Form 39.08

2021 Yar No. 510031

Supreme Court of Nova Scotia

BETWEEN:

Citizens Alliance of Nova Scotia and J.M. by his litigation guardian K.M

Applicant

and

Robert Strang acting as Chief Medical Officer of Health of Nova Scotia and Michelle Thompson acting as Minister of Health and Wellness of Nova Scotia and the Attorney General of Nova Scotia representing His Majesty the King in Right of the Province of Nova Scotia

Respondents

Affidavit of Shelly Hipson

I make oath and affirm and give evidence as follows:

1. I am Shelly Hipson.
2. I live in Atlantic, Shelburne County.
3. I am retired.
4. In my previous employment I managed the financial and day-to-day operations of Harbour Authorities in Shelburne County.
5. The source of all data and information in this Affidavit are from Freedom of Information requests and responses for official, publicly available Government data obtained through the Nova Scotia Provincial FOIPOP Office.
6. I have personal knowledge of the evidence sworn to in this Affidavit.
7. I started submitting FOI requests to the Government of Nova Scotia, primarily the Department of Health and Wellness and Nova Scotia Health to obtain government and hospital data and records related to COVID-19 mandates and responses between 2020 to present day.

8. The data received back from the government in Freedom of Information responses does not agree in material fact with what Dr. Robert Strang said publicly (Exhibits 1 - 17).

9. I obtained FOI responses that included reports from Dr. Lesley Whynot, Physician Lead, Adverse Events Following Immunization (AEFI) Management, Nova Scotia Health and Wellness, Assistant Professor, Dept. of Family Medicine, Dalhousie University that were sent to Dr. Robert Strang, Chief Medical Officer of Health and Dr. Shelley Deeks, Deputy Chief Medical Officer of Health.

    a. These records list the sex of the individuals, the type of vaccine (Pfizer or Moderna) and the resulting AEFI.

    b. Serious medical conditions that were listed in these AEFI records from Whynot to Strang included strokes, seizures, pulmonary embolisms, myocarditis, and death.

Sworn before me at _Shelburne_, Nova Scotia, this _____ day of November, 2024.

_____ _____

Notary Public Shelly Hipson

TAB 1

2021	YAR 510031
This is Exhibit 1 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 1

Freedom of Information Document Number: NSHA 2021-185

On November 22, 2021, I applied for the following FOIPOP information from the Nova Scotia Health Authority: Any record, proof, document, report that an asymptomatic positive COVID-19 case is contagious and spread to others in Nova Scotia.

Date range for record search: January 1, 2020 to November 22, 2021.

Exhibit 1 is a true copy of what I received back:

click here to download NSHA 2021-185.

December 7, 2021
Shelly Hipson
RR 3
Shelburne, NS B0T 1W0

Sent via e-mail to shellyhipson@xplornet.ca

Dear Shelly:

Re: No Responsive Records – OUR FILE# NSHA-2021-185

On November 22, 2021 Nova Scotia Health (NSH) received your request under the *Freedom of Information and Protection of Privacy Act* (*FOIPOP Act*).

We understand your application to be for a copy of the following:

> *Any record, proof, document, report that an asymptomatic positive COVID-19 case is contagious and spread to others in Nova Scotia.*

We have conducted a thorough search of our records, but we were not able to find any records responsive to your request. We are now closing your file.

Should you have any questions, please do not hesitate to contact me.

You have the right to seek a review with the Review Officer within 60 days of receiving this decision. Complete details of the process are outlined on the website of the Office of the Information & Privacy Commissioner: https://foipop.ns.ca/request-a-review. Notwithstanding, within 30 days you have the right to appeal directly to the Supreme Court if there is no third party notified pursuant to section 22 of the *FOIPOP Act*.

Sincerely,

Katie Smith
Freedom of Information Officer
Nova Scotia Health Authority
Halifax, Nova Scotia

TAB 2

2021	YAR 510031
This is Exhibit 2 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 2

Freedom of Information Document Number: 2022-01142-HEA

On June 10, 2021 I applied for the following FOIPOP information from the Department of Health and Wellness:

I would like to learn the comorbidity data that the people had who died 'with' or 'from' COVID-19 including ages, sex, any information on studies/data that has been gathered on those who have died of COVID-19 in N.S. Date range for record Search: March 1, 2020 to June 17, 2021.

Exhibit 2 is a true copy of what I received back: 2022-01142-HEA.

click here to download 2021-01142-HEA.

Please note:

1. The definition of a COVID-19 deceased case on page 1 which states the following:

   Deceased case

   A probable or confirmed COVID-19 case whose death resulted from a clinically compatible illness, unless there is a clear alternative cause of death identified (e.g. trauma, poisoning, drug overdose)

   A Medical Officer of Health, relevant public health authority, or a coroner may use their discretion when determining if a death was due to COVID-19, and their judgment will supersede the above-mentioned criteria.

   A death due to COVID-19 may be attributed when COVID-19 is the cause of death or is a contributing factor.

2. In Table 1, 86.7% of the deaths are 65 years of age or older.
3. In Table 3, of the 90 COVID-19 deaths, it is noted that they had other very serious comorbidities at the time of death that include cardiac disorders, neurological conditions, and pulmonary disorders.
4. Deaths captured in this data set are those that meet the Public Health Agency of Canada case definition.

NOVA SCOTIA
Health and Wellness
Office of the Deputy Minister

PO Box 488
Halifax, Nova Scotia
Canada B3J 2R8

902 424-7570 T
902-424-4570 F
novascotia.ca/dhw

August 11, 2021

Shelly Hipson
RR3
Shelburne, NS
B0T1W0

Sent via email: shellyhipson@xplornet.ca

Dear Shelly Hipson:

Re: You are entitled to the information you requested - 2021-01142-HEA

The Department of Health and Wellness received your application for access to information under the *Freedom of Information and Protection of Privacy Act* (or the Act) on June 10, 2021.

In your application, you requested a copy of the following records:

> *I would like to learn the comorbidity data that the people had who died 'with' or 'from' COVID-19 including ages, sex, etc. Any information or studies/data that has been gathered on those who have died of COVID-19 in NS.*

Responsive records have been located and are attached.

You have the right to ask for a review of this decision by the Information Access and Privacy Commissioner (formerly the Review Officer). You have 60 days from the date of this letter to exercise this right. If you wish to ask for a review, you may do so on Form 7, a copy of which is attached. Send the completed form to the Information Access and Privacy Commissioner, P.O. Box 181, Halifax, Nova Scotia B3J 2M4.

Please be advised that a de-identified copy of this disclosure letter and the attached response to your FOIPOP application will be made public after 14 days. The package will be posted online at https://openinformation.novascotia.ca/. The letter will not include your name, address or any other personal information that you have supplied while making your application under FOIPOP.

Please contact Chris Mack at 902-424-0262 or by e-mail at chris.mack@novascotia.ca, if you need further assistance regarding this application.

Sincerely,

Jeannine Lagassé
Associate Deputy Minister

Attach.

Form 7: Request for Review

Province of Nova Scotia
Freedom of Information and Protection of Privacy Act
Subsection 32(1)
(Applicant)

TO: The Review Officer
P.O. Box 181
Halifax, NS B3J 2M4

1. This Request for Review arises out of an Application for Access to a Record or Request for Correction of Personal Information submitted to _____ *(specify public body)* on the _____ day of , 20____, a copy of which Application or Request is attached to this Request for Review.

2. The applicant requests that the Review Officer review the following decision, act or failure to act of the head of the public body;
Check where applicable

_____ (a) decision dated or made on the _____ day of _____, 20____, a copy of which is attached to this Request for Review;
_____ (b) *(specify act or failure to act)* _____
_____
_____

3. The applicant requests that the Review Officer recommend that

Check where applicable
_____ (a) the head of the public body give access to the record as requested in the Application for Access to a Record;
_____ (b) the head of the public body correct the personal information as requested in the Request for Correction of Personal Information;
_____ (c) *(specify other recommendation or recommendations, if any, you consider appropriate)*
_____
_____
_____

Date: _____
Signature of Applicant:

_____
Print Full Name of Applicant:

_____
Mailing Address of Applicant:
(Street/Apartment No./R.R. No.)

_____

_____
(Community/County)

_____
(Postal Code)

_____
Telephone Numbers of Applicant:
*(Residence)*_____*(Business/Cell)*_____

Fax Number of Applicant: _____

FOIPOP Request 2021-01142-HEA (COVID-19 comorbidity studies and data)

Data Notes:

- Data source is Panorama and include data from March 1, 2020-June 17, 2021
- Comorbidity data is not required to be collected in all case investigations. This data should be interpreted with that in mind.
- Deaths captured in this dataset are those that meet the Public Health Agency of Canada case definition (https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/national-case-definition.html#dec)

  Deceased case
  - A probable or confirmed COVID-19 case whose death resulted from a clinically compatible illness, unless there is a clear alternative cause of death identified (e.g., trauma, poisoning, drug overdose).
  - A Medical Officer of Health, relevant public health authority, or coroner may use their discretion when determining if a death was due to COVID-19, and their judgement will supersede the above-mentioned criteria.
  - A death due to COVID-19 may be attributed when COVID-19 is the cause of death or is a contributing factor.

Table 1: Summary of COVID-19 deaths by age group, March 1, 2020-June 17, 2021

Age group	n	%
<65 yrs	12	13.3%
≥ 65 yrs	78	86.7%
Total	**90**	**100.0%**

Table 2: Summary of COVID-19 deaths by gender, March 1, 2020-June 17, 2021

Gender	n	%
Female	50	55.6%
Male	40	44.4%
Total	**90**	**100.0%**

Table 3: Summary of comorbidities for COVID-19 deaths (n=90), March 1, 2020-June 17, 2021

Comorbidities	n	%
Cancers	6	6.7%
Cardiac disorders	54	60.0%
Chronic renal disease	10	11.1%
Diabetes - Type 1 or 2	19	21.1%
Immunocompromised conditions	5	5.6%
Neurological conditions	49	54.4%
Pulmonary disorders	17	18.9%

TAB 3

2021	YAR 510031
This is Exhibit 3 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 3

Freedom of Information Document Number: 2021-01575-HEA

On August 19, 2021 I applied for the following FOIPOP information from the Department of Health and Wellness:

Amended September 8, 2021: Records that show,

1. Definition of a COVID-19 case that is used in Nova Scotia.

2. Please provide any and all reports from the start of the pandemic on how COVID-19 deaths were determined.

3. Report on COVID-19 deaths that were probable or from clinically compatible illness

4. Information/data that has been gathered as a result of COVID-19 testing:

a. Total number of COVID-19 tests done monthly for 2020 and so far in 2021

Please provide: Number that were positive: For the positive cases, please include how many were: Confirmed, Probable, Symptomatic, Asymptomatic Number that were negative:

Total number of COVID-19 deaths: Determined by PCR test, Determined by a public health authority, a coroner using their discretion, autopsy

How many of the deaths were tested and symptomatic, asymptomatic, confirmed. Any record that identifies data that shows that the only illness they had was COVID-19 and it was the true cause of death (they did not die because they were at the end of life and they did not have any other serious illness – for example, they were young, healthy, and died of COVID-19 only)

Date range for record search: From March 22, 2020 to August 19, 2021.

Exhibit 3 is a true copy of what I received back: FOIPOP 2021-01575-HEA. click here to download 2021-01575-HEA

Please note:

1. The definition of a COVID-19 Deceased Case in the Data notes on page 1.
2. The total number of COVID-19 tests for 2020: 236,201
3. The total number of COVID-19 tests for 2020 that were negative: 234,437
4. The total number of COVID-19 tests for 2020 that were positive: 1,635
5. The total number of COVID-19 deaths for 2020 were: 66
6. The total number of COVID-19 tests for 2021: 847,234
7. The total number of COVID-19 tests for 2021 that were negative: 842,214
8. The total number of COVID-19 tests for 2021 that were positive: 4,791

9. The total number of COVID-19 deaths for 2021 were: 49
10. The total number of COVID-19 tests completed for 2020 and 2021 were: 1,083,435.
11. The total number of COVID-19 tests that were negative for 2020 and 2021 were: 1,076,651.
12. The total number of COVID-19 tests that were positive for 2020 and 2021 were: 6,426.
13. The total number of COVID-19 deaths for 2020 and 2021 was: 114.
14. 114 people died out of 6,426 positive tests in two years.

December 15, 2021

Shelly D Hipson
RR3
Shelburne, B0T 1W0

Sent via email: shellyhipson@gmail.com

Dear Shelly D Hipson:

Re: You are entitled to the information you requested - 2021-01575-HEA

The Department of Health and Wellness received your application for access to information under the *Freedom of Information and Protection of Privacy Act* (the Act) on August 19, 2021.

In your application, you requested a copy of the following records:

> *Amended September 8, 2021: Records that show,*
> *1. Definition of a COVID-19 case that is used in Nova Scotia.*
> *2. Please provide any and all reports from the start of the pandemic on how COVID-19 death were determined.*
> *3. Report on COVID-19 deaths that were probable or from clinically compatible illness*
> *4. Information/data that has been gathered as a result of COVID-19 testing:*
> *a. Total number of COVID-19 tests done monthly for 2020 and so far in 2021,*
> *Please provide: Number that were positive:*
> *For the positive cases, please include how many were:*
> *Confirmed,Probable,Symptomatic,Asymptomatic*
> *Number that were negative: Total number of COVID-19 deaths:*
> *Determined by PCR test,Determined by a public health authority, a coroner using their discretion,autopsy*
> *How many of the deaths were tested and symptomatic, asymptomatic, confirmed.*
> *Any record that identifies data that shows that the only illness they had was COVID-19 and it was the true cause of death (they did not die because they were at the end of life and they did not have any other serious illness – for example, they were young, healthy, and died of COVID-19 only)*
> *(Date Range for Record Search: From 3/22/2020 To 8/19/2021)*

Responsive records have been located and are attached. Records have been provided that respond to part 1 and 4 of your request. The Department has completed a search for records that respond to part 2 and 3 of your request and no responsive records were found.

You have the right to ask for a review of this decision by the Information Access and Privacy Commissioner (formerly the Review Officer). You have 60 days from the date of this letter to exercise this right. If you wish to ask for a review, you may do so on Form 7, a copy of which is attached. Send the completed form to the Information Access and Privacy Commissioner, P.O. Box 181, Halifax, Nova Scotia B3J 2M4.

Please be advised that a de-identified copy of this disclosure letter and the attached response to your FOIPOP application will be made public after 14 days. The package will be posted online at https://openinformation.novascotia.ca/. The letter will not include your name, address, or any other personal information that you have supplied while making your application under FOIPOP.

Please contact Melinda Frelick at 902-424-6920 or by e-mail at melinda.frelick@novascotia.ca, if you need further assistance regarding this application.

Sincerely,

Craig Beaton
Associate Deputy Minister

Attachment

FOIPOP Request 2021-01575-HEA

Data Notes:

- Data sources:
  - 4a, Table 1: Provincial Public Health Laboratory Network COVID-19 lab line list
  - 4a, Table 2 and 4b: Panorama
  - Data includes records between March 22, 2020 and August 19, 2021
- Cell sizes <5 have been suppressed
- The symptom data represents what has been collected and entered in Panorama for this population of COVID-19 deaths and cases. Symptoms include pharyngitis, cough, fever, headache, pain, chills, diarrhea, malaise, nausea/vomiting, confusion/irritability, rhinorrhea or other.
- Deaths captured in this dataset are those that meet the Public Health Agency of Canada case definition. Panorama does not capture if the death was determined by a public health authority, coroner or autopsy (https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/national-case-definition.html#dec) :

  Deceased case

  - A probable or confirmed COVID-19 case whose death resulted from a clinically compatible illness, unless there is a clear alternative cause of death identified (e.g., trauma, poisoning, drug overdose).
  - A Medical Officer of Health, relevant public health authority, or coroner may use their discretion when determining if a death was due to COVID-19, and their judgement will supersede the above-mentioned criteria.
  - A death due to COVID-19 may be attributed when COVID-19 is the cause of death or is a contributing factor.
- All deaths included in this response were classified as confirmed cases of COVID-19
- The number of positive tests does not correspond exactly to the number of COVID-19 cases captured in Panorama because individuals can be tested multiple times, not all individuals tested are counted as NS cases (from out of province) and NS cases may have been tested outside of NS so are not captured in our provincial lab data.
- **Confirmed Case Definition**

  A person with confirmation of infection with SARS-CoV-2 documented by:

  1. The detection of at least 1 specific gene target by a validated laboratory-based nucleic acid amplification test (NAAT) assay (e.g. real-time PCR or nucleic acid sequencing) performed at a community, hospital, or reference laboratory (the National Microbiology Laboratory or a provincial public health laboratory)
     or
  2. The detection of at least 1 specific gene target by a validated point-of-care (POC) NAAT that has been deemed acceptable to provide a final result (i.e. does not require confirmatory testing)
     or
  3. Seroconversion or diagnostic rise (at least 4-fold or greater from baseline) in viral specific antibody titre in serum or plasma using a validated laboratory-based serological assay for SARS-CoV-2

- **Probable Case Definition**

  A person who:

  1. Has symptoms compatible with COVID-19

     and

     - Had a high-risk exposure with a confirmed COVID-19 case (i.e. close contact) **or** was exposed to a known cluster or outbreak of COVID-19
       and
     - Has not had a laboratory-based NAAT assay for SARS-CoV-2 completed **or** the result is inconclusive
       or
     - Had SARS-CoV-2 antibodies detected in a single serum, plasma, or whole blood sample using a validated laboratory-based serological assay for SARS-CoV-2 collected within 4 weeks of symptom onset

     OR

  2. Had a POC NAAT **or** POC antigen test for SARS-CoV-2 completed and the result is preliminary (presumptive) positive

     OR

  3. Had a validated POC antigen test for SARS-CoV-2 completed and the result is positive

Request:

4. *Information/data that has been gathered as a result of COVID-19 testing:*
   a. *Total number of COVID-19 tests done monthly for 2020 and so far in 2021,*
   Please provide: Number that were positive:

For the positive cases, please include how many were:
- *Confirmed:*
- *Probable:*
- *Symptomatic:*
- *Asymptomatic:*

Table 1. Number of COVID-19 tests by month and result, March 22, 2020- August 19, 2021.

Month	Result		Total
	Negative	Positive	
Mar-20	4614	147	4769
Apr-20	24531	879	25473
May-20	18105	141	18251
Jun-20	15686	8	15702
Jul-20	12465	6	12475
Aug-20	15529	22	15558
Sep-20	28734	6	28748
Oct-20	22535	23	22565
Nov-20	43463	212	43685
Dec-20	48775	191	48975
Jan-21	47356	90	47452
Feb-21	52191	67	52261
Mar-21	92621	75	92703
Apr-21	150075	924	151036
May-21	239226	3219	242575
Jun-21	121115	279	121420
Jul-21	86630	63	86705
Aug-21	53000	74	53082
Total	1076651	6426	1083435

*Tests conducted before March 22 2020 and after August 19 2021 are excluded based on the dates of the FOIPOP request.

**26 tests were excluded in 2020 and 174 in 2021 as they were not processed.

***Excludes indeterminate results

Table 2: Number of confirmed and probable COVID-19 cases, March 22, 2020 – August 19, 2021

	COVID-19 Cases	
	Confirmed	**Probable**
Asymptomatic	1473	<5
Symptomatic	4411	--
Total	**5884**	**21**

4b. Total number of COVID-19 deaths:
Determined by PCR test:

Determined by:

-a public health authority:
-a coroner using their discretion:
-autopsy:
How many of the deaths were tested and
-symptomatic
-asymptomatic
-confirmed

Table 3. Number of COVID-19 deaths, March 22, 2020-August 19, 2021

	Number of Deaths
Asymptomatic	0
Symptomatic	93

TAB 4

2021	YAR 510031
This is Exhibit 4 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 4

Freedom of Information Document Number 2022-00112-HEA:

On January 21, 2022 I applied for the following FOIPOP information from the Department of Health and Wellness:

1. Total number of teachers who have tested Positive for COVID-19 broken down into symptomatic, asymptomatic, and how they determined they were positive: Rapid Test/PCR Test/Combination of Rapid & PCR

2. Total number of students who have tested Positive for COVID-19 Broken down into symptomatic, asymptomatic, and how they determined they were positive: Rapid Test/PCR Test/Combination of Rapid & PCR

3. Total number of school staff who have tested Positive for COVID-19 broken down into symptomatic, asymptomatic, and how they determined they were positive: Rapid Test/PCR Test/Combination of Rapid & PCR

4. Please provide the recovery rate as well as a) The total number of COVID-19 infections/cases that resulted in hospitalizations (general and ICU) that have been traced to someone attending a school

5. COVID-19 deaths that have been traced back to transmissions at or from a school.

Range for records broken down into school years.

Spring 2020 - start of the pandemic.

September 2020 - End of school year in June of 2021.

September 2021 - to January 21, 2022.

Exhibit 4 is a true copy of what I received back:

FOIPOP 2022-00112-HEA. click here to download 2022-00112-HEA

Please Note:

1. There is no record.

February 22, 2022

Shelly D Hipson
RR3
Shelburne, B0T 1W0

Sent via email: shellyhipson@gmail.com

Dear Shelly Hipson:

Re: We do not have the information you asked for – 2022-00112-HEA

The Department of Health and Wellness received your application for access to information under the *Freedom of Information and Protection of Privacy Act* (the Act) on January 21, 2022.

In your application, you requested a copy of the following records:

> *1. Total number of teachers who have tested Positive for COVID-19 broken down into symptomatic, asymptomatic, and how they determined they were positive: Rapid Test/PCR Test/Combination of Rapid & PCR*
>
> *2. Total number of students who have tested Positive for COVID-19 Broken down into symptomatic, asymptomatic, and how they determined they were positive: Rapid Test/PCR Test/Combination of Rapid & PCR*
>
> *3. Total number of school staff who have tested Positive for COVID-19 broken down into symptomatic, asymptomatic, and how they determined they were positive: Rapid Test/PCR Test/Combination of Rapid & PCR*
>
> *4. Please provide the recovery rate as well as*
> *a) The total number of COVID-19 infections/cases that resulted in hospitalizations (general and ICU) that have been traced to someone attending a school*
>
> *5. COVID-19 deaths that have been traced back to transmissions at or from a school.*
>
> *Range for records broken down into school years.*
>
> *Spring 2020 - start of the pandemic*

September 2020 - End of school year in June of 2021

September 2021 - to January 21, 2022

(Date Range for Record Search: From 01/31/2020 To 01/20/2022)

After a file search, we have located no records responsive to your application. Therefore, it is my understanding, pursuant to clause 7(2)(b) of the Act, that the Department of Health and Wellness does not have custody or control of records which would respond to your application. A description as to whether a case is a student, teacher or staff is not recorded in Panorama.

The Nova Scotia Health Authority may hold records that respond to the scope of this request.

You have the right to ask for a review of this decision by the Information Access and Privacy Commissioner (formerly the Review Officer). You have 60 days from the date of this letter to exercise this right. If you wish to ask for a review, you may do so on Form 7, a copy of which is attached. Send the completed form to the Information Access and Privacy Commissioner, P.O. Box 181, Halifax, Nova Scotia B3J 2M4.

Please be advised that a de-identified copy of this disclosure letter and the attached response to your FOIPOP application will be made public after 14 days. The package will be posted online at https://openinformation.novascotia.ca/. The letter will not include your name, address, or any other personal information that you have supplied while making your application under FOIPOP.

Please contact Melinda Frelick at 902-424-6920 or by e-mail at melinda.frelick@novascotia.ca.

Sincerely,

Craig Beaton
Associate Deputy Minister

TAB 5

2021	YAR 510031
This is Exhibit 5 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 5

Freedom of Information Document Number 2022-00445-HEA:

On March 14, 2022 I applied for the following FOIPOP information from the Department of Health and Wellness:

1. Number of COVID-19 tests by month and result (positive cases/negative/total) for year 2020, year 2021 and so far for 2022)

2. Number of COVID-19 Cases by month that were Asymptomatic and Symptomatic and total for each year 2020 and year 2021

3. Number of COVID-19 deaths per month in Nova Scotia for year 2020 and year 2021 and so far in 2022.

Date range for record search: December 31, 2019 to March 11, 2022.

Exhibit 5 is a true copy of what I received back: FOIPOP 2022-00445-HEA.

click here to download 2022-00445-HEA

April 13, 2022

Shelly D Hipson
RR3
Shelburne, B0T 1W0

Sent via email: shellyhipson@gmail.com

Dear Shelly Hipson:

Re: You are entitled to the information you requested - 2022-00445-HEA

The Department of Health and Wellness received your application for access to information under the *Freedom of Information and Protection of Privacy Act* (the Act) on March 14, 2022.

In your application, you requested a copy of the following records:

> *1. Number of COVID-19 tests by month and result (positive cases/negative/total) for year 2020, year 2021 and so far for 2022)*
>
> *2. Number of COVID-19 Cases by month that were Asymptomatic and Symptomatic and total for each year 2020 and year 2021*
>
> *3. Number of COVID-19 deaths per month in Nova Scotia for year 2020 and year 2021 and so far in 2022.*
>
> *(Date Range for Record Search: From 12/31/2019 To 3/11/2022)*

Responsive records have been located and are attached.

You have the right to ask for a review of this decision by the Information Access and Privacy Commissioner (formerly the Review Officer). You have 60 days from the date of this letter to exercise this right. If you wish to ask for a review, you may do so on Form 7, a copy of which is attached. Send the completed form to the Information Access and Privacy Commissioner, P.O. Box 181, Halifax, Nova Scotia B3J 2M4.

Please be advised that a de-identified copy of this disclosure letter and the attached response to your FOIPOP application will be made public after 14 days. The package will be posted online at https://openinformation.novascotia.ca/. The letter will not include your name, address, or any other personal information that you have supplied while making your application under FOIPOP.

Please contact Melinda Frelick at 902-424-6920 or by e-mail at melinda.frelick@novascotia.ca, if you need further assistance regarding this application.

Sincerely,

Craig Beaton
Associate Deputy Minister

Attachment

FOIPOP Request 2022-00445-HEA

Data Notes:

- Data sources are Panorama for symptom status and mortality, and the province's public health lab's line list of completed tests (includes data for 01MAR2020 to 16MAR2022).
    - Data entry of cases during the recent Omicron wave (corresponding roughly from 08DEC2021 to present) is incomplete.
    - Entry of symptom information beyond the first wave is limited.
    - Information from the public health lab pertains only to PCR tests, and not rapid antigen tests.
    - The month of March 2022 is not yet complete, and so neither is the data for this period.
    - PCR test eligibility has been limited for much of the Omicron wave (effective date of eligibility change was 27DEC2021), and only reverted to more broad access in recent weeks.
- Cases captured in Panorama are those that meet the Public Health Agency of Canada case definition (https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/national-case-definition.html#dec) :

    Confirmed case

    A person with confirmation of infection with SARS-CoV-2 documented by:

    - The detection of at least 1 specific gene target by a validated laboratory-based nucleic acid amplification test (NAAT) assay (e.g. real-time PCR or nucleic acid sequencing) performed at a community, hospital, or reference laboratory (the National Microbiology Laboratory or a provincial public health laboratory)
      or
    - The detection of at least 1 specific gene target by a validated point-of-care (POC) NAAT that has been deemed acceptable to provide a final result (i.e. does not require confirmatory testing)
      or
    - Seroconversion or diagnostic rise (at least 4-fold or greater from baseline) in viral specific antibody titre in serum or plasma using a validated laboratory-based serological assay for SARS-CoV-2

Request:

1. Number of COVID-19 tests by month and result (positive cases/negative/total) for year 2020, year 2021 and so far for 2022)
2. Number of COVID-19 Cases by month that were Asymptomatic and Symptomatic and total for each year 2020 and year 2021
3. Number of COVID-19 deaths per month in Nova Scotia for year 2020 and year 2021 and so far in 2022. (Date Range for Record Search: From 12/31/2019 To 3/11/2022)

Table 1. COVID-19 PCR tests performed by the Public Health Lab (monthly totals)

Month of Sample Collection	Positives	Negatives	Pending or Invalid Result	Total
JAN2020	0	1	0	1
FEB2020	0	19	0	19
MAR2020	178	7651	22	7851
APR2020	770	24021	82	24873
MAY2020	96	17748	5	17849
JUN2020	7	15651	8	15666
JUL2020	7	12361	4	12372
AUG2020	19	16101	8	16128
SEP2020	4	28853	7	28864
OCT2020	22	21842	6	21870
NOV2020	223	46040	11	46274
DEC2020	167	46532	8	46707
JAN2021	89	46996	7	47092
FEB2021	62	60890	2	60954
MAR2021	71	85942	12	86025
APR2021	1306	192611	53	193970
MAY2021	2520	197475	138	200133
JUN2021	235	118758	43	119036
JUL2021	59	84107	36	84202
AUG2021	148	87360	44	87552
SEP2021	715	101897	60	102672
OCT2021	696	89841	61	90598
NOV2021	944	91453	71	92468
DEC2021	12108	170493	609	183210

Table 1. COVID-19 PCR tests performed by the Public Health Lab (monthly totals)				
Month of Sample Collection	Positives	Negatives	Pending or Invalid Result	Total
JAN2022	18265	102218	837	121320
FEB2022	7548	48836	490	56874
MAR2022	4928	17046	1399	23373

Table 2. Panorama-entered COVID-19 cases by symptom status (monthly totals)				
Month of Case Detection	Symptomatic	Asymptomatic	Unknown or Not Entered	Total
MAR2020	144	34	69	247
APR2020	430	266	34	730
MAY2020	54	25	2	81
JUN2020	3	1	3	7
JUL2020	5	1	0	6
AUG2020	1	7	7	15
SEP2020	2	0	1	3
OCT2020	8	4	18	30
NOV2020	38	49	152	239
DEC2020	33	52	71	156
JAN2021	4	27	44	75
FEB2021	6	27	37	70
MAR2021	12	39	39	90
APR2021	166	388	1001	1555
MAY2021	174	585	1571	2330
JUN2021	44	85	101	230
JUL2021	6	21	12	39
AUG2021	6	56	107	169
SEP2021	35	197	526	758
OCT2021	41	256	405	702
NOV2021	63	229	575	867
DEC2021	155	228	2157	2540

Table 3. Panorama-entered COVID-19 confirmed deaths (monthly totals)	
Month of Death	Total
MAR2020	0
APR2020	34
MAY2020	29
JUN2020	1
JUL2020	0
AUG2020	1
SEP2020	0
OCT2020	0
NOV2020	0
DEC2020	0
JAN2021	0
FEB2021	0
MAR2021	1
APR2021	4
MAY2021	16
JUN2021	6
JUL2021	1
AUG2021	1
SEP2021	3
OCT2021	4
NOV2021	9
DEC2021	4
JAN2022	65
FEB2022	45
MAR2022	8

*Positive tests from the public health lab and cases entered into Panorama are largely but not entirely overlapping groups. For much of the pandemic, travelers to the province were routinely tested through the lab, and so are represented in the testing numbers.

TAB 6

2021	YAR 510031
This is Exhibit 6 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 6

Freedom of Information Document Number NSHA 2021-109 Updated:

On August 23, 2021 I applied for the following FOIPOP information from the Nova Scotia Health Authority:

How many ICU hospitalizations were there each month for COVID-19 in 2020 and for each month in 2021 up to and including September?

Date range for record Search: December 31, 2019 to September 30, 2021.

Exhibit 6 is a true copy of what I received back:

click here to download NSHA 2021-109 Updated.

In conclusion, the ICU hospital beds were not full of COVID-19 patients in 2020.

Privacy Office; Legal Services
1-031 Centennial Building
1276 South Park Street
Halifax, NS B3H 2Y9
foipop@nshealth.ca

September 16, 2021
Shelly Hipson
RR3
Shelburne, NS B0T 1W0

Sent via e-mail to shellyhipson@gmail.com

Dear Shelly:

Re: Partial Access Further Explanation – OUR FILE# NSHA-2021-109

On August 23, 2021 Nova Scotia Health (NSH) received your request, transferred by the Department of Health and Wellness under the *Freedom of Information and Protection of Privacy Act* (*FOIPOP Act*).

We understand your application to be for a copy of the following:
How many ICU hospitalizations were there each month for COVID-19 in 2020 and for each month in 2021 up to and including July? (Date Range for Record Search: From 12/31/2019 To 07/31/2021).

I have withheld personal health information under section 20(3)(a) of the *FOIPOP Act*. Section 20(3)(a) of the *FOIPOP Act* says that *disclosing another individual's medical or other health care history, diagnosis, treatment, and evaluation is presumed to be an unreasonable invasion of that individual's privacy* so this information cannot be disclosed.

I am protecting the individual's privacy by changing all numbers less than 5 to "<5" in the attached spreadsheet. Nova Scotia's privacy laws protect both identified individuals and identifiable individuals. On the one hand, if the spreadsheet said "Katie Smith" in the data column for Dartmouth General ICU in the month of December 2021 then I am an identified individual. On the other hand, if the spreadsheet said 1 in the data column for Dartmouth General ICU in the month of December 2021, Nova Scotia Health posted an exposure notice saying there is a COVID exposure on a bus route from the specific bus stop near my house to the specific bus stop near my work on December 1, 2021, and Nova Scotia Health posted another exposure notice saying that there is a COVID exposure at my work on December 1, 2021; then, someone could piece together who I am from the combination of the data in the spreadsheet and the COVID exposure notices. All the pieces put together could potentially make me an identifiable person.

Moreover, for context, I checked with the individual who created the data sheet and they said the "Cape Breton Health Care Complex" refers to the ICU at Cape Breton Regional Hospital. It is the only hospital with an ICU in the area.

Should you have any questions, please do not hesitate to contact me.

Privacy Office; Legal Services
1-031 Centennial Building
1276 South Park Street
Halifax, NS B3H 2Y9
foipop@nshealth.ca

You have the right to seek a review with the Review Officer within 60 days from receiving your original decision letter. You received your original decision letter on **September 13, 2021.** Complete details of the process are outlined on the website of the Office of the Information & Privacy Commissioner: https://foipop.ns.ca/request-a-review.

Sincerely,
Katie Smith
Freedom of Information Officer
Nova Scotia Health Authority
Halifax, Nova Scotia

"Hospitalizations" is an individual count of patients each month at each facility. Some patients may have had inpatient stays that carried over into other months and any patient transferred to anoher facility would be counted at both.

COVID-19 ICU Hospitalizations

		Aberdeen Hospital	Cape Breton Health Care Complex	Colchester Regional Hospital	Cumberland Regional	Dartmouth General Hospital	QE II Health Sciences Centre VG & HI	South Shore Regional Hospital	St. Martha's Regional Hospital	Valley Regional Hospital	Yarmouth Regional Hospital
2020	January	0	0	0	0	0	0	0	0	0	0
	February	0	0	0	0	0	0	0	0	0	0
	March	0	0	<5	0	0	0	0	0	0	0
	April	0	0	<5	0	0	<5	0	0	<5	0
	May	0	<5	<5	0	0	6	0	0	<5	0
	June	0	0	0	0	0	<5	0	0	<5	0
	July	0	0	<5	0	<5	<5	0	0	0	0
	August	0	<5	0	0	0	<5	0	0	0	0
	September	0	0	0	0	0	0	0	0	<5	0
	October	0	0	0	0	<5	<5	0	0	<5	0
	November	0	0	0	0	0	0	0	0	0	0
	December	0	0	0	0	0	0	0	0	0	0
2021	January	0	0	0	0	0	<5	0	0	0	0
	February	0	0	0	0	0	<5	0	0	0	0
	March	0	0	<5	0	0	<5	0	0	0	0
	April	0	0	0	0	0	5	0	0	<5	0
	May	0	5	<5	0	<5	32	0	0	<5	0
	June	0	<5	0	0	<5	9	0	0	<5	0
	July	0	0	0	0	<5	<5	0	0	0	0
	August	0	<5	<5	0	0	<5	0	0	0	0
	September	0	<5	<5	0	0	<5	0	0	0	0

TAB 7

2021	YAR 510031
This is Exhibit 7 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 7

Freedom of Information Document Number NSHA 2021-173:

On November 17, 2021 I applied for the following FOIPOP information from the Nova Scotia Health Authority:

% of COVID hospitalizations of all hospitalizations;

% COVID ICU hospitalizations of ICU hospitalizations;

COVID ICU hospitalizations.

Date range for record Search: Year 2020 up to October 31, 2021.

Exhibit 7 is a true copy of what I received back: NSHA 2021-173.

click here to download NSHA 2021-173.

Based on this record I concluded that the majority of hospital admissions and IUC admissions were not COVID-19 related as reflected in the zeros and the redacted less than five in this FOI response.

Privacy Office; Legal Services
1-031 Centennial Building
1276 South Park Street
Halifax, NS B3H 2Y9
foipop@nshealth.ca

December 17, 2021
Shelly Hipson
RR 3
Shelburne, NS B0T 1W0

Sent via e-mail to shellyhipson@xplornet.ca

Dear Shelly:

Re: Partial Access– OUR FILE# NSHA-2021-173

On November 17, 2021Nova Scotia Health (NSH) received your request under the *Freedom of Information and Protection of Privacy Act* (*FOIPOP Act*).

We understand your application to be for a copy of the following:

% of COVID hospitalizations of all hospitalizations
% COVID ICU hospitalizations of ICU hospitalizations
 # COVID ICU hospitalizations

Please find a copy of the records located in response to your request.We have withheld personal health information under section 20(3)(a) of the *FOIPOP Act*.

We cannot disclose the percentage of COVID ICU hospitalizations of ICU hospitalizations when fewer than five patients were in the ICU because it is about identifiable individuals. The combination of this information with the information we will release to you in FOIPOP 2021-181, the total ICU hospitalizations, would allow these individuals to be identified.

We cannot disclose the percentage of COVID hospitalizations when fewer than five patients were in the hospital because it is about identifiable individuals. The combination of this information with the information we will release to you in FOIPOP 2021-181, the total hospitalizations, would allow these individuals to be identified.

Should you have any questions, please do not hesitate to contact me.

You have the right to seek a review with the Review Officer within 60 days of receiving this decision. Complete details of the process are outlined on the website of the Office of the Information & Privacy Commissioner: https://foipop.ns.ca/request-a-review.

Sincerely,

Katie Smith
Freedom of Information Officer
Nova Scotia Health Authority
Halifax, Nova Scotia

*"Hospitalizations" is an individual count of patients each month at each facility. Some patients may have had inpatient stays that carried over into other months and any patient transferred would be counted at both. ICU Counts are NOT included in non ICU counts		Aberdeen Hospital			
		# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID ICU Hospitalizations	% COVID ICU Hospitalizations of all ICU Hospitalizations
2020	January	0	0.0%	0	0.0%
	February	0	0.0%	0	0.0%
	March	<5	s.20(3)(a)	0	0.0%
	April	<5	s.20(3)(a)	0	0.0%
	May	<5	s.20(3)(a)	0	0.0%
	June	0	0.0%	0	0.0%
	July	<5	s.20(3)(a)	0	0.0%
	August	<5	s.20(3)(a)	0	0.0%
	September	0	0.0%	0	0.0%
	October	0	0.0%	0	0.0%
	November	0	0.0%	0	0.0%
	December	0	0.0%	0	0.0%
2021	January	<5	s.20(3)(a)	0	0.0%
	February	0	0.0%	0	0.0%
	March	0	0.0%	0	0.0%
	April	0	0.0%	0	0.0%
	May	<5	s.20(3)(a)	0	0.0%
	June	<5	s.20(3)(a)	0	0.0%
	July	<5	s.20(3)(a)	0	0.0%
	August	0	0.0%	0	0.0%
	September	0	0.0%	0	0.0%
	October	<5	s.20(3)(a)	0	0.0%

Annapolis Community Health Centre		Buchanan Memorial Community Health	
# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%

Cape Breton Regional Hospital			
# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID ICU Hospitalizations	% COVID ICU Hospitalizations of all ICU Hospitalizations
0	0.0%	0	0.0%
0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%
6	1.2%	0	0.0%
<5	s.20(3)(a)	<5	s.20(3)(a)
<5	s.20(3)(a)	0	0.0%
5	0.7%	0	0.0%
<5	s.20(3)(a)	<5	s.20(3)(a)
<5	s.20(3)(a)	0	0.0%
<5	s.20(3)(a)	0	0.0%
<5	s.20(3)(a)	0	0.0%
<5	s.20(3)(a)	0	0.0%
<5	s.20(3)(a)	0	0.0%
<5	s.20(3)(a)	0	0.0%
<5	s.20(3)(a)	0	0.0%
<5	s.20(3)(a)	0	0.0%
17	2.5%	5	6.9%
8	1.1%	<5	s.20(3)(a)
5	0.6%	0	0.0%
<5	s.20(3)(a)	<5	s.20(3)(a)
<5	s.20(3)(a)	<5	s.20(3)(a)
<5	s.20(3)(a)	0	0.0%

Colchester East Hants Health Centre			
# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID ICU Hospitalizations	% COVID ICU Hospitalizations of all ICU Hospitalizations
0	0.0%	0	0.0%
0	0.0%	0	0.0%
5	1.7%	<5	s.20(3)(a)
<5	s.20(3)(a)	<5	s.20(3)(a)
<5	s.20(3)(a)	<5	s.20(3)(a)
<5	s.20(3)(a)	<5	s.20(3)(a)
<5	s.20(3)(a)	<5	s.20(3)(a)
<5	s.20(3)(a)	0	0.0%
<5	s.20(3)(a)	0	0.0%
<5	s.20(3)(a)	0	0.0%
<5	s.20(3)(a)	0	0.0%
<5	s.20(3)(a)	0	0.0%
0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%
<5	s.20(3)(a)	<5	s.20(3)(a)
<5	s.20(3)(a)	0	0.0%
17	6.0%	<5	s.20(3)(a)
0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%
<5	s.20(3)(a)	0	0.0%
15	4.2%	<5	s.20(3)(a)
5	1.4%	<5	s.20(3)(a)

Cumberland Regional Health Care Centre			
# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID ICU Hospitalizations	% COVID ICU Hospitalizations of all ICU Hospitalizations
0	0.0%	0	0.0%
0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		<5	s.20(3)(a)
<5		0	0.0%

Dartmouth General Hospital				Digby General Hosptial	
# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID ICU Hospitalizations	% COVID ICU Hospitalizations of all ICU Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
5	1.1%	0	0.0%	0	0.0%
14	4.2%	0	0.0%	0	0.0%
7	1.7%	0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%	0	0.0%
10	2.2%	<5	s.20(3)(a)	0	0.0%
7	1.5%	0	0.0%	0	0.0%
7	1.5%	0	0.0%	0	0.0%
<5	s.20(3)(a)	<5	s.20(3)(a)	0	0.0%
<5		0	0.0%	0	0.0%
5	1.0%	0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%	0	0.0%
<5		0	0.0%	0	0.0%
5	0.9%	0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%	0	0.0%
12	2.3%	<5	s.20(3)(a)	0	0.0%
6	1.1%	<5		0	0.0%
7	1.3%	<5		0	0.0%
<5	s.20(3)(a)	0	0.0%	0	0.0%
6	1.1%	<5	s.20(3)(a)	0	0.0%
<5	s.20(3)(a)	<5		0	0.0%

Eastern Memorial Hospital		Eastern Shore Memorial Hosptial		Fishermen's Memorial Hospital		Glace Bay Health Care Facility		Hants Community Hospital		Inverness Consolidated Memorial Hospital	
# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5	s.20(3)(a) [redacted]	0	0.0%	<5	s.20(3)(a) [redacted]
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	<5	s.20(3)(a) [redacted]	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5	s.20(3)(a) [redacted]	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	<5	s.20(3)(a) [redacted]	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	<5		0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5	s.20(3)(a) [redacted]	<5	s.20(3)(a) [redacted]	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5	s.20(3)(a) [redacted]	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5		0	0.0%	0	0.0%

Lillian Fraser Memorial Hospital		Musquodoboit Valley Memorial Hospital	
# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations
0	0.0%	0	0.0%
0	0.0%	0	0.0%
<5	s.20(3)(a)	<5	s.20(3)(a)
<5		0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%
<5		0	0.0%
<5		0	0.0%
<5		0	0.0%

New Waterford Consolidated Hospital		North Cumberland Memorial Hospital		Northside General Hospital	
# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%	0	0.0%
<5		0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	<5	s.20(3)(a)
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	<5	s.20(3)(a)	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%

QE II Health Sciences Centre VG & HI				Queens General Hospital		Roseway Hospital	
# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID ICU Hospitalizations	% COVID ICU Hospitalizations of all ICU Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations
0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%
19	0.9%	<5	s.20(3)(a)	0	0.0%	0	0.0%
17	1.1%	7	3.7%	0	0.0%	0	0.0%
22	1.2%	7	3.1%	0	0.0%	0	0.0%
19	0.9%	<5	s.20(3)(a)	0	0.0%	0	0.0%
18	0.8%	<5		0	0.0%	0	0.0%
15	0.7%	<5		0	0.0%	0	0.0%
12	0.5%	0	0.0%	0	0.0%	0	0.0%
14	0.6%	<5	s.20(3)(a)	0	0.0%	0	0.0%
17	0.7%	<5		0	0.0%	0	0.0%
15	0.6%	0	0.0%	0	0.0%	0	0.0%
19	0.8%	<5	s.20(3)(a)	0	0.0%	0	0.0%
21	1.0%	<5		0	0.0%	0	0.0%
29	1.2%	<5		0	0.0%	0	0.0%
53	2.3%	6	2.3%	0	0.0%	0	0.0%
200	10.0%	31	15.5%	0	0.0%	0	0.0%
55	2.4%	9	3.1%	0	0.0%	0	0.0%
27	1.2%	<5	s.20(3)(a)	0	0.0%	0	0.0%
20	0.9%	<5		0	0.0%	0	0.0%
31	1.5%	<5		0	0.0%	0	0.0%
36	1.7%	8	2.9%	0	0.0%	0	0.0%

Sacred Heart Community Health Centre		Soldiers Memorial Hospital	
# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	<5	s.20(3)(a)
0	0.0%	0	0.0%
0	0.0%	<5	s.20(3)(a)
0	0.0%	<5	
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	<5	s.20(3)(a)
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%
0	0.0%	0	0.0%

South Shore Regional Hospital				St. Martha's Regional Hospital			
# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID ICU Hospitalizations	% COVID ICU Hospitalizations of all ICU Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID ICU Hospitalizations	% COVID ICU Hospitalizations of all ICU Hospitalizations
0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%	<5	s.20(3)(a)	0	0.0%
0	0.0%	0	0.0%	<5		0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%	<5	s.20(3)(a)	0	0.0%
<5		0	0.0%	0	0.0%	0	0.0%
<5		0	0.0%	<5	s.20(3)(a)	0	0.0%
<5		0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%
<5	s.20(3)(a)	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	<5	s.20(3)(a)	0	0.0%
<5	s.20(3)(a)	0	0.0%	0	0.0%	0	0.0%

St.Mary's Memorial Hospital		Strait Richmond Hospital		Twin Oaks Memorial Hospital		Valley Regional Hospital			
# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID ICU Hospitalizations	% COVID ICU Hospitalizations of all ICU Hospitalizations
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5	s.20(3)(a)	0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5		<5	s.20(3)(a)
0	0.0%	0	0.0%	0	0.0%	<5		<5	
0	0.0%	0	0.0%	0	0.0%	<5		<5	
0	0.0%	0	0.0%	0	0.0%	<5		0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5		0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5		<5	s.20(3)(a)
0	0.0%	0	0.0%	0	0.0%	0	0.0%	<5	
0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5	s.20(3)(a)	0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5		0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5		0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5		0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5		<5	s.20(3)(a)
0	0.0%	0	0.0%	0	0.0%	11	2.2%	<5	
0	0.0%	0	0.0%	0	0.0%	<5	s.20(3)(a)	<5	
0	0.0%	0	0.0%	0	0.0%	<5		0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5		0	0.0%
0	0.0%	0	0.0%	0	0.0%	<5		0	0.0%
0	0.0%	0	0.0%	0	0.0%	9	1.7%	<5	s.20(3)(a)

Victoria County Memorial Hospital		Yarmouth Regional Hospital			
# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID Hospitalizations	% COVID Hospitalizations of all Hospitalizations	# COVID ICU Hospitalizations	% COVID ICU Hospitalizations of all ICU Hospitalizations
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	<5	s.20(3)(a)	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	<5	s.20(3)(a)	<5	s.20(3)(a)
0	0.0%	<5		0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	<5	s.20(3)(a)	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	<5	s.20(3)(a)	0	0.0%
0	0.0%	<5		0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	<5	s.20(3)(a)	0	0.0%
0	0.0%	0	0.0%	0	0.0%
0	0.0%	<5	s.20(3)(a)	0	0.0%
0	0.0%	<5		<5	s.20(3)(a)

TAB 8

2021	YAR 510031
This is Exhibit 8 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 8

Freedom of Information Document Number NSHA 2021-181:

On November 22, 2021 I applied for the following FOIPOP information from Nova Scotia Health:

1. All reports/data on reasons why people were admitted into hospital for 2019, 2020, and 2021 by month, by hospital.

a.) general hospitalizations/admissions and

b.) ICU admissions (If there is a document that already has this information and additional information I would like a copy of this please.

2. A breakdown on the number of visits to hospital/reasons associated with receiving the COVID-19 vaccine.

a.) emergency visits b.) hospitalizations and c.) ICU admissions d.) 911 ambulance/First Responder calls from December 14, 2020 to present.

Date range for record Search: For 2019, 2020, & 2021.

Exhibit 8 is a true copy of what I received back: NSHA 2021-181. click here to download NSHA 181 General and ICU 2020-2021.

Please note:

1. This FOI response provides context to the number of overall Total Admissions and ICU Admissions in 2018, 2019, 2020.
2. It also shows all the reasons why people are admitted into hospital.

Privacy Office; Legal Services
1-031 Centennial Building
1276 South Park Street
Halifax, NS B3H 2Y9
foipop@nshealth.ca

January 28, 2022
Shelly Hipson
RR 3
Shelburne, NS B0T 1W0

Sent via e-mail to shellyhipson@xplornet.ca

Dear Shelly:

Re: Partial Access – OUR FILE# NSHA-2021-181

On November 22, 2021 Nova Scotia Health (NSH) received your request under the *Freedom of Information and Protection of Privacy Act* (*FOIPOP Act*).

We understand your application to be for a copy of the following:

1. All reports/data on reasons why people were admitted into hospital for 2019, 2020, and 2021 by month, by hospital.
- *a.) general hospitalizations/admissions and*
- *b.) ICU admissions (If there is a document that already has this information and additional information I would like a copy of this please.*

2. A breakdown on the number of visits to hospital/reasons associated with receiving the COVID-19 vaccine.
- *a.) emergency visits*
- *b.) hospitalizations and*
- *c.) ICU admissions*
- *d.) 911 ambulance/First Responder calls from December 14, 2020 to present.*

Please find a copy of the records located in response to your request.

We have withheld personal information about health under section 20(3)(a) of the *FOIPOP Act* by redacting all numbers that are fewer than five for the reasons for hospitalization, visits, and admissions for items one and two.

Section 20(3)(a) of the *FOIPOP Act* states: *A disclosure of personal information is presumed to be an unreasonable invasion of a third party's personal privacy if the personal information relates to a medical, dental, psychiatric, psychological or other health-care history, diagnosis, condition, treatment or evaluation.*

We have provided combined totals by month for some rural facilities in Northern Zone, Eastern Zone, and Central Zone for item one to protect individual's privacy under section 20(3)(a) of the *FOIPOP Act*. The remaining facilities have individual totals by month.

Please note that the data for item two is only the general information for emergency visits, hospitalizations, and admissions. DHW will provide the specific vaccine-related data.

Privacy Office; Legal Services
1-031 Centennial Building
1276 South Park Street
Halifax, NS B3H 2Y9
foipop@nshealth.ca

Section 4(2)(d) of the *FOIPOP Act* states that *public bodies can't provide access to a record when it falls under section 7 of the Emergency 911 Act.* 911 ambulance and first responder calls fall within that section so I cannot provide you with that data for item 2(d).

Should you have any questions, please do not hesitate to contact me.

You have the right to seek a review with the Review Officer within 60 days of receiving this decision. Complete details of the process are outlined on the website of the Office of the Information & Privacy Commissioner: https://foipop.ns.ca/request-a-review.

Sincerely,

Katie Smith
Freedom of Information Officer
Nova Scotia Health Authority
Halifax, Nova Scotia

Data Source: DAD

Time Period: CY 2018- September 30, 2021

Data Notes: Case Mix groups are a group of diagnosis that are similar.

Open year data (2021 YTD) is subject to change.

Year	Month	Total Admissions	ICU Visits
2018	April	6,555	572
2018	August	6,463	618
2018	December	6,311	550
2018	February	6,396	565
2018	January	6,754	649
2018	July	6,442	603
2018	June	6,770	597
2018	March	7,004	606
2018	May	7,020	656
2018	November	6,577	613
2018	October	6,805	647
2018	September	6,224	548
2018		79,321	7,224
2019	April	6,628	603
2019	August	6,384	577
2019	December	6,567	566
2019	February	6,183	502
2019	January	6,914	645
2019	July	6,632	570
2019	June	6,815	582
2019	March	6,815	584
2019	May	7,011	579
2019	November	6,572	574
2019	October	7,164	638
2019	September	6,375	547
2019		80,060	6,967
2020	April	4,419	429
2020	August	5,862	512
2020	December	6,627	576
2020	February	6,514	584
2020	January	6,824	582
2020	July	6,334	579
2020	June	5,795	522
2020	March	6,381	608
2020	May	5,198	480
2020	November	6,404	560
2020	October	6,686	609
2020	September	6,295	546
2020		73,339	6,587
2021	April	6,622	611

2021	August	6,269	609
2021	February	5,990	525
2021	January	6,517	538
2021	July	6,688	637
2021	June	6,638	621
2021	March	6,755	611
2021	May	6,050	532
2021	September	6,427	612
2021		57,956	5,296

Number of Admissions and ICU stays by Most Responsible Diagnosis - December 14, 2020 to September 30, 2021

Open Year Data (2021) is subject to change

All Hospitals within NSHA included

Diagnosis Long Text	Total Admissions	ICU Visits
**	<5	0
46,XX true hermaphrodite	<5	<5
4-Aminophenol derivatives causing adverse effect in therapeutic use	7	<5
Abdominal aortic aneurysm, ruptured	25	8
Abdominal aortic aneurysm, without mention of rupture	153	46
Abdominal pregnancy	<5	0
Abnormal cardiovascular function studies (biomarkers or ECG) suggestive of non ST segment elevation	1357	191
Abnormal cardiovascular function studies (biomarkers or ECG) suggestive of non ST segment elevation myocardia	1573	643
Abnormal finding of blood chemistry, unspecified	<5	0
Abnormal findings in cerebrospinal fluid, abnormal cytological findings	<5	0
Abnormal findings in specimens from female genital organs, abnormal cytological findings	<5	0
Abnormal findings in specimens from female genital organs, unspecified abnormal finding	<5	0
Abnormal findings in specimens from other organs, abnormal level of other drugs, medicaments and bio	<5	0
Abnormal findings in specimens from other organs, abnormal microbiological findings	<5	<5
Abnormal findings in specimens from respiratory organs and thorax, abnormal microbiological findings	14	10
Abnormal findings on cytological and histological examination of urine	<5	0
Abnormal findings on diagnostic imaging of breast	<5	0
Abnormal findings on diagnostic imaging of liver and biliary tract	9	0
Abnormal findings on diagnostic imaging of lung	131	19
Abnormal findings on diagnostic imaging of other abdominal regions, including retroperitoneum	12	0
Abnormal findings on diagnostic imaging of other parts of digestive tract	15	<5
Abnormal findings on diagnostic imaging of other parts of musculoskeletal system	<5	0
Abnormal findings on diagnostic imaging of other specified body structures	24	<5
Abnormal findings on diagnostic imaging of skull and head, not elsewhere classified	<5	0
Abnormal findings on diagnostic imaging of urinary organs	<5	0
Abnormal glucose tolerance test	16	<5
Abnormal haematological finding on antenatal screening of mother, delivered, with or without mention of antep	<5	0
Abnormal level of blood mineral	<5	<5
Abnormal level of unspecified serum enzyme	<5	0
Abnormal levels of other serum enzymes	300	61
Abnormal posture	<5	0
Abnormal reflex	<5	<5
Abnormal results of function studies of other organs and systems	<5	0
Abnormal results of kidney function studies	46	7
Abnormal results of liver function studies	91	23
Abnormal results of pulmonary function studies	<5	0
Abnormal results of thyroid function studies	9	<5
Abnormal sputum	<5	<5
Abnormal ultrasonic finding on antenatal screening of mother, antepartum condition or complication	<5	0
Abnormal ultrasonic finding on antenatal screening of mother, delivered, with or without mention of antepartu	10	0
Abnormal uterine and vaginal bleeding, unspecified	109	6
Abnormal weight loss	141	13
Abnormality of albumin	<5	0
Abnormality of plasma protein, unspecified	<5	0
Abnormality of red blood cells	<5	0
Abnormality of white blood cells, not elsewhere classified	72	18
ABO isoimmunization of fetus and newborn	5	0
Abscess of Bartholin's gland	<5	<5
Abscess of breast associated with childbirth, postpartum condition or complication	<5	0
Abscess of bursa, lower leg	<5	0
Abscess of external ear	<5	<5
Abscess of intestine	21	<5
Abscess of liver	65	8
Abscess of lung with pneumonia	7	0
Abscess of lung without pneumonia	13	<5
Abscess of mediastinum	8	<5
Abscess of penis	<5	<5
Abscess of prostate	5	0
Abscess of salivary gland	<5	0
Abscess of spleen	<5	<5
Abscess of vulva	9	0
Abscess, furuncle and carbuncle of nose	<5	<5
Abuse of non-dependence-producing substances	<5	0
Acanthosis nigricans	<5	0
Accentuation of personality traits	125	<5
Accessory auricle	<5	0
Accessory finger(s)	<5	0
Accident on board watercraft without accident to watercraft, not causing drowning and submersion, fi	<5	<5
Accident on board watercraft without accident to watercraft, not causing drowning and submersion, fishing boa	<5	0
Accident to watercraft causing drowning and submersion, unspecified watercraft	<5	0
Accident to watercraft causing other injury, other powered watercraft	<5	0
Accidental poisoning by and exposure to alcohol	6	<5

Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psych	10	0
Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic d	16	7
Accidental poisoning by and exposure to carbon monoxide from combustion engine exhaust	<5	<5
Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewher	8	<5
Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classif	36	15
Accidental poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics	21	7
Accidental poisoning by and exposure to organic solvents and halogenated hydrocarbons and their vapo	<5	<5
Accidental poisoning by and exposure to other and unspecified chemicals and noxious substances	16	<5
Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological subs	14	6
Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances	20	7
Accidental poisoning by and exposure to other drugs acting on the autonomic nervous system	<5	<5
Accidental puncture and laceration during a procedure, not elsewhere classified	479	109
Acetonuria	<5	0
Achalasia of cardia	23	<5
Achilles tendinitis	<5	0
Acidosis	444	217
Acne varioliformis	<5	0
Acne vulgaris	<5	0
Acne, unspecified	<5	0
Acquired absence of both lower limbs [any level, except toes alone]	<5	0
Acquired absence of breast, unspecified side	<5	<5
Acquired absence of foot and ankle	<5	0
Acquired absence of kidney	22	<5
Acquired absence of left breast	21	0
Acquired absence of left lung [part of]	5	<5
Acquired absence of leg above knee	34	<5
Acquired absence of leg at or below knee	27	<5
Acquired absence of lung [part of], unspecified side	<5	0
Acquired absence of other parts of digestive tract	<5	0
Acquired absence of part of head and neck	<5	<5
Acquired absence of right breast	27	<5
Acquired absence of right lung [part of]	10	0
Acquired atrophy of ovary and fallopian tube	<5	0
Acquired coagulation factor deficiency	8	<5
Acquired deformity of limb, unspecified	<5	0
Acquired deformity of nose	<5	0
Acquired haemolytic anaemia, unspecified	<5	0
Acquired pure red cell aplasia, unspecified	<5	0
Acromegaly and pituitary gigantism	<5	<5
Actinic keratosis	11	0
Acute abdomen	14	0
Acute anal fissure	<5	0
Acute and subacute hepatic failure	142	78
Acute and subacute infective endocarditis	146	51
Acute and subacute iridocyclitis	<5	0
Acute and transient psychotic disorder, unspecified	19	0
Acute and unspecified inflammation of lacrimal passages	<5	0
Acute appendicitis with generalized peritonitis	<5	<5
Acute appendicitis with localized peritonitis	219	8
Acute appendicitis, other and unspecified	439	<5
Acute bronchiolitis due to other specified organisms	<5	0
Acute bronchiolitis, unspecified	9	0
Acute bronchitis due to other specified organisms	<5	<5
Acute bronchitis, unspecified	7	0
Acute cholecystitis	250	22
Acute conjunctivitis, unspecified	5	0
Acute cystitis	15	<5
Acute delta-(super)infection in chronic hepatitis B	<5	<5
Acute disseminated encephalitis	<5	0
Acute drug-induced interstitial lung disorders	6	0
Acute endocarditis, unspecified	8	0
Acute epiglottitis	10	<5
Acute gingivitis	<5	0
Acute haemorrhagic gastritis	9	<5
Acute hepatitis B without delta-agent and without hepatic coma	<5	0
Acute hepatitis C	16	5
Acute inflammation of orbit	9	0
Acute inflammatory disease of uterus	<5	0
Acute ischaemic heart disease, unspecified	88	25
Acute laryngitis	<5	<5
Acute lymphadenitis of face, head and neck	<5	0
Acute lymphadenitis of other sites	<5	0
Acute lymphadenitis of trunk	<5	0
Acute lymphadenitis of upper limb	<5	0
Acute lymphadenitis, unspecified	<5	0
Acute lymphoblastic leukaemia [ALL]	31	<5
Acute mastoiditis	<5	<5
Acute maxillary sinusitis	<5	<5

Acute myeloblastic leukaemia [AML]	162	16
Acute myeloid leukaemia with multilineage dysplasia	<5	0
Acute myocardial infarction, unspecified	172	67
Acute myocarditis, unspecified	13	0
Acute nasopharyngitis [common cold]	<5	0
Acute nephritic syndrome, focal and segmental glomerular lesions	<5	0
Acute nephritic syndrome, unspecified	<5	0
Acute nonspecific idiopathic pericarditis	5	<5
Acute obstructive laryngitis [croup]	<5	0
Acute otitis externa, noninfective	<5	0
Acute pain	407	43
Acute pancreatitis, unspecified	413	38
Acute panmyelosis with myelofibrosis	<5	<5
Acute pansinusitis	<5	<5
Acute paralytic poliomyelitis, other and unspecified	<5	0
Acute parametritis and pelvic cellulitis	16	<5
Acute pericarditis, unspecified	69	21
Acute periodontitis	<5	0
Acute peritonitis	325	82
Acute pharyngitis due to other specified organisms	<5	0
Acute pharyngitis, unspecified	21	<5
Acute polymorphic psychotic disorder without symptoms of schizophrenia	<5	0
Acute posthaemorrhagic anaemia	277	76
Acute promyelocytic leukaemia [PML]	6	0
Acute prostatitis	19	0
Acute pulmonary insufficiency following nonthoracic surgery	65	54
Acute pulmonary insufficiency following thoracic surgery	26	15
Acute pulmonary manifestations due to radiation	<5	<5
Acute renal failure with acute cortical necrosis	<5	0
Acute renal failure with medullary necrosis	<5	0
Acute renal failure with tubular necrosis	168	93
Acute renal failure, unspecified	3896	893
Acute respiratory failure, type 1 [hypoxic]	131	85
Acute respiratory failure, type II [hypercapnic]	91	71
Acute respiratory failure, type unspecified	95	75
Acute rheumatic endocarditis	6	<5
Acute salpingitis and oophoritis	6	0
Acute schizophrenia-like psychotic disorder	5	0
Acute sinusitis, unspecified	11	0
Acute stress reaction	26	<5
Acute subendocardial myocardial infarction	2909	828
Acute suppurative otitis media	<5	0
Acute tonsillitis, unspecified	13	0
Acute tracheitis	<5	0
Acute transmural myocardial infarction of anterior wall	367	272
Acute transmural myocardial infarction of inferior wall	592	434
Acute transmural myocardial infarction of other sites	87	63
Acute transmural myocardial infarction of unspecified site	15	10
Acute transverse myelitis in demyelinating disease of central nervous system	10	0
Acute tubulo-interstitial nephritis	96	8
Acute upper respiratory infection, unspecified	26	<5
Acute vaginitis	17	<5
Acute vascular disorders of intestine	134	47
Acute viral hepatitis, unspecified	20	<5
Acute vulvitis	<5	<5
Addisonian crisis	10	0
Adhesive capsulitis of shoulder	7	0
Adjustment and management of cardiac pacemaker	22	11
Adjustment and management of cardiac resynchronization therapy device	<5	0
Adjustment and management of cardioverter/defibrillator	<5	0
Adjustment and management of infusion pump	<5	0
Adjustment and management of other and unspecified cardiac devices	<5	0
Adjustment and management of other implanted devices	18	0
Adjustment and management of vascular access device	<5	0
Adjustment disorders	327	18
Adrenomedullary hyperfunction	<5	0
Adult hypertrophic pyloric stenosis	41	8
Adult osteomalacia, unspecified	<5	0
Adult respiratory distress syndrome	90	67
Adult T-cell lymphoma/leukaemia [HTLV-1 associated]	<5	0
Adult-onset Still's disease	<5	<5
Agent primarily affecting the gastrointestinal system, unspecified, causing adverse effect in therap	<5	<5
Agents affecting calcification causing adverse effect in therapeutic use	<5	0
Agents affecting uric acid metabolism causing adverse effect in therapeutic use	18	<5
Agoraphobia	5	0
Air embolism (traumatic)	<5	<5
Airway disease due to other specific organic dusts	<5	0
Albinism	<5	0

Alcohol involvement, not otherwise specified	5	0
Alcohol use	27	<5
Alcoholic cardiomyopathy	8	<5
Alcoholic cirrhosis of liver	298	48
Alcoholic fatty liver	9	<5
Alcoholic fibrosis and sclerosis of liver	<5	0
Alcoholic gastritis	12	0
Alcoholic hepatic failure	86	20
Alcoholic hepatitis	87	18
Alcoholic liver disease, unspecified	15	<5
Alcoholic myopathy	<5	0
Alcoholic polyneuropathy	7	<5
Alcohol-induced acute pancreatitis	92	10
Alcohol-induced chronic pancreatitis	8	<5
Alkalosis	74	24
Allergic and dietetic gastroenteritis and colitis	<5	0
Allergic bronchopulmonary aspergillosis	<5	<5
Allergic contact dermatitis due to adhesives	<5	0
Allergic contact dermatitis due to other agents	<5	0
Allergic contact dermatitis due to plants, except food	<5	0
Allergic contact dermatitis, unspecified cause	<5	<5
Allergic granulomatous angiitis	<5	<5
Allergic purpura	<5	0
Allergic rhinitis, unspecified	<5	0
Allergic urticaria	9	<5
Allergy, unspecified	<5	0
All-terrain vehicle (ATV) sports	<5	<5
alpha-Adrenoreceptor antagonists, not elsewhere classified, causing adverse effect in therapeutic us	<5	0
alpha-Adrenoreceptor antagonists, not elsewhere classified, causing adverse effect in therapeutic use	<5	0
Alveolar and parietoalveolar conditions	<5	0
Alzheimer's disease with early onset	<5	0
Alzheimer's disease with late onset	<5	0
Alzheimer's disease with Parkinson's disease	<5	0
Alzheimer's disease with Pick's disease	<5	0
Alzheimer's disease, unspecified	272	11
Amaurosis fugax	<5	<5
Aminoglycosides causing adverse effect in therapeutic use	<5	0
Amniotic fluid embolism, postpartum condition or complication	<5	<5
Amputation of limb(s) as the cause of abnormal reaction or later complication, without mention of mi	85	9
Amputation of limb(s) as the cause of abnormal reaction or later complication, without mention of misadventur	29	5
Amyloidosis, unspecified	7	<5
Amyotrophic lateral sclerosis	38	8
Anaemia complicating pregnancy, childbirth and the puerperium, antepartum condition or complication	15	0
Anaemia complicating pregnancy, childbirth and the puerperium, delivered, with mention of postpartum complica	46	<5
Anaemia complicating pregnancy, childbirth and the puerperium, delivered, with or without mention of antepart	156	<5
Anaemia complicating pregnancy, childbirth and the puerperium, postpartum condition or complication	5	0
Anaemia in neoplastic disease	539	58
Anaemia in other chronic diseases classified elsewhere	225	44
Anaemia of prematurity	10	0
Anaemia, unspecified	1954	309
Anaesthesia of skin	<5	0
Anaesthetic, unspecified, causing adverse effect in therapeutic use	<5	<5
Anal abscess	72	<5
Anal fissure, unspecified	11	<5
Anal fistula	23	0
Anal polyp	<5	0
Anal spasm	<5	0
Analgesic nephropathy	14	<5
Analgesic, antipyretic and anti-inflammatory drug, unspecified, causing adverse effect in therapeuti	<5	0
Analgesic, antipyretic and anti-inflammatory drug, unspecified, causing adverse effect in therapeutic use	<5	0
Anankastic personality disorder	<5	0
Anaphylactic shock due to adverse effect of correct drug or medicament properly administered	9	<5
Anaphylactic shock due to other food products	<5	<5
Anaphylactic shock due to serum	<5	0
Anaphylactic shock, unspecified	<5	<5
Anaplastic large cell lymphoma, ALK-negative	<5	0
Anaplastic large cell lymphoma, ALK-positive	<5	0
Androgens and anabolic congeners causing adverse effect in therapeutic use	8	<5
Aneurysm and dissection of artery of lower extremity	49	10
Aneurysm and dissection of artery of upper extremity	<5	<5
Aneurysm and dissection of carotid artery	14	<5
Aneurysm and dissection of iliac artery	28	8
Aneurysm and dissection of other precerebral arteries	<5	<5
Aneurysm and dissection of other specified arteries	18	6
Aneurysm and dissection of renal artery	<5	0
Aneurysm and dissection of unspecified site	<5	0
Aneurysm and dissection of vertebral artery	14	5
Aneurysm of heart	13	<5

Aneurysm of pulmonary artery	<5	0
Aneurysmal bone cyst, other site	<5	0
Aneurysmal bone cyst, pelvic region and thigh	<5	0
Angina pectoris with documented spasm	35	11
Angina pectoris, unspecified	67	10
Angiodysplasia of colon with bleeding	21	<5
Angiodysplasia of colon without bleeding	6	<5
Angiodysplasia of small intestine, except duodenum with bleeding	7	<5
Angiodysplasia of small intestine, except duodenum without bleeding	<5	0
Angiodysplasia of stomach and duodenum with bleeding	62	8
Angiodysplasia of stomach and duodenum without bleeding	20	0
Angioimmunoblastic T-cell lymphoma	<5	0
Angioneurotic oedema	10	5
Angiotensin-converting-enzyme inhibitors causing adverse effect in therapeutic use	26	7
Animal-rider or occupant of animal-drawn vehicle injured by fall from or being thrown from animal or	<5	0
Animal-rider or occupant of animal-drawn vehicle injured by fall from or being thrown from animal or animal-d	<5	0
Ankyloglossia	55	0
Ankylosing spondylitis	15	7
Ankylosis of joint, lower leg	8	0
Ankylosis of joint, pelvic region and thigh	<5	0
Anogenital (venereal) warts	8	0
Anomalies of dental arch relationship	8	0
Anomalies of pupillary function	8	<5
Anomalies of tooth position	<5	0
Anomalous portal venous connection	<5	0
Anorectal abscess	<5	0
Anorectal fistula	<5	0
Anorexia	81	10
Anorexia nervosa	24	0
Anosmia	<5	<5
Anoxic brain damage, not elsewhere classified	69	58
Antepartum fetal acidaemia first noted before onset of labour	<5	0
Antepartum haemorrhage, unspecified, antepartum condition or complication	11	0
Antepartum haemorrhage, unspecified, delivered, with or without mention of antepartum condition	10	0
Anterior cerebral artery syndrome	<5	0
Anterior cord syndrome of cervical spinal cord	<5	0
Anterior dislocation of knee, closed	<5	<5
Anterior dislocation of shoulder, closed	14	0
Anterior spinal and vertebral artery compression syndromes, cervical region	<5	0
Anterior spinal and vertebral artery compression syndromes, unspecified site	<5	0
Anterograde amnesia	<5	0
Anthelminthics causing adverse effect in therapeutic use	<5	<5
Antiallergic and antiemetic drugs causing adverse effect in therapeutic use	12	<5
Antiasthmatics, not elsewhere classified, causing adverse effect in therapeutic use	<5	0
Antibody deficiency with near-normal immunoglobulins or with hyperimmunoglobulinaemia	<5	0
Anticholinesterase agents causing adverse effect in therapeutic use	<5	0
Anticoagulant antagonists, vitamin K and other coagulants causing adverse effect in therapeutic use	8	0
Anticoagulants causing adverse effect in therapeutic use	601	129
Antidotes and chelating agents, not elsewhere classified, causing adverse effect in therapeutic use	<5	<5
Antifungal antibiotics, systemically used, causing adverse effect in therapeutic use	<5	0
Antigonadotrophins, antiestrogens, antiandrogens, not elsewhere classified, causing adverse effect in therape	<5	0
Antihyperlipidaemic and antiarteriosclerotic drugs causing adverse effect in therapeutic use	7	<5
Antimycobacterial drugs causing adverse effect in therapeutic use	<5	0
Antineoplastic antimetabolites causing adverse effect in therapeutic use	30	<5
Antineoplastic natural products causing adverse effect in therapeutic use	22	<5
Antiparkinsonism drugs causing adverse effect in therapeutic use	5	0
Antirheumatics causing adverse effect in therapeutic use	<5	<5
Antispasticity drugs causing adverse effect in therapeutic use	<5	0
Antithrombotic drugs [platelet-aggregation inhibitors] causing adverse effect in therapeutic use	14	<5
Antithyroid drugs causing adverse effect in therapeutic use	<5	<5
Antiviral drugs causing adverse effect in therapeutic use	12	<5
Anuria and oliguria	40	24
Anxiety disorder, unspecified	584	56
Anxious [avoidant] personality disorder	<5	0
Aortic (valve) insufficiency	58	15
Aortic (valve) stenosis	599	150
Aortic (valve) stenosis with insufficiency	47	12
Aortic aneurysm of unspecified site, ruptured	<5	0
Aortic aneurysm of unspecified site, without mention of rupture	13	<5
Aortic valve disorder, unspecified	<5	<5
Aphonia	<5	<5
Aplastic anaemia due to other external agents	5	0
Aplastic anaemia, unspecified	239	40
Apparent life threatening event of infant	<5	0
Appendicular concretions	5	0
Apraxia	10	<5
Arnold-Chiari syndrome	5	0
Arterial fibromuscular dysplasia	<5	0

Arteriovenous fistula, acquired	21	<5
Arteriovenous malformation of cerebral vessels	<5	<5
Arteriovenous malformation of precerebral vessels	<5	0
Arteritis, unspecified	30	5
Arthralgia of temporomandibular joint	7	0
Arthritis and polyarthritis due to other specified bacterial agents, ankle and foot	<5	0
Arthritis and polyarthritis due to other specified bacterial agents, forearm	<5	0
Arthritis and polyarthritis due to other specified bacterial agents, lower leg	6	<5
Arthritis and polyarthritis due to other specified bacterial agents, pelvic region and thigh	<5	<5
Arthritis and polyarthritis due to other specified bacterial agents, shoulder region	<5	0
Arthritis in mycoses other site	<5	0
Arthritis in other bacterial diseases classified elsewhere, multiple sites	<5	0
Arthritis, unspecified, ankle and foot	8	0
Arthritis, unspecified, forearm	<5	0
Arthritis, unspecified, hand	<5	0
Arthritis, unspecified, lower leg	5	0
Arthritis, unspecified, multiple sites	<5	<5
Arthritis, unspecified, other site	<5	0
Arthritis, unspecified, pelvic region and thigh	<5	<5
Arthritis, unspecified, shoulder region	6	<5
Arthritis, unspecified, unspecified site	<5	0
Arthropathic psoriasis	8	<5
Arthropathies in other specified diseases classified elsewhere	<5	0
Arthropathy in neoplastic disease	<5	0
Arthropathy in other blood disorders	<5	0
Arthrosis of first carpometacarpal joint, unspecified	<5	0
Arthrosis, unspecified	145	<5
Articular disc disorder of the temporomandibular joint	5	0
Ascending cholangitis	51	12
Ascites	584	106
Ascorbic acid deficiency	<5	0
Asperger's syndrome	7	0
Asphyxia, unspecified	276	68
Asphyxiation	9	6
Aspiration of fluid as the cause of abnormal reaction or later complication, without mention of misa	11	<5
Aspiration of fluid as the cause of abnormal reaction or later complication, without mention of misadventure	18	6
Assault by blunt object	10	<5
Assault by bodily force	51	<5
Assault by other specified means	6	0
Assault by pushing from high place	<5	0
Assault by rifle, shotgun and larger firearm discharge	<5	0
Assault by sharp object	18	<5
Assault by smoke, fire and flames	<5	<5
Assault by unspecified chemical or noxious substance	<5	<5
Assault by unspecified firearm discharge	<5	0
Assault by unspecified means	6	<5
Assistance in dying	87	8
Asthma, unspecified, with stated status asthmaticus	<5	<5
Asthma, unspecified, without stated status asthmaticus	84	6
Asymmetric intrauterine growth restriction [IUGR]	6	0
Asymptomatic human immunodeficiency virus [HIV] infection status	20	<5
Ataxia, unspecified	76	5
Ataxic gait	22	<5
Atelectasis	203	67
Atherosclerosis of aorta	8	<5
Atherosclerosis of arteries of extremities with gangrene	55	<5
Atherosclerosis of arteries of extremities without gangrene	175	20
Atherosclerosis of other arteries	7	<5
Atherosclerosis of renal artery	14	<5
Atherosclerotic cardiovascular disease, so described	<5	<5
Atherosclerotic heart disease of artery bypass graft	16	<5
Atherosclerotic heart disease of autologous vein bypass graft	57	11
Atherosclerotic heart disease of native coronary artery	2741	876
Atherosclerotic heart disease of unspecified type of bypass graft	8	<5
Atherosclerotic heart disease of unspecified type of vessel, native or graft	301	74
Atopic dermatitis, unspecified	<5	0
Atresia of bile ducts	<5	0
Atresia of oesophagus without fistula	<5	0
Atrial fibrillation, unspecified	2795	754
Atrial flutter, unspecified	344	109
Atrial premature depolarization	<5	0
Atrial septal defect	45	<5
Atrioventricular block, complete	259	132
Atrioventricular block, first degree	74	15
Atrioventricular block, second degree	112	30
Atrioventricular septal defect	<5	0
Atrophy of edentulous alveolar ridge	<5	0
Atrophy of thyroid (acquired)	<5	0

Atrophy of tongue papillae	<5	0
Atrophy of vulva	<5	0
Attention to colostomy	57	<5
Attention to cystostomy	<5	0
Attention to gastrostomy	6	0
Attention to ileostomy	80	<5
Attention to other artificial openings	<5	0
Attention to other artificial openings of urinary tract	<5	0
Attention to surgical dressings and sutures	<5	0
Attention to tracheostomy	<5	<5
Atypical angina	<5	0
Atypical anorexia nervosa	<5	0
Atypical atrial flutter	9	<5
Atypical facial pain	<5	0
Atypical parenting situation	<5	0
Auditory hallucinations	21	0
Autoimmune hepatitis	17	<5
Autoimmune thyroiditis	12	0
Autonomic dysreflexia	14	5
Autonomic neuropathy in endocrine and metabolic diseases	118	17
Avulsion injury of ankle and foot (skin of)	<5	0
Avulsion, finger, hand, wrist	<5	0
Babesiosis	<5	0
Bacillus fragilis [B. fragilis] as the cause of diseases classified to other chapters	16	5
Background retinopathy and retinal vascular changes	<5	0
Bacterial foodborne intoxication, unspecified	<5	0
Bacterial infection, unspecified	265	46
Bacterial intestinal infection, unspecified	<5	0
Bacterial meningitis, unspecified	<5	0
Bacterial meningoencephalitis and meningomyelitis, not elsewhere classified	<5	0
Bacterial pneumonia, unspecified	21	6
Bacterial sepsis of newborn, unspecified	<5	0
Balanitis in diseases classified elsewhere	<5	0
Balanoposthitis	17	<5
Barbiturates, not elsewhere classified, causing adverse effect in therapeutic use	<5	0
Barrett's esophagus	47	<5
Bartonellosis, unspecified	<5	<5
B-cell lymphoma, unspecified	32	<5
Behçet's disease	<5	0
Bell's palsy	33	6
Benign hypertension	7903	1858
Benign intracranial hypertension	13	<5
Benign lipomatous neoplasm of intra-abdominal organs	10	0
Benign lipomatous neoplasm of other sites	8	0
Benign lipomatous neoplasm of skin and subcutaneous tissue of head, face and neck	<5	0
Benign lipomatous neoplasm of skin and subcutaneous tissue of limbs	<5	0
Benign lipomatous neoplasm of skin and subcutaneous tissue of other and unspecified sites	<5	0
Benign lipomatous neoplasm of skin and subcutaneous tissue of trunk	5	0
Benign lipomatous neoplasm of spermatic cord	<5	0
Benign lipomatous neoplasm, unspecified	7	0
Benign neoplasm of adrenal gland	27	0
Benign neoplasm of anus and anal canal	<5	0
Benign neoplasm of appendix	<5	0
Benign neoplasm of ascending colon	64	9
Benign neoplasm of bladder	<5	0
Benign neoplasm of bones of skull and face	<5	0
Benign neoplasm of brain, infratentorial	<5	<5
Benign neoplasm of brain, unspecified	<5	0
Benign neoplasm of breast	<5	0
Benign neoplasm of bronchus and lung	11	0
Benign neoplasm of caecum	51	<5
Benign neoplasm of cerebral meninges	54	6
Benign neoplasm of colon, unspecified	26	<5
Benign neoplasm of cranial nerves	11	5
Benign neoplasm of descending colon	33	<5
Benign neoplasm of duodenum	<5	<5
Benign neoplasm of endocrine gland, unspecified	<5	0
Benign neoplasm of extrahepatic bile ducts	9	<5
Benign neoplasm of heart	10	<5
Benign neoplasm of hypopharynx	<5	0
Benign neoplasm of kidney	10	0
Benign neoplasm of larynx	7	0
Benign neoplasm of liver	10	0
Benign neoplasm of long bones of lower limb	<5	0
Benign neoplasm of lymph nodes	<5	0
Benign neoplasm of major salivary gland, unspecified	<5	0
Benign neoplasm of mediastinum	<5	0
Benign neoplasm of meninges, unspecified	5	0

Benign neoplasm of mesothelial tissue of other sites	<5	0
Benign neoplasm of middle ear, nasal cavity and accessory sinuses	<5	0
Benign neoplasm of other and unspecified parts of mouth	<5	0
Benign neoplasm of other and unspecified parts of small intestine	<5	0
Benign neoplasm of other major salivary glands	<5	0
Benign neoplasm of other parts of oropharynx	<5	<5
Benign neoplasm of other specified female genital organs	<5	0
Benign neoplasm of other specified sites	6	0
Benign neoplasm of ovary	83	<5
Benign neoplasm of pancreas	7	0
Benign neoplasm of parathyroid gland	22	0
Benign neoplasm of peripheral nerves and autonomic nervous system of abdomen	<5	0
Benign neoplasm of peripheral nerves and autonomic nervous system of face, head and neck	<5	0
Benign neoplasm of peripheral nerves and autonomic nervous system of lower limb, including hip	<5	0
Benign neoplasm of peripheral nerves and autonomic nervous system of pelvis	<5	0
Benign neoplasm of peripheral nerves and autonomic nervous system of trunk, unspecified	<5	0
Benign neoplasm of peripheral nerves and autonomic nervous system, upper limb, including shoulder	<5	0
Benign neoplasm of pituitary gland	26	<5
Benign neoplasm of prostate	<5	0
Benign neoplasm of rectosigmoid junction	11	<5
Benign neoplasm of rectum	21	<5
Benign neoplasm of renal pelvis	<5	0
Benign neoplasm of retroperitoneum	<5	0
Benign neoplasm of sigmoid colon	42	<5
Benign neoplasm of spinal meninges	<5	0
Benign neoplasm of thymus	<5	0
Benign neoplasm of thyroid gland	29	0
Benign neoplasm of tongue	<5	0
Benign neoplasm of trachea	<5	0
Benign neoplasm of transverse colon	57	<5
Benign neoplasm of unspecified site	<5	<5
Benign neoplasm of uterine tubes and ligaments	<5	0
Benign neoplasm of vertebral column	<5	<5
Benign neoplasm of vulva	<5	0
Benign neoplasm parotid gland	26	0
Benign paroxysmal vertigo	49	0
Benzodiazepines causing adverse effect in therapeutic use	36	12
Benzothiadiazine derivatives causing adverse effect in therapeutic use	19	6
beta-Adrenoreceptor antagonists, not elsewhere classified, causing adverse effect in therapeutic use	48	8
Bicipital tendinitis	<5	0
Bicornate uterus	12	0
Bifascicular block	<5	0
Bilateral femoral hernia, without obstruction or gangrene	<5	0
Bilateral inguinal hernia, with obstruction, without gangrene	<5	0
Bilateral inguinal hernia, without obstruction or gangrene	20	<5
Biliary acute pancreatitis	189	13
Biliary cirrhosis, unspecified	<5	<5
Biliary cyst	<5	0
Bimalleolar fracture of ankle, closed	92	5
Bimalleolar fracture of ankle, open	<5	0
Bipolar affective disorder, current episode hypomanic	7	0
Bipolar affective disorder, current episode manic with psychotic symptoms	88	0
Bipolar affective disorder, current episode manic without psychotic symptoms	71	0
Bipolar affective disorder, current episode mild or moderate depression	12	<5
Bipolar affective disorder, current episode mixed	8	0
Bipolar affective disorder, current episode severe depression with psychotic symptoms	7	0
Bipolar affective disorder, current episode severe depression without psychotic symptoms	12	0
Bipolar affective disorder, currently in remission	<5	0
Bipolar affective disorder, unspecified	186	15
Birth injury to face	<5	0
Bitten by rat	<5	0
Bitten or struck by dog	13	0
Bitten or struck by other mammals	10	<5
Bitten or stung by nonvenomous insect and other nonvenomous arthropods	12	<5
Bladder disorder, unspecified	<5	0
Bladder-neck obstruction	46	<5
Blepharitis	13	<5
Blepharoconjunctivitis	<5	0
Blindness, binocular	18	<5
Blindness, monocular	<5	0
Blood alcohol level of 20-39 mg/100 ml	<5	0
Blood glucose between 12.0 - 13.9 mmol/L post-meal (or NOS)	<5	<5
Blood glucose between 8.0 - 11.9 mmol/L pre-meal (fasting)	<5	0
Blood glucose greater than or equal to 14.0 mmol/L post-meal (or NOS)	16	<5
Blood glucose greater than or equal to 14.0 mmol/L pre-meal (fasting)	<5	0
Blood-sampling as the cause of abnormal reaction or later complication, without mention of misadventure at th	<5	0
Bloodstream infection and inflammatory reaction due to central venous catheter	68	21
Bone marrow transplant status	<5	0

Brachial plexus disorders	10	<5
Bradycardia, unspecified	597	176
Brain stem stroke syndrome	13	0
Bronchiectasis	21	<5
Bronchitis and pneumonitis due to chemicals, gases, fumes and vapours	<5	0
Bronchitis, not specified as acute or chronic	5	0
Bronchopneumonia, unspecified	289	55
Bronchopulmonary dysplasia originating in the perinatal period	<5	0
Bruising of scalp due to birth injury	5	0
Budd-Chiari syndrome	<5	0
Bulimia nervosa	9	0
Bullous disorders in diseases classified elsewhere	<5	<5
Bullous erythema multiforme	<5	<5
Bullous keratopathy	<5	0
Bullous pemphigoid	10	0
Burkitt lymphoma	18	0
Burn of eyelid and periocular area	<5	<5
Burn of first degree of head and neck	<5	0
Burn of first degree of hip and lower limb, except ankle and foot	<5	0
Burn of first degree of shoulder and upper limb, except wrist and hand	<5	0
Burn of first degree of trunk	<5	0
Burn of larynx and trachea	<5	0
Burn of mouth and pharynx	<5	0
Burn of oesophagus	<5	<5
Burn of other parts of alimentary tract	<5	0
Burn of second degree of ankle and foot	<5	0
Burn of second degree of hip and lower limb, except ankle and foot	5	0
Burn of second degree of shoulder and upper limb, except wrist and hand	<5	<5
Burn of second degree of trunk	7	<5
Burn of second degree of wrist and hand	<5	0
Burn of third degree of head and neck	<5	<5
Burn of third degree of hip and lower limb, except ankle and foot	5	<5
Burn of third degree of shoulder and upper limb, except wrist and hand	<5	<5
Burn of third degree of trunk	<5	<5
Burn of third degree of wrist and hand	<5	<5
Burn of unspecified degree of ankle and foot	<5	0
Burn of unspecified degree of head and neck	<5	0
Burn of unspecified degree of hip and lower limb, except ankle and foot	<5	<5
Burn of unspecified degree of shoulder and upper limb, except wrist and hand	<5	0
Burn of unspecified degree of trunk	<5	0
Burn of unspecified degree of wrist and hand	<5	0
Burn-out	<5	0
Burns involving 10-19% of body surface with 0% or unspecified third degree burns	<5	<5
Burns involving 10-19% of body surface with 10-19% third degree burns	<5	<5
Burns involving 10-19% of body surface with less than 10% third degree burns	<5	<5
Burns involving 20-29% of body surface with 20-29% third degree burns	<5	0
Burns involving 40-49% of body surface with 40-49% third degree burns	<5	<5
Burns involving less than 10% of body surface with 0% or unspecified third degree burns	19	<5
Burns involving less than 10% of body surface with less than 10% third degree burns	12	<5
Burns of multiple regions, at least one burn of third degree mentioned	5	<5
Burns of multiple regions, no more than second-degree burns mentioned	<5	0
Burns of multiple regions, unspecified degree	<5	0
Bursitis of hand	<5	0
Bursitis of shoulder	7	0
Bus occupant injured in noncollision transport accident, passenger, nontraffic accident	<5	0
Butyrophenone and thioxanthene neuroleptics causing adverse effect in therapeutic use	6	<5
Cachexia	500	26
Calcaneal spur	<5	0
Calcific tendinitis of shoulder	<5	0
Calcification and ossification of muscle, unspecified, other site	<5	0
Calcification and ossification of muscle, unspecified, pelvic region and thigh	<5	0
Calcinosis cutis	<5	<5
Calcium-channel blockers causing adverse effect in therapeutic use	19	5
Calculus in bladder	69	<5
Calculus in urethra	<5	0
Calculus of bile duct with cholangitis with obstruction	20	<5
Calculus of bile duct with cholangitis without mention of obstruction	54	<5
Calculus of bile duct with cholecystitis with obstruction	36	<5
Calculus of bile duct with cholecystitis without mention of obstruction	112	7
Calculus of bile duct without cholangitis or cholecystitis with obstruction	50	0
Calculus of bile duct without cholangitis or cholecystitis without mention of obstruction	115	5
Calculus of gallbladder with acute cholecystitis with obstruction	31	<5
Calculus of gallbladder with acute cholecystitis without mention of obstruction	468	26
Calculus of gallbladder with other cholecystitis with obstruction	12	<5
Calculus of gallbladder with other cholecystitis without mention of obstruction	371	8
Calculus of gallbladder without cholecystitis with obstruction	<5	0
Calculus of gallbladder without cholecystitis without mention of obstruction	79	6
Calculus of kidney	156	11

Calculus of kidney with calculus of ureter	26	<5
Calculus of ureter	131	7
Campylobacter enteritis	18	0
Candidal endocarditis	<5	<5
Candidal enteritis	<5	<5
Candidal esophagitis	35	<5
Candidal otitis externa	<5	0
Candidal sepsis	22	14
Candidal stomatitis	229	31
Candidiasis of other sites	65	24
Candidiasis of other urogenital sites	111	33
Candidiasis of skin and nail	57	10
Candidiasis of vulva and vagina	41	5
Candidiasis, unspecified	44	7
Cannabinosis	<5	0
Car occupant [any] injured in other specified transport accidents	<5	0
Car occupant [any] injured in unspecified nontraffic accident	<5	0
Car occupant [any] injured in unspecified traffic accident	16	<5
Car occupant injured in collision with car, pick-up truck or van, driver, nontraffic accident	<5	0
Car occupant injured in collision with car, pick-up truck or van, driver, traffic accident	48	9
Car occupant injured in collision with car, pick-up truck or van, passenger, traffic accident	11	<5
Car occupant injured in collision with car, pick-up truck or van, unspecified car occupant, traffic	<5	0
Car occupant injured in collision with car, pick-up truck or van, unspecified car occupant, traffic accident	<5	0
Car occupant injured in collision with fixed or stationary object, driver, nontraffic accident	<5	<5
Car occupant injured in collision with fixed or stationary object, driver, traffic accident	26	8
Car occupant injured in collision with fixed or stationary object, passenger, traffic accident	5	<5
Car occupant injured in collision with heavy transport vehicle or bus, driver, traffic accident	<5	<5
Car occupant injured in collision with heavy transport vehicle or bus, passenger, traffic accident	<5	0
Car occupant injured in collision with pedestrian or animal, driver, traffic accident	<5	0
Car occupant injured in collision with two- or three-wheeled motor vehicle, driver, traffic accident	<5	0
Car occupant injured in noncollision transport accident, driver, nontraffic accident	<5	<5
Car occupant injured in noncollision transport accident, driver, traffic accident	40	12
Car occupant injured in noncollision transport accident, passenger, nontraffic accident	<5	<5
Car occupant injured in noncollision transport accident, passenger, traffic accident	12	<5
Car occupant injured in noncollision transport accident, unspecified car occupant, nontraffic accident	<5	0
Car occupant injured in noncollision transport accident, unspecified car occupant, traffic accident	<5	<5
Car occupant injured in noncollision transport accident, while boarding or alighting	13	0
Carcinoma in situ of bladder	11	0
Carcinoma in situ of bronchus and lung	<5	0
Carcinoma in situ of cervix, unspecified	22	0
Carcinoma in situ of endocervix	<5	0
Carcinoma in situ of exocervix	<5	0
Carcinoma in situ of larynx	<5	0
Carcinoma in situ of left breast, unspecified	10	0
Carcinoma in situ of other and unspecified urinary organs	<5	0
Carcinoma in situ of other parts of respiratory system	<5	<5
Carcinoma in situ of other specified digestive organs	<5	0
Carcinoma in situ of penis	<5	0
Carcinoma in situ of prostate	7	0
Carcinoma in situ of right breast, unspecified	13	<5
Carcinoma in situ of skin of other and unspecified parts of face	<5	0
Carcinoma in situ of skin of scalp and neck	<5	0
Carcinoma in situ of skin of upper limb, including shoulder	<5	0
Carcinoma in situ of thyroid and other endocrine glands	<5	0
Carcinoma in situ of tongue	<5	0
Carcinoma in situ of vulva	13	0
Cardiac arrest with successful resuscitation	288	249
Cardiac arrest, unspecified	141	61
Cardiac arrhythmia, unspecified	16	<5
Cardiac catheterization as the cause of abnormal reaction or later complication, without mention of	177	79
Cardiac catheterization as the cause of abnormal reaction or later complication, without mention of misadvent	7	<5
Cardiac murmur, unspecified	33	5
Cardiac rehabilitation	<5	0
Cardiac septal defect, acquired	<5	<5
Cardiac-stimulant glycosides and drugs of similar action causing adverse effect in therapeutic use	30	<5
Cardiogenic shock	160	120
Cardiomegaly	66	15
Cardiomyopathy due to drugs and other external agents	<5	<5
Cardiomyopathy in infectious and parasitic diseases classified elsewhere	<5	<5
Cardiomyopathy in metabolic diseases	14	<5
Cardiomyopathy in other diseases classified elsewhere	<5	<5
Cardiomyopathy in the puerperium, postpartum condition or complication	<5	0
Cardiomyopathy, unspecified	124	31
Cardiovascular devices associated with adverse incidents, miscellaneous devices, not elsewhere classified	<5	<5
Cardiovascular devices associated with adverse incidents, prosthetic and other implants, materials a	13	<5
Cardiovascular devices associated with adverse incidents, prosthetic and other implants, materials and access	9	<5
Cardiovascular devices associated with adverse incidents, surgical instruments, materials and devices (includ	<5	0
Cardiovascular disease, unspecified	<5	0

Care and examination immediately after delivery	6	0
Care involving use of other rehabilitation procedures	186	7
Care involving use of rehabilitation procedure, unspecified	2575	267
Caries of dentine	<5	0
Carotid artery syndrome (hemispheric)	<5	0
Carpal tunnel syndrome	10	0
Carrier of drug-resistant enterococcus	7	<5
Carrier of drug-resistant staphylococcus	333	34
Carrier of drug-resistant streptococcus	<5	0
Carrier of infections with a predominantly sexual mode of transmission	6	0
Carrier of other drug-resistant micro-organism	<5	<5
Carrier of other intestinal infectious diseases	<5	0
Carrier of other specified bacterial diseases	440	<5
Cataract (lens) fragments in eye following cataract surgery	<5	0
Cataract, unspecified	26	<5
Catatonic schizophrenia	11	0
Cat-scratch disease	<5	<5
Cauda equina syndrome	16	<5
Caught, crushed, jammed or pinched in or between objects	<5	0
Cefalosporins and other beta-lactam antibiotics causing adverse effect in therapeutic use	48	<5
Cellulitis and abscess of mouth	42	<5
Cellulitis of abdominal wall	42	11
Cellulitis of back [any part except buttock]	7	<5
Cellulitis of buttock	14	0
Cellulitis of chest wall	14	<5
Cellulitis of external ear	<5	0
Cellulitis of face	25	0
Cellulitis of finger	13	0
Cellulitis of groin	12	0
Cellulitis of lower limb	722	65
Cellulitis of other sites	27	<5
Cellulitis of penis	<5	0
Cellulitis of perineum	5	0
Cellulitis of toe	36	<5
Cellulitis of trunk, unspecified	7	<5
Cellulitis of upper limb	220	36
Cellulitis, unspecified	50	<5
Central cord lesion of cervical spinal cord	8	<5
Central cord lesion of lumbar spinal cord	<5	<5
Central perforation of tympanic membrane	<5	0
Central pontine myelinolysis	<5	0
Central retinal artery occlusion	<5	<5
Centrally acting and adrenergic-neuron-blocking agents, not elsewhere classified, causing adverse ef	<5	0
Centrally acting and adrenergic-neuron-blocking agents, not elsewhere classified, causing adverse effect in t	<5	<5
Centrilobular emphysema	<5	0
Cephalhaematoma due to birth injury	9	0
Cerebellar stroke syndrome	<5	0
Cerebral amyloid angiopathy	14	<5
Cerebral aneurysm, nonruptured	33	7
Cerebral arteritis, not elsewhere classified	7	<5
Cerebral atherosclerosis	<5	0
Cerebral cryptococcosis	<5	0
Cerebral cysts	8	0
Cerebral infarction due to cerebral venous thrombosis, nonpyogenic	<5	0
Cerebral infarction due to embolism of cerebral arteries	172	25
Cerebral infarction due to embolism of precerebral arteries	11	<5
Cerebral infarction due to thrombosis of cerebral arteries	72	11
Cerebral infarction due to thrombosis of precerebral arteries	24	5
Cerebral infarction due to unspecified occlusion or stenosis of cerebral arteries	437	64
Cerebral infarction due to unspecified occlusion or stenosis of precerebral arteries	70	6
Cerebral infarction, unspecified	563	76
Cerebral oedema	19	12
Cerebral palsy, unspecified	27	<5
Cerebrospinal fluid leak from spinal puncture	<5	<5
Cerebrospinal fluid leak unspecified	11	<5
Cerebrospinal fluid leak within cranium	11	<5
Cerebrospinal fluid otorrhea (leak)	<5	0
Cerebrospinal fluid rhinorrhea (leak)	6	<5
Cerebrovascular disease, unspecified	9	<5
Cervical disc disorder with myelopathy	52	<5
Cervical disc disorder with radiculopathy	12	0
Cervicalgia	41	<5
Chalazion	<5	0
Change in bowel habit	10	0
Changes in skin texture	<5	<5
Cheek and lip biting	<5	0
Chemotherapy session for neoplasm	206	<5
Chest pain on breathing	<5	0

Chest pain, unspecified	424	70
Chignon due to birth injury	<5	0
Childhood autism	30	0
Childhood disorder of social functioning, unspecified	<5	0
Chlamydia psittaci infection	<5	0
Chlamydial infection of lower genitourinary tract	<5	0
Cholecystitis, unspecified	29	<5
Cholera due to Vibrio cholerae 01, biovar cholerae	<5	0
Cholesteatoma of middle ear	19	0
Cholesterolosis of gallbladder	47	0
Chondrocostal junction syndrome [Tietze]	<5	0
Chondrodysplasia punctata	<5	0
Chondromalacia patellae	<5	0
Chorioretinal inflammation, unspecified	<5	<5
Chronic adhesive pericarditis	<5	0
Chronic and other pulmonary manifestations due to radiation	<5	0
Chronic atrial fibrillation	133	36
Chronic atrophic gastritis	7	<5
Chronic cholecystitis	152	12
Chronic congestive splenomegaly	<5	0
Chronic constrictive pericarditis	12	6
Chronic disease of tonsils and adenoids, unspecified	<5	0
Chronic drug-induced interstitial lung disorders	<5	0
Chronic ethmoidal sinusitis	<5	0
Chronic gastritis, unspecified	117	14
Chronic gingivitis	9	0
Chronic hepatic failure	17	6
Chronic hepatitis, unspecified	<5	<5
Chronic inflammatory disease of uterus	<5	0
Chronic inflammatory disorders of orbit	<5	0
Chronic instability of knee	<5	0
Chronic intractable pain	15	0
Chronic iridocyclitis	<5	0
Chronic ischaemic heart disease, unspecified	150	53
Chronic kidney disease, stage 1	<5	<5
Chronic kidney disease, stage 3	13	<5
Chronic kidney disease, stage 4	15	<5
Chronic kidney disease, stage 5	427	74
Chronic kidney disease, unspecified	820	145
Chronic lymphocytic leukaemia of B-cell type	71	9
Chronic mastoiditis	<5	0
Chronic maxillary sinusitis	6	0
Chronic myeloid leukaemia [CML], BCR/ABL-positive	21	<5
Chronic myelomonocytic leukaemia	5	<5
Chronic myeloproliferative disease	10	<5
Chronic nephritic syndrome, unspecified	<5	<5
Chronic obstructive pulmonary disease with acute exacerbation, unspecified	1094	155
Chronic obstructive pulmonary disease with acute lower respiratory infection	851	154
Chronic obstructive pulmonary disease, unspecified	570	81
Chronic obstructive pyelonephritis	<5	0
Chronic osteomyelitis with draining sinus, ankle and foot	<5	0
Chronic osteomyelitis with draining sinus, other site	<5	<5
Chronic osteomyelitis with draining sinus, pelvic region and thigh	<5	0
Chronic pansinusitis	10	<5
Chronic passive congestion of liver	14	5
Chronic pharyngitis	<5	0
Chronic prostatitis	10	0
Chronic pulmonary insufficiency following surgery	<5	<5
Chronic respiratory failure, type I [hypoxic]	<5	<5
Chronic respiratory failure, type II [hypercapnic]	11	9
Chronic respiratory failure, type unspecified	<5	<5
Chronic rhinitis	9	0
Chronic salpingitis and oophoritis	14	0
Chronic serous otitis media	<5	0
Chronic sinusitis, unspecified	26	<5
Chronic sphenoidal sinusitis	<5	0
Chronic superficial gastritis	<5	0
Chronic tonsillitis	8	0
Chronic tubulo-interstitial nephritis, unspecified	6	0
Chronic ulcer of skin, not elsewhere classified	45	5
Chronic vascular disorders of intestine	18	0
Chronic viral hepatitis B without delta-agent	7	<5
Chronic viral hepatitis C	194	29
Cicatricial pemphigoid	<5	0
Classical hydatidiform mole	<5	0
Classical phenylketonuria	<5	0
Cleft lip	<5	0
Cleft palate with cleft lip	<5	0

Cleft palate, unspecified	<5	0
Cleft uvula	<5	0
Clicking hip	24	0
Clostridium perfringens [C. perfringens] as the cause of diseases classified to other chapters	13	<5
Cluster headache syndrome	<5	0
Coagulation defect, unspecified	344	86
Coalworker's pneumoconiosis	<5	0
Codeine and derivatives causing adverse effect in therapeutic use	<5	0
Coeliac artery compression syndrome	6	<5
Coeliac disease	11	<5
Collapsed vertebra in diseases classified elsewhere	22	<5
Collapsed vertebra, not elsewhere classified, lumbar region	9	0
Collapsed vertebra, not elsewhere classified, multiple sites in spine	<5	0
Collapsed vertebra, not elsewhere classified, thoracic region	5	<5
Collapsed vertebra, not elsewhere classified, thoracolumbar region	<5	0
Collapsed vertebra, not elsewhere classified, unspecified site	<5	0
Colles' fracture, closed	17	<5
Colostomy status	19	<5
Coma, unspecified	16	9
Combined disorders of mitral, aortic and tricuspid valves	6	<5
Combined immunodeficiency, unspecified	<5	0
Combined vocal and multiple motor tic disorder [de la Tourette]	5	0
Common variable immunodeficiency, unspecified	<5	0
Communicating hydrocephalus	<5	<5
Complete lesion of lumbar spinal cord	<5	<5
Complete transposition of great vessels	<5	0
Complete uterovaginal prolapse	19	0
Completely shattered kidney or avulsion or renal hilum resulting in devascularization without open w	<5	<5
Complex febrile convulsions	<5	<5
Complex partial status epilepticus	<5	<5
Complex Regional Pain Syndrome I [CRPS I], upper limb	<5	0
Complicated migraine	<5	0
Compression of brain	16	9
Compression of vein	31	5
Concussion	44	5
Concussion and oedema of cervical spinal cord	<5	<5
Condition originating in the perinatal period, unspecified	6	0
Conduct disorder, unspecified	<5	0
Conduction disorder, unspecified	16	<5
Conductive hearing loss, unilateral with unrestricted hearing on the contralateral side	<5	0
Conductive hearing loss, unspecified	<5	<5
Condylar fracture of femur, closed	22	<5
Condylar fracture of femur, open	<5	0
Congenital absence and hypoplasia of umbilical artery	<5	0
Congenital absence, atresia and stenosis of anus without fistula	<5	0
Congenital absence, atresia and stenosis of small intestine, part unspecified	<5	0
Congenital and developmental myasthenia	<5	<5
Congenital cataract	<5	0
Congenital cerebral cysts	<5	0
Congenital chordee	<5	0
Congenital cytomegalovirus infection	<5	0
Congenital deformity of feet, unspecified	<5	0
Congenital diaphragmatic hernia	<5	<5
Congenital dislocation of hip, unilateral	<5	0
Congenital dislocation of hip, unspecified	<5	0
Congenital herpesviral [herpes simplex] infection	<5	0
Congenital hydrocele	20	0
Congenital hydrocephalus, unspecified	5	0
Congenital hydronephrosis	<5	0
Congenital hypertrophic pyloric stenosis	<5	0
Congenital hypotonia	<5	0
Congenital ichthyosis, unspecified	<5	0
Congenital insufficiency of aortic valve	51	9
Congenital laryngomalacia	<5	0
Congenital malformation of aortic and mitral valves, unspecified	<5	0
Congenital malformation of brain, unspecified	<5	0
Congenital malformation of digestive system, unspecified	<5	<5
Congenital malformation of heart, unspecified	<5	0
Congenital malformation of orbit	<5	0
Congenital malformation syndromes predominantly affecting facial appearance	<5	0
Congenital malformation syndromes predominantly associated with short stature	<5	0
Congenital malformation syndromes predominantly involving limbs	<5	0
Congenital malformations of corpus callosum	<5	<5
Congenital malformations of intestinal fixation	<5	0
Congenital malformations of lips, not elsewhere classified	<5	0
Congenital malformations of other endocrine glands	<5	0
Congenital malformations of palate, not elsewhere classified	<5	0
Congenital non-neoplastic naevus	8	0

Congenital perforated nasal septum	<5	0
Congenital pes planus	<5	0
Congenital pneumonia, unspecified	<5	0
Congenital pulmonary valve insufficiency	<5	0
Congenital pulmonary valve stenosis	<5	0
Congenital renal failure	<5	0
Congenital rubella syndrome	<5	0
Congenital stenosis of aortic valve	<5	0
Congenital stricture of urinary meatus	<5	<5
Congenital subaortic stenosis	<5	0
Congenital subglottic stenosis	19	0
Congenital subluxation of hip, unilateral	<5	0
Congenital tricuspid atresia	<5	0
Congenitally corrected transposition of great vessels	<5	0
Congestion and haemorrhage of prostate	6	<5
Congestive heart failure	3754	844
Conjunctival haemorrhage	14	<5
Conjunctivitis in infectious and parasitic diseases classified elsewhere	<5	0
Conjunctivitis, unspecified	40	5
Constipation	1205	84
Constitutional aplastic anaemia	<5	0
Contact with agricultural machinery	<5	0
Contact with and exposure to other communicable diseases	<5	0
Contact with hot drinks, food, fats and cooking oils	10	0
Contact with hot engines, machinery and tools	<5	<5
Contact with hot tap-water	<5	0
Contact with hypodermic needle	18	<5
Contact with knife, sword or dagger	<5	<5
Contact with lifting and transmission device(s), not elsewhere classified	<5	0
Contact with marine animal	<5	0
Contact with nonpowered hand tool	<5	0
Contact with other and unspecified heat and hot substances	<5	0
Contact with other and unspecified machinery	20	<5
Contact with other hot fluids	<5	<5
Contact with other powered hand tools and household machinery	9	0
Contact with other sharp object(s), not elsewhere classified	5	0
Contact with other venomous arthropods	<5	0
Contact with powered lawnmower	<5	0
Contact with sharp glass	7	0
Contact with sharp object, undetermined intent	<5	0
Contact with stove (cooker) (kitchen stove) (oven)	<5	0
Contact with unspecified sharp object(s)	<5	0
Continuing pregnancy after spontaneous abortion of one fetus or more, antepartum condition or complication	<5	0
Continuing pregnancy after spontaneous abortion of one fetus or more, delivered, with or without mention of a	<5	0
Contracture of joint, forearm	<5	0
Contracture of joint, hand	<5	0
Contracture of joint, lower leg	12	<5
Contracture of joint, multiple sites	<5	0
Contracture of joint, pelvic region and thigh	6	0
Contracture of muscle, multiple sites	<5	0
Contracture of muscle, pelvic region and thigh	10	0
Contusion and haematoma of heart, without open wound into thoracic cavity	<5	<5
Contusion and haematoma of lung with open wound into thoracic cavity	<5	0
Contusion and haematoma of lung without open wound into thoracic cavity	45	21
Contusion and haematoma of pleura without open wound of thoracic cavity	<5	0
Contusion and haematoma of pleura, with open wound into thoracic cavity	<5	0
Contusion of abdominal wall	11	0
Contusion of ankle	<5	0
Contusion of elbow	<5	0
Contusion of eyeball and orbital tissues	10	<5
Contusion of eyelid and periocular area	5	<5
Contusion of hip	14	0
Contusion of knee	11	0
Contusion of lower back and pelvis	8	0
Contusion of other and unspecified parts of forearm	<5	0
Contusion of other parts of wrist and hand	<5	0
Contusion of scrotum and testes	<5	<5
Contusion of shoulder and upper arm	5	0
Contusion of thigh	<5	0
Contusion of thorax	7	<5
Convalescence following chemotherapy	<5	0
Convalescence following combined treatment	<5	<5
Convalescence following other treatment	103	16
Convalescence following radiotherapy	6	0
Convalescence following surgery	1009	43
Convalescence following treatment of fracture	20	0
Convalescence following unspecified treatment	7	0
Convulsions of newborn	<5	0

Cor triatriatum	<5	<5
Cord compression, unspecified	12	6
Corneal pigmentations and deposits	<5	<5
Corneal ulcer	11	0
Corns and callosities	8	<5
Coronary artery aneurysm and dissection	31	16
Coronary thrombosis not resulting in myocardial infarction	8	<5
Coronary vasodilators, not elsewhere classified, causing adverse effect in therapeutic use	10	0
Coronavirus as the cause of diseases classified to other chapters	8	<5
Coronavirus disease 2019 [COVID-19], virus identified	304	80
Coronavirus disease 2019 [COVID-19], virus not identified	7	<5
Corpus luteum cyst	18	0
Corrosion of oesophagus	<5	0
Corrosion of respiratory tract, part unspecified	<5	<5
Cough	69	13
COVID-19 vaccines causing adverse effects in therapeutic use	69	13
Coxarthrosis resulting from dysplasia, bilateral	<5	0
Coxarthrosis, unspecified	461	<5
CR(E)ST syndrome	5	<5
Cramp and spasm	27	6
Cranial nerve disorder, unspecified	<5	0
Craniosynostosis	<5	0
Creutzfeldt-Jakob disease	<5	<5
Crohn's disease of large intestine	48	<5
Crohn's disease of small intestine	55	<5
Crohn's disease, unspecified	160	8
Crushed, pushed or stepped on by crowd or human stampede	<5	0
Crushing injuries involving multiple regions of lower limb(s)	<5	0
Crushing injuries involving multiple regions of upper limb(s)	<5	0
Crushing injury of hip with thigh	<5	0
Crushing injury of other and unspecified parts of lower leg	<5	<5
Crushing injury of other and unspecified parts of wrist and hand	<5	0
Crushing injury of other parts of ankle and foot	<5	0
Crushing injury of thigh	<5	0
Cryoglobulinaemia	<5	<5
Cryptosporidiosis	<5	0
Crystal arthropathy, unspecified, forearm	<5	0
Crystal arthropathy, unspecified, lower leg	5	0
Crystal arthropathy, unspecified, pelvic region and thigh	<5	0
Crystal arthropathy, unspecified, upper arm	<5	0
Cushing's syndrome, unspecified	<5	<5
Cutaneous abscess, furuncle and carbuncle of buttock	14	<5
Cutaneous abscess, furuncle and carbuncle of face	<5	<5
Cutaneous abscess, furuncle and carbuncle of limb	108	12
Cutaneous abscess, furuncle and carbuncle of neck	13	<5
Cutaneous abscess, furuncle and carbuncle of other sites	10	<5
Cutaneous abscess, furuncle and carbuncle of trunk	106	13
Cutaneous abscess, furuncle and carbuncle, unspecified	10	0
Cutaneous erysipeloid	<5	0
Cutaneous nocardiosis	<5	0
Cutaneous T-cell lymphoma, unspecified	<5	<5
Cyanosis	9	<5
Cyanotic attacks of newborn	7	0
Cyclothymia	<5	0
Cyst and mucocele of nose and nasal sinus	<5	0
Cyst of Bartholin's gland	<5	0
Cyst of kidney	35	<5
Cyst of pancreas	18	<5
Cyst of spleen	<5	0
Cystic disease of liver	<5	0
Cystic fibrosis with intestinal manifestations	<5	0
Cystic fibrosis with other manifestations	<5	0
Cystic fibrosis with pulmonary manifestations	9	<5
Cystic fibrosis, unspecified	12	0
Cysticercosis of central nervous system	<5	0
Cystitis, unspecified	32	<5
Cystocele	61	<5
Cytomegaloviral disease, unspecified	10	0
Cytomegaloviral pneumonitis	<5	<5
Dacryoadenitis	<5	0
Damage to pelvic organs and tissues following medical abortion	<5	0
Deaf mutism, not elsewhere classified	<5	<5
Decubitus [pressure] ulcer, unstageable	248	38
Decubitus ulcer and pressure area, unspecified	389	51
Deep phlebothrombosis in pregnancy, antepartum condition or complication	<5	0
Deep phlebothrombosis in pregnancy, delivered, with or without mention of antepartum condition	5	0
Deep phlebothrombosis in the puerperium, postpartum condition or complication	<5	0
Defects in the complement system	<5	<5

Deficiency of other specified B group vitamins	163	<5
Deficiency of vitamin K	<5	0
Deformity of finger(s)	<5	0
Degeneration of macula and posterior pole	5	0
Degeneration of nervous system due to alcohol	26	5
Degenerative disease of nervous system, unspecified	12	0
Dehiscence of uterus with extension during labour, delivered, with or without mention of antepartum condition	<5	0
Dehydration	1142	112
Dehydration of newborn	6	0
Delayed and secondary postpartum haemorrhage, delivered, with mention of postpartum complication	9	0
Delayed and secondary postpartum haemorrhage, postpartum condition or complication	8	0
Delayed delivery after spontaneous or unspecified rupture of membranes, delivered, with or without mention of	131	<5
Delayed delivery of second twin, triplet, etc., delivered, with or without mention of antepartum condition	<5	0
Delayed or excessive haemorrhage following ectopic pregnancy	<5	0
Delayed or excessive haemorrhage following medical abortion	<5	0
Delayed or excessive haemorrhage following spontaneous abortion	<5	0
Delayed union of fracture, other site	<5	0
Delayed union of fracture, pelvic region and thigh	<5	0
Delirium not superimposed on dementia, so described	39	<5
Delirium superimposed on dementia	374	14
Delirium, unspecified	1447	237
Delusional disorder	144	<5
Dementia in Alzheimer's disease with early onset	<5	0
Dementia in Alzheimer's disease with late onset	<5	0
Dementia in Alzheimer's disease, atypical or mixed type	48	0
Dementia in Alzheimer's disease, unspecified	243	11
Dementia in Creutzfeldt-Jakob disease	<5	<5
Dementia in human immunodeficiency virus [HIV] disease	<5	0
Dementia in other specified diseases classified elsewhere	97	<5
Dementia in Parkinson's disease	89	0
Dementia in Pick's disease	19	0
Demoralization and apathy	<5	0
Demyelinating disease of central nervous system, unspecified	<5	0
Dental caries, unspecified	57	9
Dentofacial anomaly, unspecified	131	0
Dependence on other enabling machines and devices	20	0
Dependence on renal dialysis	77	23
Dependence on respirator	<5	<5
Dependent personality disorder	12	<5
Depressive episode, unspecified	363	29
Derangement of meniscus due to old tear or injury, multiple sites	<5	0
Derangement of other and unspecified medial meniscus due to old tear or injury	<5	0
Derangement of posterior horn of medial meniscus due to old tear or injury	<5	0
Dermatitis due to other substances taken internally	<5	<5
Dermatitis, unspecified	38	<5
Dermato(poly)myositis in neoplastic disease	<5	<5
Dermatographic urticaria	<5	0
Dermatophytosis, unspecified	<5	0
Desensitization to allergens	<5	<5
Developmental (nonodontogenic) cysts of oral region	<5	0
Developmental disorder of scholastic skills, unspecified	22	0
Developmental disorders of jaws	<5	0
Developmental odontogenic cysts	<5	0
Deviated nasal septum	61	<5
Di George's syndrome	<5	0
Diabetes insipidus	21	6
Diabetes mellitus arising in pregnancy (gestational) antepartum condition or complication	17	<5
Diabetes mellitus arising in pregnancy (gestational) delivered with mention of postpartum complication	<5	0
Diabetes mellitus arising in pregnancy (gestational) delivered with or without mention of antepartum conditio	184	0
Diabetic arthropathy	<5	0
Diabetic cataract	<5	0
Diabetic mononeuropathy	17	<5
Diabetic polyneuropathy	141	14
Diabetic retinopathy	28	7
Diaper [napkin] dermatitis	7	0
Diaphragmatic hernia with obstruction, without gangrene	27	6
Diaphragmatic hernia without obstruction or gangrene	173	11
Diastasis of muscle, other site	<5	0
Diastasis of muscle, pelvic region and thigh	<5	0
Dietary calcium deficiency	<5	<5
Dietary counselling and surveillance	<5	<5
Dietary folate deficiency anaemia	<5	0
Difficulty in walking, not elsewhere classified	24	0
Diffuse (eosinophilic) fasciitis	<5	0
Diffuse brain injury with open intracranial wound	<5	<5
Diffuse brain injury without open intracranial wound	54	21
Diffuse cystic mastopathy	<5	0
Diffuse large B-cell lymphoma	214	15

Dilated cardiomyopathy	71	19
Diplopia	52	8
Disappearance and death of family member	6	0
Discharge from unspecified firearm	7	<5
Discharge of firework	<5	<5
Discitis, unspecified, cervical region	<5	0
Discitis, unspecified, lumbar region	21	<5
Discitis, unspecified, lumbosacral region	5	0
Discitis, unspecified, thoracic region	7	<5
Discitis, unspecified, thoracolumbar region	5	0
Discitis, unspecified, unspecified site	<5	0
Discoid lupus erythematosus	<5	0
Discontinuity and dislocation of ear ossicles	<5	<5
Discord with neighbours, lodgers and landlord	<5	0
Disease of anus and rectum, unspecified	<5	0
Disease of biliary tract, unspecified	<5	<5
Disease of blood and blood-forming organs, unspecified	<5	0
Disease of digestive system, unspecified	<5	0
Disease of gallbladder, unspecified	<5	0
Disease of hard tissues of teeth, unspecified	<5	0
Disease of intestine, unspecified	9	<5
Disease of oesophagus, unspecified	<5	<5
Disease of pancreas, unspecified	6	0
Disease of pericardium, unspecified	109	37
Disease of salivary gland, unspecified	<5	0
Disease of spinal cord, unspecified	15	0
Disease of spleen, unspecified	<5	0
Disease of stomach and duodenum, unspecified	9	<5
Disease of tongue, unspecified	<5	0
Diseases of bronchus, not elsewhere classified	18	9
Diseases of lips	<5	0
Diseases of mediastinum, not elsewhere classified	13	6
Diseases of the circulatory system complicating pregnancy, childbirth and the puerperium, antepartum conditio	<5	0
Diseases of the circulatory system complicating pregnancy, childbirth and the puerperium, delivered, with men	5	<5
Diseases of the circulatory system complicating pregnancy, childbirth and the puerperium, delivered, with or	9	<5
Diseases of the circulatory system complicating pregnancy, childbirth and the puerperium, postpartum conditio	<5	0
Diseases of the digestive system complicating pregnancy, childbirth and the puerperium, antepartum c	<5	0
Diseases of the digestive system complicating pregnancy, childbirth and the puerperium, antepartum condition	8	0
Diseases of the digestive system complicating pregnancy, childbirth and the puerperium, delivered, with menti	<5	<5
Diseases of the digestive system complicating pregnancy, childbirth and the puerperium, delivered, with or wi	7	0
Diseases of the digestive system complicating pregnancy, childbirth and the puerperium, postpartum c	<5	0
Diseases of the digestive system complicating pregnancy, childbirth and the puerperium, postpartum condition	<5	0
Diseases of the respiratory system complicating pregnancy, childbirth and the puerperium, antepartum conditio	<5	0
Diseases of the respiratory system complicating pregnancy, childbirth and the puerperium, delivered, with men	<5	<5
Diseases of the respiratory system complicating pregnancy, childbirth and the puerperium, delivered, with or	8	0
Diseases of the skin and subcutaneous tissue complicating pregnancy, childbirth and the puerperium, delivered	6	0
Diseases of the skin and subcutaneous tissue complicating pregnancy, childbirth and the puerperium, postpartu	<5	0
Dislocation of acromioclavicular joint, closed	6	0
Dislocation of acromioclavicular joint, open	<5	0
Dislocation of ankle joint, closed	<5	0
Dislocation of ankle joint, open	<5	0
Dislocation of carpometacarpal (joint), closed	<5	0
Dislocation of cervical vertebra	<5	<5
Dislocation of interphalangeal (joint) of finger, closed	<5	0
Dislocation of lens	<5	0
Dislocation of lumbar vertebra	<5	0
Dislocation of metacarpophalangeal (joint) of finger, closed	<5	0
Dislocation of metatarsophalangeal joint, closed	<5	0
Dislocation of other and unspecified parts of lumbar spine and pelvis	<5	0
Dislocation of patella, closed	<5	<5
Dislocation of radial head	<5	<5
Dislocation of radiocarpal (joint), closed	<5	0
Dislocation of sacroiliac and sacrococcygeal joint	<5	0
Dislocation of sternoclavicular joint, closed	<5	0
Dislocation of tarsal (midtarsal) joint, open	<5	0
Dislocation of tooth	<5	0
Dislocations, sprains and strains involving multiple regions of lower limb(s)	<5	<5
Dislocations, sprains and strains involving multiple regions of upper limb(s)	<5	0
Disorder involving the immune mechanism, unspecified	<5	<5
Disorder of adrenal gland, unspecified	6	<5
Disorder of arteries and arterioles, unspecified	9	<5
Disorder of autonomic nervous system, unspecified	<5	0
Disorder of bilirubin metabolism, unspecified	6	<5
Disorder of bone density and structure, unspecified, other site	<5	0
Disorder of bone, unspecified, ankle and foot	<5	0
Disorder of bone, unspecified, lower leg	19	0
Disorder of bone, unspecified, multiple sites	<5	0
Disorder of bone, unspecified, other site	5	<5

Disorder of bone, unspecified, pelvic region and thigh	44	0
Disorder of bone, unspecified, shoulder region	<5	0
Disorder of bone, unspecified, upper arm	<5	0
Disorder of brain, unspecified	22	<5
Disorder of central nervous system, unspecified	<5	<5
Disorder of choroid, unspecified	<5	0
Disorder of conjunctiva, unspecified	<5	0
Disorder of cornea, unspecified	<5	<5
Disorder of eye and adnexa, unspecified	<5	0
Disorder of eyelid, unspecified	<5	0
Disorder of facial nerve, unspecified	14	<5
Disorder of kidney and ureter, unspecified	10	<5
Disorder of ligament, shoulder region	<5	0
Disorder of lipoprotein metabolism, unspecified	137	47
Disorder of male genital organs, unspecified	<5	0
Disorder of middle ear and mastoid, unspecified	<5	0
Disorder of muscle tone of newborn, unspecified	<5	0
Disorder of muscle, unspecified, multiple sites	<5	<5
Disorder of orbit, unspecified	<5	0
Disorder of penis, unspecified	<5	0
Disorder of refraction, unspecified	<5	<5
Disorder of skin and subcutaneous tissue related to radiation, unspecified	<5	0
Disorder of skin and subcutaneous tissue, unspecified	13	<5
Disorder of synovium and tendon, unspecified, ankle and foot	<5	0
Disorder of synovium and tendon, unspecified, pelvic region and thigh	<5	0
Disorder of synovium and tendon, unspecified, shoulder region	<5	0
Disorder of teeth and supporting structures, unspecified	7	0
Disorder of thyroid, unspecified	5	<5
Disorder of tympanic membrane, unspecified	<5	0
Disorder of vein, unspecified	<5	0
Disorder of vestibular function, unspecified	<5	0
Disorder of white blood cells, unspecified	<5	0
Disorders of acoustic nerve	<5	0
Disorders of amino-acid transport	<5	0
Disorders of both aortic and tricuspid valves	9	<5
Disorders of both mitral and aortic valves	24	<5
Disorders of both mitral and tricuspid valves	19	5
Disorders of calcium metabolism	479	65
Disorders of diaphragm	<5	<5
Disorders of excessive somnolence [hypersomnias]	<5	0
Disorders of fatty-acid metabolism	<5	0
Disorders of glycine metabolism	<5	0
Disorders of initiating and maintaining sleep [insomnias]	112	13
Disorders of iron metabolism, unspecified	<5	0
Disorders of magnesium metabolism	778	111
Disorders of meninges, not elsewhere classified	<5	<5
Disorders of optic nerve, not elsewhere classified	<5	0
Disorders of other specified cranial nerves	<5	0
Disorders of phosphorus metabolism and phosphatases	537	118
Disorders of plasma-protein metabolism, not elsewhere classified	89	22
Disorders of tyrosine metabolism	<5	0
Disorders of urea cycle metabolism	<5	0
Disorders of vagus nerve	<5	0
Disorders of visual cortex	<5	<5
Disorientation, unspecified	822	101
Disruption of family by separation and divorce	13	0
Disruption of operation wound, not elsewhere classified	208	48
Disruption of perineal obstetric wound, postpartum condition or complication	<5	0
Dissection of aorta [any part]	51	7
Dissection of cerebral arteries, nonruptured	<5	0
Disseminated herpesviral disease	<5	<5
Disseminated intravascular coagulation [defibrination syndrome]	49	38
Disseminated mycobacterium avium-intracellulare complex [DMAC] infection	<5	<5
Disseminated zoster	<5	0
Dissocial personality disorder	52	<5
Dissociative [conversion] disorder, unspecified	9	0
Dissociative anaesthesia and sensory loss	<5	0
Dissociative convulsions	20	<5
Dissociative motor disorders	<5	0
Disturbance of activity and attention	67	<5
Disturbance of temperature regulation of newborn, unspecified	12	0
Disturbances in tooth eruption	<5	0
Disturbances of salivary secretion	<5	0
Diverticular disease of both small and large intestine with perforation and abscess	5	0
Diverticular disease of both small and large intestine without perforation or abscess	5	<5
Diverticular disease of intestine, part unspecified, with perforation and abscess	38	<5
Diverticular disease of intestine, part unspecified, without perforation or abscess	89	8
Diverticular disease of large intestine with perforation and abscess	182	26

Diverticular disease of large intestine without perforation or abscess	398	27
Diverticular disease of small intestine with perforation and abscess	7	<5
Diverticular disease of small intestine without perforation or abscess	23	5
Diverticulum of appendix	5	0
Diverticulum of bladder	5	0
Diverticulum of oesophagus	<5	<5
Diverticulum of oesophagus, acquired	6	0
Diving or jumping into water causing injury other than drowning or submersion	<5	0
Dizziness and giddiness	347	28
Dorsalgia, unspecified site	130	13
Double inlet ventricle	<5	0
Doubling of uterus with doubling of cervix and vagina	<5	0
Doubling of vagina	<5	0
Down's syndrome, unspecified	19	5
Dressler's syndrome	5	<5
Driver of car injured in collision with other and unspecified motor vehicles in traffic accident	<5	<5
Driver of other all-terrain or other off road motor vehicle injured in nontraffic accident	70	9
Driver of other all-terrain or other off road motor vehicle injured in traffic accident	<5	<5
Driver of snowmobile injured in nontraffic land accident	14	<5
Driver of snowmobile injured in traffic accident	<5	<5
Driver of special agricultural vehicle injured in nontraffic accident	<5	<5
Drowning and nonfatal submersion	<5	<5
Drowning and submersion while in bath-tub	<5	<5
Drowning and submersion while in natural water	<5	0
Drowning and submersion while in swimming-pool	<5	0
Drug or medicament, unspecified, causing adverse effect in therapeutic use	43	6
Drug use	23	<5
Drug-induced acute pancreatitis	<5	0
Drug-induced adrenocortical insufficiency	<5	<5
Drug-induced aplastic anaemia	56	12
Drug-induced autoimmune haemolytic anaemia	<5	0
Drug-induced cataract	<5	0
Drug-induced chorea	<5	0
Drug-induced Cushing's syndrome	<5	0
Drug-induced dystonia	<5	0
Drug-induced fever	41	5
Drug-induced gout, ankle and foot	<5	0
Drug-induced headache, not elsewhere classified	16	<5
Drug-induced hypoglycaemia without coma	7	<5
Drug-induced interstitial lung disorders, unspecified	<5	<5
Drug-induced myopathy	9	<5
Drug-induced nonautoimmune haemolytic anaemia	<5	0
Drug-induced osteoporosis	<5	0
Drug-induced osteoporosis with pathological fracture, lower leg	<5	0
Drug-induced osteoporosis with pathological fracture, pelvic region and thigh	<5	0
Drug-induced polyneuropathy	<5	0
Drug-induced thyroiditis	<5	<5
Drug-induced tremor	10	0
Dry mouth, unspecified	7	0
Duodenal ulcer, acute with haemorrhage	32	10
Duodenal ulcer, acute with perforation	12	5
Duodenal ulcer, acute without haemorrhage or perforation	<5	<5
Duodenal ulcer, chronic or unspecified with haemorrhage	90	16
Duodenal ulcer, chronic or unspecified with perforation	14	5
Duodenal ulcer, chronic without haemorrhage or perforation	<5	<5
Duodenal ulcer, unspecified as acute or chronic, without haemorrhage or perforation	40	12
Duodenitis	93	10
Duplication of ureter	<5	0
Dysarthria and anarthria	115	12
Dyskinesia of oesophagus	11	0
Dyslexia and alexia	<5	0
Dysmenorrhoea, unspecified	61	0
Dyspareunia	7	0
Dysphasia and aphasia	415	61
Dysphonia	24	9
Dysplasia of cervix uteri, unspecified	10	0
Dysplasia of vulva, unspecified	<5	0
Dyspnoea	528	91
Dysthymia	25	<5
Dysthyroid exophthalmos	<5	0
Dystonia, unspecified	12	<5
Dysuria	45	6
Early-onset cerebellar ataxia	<5	0
Eating disorder, unspecified	15	<5
Ebstein anomaly	<5	0
Eccrine sweat disorder, unspecified	<5	0
Eclampsia in the puerperium, delivered, with mention of postpartum complication	<5	0
Ectopic ACTH syndrome	<5	0

Ectopic kidney	<5	0
Ectopic pregnancy, unspecified	<5	0
Ectropion of eyelid	<5	<5
Edwards' syndrome, unspecified	<5	0
Effects of hunger	5	<5
Effusion of joint, ankle and foot	5	0
Effusion of joint, forearm	<5	0
Effusion of joint, hand	<5	0
Effusion of joint, lower leg	40	<5
Effusion of joint, shoulder region	<5	0
Egodystonic sexual orientation	<5	0
Ehlers-Danlos syndrome	9	0
Elective mutism	<5	0
Electrocardiogram suggestive of ST segment elevation myocardial infarction [STEMI]	1100	802
Electroconvulsive therapy as the cause of abnormal reaction or later complication, without mention o	<5	0
Electroconvulsive therapy as the cause of abnormal reaction or later complication, without mention of misadve	<5	0
Electrolytic, caloric and water-balance agents causing adverse effect in therapeutic use	5	<5
Elevated blood-pressure reading, without diagnosis of hypertension	30	<5
Elevated erythrocyte sedimentation rate	<5	0
Elevation of levels of transaminase and lactic acid dehydrogenase [LDH]	104	25
Embolism and thrombosis of abdominal aorta	9	<5
Embolism and thrombosis of arteries of extremities, unspecified	10	<5
Embolism and thrombosis of arteries of lower extremities	109	30
Embolism and thrombosis of arteries of upper extremities	30	5
Embolism and thrombosis of iliac artery	26	<5
Embolism and thrombosis of other and unspecified parts of aorta	14	<5
Embolism and thrombosis of other arteries	37	16
Embolism and thrombosis of other specified veins	97	32
Embolism and thrombosis of renal vein	<5	0
Embolism and thrombosis of unspecified artery	9	<5
Embolism and thrombosis of unspecified vein	<5	<5
Embolism and thrombosis of vena cava	22	<5
Embryonic cyst of broad ligament	<5	0
Emergency use of U07.1	14	<5
Emergency use of U07.4	<5	<5
Emergency use of U07.5	<5	<5
Emergency use of U07.7	<5	0
Emotionally unstable personality disorder	184	8
Emphysema (subcutaneous) resulting from a procedure	29	6
Emphysema, unspecified	33	<5
Encephalitis, myelitis and encephalomyelitis in viral diseases classified elsewhere	13	<5
Encephalitis, myelitis and encephalomyelitis, unspecified	6	<5
Encephalocele of other sites	<5	0
Encephalopathy in diseases classified elsewhere	181	35
Encephalopathy, unspecified	40	18
Endocardial fibroelastosis	7	<5
Endocarditis, valve unspecified	19	5
Endocarditis, valve unspecified, in diseases classified elsewhere	<5	<5
Endocrine disorder, unspecified	<5	<5
Endocrine, nutritional and metabolic diseases complicating pregnancy, childbirth and the puerperium, antepart	6	0
Endocrine, nutritional and metabolic diseases complicating pregnancy, childbirth and the puerperium, delivere	89	<5
Endometrial adenomatous hyperplasia	13	0
Endometrial glandular hyperplasia	27	<5
Endometriosis of fallopian tube	14	<5
Endometriosis of intestine	<5	0
Endometriosis of ovary	33	<5
Endometriosis of pelvic peritoneum	18	0
Endometriosis of rectovaginal septum and vagina	<5	0
Endometriosis of uterus	99	0
Endometriosis, unspecified	19	0
Enduring personality change, unspecified	<5	0
Enlarged lymph nodes, unspecified	7	<5
Enophthalmos	<5	<5
Enterococcus as the cause of diseases classified to other chapters	561	92
Enterocolitis due to Clostridium difficile	451	72
Enteroptosis	<5	0
Enterostomy malfunction, not elsewhere classified	123	20
Enteroviral vesicular stomatitis with exanthem	<5	0
Enterovirus as the cause of diseases classified to other chapters	<5	0
Enterovirus infection, unspecified site	<5	0
Enthesopathy, unspecified site	<5	0
Entropion and trichiasis of eyelid	<5	0
Enzymes, not elsewhere classified, causing adverse effect in therapeutic use	<5	<5
Eosinophilia	8	<5
Epidermal cyst	12	<5
Epididymitis	11	<5
Epididymitis with abscess	<5	<5
Epididymo-orchitis	<5	0

Epididymo-orchitis with abscess	<5	0
Epidural haemorrhage	14	5
Epigastric pain	62	5
Epilepsy, unspecified, intractable	20	<5
Epilepsy, unspecified, not stated as intractable	103	22
Episcleritis	<5	0
Epispadias	<5	0
Epistaxis	144	31
Erb's paralysis due to birth injury	<5	0
Erosion and ectropion of cervix uteri	<5	0
Erosion of teeth	<5	0
Erysipelas	<5	0
Erythema annulare centrifugum	<5	0
Erythema intertrigo	35	<5
Erythema nodosum	<5	0
Erythematous condition, unspecified	24	6
Escherichia coli [E. coli] as the cause of diseases classified to other chapters	1209	145
Esophageal dysphagia	126	21
Essential (haemorrhagic) thrombocythaemia	14	<5
Essential tremor	22	<5
Eustachian tube disorder, unspecified	<5	0
Examination and observation following other accident	12	0
Examination and observation following other inflicted injury	<5	0
Examination and observation following transport accident	<5	0
Examination and observation for other specified reasons	<5	0
Examination and observation for unspecified reason	22	0
Exanthema subitum [sixth disease]	<5	0
Exceptionally large baby	45	0
Excessive amount of blood or other fluid given during transfusion or infusion	11	<5
Excessive and frequent menstruation with irregular cycle	9	0
Excessive and frequent menstruation with regular cycle	101	<5
Excessive and redundant skin and subcutaneous tissue	11	0
Excessive attrition of teeth	<5	0
Excessive bleeding in the premenopausal period	<5	<5
Excessive weight gain in pregnancy, delivered, with or without mention of antepartum condition	5	0
Exophthalmic conditions	8	<5
Explosion and rupture of gas cylinder	<5	0
Explosion and rupture of pressurized tire, pipe or hose	<5	<5
Explosion of other materials	<5	<5
Exposure to controlled fire in building or structure	<5	0
Exposure to controlled fire, not in building or structure	<5	0
Exposure to excessive natural cold	11	<5
Exposure to ignition of highly flammable material	<5	0
Exposure to ignition or melting of other clothing and apparel	<5	<5
Exposure to ionizing radiation	<5	0
Exposure to other and unspecified animate mechanical forces	6	<5
Exposure to other and unspecified inanimate mechanical forces	37	6
Exposure to other specified factors	58	6
Exposure to other specified smoke, fire and flames	<5	0
Exposure to sunlight	<5	0
Exposure to uncontrolled fire in building or structure	<5	0
Exposure to unspecified factor causing fracture	27	<5
Exposure to unspecified factor causing other and unspecified injury	159	13
Exposure to unspecified type of radiation	<5	0
Extracapsular disorder of the temporomandibular joint	<5	<5
Extracorporeal dialysis	<5	<5
Extradural and subdural abscess, unspecified	<5	<5
Extramedullary plasmacytoma	<5	<5
Extranodal marginal zone B-cell lymphoma of mucosa-associated lymphoid tissue [MALT-lymphoma]	8	0
Extranodal NK/T-cell lymphoma, nasal type	<5	0
Extrapyramidal and movement disorder, unspecified	10	0
Extrarenal uraemia	11	0
Extravasation of urine	5	<5
Extreme immaturity	10	0
Extreme obesity with alveolar hypoventilation	86	39
Extremely low birth weight	11	0
Factitial dermatitis	<5	0
Faecal incontinence	80	6
Failed application of vacuum extractor and forceps, unspecified, delivered, with or without mention of antepa	22	<5
Failed instrumental induction of labour, delivered, with or without mention of antepartum condition	6	0
Failed medical induction of labour, antepartum condition or complication	5	0
Failed medical induction of labour, delivered, with or without mention of antepartum condition	43	0
Failed or difficult intubation	15	9
Failed trial of labour following previous caesarean, unspecified, delivered, with or without mention of antep	21	0
Failed trial of labour, unspecified, delivered, with or without mention of antepartum condition	8	0
Failure in dosage during other surgical and medical care	8	<5
Failure in suture or ligature during surgical operation	<5	0
Failure of genital response	<5	0

Failure of other transplanted tissue	<5	0
Failure of soft tissue (skin, muscle, fascia, tendon, mucosa) graft/flap	13	7
Failure to introduce or to remove other tube or instrument	<5	<5
Fall from cliff	<5	0
Fall from tree	6	<5
Fall from, out of or through building or structure	29	<5
Fall involving adult walker	63	<5
Fall involving bed	120	8
Fall involving chair	90	6
Fall involving ice skates	7	0
Fall involving other furniture	11	<5
Fall involving other specified sports equipment	8	0
Fall involving other specified walking devices	<5	0
Fall involving roller skates/in-line skates	<5	0
Fall involving shopping cart	<5	0
Fall involving skateboard	13	0
Fall involving skis	5	0
Fall involving snowboard	<5	0
Fall involving swing	<5	0
Fall involving toboggan	<5	0
Fall involving trampoline	<5	0
Fall involving wheelchair	19	0
Fall on and from ladder	52	<5
Fall on and from scaffolding	11	<5
Fall on and from stairs and steps	268	20
Fall on same level from or off toilet	54	6
Fall on same level from slipping, tripping and stumbling	1145	41
Fall on same level in or from bathtub	16	<5
Fall on same level in or from shower stall	10	<5
Fall on same level involving ice and snow	112	<5
Fall while being carried or supported by other person(s) in or from bathtub	<5	0
Fall while being carried or supported by other person(s) involving other specified level	6	0
Fall while being carried or supported by other person(s) onto or off bed	<5	0
Fall while being carried or supported by other person(s) onto or off chair	<5	0
Fall while being carried or supported by other person(s) onto or off toilet	<5	0
Fall while being carried or supported by other person(s) onto or out of wheelchair	<5	0
Fall while being carried or supported by other person(s), unspecified	<5	0
Falling, jumping or pushed from a high place, undetermined intent	<5	0
Falling, lying or running before or into moving object, undetermined intent	<5	0
False labour at or after 37 completed weeks of gestation, antepartum condition or complication	9	0
False labour before 37 completed weeks of gestation, antepartum condition or complication	21	0
Family history of alcohol abuse	<5	0
Family history of diabetes mellitus	<5	0
Family history of ischaemic heart disease and other diseases of the circulatory system	35	7
Family history of malignant neoplasm of breast	<5	0
Family history of malignant neoplasm of digestive organs	5	<5
Family history of malignant neoplasm of other genital organs	<5	0
Family history of malignant neoplasm of other organs or systems	<5	0
Family history of malignant neoplasm of ovary	<5	0
Family history of malignant neoplasm of prostate	<5	0
Family history of malignant neoplasm of trachea, bronchus and lung	<5	0
Family history of malignant neoplasm of urinary tract	<5	0
Family history of malignant neoplasm, unspecified	<5	0
Family history of other psychoactive substance abuse	<5	0
Family history of other specified conditions	<5	0
Fasciculation	<5	<5
Fat embolism (traumatic)	<5	0
Fat necrosis of breast	<5	0
Fatigue fracture of vertebra, cervical region	<5	0
Fatigue fracture of vertebra, lumbar region	6	<5
Fatigue fracture of vertebra, lumbosacral region	<5	0
Fatigue fracture of vertebra, multiple sites in spine	<5	0
Fatigue fracture of vertebra, thoracic region	6	0
Fatigue fracture of vertebra, thoracolumbar region	<5	0
Fatty (change of) liver, not elsewhere classified	71	12
Febrile convulsions, unspecified	5	0
Feeding difficulties and mismanagement	13	0
Feeding disorder of infancy and childhood	<5	0
Feeding problem of newborn, unspecified	18	0
Feeling of incomplete bladder emptying	10	<5
Female genital prolapse, unspecified	<5	0
Female genital tract fistula, unspecified	<5	0
Female infertility associated with anovulation	<5	0
Female infertility, unspecified	<5	0
Female pelvic inflammatory disease, unspecified	17	0
Female pelvic peritoneal adhesions	124	<5
Female pelvic peritonitis, unspecified	<5	0
Fentanyl and derivatives causing adverse effect in therapeutic use	9	<5

Fetal acidaemia first noted at birth	11	0
Fetal acidaemia, unspecified when first noted	<5	0
Fetal alcohol syndrome (dysmorphic)	<5	<5
Fetal death of unspecified cause	14	0
Fetal malnutrition without mention of light or small for gestational age	<5	0
Fetus and newborn affected by breech delivery and extraction	7	0
Fetus and newborn affected by caesarean delivery	<5	0
Fetus and newborn affected by chorioamnionitis	<5	0
Fetus and newborn affected by complication of labour and delivery, unspecified	<5	0
Fetus and newborn affected by delivery by vacuum extractor [ventouse]	15	0
Fetus and newborn affected by forceps delivery	21	0
Fetus and newborn affected by malpresentation before labour	<5	0
Fetus and newborn affected by maternal anaesthesia and analgesia in pregnancy, labour and delivery	<5	0
Fetus and newborn affected by multiple pregnancy	<5	0
Fetus and newborn affected by other compression of umbilical cord	21	0
Fetus and newborn affected by other forms of placental separation and haemorrhage	<5	0
Fetus and newborn affected by other malpresentation, malposition and disproportion during labour and delivery	16	0
Fetus and newborn affected by other maternal conditions	<5	0
Fetus and newborn affected by other specified complications of labour and delivery	<5	0
Fetus and newborn affected by placenta praevia	<5	0
Fetus and newborn affected by polyhydramnios	<5	0
Fetus and newborn affected by precipitate delivery	<5	0
Fetus and newborn affected by premature rupture of membranes	<5	0
Fever, unspecified	956	122
Fibromyalgia	19	0
Fibrosclerosis of breast	<5	0
Fibrothorax	<5	0
Fibrous dysplasia (monostotic), other site	<5	0
Fibrous dysplasia (monostotic), pelvic region and thigh	<5	0
Finding of other specified substances, not normally found in blood	<5	<5
Finding of unspecified substance, not normally found in blood	<5	0
First degree haemorrhoids	<5	0
First degree perineal laceration during delivery, delivered, with or without mention of antepartum condition	387	0
First degree perineal laceration during delivery, postpartum condition or complication	<5	0
Fissured, notched and cleft nose	<5	0
Fistula of gallbladder	6	<5
Fistula of intestine	92	18
Fistula of salivary gland	<5	<5
Fistula of stomach and duodenum	8	<5
Fistula of vagina to large intestine	33	<5
Fistula of vagina to small intestine	<5	0
Fitting and adjustment of ileostomy and other intestinal appliances	<5	0
Fitting and adjustment of urinary device	<5	0
Flaccid hemiplegia of dominant side	<5	0
Flaccid hemiplegia of non-dominant side	<5	0
Flaccid hemiplegia of unspecified [unilateral] side	8	<5
Flaccid neuropathic bladder, not elsewhere classified	6	<5
Flaccid paraplegia, incomplete, at thoracic level	<5	0
Flaccid quadriplegia, unspecified, at cervical spine level C5 to C7	<5	0
Flail chest, closed	28	6
Flail joint, lower leg	<5	0
Flat foot [pes planus] (acquired)	<5	0
Flatulence and related conditions	28	<5
Flexion deformity	<5	0
Fluid overload	615	174
Flushing	<5	0
Focal brain injury without open intracranial wound	29	10
Folate deficiency anaemia, unspecified	131	20
Follicular cyst of ovary	25	<5
Follicular cyst of skin and subcutaneous tissue, unspecified	<5	0
Follicular disorder, unspecified	10	<5
Follicular lymphoma grade I	<5	0
Follicular lymphoma grade II	<5	0
Follicular lymphoma grade III, unspecified	5	0
Follicular lymphoma grade IIIa	8	<5
Follicular lymphoma, unspecified	39	5
Follow-up care involving plastic surgery of breast	18	0
Follow-up care involving plastic surgery of head and neck	<5	0
Follow-up care involving plastic surgery of other body part	<5	0
Follow-up care involving plastic surgery of upper extremity	<5	0
Follow-up care involving removal of fracture plate and other internal fixation device	7	0
Follow-up examination after surgery for malignant neoplasm	<5	0
Follow-up examination after surgery for other conditions	5	0
Follow-up examination after treatment of fracture	<5	0
Foodborne Bacillus cereus intoxication	<5	0
Foreign body accidentally left in body cavity or operation wound following a procedure, without ment	<5	0
Foreign body accidentally left in body cavity or operation wound following a procedure, without mention of an	<5	<5
Foreign body entering into or through eye or natural orifice	107	32

Foreign body granuloma of skin and subcutaneous tissue	<5	0
Foreign body granuloma of soft tissue, not elsewhere classified, other site	<5	0
Foreign body in alimentary tract, part unspecified	<5	<5
Foreign body in anus and rectum	5	0
Foreign body in bladder	<5	<5
Foreign body in bronchus	13	9
Foreign body in colon	<5	<5
Foreign body in cornea	<5	0
Foreign body in ear	<5	0
Foreign body in oesophagus	27	<5
Foreign body in other and multiple parts of respiratory tract	13	<5
Foreign body in pharynx	<5	<5
Foreign body in respiratory tract, part unspecified	68	28
Foreign body in small intestine	14	<5
Foreign body in stomach	<5	0
Foreign body in trachea	<5	<5
Foreign body in urethra	<5	0
Foreign body in vulva and vagina	<5	0
Foreign body or object entering through skin	<5	<5
Foreign object accidentally left in body during aspiration, puncture and other catheterization	<5	<5
Foreign object accidentally left in body during other surgical and medical care	<5	0
Foreign object accidentally left in body during removal of catheter or packing	<5	0
Foreign object accidentally left in body during surgical operation	<5	<5
Foreign object accidentally left in body during unspecified surgical and medical care	<5	0
Fournier's gangrene	22	11
Fourth [trochlear] nerve palsy	<5	0
Fourth degree haemorrhoids, complicated	<5	0
Fourth degree haemorrhoids, uncomplicated	9	<5
Fourth degree perineal laceration during delivery, delivered, with or without mention of antepartum condition	<5	0
Fracture of unspecified thoracic vertebra, closed	<5	<5
Fracture of acetabulum, closed	85	11
Fracture of acromial end of clavicle, closed	15	<5
Fracture of acromial end of clavicle, open	<5	0
Fracture of acromial process of scapula, closed	<5	<5
Fracture of alveolus, closed	<5	<5
Fracture of anatomical neck of humerus, closed	15	0
Fracture of ankle NOS, closed	22	<5
Fracture of base of femoral neck (cervicotrochanteric) closed	24	<5
Fracture of base of first metacarpal bone, closed	<5	0
Fracture of base of other metacarpal bone, closed	9	<5
Fracture of base of skull, closed	55	26
Fracture of base of skull, open	<5	<5
Fracture of bone following insertion of joint prosthesis	95	<5
Fracture of bone following insertion of other and unspecified orthopaedic implant	21	<5
Fracture of bone in neoplastic disease	132	<5
Fracture of C3 - C4 vertebra, closed	9	<5
Fracture of C5 - C7 vertebra, closed	53	18
Fracture of calcaneus, closed	33	<5
Fracture of calcaneus, open	<5	0
Fracture of capitate bone, open	<5	0
Fracture of clavicle due to birth injury	<5	0
Fracture of coccyx, closed	<5	<5
Fracture of coracoid process of scapula, closed	<5	<5
Fracture of coronoid process of ulna, closed	<5	0
Fracture of cuboid bone, closed	5	<5
Fracture of distal phalanx, closed	<5	0
Fracture of femur, part unspecified, closed	35	<5
Fracture of femur, part unspecified, open	<5	<5
Fracture of fibula alone, closed	37	<5
Fracture of first cervical vertebra, closed	17	<5
Fracture of foot, unspecified, closed	<5	0
Fracture of forearm, part unspecified, closed	<5	0
Fracture of glenoid cavity and neck of scapula, closed	9	<5
Fracture of great toe, closed	9	<5
Fracture of great toe, open	<5	0
Fracture of greater tuberosity of humerus, closed	25	<5
Fracture of greater tuberosity of humerus, open	<5	0
Fracture of hamate bone, closed	<5	0
Fracture of hard palate, closed	<5	0
Fracture of head of radius, closed	8	0
Fracture of head of radius, open	<5	0
Fracture of ilium, closed	13	<5
Fracture of ilium, open	<5	0
Fracture of lateral condyle of humerus, closed	<5	0
Fracture of lateral malleolus, closed	36	<5
Fracture of lateral malleolus, open	<5	0
Fracture of lower (distal) end of tibia with or without fibula, closed	58	<5
Fracture of lower (distal) end of tibia with or without fibula, open	14	<5

Fracture of lower end of both ulna and radius, closed	15	<5
Fracture of lower end of both ulna and radius, open	5	0
Fracture of lower limb, level unspecified, closed	<5	0
Fracture of lumbar vertebra, L1 level, closed	71	7
Fracture of lumbar vertebra, L2 level, closed	31	<5
Fracture of lumbar vertebra, L3 level, closed	19	6
Fracture of lumbar vertebra, L4 level, closed	15	0
Fracture of lumbar vertebra, L5 level, closed	10	<5
Fracture of lumbar vertebra, unspecified level, closed	<5	<5
Fracture of lumbar vertebra, unspecified level, open	<5	0
Fracture of lunate bone, closed	<5	0
Fracture of malar and maxillary bones, LeFort 1, closed	6	<5
Fracture of malar and maxillary bones, combined LeFort 1 with LeFort 2 (contralateral fractures), cl	<5	<5
Fracture of malar and maxillary bones, LeFort 2, closed	5	<5
Fracture of malar and maxillary bones, LeFort 3, unilateral, closed	<5	<5
Fracture of mandible, closed	20	<5
Fracture of mandible, open	<5	<5
Fracture of medial condyle of humerus, closed	<5	0
Fracture of medial malleolus, closed	35	<5
Fracture of medial malleolus, open	5	<5
Fracture of metatarsal bone(s), closed	32	7
Fracture of metatarsal bone(s), open	5	0
Fracture of middle or proximal phalanx of finger, closed	9	<5
Fracture of middle or proximal phalanx of finger, open	<5	0
Fracture of nasal bones, closed	63	16
Fracture of nasal bones, open	<5	<5
Fracture of navicular [scaphoid] bone of hand, closed	5	<5
Fracture of navicular [scaphoid] bone of hand, open	<5	0
Fracture of navicular bone, closed	<5	<5
Fracture of navicular bone, open	<5	0
Fracture of olecranon process of ulna, closed	29	<5
Fracture of olecranon process of ulna, open	<5	0
Fracture of orbital floor, closed	44	10
Fracture of other and unspecified parts of lumbar spine and pelvis, closed	31	6
Fracture of other and unspecified parts of lumbar spine and pelvis, open	<5	<5
Fracture of other and unspecified parts of wrist and hand, closed	10	<5
Fracture of other and unspecified skull and facial bones NEC, closed	29	13
Fracture of other part of lower end of humerus, closed	30	<5
Fracture of other part of scapula, closed	8	<5
Fracture of other part of upper end of humerus, closed	24	<5
Fracture of other part of upper end of humerus, open	<5	0
Fracture of other parts of bony thorax, closed	<5	<5
Fracture of other parts of forearm, closed	14	<5
Fracture of other parts of forearm, open	<5	0
Fracture of other parts of neck, closed	<5	<5
Fracture of other parts of shoulder and upper arm, closed	<5	0
Fracture of other toe, closed	7	<5
Fracture of other toe, open	<5	0
Fracture of patella, closed	62	6
Fracture of patella, open	<5	0
Fracture of proximal phalanx, open	<5	0
Fracture of pubis, closed	205	15
Fracture of radius with ulna, upper end, closed	<5	0
Fracture of radius with ulna, upper end, open	<5	0
Fracture of ramus, closed	5	0
Fracture of rib, closed	69	9
Fracture of rib, open	<5	0
Fracture of sacrum, closed	64	8
Fracture of sacrum, open	<5	0
Fracture of second cervical vertebra, closed	25	<5
Fracture of shaft of clavicle, closed	17	<5
Fracture of shaft of femur, closed	55	9
Fracture of shaft of femur, open	<5	<5
Fracture of shaft of humerus, closed	23	<5
Fracture of shaft of humerus, open	<5	0
Fracture of shaft of other metacarpal bone, closed	<5	0
Fracture of shaft of other metacarpal bone, open	<5	0
Fracture of shaft of radius, closed	7	<5
Fracture of shaft of tibia with or without fibula, closed	15	0
Fracture of shaft of tibia with or without fibula, open	9	<5
Fracture of shaft of ulna, closed	5	0
Fracture of shaft of ulna, open	<5	0
Fracture of shafts of both ulna and radius, closed	6	0
Fracture of shoulder girdle, part unspecified, closed	5	0
Fracture of skull and facial bones, part unspecified, closed	<5	<5
Fracture of spine, level unspecified, closed	<5	<5
Fracture of spine, level unspecified, open	<5	0
Fracture of sternal end of clavicle, closed	<5	0

Fracture of sternum, closed	53	13
Fracture of sternum, open	<5	0
Fracture of surgical neck of humerus, closed	51	<5
Fracture of talus, closed	12	<5
Fracture of talus, open	<5	0
Fracture of temporomandibular joint, closed	<5	0
Fracture of thoracic vertebra T1 - T6, closed	46	13
Fracture of thoracic vertebra T7- T12, closed	89	10
Fracture of thoracic vertebra T7- T12, open	<5	0
Fracture of tooth	11	<5
Fracture of trapezium bone, closed	<5	0
Fracture of trapezoid bone, closed	<5	0
Fracture of triquetral bone, closed	<5	0
Fracture of unspecified condyle of humerus, closed	<5	0
Fracture of unspecified part of clavicle, closed	39	11
Fracture of unspecified part of humerus, closed	12	5
Fracture of unspecified part of lower end of humerus, closed	<5	0
Fracture of unspecified part of phalanx of finger, closed	<5	0
Fracture of unspecified part of scapula, closed	32	8
Fracture of unspecified part of upper end of humerus, closed	85	<5
Fracture of unspecified part of upper end of humerus, open	<5	0
Fracture of unspecified site of other metacarpal bone, closed	10	<5
Fracture of unspecified site of other metacarpal bone, open	<5	0
Fracture of unspecified tarsal bone, closed	5	0
Fracture of upper (proximal) end of tibia with or without fibula, closed	117	9
Fracture of upper (proximal) end of tibia with or without fibula, open	<5	<5
Fracture of upper femoral epiphysis (separation), closed	<5	0
Fracture of vault of skull, closed	16	10
Fracture of vault of skull, open	<5	<5
Fractures involving multiple regions of both lower limbs, closed	<5	0
Fractures involving multiple regions of both upper limbs, closed	<5	<5
Fractures involving multiple regions of both upper limbs, open	<5	0
Fractures involving other combinations of body regions, closed	<5	0
Fractures of other parts of femur, closed	17	<5
Frontal lobe dementia	19	0
Frostbite with tissue necrosis of ankle and foot	<5	0
Functional diarrhoea	<5	0
Functional dyspepsia	12	<5
Galactorrhoea, unspecified as to episode of care, or not applicable	<5	0
Gallbladder laceration without bile duct injury with open wound into cavity	<5	0
Gallbladder laceration without bile duct injury without open wound into cavity	<5	0
Gallstone ileus	<5	0
Gambling and betting	<5	0
Gammaherpesviral mononucleosis	<5	<5
Gangrene and necrosis of lung	10	<5
Gangrene, not elsewhere classified	66	14
Gas gangrene	9	<5
Gastric diverticulum	<5	0
Gastric ulcer, acute with both haemorrhage and perforation	<5	0
Gastric ulcer, acute with haemorrhage	27	5
Gastric ulcer, acute with perforation	6	<5
Gastric ulcer, acute without haemorrhage or perforation	9	<5
Gastric ulcer, chronic or unspecified with both haemorrhage and perforation	<5	<5
Gastric ulcer, chronic or unspecified with haemorrhage	91	21
Gastric ulcer, chronic or unspecified with perforation	7	<5
Gastric ulcer, chronic without haemorrhage or perforation	<5	<5
Gastric ulcer, unspecified as acute or chronic, without haemorrhage or perforation	60	10
Gastric varices	11	<5
Gastritis, unspecified	116	10
Gastroduodenitis, unspecified	<5	0
Gastroenteritis and colitis due to radiation	7	0
Gastroenteritis and colitis of unspecified origin	922	114
Gastroenterology and urology devices associated with adverse incidents, miscellaneous devices, not elsewhere	<5	<5
Gastroenterology and urology devices associated with adverse incidents, prosthetic and other implant	8	<5
Gastroenterology and urology devices associated with adverse incidents, prosthetic and other implants, materi	17	<5
Gastroenterology and urology devices associated with adverse incidents, surgical instruments, materi	<5	0
Gastroenterology and urology devices associated with adverse incidents, surgical instruments, materials and d	<5	0
Gastroenterology and urology devices associated with adverse incidents, therapeutic (nonsurgical) and rehabil	<5	<5
Gastrointestinal haemorrhage, unspecified	397	71
Gastrojejunal ulcer, acute with haemorrhage	<5	0
Gastrojejunal ulcer, acute with perforation	<5	0
Gastrojejunal ulcer, chronic or unspecified with both haemorrhage and perforation	<5	<5
Gastrojejunal ulcer, chronic or unspecified with haemorrhage	<5	0
Gastrojejunal ulcer, unspecified as acute or chronic, without haemorrhage or perforation	<5	0
Gastro-oesophageal laceration-haemorrhage syndrome	30	7
Gastro-oesophageal reflux disease with oesophagitis	27	<5
Gastro-oesophageal reflux disease without oesophagitis	193	20
Gastrostomy malfunction, not elsewhere classified	<5	<5

Gastrostomy status	<5	0
Gender identity disorder, unspecified	<5	0
General- and plastic-surgery devices associated with adverse incidents, prosthetic and other implant	<5	0
General- and plastic-surgery devices associated with adverse incidents, prosthetic and other implants, materi	<5	0
General- and plastic-surgery devices associated with adverse incidents, surgical instruments, materi	<5	0
General- and plastic-surgery devices associated with adverse incidents, surgical instruments, materials and d	<5	0
General hospital and personal-use devices associated with adverse incidents, prosthetic and other im	<5	<5
General psychiatric examination, not elsewhere classified	<5	0
General psychiatric examination, requested by authority	99	0
Generalized and unspecified atherosclerosis	<5	<5
Generalized anxiety disorder	103	<5
Generalized enlarged lymph nodes	25	<5
Generalized hyperhidrosis	<5	0
Generalized idiopathic epilepsy and epileptic syndromes, not stated as intractable	13	<5
Generalized oedema	162	35
Generalized skin eruption due to drugs and medicaments	86	15
Genetic anomalies of leukocytes	<5	0
Genital tract and pelvic infection following medical abortion	<5	0
Gestational [pregnancy-induced] hypertension, antepartum condition or complication	17	0
Gestational [pregnancy-induced] hypertension, delivered, with mention of postpartum complication	<5	0
Gestational [pregnancy-induced] hypertension, delivered, with or without mention of antepartum condition	112	0
Gestational oedema with proteinuria, delivered, with or without mention of antepartum condition	<5	0
Gestational oedema, delivered, with mention of postpartum complication	<5	<5
Gestational proteinuria, antepartum condition or complication	<5	0
Gestational proteinuria, delivered, with or without mention of antepartum condition	<5	0
Giant cell arteritis with polymyalgia rheumatica	<5	0
Giant cell granuloma, central	<5	0
Giardiasis [lambliasis]	<5	0
Gilbert's syndrome	<5	<5
Gingival enlargement	<5	0
Glaucoma in endocrine, nutritional and metabolic diseases	15	0
Glaucoma secondary to other eye disorders	<5	0
Glaucoma suspect	8	<5
Glaucoma, unspecified	15	<5
Glomerular disorders in blood diseases and disorders involving the immune mechanism	<5	0
Glomerular disorders in diabetes mellitus, chronic kidney disease, stage 1	6	<5
Glomerular disorders in diabetes mellitus, chronic kidney disease, stage 3	13	<5
Glomerular disorders in diabetes mellitus, chronic kidney disease, stage 4	26	7
Glomerular disorders in diabetes mellitus, chronic kidney disease, stage 5	517	107
Glomerular disorders in other diseases classified elsewhere	<5	0
Glomerular disorders in other endocrine, nutritional and metabolic diseases	<5	0
Glomerular disorders in systemic connective tissue disorders	15	5
Glossitis	7	<5
Glossodynia	<5	0
Glucocorticoids and synthetic analogues causing adverse effect in therapeutic use	81	13
Glycogen storage disease	<5	<5
Gonarthrosis, unspecified	647	5
Gonococcal infection, unspecified	<5	0
Gout due to impairment of renal function, ankle and foot	<5	0
Gout due to impairment of renal function, forearm	<5	0
Gout, unspecified, ankle and foot	85	6
Gout, unspecified, forearm	15	<5
Gout, unspecified, hand	11	0
Gout, unspecified, lower leg	47	<5
Gout, unspecified, multiple sites	21	<5
Gout, unspecified, other site	<5	0
Gout, unspecified, pelvic region and thigh	<5	0
Gout, unspecified, shoulder region	<5	0
Gout, unspecified, unspecified site	32	8
Gout, unspecified, upper arm	<5	0
Graft-versus-host reaction or disease	12	<5
Grand mal seizures, unspecified (with or without petit mal), intractable	7	<5
Grand mal seizures, unspecified (with or without petit mal), not stated as intractable	90	24
Grand mal status epilepticus	10	7
Granulomatous disorder of skin and subcutaneous tissue, unspecified	<5	0
Granulomatous hepatitis, not elsewhere classified	<5	<5
Granulomatous prostatitis	<5	0
Gross hematuria	422	41
Guillain-Barré syndrome	20	6
Guttate psoriasis	<5	0
Habit and impulse disorder, unspecified	<5	0
Haemangioma of digestive system	<5	0
Haemangioma of ear, nose, mouth and throat	<5	0
Haemangioma of hepatobiliary system	8	<5
Haemangioma of intracranial structures	<5	0
Haemangioma of other sites	8	<5
Haemangioma of subcutaneous tissue	<5	0
Haemangioma, unspecified site	<5	0

Haemarthrosis, lower leg	11	0
Haemarthrosis, shoulder region	<5	0
Haematemesis	185	38
Haematocolpos	<5	0
Haematoma NOS, laceration NOS, injury to spleen NOS with open wound into cavity	<5	<5
Haematoma NOS, laceration NOS, injury to spleen NOS without open wound into cavity	20	9
Haematoma of bladder, without open wound into cavity	<5	0
Haematoma of kidney, without open wound into cavity	<5	0
Haematoma of obstetric wound, delivered, with mention of postpartum complication	11	0
Haematoma of other intra-abdominal organs with open wound into cavity	<5	<5
Haematoma of other intra-abdominal organs without open wound into cavity	11	5
Haematoma of other pelvic organs, without open wound into cavity	<5	0
Haematoma of pancreas with pancreatic duct injury or laceration (without pancreatic duct injury) wit	<5	<5
Haematoma of small intestine, excluding duodenum with open wound into cavity	<5	0
Haematoma of small intestine, excluding duodenum without open wound into cavity	<5	<5
Haematoma of unspecified pelvic organ, without open wound into cavity	<5	0
Haematoma of urethra, without open wound into cavity	<5	0
Haematometra	<5	0
Haematosalpinx	6	0
Haemochromatosis	24	5
Haemolytic-uraemic syndrome	<5	<5
Haemopericardium as current complication following acute myocardial infarction	<5	<5
Haemopericardium, not elsewhere classified	<5	<5
Haemoperitoneum	27	9
Haemophagocytic lymphohistiocytosis	7	<5
Haemophilic arthropathy	<5	0
Haemophilus influenzae [H. influenzae] as the cause of diseases classified to other chapters	7	<5
Haemophilus influenzae infection, unspecified site	<5	0
Haemoptysis	112	26
Haemorrhage and haematoma complicating a procedure, not elsewhere classified	575	142
Haemorrhage from colostomy stoma	<5	<5
Haemorrhage from enterostomy stoma	<5	0
Haemorrhage from other sites in respiratory passages	18	13
Haemorrhage from tracheostomy stoma	5	<5
Haemorrhage of anus and rectum	199	21
Haemorrhage, not elsewhere classified	49	26
Haemorrhagic disorder due to circulating anticoagulants	31	10
Haemorrhoids in pregnancy, antepartum condition or complication	<5	0
Haemorrhoids in pregnancy, delivered, with or without mention of antepartum condition	<5	0
Haemorrhoids, unspecified	74	7
Haemothorax	37	9
Hairy-cell leukaemia	<5	0
Halitosis	<5	0
Hallucinations, unspecified	78	18
Hallux rigidus	<5	0
Hallux valgus (acquired)	<5	0
Headache	225	33
Health supervision and care of other healthy infant and child	6	0
Healthy person accompanying sick person	6	0
Hearing loss, unspecified	12	0
Heart disease, unspecified	<5	<5
Heart failure, unspecified	183	52
Heart transplant candidate	<5	<5
Heart transplant failure	<5	0
Heart transplant status	6	0
Heartburn	27	<5
Heat exhaustion, unspecified	<5	0
Hebephrenic schizophrenia	<5	0
Helicobacter pylori [H. pylori] as the cause of diseases classified to other chapters	62	6
HELLP syndrome, antepartum condition or complication	<5	0
HELLP syndrome, delivered, with or without mention of antepartum condition	5	0
Hemiplegia of unspecified type of dominant side	52	9
Hemiplegia of unspecified type of non-dominant side	65	12
Hemiplegia of unspecified type of unspecified [unilateral] side	366	45
Hepatic failure, unspecified	245	43
Hepatic fibrosis	6	<5
Hepatic veno-occlusive disease	<5	<5
Hepatitis A without hepatic coma	<5	0
Hepatomegaly with splenomegaly, not elsewhere classified	12	0
Hepatomegaly, not elsewhere classified	<5	0
Hepatorenal syndrome	50	16
Hereditary ataxia, unspecified	7	0
Hereditary deficiency of other clotting factors	<5	0
Hereditary factor IX deficiency	<5	0
Hereditary factor VIII deficiency	5	0
Hereditary factor XI deficiency	<5	0
Hereditary haemolytic anaemia, unspecified	<5	0
Hereditary haemorrhagic telangiectasia	<5	0

Hereditary lymphoedema	<5	0
Hereditary motor and sensory neuropathy	9	<5
Hereditary retinal dystrophy	<5	0
Hereditary spastic paraplegia	<5	<5
Herpes gestationis, delivered, with or without mention of antepartum condition	<5	0
Herpesviral encephalitis	7	<5
Herpesviral gingivostomatitis and pharyngotonsillitis	5	0
Herpesviral infection of genitalia and urogenital tract	7	0
Herpesviral infection, unspecified	21	5
Herpesviral keratitis and keratoconjunctivitis	<5	0
Herpesviral meningitis	<5	<5
Herpesviral ocular disease	<5	0
Herpesviral vesicular dermatitis	19	<5
Hesitancy of micturition	<5	0
Heterophoria	<5	<5
Hiccough	22	0
Hidradenitis suppurativa	16	0
Hilar vascular laceration resulting in completely shattered spleen (Grade V) with open wound into ca	<5	<5
Hilar vascular laceration resulting in completely shattered spleen (Grade V) without open wound into	<5	<5
Hirschsprung's disease	<5	0
Hirsutism	<5	<5
Histamine H2-receptor antagonists causing adverse effect in therapeutic use	<5	0
Histiocytic and mast cell tumours of uncertain and unknown behaviour	<5	0
Hit, struck, kicked, twisted, bitten or scratched by another person	8	0
Hodgkin lymphoma, unspecified	19	<5
Holiday relief care	48	0
Holoprosencephaly	<5	0
Homelessness	395	17
Hordeolum and other deep inflammation of eyelid	5	0
Horner's syndrome	<5	<5
Hostility	<5	0
Hourglass stricture and stenosis of stomach	<5	0
Human immunodeficiency virus [HIV] disease	22	<5
Huntington's disease	8	0
Hydantoin derivatives causing adverse effect in therapeutic use	8	<5
Hydrocele, unspecified	11	<5
Hydrocephalus in neoplastic disease	<5	<5
Hydrocephalus, unspecified	23	6
Hydromorphone causing adverse effect in therapeutic use	51	7
Hydronephrosis with renal and ureteral calculous obstruction	139	6
Hydronephrosis with ureteral stricture, not elsewhere classified	60	0
Hydronephrosis with ureteropelvic junction obstruction	23	<5
Hydrops of gallbladder	5	0
Hydroureter	8	<5
Hydroxyapatite deposition disease, pelvic region and thigh	<5	0
Hyperaldosteronism, unspecified	6	0
Hyperemesis gravidarum with metabolic disturbance, antepartum condition or complication	15	0
Hyperemesis gravidarum with metabolic disturbance, unspecified as to episode of care, or not applicable	<5	0
Hypergammaglobulinaemia, unspecified	<5	0
Hyperglycaemia, unspecified	36	9
Hyperhidrosis, unspecified	<5	0
Hyperimmunoglobulin E [IgE] syndrome	<5	0
Hyperkalaemia	721	189
Hyperlipidaemia, unspecified	110	29
Hyperosmolality and hypernatraemia	347	110
Hyperparathyroidism, unspecified	29	0
Hyperplasia of appendix	<5	0
Hyperplasia of prostate	526	20
Hyperprolactinaemia	<5	0
Hypersensitivity angiitis	<5	<5
Hypersensitivity pneumonitis due to other organic dusts	<5	0
Hypersensitivity pneumonitis due to unspecified organic dust	6	<5
Hypersplenism	<5	0
Hyperstimulation of ovaries	<5	0
Hypertension secondary to endocrine disorders, benign or unspecified	<5	0
Hypertensive encephalopathy	26	13
Hypertensive heart and renal disease	60	12
Hypertensive heart disease	15	6
Hypertensive renal disease	34	7
Hypertonic, incoordinate, and prolonged uterine contractions, delivered, with or without mention of antepartu	47	0
Hypertrophic scar	<5	0
Hypertrophy of breast	52	0
Hypertrophy of kidney	<5	0
Hypertrophy of nasal turbinates	6	0
Hypertrophy of tonsils	10	0
Hypertrophy of tonsils with hypertrophy of adenoids	7	0
Hypertrophy of uterus	6	0
Hyperuricaemia without signs of inflammatory arthritis and tophaceous disease	<5	0

Hyperventilation	5	0
Hypochondriacal disorder	<5	0
Hypoglycaemia, unspecified	81	28
Hypokalaemia	1784	220
Hypokalaemia of newborn	<5	0
Hypomania	8	0
Hyponatraemia of newborn	5	0
Hypo-osmolality and hyponatraemia	1174	148
Hypoparathyroidism, unspecified	<5	0
Hypopituitarism	6	<5
Hypoplasia and dysplasia of lung	<5	<5
Hypoplastic right heart syndrome	<5	<5
Hypospadias, balanic	<5	0
Hypospadias, penile	<5	0
Hypospadias, unspecified	<5	0
Hyposplenism	<5	0
Hypotension due to drugs	91	29
Hypotension, unspecified	1732	658
Hypothalamic dysfunction, not elsewhere classified	<5	<5
Hypothermia	17	7
Hypothermia of newborn, unspecified	14	0
Hypothermia, not associated with low environmental temperature	20	8
Hypothyroidism, unspecified	231	35
Hypovolaemic shock	49	39
Ice hockey	<5	0
Ice skating	<5	0
Idiopathic acute pancreatitis	20	<5
Idiopathic aplastic anaemia	<5	0
Idiopathic aseptic necrosis of bone, pelvic region and thigh	6	0
Idiopathic aseptic necrosis of bone, shoulder region	<5	0
Idiopathic gout, ankle and foot	10	<5
Idiopathic gout, hand	<5	<5
Idiopathic gout, lower leg	<5	0
Idiopathic gout, multiple sites	9	<5
Idiopathic gout, upper arm	<5	0
Idiopathic hypotension	<5	0
Idiopathic peripheral autonomic neuropathy	<5	0
Ileostomy status	31	<5
Ileus, unspecified	314	66
Imbalance of constituents of food intake	<5	0
Iminostilbenes causing adverse effect in therapeutic use	<5	0
Immobility	69	8
Immune reconstitution syndrome	<5	<5
Immunodeficiency, unspecified	<5	0
Immunoglobulin causing adverse effect in therapeutic use	7	<5
Immunosuppressive agents causing adverse effect in therapeutic use	19	<5
Impacted cerumen	49	<5
Impacted teeth	36	0
Imperforate hymen	<5	0
Impetigo [any organism] [any site]	5	<5
Impingement syndrome of shoulder	12	0
Inadequate family support	<5	0
Inadequate housing	37	<5
Inadequate parental supervision and control	<5	0
Inadvertent exposure of patient to radiation during medical care	<5	0
Inappropriate temperature in local application and packing	<5	<5
Incisional hernia with gangrene	<5	0
Incisional hernia with obstruction, without gangrene	69	6
Incisional hernia without obstruction or gangrene	178	19
Incomplete uterovaginal prolapse	42	0
Indeterminate sex, unspecified	<5	0
Infarction of liver	6	<5
Infarction of spleen	44	11
Infected hydrocele	<5	0
Infection and inflammatory reaction due to ankle and tarsal prosthesis	6	0
Infection and inflammatory reaction due to cardiac valve prosthesis	26	7
Infection and inflammatory reaction due to elbow prosthesis	<5	0
Infection and inflammatory reaction due to hip prosthesis	79	5
Infection and inflammatory reaction due to internal fixation device of bones at other site	6	<5
Infection and inflammatory reaction due to internal fixation device of bones of foot	6	0
Infection and inflammatory reaction due to internal fixation device of femur	15	<5
Infection and inflammatory reaction due to internal fixation device of radius and ulna	<5	<5
Infection and inflammatory reaction due to internal fixation device of tibia and fibula	13	0
Infection and inflammatory reaction due to knee prosthesis	63	<5
Infection and inflammatory reaction due to other and unspecified cardiac and vascular devices, impla	88	19
Infection and inflammatory reaction due to other and unspecified cardiac and vascular devices, implants and g	48	7
Infection and inflammatory reaction due to other internal orthopaedic prosthetic devices, implants a	7	<5
Infection and inflammatory reaction due to other internal orthopaedic prosthetic devices, implants and grafts	9	0

Infection and inflammatory reaction due to other internal prosthetic devices, implants and grafts	87	13
Infection and inflammatory reaction due to other joint prosthesis	<5	0
Infection and inflammatory reaction due to prosthetic device, implant and graft in genital tract	5	0
Infection and inflammatory reaction due to prosthetic device, implant and graft in urinary system	91	13
Infection and inflammatory reaction due to shoulder prosthesis	<5	0
Infection and inflammatory reaction due to unspecified joint prosthesis	<5	0
Infection following a procedure, not elsewhere classified	817	164
Infection of above knee amputation stump	5	<5
Infection of amniotic sac and membranes, third trimester, delivered, with or without mention of antepartum co	22	0
Infection of below knee amputation stump	18	5
Infection of colostomy stoma	<5	<5
Infection of enterostomy stoma	<5	<5
Infection of external stoma of urinary tract	<5	0
Infection of gastrostomy stoma	<5	0
Infection of intervertebral disc (pyogenic), cervical region	<5	0
Infection of intervertebral disc (pyogenic), cervicothoracic region	<5	0
Infection of intervertebral disc (pyogenic), lumbar region	<5	0
Infection of obstetric surgical wound, postpartum condition or complication	<5	0
Infection of other amputation stump	20	0
Infection of other reattached body part	<5	0
Infection of tracheostomy stoma	<5	0
Infection specific to the perinatal period, unspecified	<5	0
Infections following infusion, transfusion and therapeutic injection	29	6
Infections of kidney in pregnancy, antepartum condition or complication	14	0
Infections of kidney in pregnancy, delivered, with or without mention of antepartum condition	<5	0
Infections of other parts of urinary tract in pregnancy, antepartum condition or complication	<5	0
Infections of the genital tract in pregnancy, delivered, with or without mention of antepartum condition	<5	0
Infectious mononucleosis, unspecified	5	<5
Infective dermatitis	<5	0
Infective myocarditis	15	<5
Infective myositis, other	<5	0
Infective myositis, pelvic region and thigh	26	<5
Infective myositis, unspecified site	<5	0
Infective pericarditis	11	5
Inferior dislocation of humerus, closed	<5	0
Inflammatory conditions of jaws	9	<5
Inflammatory disease of cervix uteri	82	<5
Inflammatory disease of prostate, unspecified	12	0
Inflammatory disease of uterus, unspecified	5	<5
Inflammatory disorders of breast	21	0
Inflammatory disorders of other specified male genital organs	<5	0
Inflammatory disorders of scrotum	33	8
Inflammatory liver disease, unspecified	27	5
Inflammatory myopathy, not elsewhere classified	6	0
Inflammatory polyarthropathy	5	<5
Inflammatory polyps	5	0
Inflammatory spondylopathy, unspecified, cervical region	<5	0
Inflammatory spondylopathy, unspecified, cervicothoracic region	<5	<5
Inflammatory spondylopathy, unspecified, lumbar region	<5	0
Influenza with other respiratory manifestations, virus not identified	<5	<5
Ingrowing nail	8	<5
Inhalation and ingestion of food causing obstruction of respiratory tract	161	29
Inhalation and ingestion of other objects causing obstruction of respiratory tract	574	179
Inhalation of gastric contents	125	39
Inhaled anaesthetics causing adverse effect in therapeutic use	<5	<5
Injuries of muscles and tendons involving multiple body regions	<5	0
Injury NOS of small intestine with open wound into cavity	<5	<5
Injury NOS of small intestine without open wound into cavity	<5	0
Injury NOS of unspecified pelvic organ, without open wound into cavity	<5	0
Injury NOS of colon with open wound into cavity	<5	0
Injury NOS of colon without open wound into cavity	<5	<5
Injury NOS of other intra-abdominal organs with open wound into cavity	<5	0
Injury NOS of other intra-abdominal organs without open wound into cavity	5	5
Injury NOS of other pelvic organs, with open wound into cavity	<5	0
Injury NOS of rectum with open wound into cavity	<5	0
Injury NOS of unspecified intra-abdominal organ, without open wound into cavity	<5	0
Injury NOS of ureter, without open wound into cavity	<5	0
Injury NOS of urethra, without open wound into cavity	5	0
Injury of (anterior)(posterior) tibial artery	<5	0
Injury of abdominal aorta	<5	0
Injury of blood vessel(s) of other finger	<5	0
Injury of blood vessels of head, not elsewhere classified	<5	<5
Injury of brachial artery	<5	0
Injury of carotid artery	<5	<5
Injury of coeliac or mesenteric artery	10	<5
Injury of conjunctiva and corneal abrasion without mention of foreign body	16	<5
Injury of external jugular vein	<5	<5
Injury of eye and orbit, unspecified	<5	0

Injury of femoral artery	<5	<5
Injury of femoral vein at hip and thigh level	<5	<5
Injury of greater saphenous vein at lower leg level	<5	<5
Injury of heart with haemopericardium, with open wound into thoracic cavity	<5	0
Injury of heart with haemopericardium, without open wound into thoracic cavity	<5	<5
Injury of iliac blood vessels	8	<5
Injury of inferior vena cava	7	<5
Injury of innominate or subclavian artery	<5	<5
Injury of innominate or subclavian vein	<5	<5
Injury of intercostal blood vessels	<5	0
Injury of internal jugular vein	<5	0
Injury of intra-abdominal organ(s) with pelvic organ(s)	<5	<5
Injury of kidney NOS without open wound into cavity	<5	0
Injury of multiple blood vessels at shoulder and upper arm level	<5	0
Injury of multiple blood vessels at wrist and hand level	<5	0
Injury of other blood vessels at abdomen, lower back and pelvis level	9	0
Injury of other blood vessels at ankle and foot level	<5	0
Injury of other blood vessels at lower leg level	<5	0
Injury of other blood vessels at shoulder and upper arm level	<5	0
Injury of other blood vessels of thorax	<5	<5
Injury of popliteal artery	<5	<5
Injury of popliteal vein	<5	<5
Injury of portal or splenic vein	<5	<5
Injury of pulmonary blood vessels	5	<5
Injury of radial artery at wrist and hand level	<5	0
Injury of renal blood vessels	<5	<5
Injury of superficial vein at shoulder and upper arm level	<5	0
Injury of superior vena cava	<5	0
Injury of thoracic aorta	8	5
Injury of ulnar artery at forearm level	<5	0
Injury of ulnar artery at wrist and hand level	<5	0
Injury of unspecified blood vessel at abdomen, lower back and pelvis level	<5	<5
Injury of unspecified blood vessel at wrist and hand level	<5	0
Injury of unspecified nerve of lower limb, level unspecified	<5	0
Injury of unspecified nerve of upper limb, level unspecified	<5	0
Injury of vertebral artery	<5	<5
Injury to gallbladder NOS with open wound into cavity	<5	<5
Injury to multiple structures of knee	<5	0
Injury, unspecified	5	<5
Insertion of (intrauterine) contraceptive device	<5	0
Insufficient intake of food and water	<5	0
Insufficient social insurance and welfare support	<5	0
Insulin and oral hypoglycaemic [antidiabetic] drugs causing adverse effect in therapeutic use	25	8
Intentional production or feigning of symptoms or disabilities, either physical or psychological [factitious	<5	<5
Intentional self-harm by crashing of motor vehicle	<5	0
Intentional self-harm by drowning and submersion	<5	0
Intentional self-harm by hanging, strangulation and suffocation	10	6
Intentional self-harm by jumping from a high place	5	<5
Intentional self-harm by rifle, shotgun and larger firearm discharge	<5	0
Intentional self-harm by sharp object	26	<5
Intentional self-harm by unspecified means	<5	<5
Intentional self-poisoning by and exposure to alcohol	25	9
Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and	49	15
Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotr	92	30
Intentional self-poisoning by and exposure to carbon monoxide from combustion engine exhaust	<5	0
Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not el	9	7
Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere c	15	8
Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics	52	13
Intentional self-poisoning by and exposure to organic solvents and halogenated hydrocarbons and thei	<5	<5
Intentional self-poisoning by and exposure to other and unspecified chemicals and noxious substances	16	9
Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biologica	22	10
Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substan	23	15
Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system	13	8
Intentional self-poisoning by carbon monoxide from unspecified sources	<5	0
Internuclear ophthalmoplegia	<5	0
Interstitial cystitis (chronic)	17	<5
Interstitial emphysema	18	9
Interstitial pulmonary disease, unspecified	96	8
Intertrochanteric fracture, closed	502	21
Intertrochanteric fracture, open	<5	<5
Intestinal adhesions [bands] with obstruction	254	27
Intestinal bypass and anastomosis status	7	<5
Intestinal malabsorption, unspecified	<5	0
Intra-abdominal and pelvic swelling, mass and lump	53	<5
Intracardiac thrombosis, not elsewhere classified	43	11
Intracerebral haemorrhage in brain stem	<5	0
Intracerebral haemorrhage in cerebellum	16	<5
Intracerebral haemorrhage in hemisphere, cortical	67	11

Intracerebral haemorrhage in hemisphere, subcortical	36	7
Intracerebral haemorrhage in hemisphere, unspecified	8	<5
Intracerebral haemorrhage, intraventricular	16	<5
Intracerebral haemorrhage, multiple localized	7	<5
Intracerebral haemorrhage, unspecified	42	7
Intracranial abscess and granuloma	20	<5
Intracranial and intraspinal abscess and granuloma in diseases classified elsewhere	<5	0
Intracranial and intraspinal phlebitis and thrombophlebitis	8	<5
Intracranial haemorrhage (nontraumatic), unspecified	16	<5
Intracranial injury, unspecified	16	<5
Intracranial space-occupying lesion	<5	0
Intraductal carcinoma in situ of left breast	<5	0
Intraductal carcinoma in situ of right breast	<5	0
Intrahepatic bile duct carcinoma	72	5
Intramural leiomyoma of uterus	22	0
Intrapartum fetal acidaemia first noted during labour and delivery	<5	0
Intrapartum haemorrhage, unspecified, delivered, with or without mention of antepartum condition	5	0
Intrasphincteric abscess	5	0
Intraspinal abscess and granuloma	32	9
Intraventricular (nontraumatic) haemorrhage, grade 4, of fetus and newborn	<5	0
Intussusception	13	<5
Invalid Code	<5	<5
Invasive pulmonary aspergillosis	<5	0
Involvement of eyelid in other infectious diseases classified elsewhere	<5	<5
Iridocyclitis, unspecified	5	0
Iron deficiency	43	<5
Iron deficiency anaemia secondary to blood loss (chronic)	223	39
Iron deficiency anaemia, unspecified	924	100
Iron preparations and other anti-hypochromic-anaemia preparations causing adverse effect in therapeu	<5	0
Iron preparations and other anti-hypochromic-anaemia preparations causing adverse effect in therapeutic use	6	<5
Irradiation cystitis	25	0
Irregular menstruation, unspecified	17	0
Irritability and anger	8	<5
Irritable bowel syndrome with diarrhoea	20	<5
Irritable bowel syndrome without diarrhoea	19	<5
Irritant contact dermatitis due to detergents	<5	0
Irritant contact dermatitis due to other chemical products	<5	<5
Irritant contact dermatitis, unspecified cause	<5	0
Irritative hyperplasia of oral mucosa	<5	0
Ischaemia and infarction of kidney	28	8
Ischaemic cardiomyopathy	178	71
Ischaemic infarction of muscle, ankle and foot	<5	0
Ischaemic infarction of muscle, forearm	5	<5
Ischaemic infarction of muscle, hand	<5	<5
Ischaemic infarction of muscle, lower leg	5	0
Ischaemic infarction of muscle, multiple sites	<5	<5
Ischaemic infarction of muscle, pelvic region and thigh	<5	0
Ischaemic infarction of muscle, upper arm	<5	0
Ischiorectal abscess	33	<5
Isolated myocarditis	<5	0
Isolated proteinuria	10	<5
Isolation	<5	0
Joint disorder, unspecified, lower leg	<5	0
Joint disorder, unspecified, pelvic region and thigh	<5	0
Joint disorder, unspecified, shoulder region	<5	0
Junctional premature depolarization	<5	0
Juvenile arthritis, unspecified site	<5	0
Juvenile osteochondrosis of humerus	<5	0
Juvenile osteochondrosis of tibia and fibula	<5	0
Juvenile rheumatoid arthritis	<5	<5
Kaposi's sarcoma of skin	<5	<5
Keratitis, unspecified	<5	0
Keratoconjunctivitis	<5	0
Keratopathy (bullous aphakic) following cataract surgery	<5	0
Kidney dialysis as the cause of abnormal reaction or later complication, without mention of misadven	50	12
Kidney dialysis as the cause of abnormal reaction or later complication, without mention of misadventure at t	11	<5
Kidney donor	18	0
Kidney transplant candidate	<5	<5
Kidney transplant failure	17	0
Kidney transplant rejection	19	<5
Kidney transplant status	71	8
Kienböck's disease of adults	<5	0
Kinking and stricture of ureter without hydronephrosis	27	0
Klebsiella pneumoniae [K. pneumoniae] as the cause of diseases classified to other chapters	402	68
Klinefelter's syndrome, male with more than two X chromosomes	<5	0
Klinefelter's syndrome, unspecified	<5	0
Klippel-Feil syndrome	<5	0
Laboratory evidence of human immunodeficiency virus [HIV]	<5	<5

Labour and delivery complicated by cord around neck, with compression, delivered, with or without mention of	61	0
Labour and delivery complicated by fetal heart rate anomaly with meconium in amniotic fluid, delivered, with	119	0
Labour and delivery complicated by fetal heart rate anomaly, delivered, with or without mention of antepartum	463	<5
Labour and delivery complicated by meconium in amniotic fluid, delivered, with or without mention of antepart	273	<5
Labour and delivery complicated by other cord complications, delivered, with or without mention of antepartum	7	0
Labour and delivery complicated by other cord entanglement, with compression, delivered, with or without ment	31	0
Labour and delivery complicated by prolapse of cord, delivered, with or without mention of antepartum conditi	8	0
Labour and delivery complicated by short cord, delivered, with or without mention of antepartum condition	<5	0
Labyrinthitis	6	0
Laceration and other and unspecified nerves of neck	<5	0
Laceration and puncture of heart with open wound into thoracic cavity	10	<5
Laceration and puncture of heart without open wound into thoracic cavity	8	6
Laceration and puncture of lung with open wound into thoracic cavity	7	<5
Laceration and puncture of lung without open wound into thoracic cavity	12	<5
Laceration and puncture of pleura with open wound into thoracic cavity	<5	0
Laceration and puncture of pleura without open wound into thoracic cavity	<5	0
Laceration involving segmental or hilar vessels causing major devascularization > 25% of spleen (Gra	<5	<5
Laceration involving segmental or hilar vessels causing major devascularization > 25% of spleen (Grade IV) wi	<5	0
Laceration of (posterior) tibial nerve at lower leg level	<5	0
Laceration of bladder, with open wound into cavity	12	0
Laceration of bladder, without open wound into cavity	11	<5
Laceration of colon with open wound into cavity	25	<5
Laceration of colon without open wound into cavity	26	5
Laceration of cutaneous sensory nerve at forearm level	<5	0
Laceration of diaphragm with open wound into thoracic cavity	5	<5
Laceration of diaphragm without open wound into thoracic cavity	<5	<5
Laceration of duodenum (without bile duct injury) with open wound into cavity	7	<5
Laceration of duodenum (without bile duct injury) without open wound into cavity	<5	<5
Laceration of duodenum with bile duct or duodenopancreatic complex injury with open wound into cavit	<5	0
Laceration of extensor muscle and tendon of other finger(s) at forearm level	<5	0
Laceration of extensor muscle and tendon of thumb at wrist and hand level	<5	<5
Laceration of facial nerve	<5	0
Laceration of flexor muscle and tendon of other finger at wrist and hand level	<5	0
Laceration of kidney (without urinary extravasation) with open wound into cavity	<5	<5
Laceration of kidney (without urinary extravasation) without open wound into cavity	13	<5
Laceration of long extensor muscle and tendon of toe at ankle and foot level	<5	0
Laceration of long flexor muscle and tendon of other finger(s) at forearm level	<5	0
Laceration of median nerve at upper arm level	<5	0
Laceration of median nerve at wrist and hand level	<5	0
Laceration of multiple extensor muscles and tendons at wrist and hand level	<5	0
Laceration of multiple flexor muscles and tendons at wrist and hand level	<5	0
Laceration of multiple muscles and tendons at hip and thigh level	<5	0
Laceration of muscle and tendon at neck level	<5	0
Laceration of muscle and tendon of abdomen, lower back and pelvis	<5	<5
Laceration of muscle and tendon of head	<5	0
Laceration of muscle and tendon of hip	7	<5
Laceration of muscle and tendon of other parts of bicep	<5	0
Laceration of muscle and tendon of the posterior muscle and tendon (group) at thigh level	<5	0
Laceration of muscle(s) and tendon(s) of the rotator cuff of shoulder	11	0
Laceration of oesophagus with open wound into thoracic cavity	<5	<5
Laceration of oesophagus without open wound into thoracic cavity	6	<5
Laceration of other and unspecified nerves at abdomen, lower back and pelvis level	<5	0
Laceration of other cranial nerves	<5	<5
Laceration of other flexor muscle and tendon at forearm level	<5	0
Laceration of other intra-abdominal organs with open wound into cavity	8	<5
Laceration of other intra-abdominal organs without open wound into cavity	5	<5
Laceration of other muscles and tendons at shoulder and upper arm level	<5	0
Laceration of other pelvic organs, with open wound into cavity	<5	0
Laceration of other pelvic organs, without open wound into cavity	<5	0
Laceration of ovary, without open wound into cavity	<5	0
Laceration of quadriceps muscle and tendon	19	0
Laceration of radial nerve at wrist and hand level	<5	0
Laceration of rectum with open wound into cavity	<5	0
Laceration of rectum without open wound into cavity	<5	<5
Laceration of small intestine, excluding duodenum with open wound into cavity	91	21
Laceration of small intestine, excluding duodenum without open wound into cavity	28	<5
Laceration of stomach with open wound into cavity	5	0
Laceration of stomach without open wound into cavity	<5	<5
Laceration of ulnar nerve at wrist and hand level	<5	0
Laceration of unspecified intra-abdominal organ, with open wound into cavity	<5	0
Laceration of ureter, with open wound into cavity	7	<5
Laceration of ureter, without open wound into cavity	<5	0
Laceration of urethra, with open wound into cavity	<5	<5
Laceration of urethra, without open wound into cavity	<5	0
Laceration of uterus, without open wound into cavity	<5	0
Lack of adequate food	<5	0
Lack of expected normal physiological development, unspecified	18	<5
Lack of food	<5	<5

Lack of water	<5	0
Lactose intolerance, unspecified	<5	0
Lambert-Eaton syndrome	<5	0
Laryngeal spasm	9	<5
Laryngocele	<5	0
Late congenital syphilis, unspecified	<5	0
Late metabolic acidosis of newborn	<5	0
Late vomiting of pregnancy, antepartum condition or complication	<5	0
Late vomiting of pregnancy, delivered, with or without mention of antepartum condition	<5	0
Latent syphilis, unspecified as early or late	<5	0
Latent tuberculosis	<5	0
Lateral dislocation of elbow, closed	<5	<5
Left anterior fascicular block	<5	0
Left bundle-branch block, unspecified	100	29
Left lower quadrant pain	20	0
Left sided colitis	14	0
Left upper quadrant pain	11	<5
Left ventricular failure	147	63
Legal intervention involving other specified means	<5	0
Legal intervention, means unspecified	<5	0
Legionnaires' disease	12	8
Leiomyoma of uterus, unspecified	183	5
Lesion of femoral nerve	<5	0
Lesion of lateral popliteal nerve	<5	<5
Lesion of radial nerve	8	<5
Lesion of sciatic nerve	<5	0
Lesion of ulnar nerve	6	0
Leukaemia, unspecified	<5	<5
Leukoplakia and other disturbances of oral epithelium, including tongue	5	0
Leukoplakia of penis	<5	<5
Leukoplakia of vulva	7	0
Lichen planus, unspecified	<5	0
Lichen sclerosus et atrophicus	<5	0
Lichen simplex chronicus	<5	0
Limitation of activities due to disability	<5	0
Lipodystrophy, not elsewhere classified	<5	0
Listerial sepsis	<5	0
Listeriosis, unspecified	<5	0
Liver cell carcinoma	123	7
Liver disease, unspecified	31	7
Liver disorders in pregnancy, childbirth and the puerperium, antepartum condition or complication	<5	0
Liver disorders in pregnancy, childbirth and the puerperium, delivered, with or without mention of antepartum	13	0
Liver disorders in pregnancy, childbirth and the puerperium, postpartum condition or complication	<5	<5
Liver haematoma NOS, laceration NOS, injury to liver NOS without open wound into cavity	24	7
Liver transplant candidate	<5	0
Liver transplant failure	<5	<5
Liver transplant rejection	5	<5
Liver transplant status	42	12
Liverr haematoma NOS, laceration NOS, injury to liver NOS with open wound into cavity	15	<5
Living alone	45	0
Lobar pneumonia, unspecified	134	25
Lobulated, fused and horseshoe kidney	<5	0
Local anaesthetics causing adverse effect in therapeutic use	7	<5
Local antifungal, anti-infective and anti-inflammatory drugs, not elsewhere classified, causing adve	<5	0
Local antifungal, anti-infective and anti-inflammatory drugs, not elsewhere classified, causing adverse effec	<5	<5
Local infection and inflammatory reaction due to central venous catheter	13	<5
Local infection of skin and subcutaneous tissue, unspecified	46	<5
Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized	<5	0
Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex par	10	<5
Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seiz	12	<5
Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple part	29	<5
Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizu	22	<5
Localized adiposity	5	0
Localized connective tissue disorder, unspecified	<5	0
Localized enlarged lymph nodes	73	7
Localized oedema	528	88
Localized skin eruption due to drugs and medicaments	6	<5
Localized swelling, mass and lump, head	6	0
Localized swelling, mass and lump, lower limb	<5	0
Localized swelling, mass and lump, multiple sites	<5	0
Localized swelling, mass and lump, neck	13	<5
Localized swelling, mass and lump, trunk	13	0
Localized swelling, mass and lump, unspecified	6	<5
Localized swelling, mass and lump, upper limb	<5	0
Locked-in syndrome	<5	<5
Loop [high-ceiling] diuretics causing adverse effect in therapeutic use	82	13
Loose body in joint, ankle and foot	<5	0
Loose body in joint, forearm	<5	0

Loose body in joint, pelvic region and thigh	5	<5
Loose body in joint, shoulder region	<5	0
Loose body in joint, upper arm	<5	0
Loose body in knee	23	<5
Loss of teeth due to accident, extraction or local periodontal disease	<5	0
Low back pain	208	9
Low income	<5	0
Lower abdominal pain, unspecified	33	<5
Lumbago with sciatica	8	<5
Lumbar and other intervertebral disc disorders with myelopathy	7	0
Lumbar and other intervertebral disc disorders with radiculopathy	61	<5
Lumbosacral plexus disorders	<5	0
Lumbosacral root disorders, not elsewhere classified	<5	0
Lung transplant candidate	<5	<5
Lung transplant status	16	<5
Lyme disease	70	13
Lymphangitis	<5	0
Lymphoblastic (diffuse) lymphoma	<5	<5
Lymphoedema, not elsewhere classified	35	<5
Lymphoid leukaemia, unspecified	<5	0
MacLeod's syndrome	<5	<5
Macrocephaly	<5	0
Macroglossia	<5	0
Macrolides causing adverse effect in therapeutic use	<5	0
Macrostomia	<5	0
Magnesium deficiency	16	6
Malabsorption due to intolerance, not elsewhere classified	<5	0
Malaise and fatigue	1770	139
Malformation of coronary vessels	<5	<5
Malformation of placenta, delivered, with or without mention of antepartum condition	40	0
Malformation of urachus	<5	0
Malfunction of colostomy stoma, not elsewhere classified	25	<5
Malfunction of tracheostomy stoma	<5	<5
Malignant hypertension	6	<5
Malignant hyperthermia due to anaesthesia	<5	0
Malignant lesion biliary tract unspecified	8	0
Malignant lesion hypopharynx unspecified	5	<5
Malignant lesion oesophagus unspecified	103	<5
Malignant lesion oropharynx unspecified	8	0
Malignant lesion small intestine unspecified	6	<5
Malignant melanoma of ear and external auricular canal	<5	0
Malignant melanoma of lower limb, including hip	11	0
Malignant melanoma of other and unspecified parts of face	11	0
Malignant melanoma of scalp and neck	7	0
Malignant melanoma of skin, unspecified	25	0
Malignant melanoma of trunk	11	0
Malignant melanoma of upper limb, including shoulder	<5	0
Malignant neoplasm accessory sinus unspecified	<5	<5
Malignant neoplasm adrenal gland unspecified	<5	0
Malignant neoplasm ampulla of Vater	6	0
Malignant neoplasm anterior floor of mouth	<5	<5
Malignant neoplasm anterior mediastinum	<5	0
Malignant neoplasm anterior wall bladder	10	<5
Malignant neoplasm bone and articular cartilage of limb, unspecified	<5	0
Malignant neoplasm bone and articular cartilage, unspecified	10	0
Malignant neoplasm bronchus or lung, unspecified, unspecified side	339	19
Malignant neoplasm cervical oesophagus	<5	<5
Malignant neoplasm cervix uteri, unspecified	72	<5
Malignant neoplasm colon, unspecified	143	12
Malignant neoplasm corpus uteri, unspecified	<5	0
Malignant neoplasm cortex adrenal gland	<5	0
Malignant neoplasm dorsal surface of tongue	<5	0
Malignant neoplasm endocrine gland unspecified	<5	0
Malignant neoplasm extrahepatic bile duct	19	<5
Malignant neoplasm floor of mouth, unspecified	<5	<5
Malignant neoplasm greater curvature of stomach, unspecified	<5	0
Malignant neoplasm intestinal tract, part unspecified	11	0
Malignant neoplasm larynx unspecified	21	<5
Malignant neoplasm lateral wall bladder	49	<5
Malignant neoplasm lateral wall oropharynx	<5	<5
Malignant neoplasm left bronchus or lung, unspecified	117	6
Malignant neoplasm lesser curvature of stomach, unspecified	<5	0
Malignant neoplasm lip, unspecified, inner aspect	<5	0
Malignant neoplasm lower third of oesophagus	62	<5
Malignant neoplasm major salivary gland, unspecified	<5	0
Malignant neoplasm Meckel diverticulum	<5	0
Malignant neoplasm mediastinum, part unspecified	<5	0
Malignant neoplasm medulla adrenal gland	<5	<5

Malignant neoplasm middle lobe, bronchus or lung	34	0
Malignant neoplasm middle third of oesophagus	10	0
Malignant neoplasm nasopharynx unspecified	7	0
Malignant neoplasm of abdomen	6	<5
Malignant neoplasm of acoustic nerve	<5	<5
Malignant neoplasm of anal canal	5	<5
Malignant neoplasm of anterior wall nasopharynx	<5	0
Malignant neoplasm of anus unspecified	11	0
Malignant neoplasm of appendix	39	5
Malignant neoplasm of ascending colon	89	10
Malignant neoplasm of axillary tail of left breast	<5	0
Malignant neoplasm of axillary tail of right breast	<5	0
Malignant neoplasm of base of tongue	15	<5
Malignant neoplasm of bladder neck	20	0
Malignant neoplasm of bladder, unspecified	216	14
Malignant neoplasm of body of pancreas	11	<5
Malignant neoplasm of body of penis	<5	0
Malignant neoplasm of body of stomach	13	0
Malignant neoplasm of border of tongue	12	8
Malignant neoplasm of brain stem	5	<5
Malignant neoplasm of brain unspecified	36	0
Malignant neoplasm of branchial cleft	<5	0
Malignant neoplasm of breast, part unspecified, unspecified side	82	<5
Malignant neoplasm of caecum	126	11
Malignant neoplasm of cardia	56	6
Malignant neoplasm of central portion of left breast	<5	0
Malignant neoplasm of central portion of right breast	<5	0
Malignant neoplasm of cerebellum	<5	0
Malignant neoplasm of cerebral meninges	<5	<5
Malignant neoplasm of cerebral ventricle	<5	0
Malignant neoplasm of cerebrum, except lobes and ventricles	6	0
Malignant neoplasm of cheek mucosa	7	<5
Malignant neoplasm of choroid	<5	0
Malignant neoplasm of clitoris	<5	0
Malignant neoplasm of connective and soft tissue of abdomen	<5	0
Malignant neoplasm of connective and soft tissue of head, face and neck	13	0
Malignant neoplasm of connective and soft tissue of lower limb, including hip	23	0
Malignant neoplasm of connective and soft tissue of pelvis	11	0
Malignant neoplasm of connective and soft tissue of thorax	5	0
Malignant neoplasm of connective and soft tissue of trunk, unspecified	6	<5
Malignant neoplasm of connective and soft tissue of upper limb, including shoulder	<5	0
Malignant neoplasm of connective and soft tissue, unspecified	18	0
Malignant neoplasm of craniofacial bones	<5	0
Malignant neoplasm of descended left testis	<5	0
Malignant neoplasm of descended right testis	<5	0
Malignant neoplasm of descending colon	17	6
Malignant neoplasm of dome of bladder	14	<5
Malignant neoplasm of duodenum	13	<5
Malignant neoplasm of endocervix	7	0
Malignant neoplasm of endometrium	197	<5
Malignant neoplasm of ethmoidal sinus	<5	0
Malignant neoplasm of exocervix	<5	0
Malignant neoplasm of external lower lip	<5	0
Malignant neoplasm of eye unspecified	5	0
Malignant neoplasm of fallopian tube, bilateral	<5	0
Malignant neoplasm of fallopian tube, unilateral	<5	0
Malignant neoplasm of female genital organ, unspecified	<5	0
Malignant neoplasm of frontal lobe	43	<5
Malignant neoplasm of frontal sinus	<5	<5
Malignant neoplasm of fundus of stomach	<5	0
Malignant neoplasm of gallbladder	20	0
Malignant neoplasm of glans penis	<5	0
Malignant neoplasm of glottis	15	<5
Malignant neoplasm of head of pancreas	67	<5
Malignant neoplasm of head, face and neck	16	0
Malignant neoplasm of heart	<5	<5
Malignant neoplasm of hepatic flexure	21	<5
Malignant neoplasm of ileum	19	<5
Malignant neoplasm of jejunum	<5	0
Malignant neoplasm of kidney, except renal pelvis	290	15
Malignant neoplasm of labium majus	<5	0
Malignant neoplasm of labium minus	<5	0
Malignant neoplasm of left breast, part unspecified	94	<5
Malignant neoplasm of left main bronchus	22	<5
Malignant neoplasm of left nipple and areola	<5	0
Malignant neoplasm of left testis, unspecified	<5	<5
Malignant neoplasm of lip unspecified	<5	0
Malignant neoplasm of liver unspecified	28	0

Malignant neoplasm of long bones of lower limb	17	0
Malignant neoplasm of lower gum	<5	<5
Malignant neoplasm of lower limb	<5	0
Malignant neoplasm of lower lobe, bronchus or lung, unspecified side	<5	0
Malignant neoplasm of lower lobe, left bronchus or lung	94	5
Malignant neoplasm of lower lobe, right bronchus or lung	136	12
Malignant neoplasm of lower-inner quadrant of left breast	<5	0
Malignant neoplasm of lower-inner quadrant of right breast	<5	0
Malignant neoplasm of lower-outer quadrant of left breast	<5	0
Malignant neoplasm of lower-outer quadrant of right breast	<5	0
Malignant neoplasm of lymphoid, haematopoietic and related tissue, unspecified	<5	0
Malignant neoplasm of main bronchus, unspecified side	8	<5
Malignant neoplasm of mandible	14	<5
Malignant neoplasm of maxillary sinus	7	<5
Malignant neoplasm of maxillofacial bones	8	<5
Malignant neoplasm of middle ear	<5	0
Malignant neoplasm of mouth unspecified	<5	0
Malignant neoplasm of occipital lobe	6	<5
Malignant neoplasm of orbit	5	<5
Malignant neoplasm of other and unspecified cranial nerves	<5	0
Malignant neoplasm of other parts of nasal cavity	5	<5
Malignant neoplasm of other specified female genital organs	<5	0
Malignant neoplasm of ovary, bilateral	26	0
Malignant neoplasm of ovary, not specified whether unilateral or bilateral	93	7
Malignant neoplasm of ovary, unilateral	51	0
Malignant neoplasm of overlapping lesion of left bronchus and lung	<5	0
Malignant neoplasm of overlapping lesion of right bronchus and lung	6	<5
Malignant neoplasm of pancreatic duct	6	0
Malignant neoplasm of parametrium	<5	0
Malignant neoplasm of parathyroid gland	<5	0
Malignant neoplasm of parietal lobe	28	0
Malignant neoplasm of parotid gland	32	<5
Malignant neoplasm of pelvis	8	0
Malignant neoplasm of penis unspecified	16	0
Malignant neoplasm of peripheral nerves of upper limb, including shoulder	<5	<5
Malignant neoplasm of pineal gland	<5	0
Malignant neoplasm of pleura	<5	0
Malignant neoplasm of posterior wall of bladder	22	0
Malignant neoplasm of prepuce	<5	0
Malignant neoplasm of prostate	490	20
Malignant neoplasm of pyloric antrum	13	<5
Malignant neoplasm of pylorus	<5	0
Malignant neoplasm of pyriform sinus	<5	<5
Malignant neoplasm of rectosigmoid junction	206	14
Malignant neoplasm of rectum	200	12
Malignant neoplasm of renal pelvis	15	0
Malignant neoplasm of retromolar area	<5	<5
Malignant neoplasm of retroperitoneum	19	<5
Malignant neoplasm of right breast, part unspecified	109	5
Malignant neoplasm of right bronchus or lung unspecified	158	11
Malignant neoplasm of right main bronchus	39	<5
Malignant neoplasm of right testis, unspecified	<5	0
Malignant neoplasm of scrotum	<5	0
Malignant neoplasm of sigmoid colon	122	11
Malignant neoplasm of skin of lip	<5	0
Malignant neoplasm of skin of trunk	18	0
Malignant neoplasm of skin, unspecified	5	<5
Malignant neoplasm of soft palate	<5	0
Malignant neoplasm of specified parts of peritoneum	6	0
Malignant neoplasm of spinal cord	<5	<5
Malignant neoplasm of splenic flexure	13	<5
Malignant neoplasm of subglottis	<5	0
Malignant neoplasm of supraglottis	<5	0
Malignant neoplasm of tail of pancreas	15	0
Malignant neoplasm of temporal lobe	41	0
Malignant neoplasm of testis, unspecified, unspecified side	10	0
Malignant neoplasm of thorax	<5	<5
Malignant neoplasm of thymus	11	<5
Malignant neoplasm of thyroid gland	101	<5
Malignant neoplasm of trachea	<5	0
Malignant neoplasm of transverse colon	63	11
Malignant neoplasm of trigone of bladder	13	0
Malignant neoplasm of upper lobe, bronchus or lung, unspecified side	<5	0
Malignant neoplasm of upper lobe, right bronchus or lung	253	10
Malignant neoplasm of upper-inner quadrant of breast, unspecified side	<5	0
Malignant neoplasm of upper-inner quadrant of left breast	<5	0
Malignant neoplasm of upper-inner quadrant of right breast	<5	0
Malignant neoplasm of upper-outer quadrant of left breast	6	0

Malignant neoplasm of upper-outer quadrant of right breast	15	<5
Malignant neoplasm of ureter	24	<5
Malignant neoplasm of ureteric orifice	9	0
Malignant neoplasm of urethra	11	<5
Malignant neoplasm of uterine adnexa, unspecified	<5	0
Malignant neoplasm of uterus, part unspecified	29	0
Malignant neoplasm of vagina	13	0
Malignant neoplasm of vallecula	<5	0
Malignant neoplasm of vertebral column	<5	0
Malignant neoplasm of vestibule of nose	<5	0
Malignant neoplasm of vulva unspecified	18	0
Malignant neoplasm other parts pancreas	<5	0
Malignant neoplasm pancreas part unspecified	157	<5
Malignant neoplasm pelvic bones, sacrum and coccyx	10	<5
Malignant neoplasm peritoneum unspecfied	6	<5
Malignant neoplasm pharynx unspecified	10	<5
Malignant neoplasm posterior wall of nasopharynx	<5	0
Malignant neoplasm ribs sternum clavicle	<5	0
Malignant neoplasm scapula and long bones of upper limb	<5	0
Malignant neoplasm short bones of lower limb	6	0
Malignant neoplasm skin of ear and external auricular canal	21	<5
Malignant neoplasm skin of eyelid, including canthus	<5	<5
Malignant neoplasm skin of lower limb, including hip	6	0
Malignant neoplasm skin of other and unspecified parts of face	58	<5
Malignant neoplasm skin of scalp & neck	23	<5
Malignant neoplasm skin of upper limb, including shoulder	11	<5
Malignant neoplasm stomach unspecified	60	<5
Malignant neoplasm submandibular gland	<5	0
Malignant neoplasm tongue unspecified	13	<5
Malignant neoplasm tonsil unspecified	20	0
Malignant neoplasm upper lobe, left bronchus or lung	169	8
Malignant neoplasm upper third oesophagus	7	0
Malignant neoplasm urinary organ unspecified	<5	0
Malignant neoplasm ventral surface of tongue	<5	<5
Malignant neoplasm, primary site unknown, so stated	91	<5
Malignant neoplasm, primary site unspecified	92	<5
Malignant neoplasms of independent (primary) multiple sites	11	0
Malignant neoplasms of other & ill-defined sites within the digestive system	7	0
Malignant neuroleptic syndrome	<5	<5
Malingerer [conscious simulation]	6	0
Malocclusion, unspecified	42	<5
Malposition of uterus	<5	0
Malunion of fracture, ankle and foot	<5	0
Malunion of fracture, forearm	<5	0
Malunion of fracture, hand	<5	0
Malunion of fracture, lower leg	<5	0
Malunion of fracture, pelvic region and thigh	<5	0
Malunion of fracture, shoulder region	<5	0
Malunion of fracture, upper arm	<5	0
Mandibular hyperplasia	<5	0
Mandibular prognathism	<5	0
Mandibular retrognathism	10	0
Mania with psychotic symptoms	27	0
Manic episode, unspecified	25	0
Mantle cell lymphoma	44	<5
Marfan's syndrome	<5	0
Mastodynia	<5	0
Mastoiditis in infectious and parasitic diseases classified elsewhere	<5	0
Mastoiditis, unspecified	6	<5
Maternal care for (suspected) chromosomal abnormality in fetus, delivered, with or without mention of antepar	<5	0
Maternal care for (suspected) fetal abnormality and damage, unspecified, delivered, with or without mention o	<5	0
Maternal care for (suspected) fetal hydrocephalus, antepartum condition or complication	<5	0
Maternal care for (suspected) hereditary disease in fetus, delivered, with or without mention of antepartum c	<5	0
Maternal care for abnormality of vagina, delivered, with or without mention of antepartum condition	<5	0
Maternal care for breech presentation, antepartum condition or complication	6	0
Maternal care for breech presentation, delivered, with or without mention of antepartum condition	92	<5
Maternal care for cervical incompetence, antepartum condition or complication	<5	0
Maternal care for cervical incompetence, delivered, with or without mention of antepartum condition	<5	0
Maternal care for compound presentation, delivered, with or without mention of antepartum condition	10	0
Maternal care for congenital malformation of uterus, antepartum condition or complication	<5	0
Maternal care for congenital malformation of uterus, delivered, with or without mention of antepartum conditi	14	0
Maternal care for decreased fetal movements, third trimester, antepartum condition or complication	<5	0
Maternal care for decreased fetal movements, third trimester, delivered, with or without mention of antepartu	10	0
Maternal care for disproportion due to unusually large fetus, delivered, with or without mention of antepartu	<5	0
Maternal care for disproportion, unspecified, delivered, with or without mention of antepartum condition	11	0
Maternal care for excessive fetal growth, third trimester, antepartum condition or complication	<5	0
Maternal care for excessive fetal growth, third trimester, delivered, with or without mention of antepartum c	104	0
Maternal care for face, brow and chin presentation, delivered, with or without mention of antepartum conditio	<5	0

Maternal care for high head at term, delivered, with or without mention of antepartum condition	7	0
Maternal care for hydrops fetalis, third trimester, delivered, with or without mention of antepartum conditio	<5	0
Maternal care for intrauterine death, second trimester, delivered, with or without mention of antepartum cond	6	0
Maternal care for intrauterine death, third trimester, delivered, with or without mention of antepartum condi	7	0
Maternal care for malpresentation of fetus, unspecified, delivered, with or without mention of antepartum con	<5	0
Maternal care for multiple gestation with malpresentation of one fetus or more, antepartum condition or compl	<5	0
Maternal care for multiple gestation with malpresentation of one fetus or more, delivered, with or without me	<5	0
Maternal care for other (suspected) fetal abnormality and damage, unspecified as to episode of care, or not a	<5	0
Maternal care for other abnormalities of cervix, delivered, with or without mention of antepartum condition	5	0
Maternal care for other abnormalities of gravid uterus, delivered, with or without mention of antepartum cond	<5	0
Maternal care for other abnormalities of pelvic organs, antepartum condition or complication	<5	0
Maternal care for other abnormalities of pelvic organs, delivered, with or without mention of antepartum cond	<5	0
Maternal care for other isoimmunization, third trimester, delivered, with or without mention of antepartum co	<5	0
Maternal care for other malpresentation of fetus, antepartum condition or complication	<5	0
Maternal care for other malpresentation of fetus, delivered, with or without mention of antepartum condition	30	0
Maternal care for other specified fetal problems, third trimester, delivered, with or without mention of ante	<5	0
Maternal care for restricted fetal growth, third trimester, antepartum condition or complication	7	0
Maternal care for restricted fetal growth, third trimester, delivered, with or without mention of antepartum	102	0
Maternal care for restricted fetal growth, unspecified trimester, delivered, with or without mention of antep	<5	0
Maternal care for rhesus isoimmunization, third trimester, delivered, with or without mention of antepartum c	39	0
Maternal care for signs of fetal asphyxia, first trimester, antepartum condition or complication	<5	0
Maternal care for signs of fetal asphyxia, third trimester, antepartum condition or complication	<5	0
Maternal care for signs of fetal asphyxia, third trimester, delivered, with or without mention of antepartum	7	0
Maternal care for transverse and oblique lie, antepartum condition or complication	<5	0
Maternal care for transverse and oblique lie, delivered, with or without mention of antepartum condition	12	0
Maternal care for tumour of corpus uteri, antepartum condition or complication	<5	0
Maternal care for tumour of corpus uteri, delivered, with or without mention of antepartum condition	10	0
Maternal care for unstable lie, antepartum condition or complication	<5	0
Maternal care for unstable lie, delivered, with or without mention of antepartum condition	14	0
Maternal care for uterine scar due to other and unspecified previous surgery, delivered, with or without ment	<5	0
Maternal care for uterine scar due to previous caesarean section, antepartum condition or complication	7	0
Maternal care for uterine scar due to previous caesarean section, delivered, with or without mention of antep	348	<5
Maternal distress during labour and delivery, delivered, with or without mention of antepartum condition	<5	0
Mature T/NK-cell lymphoma, unspecified	<5	0
Maxillary alveolar ridge hypoplasia	<5	0
Maxillary and mandibular microgenia	5	<5
Maxillary hyperplasia	<5	0
Maxillary hypoplasia	<5	0
Maxillary prognathism	<5	0
Maxillary retrognathism	5	<5
Mechanical complication of ankle and tarsal prosthesis	<5	<5
Mechanical complication of breast prosthesis and implant	5	0
Mechanical complication of cardiac electronic device	41	11
Mechanical complication of coronary artery bypass and valve grafts	<5	<5
Mechanical complication of elbow prosthesis	<5	0
Mechanical complication of gastrointestinal prosthetic devices, implants and grafts	74	13
Mechanical complication of graft of urinary organ	<5	0
Mechanical complication of heart valve prosthesis	14	<5
Mechanical complication of hip prosthesis, breakage and dissociation	<5	<5
Mechanical complication of hip prosthesis, instability	27	0
Mechanical complication of hip prosthesis, loosening	29	0
Mechanical complication of hip prosthesis, osteolysis around joint prosthesis	<5	0
Mechanical complication of hip prosthesis, other	<5	0
Mechanical complication of hip prosthesis, unspecified	14	0
Mechanical complication of hip prosthesis, wear of articular bearing surface	5	0
Mechanical complication of implanted electronic stimulator of nervous system	<5	0
Mechanical complication of internal fixation device of bones of foot	<5	0
Mechanical complication of internal fixation device of femur	21	0
Mechanical complication of internal fixation device of humerus	<5	0
Mechanical complication of internal fixation device of mandible	5	<5
Mechanical complication of internal fixation device of other bones	7	0
Mechanical complication of internal fixation device of radius and ulna	<5	0
Mechanical complication of internal fixation device of spinal vertebrae	6	<5
Mechanical complication of internal fixation device of tibia and fibula	<5	0
Mechanical complication of intraocular lens	<5	0
Mechanical complication of intrauterine contraceptive device	<5	0
Mechanical complication of knee prosthesis, breakage and dissociation	7	0
Mechanical complication of knee prosthesis, instability	24	<5
Mechanical complication of knee prosthesis, loosening	28	0
Mechanical complication of knee prosthesis, osteolysis around joint prosthesis	<5	0
Mechanical complication of knee prosthesis, other	8	<5
Mechanical complication of knee prosthesis, unspecified	10	0
Mechanical complication of knee prosthesis, wear of articular bearing surface	<5	0
Mechanical complication of other bone devices, implants and grafts	5	0
Mechanical complication of other cardiac and vascular devices and implants	48	19
Mechanical complication of other internal orthopaedic devices, implants and grafts	<5	0
Mechanical complication of other prosthetic devices, implants and grafts in genital tract	<5	<5
Mechanical complication of other specified internal prosthetic devices, implants and grafts	73	11

Mechanical complication of other urinary devices and implants	55	<5
Mechanical complication of other vascular grafts	32	<5
Mechanical complication of shoulder prosthesis	7	0
Mechanical complication of urinary (indwelling) catheter	58	5
Mechanical complication of vascular dialysis catheter	13	<5
Mechanical complication of ventricular intracranial (communicating) shunt	21	<5
Meckel diverticulum	15	<5
Medical abortion, complete or unspecified, with other and unspecified complications	<5	0
Medical abortion, complete or unspecified, without complication	6	0
Medical abortion, incomplete, complicated by delayed or excessive haemorrhage	<5	0
Medical abortion, incomplete, without complication	<5	0
Medical procedure, unspecified, as the cause of abnormal reaction or later complication, without me	6	<5
Medical procedure, unspecified, as the cause of abnormal reaction or later complication, without mention of	<5	0
Medical services not available in home	<5	0
Medullary cystic kidney	<5	0
Megacolon, not elsewhere classified	<5	<5
Megaloureter	<5	0
Melaena	352	74
Melanocytic naevi of scalp and neck	<5	0
Melanocytic naevi of trunk	<5	0
Melanoma in situ of lower limb, including hip	<5	0
Melanoma in situ of other and unspecified parts of face	<5	0
Melanoma in situ of scalp and neck	<5	0
Mendelson's syndrome	<5	0
Ménière's disease	6	0
Meningismus	<5	0
Meningitis due to other specified causes	<5	0
Meningitis in bacterial diseases classified elsewhere	<5	<5
Meningitis in mycoses	<5	0
Meningitis in other specified infectious and parasitic diseases classified elsewhere	<5	0
Meningitis in viral diseases classified elsewhere	<5	<5
Meningitis, unspecified	12	<5
Meningococcal meningitis	<5	<5
Mental and behavioural disorders due to multiple drug use and use of psychoactive substances, acute	<5	0
Mental and behavioural disorders due to multiple drug use and use of psychoactive substances, acute intoxicat	<5	0
Mental and behavioural disorders due to multiple drug use and use of psychoactive substances, depend	<5	0
Mental and behavioural disorders due to multiple drug use and use of psychoactive substances, dependence synd	14	0
Mental and behavioural disorders due to multiple drug use and use of psychoactive substances, harmfu	32	5
Mental and behavioural disorders due to multiple drug use and use of psychoactive substances, harmful use	72	13
Mental and behavioural disorders due to multiple drug use and use of psychoactive substances, other	<5	0
Mental and behavioural disorders due to multiple drug use and use of psychoactive substances, other mental an	9	0
Mental and behavioural disorders due to multiple drug use and use of psychoactive substances, psycho	16	0
Mental and behavioural disorders due to multiple drug use and use of psychoactive substances, psychotic disor	37	0
Mental and behavioural disorders due to multiple drug use and use of psychoactive substances, unspec	37	<5
Mental and behavioural disorders due to multiple drug use and use of psychoactive substances, unspecified men	26	0
Mental and behavioural disorders due to multiple drug use and use of psychoactive substances, withdr	14	0
Mental and behavioural disorders due to multiple drug use and use of psychoactive substances, withdrawal stat	13	<5
Mental and behavioural disorders due to use of alcohol, acute intoxication	41	9
Mental and behavioural disorders due to use of alcohol, amnesic syndrome	18	<5
Mental and behavioural disorders due to use of alcohol, dependence syndrome	233	13
Mental and behavioural disorders due to use of alcohol, harmful use	397	52
Mental and behavioural disorders due to use of alcohol, other mental and behavioural disorders	14	0
Mental and behavioural disorders due to use of alcohol, psychotic disorder	10	0
Mental and behavioural disorders due to use of alcohol, residual and late-onset psychotic disorder	32	<5
Mental and behavioural disorders due to use of alcohol, unspecified mental and behavioural disorder	185	19
Mental and behavioural disorders due to use of alcohol, withdrawal state	1396	115
Mental and behavioural disorders due to use of alcohol, withdrawal state with delirium	113	30
Mental and behavioural disorders due to use of cannabinoids, acute intoxication	5	<5
Mental and behavioural disorders due to use of cannabinoids, dependence syndrome	17	0
Mental and behavioural disorders due to use of cannabinoids, harmful use	165	10
Mental and behavioural disorders due to use of cannabinoids, other mental and behavioural disorders	24	0
Mental and behavioural disorders due to use of cannabinoids, psychotic disorder	110	0
Mental and behavioural disorders due to use of cannabinoids, unspecified mental and behavioural diso	51	0
Mental and behavioural disorders due to use of cannabinoids, unspecified mental and behavioural disorder	35	0
Mental and behavioural disorders due to use of cannabinoids, withdrawal state	21	0
Mental and behavioural disorders due to use of cannabinoids, withdrawal state with delirium	<5	0
Mental and behavioural disorders due to use of cocaine, acute intoxication	<5	<5
Mental and behavioural disorders due to use of cocaine, dependence syndrome	27	<5
Mental and behavioural disorders due to use of cocaine, harmful use	142	17
Mental and behavioural disorders due to use of cocaine, other mental and behavioural disorders	5	0
Mental and behavioural disorders due to use of cocaine, psychotic disorder	19	0
Mental and behavioural disorders due to use of cocaine, unspecified mental and behavioural disorder	63	<5
Mental and behavioural disorders due to use of cocaine, withdrawal state	156	<5
Mental and behavioural disorders due to use of cocaine, withdrawal state with delirium	<5	<5
Mental and behavioural disorders due to use of hallucinogens, harmful use	6	<5
Mental and behavioural disorders due to use of hallucinogens, psychotic disorder	6	0
Mental and behavioural disorders due to use of hallucinogens, withdrawal state	<5	0
Mental and behavioural disorders due to use of opioids, acute intoxication	8	<5

Mental and behavioural disorders due to use of opioids, dependence syndrome	63	5
Mental and behavioural disorders due to use of opioids, harmful use	72	9
Mental and behavioural disorders due to use of opioids, other mental and behavioural disorders	<5	0
Mental and behavioural disorders due to use of opioids, psychotic disorder	5	0
Mental and behavioural disorders due to use of opioids, unspecified mental and behavioural disorder	31	<5
Mental and behavioural disorders due to use of opioids, withdrawal state	60	<5
Mental and behavioural disorders due to use of opioids, withdrawal state with delirium	6	<5
Mental and behavioural disorders due to use of other stimulants including caffeine, acute intoxicati	<5	<5
Mental and behavioural disorders due to use of other stimulants including caffeine, dependence syndr	<5	0
Mental and behavioural disorders due to use of other stimulants including caffeine, dependence syndrome	<5	0
Mental and behavioural disorders due to use of other stimulants including caffeine, harmful use	25	<5
Mental and behavioural disorders due to use of other stimulants including caffeine, other mental and	<5	<5
Mental and behavioural disorders due to use of other stimulants including caffeine, psychotic disord	9	0
Mental and behavioural disorders due to use of other stimulants including caffeine, psychotic disorder	14	0
Mental and behavioural disorders due to use of other stimulants including caffeine, unspecified ment	8	0
Mental and behavioural disorders due to use of other stimulants including caffeine, unspecified mental and be	<5	0
Mental and behavioural disorders due to use of other stimulants including caffeine, withdrawal state	39	0
Mental and behavioural disorders due to use of sedatives or hypnotics, acute intoxication	5	<5
Mental and behavioural disorders due to use of sedatives or hypnotics, dependence syndrome	11	0
Mental and behavioural disorders due to use of sedatives or hypnotics, harmful use	23	<5
Mental and behavioural disorders due to use of sedatives or hypnotics, psychotic disorder	<5	0
Mental and behavioural disorders due to use of sedatives or hypnotics, unspecified mental and behavi	8	0
Mental and behavioural disorders due to use of sedatives or hypnotics, withdrawal state	25	<5
Mental and behavioural disorders due to use of sedatives or hypnotics, withdrawal state with deliriu	<5	<5
Mental and behavioural disorders due to use of sedatives or hypnotics, withdrawal state with delirium	<5	0
Mental and behavioural disorders due to use of tobacco, dependence syndrome	172	<5
Mental and behavioural disorders due to use of tobacco, harmful use	7	<5
Mental and behavioural disorders due to use of tobacco, unspecified mental and behavioural disorder	<5	0
Mental and behavioural disorders due to use of tobacco, withdrawal state	24	<5
Mental disorder, not otherwise specified	5	0
Mental disorders and diseases of the nervous system complicating pregnancy, childbirth and the puerp	<5	0
Mental disorders and diseases of the nervous system complicating pregnancy, childbirth and the puerperium, an	7	0
Mental disorders and diseases of the nervous system complicating pregnancy, childbirth and the puerperium, de	46	<5
Mental disorders and diseases of the nervous system complicating pregnancy, childbirth and the puerperium, po	<5	0
Meralgia paraesthetica	<5	0
Mesothelioma of other sites	10	<5
Mesothelioma of peritoneum	<5	<5
Mesothelioma of pleura	17	<5
Mesothelioma, unspecified	<5	0
Metabolic disorder, unspecified	<5	<5
Metabolic encephalopathy	29	19
Metabolic syndrome	5	<5
Metatarsalgia	<5	0
Microscopic hematuria	23	<5
Microscopic polyangiitis	6	0
Middle cerebral artery syndrome	8	<5
Migraine with aura [classical migraine]	5	0
Migraine, unspecified	39	<5
Mild cervical dysplasia	8	0
Mild cognitive disorder	274	17
Mild depressive episode	<5	0
Mild hyperemesis gravidarum, antepartum condition or complication	24	0
Mild hyperemesis gravidarum, delivered, with or without mention of antepartum condition	<5	0
Mild mental and behavioural disorders associated with the puerperium, not elsewhere classified	<5	0
Mild mental retardation without mention of impairment of behaviour	<5	0
Mild to moderate pre-eclampsia, antepartum condition or complication	<5	0
Mild to moderate pre-eclampsia, delivered, with or without mention of antepartum condition	12	0
Mild vulvar dysplasia	<5	0
Miliaria rubra	<5	0
Miliary tuberculosis, unspecified	<5	0
Mineral salts, not elsewhere classified, causing adverse effect in therapeutic use	<5	0
Mineralocorticoid antagonists [aldosterone antagonists] causing adverse effect in therapeutic use	7	<5
Mineralocorticoids causing adverse effect in therapeutic use	<5	0
Misplaced ear	<5	0
Missed abortion	8	0
Mitochondrial myopathy, not elsewhere classified	<5	0
Mitral (valve) insufficiency	141	43
Mitral (valve) prolapse	16	<5
Mitral stenosis	29	11
Mitral stenosis with insufficiency	10	<5
Mitral valve disease, unspecified	9	<5
Mixed and other personality disorders	16	0
Mixed anxiety and depressive disorder	154	14
Mixed asthma without stated status asthmaticus	<5	0
Mixed cellularity (classical) Hodgkin lymphoma	<5	0
Mixed conductive and sensorineural hearing loss, bilateral	<5	<5
Mixed conductive and sensorineural hearing loss, unilateral with unrestricted hearing on the contral	<5	<5
Mixed cortical and subcortical vascular dementia	<5	0

Mixed incontinence	9	0
Moderate cervical dysplasia	5	0
Moderate depressive episode	11	0
Monoarthritis, not elsewhere classified, ankle and foot	<5	0
Monoclonal gammopathy of undetermined significance (MGUS)	9	<5
Mononeuropathy, unspecified	<5	<5
Monoplegia of upper limb on non-dominant side	<5	0
Monoplegia of upper limb on unspecified [unilateral] side	8	<5
Monteggia's fracture, closed	<5	0
Monteggia's fracture, open	<5	0
Morbidly adherent placenta, delivered, with or without mention of antepartum condition	<5	0
Morphine causing adverse effect in therapeutic use	23	<5
Motor neuron disease, unspecified	<5	0
Motorcycle rider [any] injured in other specified transport accidents	<5	0
Motorcycle rider [any] injured in unspecified nontraffic accident	<5	<5
Motorcycle rider [any] injured in unspecified traffic accident	5	<5
Motorcycle rider injured in collision with car, pick-up truck or van, driver, traffic accident	13	<5
Motorcycle rider injured in collision with car, pick-up truck or van, passenger, traffic accident	<5	<5
Motorcycle rider injured in collision with fixed or stationary object, driver, nontraffic accident	<5	0
Motorcycle rider injured in collision with fixed or stationary object, driver, traffic accident	9	<5
Motorcycle rider injured in collision with heavy transport vehicle or bus, driver, nontraffic accide	<5	0
Motorcycle rider injured in collision with heavy transport vehicle or bus, driver, traffic accident	<5	<5
Motorcycle rider injured in collision with pedestrian or animal, driver, traffic accident	<5	<5
Motorcycle rider injured in collision with two- or three-wheeled motor vehicle, driver, traffic acci	<5	0
Motorcycle rider injured in noncollision transport accident, driver, nontraffic accident	13	0
Motorcycle rider injured in noncollision transport accident, driver, traffic accident	19	<5
Motorized vehicle sports	<5	0
Mouth breathing	<5	0
Moyamoya disease	<5	0
Mucocele of salivary gland	<5	0
Mucopolysaccharidosis, type I	<5	<5
Mucopurulent conjunctivitis	<5	0
Mucositis (ulcerative) of the digestive system	<5	0
Multi-infarct dementia	<5	0
Multiple disorders of sexual preference	<5	0
Multiple fractures involving skull and facial bones, closed	15	9
Multiple fractures involving skull and facial bones, open	<5	0
Multiple fractures of 2 - 4 ribs, closed	141	21
Multiple fractures of 5 or more ribs, closed	73	19
Multiple fractures of cervical spine, closed	14	8
Multiple fractures of clavicle, scapula and humerus, closed	<5	<5
Multiple fractures of femur, closed	<5	0
Multiple fractures of femur, open	<5	<5
Multiple fractures of fingers, closed	<5	0
Multiple fractures of foot, closed	<5	0
Multiple fractures of foot, open	<5	<5
Multiple fractures of forearm, closed	<5	<5
Multiple fractures of forearm, open	<5	0
Multiple fractures of lumbar spine and pelvis, closed	55	18
Multiple fractures of lumbar spine and pelvis, open	<5	<5
Multiple fractures of multiple sites of other metacarpal bones, closed	<5	0
Multiple fractures of multiple sites of other metacarpal bones, open	<5	0
Multiple fractures of shaft of other metacarpal bones, open	<5	0
Multiple fractures of thoracic spine, closed	32	10
Multiple fractures of unspecified number of ribs, closed	58	22
Multiple fractures unspecified site of other metacarpal bones, closed	<5	0
Multiple mandibular fracture sites, closed	34	<5
Multiple myeloma	169	20
Multiple open wounds of abdomen, lower back and pelvis, uncomplicated	<5	0
Multiple open wounds of head, uncomplicated	<5	<5
Multiple open wounds of lower leg, complicated	<5	0
Multiple open wounds of lower leg, uncomplicated	<5	0
Multiple open wounds of neck, uncomplicated	<5	0
Multiple open wounds of thoracic wall, uncomplicated	<5	0
Multiple open wounds of wrist and hand, uncomplicated	<5	0
Multiple sclerosis	114	8
Multiple superficial injuries of abdomen, lower back and pelvis	<5	0
Multiple superficial injuries of forearm	<5	0
Multiple superficial injuries of head	8	<5
Multiple superficial injuries of hip and thigh	<5	<5
Multiple superficial injuries of lower leg	<5	0
Multiple superficial injuries of shoulder and upper arm	<5	0
Multiple superficial injuries, unspecified	<5	<5
Multiple system atrophy, cerebellar type [MSA-C]	<5	0
Multiple system atrophy, parkinsonian type [MSA-P]	<5	0
Mumps with other complications	<5	<5
Muscle strain, lower leg	<5	0
Muscle strain, other site	<5	0

Muscle strain, pelvic region and thigh	<5	0
Muscle wasting and atrophy, not elsewhere classified, multiple sites	<5	0
Muscle wasting and atrophy, not elsewhere classified, unspecified site	<5	0
Muscular dystrophy	11	<5
Myalgia, lower leg	6	0
Myalgia, multiple sites	17	0
Myalgia, other site	6	0
Myalgia, pelvic region and thigh	<5	<5
Myalgia, shoulder region	<5	0
Myalgia, unspecified site	6	<5
Myalgia, upper arm	<5	0
Myasthenia gravis	27	6
Myasthenic syndromes in endocrine diseases	6	<5
Mycetoma, unspecified	<5	0
Mycobacterial infection, unspecified	<5	0
Mycosis fungoides	<5	0
Myelodysplastic and myeloproliferative disease, not elsewhere classified	<5	0
Myelodysplastic syndrome, unspecified	90	16
Myeloid leukaemia, unspecified	<5	0
Myeloid sarcoma	<5	0
Myelopathy in diseases classified elsewhere	115	5
Myocardial degeneration	<5	<5
Myocarditis in other diseases classified elsewhere	<5	0
Myocarditis, unspecified	28	5
Myoclonus	34	13
Myoneural disorder, unspecified	<5	<5
Myopathy in metabolic diseases	<5	0
Myopathy in other diseases classified elsewhere	<5	0
Myopathy, unspecified	5	<5
Myositis in bacterial diseases classified elsewhere	<5	0
Myositis unspecified, unspecified site	5	<5
Myositis, unspecified, lower leg	5	<5
Myositis, unspecified, multiple sites	<5	0
Myositis, unspecified, other site	<5	0
Myositis, unspecified, pelvic region and thigh	<5	0
Myositis, unspecified, upper arm	<5	0
Myotonic disorders	6	<5
Myxoedema coma	<5	<5
Naevus, non-neoplastic	<5	<5
Nail disorder, unspecified	<5	0
Narcolepsy and cataplexy	<5	0
Nasal polyp, unspecified	7	0
Natural blood and blood products causing adverse effect in therapeutic use	20	6
Nausea alone	376	31
Nausea with vomiting	760	67
Necrosis of above knee amputation stump	<5	0
Necrosis of below knee amputation stump	<5	<5
Necrosis of other amputation stump	<5	0
Necrosis of pulp	<5	0
Necrotizing fasciitis, ankle and foot	<5	0
Necrotizing fasciitis, forearm	<5	0
Necrotizing fasciitis, lower leg	6	<5
Necrotizing fasciitis, multiple sites	6	<5
Necrotizing fasciitis, other site	8	<5
Necrotizing fasciitis, pelvic region and thigh	11	<5
Necrotizing fasciitis, unspecified site	<5	0
Necrotizing fasciitis, upper arm	<5	<5
Necrotizing vasculopathy, unspecified site	<5	0
Need for assistance at home and no other household member able to render care	151	<5
Need for assistance due to reduced mobility	70	6
Need for assistance with personal care	8	<5
Need for continuous supervision	12	<5
Need for immunization against COVID-19	24	<5
Neglect and abandonment by parent	<5	0
Neglect and abandonment by unspecified person	<5	0
Neglect or abandonment	<5	0
Nelson's syndrome	<5	0
Neonatal aspiration of amniotic fluid and mucus	<5	0
Neonatal aspiration of meconium	5	0
Neonatal aspiration of milk and regurgitated food	<5	0
Neonatal cerebral leukomalacia	<5	0
Neonatal conjunctivitis and dacryocystitis	<5	0
Neonatal cutaneous haemorrhage	17	0
Neonatal diabetes mellitus	<5	0
Neonatal difficulty in feeding at breast	96	0
Neonatal erythema toxicum	5	0
Neonatal hypertension	<5	0
Neonatal hypomagnesaemia	<5	0

Neonatal jaundice associated with preterm delivery	9	0
Neonatal jaundice due to bruising	<5	0
Neonatal jaundice from other specified causes	<5	0
Neonatal jaundice, unspecified	303	0
Neonatal oesophageal reflux	9	0
Neonatal urinary tract infection	<5	0
Neonatal withdrawal symptoms from maternal use of drugs of addiction	22	0
Neoplasm of uncertain or unknown behaviour of adrenal gland	8	<5
Neoplasm of uncertain or unknown behaviour of aortic body and other paraganglia	<5	0
Neoplasm of uncertain or unknown behaviour of appendix	<5	0
Neoplasm of uncertain or unknown behaviour of bladder	19	<5
Neoplasm of uncertain or unknown behaviour of bone and articular cartilage	8	<5
Neoplasm of uncertain or unknown behaviour of brain, infratentorial	7	0
Neoplasm of uncertain or unknown behaviour of brain, supratentorial	19	<5
Neoplasm of uncertain or unknown behaviour of brain, unspecified	7	0
Neoplasm of uncertain or unknown behaviour of carotid body	<5	0
Neoplasm of uncertain or unknown behaviour of connective and other soft tissue	11	0
Neoplasm of uncertain or unknown behaviour of cranial nerves	<5	0
Neoplasm of uncertain or unknown behaviour of craniopharyngeal duct	6	<5
Neoplasm of uncertain or unknown behaviour of digestive organ, unspecified	11	0
Neoplasm of uncertain or unknown behaviour of endocrine gland, unspecified	<5	0
Neoplasm of uncertain or unknown behaviour of kidney	14	<5
Neoplasm of uncertain or unknown behaviour of liver, gallbladder and bile ducts	9	0
Neoplasm of uncertain or unknown behaviour of lymphoid, haematopoietic and related tissue, unspecifi	<5	0
Neoplasm of uncertain or unknown behaviour of lymphoid, haematopoietic and related tissue, unspecified	5	0
Neoplasm of uncertain or unknown behaviour of mediastinum	<5	0
Neoplasm of uncertain or unknown behaviour of other digestive organs	13	<5
Neoplasm of uncertain or unknown behaviour of other female genital organs	<5	0
Neoplasm of uncertain or unknown behaviour of other respiratory organs	<5	0
Neoplasm of uncertain or unknown behaviour of other specified sites	<5	0
Neoplasm of uncertain or unknown behaviour of ovary	9	<5
Neoplasm of uncertain or unknown behaviour of parotid salivary glands	6	0
Neoplasm of uncertain or unknown behaviour of peripheral nerves and autonomic nervous system	<5	0
Neoplasm of uncertain or unknown behaviour of peritoneum	6	0
Neoplasm of uncertain or unknown behaviour of pituitary gland	<5	0
Neoplasm of uncertain or unknown behaviour of prostate	<5	0
Neoplasm of uncertain or unknown behaviour of retroperitoneum	5	0
Neoplasm of uncertain or unknown behaviour of skin	<5	<5
Neoplasm of uncertain or unknown behaviour of small intestine	<5	0
Neoplasm of uncertain or unknown behaviour of spinal cord	<5	0
Neoplasm of uncertain or unknown behaviour of stomach	7	<5
Neoplasm of uncertain or unknown behaviour of the colon	6	0
Neoplasm of uncertain or unknown behaviour of the rectum	5	0
Neoplasm of uncertain or unknown behaviour of thyroid gland	<5	0
Neoplasm of uncertain or unknown behaviour of trachea, bronchus and lung	17	<5
Neoplasm of uncertain or unknown behaviour of ureter	<5	0
Neoplasm of uncertain or unknown behaviour of urethra	<5	0
Neoplasm of uncertain or unknown behaviour of uterus	5	0
Neoplasm of uncertain or unknown behaviour, unspecified	<5	0
Nephrogenic diabetes insipidus	7	<5
Nephropathy induced by other drugs, medicaments and biological substances	153	36
Nephropathy induced by unspecified drug, medicament or biological substance	<5	<5
Nephrotic syndrome, diffuse membranous glomerulonephritis	<5	0
Nephrotic syndrome, focal and segmental glomerular lesions	<5	0
Nephrotic syndrome, other	<5	0
Nephrotic syndrome, unspecified	30	<5
Nerve root and plexus compressions in intervertebral disc disorders	75	<5
Nerve root and plexus compressions in neoplastic disease	21	0
Nerve root and plexus compressions in other dorsopathies	44	<5
Nerve root and plexus compressions in spondylosis	9	<5
Nerve root and plexus disorder, unspecified	<5	0
Neuralgia and neuritis, unspecified, lower leg	<5	<5
Neuralgia and neuritis, unspecified, multiple sites	<5	0
Neuralgia and neuritis, unspecified, other site	<5	0
Neuralgia and neuritis, unspecified, unspecified site	<5	0
Neurofibromatosis (nonmalignant)	<5	<5
Neurogenic bowel, not elsewhere classified	13	0
Neurological devices associated with adverse incidents, prosthetic and other implants, materials and	7	0
Neurological neglect syndrome	8	<5
Neurologically determined death	20	19
Neuroma of above knee amputation stump	<5	0
Neuromuscular dysfunction of bladder, unspecified	52	5
Neuromyelitis optica [Devic]	<5	0
Neuropathic arthropathy	24	<5
Neurosyphilis, unspecified	<5	0
Neutropenia	385	44
Nightmares	<5	0
Nocturia	7	0

Nodular lymphocyte predominant Hodgkin lymphoma	<5	0
Nodular sclerosis (classical) Hodgkin lymphoma	<5	0
Nondiabetic hypoglycaemic coma	<5	<5
Nonfamilial hypogammaglobulinaemia	<5	0
Non-follicular (diffuse) lymphoma, unspecified	<5	0
Non-Hodgkin lymphoma, unspecified	92	<5
Noninfective gastroenteritis and colitis, unspecified	71	9
Noninflammatory disorder of cervix uteri, unspecified	<5	0
Noninflammatory disorder of ovary, fallopian tube and broad ligament, unspecified	7	<5
Noninflammatory disorder of uterus, unspecified	6	<5
Noninflammatory disorder of vulva and perineum, unspecified	<5	0
Non-neuropathic heredofamilial amyloidosis	<5	0
Nonorganic insomnia	<5	0
Nonorganic vaginismus	<5	0
Nonpurulent mastitis associated with childbirth, delivered, with or without mention of antepartum condition	<5	0
Nonpurulent mastitis associated with childbirth, postpartum condition or complication	<5	0
Nonpyogenic meningitis	<5	0
Nonpyogenic thrombosis of intracranial venous system	<5	<5
Nonrheumatic tricuspid (valve) insufficiency	<5	<5
Nonspecific intraventricular block	<5	<5
Nonspecific low blood-pressure reading	<5	0
Nonspecific lymphadenitis, unspecified	<5	0
Nonspecific mesenteric lymphadenitis	<5	0
Nonspecific reactive hepatitis	<5	0
Nonspecific symptoms peculiar to infancy	<5	0
Nonsuppurative otitis media, unspecified	<5	<5
Nontoxic goitre, unspecified	13	<5
Nontoxic multinodular goitre	26	<5
Nontoxic single thyroid nodule	68	5
Nontraumatic extradural haemorrhage	<5	0
Nonunion of fracture [pseudarthrosis], ankle and foot	6	0
Nonunion of fracture [pseudarthrosis], forearm	<5	0
Nonunion of fracture [pseudarthrosis], hand	<5	0
Nonunion of fracture [pseudarthrosis], lower leg	10	<5
Nonunion of fracture [pseudarthrosis], other site	6	0
Nonunion of fracture [pseudarthrosis], pelvic region and thigh	18	0
Nonunion of fracture [pseudarthrosis], shoulder region	7	0
Nonunion of fracture [pseudarthrosis], upper arm	13	0
Normal-pressure hydrocephalus	18	0
Nosocomial condition	<5	<5
Nummular dermatitis	<5	<5
Nutritional anaemia, unspecified	38	<5
Nutritional and metabolic disorders in diseases classified elsewhere	6	<5
Nutritional deficiency, unspecified	6	<5
Nutritional marasmus	<5	0
Nystagmus and other irregular eye movements	12	<5
Obesity, unspecified	67	18
Observation for other suspected cardiovascular diseases	<5	<5
Observation for other suspected diseases and conditions	34	<5
Observation for suspected malignant neoplasm	<5	0
Observation for suspected mental and behavioural disorders	6	0
Observation for suspected toxic effect from ingested substance	<5	<5
Obsessive-compulsive disorder, unspecified	38	<5
Obstetric and gynaecological devices associated with adverse incidents, prosthetic and other implants, materi	<5	0
Obstetric and gynaecological devices associated with adverse incidents, therapeutic (nonsurgical) and rehabil	<5	0
Obstetric blood-clot embolism, postpartum condition or complication	<5	0
Obstetric damage to pelvic joints and ligaments, delivered, with or without mention of antepartum condition	7	0
Obstetric damage to pelvic joints and ligaments, postpartum condition or complication	<5	0
Obstetric haematoma of pelvis, delivered, with or without mention of antepartum condition	12	<5
Obstetric high vaginal laceration, delivered, with or without mention of antepartum condition	19	<5
Obstetric laceration of cervix, delivered, with or without mention of antepartum condition	9	<5
Obstetric trauma, unspecified, delivered, with or without mention of antepartum condition	<5	0
Obstructed labour due to abnormality of maternal pelvic organs, delivered, with or without mention of antepar	<5	0
Obstructed labour due to breech presentation, delivered, with or without mention of antepartum condition	20	0
Obstructed labour due to compound presentation, delivered, with or without mention of antepartum condition	5	0
Obstructed labour due to deformed pelvis, delivered, with or without mention of antepartum condition	<5	0
Obstructed labour due to face presentation, delivered, with or without mention of antepartum condition	<5	0
Obstructed labour due to fetopelvic disproportion, unspecified, delivered, with or without mention of antepar	25	<5
Obstructed labour due to incomplete rotation of fetal head, delivered, with or without mention of antepartum	164	0
Obstructed labour due to malposition and malpresentation, unspecified, delivered, with or without mention of	<5	0
Obstructed labour due to maternal pelvic abnormality, unspecified, delivered, with or without mention of ante	<5	0
Obstructed labour due to other malposition and malpresentation, delivered, with or without mention of antepar	20	0
Obstructed labour due to shoulder dystocia, delivered, with or without mention of antepartum condition	124	0
Obstructed labour due to shoulder presentation, delivered, with or without mention of antepartum condition	6	0
Obstructed labour due to unusually large fetus, delivered, with or without mention of antepartum condition	<5	0
Obstructed labour, unspecified, delivered, with or without mention of antepartum condition	52	<5
Obstruction due to foreign body accidentally left in body cavity or operation wound following proced	<5	<5
Obstruction due to foreign body accidentally left in body cavity or operation wound following procedure	<5	0

Obstruction of bile duct	156	12
Obstruction of duodenum	7	<5
Obstructive and reflux uropathy, unspecified	47	6
Obstructive hydrocephalus	14	6
Obstructive hypertrophic cardiomyopathy	18	<5
Occlusion and stenosis of anterior cerebral artery	<5	0
Occlusion and stenosis of basilar artery	<5	<5
Occlusion and stenosis of carotid artery	146	24
Occlusion and stenosis of cerebellar arteries	<5	0
Occlusion and stenosis of middle cerebral artery	11	5
Occlusion and stenosis of multiple and bilateral precerebral arteries	11	<5
Occlusion and stenosis of other cerebral artery	6	0
Occlusion and stenosis of posterior cerebral artery	<5	0
Occlusion and stenosis of unspecified cerebral artery	12	<5
Occlusion and stenosis of vertebral artery	11	<5
Occupant [any] of heavy transport vehicle injured in other specified transport accidents	<5	0
Occupant [any] of pick-up truck or van injured in other specified transport accidents	<5	0
Occupant of heavy transport vehicle injured in collision with car, pick-up truck or van, driver, tra	<5	0
Occupant of heavy transport vehicle injured in noncollision transport accident, driver, nontraffic accident	<5	0
Occupant of heavy transport vehicle injured in noncollision transport accident, driver, traffic accident	<5	0
Occupant of pick-up truck or van injured in collision with car, pick-up truck or van, driver, nontraffic acci	<5	0
Occupant of pick-up truck or van injured in collision with car, pick-up truck or van, driver, traffi	<5	<5
Occupant of pick-up truck or van injured in collision with fixed or stationary object, driver, nontraffic acc	<5	0
Occupant of pick-up truck or van injured in collision with fixed or stationary object, driver, traff	<5	0
Occupant of pick-up truck or van injured in collision with fixed or stationary object, driver, traffic accide	<5	0
Occupant of pick-up truck or van injured in collision with pedestrian or animal, driver, traffic acc	<5	0
Occupant of pick-up truck or van injured in collision with pedestrian or animal, while boarding or a	<5	<5
Occupant of pick-up truck or van injured in noncollision transport accident, driver, traffic accident	<5	<5
Occupant of pick-up truck or van injured in noncollision transport accident, person on outside of ve	<5	<5
Occupant of pick-up truck or van injured in noncollision transport accident, while boarding or alighting	<5	0
Occupant of three-wheeled motor vehicle injured in noncollision transport accident, driver, nontraffic accide	<5	0
Occupational therapy and vocational rehabilitation, not elsewhere classified	583	49
Ocular laceration and rupture with prolapse or loss of intraocular tissue	5	0
Ocular laceration without prolapse or loss of intraocular tissue	7	<5
Ocular pain	7	0
Oedema of larynx	9	<5
Oedema, unspecified	46	10
Oesophageal obstruction	67	6
Oesophageal varices with bleeding	10	<5
Oesophageal varices with bleeding in diseases classified elsewhere	53	21
Oesophageal varices without bleeding	16	<5
Oesophageal varices without bleeding in diseases classified elsewhere	69	12
Oesophagitis	122	16
Old myocardial infarction	141	52
Olecranon bursitis	<5	0
Oligohydramnios, third trimester, delivered, with or without mention of antepartum condition	23	0
Oligohydramnios, unspecified trimester, delivered, with or without mention of antepartum condition	<5	0
Oligomenorrhoea, unspecified	<5	0
Onychogryphosis	<5	<5
Onycholysis	<5	0
Open wound involving larynx and trachea, uncomplicated	<5	<5
Open wound involving pharynx and cervical esophagus, uncomplicated	<5	<5
Open wound of ankle, complicated	<5	0
Open wound of ankle, uncomplicated	<5	<5
Open wound of breast, uncomplicated	<5	0
Open wound of cheek and temporomandibular area, complicated	<5	<5
Open wound of cheek and temporomandibular area, uncomplicated	<5	<5
Open wound of ear, uncomplicated	<5	<5
Open wound of elbow, complicated	<5	0
Open wound of elbow, uncomplicated	9	<5
Open wound of eyelid and periocular area, complicated	<5	0
Open wound of eyelid and periocular area, uncomplicated	19	<5
Open wound of finger(s) with damage to nail, uncomplicated	<5	0
Open wound of finger(s) without damage to nail, complicated	<5	0
Open wound of finger(s) without damage to nail, uncomplicated	6	0
Open wound of forearm, multiple, complicated	<5	<5
Open wound of forearm, multiple, uncomplicated	<5	0
Open wound of forearm, part unspecified, uncomplicated	7	0
Open wound of front wall of thorax, uncomplicated	<5	<5
Open wound of head, part unspecified, uncomplicated	5	0
Open wound of hip, complicated	<5	<5
Open wound of hip, uncomplicated	<5	<5
Open wound of knee, complicated	8	<5
Open wound of knee, uncomplicated	13	<5
Open wound of lip and oral cavity, complicated	<5	<5
Open wound of lip and oral cavity, uncomplicated	6	<5
Open wound of lower abdominal wall, complicated	<5	0
Open wound of lower abdominal wall, uncomplicated	5	0

Open wound of lower back and pelvis, complicated	<5	<5
Open wound of lower back and pelvis, uncomplicated	<5	0
Open wound of lower leg, part unspecified, complicated	<5	0
Open wound of lower leg, part unspecified, uncomplicated	7	<5
Open wound of lower limb, level unspecified	6	0
Open wound of neck, part unspecified, complicated	<5	0
Open wound of neck, part unspecified, uncomplicated	7	0
Open wound of nose, uncomplicated	5	<5
Open wound of other and unspecified parts of abdomen, complicated	<5	0
Open wound of other and unspecified parts of abdomen, uncomplicated	<5	0
Open wound of other parts of foot, complicated	5	0
Open wound of other parts of foot, uncomplicated	<5	0
Open wound of other parts of forearm, complicated	<5	<5
Open wound of other parts of forearm, uncomplicated	5	<5
Open wound of other parts of neck, uncomplicated	<5	<5
Open wound of other parts of wrist and hand, complicated	<5	<5
Open wound of other parts of wrist and hand, uncomplicated	<5	<5
Open wound of periumbilical region of abdominal wall, uncomplicated	<5	<5
Open wound of scalp, complicated	<5	0
Open wound of scalp, uncomplicated	47	13
Open wound of scrotum and testes, complicated	<5	<5
Open wound of scrotum and testes, uncomplicated	<5	<5
Open wound of shoulder, complicated	<5	0
Open wound of thigh, complicated	<5	<5
Open wound of thigh, uncomplicated	<5	<5
Open wound of toe(s) with damage to nail, complicated	<5	0
Open wound of toe(s) with damage to nail, uncomplicated	<5	<5
Open wound of toe(s) without damage to nail, complicated	<5	0
Open wound of toe(s) without damage to nail, uncomplicated	<5	0
Open wound of unspecified body region	<5	0
Open wound of unspecified site of abdominal wall, complicated	<5	0
Open wound of unspecified site of abdominal wall, uncomplicated	<5	<5
Open wound of upper abdominal wall, uncomplicated	<5	<5
Open wound of upper arm, complicated	<5	0
Open wound of upper arm, uncomplicated	<5	0
Open wound of upper limb, level unspecified	<5	<5
Open wound of vagina and vulva, uncomplicated	14	<5
Open wound of wrist and hand, part unspecified, complicated	<5	0
Open wound of wrist and hand, part unspecified, uncomplicated	12	<5
Open wounds involving multiple regions of upper limb(s) with lower limb(s), uncomplicated	<5	0
Open wounds involving multiple regions of upper limb(s), uncomplicated	<5	0
Open wounds involving other combinations of body regions, uncomplicated	<5	0
Open wounds of multiple regions of lower limb(s), complicated	<5	0
Open wounds of multiple regions of lower limb(s), uncomplicated	<5	<5
Open wounds of other parts of head, complicated	7	<5
Open wounds of other parts of head, uncomplicated	100	15
Open wounds of other parts of lower leg, complicated	11	<5
Open wounds of other parts of lower leg, uncomplicated	9	<5
Ophthalmic devices associated with adverse incidents, prosthetic and other implants, materials and accessory	<5	0
Opioid receptor antagonists causing adverse effect in therapeutic use	<5	0
Oppositional defiant disorder	<5	0
Optic neuritis	7	0
Oral contraceptives causing adverse effect in therapeutic use	<5	0
Oral mucositis (ulcerative)	91	12
Orchitis	9	0
Orchitis with abscess	<5	0
Organic catatonic disorder	<5	<5
Organic delusional [schizophrenia-like] disorder	<5	0
Organic mood [affective] disorders	<5	0
Organic personality disorder	<5	0
Organ-limited amyloidosis	29	<5
Oropharyngeal dysphagia	18	<5
Orthopaedic devices associated with adverse incidents, prosthetic and other implants, materials and	14	<5
Orthopaedic devices associated with adverse incidents, prosthetic and other implants, materials and accessory	16	0
Orthopaedic devices associated with adverse incidents, surgical instruments, materials and devices (	<5	0
Orthopaedic devices associated with adverse incidents, therapeutic (nonsurgical) and rehabilitative devices	<5	0
Orthostatic hypotension	323	23
Osteochondritis dissecans, lower leg	<5	0
Osteogenesis imperfecta	<5	0
Osteolysis, ankle and foot	<5	0
Osteolysis, other site	<5	0
Osteomyelitis of vertebra, cervical region	<5	<5
Osteomyelitis of vertebra, multiple sites in spine	<5	<5
Osteomyelitis of vertebra, sacral and sacrococcygeal region	8	<5
Osteomyelitis of vertebra, thoracolumbar region	17	<5
Osteomyelitis of vertebra, unspecified site	7	0
Osteomyelitis, unspecified, ankle and foot	109	9
Osteomyelitis, unspecified, hand	6	0

Osteomyelitis, unspecified, lower leg	8	<5
Osteomyelitis, unspecified, multiple sites	<5	0
Osteomyelitis, unspecified, other site	21	<5
Osteomyelitis, unspecified, pelvic region and thigh	20	<5
Osteomyelitis, unspecified, shoulder region	<5	0
Osteomyelitis, unspecified, unspecified site	5	0
Osteomyelofibrosis	26	5
Osteonecrosis due to drugs, shoulder region	<5	0
Osteonecrosis due to previous trauma, pelvic region and thigh	<5	0
Osteonecrosis, unspecified, ankle and foot	<5	<5
Osteonecrosis, unspecified, forearm	<5	0
Osteonecrosis, unspecified, lower leg	<5	0
Osteonecrosis, unspecified, other site	<5	0
Osteonecrosis, unspecified, pelvic region and thigh	36	<5
Osteophyte, ankle and foot	<5	0
Osteophyte, lower leg	79	<5
Osteophyte, pelvic region and thigh	62	0
Osteoporosis in endocrine disorders	5	<5
Osteoporosis of disuse with pathological fracture, other site	<5	0
Osteoporosis, unspecified	598	17
Otalgia	10	<5
Other (classical) Hodgkin lymphoma	6	0
Other abnormal findings on antenatal screening of mother, delivered, with or without mention of antepartum co	<5	0
Other abnormal findings on diagnostic imaging of central nervous system	<5	0
Other abortion, incomplete, complicated by delayed or excessive haemorrhage	<5	0
Other abortion, incomplete, without complication	<5	0
Other abscess of pharynx	<5	<5
Other acquired deformities of ankle and foot	5	0
Other acute and transient psychotic disorders	<5	0
Other acute gastritis	20	<5
Other acute myocarditis	7	<5
Other acute osteomyelitis, ankle and foot	47	5
Other acute osteomyelitis, lower leg	5	<5
Other acute osteomyelitis, multiple sites	<5	0
Other acute osteomyelitis, other site	9	<5
Other acute osteomyelitis, pelvic region and thigh	<5	<5
Other acute pancreatitis	22	5
Other acute predominantly delusional psychotic disorders	9	0
Other acute renal failure	37	13
Other acute sinusitis	<5	0
Other adhesions and disruptions of iris and ciliary body	<5	0
Other adventure sports	<5	0
Other agents primarily affecting the gastrointestinal system causing adverse effect in therapeutic u	<5	0
Other agents primarily affecting the gastrointestinal system causing adverse effect in therapeutic use	<5	<5
Other agranulocytosis	15	<5
Other Alzheimer's disease	50	0
Other amnesia	9	<5
Other amyloidosis	<5	0
Other analgesics and antipyretics causing adverse effect in therapeutic use	<5	0
Other and unspecified abdominal pain	343	15
Other and unspecified abnormal findings in urine	<5	<5
Other and unspecified abnormal involuntary movements	14	<5
Other and unspecified abnormal results of cardiovascular function studies	204	56
Other and unspecified abnormalities of breathing	106	25
Other and unspecified abnormalities of gait and mobility	85	5
Other and unspecified abnormalities of heart beat	20	<5
Other and unspecified adrenocortical insufficiency	37	11
Other and unspecified agents affecting blood constituents causing adverse effect in therapeutic use	<5	<5
Other and unspecified antidepressants causing adverse effect in therapeutic use	40	<5
Other and unspecified antiepileptics causing adverse effect in therapeutic use	13	<5
Other and unspecified atelectasis of newborn	<5	0
Other and unspecified atrioventricular block	11	<5
Other and unspecified bacterial vaccines causing adverse effect in therapeutic use	<5	0
Other and unspecified cholangitis	71	5
Other and unspecified cirrhosis of liver	317	61
Other and unspecified complications of above knee amputation stump	<5	<5
Other and unspecified complications of below knee amputation stump	<5	<5
Other and unspecified complications of other amputation stump	<5	0
Other and unspecified convulsions	352	94
Other and unspecified difficulties of micturition	13	<5
Other and unspecified diseases of pulp and periapical tissues	<5	0
Other and unspecified disorders of breast associated with childbirth, delivered, with or without mention of a	<5	0
Other and unspecified disorders of circulatory system	20	10
Other and unspecified disturbances of skin sensation	36	<5
Other and unspecified disturbances of smell and taste	<5	<5
Other and unspecified drugs primarily affecting the autonomic nervous system causing adverse effect	<5	<5
Other and unspecified drugs primarily affecting the autonomic nervous system causing adverse effect in therap	<5	0
Other and unspecified dysphagia	968	150

Other and unspecified fall on same level	783	35
Other and unspecified gastroenteritis and colitis of infectious origin	69	<5
Other and unspecified general anaesthetics causing adverse effect in therapeutic use	33	9
Other and unspecified hematuria	203	28
Other and unspecified hormones and their synthetic substitutes causing adverse effect in therapeutic	5	<5
Other and unspecified hormones and their synthetic substitutes causing adverse effect in therapeutic use	<5	0
Other and unspecified hydronephrosis	245	15
Other and unspecified infectious diseases	23	<5
Other and unspecified injury of Achilles tendon	<5	0
Other and unspecified injury of adductor muscle and tendon of thigh	<5	<5
Other and unspecified injury of brachial plexus	<5	<5
Other and unspecified injury of diaphragm without open wound into thoracic cavity	<5	0
Other and unspecified injury of extensor muscle and tendon of other finger at wrist and hand level	<5	0
Other and unspecified injury of facial nerve	<5	<5
Other and unspecified injury of median nerve at wrist and hand level	<5	0
Other and unspecified injury of multiple muscles and tendons at hip and thigh level	<5	0
Other and unspecified injury of muscle and tendon at thorax level	<5	0
Other and unspecified injury of muscle and tendon of abdomen, lower back and pelvis	8	<5
Other and unspecified injury of muscle and tendon of head	<5	0
Other and unspecified injury of muscle and tendon of hip	6	0
Other and unspecified injury of muscle and tendon of long head of bicep	<5	0
Other and unspecified injury of muscle and tendon of other parts of bicep	<5	0
Other and unspecified injury of muscle and tendon of the posterior muscle and tendon (group) at thigh level	<5	0
Other and unspecified injury of muscle(s) and tendon(s) of the rotator cuff of shoulder	16	0
Other and unspecified injury of nerve root of cervical spine	<5	0
Other and unspecified injury of other and unspecified muscles and tendons at thigh level	<5	0
Other and unspecified injury of other and unspecified nerves of neck	<5	<5
Other and unspecified injury of other cranial nerves	<5	<5
Other and unspecified injury of other extensor muscle and tendon at forearm level	<5	<5
Other and unspecified injury of other muscles and tendons at ankle and foot level	<5	0
Other and unspecified injury of other muscles and tendons at lower leg level	<5	0
Other and unspecified injury of other muscles and tendons at shoulder and upper arm level	<5	0
Other and unspecified injury of other nerves at ankle and foot level	<5	0
Other and unspecified injury of other specified intrathoracic organs with open wound into thoracic cavity	<5	0
Other and unspecified injury of other specified intrathoracic organs without open wound into thoraci	<5	<5
Other and unspecified injury of other specified intrathoracic organs without open wound into thoracic cavity	<5	0
Other and unspecified injury of peroneal nerve at lower leg level	<5	<5
Other and unspecified injury of quadriceps muscle and tendon	20	<5
Other and unspecified injury of radial nerve at upper arm level	<5	0
Other and unspecified injury of unspecified muscle and tendon at shoulder and upper arm level	<5	0
Other and unspecified injury of unspecified nerves at wrist and hand level	<5	0
Other and unspecified intestinal obstruction	740	41
Other and unspecified kyphosis, cervicothoracic region	<5	<5
Other and unspecified kyphosis, thoracic region	8	<5
Other and unspecified kyphosis, thoracolumbar region	<5	0
Other and unspecified kyphosis, unspecified site	<5	0
Other and unspecified lack of coordination	16	<5
Other and unspecified lesions of oral mucosa	12	0
Other and unspecified medical devices associated with adverse incidents, diagnostic and monitoring devices	<5	0
Other and unspecified medical devices associated with adverse incidents, miscellaneous devices, not elsewhere	10	<5
Other and unspecified medical devices associated with adverse incidents, prosthetic and other implan	<5	<5
Other and unspecified medical devices associated with adverse incidents, prosthetic and other implants, mater	<5	<5
Other and unspecified medical devices associated with adverse incidents, surgical instruments, mater	<5	0
Other and unspecified medical devices associated with adverse incidents, surgical instruments, materials and	<5	0
Other and unspecified medical devices associated with adverse incidents, therapeutic (nonsurgical) and rehabi	6	<5
Other and unspecified oedema specific to fetus and newborn	<5	0
Other and unspecified opioids and related analgesics causing adverse effect in therapeutic use	115	14
Other and unspecified ovarian cysts	94	0
Other and unspecified polyuria	51	8
Other and unspecified premature depolarization	<5	0
Other and unspecified problems related to employment	<5	0
Other and unspecified right bundle-branch block	49	10
Other and unspecified skin changes	8	<5
Other and unspecified speech disturbances	47	8
Other and unspecified superficial injuries of throat	<5	0
Other and unspecified symptoms and signs involving cognitive functions and awareness	188	40
Other and unspecified symptoms and signs involving general sensations and perceptions	<5	0
Other and unspecified symptoms and signs involving the nervous and musculoskeletal systems	15	0
Other and unspecified symptoms and signs involving the urinary system	<5	0
Other and unspecified ulnar nerve injury at forearm level	<5	0
Other and unspecified ventral hernia with gangrene	<5	<5
Other and unspecified ventral hernia with obstruction, without gangrene	61	5
Other and unspecified ventral hernia without obstruction or gangrene	63	<5
Other and unspecified voice disturbances	<5	0
Other and unspecified water transport accident, fishing boat	<5	0
Other antacids and anti-gastric-secretion drugs causing adverse effect in therapeutic use	5	<5
Other antepartum haemorrhage, antepartum condition or complication	<5	0
Other antepartum haemorrhage, delivered, with or without mention of antepartum condition	<5	0

Other antidysrhythmic drugs, not elsewhere classified, causing adverse effect in therapeutic use	16	8
Other antihypertensive drugs, not elsewhere classified, causing adverse effect in therapeutic use	17	<5
Other antineoplastic drugs causing adverse effect in therapeutic use	343	39
Other antipsychotics and neuroleptics causing adverse effect in therapeutic use	53	<5
Other aortic valve disorders	12	<5
Other apnoea of newborn	19	0
Other appendicitis	12	0
Other arenaviral haemorrhagic fevers	<5	0
Other articular cartilage disorders, pelvic region and thigh	<5	<5
Other articular cartilage disorders, shoulder region	<5	0
Other artificial openings of urinary tract status	9	<5
Other autoimmune haemolytic anaemias	15	<5
Other bacterial infections of unspecified site	260	35
Other bacterial meningitis	<5	0
Other bacterial pneumonia	20	10
Other benign mammary dysplasias	<5	0
Other benign neoplasm of cervix uteri	<5	0
Other benign neoplasm of connective and other soft tissue of abdomen	<5	0
Other benign neoplasm of connective and other soft tissue of head, face and neck	<5	0
Other benign neoplasm of connective and other soft tissue of pelvis	<5	0
Other benign neoplasm of corpus uteri	6	0
Other benign neoplasm of skin of eyelid, including canthus	<5	0
Other benign neoplasm of skin of trunk	<5	0
Other benign neoplasm of skin of upper limb, including shoulder	<5	0
Other benign neoplasm of uterus, unspecified	<5	0
Other bipolar affective disorders	33	0
Other birth injuries to scalp	33	0
Other birth injuries to skull	<5	0
Other boarder in health-care facility	30	<5
Other brachial plexus birth injuries	<5	0
Other branchial cleft malformations	<5	0
Other bursal cyst, other site	<5	0
Other bursitis of elbow	<5	0
Other bursitis of hip	11	0
Other bursitis of knee	5	0
Other bursitis, not elsewhere classified, lower leg	<5	0
Other cardiomyopathies	130	46
Other cardiovascular disorders originating in the perinatal period	80	0
Other cerebral infarction	61	18
Other cerebral palsy	<5	0
Other cerebrospinal fluid leak	<5	0
Other cervical disc degeneration	9	0
Other cervical disc displacement	5	0
Other chemotherapy	<5	0
Other chest pain	234	34
Other cholecystitis	<5	0
Other cholelithiasis without mention of obstruction	<5	<5
Other chondrocalcinosis, forearm	<5	0
Other chondrocalcinosis, lower leg	<5	0
Other chondrocalcinosis, unspecified site	<5	0
Other chorea	<5	0
Other chorioretinal inflammations	<5	0
Other chronic cystitis	7	0
Other chronic diseases of tonsils and adenoids	6	0
Other chronic osteomyelitis, ankle and foot	21	<5
Other chronic osteomyelitis, lower leg	<5	0
Other chronic osteomyelitis, other site	5	0
Other chronic osteomyelitis, pelvic region and thigh	7	0
Other chronic osteomyelitis, shoulder region	<5	0
Other chronic pain	86	9
Other chronic pancreatitis	96	8
Other chronic sinusitis	8	0
Other chronic suppurative otitis media	5	0
Other chronic thyroiditis	<5	0
Other complications following ectopic pregnancy	<5	0
Other complications following immunization, not elsewhere classified	<5	0
Other complications following infusion, transfusion and therapeutic injection	24	5
Other complications of anaesthesia	23	9
Other complications of genitourinary prosthetic devices, implants and grafts	40	<5
Other complications of internal orthopaedic prosthetic devices, implants and grafts	51	<5
Other complications of internal prosthetic devices, implants and grafts, not elsewhere classified	48	14
Other complications of obstetric surgery and procedures, delivered, with mention of postpartum complication	<5	<5
Other complications of obstetric surgery and procedures, delivered, with or without mention of antepartum con	<5	0
Other complications of procedures, not elsewhere classified	157	27
Other complications of spinal and epidural anaesthesia during labour and delivery, delivered, with or without	<5	0
Other complications of spinal and epidural anaesthesia during the puerperium, delivered, with mention of post	<5	0
Other complications specific to multiple gestation, delivered, with or without mention of antepartum conditio	<5	0
Other conduct disorders	<5	0

Other congenital anaemias, not elsewhere classified	6	0
Other congenital deformities of feet	14	0
Other congenital deformities of hip	6	0
Other congenital ichthyosis	<5	0
Other congenital malformations of anterior segment of eye	<5	0
Other congenital malformations of aorta	<5	<5
Other congenital malformations of aortic and mitral valves	<5	0
Other congenital malformations of cardiac chambers and connections	<5	0
Other congenital malformations of cardiac septa	<5	0
Other congenital malformations of diaphragm	<5	0
Other congenital malformations of great arteries	<5	0
Other congenital malformations of great veins	<5	0
Other congenital malformations of lacrimal apparatus	<5	0
Other congenital malformations of liver	<5	0
Other congenital malformations of lower limb(s), including pelvic girdle	<5	0
Other congenital malformations of mouth	<5	0
Other congenital malformations of musculoskeletal system	<5	0
Other congenital malformations of oesophagus	<5	0
Other congenital malformations of pancreas and pancreatic duct	<5	0
Other congenital malformations of penis	<5	0
Other congenital malformations of spine, not associated with scoliosis	5	0
Other congenital malformations of testis and scrotum	<5	0
Other congenital malformations of tongue	<5	0
Other congenital malformations of uterus and cervix	5	0
Other congenital valgus deformities of feet	<5	0
Other congenital varus deformities of feet	<5	0
Other conjunctival vascular disorders and cysts	<5	<5
Other conjunctivitis	<5	<5
Other contraceptive management	<5	0
Other contracture of tendon (sheath), ankle and foot	<5	0
Other contracture of tendon (sheath), pelvic region and thigh	<5	0
Other corneal oedema	<5	0
Other Crohn's disease	47	<5
Other current complications following acute myocardial infarction	6	<5
Other cyst of bone, lower leg	<5	0
Other cyst of bone, pelvic region and thigh	15	0
Other cystitis	23	<5
Other cysts of jaw	<5	0
Other cysts of oral region, not elsewhere classified	<5	0
Other cytomegaloviral diseases	<5	0
Other deformities of toe(s) (acquired)	<5	0
Other deformity of hallux (acquired)	<5	0
Other deletions of part of a chromosome	<5	0
Other delirium	609	159
Other dental caries	<5	0
Other dentofacial anomalies	<5	0
Other depressive episodes	14	0
Other derangement of other and unspecified medial meniscus	<5	0
Other derangement of posterior horn of lateral meniscus	<5	0
Other dermatomyositis	5	0
Other developmental disorders of scholastic skills	<5	0
Other diagnostic agents causing adverse effect in therapeutic use	<5	<5
Other dialysis	<5	0
Other dietary vitamin B12 deficiency anaemia	<5	0
Other diseases of larynx	7	0
Other diseases of pharynx	16	<5
Other diseases of salivary glands	<5	0
Other diseases of spleen	<5	0
Other diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism com	18	<5
Other diseases of thymus	<5	<5
Other diseases of tongue	<5	0
Other diseases of vocal cords	9	<5
Other dislocation of wrist, closed	<5	0
Other disorders affecting eyelid function	<5	0
Other disorders of bilirubin metabolism	36	6
Other disorders of conjunctiva in diseases classified elsewhere	<5	<5
Other disorders of electrolyte and fluid balance, not elsewhere classified	85	8
Other disorders of facial nerve	<5	<5
Other disorders of globe	<5	<5
Other disorders of glycoprotein metabolism	<5	0
Other disorders of kidney and ureter in other diseases classified elsewhere	<5	0
Other disorders of lacrimal gland	11	0
Other disorders of lipoprotein metabolism	<5	0
Other disorders of lung	101	8
Other disorders of male genital organs in diseases classified elsewhere	<5	0
Other disorders of mineral metabolism	<5	0
Other disorders of nervous system, not elsewhere classified	5	<5
Other disorders of orbit	<5	0

Other disorders of pituitary gland	<5	0
Other disorders of prepuce	<5	0
Other disorders of psychological development	<5	0
Other disorders of sclera and cornea in diseases classified elsewhere	<5	0
Other disorders of temporomandibular joint	<5	0
Other disorders of vestibular function	<5	0
Other disorders of vitreous body	<5	0
Other disorders resulting from impaired renal tubular function	7	<5
Other dissociative [conversion] disorders	<5	0
Other diuretics causing adverse effect in therapeutic use	26	<5
Other dorsalgia	21	<5
Other doubling of uterus	<5	0
Other drug-induced secondary parkinsonism	8	0
Other drugs and medicaments causing adverse effect in therapeutic use	39	<5
Other dysplastic coxarthrosis	<5	0
Other dystonia	<5	0
Other early complications of trauma	<5	0
Other eating disorders	<5	0
Other ectopic pregnancy	<5	0
Other emphysema	<5	<5
Other encephalitis, myelitis and encephalomyelitis	5	<5
Other endometriosis	<5	0
Other enduring personality changes	<5	0
Other enthesopathies of lower limb, excluding foot	7	0
Other enthesopathies, not elsewhere classified	<5	0
Other epilepsy, not stated as intractable	5	0
Other estrogens and progestogens causing adverse effect in therapeutic use	<5	0
Other failed induction of labour, antepartum condition or complication	<5	0
Other fall from one level to another	105	<5
Other fall on same level due to collision with, or pushing by, another person	7	0
Other feeding problems of newborn	10	0
Other female genital prolapse	5	0
Other female genital tract fistulae	<5	0
Other female intestinal-genital tract fistulae	<5	<5
Other female urinary-genital tract fistulae	<5	0
Other fibroblastic disorders, lower leg	<5	0
Other fibroblastic disorders, other site	<5	0
Other fibroblastic disorders, pelvic region and thigh	<5	0
Other folate deficiency anaemias	5	<5
Other follicular cysts of skin and subcutaneous tissue	<5	0
Other forms of acute ischaemic heart disease	31	11
Other forms of acute pericarditis	<5	<5
Other forms of angina pectoris	70	<5
Other forms of chronic ischaemic heart disease	24	9
Other forms of herpesviral infection	17	5
Other forms of nocardiosis	<5	0
Other forms of scoliosis, thoracic region	<5	0
Other forms of stomatitis	8	<5
Other forms of systemic lupus erythematosus	<5	<5
Other forms of systemic sclerosis	<5	<5
Other fracture of femoral neck, closed	375	9
Other fracture of femoral neck, open	<5	0
Other fracture of lower end of radius, closed	16	0
Other fracture of lower end of radius, open	<5	0
Other fracture of malar and maxillary bones, closed	65	15
Other functional disturbances following cardiac surgery	<5	<5
Other gastritis	10	<5
Other gender identity disorders	<5	0
Other generalized epilepsy and epileptic syndromes, intractable	<5	<5
Other generalized epilepsy and epileptic syndromes, not stated as intractable	<5	0
Other giant cell arteritis	17	0
Other glomerular disorders in diabetes mellitus	33	6
Other granulomatous disorders of skin and subcutaneous tissue	<5	<5
Other habit and impulse disorders	<5	0
Other hallucinations	11	0
Other hammer toe(s) (acquired)	<5	0
Other heart disorders in other infectious and parasitic diseases classified elsewhere	<5	0
Other heavy for gestational age infants	168	0
Other hereditary and idiopathic neuropathies	<5	0
Other hydrocele	<5	0
Other hydrocephalus	<5	<5
Other hyperlipidaemia	<5	<5
Other hyperparathyroidism	<5	0
Other hypertrophic cardiomyopathy	31	7
Other hypertrophic disorders of skin	5	<5
Other hypoglycaemia	7	0
Other hypoparathyroidism	<5	0
Other hypospadias	<5	0

Other hypotension	45	19
Other hypothermia of newborn	<5	0
Other idiopathic thrombocytopenic purpura	42	7
Other ill-defined heart diseases	47	16
Other immediate postpartum haemorrhage, delivered, with mention of postpartum complication	298	5
Other immediate postpartum haemorrhage, postpartum condition or complication	<5	0
Other impaction of intestine	12	<5
Other infection during labour, delivered, with or without mention of antepartum condition	<5	0
Other infections with a predominantly sexual mode of transmission complicating pregnancy, childbirth and the	<5	0
Other infectious mononucleosis	<5	0
Other infective (teno)synovitis, ankle and foot	<5	0
Other infective (teno)synovitis, forearm	<5	0
Other infective (teno)synovitis, hand	<5	0
Other infective (teno)synovitis, lower leg	<5	0
Other infective bursitis, lower leg	<5	0
Other infective bursitis, upper arm	8	<5
Other infective otitis externa	<5	0
Other infective spondylopathies, lumbar region	<5	0
Other infective spondylopathies, lumbosacral region	<5	0
Other infective spondylopathies, thoracic region	<5	0
Other inflammatory diseases of prostate	<5	0
Other inflammatory disorders of penis	<5	0
Other inflammatory polyneuropathies	<5	0
Other injuries of cervical spinal cord	5	<5
Other injuries of eye and orbit	5	<5
Other injuries of lumbar spinal cord	8	0
Other injuries of thoracic spinal cord	<5	<5
Other injuries of unspecified body region	<5	0
Other injury of lung with open wound into thoracic cavity	<5	0
Other instability of joint, ankle and foot	<5	0
Other instability of joint, forearm	<5	0
Other internal derangements of knee	<5	0
Other interstitial pulmonary diseases with fibrosis	164	28
Other intestinal Escherichia coli infections	<5	0
Other intestinal malabsorption	<5	0
Other intracerebral haemorrhage	19	6
Other intracranial injuries with open intracranial wound	10	<5
Other intracranial injuries without open intracranial wound	29	5
Other intrapartum haemorrhage, delivered, with or without mention of antepartum condition	10	0
Other iron deficiency anaemias	134	17
Other keratitis	<5	0
Other lack of expected normal physiological development	15	0
Other laxatives causing adverse effect in therapeutic use	<5	0
Other lipid storage disorders	<5	0
Other local lupus erythematosus	<5	0
Other low birth weight	148	0
Other malformations of cerebral vessels	<5	0
Other malfunction of external stoma of urinary tract, NEC	<5	0
Other maltreatment by spouse or partner	<5	0
Other maltreatment by unspecified person	<5	0
Other manic episodes	<5	0
Other maternal infectious and parasitic diseases complicating pregnancy, childbirth and the puerperium, antep	<5	0
Other maternal infectious and parasitic diseases complicating pregnancy, childbirth and the puerperium, deliv	<5	0
Other maternal infectious and parasitic diseases complicating pregnancy, childbirth and the puerperium, postp	<5	0
Other mature T/NK-cell lymphomas	<5	0
Other medical procedures as the cause of abnormal reaction or later complication, without mention of	445	178
Other medical procedures as the cause of abnormal reaction or later complication, without mention of misadven	157	55
Other megaloblastic anaemias, not elsewhere classified	<5	0
Other melanin hyperpigmentation	<5	0
Other mental retardation without mention of impairment of behaviour	<5	0
Other mental retardation, significant impairment of behaviour requiring attention or treatment	<5	0
Other migraine	9	0
Other misshapen ear	<5	0
Other mitral valve diseases	6	<5
Other mixed disorders of conduct and emotions	8	<5
Other mononeuropathies in diseases classified elsewhere	<5	0
Other motor neuron disease	<5	0
Other multiple injuries of abdomen, lower back and pelvis	<5	0
Other myelodysplastic syndromes	8	0
Other myositis, multiple sites	<5	<5
Other myositis, shoulder region	<5	0
Other myositis, unspecified site	<5	<5
Other negative life events in childhood	<5	0
Other neonatal cardiac dysrhythmia	23	0
Other neonatal hypocalcaemia	<5	0
Other neonatal hypoglycaemia	239	0
Other nonautoimmune haemolytic anaemias	6	<5
Other non-follicular lymphoma	<5	0

Other noninflammatory disorders of ovary, fallopian tube and broad ligament	47	0
Other nonorganic psychotic disorders	21	<5
Other nonrheumatic mitral valve disorders	<5	<5
Other nonsteroidal anti-inflammatory drugs [NSAID] causing adverse effect in therapeutic use	53	7
Other nonthrombocytopenic purpura	5	<5
Other obesity	206	22
Other obstetric injury to pelvic organs, delivered, with or without mention of antepartum condition	5	<5
Other obstructive and reflux uropathy	10	<5
Other obstructive defects of renal pelvis and ureter	<5	0
Other ocular manifestations of vitamin A deficiency	<5	0
Other orthopoxvirus infections	<5	0
Other ossification of muscle, multiple sites	<5	0
Other ossification of muscle, pelvic region and thigh	<5	<5
Other osteomyelitis, ankle and foot	20	<5
Other osteomyelitis, lower leg	<5	<5
Other osteomyelitis, other site	7	<5
Other osteomyelitis, pelvic region and thigh	9	<5
Other osteomyelitis, unspecified site	<5	0
Other osteomyelitis, upper arm	<5	0
Other osteonecrosis, ankle and foot	5	<5
Other osteonecrosis, forearm	<5	<5
Other osteonecrosis, lower leg	<5	0
Other osteonecrosis, other site	<5	0
Other osteonecrosis, pelvic region and thigh	10	0
Other osteoporosis	7	<5
Other osteoporosis with pathological fracture, other site	<5	0
Other osteoporosis with pathological fracture, pelvic region and thigh	<5	0
Other otitis externa	<5	<5
Other paralytic strabismus	<5	0
Other parasympatholytics [anticholinergics and antimuscarinics] and spasmolytics, not elsewhere clas	6	0
Other parasympathomimetics [cholinergics] causing adverse effect in therapeutic use	<5	0
Other perforations of tympanic membrane	<5	0
Other peripheral vertigo	17	0
Other peritonitis	14	<5
Other persistent delusional disorders	<5	0
Other persistent mood [affective] disorders	7	0
Other pervasive developmental disorders	<5	0
Other phobic anxiety disorders	<5	0
Other physical and mental strain related to work	<5	0
Other physical therapy	1967	245
Other plastic surgery for unacceptable cosmetic appearance	8	0
Other pneumonia, organism unspecified	46	13
Other pneumothorax	20	6
Other polyarthrosis	<5	0
Other polyglandular dysfunction	<5	0
Other polyp of sinus	13	0
Other porphyria	9	0
Other postprocedural disorders of circulatory system, not elsewhere classified	11	6
Other postprocedural disorders of digestive system, not elsewhere classified	25	<5
Other postprocedural disorders of ear and mastoid process	<5	0
Other postprocedural disorders of eye and adnexa	<5	0
Other postprocedural disorders of genitourinary system	10	0
Other postprocedural disorders of nervous system	<5	0
Other postprocedural musculoskeletal disorders	12	<5
Other postprocedural respiratory disorders	98	93
Other post-traumatic arthrosis of first carpometacarpal joint	<5	<5
Other post-traumatic coxarthrosis	6	0
Other post-traumatic gonarthrosis	16	0
Other premature separation of placenta, delivered, with or without mention of antepartum condition	<5	0
Other preterm infants	179	0
Other primary coxarthrosis	246	0
Other primary disorders of muscles	<5	0
Other primary gonarthrosis	420	6
Other primary thrombocytopenia	<5	0
Other problems related to care-provider dependency	436	<5
Other problems related to housing and economic circumstances	35	<5
Other problems related to life-management difficulty	<5	0
Other problems related to lifestyle	<5	0
Other problems related to medical facilities and other health care	<5	<5
Other problems related to physical environment	<5	0
Other problems related to social environment	9	0
Other prophylactic chemotherapy	416	<5
Other prurigo	<5	0
Other pruritus	13	<5
Other psoriasis	<5	0
Other psoriatic arthropathies	8	<5
Other psychotropic drugs, not elsewhere classified, causing adverse effect in therapeutic use	<5	0
Other pulmonary aspergillosis	<5	0

Other pulmonary collapse	17	8
Other pulmonary haemorrhages originating in the perinatal period	<5	0
Other pulmonary valve disorders	<5	0
Other reaction to spinal and lumbar puncture	7	0
Other reactions to severe stress	<5	0
Other reactive arthropathies, unspecified site	<5	0
Other reconstructive surgery as the cause of abnormal reaction or later complication, without mentio	24	0
Other reconstructive surgery as the cause of abnormal reaction or later complication, without mention of misa	20	<5
Other recurrent depressive disorders	<5	0
Other reduction deformities of brain	<5	0
Other respiratory distress of newborn	10	0
Other respiratory tuberculosis, confirmed bacteriologically and histologically	<5	0
Other restrictive cardiomyopathy	<5	0
Other retinal artery occlusions	5	<5
Other retinal detachments	<5	0
Other rupture of muscle (nontraumatic), pelvic region and thigh	<5	0
Other rupture of muscle (nontraumatic), shoulder region	<5	0
Other rupture of uterus during labour, delivered, with or without mention of antepartum condition	<5	<5
Other sarcomas of liver	<5	0
Other schizophrenia	12	0
Other secondary arthrosis	<5	0
Other secondary coxarthrosis	5	0
Other secondary coxarthrosis, bilateral	<5	0
Other secondary gonarthrosis	<5	0
Other secondary gonarthrosis, bilateral	<5	0
Other secondary gout, forearm	<5	<5
Other secondary gout, hand	<5	<5
Other secondary hypertension, benign or unspecified	<5	<5
Other secondary kyphosis, cervical region	<5	0
Other secondary osteonecrosis, other site	<5	<5
Other secondary osteonecrosis, pelvic region and thigh	<5	0
Other secondary pulmonary hypertension	128	32
Other secondary scoliosis, thoracolumbar region	<5	0
Other secondary syphilis	<5	0
Other sedatives, hypnotics and antianxiety drugs causing adverse effect in therapeutic use	7	<5
Other serum reactions	10	<5
Other shock	13	12
Other shock therapy as the cause of abnormal reaction or later complication, without mention of misa	<5	0
Other shock therapy as the cause of abnormal reaction or later complication, without mention of misadventure	<5	<5
Other shoulder lesions	12	0
Other signs and symptoms in breast	<5	0
Other sleep apnoea	48	11
Other sleep disorders	<5	0
Other somatoform disorders	6	<5
Other specific arthropathies, not elsewhere classified, lower leg	<5	0
Other specific arthropathies, not elsewhere classified, shoulder region	<5	0
Other specific joint derangements, not elsewhere classified, pelvic region and thigh	<5	0
Other specific personality disorders	15	<5
Other specified abdominal hernia with obstruction, without gangrene	20	<5
Other specified abdominal hernia without obstruction or gangrene	6	<5
Other specified abnormal findings of blood chemistry	350	69
Other specified abnormal immunological findings in serum	<5	<5
Other specified abnormal uterine and vaginal bleeding	43	0
Other specified abnormalities of plasma proteins	<5	0
Other specified acquired deformities of limbs, ankle and foot	<5	0
Other specified acquired deformities of limbs, forearm	<5	0
Other specified acquired deformities of limbs, pelvic region and thigh	<5	0
Other specified acute viral hepatitis	<5	<5
Other specified anaemias	38	6
Other specified anomalies (or asymmetry) of jaw-cranial base relationship	5	0
Other specified anomalies of jaw size	<5	0
Other specified anxiety disorders	23	<5
Other specified aplastic anaemias	22	<5
Other specified arthritis, ankle and foot	<5	0
Other specified arthritis, forearm	<5	0
Other specified arthritis, lower leg	<5	<5
Other specified arthritis, multiple sites	<5	0
Other specified arthritis, pelvic region and thigh	<5	0
Other specified arthritis, shoulder region	<5	0
Other specified arthritis, upper arm	<5	0
Other specified arthrosis	21	0
Other specified bacterial agents as the cause of diseases classified to other chapters	401	85
Other specified bacterial intestinal infections	<5	0
Other specified behavioural and emotional disorders with onset usually occurring in childhood and adolescence	14	<5
Other specified birth injuries	<5	0
Other specified bullous disorders	<5	<5
Other specified carcinomas of liver	10	0
Other specified cardiac arrhythmias	62	20

Other specified cataract	<5	0
Other specified cerebrovascular diseases	17	8
Other specified chromosome abnormalities	<5	0
Other specified chronic obstructive pulmonary disease	75	17
Other specified coagulation defects	5	0
Other specified complications of cardiac and vascular prosthetic devices, implants and grafts	358	86
Other specified complications of labour and delivery, delivered, with mention of postpartum complication	<5	0
Other specified complications of labour and delivery, delivered, with or without mention of antepartum condit	69	<5
Other specified complications of labour and delivery, postpartum condition or complication	<5	0
Other specified complications of surgical and medical care, not elsewhere classified	12	<5
Other specified conditions associated with female genital organs and menstrual cycle	7	0
Other specified conditions originating in the perinatal period	<5	0
Other specified conduction disorders	<5	<5
Other specified congenital malformations	<5	0
Other specified congenital malformations of brain	5	<5
Other specified congenital malformations of circulatory system	<5	0
Other specified congenital malformations of ear	<5	0
Other specified congenital malformations of heart	7	0
Other specified congenital malformations of intestine	5	0
Other specified congenital malformations of limb(s)	<5	0
Other specified congenital malformations of peripheral vascular system	<5	0
Other specified congenital malformations of respiratory system	<5	<5
Other specified congenital malformations of skin	<5	0
Other specified congenital malformations of skull and face bones	<5	0
Other specified congenital malformations of spinal cord	<5	0
Other specified congenital malformations of stomach	<5	0
Other specified congenital malformations of urinary system	<5	0
Other specified crystal arthropathies, lower leg	<5	0
Other specified crystal arthropathies, multiple sites	<5	0
Other specified crystal arthropathies, shoulder region	<5	0
Other specified degenerative diseases of basal ganglia	<5	0
Other specified degenerative diseases of nervous system	97	<5
Other specified degenerative disorders of nervous system in diseases classified elsewhere	28	<5
Other specified demyelinating diseases of central nervous system	<5	<5
Other specified dermatitis	12	0
Other specified diabetes mellitus with autonomic neuropathy	<5	0
Other specified diabetes mellitus with certain circulatory complications	6	<5
Other specified diabetes mellitus with coma	<5	0
Other specified diabetes mellitus with established or advanced kidney disease	<5	<5
Other specified diabetes mellitus with hypoglycaemia	<5	0
Other specified diabetes mellitus with other specified complication, not elsewhere classified	<5	0
Other specified diabetes mellitus with other specified kidney complication not elsewhere classified	5	<5
Other specified diabetes mellitus with poor control, so described	7	0
Other specified diabetes mellitus without (mention of) complication	13	0
Other specified diseases and conditions complicating pregnancy, childbirth and the puerperium, antep	<5	0
Other specified diseases and conditions complicating pregnancy, childbirth and the puerperium, antepartum con	23	0
Other specified diseases and conditions complicating pregnancy, childbirth and the puerperium, delivered, wit	62	<5
Other specified diseases and conditions complicating pregnancy, childbirth and the puerperium, postpartum con	<5	0
Other specified diseases of anus and rectum	29	<5
Other specified diseases of appendix	5	0
Other specified diseases of biliary tract	12	<5
Other specified diseases of blood and blood-forming organs	7	<5
Other specified diseases of digestive system	<5	0
Other specified diseases of gallbladder	21	<5
Other specified diseases of inner ear	<5	0
Other specified diseases of intestine (small)(large)	16	<5
Other specified diseases of jaws	7	0
Other specified diseases of liver	46	7
Other specified diseases of oesophagus	23	<5
Other specified diseases of pancreas	17	<5
Other specified diseases of pulmonary vessels	<5	<5
Other specified diseases of spinal cord	12	<5
Other specified diseases of stomach and duodenum	80	15
Other specified diseases of upper respiratory tract	13	5
Other specified disorders involving the immune mechanism, not elsewhere classified	<5	<5
Other specified disorders of adrenal gland	8	<5
Other specified disorders of arteries and arterioles	5	<5
Other specified disorders of bladder	78	0
Other specified disorders of bone density and structure, ankle and foot	<5	0
Other specified disorders of bone density and structure, lower leg	<5	0
Other specified disorders of bone density and structure, multiple sites	<5	0
Other specified disorders of bone density and structure, other site	<5	0
Other specified disorders of bone density and structure, pelvic region and thigh	<5	0
Other specified disorders of bone density and structure, unspecified site	7	0
Other specified disorders of bone, multiple sites	<5	0
Other specified disorders of bone, other site	7	0
Other specified disorders of bone, pelvic region and thigh	<5	0
Other specified disorders of bone, unspecified site	<5	0

Other specified disorders of bone, upper arm	<5	0
Other specified disorders of brain	32	8
Other specified disorders of breast	<5	0
Other specified disorders of central nervous system	<5	0
Other specified disorders of cornea	<5	0
Other specified disorders of external ear	<5	0
Other specified disorders of eye and adnexa	7	<5
Other specified disorders of eye and adnexa in diseases classified elsewhere	9	0
Other specified disorders of eyelid	<5	0
Other specified disorders of gingiva and edentulous alveolar ridge	<5	<5
Other specified disorders of iris and ciliary body	<5	0
Other specified disorders of kidney and ureter	46	<5
Other specified disorders of male genital organs	38	5
Other specified disorders of middle ear and mastoid	<5	0
Other specified disorders of muscle, ankle and foot	<5	0
Other specified disorders of muscle, forearm	<5	<5
Other specified disorders of muscle, hand	<5	0
Other specified disorders of muscle, lower leg	24	<5
Other specified disorders of muscle, multiple sites	516	86
Other specified disorders of muscle, other site	18	<5
Other specified disorders of muscle, pelvic region and thigh	12	5
Other specified disorders of muscle, unspecified site	324	66
Other specified disorders of muscle, upper arm	6	0
Other specified disorders of nervous system in diseases classified elsewhere	<5	0
Other specified disorders of nose and nasal sinuses	40	<5
Other specified disorders of penis	11	<5
Other specified disorders of peritoneum	7	<5
Other specified disorders of prostate	<5	0
Other specified disorders of skin and subcutaneous tissue	13	0
Other specified disorders of skin and subcutaneous tissue in diseases classified elsewhere	5	<5
Other specified disorders of skin and subcutaneous tissue related to radiation	<5	<5
Other specified disorders of synovium and tendon, lower leg	<5	0
Other specified disorders of teeth and supporting structures	10	<5
Other specified disorders of thyroid	<5	0
Other specified disorders of urethra	10	<5
Other specified disorders of veins	39	<5
Other specified disorders of white blood cells	135	18
Other specified effects of external causes	<5	<5
Other specified effects of reduced temperature	<5	0
Other specified epidermal thickening	<5	0
Other specified erythematous conditions	6	0
Other specified events, undetermined intent	5	<5
Other specified extrapyramidal and movement disorders	47	<5
Other specified female pelvic inflammatory diseases	7	<5
Other specified fever	50	5
Other specified firearm discharge, undetermined intent	<5	0
Other specified forms of tremor	12	<5
Other specified functional intestinal disorders	<5	0
Other specified general symptoms and signs	47	15
Other specified haemorrhagic conditions	<5	0
Other specified haemorrhoids	81	<5
Other specified headache syndromes	<5	<5
Other specified heart block	20	15
Other specified hypothyroidism	5	<5
Other specified immunodeficiencies	7	6
Other specified infections specific to the perinatal period	<5	0
Other specified inflammation of vagina and vulva	<5	<5
Other specified inflammatory liver diseases	98	18
Other specified injuries involving multiple body regions	161	58
Other specified injuries of abdomen, lower back and pelvis	<5	0
Other specified injuries of ankle and foot	<5	<5
Other specified injuries of forearm	<5	0
Other specified injuries of head	<5	<5
Other specified injuries of hip and thigh	<5	0
Other specified injuries of lower leg	11	<5
Other specified injuries of lower limb, level unspecified	<5	0
Other specified injuries of neck	<5	<5
Other specified injuries of shoulder and upper arm	<5	0
Other specified injuries of wrist and hand	<5	0
Other specified interstitial pulmonary diseases	20	6
Other specified intervertebral disc degeneration	43	<5
Other specified intervertebral disc disorders	<5	0
Other specified intervertebral disc displacement	58	0
Other specified intestinal infections	6	<5
Other specified joint disorders, forearm	<5	0
Other specified joint disorders, lower leg	<5	0
Other specified joint disorders, pelvic region and thigh	<5	0
Other specified joint disorders, shoulder region	<5	0

Other specified leukaemias	<5	<5
Other specified local infections of skin and subcutaneous tissue	11	<5
Other specified medical care NEC	125	16
Other specified mental disorders due to brain damage and dysfunction and to physical disease	20	0
Other specified metabolic disorders	11	<5
Other specified misadventures during surgical and medical care	37	15
Other specified mononeuropathies	12	0
Other specified mood [affective] disorders	<5	0
Other specified mycoses	<5	<5
Other specified myopathies	8	5
Other specified necrotizing vasculopathies	<5	0
Other specified neoplasms of uncertain or unknown behaviour of lymphoid, haematopoietic and related	<5	0
Other specified neurotic disorders	<5	0
Other specified noninfective disorders of lymphatic vessels and lymph nodes	7	<5
Other specified noninfective gastroenteritis and colitis	33	<5
Other specified noninflammatory disorders of cervix uteri	19	0
Other specified noninflammatory disorders of uterus	10	0
Other specified noninflammatory disorders of vagina	7	0
Other specified noninflammatory disorders of vulva and perineum	<5	0
Other specified nontoxic goitre	<5	0
Other specified nutritional anaemias	<5	<5
Other specified nutritional deficiencies	<5	<5
Other specified obstetric trauma, delivered, with mention of postpartum complication	<5	<5
Other specified obstetric trauma, delivered, with or without mention of antepartum condition	12	0
Other specified obstructed labour, delivered, with or without mention of antepartum condition	<5	0
Other specified orthopaedic follow-up care	5	0
Other specified paralytic syndromes	11	<5
Other specified perinatal haematological disorders	<5	0
Other specified peripheral vascular diseases	<5	0
Other specified place of occurrence	263	30
Other specified placental disorder, delivered, with or without mention of antepartum condition	5	0
Other specified pleural conditions	27	9
Other specified polyneuropathies	17	<5
Other specified postsurgical states	<5	0
Other specified pregnancy-related conditions, antepartum condition or complication	7	0
Other specified pregnancy-related conditions, delivered, with mention of postpartum complication	<5	0
Other specified pregnancy-related conditions, delivered, with or without mention of antepartum condition	19	0
Other specified problems related to primary support group	10	0
Other specified problems related to psychosocial circumstances	5	0
Other specified puerperal infections, postpartum condition or complication	<5	<5
Other specified pulmonary heart diseases	<5	0
Other specified renal tubulo-interstitial diseases	<5	0
Other specified respiratory conditions of newborn	15	0
Other specified respiratory disorders	31	17
Other specified rheumatic heart diseases	<5	0
Other specified rheumatoid arthritis	7	<5
Other specified salmonella infections	<5	0
Other specified sepsis	84	40
Other specified soft tissue disorders, ankle and foot	5	0
Other specified soft tissue disorders, forearm	9	<5
Other specified soft tissue disorders, hand	5	<5
Other specified soft tissue disorders, lower leg	23	<5
Other specified soft tissue disorders, multiple sites	<5	0
Other specified soft tissue disorders, other site	<5	0
Other specified soft tissue disorders, pelvic region and thigh	<5	<5
Other specified soft tissue disorders, unspecified site	5	<5
Other specified soft tissue disorders, upper arm	6	0
Other specified special examinations	5	0
Other specified spondylopathies, cervical region	<5	0
Other specified spondylopathies, lumbar region	<5	0
Other specified sports and recreational activity	<5	0
Other specified superficial mycoses	<5	0
Other specified surgical follow-up care	7	0
Other specified symptoms and signs involving the circulatory and respiratory systems	8	<5
Other specified symptoms and signs involving the digestive system and abdomen	11	9
Other specified systemic anti-infectives and antiparasitics causing adverse effect in therapeutic us	7	<5
Other specified systemic anti-infectives and antiparasitics causing adverse effect in therapeutic use	9	<5
Other specified systemic involvement of connective tissue	<5	0
Other specified transport accident	<5	<5
Other specified types of non-Hodgkin lymphoma	<5	0
Other specified urinary incontinence	24	<5
Other specified vaccines and biological substances causing adverse effect in therapeutic use	7	<5
Other specified viral infections characterized by skin and mucous membrane lesions	<5	0
Other sphingolipidosis	<5	<5
Other spondylosis with myelopathy, cervical region	25	<5
Other spondylosis with myelopathy, cervicothoracic region	<5	0
Other spondylosis with myelopathy, thoracic region	<5	0
Other spondylosis with radiculopathy, cervical region	<5	<5

Other spondylosis with radiculopathy, lumbar region	5	0
Other spondylosis with radiculopathy, lumbosacral region	<5	0
Other spondylosis, cervical region	<5	<5
Other spondylosis, lumbar region	<5	0
Other spondylosis, lumbosacral region	<5	0
Other spontaneous disruption of unspecified ligament(s) of knee	<5	0
Other spontaneous pneumothorax	70	8
Other sprain and strain of anterior cruciate ligament of knee	<5	0
Other sprain and strain of cervical spine	<5	0
Other sprain and strain of elbow	<5	0
Other staphylococcus as the cause of diseases classified to other chapters	170	41
Other status epilepticus	<5	<5
Other streptococcal arthritis and polyarthritis, ankle and foot	<5	0
Other streptococcal arthritis and polyarthritis, lower leg	6	<5
Other streptococcal arthritis and polyarthritis, pelvic region and thigh	<5	0
Other streptococcal arthritis and polyarthritis, upper arm	<5	<5
Other streptococcal sepsis	40	11
Other streptococcus as the cause of diseases classified to other chapters	126	28
Other stressful life events affecting family and household	<5	0
Other subarachnoid haemorrhage	5	<5
Other superficial injuries of abdominal wall	7	<5
Other superficial injuries of ankle and foot	6	0
Other superficial injuries of back wall of thorax	<5	<5
Other superficial injuries of eyelid and periocular area	6	<5
Other superficial injuries of forearm	<5	0
Other superficial injuries of front wall of thorax	<5	0
Other superficial injuries of hip and thigh	10	<5
Other superficial injuries of lower back and pelvis	5	<5
Other superficial injuries of lower leg	25	<5
Other superficial injuries of penis	<5	0
Other superficial injuries of scrotum and testes	<5	0
Other superficial injuries of shoulder and upper arm	<5	<5
Other superficial injuries of wrist and hand	7	0
Other surgical procedures as the cause of abnormal reaction or later complication, without mention o	400	62
Other surgical procedures as the cause of abnormal reaction or later complication, without mention of misadve	286	58
Other symptoms and signs concerning food and fluid intake	<5	<5
Other symptoms and signs involving appearance and behaviour	24	<5
Other symptoms and signs involving emotional state	127	7
Other synovitis and tenosynovitis, ankle and foot	<5	0
Other synovitis and tenosynovitis, hand	<5	0
Other synovitis and tenosynovitis, lower leg	10	0
Other synovitis and tenosynovitis, pelvic region and thigh	<5	0
Other synovitis and tenosynovitis, shoulder region	<5	<5
Other systemic antibiotics causing adverse effect in therapeutic use	50	7
Other systemic atrophy primarily affecting central nervous system in neoplastic disease	<5	<5
Other tetanus	<5	0
Other thrombophilia	17	5
Other thyrotoxicosis	5	<5
Other tick-borne viral encephalitis	<5	0
Other torsion of testis	<5	0
Other tracheostomy complication	<5	<5
Other transient cerebral ischaemic attacks and related syndromes	7	<5
Other transitory neonatal disorders of calcium and magnesium metabolism	<5	0
Other tricuspid valve diseases	9	<5
Other tuberculosis of nervous system	<5	0
Other ulcerative colitis	7	<5
Other urethral stricture	<5	0
Other urethritis	<5	0
Other urticaria	7	<5
Other uterine inertia, delivered, with or without mention of antepartum condition	27	<5
Other vascular dementia	11	<5
Other vascular disorders of intestine	<5	0
Other vascular disorders of iris and ciliary body	<5	0
Other vascular syndromes of brain in cerebrovascular diseases	<5	0
Other vasculitis limited to skin	7	<5
Other Vincent's infections	<5	<5
Other viral agents as the cause of diseases classified to other chapters	5	<5
Other viral diseases complicating pregnancy, childbirth and the puerperium, antepartum condition or complicat	<5	0
Other viral diseases complicating pregnancy, childbirth and the puerperium, delivered, with or without mentio	7	0
Other viral enteritis	<5	0
Other viral infections of unspecified site	<5	<5
Other viral pneumonia	81	25
Other visual disturbances	30	5
Other vitamin B12 deficiency anaemias	<5	0
Other vitreous opacities	7	0
Other volume depletion	213	61
Other waiting period for investigation and treatment	266	27
Other/multiple fracture of upper end of radius, closed	<5	0

Other/multiple fractures of upper end of ulna, closed	5	0
Otitis externa in mycoses	<5	0
Otitis externa, unspecified	6	0
Otitis media, unspecified	26	<5
Otorhinolaryngological devices associated with adverse incidents, prosthetic and other implants, mat	<5	<5
Otorrhoea	<5	0
Otosclerosis, unspecified	<5	0
Ovarian pregnancy	<5	0
Overdose of radiation given during therapy	<5	<5
Overexertion and strenuous or repetitive movements	64	<5
Overlapping malignant lesion of accessory sinuses	<5	0
Overlapping malignant lesion of bladder	31	<5
Overlapping malignant lesion of brain	13	0
Overlapping malignant lesion of cervix uteri	<5	0
Overlapping malignant lesion of colon	<5	0
Overlapping malignant lesion of digestive system	<5	0
Overlapping malignant lesion of female genital organs	5	0
Overlapping malignant lesion of larynx	<5	0
Overlapping malignant lesion of left breast	13	0
Overlapping malignant lesion of oesophagus	<5	0
Overlapping malignant lesion of oropharynx	<5	0
Overlapping malignant lesion of other and ill-defined sites	<5	0
Overlapping malignant lesion of other and unspecified parts of mouth	<5	0
Overlapping malignant lesion of pancreas	<5	0
Overlapping malignant lesion of penis	<5	0
Overlapping malignant lesion of rectum, anus and anal canal	<5	0
Overlapping malignant lesion of right breast	22	0
Overlapping malignant lesion of stomach	<5	0
Overlapping malignant lesion of tongue	<5	0
Overlapping malignant lesion of tonsil	<5	0
Oxycodone causing adverse effect in therapeutic use	<5	0
Oxytocic drugs causing adverse effect in therapeutic use	<5	0
Paget's disease of other bones	6	0
Pain in joint, ankle and foot	11	<5
Pain in joint, forearm	7	<5
Pain in joint, hand	<5	0
Pain in joint, lower leg	72	<5
Pain in joint, multiple sites	14	0
Pain in joint, pelvic region and thigh	109	9
Pain in joint, shoulder region	91	6
Pain in joint, unspecified site	<5	0
Pain in joint, upper arm	<5	0
Pain in lower limb	134	17
Pain in thoracic spine	8	0
Pain in throat	5	0
Pain in upper limb	22	<5
Pain management planning	261	12
Pain, unspecified	28	<5
Painful micturition, unspecified	<5	0
Palindromic rheumatism, multiple sites	<5	0
Palliative care	5193	716
Palmar fascial fibromatosis [Dupuytren]	<5	0
Palpitations	24	<5
Palsy of conjugate gaze	<5	0
Pancreas transplant status	<5	0
Panic disorder [episodic paroxysmal anxiety]	41	<5
Panniculitis, unspecified, other site	<5	0
Panniculitis, unspecified, unspecified site	<5	0
Papilloedema, unspecified	<5	0
Papillomavirus as the cause of diseases classified to other chapters	<5	0
Papyraceous fetus, delivered, with or without mention of antepartum condition	<5	0
Paraesthesia of skin	38	<5
Paralysis of vocal cords and larynx, bilateral	6	<5
Paralysis of vocal cords and larynx, unilateral	8	<5
Paralysis of vocal cords and larynx, unspecified whether unilateral or bilateral	<5	0
Paralytic gait	<5	0
Paralytic ileus	28	7
Paralytic strabismus, unspecified	<5	0
Paralytic syndrome, unspecified	<5	<5
Paraneoplastic neuromyopathy and neuropathy	8	<5
Paranoid personality disorder	6	<5
Paranoid schizophrenia	42	<5
Paraphimosis	8	<5
Paraplegia of unspecified type, incomplete, at cervical level	<5	0
Paraplegia of unspecified type, incomplete, at lumbar level	<5	0
Paraplegia of unspecified type, incomplete, at thoracic level	6	<5
Paraplegia of unspecified type, unspecified, at cervical level	<5	0
Paraplegia of unspecified type, unspecified, at lumbar level	12	<5

Paraplegia of unspecified type, unspecified, at thoracic level	6	<5
Parastomal hernia with gangrene	<5	<5
Parastomal hernia with obstruction, without gangrene	31	<5
Parastomal hernia without obstruction or gangrene	58	6
Parenchymal injury (or transection) involving ampulla of vater but not pancreatic head without open	<5	<5
Parenchymal liver disruption involving 25 to 75% hepatic lobe, or 1 to three segments (Grade IV) wit	6	<5
Parenchymal liver disruption involving greater than 75% of hepatic lobe or more than 3 segments (Gra	<5	0
Parenteral anaesthetics causing adverse effect in therapeutic use	<5	<5
Parkinson's disease	281	6
Parosmia	<5	<5
Paroxysmal atrial fibrillation	439	174
Paroxysmal tachycardia, unspecified	<5	0
Partial anomalous pulmonary venous connection	<5	<5
Passenger of other all-terrain or other off road motor vehicle injured in nontraffic accident	<5	<5
Passenger of other all-terrain or other off road motor vehicle injured in traffic accident	<5	0
Passenger of snowmobile injured in nontraffic land accident	<5	0
Pasteurellosis	<5	<5
Patellofemoral disorders	<5	0
Patent ductus arteriosus	9	<5
Pathological dislocation and subluxation of joint, not elsewhere classified, pelvic region and thigh	<5	0
Pathological fracture, not elsewhere classified, ankle and foot	<5	0
Pathological fracture, not elsewhere classified, forearm	<5	0
Pathological fracture, not elsewhere classified, lower leg	<5	0
Pathological fracture, not elsewhere classified, other site	23	<5
Pathological fracture, not elsewhere classified, pelvic region and thigh	12	<5
Pathological fracture, not elsewhere classified, unspecified site	<5	0
Pathological fracture, not elsewhere classified, upper arm	7	0
Pathological gambling	<5	0
Pathological stealing [kleptomania]	<5	0
Pedal cyclist [any] injured in other specified transport accident	<5	0
Pedal cyclist [any] injured in unspecified traffic accident	<5	0
Pedal cyclist injured in collision with car, pick-up truck or van, driver, traffic accident	5	<5
Pedal cyclist injured in collision with car, pick-up truck or van, unspecified pedal cyclist, nontraffic acci	<5	0
Pedal cyclist injured in collision with car, pick-up truck or van, unspecified pedal cyclist, traffic acciden	<5	0
Pedal cyclist injured in collision with fixed or stationary object, driver, nontraffic accident	<5	0
Pedal cyclist injured in collision with fixed or stationary object, driver, traffic accident	<5	0
Pedal cyclist injured in collision with other nonmotor vehicle, driver, nontraffic accident	<5	0
Pedal cyclist injured in collision with other pedal cycle, driver, traffic accident	<5	0
Pedal cyclist injured in noncollision transport accident, driver, nontraffic accident	16	<5
Pedal cyclist injured in noncollision transport accident, driver, traffic accident	7	0
Pedal cyclist injured in noncollision transport accident, unspecified pedal cyclist, traffic acciden	<5	0
Pedestrian injured in collision with car, pick-up truck or van, nontraffic accident	8	<5
Pedestrian injured in collision with car, pick-up truck or van, traffic accident	30	8
Pedestrian injured in collision with car, pick-up truck or van, unspecified whether traffic or nontraffic acc	<5	0
Pedestrian injured in collision with heavy transport vehicle or bus, traffic accident	<5	<5
Pedestrian injured in collision with two- or three-wheeled motor vehicle, nontraffic accident	<5	0
Pedestrian injured in collision with two- or three-wheeled motor vehicle, traffic accident	<5	0
Pediculosis due to Pediculus humanus capitis	<5	0
Pediculosis, unspecified	<5	0
Pelvic and perineal pain	63	<5
Penetrating wound of eyeball with foreign body	<5	0
Penetrating wound of orbit with or without foreign body	<5	0
Penicillins causing adverse effect in therapeutic use	30	<5
Peptic ulcer, acute with haemorrhage	<5	<5
Peptic ulcer, acute without haemorrhage or perforation	<5	0
Peptic ulcer, chronic or unspecified with haemorrhage	8	<5
Peptic ulcer, unspecified as acute or chronic, without haemorrhage or perforation	5	<5
Perforation of bile duct	<5	<5
Perforation of gallbladder	30	5
Perforation of intestine (nontraumatic)	99	31
Perforation of oesophagus	9	<5
Perforation of tympanic membrane, unspecified	10	<5
Periapical abscess without sinus	43	<5
Pericardial effusion (noninflammatory)	114	36
Pericarditis as current complication following acute myocardial infarction	17	14
Pericarditis in other diseases classified elsewhere	6	<5
Perichondritis of external ear	<5	0
Perinatal intestinal perforation	<5	0
Perineal laceration during delivery, unspecified, delivered, with or without mention of antepartum condition	<5	0
Periodontal disease, unspecified	<5	<5
Perioral dermatitis	<5	0
Peripheral angiopathy in diseases classified elsewhere	335	27
Peripheral arteriovenous malformation of digestive system vessel	31	7
Peripheral arteriovenous malformation of other site	<5	0
Peripheral arteriovenous malformation of upper limb	<5	0
Peripheral T-cell lymphoma, not elsewhere classified	6	<5
Peripheral vascular disease, unspecified	110	15
Peripheral vasodilators causing adverse effect in therapeutic use	<5	0

Peritoneal adhesions	360	39
Peritonitis, unspecified	34	6
Peritonsillar abscess	13	<5
Periumbilical pain	6	0
Persistent atrial fibrillation	28	21
Persistent delusional disorder, unspecified	<5	0
Persistent fetal circulation	<5	0
Persistent left superior vena cava	<5	0
Persistent mood [affective] disorder, unspecified	<5	0
Persistent postoperative fistula	10	<5
Persistent somatoform pain disorder	<5	0
Person awaiting admission to adequate facility elsewhere	2330	99
Person injured in unspecified nontraffic motor-vehicle accident	<5	<5
Person injured in unspecified traffic motor-vehicle accident	11	<5
Person injured in unspecified vehicle accident	<5	0
Person injured while boarding or alighting from streetcar	<5	0
Person on outside of special construction vehicle injured in nontraffic accident	<5	<5
Personal history of alcohol abuse	13	<5
Personal history of allergy to anaesthetic agent	<5	0
Personal history of benign neoplasms	5	0
Personal history of chemotherapy for neoplastic disease	<5	0
Personal history of COVID-19	31	<5
Personal history of diseases of the blood and blood-forming organs and certain disorders involving the immune	<5	0
Personal history of drug abuse	12	<5
Personal history of in-situ neoplasms	<5	0
Personal history of irradiation	<5	0
Personal history of leukaemia	<5	0
Personal history of long-term (current) use of anticoagulants	24	0
Personal history of long-term (current) use of multiple prescription drugs [polypharmacy]	35	<5
Personal history of long-term (current) use of other drug therapy	42	<5
Personal history of major surgery, not elsewhere classified	<5	0
Personal history of malignant neoplasm of breast, unspecified side	95	6
Personal history of malignant neoplasm of bronchus and lung, unspecified side	42	<5
Personal history of malignant neoplasm of digestive organs	301	33
Personal history of malignant neoplasm of genital organs	228	15
Personal history of malignant neoplasm of left breast	68	6
Personal history of malignant neoplasm of left bronchus and lung	15	<5
Personal history of malignant neoplasm of other respiratory and intrathoracic organs	22	<5
Personal history of malignant neoplasm of right breast	71	5
Personal history of malignant neoplasm of right bronchus and lung	33	5
Personal history of malignant neoplasm of urinary tract	133	8
Personal history of malignant neoplasm, unspecified	5	<5
Personal history of noncompliance with medical treatment and regimen	400	33
Personal history of other diseases of the circulatory system	27	6
Personal history of other diseases of the digestive system	<5	0
Personal history of other malignant neoplasms of lymphoid, haematopoietic and related tissues	19	<5
Personal history of other mental and behavioural disorders	<5	0
Personal history of other physical trauma	7	0
Personal history of other specified conditions	<5	<5
Personal history of other specified risk-factors, not elsewhere classified	<5	0
Personal history of primary malignant neoplasms of other organs and systems	155	13
Personal history of secondary malignant neoplasms	12	<5
Personal history of self-harm	83	<5
Personal history of thromboembolic disease	8	<5
Personal history of tobacco abuse	21	<5
Personality disorder, unspecified	26	0
Persons encountering health services in other specified circumstances	43	<5
Pertussis vaccine, including combinations with a pertussis component causing adverse effect in therapeutic us	<5	0
Pervasive developmental disorder, unspecified	<5	0
Petit mal, unspecified, without grand mal seizures, not stated as intractable	<5	<5
Phakomatosis, unspecified	<5	<5
Phantom limb syndrome with pain	13	<5
Phenothiazine antipsychotics and neuroleptics causing adverse effect in therapeutic use	<5	0
Phimosis	19	<5
Phlebitis and thrombophlebitis of femoral vein	5	<5
Phlebitis and thrombophlebitis of lower extremities, unspecified	14	<5
Phlebitis and thrombophlebitis of other deep vessels of lower extremities	258	45
Phlebitis and thrombophlebitis of other sites	52	13
Phlebitis and thrombophlebitis of superficial vessels of lower extremities	9	<5
Phlebitis and thrombophlebitis of unspecified site	9	<5
Physical abuse	<5	0
Physical violence	<5	<5
Pilonidal cyst with abscess	<5	0
Pilonidal cyst without abscess	11	<5
Pityriasis versicolor	<5	0
Place of occurrence, farm	8	0
Place of occurrence, home	2806	255
Place of occurrence, hospital	774	209

Place of occurrence, industrial and construction area	30	6
Place of occurrence, residential institution	463	19
Place of occurrence, school and other institutions and public areas	6	<5
Place of occurrence, sports and athletics area	53	<5
Place of occurrence, street and highway	98	14
Place of occurrence, trade and service area	85	5
Placenta praevia specified as without haemorrhage, delivered, with or without mention of antepartum condition	20	<5
Placenta praevia with haemorrhage, antepartum condition or complication	13	0
Placenta praevia with haemorrhage, delivered, with or without mention of antepartum condition	6	0
Placental disorder, unspecified, delivered, with or without mention of antepartum condition	<5	0
Plagiocephaly	<5	0
Plantar fascial fibromatosis	<5	0
Plasma cell leukaemia	<5	0
Pleural effusion, not elsewhere classified	980	221
Pleural plaque with presence of asbestos	<5	0
Pleural plaque without asbestos	<5	0
Pleurisy	8	0
Pneumococcal arthritis and polyarthritis, multiple sites	<5	0
Pneumoconiosis due to asbestos and other mineral fibres	9	<5
Pneumoconiosis due to other dust containing silica	6	0
Pneumocystosis	15	5
Pneumomediastinum originating in the perinatal period	<5	0
Pneumonia due to Escherichia coli	8	5
Pneumonia due to Haemophilus influenzae	13	12
Pneumonia due to Klebsiella pneumoniae	17	5
Pneumonia due to other Gram-negative bacteria	10	7
Pneumonia due to other specified infectious organisms	<5	<5
Pneumonia due to other streptococci	<5	<5
Pneumonia due to Pseudomonas	28	16
Pneumonia due to staphylococcus	55	43
Pneumonia due to Streptococcus pneumoniae	12	9
Pneumonia due to streptococcus, group B	<5	<5
Pneumonia in mycoses	21	6
Pneumonia in other diseases classified elsewhere	<5	0
Pneumonia in viral diseases classified elsewhere	<5	<5
Pneumonia, unspecified	2192	391
Pneumonitis due to food and vomit	856	251
Pneumonitis due to other solids and liquids	5	<5
Pneumothorax originating in the perinatal period	13	0
Pneumothorax, unspecified	48	19
Poisoning by 4-Aminophenol derivatives	56	14
Poisoning by analeptics and opioid receptor antagonists	<5	0
Poisoning by and exposure to alcohol, undetermined intent	6	<5
Poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic dru	<5	<5
Poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not e	12	7
Poisoning by and exposure to carbon monoxide from other sources	<5	0
Poisoning by and exposure to carbon monoxide from utility gas	<5	0
Poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classifie	<5	<5
Poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified, undete	15	7
Poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics, undetermined int	<5	<5
Poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics, undetermined intent	<5	<5
Poisoning by and exposure to other and unspecified chemicals and noxious substances, undetermined in	<5	0
Poisoning by and exposure to other and unspecified chemicals and noxious substances, undetermined intent	<5	<5
Poisoning by and exposure to other and unspecified drugs, medicaments and biological substances, und	<5	0
Poisoning by and exposure to other and unspecified drugs, medicaments and biological substances, undetermined	<5	<5
Poisoning by and exposure to other drugs acting on the autonomic nervous system, undetermined intent	<5	<5
Poisoning by angiotensin-converting-enzyme inhibitors	5	<5
Poisoning by antiallergic and antiemetic drugs	11	6
Poisoning by anticoagulants	8	<5
Poisoning by anti-common-cold drugs	<5	0
Poisoning by antidotes and chelating agents, not elsewhere classified	<5	<5
Poisoning by antiepileptic and sedative-hypnotic drugs, unspecified	13	5
Poisoning by antihyperlipidaemic and antiarteriosclerotic drugs	<5	0
Poisoning by antineoplastic and immunosuppressive drugs	<5	<5
Poisoning by antiparkinsonism drugs and other central muscle-tone depressants	5	<5
Poisoning by antithyroid drugs	<5	<5
Poisoning by antitussives	<5	<5
Poisoning by barbiturates	<5	0
Poisoning by benzodiazepines	75	27
Poisoning by beta-Adrenoreceptor antagonists, not elsewhere classified	8	6
Poisoning by butyrophenone and thioxanthene neuroleptics	<5	0
Poisoning by calcium-channel blockers	6	5
Poisoning by cannabis (derivatives)	14	5
Poisoning by cardiac-stimulant glycosides and drugs of similar action	<5	<5
Poisoning by cefalosporins and other beta-lactam antibiotics	<5	<5
Poisoning by cocaine	16	13
Poisoning by codeine and derivatives	<5	<5
Poisoning by drugs affecting uric acid metabolism	<5	<5

Poisoning by expectorants	<5	0
Poisoning by fentanyl and derivatives	<5	<5
Poisoning by fibrinolysis-affecting drugs	<5	0
Poisoning by glucocorticoids and synthetic analogues	<5	0
Poisoning by hydantoin derivatives	<5	0
Poisoning by hydromorphone	8	<5
Poisoning by iminostilbenes	<5	0
Poisoning by inhaled anaesthetics	<5	0
Poisoning by insulin and oral hypoglycaemic [antidiabetic] drugs	9	5
Poisoning by loop [high-ceiling] diuretics	<5	<5
Poisoning by methadone	9	6
Poisoning by mineralocorticoids and their antagonists	<5	<5
Poisoning by morphine	8	<5
Poisoning by other agents primarily affecting the gastrointestinal system	<5	<5
Poisoning by other and unspecified agents primarily affecting the cardiovascular system	<5	<5
Poisoning by other and unspecified antidepressants	59	24
Poisoning by other and unspecified antipsychotics and neuroleptics	30	7
Poisoning by other and unspecified drugs primarily affecting the autonomic nervous system	<5	<5
Poisoning by other and unspecified drugs, medicaments and biological substances	11	<5
Poisoning by other and unspecified narcotics	7	<5
Poisoning by other antacids and anti-gastric-secretion drugs	<5	0
Poisoning by other antidysrhythmic drugs, not elsewhere classified	<5	<5
Poisoning by other antiepileptic and sedative-hypnotic drugs	44	17
Poisoning by other antihypertensive drugs, not elsewhere classified	<5	<5
Poisoning by other nonopioid analgesics and antipyretics, not elsewhere classified	<5	<5
Poisoning by other nonsteroidal anti-inflammatory drugs [NSAID]	16	6
Poisoning by other opioids, not elsewhere classified	16	6
Poisoning by other parasympatholytics [anticholinergics and antimuscarinics] and spasmolytics, not e	5	<5
Poisoning by other primarily systemic and haematological agents	<5	<5
Poisoning by other synthetic narcotics, not elsewhere classified	<5	<5
Poisoning by other systemic antibiotics	<5	<5
Poisoning by oxycodone	<5	<5
Poisoning by phenothiazine antipsychotics and neuroleptics	<5	0
Poisoning by predominantly alpha-adrenoreceptor agonists, not elsewhere classified	<5	0
Poisoning by psychostimulants with abuse potential	11	5
Poisoning by salicylates	13	6
Poisoning by skeletal muscle relaxants [neuromuscular blocking agents]	6	<5
Poisoning by thyroid hormones and substitutes	<5	<5
Poisoning by tramadol	<5	0
Poisoning by tricyclic and tetracyclic antidepressants	14	9
Polyarthritis, unspecified	9	<5
Polyarthrosis, unspecified	10	<5
Polycystic kidney, autosomal dominant	9	<5
Polycystic kidney, unspecified	41	<5
Polycystic ovarian syndrome	9	<5
Polycythaemia neonatorum	<5	0
Polycythaemia vera	<5	<5
Polydipsia	16	<5
Polyhydramnios, third trimester, antepartum condition or complication	<5	0
Polyhydramnios, third trimester, delivered, with or without mention of antepartum condition	43	0
Polymyalgia rheumatica	49	<5
Polymyositis	<5	<5
Polyneuropathy due to other toxic agents	<5	0
Polyneuropathy in infectious and parasitic diseases classified elsewhere	<5	0
Polyneuropathy in neoplastic disease	<5	<5
Polyneuropathy in nutritional deficiency	<5	0
Polyneuropathy in other endocrine and metabolic diseases	<5	0
Polyneuropathy in other musculoskeletal disorders	10	<5
Polyneuropathy in systemic connective tissue disorders	<5	0
Polyneuropathy, unspecified	40	<5
Polyp of cervix uteri	7	0
Polyp of colon	102	9
Polyp of corpus uteri	24	0
Polyp of middle ear	<5	0
Polyp of nasal cavity	<5	0
Polyp of stomach and duodenum	60	11
Polyp of vagina	<5	0
Polyp of vocal cord and larynx	9	0
Polyphagia	<5	0
Portal hypertension	85	19
Portal vein thrombosis	51	14
Positive faecal occult blood test	5	<5
Post COVID-19 condition	18	6
Postcholecystectomy syndrome	<5	0
Postcoital and contact bleeding	<5	0
Postconcussional syndrome	6	<5
Postencephalitic syndrome	<5	<5
Posterior cord syndrome of lumbar spinal cord	<5	0

Posterior dislocation of elbow, closed	<5	0
Posterior dislocation of hip, closed	<5	0
Posterior dislocation of humerus, closed	<5	0
Posterior dislocation of knee, closed	<5	0
Postmastectomy lymphoedema syndrome	7	0
Postmenopausal atrophic vaginitis	5	0
Postmenopausal bleeding	64	<5
Postmyocardial infarction angina as current complication following acute myocardial infarction	32	22
Postoperative intestinal obstruction	387	78
Postoperative leak	231	59
Postpartum acute renal failure, delivered, with mention of postpartum complication	<5	0
Postpartum acute renal failure, postpartum condition or complication	<5	0
Postpartum coagulation defects, delivered, with mention of postpartum complication	<5	<5
Postpartum coagulation defects, postpartum condition or complication	<5	<5
Postpartum inversion of uterus, delivered, with mention of postpartum complication	<5	0
Postprocedural disorder of circulatory system, unspecified	<5	<5
Postprocedural disorder of digestive system, unspecified	<5	0
Postprocedural endocrine and metabolic disorder, unspecified	<5	0
Postprocedural hypoinsulinaemia	<5	0
Postprocedural hypoparathyroidism	<5	0
Postprocedural hypothyroidism	<5	0
Postprocedural musculoskeletal disorder, unspecified	<5	0
Postprocedural pelvic peritoneal adhesions	55	11
Postprocedural pneumothorax	119	26
Postprocedural renal failure	315	145
Postprocedural respiratory disorder, unspecified	<5	<5
Postprocedural subglottic stenosis	5	<5
Postprocedural urethral stricture	7	0
Postsplenectomy thrombocytosis	<5	0
Postsurgical malabsorption, not elsewhere classified	8	<5
Post-term infant, not heavy for gestational age	85	0
Postthrombotic syndrome with other complications	<5	<5
Post-traumatic arthrosis of first carpometacarpal joints, bilateral	<5	0
Post-traumatic arthrosis of other joints	26	<5
Post-traumatic coxarthrosis, bilateral	<5	0
Post-traumatic gonarthrosis, bilateral	5	0
Post-traumatic hydrocephalus, unspecified	<5	0
Post-traumatic stress disorder	149	7
Post-traumatic wound infection, not elsewhere classified	8	0
Postviral fatigue syndrome	<5	0
Postzoster neuralgia	20	<5
Preauricular sinus and cyst	<5	0
Precipitate labour, delivered, with or without mention of antepartum condition	518	0
Precordial pain	11	<5
Predominantly allergic asthma with stated status asthmaticus	<5	0
Predominantly allergic asthma without stated status asthmaticus	19	<5
Predominantly beta-adrenoreceptor agonists, not elsewhere classified, causing adverse effect in therapeutic u	<5	<5
Predominantly obsessional thoughts or ruminations	<5	0
Pre-eclampsia superimposed on chronic hypertension, antepartum condition or complication	<5	0
Pre-eclampsia superimposed on chronic hypertension, delivered, with or without mention of antepartum conditio	6	<5
Pre-eclampsia, unspecified, antepartum condition or complication	12	0
Pre-eclampsia, unspecified, delivered, with mention of postpartum complication	<5	0
Pre-eclampsia, unspecified, delivered, with or without mention of antepartum condition	50	<5
Pre-eclampsia, unspecified, postpartum condition or complication	<5	<5
Pre-excitation syndrome	12	6
Pre-existing diabetes mellitus of other or unspecified type in pregnancy delivered with or without mention of	<5	0
Pre-existing essential hypertension complicating pregnancy, childbirth and the puerperium, antepartum conditi	<5	0
Pre-existing essential hypertension complicating pregnancy, childbirth and the puerperium, delivered, with me	<5	0
Pre-existing essential hypertension complicating pregnancy, childbirth and the puerperium, delivered, with or	27	<5
Pre-existing essential hypertension complicating pregnancy, childbirth and the puerperium, unspecified as to	<5	0
Pre-existing type 1 diabetes mellitus in pregnancy antepartum condition or complication	<5	0
Pre-existing type 1 diabetes mellitus in pregnancy delivered with mention of postpartum complication	<5	0
Pre-existing type 1 diabetes mellitus in pregnancy delivered with or without mention of antepartum condition	6	0
Pre-existing type 2 diabetes mellitus in pregnancy antepartum condition or complication	<5	0
Pre-existing type 2 diabetes mellitus in pregnancy delivered with or without mention of antepartum condition	12	0
Pre-existing type 2 diabetes mellitus in pregnancy unspecified as to episode of care or not applicable	<5	0
Pregnancy care of habitual aborter, delivered, with or without mention of antepartum condition	<5	0
Pregnancy resulting from both spontaneous (NOS) ovulation and conception triplets, all liveborn	<5	0
Pregnancy-related condition, unspecified, delivered, with or without mention of antepartum condition	<5	0
Pregnant state, incidental	29	5
Premature rupture of membranes, labour delayed by therapy, antepartum condition or complication	<5	0
Premature rupture of membranes, onset of labour after 24 hours, delivered, with or without mention of antepar	7	0
Premature rupture of membranes, onset of labour after 24 hours. delivered, with or without mention of antepar	45	0
Premature rupture of membranes, onset of labour within 24 hours, delivered, with or without mention of antepa	345	<5
Premature rupture of membranes, unspecified, antepartum condition or complication	13	0
Premature rupture of membranes, unspecified, delivered, with or without mention of antepartum condition	64	<5
Premature separation of placenta with disseminated intravascular coagulation, delivered, with or without ment	<5	<5
Premature separation of placenta, unspecified, antepartum condition or complication	6	0

Premature separation of placenta, unspecified, delivered, with or without mention of antepartum condition	36	0
Premenstrual tension syndrome	<5	0
Preparatory care for dialysis	19	<5
Preparatory care for subsequent treatment, not elsewhere classified	34	<5
Prepatellar bursitis	5	0
Presbycusis	<5	0
Presence of (intrauterine) contraceptive device	<5	0
Presence of aortocoronary bypass graft	53	12
Presence of artificial eye	<5	0
Presence of artificial hip	92	0
Presence of artificial knee	69	0
Presence of artificial larynx	<5	0
Presence of cardiac pacemaker	107	24
Presence of cardiac resynchronization therapy device	<5	0
Presence of cardioverter/defibrillator	11	6
Presence of cerebrospinal fluid drainage device	<5	0
Presence of coronary angioplasty implant and graft	105	26
Presence of intraocular lens	<5	0
Presence of other and unspecified electronic cardiac devices	<5	<5
Presence of other cardiac and vascular implants and grafts	<5	<5
Presence of other heart-valve replacement	6	<5
Presence of other orthopaedic joint implants	9	0
Presence of other specified functional implants	<5	0
Presence of prosthetic heart valve	14	<5
Presence of urogenital implants	13	<5
Presence of xenogenic heart valve	<5	0
Preterm delivery without spontaneous labour, with or without mention of antepartum condition	49	<5
Preterm labour without delivery, antepartum condition or complication	41	0
Preterm spontaneous labour with preterm delivery, with or without mention of antepartum condition	97	0
Preterm spontaneous labour with term delivery, with or without mention of antepartum condition	<5	0
Priapism	<5	0
Primary adrenocortical insufficiency	11	<5
Primary angle-closure glaucoma	<5	<5
Primary arthrosis of other joints	27	0
Primary biliary cirrhosis	8	<5
Primary coxarthrosis, bilateral	174	<5
Primary dysmenorrhoea	<5	0
Primary generalized (osteo)arthrosis	<5	0
Primary gonarthrosis, bilateral	319	<5
Primary hyperaldosteronism	7	0
Primary hyperparathyroidism	21	<5
Primary inadequate contractions, antepartum condition or complication	<5	0
Primary inadequate contractions, delivered, with or without mention of antepartum condition	63	0
Primary open-angle glaucoma	<5	0
Primary pulmonary hypertension	231	59
Primary sclerosing cholangitis	16	<5
Primary thrombophilia	9	<5
Problem related to care-provider dependency, unspecified	<5	0
Problem related to housing and economic circumstances, unspecified	9	0
Problem related to life-management difficulty, unspecified	<5	0
Problem related to physical environment, unspecified	<5	0
Problem related to primary support group, unspecified	<5	0
Problem related to social environment, unspecified	<5	0
Problems in relationship with parents and in-laws	<5	0
Problems in relationship with spouse or partner	13	0
Problems related to alleged physical abuse of child	<5	0
Problems related to alleged sexual abuse of child by person outside primary support group	<5	0
Problems related to alleged sexual abuse of child by person within primary support group	<5	0
Problems related to other legal circumstances	15	0
Procedure not carried out because of contraindication	64	<5
Procedure not carried out because of patient's decision for other and unspecified reasons	23	<5
Procedure not carried out because of patient's decision for reasons of belief or group pressure	<5	0
Procedure not carried out for other reasons	206	<5
Procedure not carried out, unspecified reason	62	0
Procedures for transgender reassignment	<5	0
Product of both spontaneous (NOS) ovulation and conception, quintuplet, born in hospital, delivered vaginally	<5	0
Product of both spontaneous (NOS) ovulation and conception, triplet, born in hospital, delivered by caesarean	<5	0
Progressive bulbar palsy	<5	0
Progressive external ophthalmoplegia	<5	0
Progressive isolated aphasia [Mesulam]	<5	0
Progressive supranuclear ophthalmoplegia [Steele-Richardson-Olszewski]	18	0
Projectile vomiting	<5	0
Prolapse of vaginal vault after hysterectomy	10	0
Prolonged first stage (of labour), delivered, with or without mention of antepartum condition	16	0
Prolonged pregnancy, antepartum condition or complication	<5	0
Prolonged pregnancy, delivered, with or without mention of antepartum condition	321	0
Prolonged second stage (of labour), delivered, with or without mention of antepartum condition	85	0
Prolymphocytic leukaemia of T-cell type	<5	0

Prophylactic removal of breast	44	0
Prophylactic removal of other organ	9	0
Prophylactic removal of ovary	7	0
Propionic acid derivatives causing adverse effect in therapeutic use	8	0
Proteus (mirabilis)(morganii) as the cause of diseases classified to other chapters	225	23
Protozoal diseases complicating pregnancy, childbirth and the puerperium, antepartum condition or complicatio	<5	0
Protozoal diseases complicating pregnancy, childbirth and the puerperium, delivered, with or without mention	<5	0
Protrusio acetabuli	5	0
Prurigo nodularis	<5	0
Pruritus vulvae	<5	0
Pruritus, unspecified	68	<5
Pseudarthrosis after fusion or arthrodesis	<5	0
Pseudocyst of pancreas	31	5
Pseudomonas (aeruginosa) as the cause of diseases classified to other chapters	291	44
Psoas tendinitis	<5	0
Psoriasis vulgaris	<5	0
Psoriasis, unspecified	18	0
Psychodysleptics [hallucinogens] causing adverse effect in therapeutic use	11	<5
Psychostimulants with abuse potential causing adverse effect in therapeutic use	<5	0
Psychotropic drug, unspecified, causing adverse effect in therapeutic use	<5	0
Pterygium	<5	0
Ptosis of eyelid	5	<5
Puerperal sepsis, delivered, with mention of postpartum complication	<5	0
Puerperal sepsis, postpartum condition or complication	<5	0
Pulmonary candidiasis	<5	<5
Pulmonary embolism with mention of acute cor pulmonale	<5	0
Pulmonary embolism without mention of acute cor pulmonale	678	183
Pulmonary eosinophilia, not elsewhere classified	9	<5
Pulmonary heart disease, unspecified	5	<5
Pulmonary mycobacterial infection	9	<5
Pulmonary nocardiosis	<5	0
Pulmonary oedema	207	67
Pulmonary valve insufficiency	<5	<5
Pulmonary valve stenosis	<5	0
Pulseless electrical activity, not elsewhere classified	<5	<5
Pupillary membranes	<5	0
Pure hypercholesterolaemia	15	<5
Pure hyperglyceridaemia	20	7
Pure motor lacunar syndrome	<5	0
Purulent endophthalmitis	8	0
Pyoderma	<5	0
Pyoderma gangrenosum	8	0
Pyogenic arthritis, unspecified, ankle and foot	11	0
Pyogenic arthritis, unspecified, forearm	8	<5
Pyogenic arthritis, unspecified, hand	7	0
Pyogenic arthritis, unspecified, lower leg	43	<5
Pyogenic arthritis, unspecified, multiple sites	<5	0
Pyogenic arthritis, unspecified, pelvic region and thigh	18	0
Pyogenic arthritis, unspecified, shoulder region	14	<5
Pyogenic arthritis, unspecified, upper arm	7	<5
Pyonephrosis	228	28
Pyothorax with fistula	20	8
Pyothorax without fistula	75	29
Pyrexia during labour, not elsewhere classified, delivered, with or without mention of antepartum condition	23	0
Pyrexia of unknown origin following delivery, delivered, with mention of postpartum complication	<5	0
Pyrexia of unknown origin following delivery, postpartum condition or complication	<5	0
Quadriplegia, unspecified type, complete, at cervical spine level C1 to C4	<5	0
Quadriplegia, unspecified type, complete, at cervical spine level C5 to C7	<5	<5
Quadriplegia, unspecified type, incomplete, at cervical spine level C1 to C4	<5	<5
Quadriplegia, unspecified type, incomplete, at cervical spine level C5 to C7	<5	0
Quadriplegia, unspecified type, unspecified, at cervical spine level C1 to C4	<5	0
Quadriplegia, unspecified type, unspecified, at cervical spine level C5 to C7	10	<5
Radiation proctitis	16	<5
Radiculopathy, cervical region	9	<5
Radiculopathy, lumbar region	13	<5
Radiculopathy, lumbosacral region	<5	0
Radiculopathy, multiple sites in spine	<5	0
Radiculopathy, sacral and sacrococcygeal region	<5	0
Radiculopathy, thoracic region	<5	0
Radiculopathy, unspecified site	13	<5
Radiological examination, not elsewhere classified	<5	0
Radiological procedure and radiotherapy as the cause of abnormal reaction or later complication, wit	80	5
Radiological procedure and radiotherapy as the cause of abnormal reaction or later complication, without ment	49	6
Radiotherapy session	34	0
Raised antibody titre	<5	0
Rash and other nonspecific skin eruption	163	25
Raynaud's syndrome	<5	0
Reaction to severe stress, unspecified	<5	0

Reactive arthropathy, unspecified, multiple sites	<5	0
Reactive thrombocytosis	19	5
Receptive language disorder	<5	0
Rectal abscess	19	<5
Rectal fistula	<5	<5
Rectal polyp	36	<5
Rectal prolapse	26	<5
Rectocele	63	0
Recurrent and persistent haematuria, diffuse membranous glomerulonephritis	<5	0
Recurrent and persistent haematuria, other	24	<5
Recurrent and persistent haematuria, unspecified	7	0
Recurrent cholesteatoma of postmastoidectomy cavity	<5	0
Recurrent depressive disorder, current episode mild	<5	0
Recurrent depressive disorder, current episode moderate	14	0
Recurrent depressive disorder, current episode severe with psychotic symptoms	22	0
Recurrent depressive disorder, current episode severe without psychotic symptoms	49	<5
Recurrent depressive disorder, unspecified	51	<5
Recurrent dislocation and subluxation of joint, ankle and foot	<5	0
Recurrent dislocation and subluxation of joint, pelvic region and thigh	<5	0
Recurrent dislocation and subluxation of joint, shoulder region	7	0
Recurrent dislocation of the temporomandibular joint	<5	0
Recurrent oral aphthae	12	<5
Recurrent subluxation of patella	<5	0
Refractory anaemia with excess of blasts [RAEB]	<5	0
Refractory anaemia with ring sideroblasts	<5	0
Regurgitation and rumination in newborn	5	0
Rejection of Lung transplant	<5	<5
Rejection of soft tissue (skin, muscle, fascia, tendon, mucosa) graft/flap	<5	<5
Relapsing polychondritis	<5	0
Removal of other organ (partial) (total) as the cause of abnormal reaction or later complication, wi	733	63
Removal of other organ (partial) (total) as the cause of abnormal reaction or later complication, without men	295	30
Renal agenesis, unilateral	7	0
Renal and perinephric abscess	22	<5
Renal dysplasia	<5	0
Renal tubulo-interstitial disease, unspecified	<5	0
Renal tubulo-interstitial disorders in infectious and parasitic diseases classified elsewhere	16	<5
Renal tubulo-interstitial disorders in systemic connective tissue disorders	<5	0
Renovascular hypertension, benign or unspecified	<5	0
Residual foreign body in soft tissue, lower leg	<5	0
Residual foreign body in soft tissue, other site	<5	0
Residual foreign body in soft tissue, pelvic region and thigh	<5	0
Residual haemorrhoidal skin tags	6	0
Residual schizophrenia	27	0
Resistance to antineoplastic drugs	34	<5
Resistance to betalactam antibiotics, unspecified	<5	0
Resistance to methicillin	102	21
Resistance to multiple antibiotics	128	27
Resistance to multiple antimicrobial drugs	<5	<5
Resistance to other betalactam antibiotics	8	<5
Resistance to other single specified antibiotic	64	12
Resistance to other specified antimicrobial drug	<5	0
Resistance to other specified extended spectrum betalactam antibiotics	29	7
Resistance to penicillin	16	<5
Resistance to quinolones	<5	0
Resistance to unspecified antimicrobial drugs	<5	0
Resistance to vancomycin	<5	0
Respiratory arrest	18	13
Respiratory condition of newborn, unspecified	15	0
Respiratory conditions due to other specified external agents	5	<5
Respiratory disorder, unspecified	<5	<5
Respiratory disorders in other diffuse connective tissue disorders	6	<5
Respiratory disorders in other diseases classified elsewhere	8	<5
Respiratory distress of newborn, unspecified	108	0
Respiratory distress syndrome of newborn	35	0
Respiratory failure of newborn	154	0
Respiratory failure, unspecified, type I [hypoxic]	234	170
Respiratory failure, unspecified, type II [hypercapnic]	174	106
Respiratory failure, unspecified, type unspecified	141	98
Respiratory syncytial virus pneumonia	<5	<5
Respiratory tuberculosis unspecified, without mention of bacteriological or histological confirmatio	<5	<5
Restlessness and agitation	617	193
Retained (old) intraocular foreign body, nonmagnetic	<5	0
Retained placenta without haemorrhage, delivered, with mention of postpartum complication	17	0
Retained placenta without haemorrhage, postpartum condition or complication	<5	0
Retained portions of placenta and membranes, without haemorrhage, delivered, with mention of postpartum compl	<5	0
Retained portions of placenta and membranes, without haemorrhage, postpartum condition or complication	<5	0
Retention of urine	1001	79
Retinal breaks without detachment	<5	0

Retinal detachment with retinal break	9	0
Retinal haemorrhage	<5	<5
Retinal vascular occlusion, unspecified	<5	0
Retinopathy of prematurity	<5	0
Retrobulbar neuritis in diseases classified elsewhere	<5	0
Retrograde amnesia	<5	0
Retroperitoneal fibrosis	5	<5
Retropharyngeal and parapharyngeal abscess	11	<5
Rh isoimmunization of fetus and newborn	<5	0
Rheumatic heart disease, unspecified	<5	0
Rheumatic mitral insufficiency	<5	0
Rheumatoid arthritis with involvement of other organs and systems	<5	0
Rheumatoid arthritis, unspecified	79	8
Rheumatoid lung disease	<5	0
Rheumatoid vasculitis	<5	<5
Rhinophyma	<5	0
Rhinosporidiosis	<5	0
Riboflavin deficiency	<5	0
Rickettsiosis, unspecified	<5	0
Right lower quadrant pain	31	<5
Right upper quadrant pain	53	<5
Rosacea, unspecified	<5	0
Rotator cuff syndrome	58	<5
Routine postpartum follow-up	<5	0
Rubella without complication	<5	0
Rupture of artery	<5	<5
Rupture of bladder, nontraumatic	<5	0
Rupture of cardiac wall without haemopericardium as current complication following acute myocardial	<5	0
Rupture of chordae tendineae, not elsewhere classified	<5	0
Rupture of papillary muscle as current complication following acute myocardial infarction	<5	<5
Rupture of popliteal cyst	<5	0
Sacrococcygeal disorders, not elsewhere classified	<5	0
Sacroiliitis, not elsewhere classified	6	<5
Salicylates causing adverse effect in therapeutic use	15	<5
Saline and osmotic laxatives causing adverse effect in therapeutic use	<5	<5
Salmonella enteritis	18	0
Salmonella infection, unspecified	<5	0
Salmonella sepsis	<5	0
Salpingitis and oophoritis, unspecified	8	<5
Sarcoidosis of lung	8	<5
Sarcoidosis of lung with sarcoidosis of lymph nodes	<5	0
Sarcoidosis of lymph nodes	<5	<5
Sarcoidosis of other and combined sites	12	<5
Sarcoidosis, unspecified	10	0
Scabies	<5	0
Scar conditions and fibrosis of skin	20	0
Schizoaffective disorder, depressive type	17	0
Schizoaffective disorder, manic type	<5	0
Schizoaffective disorder, mixed type	160	0
Schizoaffective disorder, unspecified	64	<5
Schizoid personality disorder	<5	0
Schizophrenia, unspecified	361	13
Schizotypal disorder	13	<5
Schmorl's nodes	<5	0
Sciatica	27	<5
Scoliosis unspecified, unspecified site	7	<5
Scoliosis, unspecified, lumbar region	<5	0
Seborrhoea capitis	<5	<5
Seborrhoeic dermatitis, unspecified	7	<5
Seborrhoeic keratosis	10	0
Second degree haemorrhoids, uncomplicated	<5	<5
Second degree perineal laceration during delivery, delivered, with or without mention of antepartum condition	725	<5
Second degree perineal laceration during delivery, postpartum condition or complication	<5	0
Secondary amenorrhoea	<5	0
Secondary biliary cirrhosis	<5	<5
Secondary dysmenorrhoea	<5	0
Secondary hyperparathyroidism, not elsewhere classified	6	<5
Secondary hypertension, benign or unspecified	<5	0
Secondary malignant neoplasm lymph nodes of head, face and neck	117	11
Secondary malignant neoplasm of adrenal gland	143	7
Secondary malignant neoplasm of axillary and upper limb lymph nodes	80	<5
Secondary malignant neoplasm of bladder and other and unspecified urinary organs	33	<5
Secondary malignant neoplasm of bone and bone marrow	835	38
Secondary malignant neoplasm of brain and cerebral meninges	399	12
Secondary malignant neoplasm of breast	10	0
Secondary malignant neoplasm of inguinal and lower limb lymph nodes	51	<5
Secondary malignant neoplasm of intra-abdominal lymph nodes	222	16
Secondary malignant neoplasm of intrapelvic lymph nodes	74	<5

Secondary malignant neoplasm of intrathoracic lymph nodes	161	12
Secondary malignant neoplasm of kidney and renal pelvis	41	<5
Secondary malignant neoplasm of large intestine and rectum	59	<5
Secondary malignant neoplasm of left lung	236	8
Secondary malignant neoplasm of liver and intrahepatic bile duct	992	45
Secondary malignant neoplasm of lung, unspecified side	349	14
Secondary malignant neoplasm of lymph node, unspecified	132	7
Secondary malignant neoplasm of lymph nodes of multiple regions	69	<5
Secondary malignant neoplasm of mediastinum	57	<5
Secondary malignant neoplasm of other and unspecified digestive organs	150	11
Secondary malignant neoplasm of other and unspecified parts of nervous system	17	0
Secondary malignant neoplasm of other and unspecified respiratory organs	7	<5
Secondary malignant neoplasm of other specified sites	269	21
Secondary malignant neoplasm of ovary	33	<5
Secondary malignant neoplasm of pleura	246	14
Secondary malignant neoplasm of retroperitoneum and peritoneum	405	27
Secondary malignant neoplasm of right lung	256	6
Secondary malignant neoplasm of skin	40	<5
Secondary malignant neoplasm of small intestine	44	<5
Secondary malignant neoplasm, unspecified site	160	12
Secondary polycythaemia	8	<5
Secondary sclerosing cholangitis	5	<5
Secondary thrombocytopenia	61	17
Secondary uterine inertia, antepartum condition or complication	<5	0
Secondary uterine inertia, delivered, with or without mention of antepartum condition	99	0
Sedative, hypnotic and antianxiety drug, unspecified, causing adverse effect in therapeutic use	<5	<5
Seizure disorder, so described	65	16
Selective deficiency of immunoglobulin A [IgA]	<5	0
Selective deficiency of immunoglobulin G [IgG] subclasses	<5	0
Senile cataract, unspecified	<5	<5
Senile degeneration of brain, not elsewhere classified	<5	<5
Senile nuclear cataract	<5	0
Senility	14	0
Sensorineural hearing loss, bilateral	<5	0
Sensorineural hearing loss, unilateral with unrestricted hearing on the contralateral side	6	<5
Sensorineural hearing loss, unspecified	6	<5
Separation anxiety disorder of childhood	<5	<5
Sepsis due to anaerobes	29	8
Sepsis due to enterococcus	46	19
Sepsis due to Escherichia coli [E.coli]	155	53
Sepsis due to Haemophilus influenzae	<5	<5
Sepsis due to other Gram-negative organisms	63	20
Sepsis due to other specified staphylococcus	53	18
Sepsis due to Pseudomonas	38	14
Sepsis due to Serratia	5	<5
Sepsis due to Staphylococcus aureus	126	48
Sepsis due to Streptococcus pneumoniae	5	<5
Sepsis due to streptococcus, group A	5	<5
Sepsis due to streptococcus, group B	13	<5
Sepsis due to unspecified staphylococcus	7	<5
Sepsis, unspecified	816	336
Septic shock	311	267
Sequelae of adverse effects caused by drugs, medicaments and biological substances in therapeutic use	<5	0
Sequelae of adverse incidents associated with medical devices in diagnostic and therapeutic use	<5	<5
Sequelae of cerebral infarction	23	<5
Sequelae of fracture of arm	<5	0
Sequelae of fracture of femur	<5	0
Sequelae of injury of spinal cord	<5	<5
Sequelae of intentional self-harm	<5	0
Sequelae of intracerebral haemorrhage	<5	0
Sequelae of intracranial injury	8	0
Sequelae of motor-vehicle accident	8	<5
Sequelae of other and unspecified cerebrovascular diseases	<5	0
Sequelae of other specified injuries of neck and trunk	<5	0
Sequelae of stroke, not specified as haemorrhage or infarction	18	0
Sequelae of surgical and medical procedures as the cause of abnormal reaction of the patient, or of later com	<5	0
Sequelae of unspecified burn, corrosion and frostbite	<5	0
Sequelae of unspecified external cause	5	0
Seropositive rheumatoid arthritis, unspecified site	<5	0
Serous retinal detachment	<5	0
Severe cervical dysplasia, not elsewhere classified	<5	0
Severe depressive episode with psychotic symptoms	50	0
Severe depressive episode without psychotic symptoms	182	11
Severe mental and behavioural disorders associated with the puerperium, not elsewhere classified	<5	0
Severe mental retardation without mention of impairment of behaviour	<5	0
Severe mental retardation, other impairments of behaviour	<5	0
Severe pre-eclampsia, delivered, with or without mention of antepartum condition	9	0
Severe visual impairment, binocular	<5	0

Severe visual impairment, monocular	<5	0
Sexual abuse	<5	0
Sexual assault by bodily force	<5	0
Sexually transmitted chlamydial infection of other sites	6	0
Shock due to anaesthesia	<5	0
Shock during or following labour and delivery, delivered, with mention of postpartum complication	<5	<5
Shock during or resulting from a procedure, not elsewhere classified	70	59
Shock following spontaneous abortion	<5	0
Shock, unspecified	42	35
Short Achilles tendon (acquired)	<5	0
Shoulder lesion, unspecified site	<5	0
Sialoadenitis	20	<5
Sialolithiasis	<5	0
Sicca syndrome [Sjögren]	10	<5
Sick sinus syndrome	91	38
Sick-euthyroid syndrome	<5	0
Sickle-cell anaemia with crisis	14	<5
Sickle-cell anaemia without crisis	<5	0
Sickle-cell trait	<5	0
Silent myocardial ischaemia	11	<5
Single live birth, pregnancy resulting from assisted reproductive technology (ART)	42	0
Single live birth, pregnancy resulting from both spontaneous ovulation and conception	2744	8
Single stillbirth, pregnancy resulting from both spontaneous ovulation and conception	13	0
Singleton born in hospital, product of assisted reproductive technology (ART), delivered by caesarean	11	0
Singleton born in hospital, product of assisted reproductive technology (ART), delivered vaginally	17	0
Singleton born in hospital, product of both spontaneous (NOS) ovulation and conception, delivered by caesarea	882	0
Singleton, born in hospital, product of both spontaneous (NOS) ovulation and conception, delivered v	<5	0
Singleton, born in hospital, product of both spontaneous (NOS) ovulation and conception, delivered vaginally	1880	0
Singleton, born outside hospital, product of both spontaneous (NOS) ovulation and conception	8	0
Sinus, fistula and cyst of branchial cleft	<5	0
Sixth [abducent] nerve palsy	6	<5
Skeletal fluorosis, lower leg	<5	0
Skeletal muscle relaxants [neuromuscular blocking agents] causing adverse effect in therapeutic use	<5	<5
Skiing	<5	0
Sleep apnoea, central	<5	0
Sleep apnoea, obstructed	545	145
Sleep disorder, unspecified	11	<5
Slow feeding of newborn	6	0
Small cell B-cell lymphoma	18	0
Social phobias	5	0
Soft tissue disorder, unspecified, pelvic region and thigh	<5	0
Solitary bone cyst, pelvic region and thigh	<5	0
Solitary cyst of breast	<5	0
Solitary plasmacytoma	7	<5
Somatization disorder	8	0
Somatoform autonomic dysfunction	<5	0
Somatoform disorder, unspecified	<5	0
Somnolence	75	11
Spasm of sphincter of Oddi	<5	0
Spastic hemiplegic cerebral palsy	<5	<5
Spastic diplegic cerebral palsy	<5	0
Spastic hemiplegia of dominant side	<5	0
Spastic hemiplegia of unspecified [unilateral] side	<5	0
Spastic paraplegia, incomplete, at the thoracic level	<5	0
Spastic quadriplegia, incomplete, at cervical spine level C1 to C4	<5	0
Spastic quadriplegia, unspecified, at cervical spine level C5 to C7	<5	<5
Spastic quadriplegic cerebral palsy	<5	0
Special epileptic syndromes, intractable	<5	0
Special epileptic syndromes, not stated as intractable	15	6
Special screening examination for other viral diseases	41	5
Specific (isolated) phobias	<5	<5
Speech therapy	<5	0
Spermatocele	<5	<5
Spina bifida, unspecified	23	5
Spinal and epidural anaesthesia-induced headache during labour and delivery, delivered, with or without menti	<5	0
Spinal and epidural anaesthesia-induced headache during the puerperium, delivered, with mention of postpartum	5	0
Spinal stenosis, cervical region	46	<5
Spinal stenosis, cervicothoracic region	6	0
Spinal stenosis, lumbar region	139	<5
Spinal stenosis, lumbosacral region	21	0
Spinal stenosis, multiple sites in spine	7	<5
Spinal stenosis, thoracic region	6	0
Spinal stenosis, thoracolumbar region	5	0
Spinal stenosis, unspecified site	28	0
Splenomegaly, not elsewhere classified	28	<5
Spondylolisthesis, cervical region	<5	0
Spondylolisthesis, lumbar region	20	0
Spondylolisthesis, lumbosacral region	12	0

Spondylolysis, lumbar region	<5	0
Spondylolysis, thoracolumbar region	<5	0
Spondylopathy, unspecified, lumbosacral region	<5	0
Spondylosis, unspecified, cervical region	<5	0
Spondylosis, unspecified, lumbar region	5	0
Spondylosis, unspecified, lumbosacral region	<5	0
Spontaneous abortion, complete or unspecified, without complication	5	0
Spontaneous abortion, incomplete, complicated by delayed or excessive haemorrhage	<5	0
Spontaneous abortion, incomplete, complicated by genital tract and pelvic infection	<5	0
Spontaneous abortion, incomplete, without complication	7	0
Spontaneous ecchymoses	12	<5
Spontaneous rupture of flexor tendons, upper arm	<5	0
Spontaneous rupture of other tendons, ankle and foot	<5	0
Spontaneous rupture of other tendons, pelvic region and thigh	<5	0
Spontaneous rupture of unspecified tendon, pelvic region and thigh	<5	0
Spontaneous tension pneumothorax	8	6
Sprain and strain of acromioclavicular joint	<5	0
Sprain and strain of ankle, unspecified	8	0
Sprain and strain of anterior cruciate ligament of knee, rupture	<5	<5
Sprain and strain of deltoid ligament, ankle	5	0
Sprain and strain of lateral collateral ligament of knee, rupture	<5	0
Sprain and strain of lumbar spine	<5	0
Sprain and strain of medial collateral ligament of knee, rupture	<5	<5
Sprain and strain of other and unspecified parts of knee	<5	0
Sprain and strain of other and unspecified parts of lumbar spine and pelvis	<5	0
Sprain and strain of other ligament of ankle	<5	0
Sprain and strain of posterior cruciate ligament of knee, rupture	<5	<5
Sprain and strain of sacroiliac joint	<5	0
Sprain and strain of shoulder joint, NOS	<5	0
Sprain and strain of shoulder joint, rotator cuff capsule	<5	0
Sprain and strain of unspecified site of hip	<5	0
Stage I decubitus ulcer and pressure area	832	115
Stage II decubitus [pressure] ulcer	889	141
Stage III decubitus [pressure] ulcer	186	42
Stage IV decubitus [pressure] ulcer	56	12
Staphylococcal arthritis and polyarthritis, ankle and foot	5	0
Staphylococcal arthritis and polyarthritis, forearm	<5	0
Staphylococcal arthritis and polyarthritis, hand	<5	0
Staphylococcal arthritis and polyarthritis, lower leg	9	<5
Staphylococcal arthritis and polyarthritis, pelvic region and thigh	<5	<5
Staphylococcal arthritis and polyarthritis, shoulder region	<5	0
Staphylococcal infection, unspecified site	151	37
Staphylococcal meningitis	<5	0
Staphylococcus aureus as the cause of diseases classified to other chapters	482	97
Status epilepticus, unspecified	52	39
Stem cell transplant candidate	<5	0
Stem cell transplant status	19	<5
Stenosis and insufficiency of lacrimal passages	<5	0
Stenosis of anus and rectum	12	0
Stenosis of aorta	<5	0
Stenosis of larynx	7	0
Stenosis of pulmonary artery	<5	<5
Sterilization	144	<5
Stiffness of joint, not elsewhere classified, forearm	<5	0
Stiffness of joint, not elsewhere classified, hand	<5	0
Stiffness of joint, not elsewhere classified, lower leg	<5	0
Stiffness of joint, not elsewhere classified, multiple sites	<5	0
Stiffness of joint, not elsewhere classified, other site	<5	0
Stiffness of joint, not elsewhere classified, shoulder region	<5	0
Stiffness of joint, not elsewhere classified, upper arm	<5	<5
Stimulant laxatives causing adverse effect in therapeutic use	<5	0
Strabismus, unspecified	<5	0
Strange and inexplicable behaviour	5	0
Streptococcal and enterococcal infection, unspecified site	63	9
Streptococcal meningitis	<5	<5
Streptococcal pharyngitis	5	<5
Streptococcal sepsis, unspecified	6	<5
Streptococcal tonsillitis	<5	0
Streptococcus Group G, as the cause of diseases classified to other chapters	15	<5
Streptococcus pneumoniae as the cause of diseases classified to other chapters	9	<5
Streptococcus, group A, as the cause of diseases classified to other chapters	13	<5
Streptococcus, group B, as the cause of diseases classified to other chapters	99	18
Streptococcus, group D, as the cause of diseases classified to other chapters	7	<5
Stress fracture, not elsewhere classified, ankle and foot	<5	0
Stress fracture, not elsewhere classified, other site	<5	0
Stress fracture, not elsewhere classified, pelvic region and thigh	<5	0
Stress incontinence	38	0
Stress, not elsewhere classified	8	0

Stressful work schedule	<5	0
Stricture and atresia of vagina	<5	0
Stricture and stenosis of cervix uteri	<5	<5
Stricture of artery	59	6
Stridor	23	10
Striking against or bumped into by another person in football/rugby	<5	0
Striking against or bumped into by another person in non-sports	<5	0
Striking against or bumped into by another person in other sports/recreation	<5	0
Striking against or bumped into by another person in soccer	<5	0
Striking against or struck by ball	<5	0
Striking against or struck by hockey puck	<5	0
Striking against or struck by other objects in non-sports	16	<5
Striking against or struck by other objects while engaged in other sports/recreation	<5	0
Striking against or struck by other objects while playing hockey	<5	0
Striking against or struck by other objects while skiing/snowboarding	<5	0
Striking against or struck by other objects, unspecified	13	<5
Striking against or struck by other specified sport equipment	<5	0
Stroke, not specified as haemorrhage or infarction	45	5
Struck by thrown, projected or falling object(s)	24	<5
Stupor	<5	0
Stuttering [stammering]	<5	0
Subacute cutaneous lupus erythematosus	<5	0
Subacute osteomyelitis, ankle and foot	<5	0
Subarachnoid haemorrhage from anterior communicating artery	9	5
Subarachnoid haemorrhage from basilar artery	<5	<5
Subarachnoid haemorrhage from carotid siphon and bifurcation	<5	<5
Subarachnoid haemorrhage from intracranial artery, unspecified	5	<5
Subarachnoid haemorrhage from middle cerebral artery	<5	<5
Subarachnoid haemorrhage from other intracranial arteries	<5	<5
Subarachnoid haemorrhage from posterior communicating artery	8	<5
Subarachnoid haemorrhage from vertebral artery	<5	<5
Subarachnoid haemorrhage, unspecified	34	7
Subcapsular haematoma of spleen (less than 10% of surface area involvement) or capsular laceration o	<5	<5
Subcapsular haematoma of spleen involving > 50% of surface, or intraparenchymal haematoma > 5 cm, ca	9	<5
Subcapsular haematoma of spleen involving > 50% of surface, or intraparenchymal haematoma > 5 cm, capsular la	<5	0
Subcapsular haematoma of spleen involving 10% to 50% of surface, or capsular laceration of 1 to 3 cm	8	<5
Subcapsular haematoma of spleen involving 10% to 50% of surface, or capsular laceration of 1 to 3 cm parenchy	<5	0
Subcapsular liver haematoma (less than 10% of surface area involvement) or capsular laceration of le	<5	<5
Subcapsular liver haematoma involving > 50% of surface, or intraparenchymal haematoma > 10 cm, capsu	<5	<5
Subcapsular liver haematoma involving 10% to 50% of surface, or capsular laceration of 1 to 3 cm par	8	<5
Subclinical iodine-deficiency hypothyroidism	9	<5
Subcorneal pustular dermatitis	<5	0
Subdural haemorrhage (acute)(nontraumatic)	84	10
Subjective visual disturbances	10	0
Subluxation of symphysis (pubis) in pregnancy, childbirth and the puerperium, delivered, with or without ment	<5	0
Submucous leiomyoma of uterus	6	0
Subsequent myocardial infarction of anterior wall	<5	<5
Subsequent myocardial infarction of inferior wall	<5	<5
Subsequent myocardial infarction of other sites	<5	0
Subsequent myocardial infarction of unspecified site	16	9
Subserosal leiomyoma of uterus	15	0
Subtrochanteric fracture, closed	57	<5
Subtrochanteric fracture, open	<5	<5
Sudden cardiac death, so described	9	<5
Sudden idiopathic hearing loss	<5	0
Sulfonamides causing adverse effect in therapeutic use	<5	0
Sunburn of second degree	<5	0
Superficial injuries involving multiple regions of lower limb(s)	5	0
Superficial injuries involving multiple regions of upper limb(s)	<5	0
Superficial injuries involving multiple regions of upper limb(s) with lower limb(s)	<5	0
Superficial injuries involving other combinations of body regions	6	0
Superficial injuries involving thorax with abdomen, lower back and pelvis	<5	0
Superficial injury of abdomen, lower back and pelvis, part unspecified	9	0
Superficial injury of ankle and foot, unspecified	6	0
Superficial injury of ear	<5	<5
Superficial injury of forearm, unspecified	8	0
Superficial injury of head, part unspecified	7	0
Superficial injury of hip and thigh, unspecified	21	<5
Superficial injury of lip and oral cavity	<5	0
Superficial injury of lower leg, unspecified	14	<5
Superficial injury of lower limb, level unspecified	8	0
Superficial injury of neck, part unspecified	<5	<5
Superficial injury of nose	<5	0
Superficial injury of other and unspecified parts of thorax	15	5
Superficial injury of other parts of head	52	7
Superficial injury of other parts of neck	<5	<5
Superficial injury of scalp	20	<5
Superficial injury of shoulder and upper arm, unspecified	6	<5

Superficial injury of trunk, level unspecified	<5	0
Superficial injury of unspecified body region	6	<5
Superficial injury of upper limb, level unspecified	13	0
Superficial mycosis, unspecified	8	<5
Supervision of elderly multigravida	184	<5
Supervision of elderly primigravida	42	0
Supervision of normal first pregnancy	<5	0
Supervision of other high-risk pregnancy	<5	0
Supervision of pregnancy with grand multiparity	<5	0
Supervision of pregnancy with history of abortive outcome	<5	0
Supervision of pregnancy with history of infertility	16	0
Supervision of pregnancy with history of insufficient antenatal care	11	0
Supervision of pregnancy with other poor reproductive or obstetric history	17	0
Supracondylar fracture of femur, closed	7	0
Supracondylar fracture of humerus, closed	14	0
Supraventricular tachycardia	224	65
Surgical operation with anastomosis, bypass or graft as the cause of abnormal reaction or later comp	685	101
Surgical operation with anastomosis, bypass or graft as the cause of abnormal reaction or later complication,	272	81
Surgical operation with formation of external stoma as the cause of abnormal reaction or later compl	250	46
Surgical operation with formation of external stoma as the cause of abnormal reaction or later complication,	191	48
Surgical operation with implant of artificial internal device as the cause of abnormal reaction or l	1364	216
Surgical operation with implant of artificial internal device as the cause of abnormal reaction or later comp	484	57
Surgical operation with transplant of whole organ or tissue as the cause of abnormal reaction or lat	147	25
Surgical operation with transplant of whole organ or tissue as the cause of abnormal reaction or later compli	5	<5
Surgical procedure, unspecified, as the cause of abnormal reaction or later complication, without me	999	256
Surgical procedure, unspecified, as the cause of abnormal reaction or later complication, without mention of	102	30
Surveillance of (intrauterine) contraceptive device	7	<5
Suspected severe acute respiratory syndrome [SARS]	<5	<5
Symmetric intrauterine growth restriction [IUGR]	8	0
Syncope and collapse	600	89
Syndactyly, unspecified	<5	<5
Syndrome of inappropriate secretion of antidiuretic hormone	98	14
Syndrome of infant of a diabetic mother	10	0
Syndrome of infant of mother with gestational diabetes	52	0
Synovial cyst of popliteal space [Baker]	8	0
Synovitis and tenosynovitis unspecified, other site	<5	0
Synovitis and tenosynovitis, unspecified, ankle and foot	<5	0
Synovitis and tenosynovitis, unspecified, forearm	<5	0
Synovitis and tenosynovitis, unspecified, hand	6	0
Synovitis and tenosynovitis, unspecified, lower leg	13	0
Synovitis and tenosynovitis, unspecified, pelvic region and thigh	<5	<5
Synovitis and tenosynovitis, unspecified, shoulder region	<5	0
Syphilis, unspecified	5	0
Syringomyelia and syringobulbia	<5	0
Systemic antibiotic, unspecified, causing adverse effect in therapeutic use	47	<5
Systemic disorders of connective tissue in other diseases classified elsewhere	<5	0
Systemic inflammatory response syndrome of infectious origin with acute organ failure	16	14
Systemic inflammatory response syndrome of infectious origin without organ failure	<5	<5
Systemic inflammatory response syndrome of noninfectious origin with acute organ failure	<5	<5
Systemic inflammatory response syndrome of noninfectious origin without organ failure	<5	<5
Systemic inflammatory response syndrome, unspecified	<5	<5
Systemic involvement of connective tissue, unspecified site	<5	<5
Systemic lupus erythematosus with organ or system involvement	8	<5
Systemic lupus erythematosus, unspecified	9	<5
Systemic sclerosis, unspecified	6	0
Tachycardia, unspecified	575	161
Talipes equinovarus	<5	0
Tear of lateral meniscus of knee, current	<5	<5
Tear of medial meniscus of knee, current	<5	0
Tear of meniscus of knee, unspecified	<5	0
Temporomandibular joint disorder, unspecified	<5	0
Tendency to fall, not elsewhere classified	625	26
Tension-type headache	7	0
Testicular hypofunction	<5	0
Tetracyclines causing adverse effect in therapeutic use	<5	<5
Tetralogy of Fallot	<5	<5
Thalassaemia trait	<5	0
Thiamine deficiency, unspecified	6	<5
Third [oculomotor] nerve palsy	<5	<5
Third degree haemorrhoids, uncomplicated	9	<5
Third degree perineal laceration during delivery, other specified type, delivered, with or without mention of	<5	0
Third degree perineal laceration during delivery, type 3a, so described, delivered, with or without mention o	38	0
Third degree perineal laceration during delivery, type 3b, so described, delivered, with or without mention o	13	0
Third degree perineal laceration during delivery, type 3c, so described, delivered, with or without mention o	11	<5
Third degree perineal laceration during delivery, unspecified type, delivered, with or without mention of ant	12	0
Third-stage haemorrhage, delivered, with mention of postpartum complication	26	<5
Thoracic aortic aneurysm, ruptured	<5	0
Thoracic aortic aneurysm, without mention of rupture	54	6

Thoracoabdominal aortic aneurysm, ruptured	<5	0
Thoracoabdominal aortic aneurysm, without mention of rupture	<5	0
Thoracogenic scoliosis, thoracolumbar region	<5	0
Threatened abortion, antepartum condition or complication	<5	0
Thrombocytopenia, unspecified	301	77
Thrombolytic drugs causing adverse effect in therapeutic use	19	10
Thrombophlebitis migrans	<5	0
Thrombosis of atrium, auricular appendage, and ventricle as current complications following acute my	10	9
Thrombosis of atrium, auricular appendage, and ventricle as current complications following acute myocardial	<5	0
Thrombotic microangiopathy	15	7
Thyroid crisis or storm	<5	0
Thyroid hormones and substitutes causing adverse effect in therapeutic use	<5	0
Thyroiditis, unspecified	<5	0
Thyrotoxicosis factitia	<5	<5
Thyrotoxicosis with diffuse goitre	20	<5
Thyrotoxicosis with toxic multinodular goitre	9	0
Thyrotoxicosis, unspecified	25	<5
Tibial plafond fracture of ankle with or without fibular/talar involvement closed	9	0
Tibial plafond fracture of ankle with or without fibular/tarsal involvement open	6	0
Tinea barbae and tinea capitis	<5	0
Tinea corporis	<5	0
Tinea inguinalis [Tinea cruris]	12	<5
Tinea pedis	12	0
Tinea unguium	11	<5
Tinnitus	9	0
Tobacco use	72	12
Toothache NOS	15	0
Topical or gastrointestinal neonatal candidiasis	<5	0
Torsion of appendix epididymis	<5	0
Torsion of ovary and ovarian pedicle	11	0
Torsion of ovary and ovarian pedicle with torsion of fallopian tube	<5	0
Torticollis	5	0
Toxic effect of 2-Propanol	<5	0
Toxic effect of alcohol, unspecified	<5	<5
Toxic effect of carbon monoxide	<5	0
Toxic effect of corrosive alkalis and alkali-like substances	<5	<5
Toxic effect of corrosive substance, unspecified	<5	0
Toxic effect of ethanol	31	10
Toxic effect of gases, fumes and vapours, unspecified	<5	0
Toxic effect of ingested mushrooms	<5	<5
Toxic effect of methanol	<5	<5
Toxic effect of noxious substance eaten as food, unspecified	<5	0
Toxic effect of organic solvent, unspecified	<5	0
Toxic effect of other metals	<5	<5
Toxic effect of other organic solvents	<5	<5
Toxic effect of other specified gases, fumes and vapours	<5	0
Toxic effect of other specified substances	9	7
Toxic effect of unspecified substance	12	<5
Toxic effect of venom of other arthropods	<5	0
Toxic encephalopathy	<5	0
Toxic epidermal necrolysis [Lyell]	<5	0
Toxic erythema	<5	<5
Toxic gastroenteritis and colitis	109	10
Toxic liver disease with acute hepatitis	6	<5
Toxic liver disease with cholestasis	<5	0
Toxic liver disease with hepatic necrosis	12	<5
Toxic liver disease with hepatitis, not elsewhere classified	<5	0
Toxic liver disease with other disorders of liver	<5	<5
Toxic liver disease, unspecified	<5	0
Toxic nephropathy, not elsewhere classified	<5	<5
Toxic shock syndrome	<5	<5
Toxoplasmosis, unspecified	<5	0
Tracheo-esophageal fistula following tracheostomy	<5	<5
Tracheostomy status	8	<5
Traction detachment of retina	<5	0
Tramadol causing adverse effect in therapeutic use	<5	<5
Transient alteration of awareness	347	124
Transient cerebral ischaemic attack, unspecified	200	12
Transient global amnesia	<5	0
Transient neonatal thrombocytopenia	<5	0
Transient synovitis, lower leg	<5	0
Transient tachypnoea of newborn	75	0
Transsexualism	<5	0
Traumatic amputation at level between knee and ankle	<5	<5
Traumatic amputation of ear	<5	<5
Traumatic amputation of one toe	<5	0
Traumatic amputation of other single finger (complete)(partial)	<5	0
Traumatic amputation of thumb (complete)(partial)	<5	0

Traumatic amputation of two or more fingers alone (complete)(partial)	<5	0
Traumatic amputation of two or more toes	<5	0
Traumatic amputation of upper limb, level unspecified	<5	<5
Traumatic arthropathy, hand	<5	0
Traumatic arthropathy, shoulder region	<5	0
Traumatic cerebral oedema	6	5
Traumatic haemopneumothorax, with open wound into thoracic cavity	<5	0
Traumatic haemopneumothorax, without open wound into thoracic cavity	30	11
Traumatic haemothorax, with open wound into thoracic cavity	<5	0
Traumatic haemothorax, without open wound into thoracic cavity	15	<5
Traumatic ischaemia of muscle	118	20
Traumatic pneumothorax, with open wound into thoracic cavity	8	<5
Traumatic pneumothorax, without open wound into thoracic cavity	101	32
Traumatic rupture of ear drum	<5	0
Traumatic rupture of ligament of finger at metacarpophalangeal and interphalangeal joint(s)	<5	0
Traumatic secondary and recurrent haemorrhage	<5	0
Traumatic shock	<5	<5
Traumatic subarachnoid haemorrhage	139	56
Traumatic subcutaneous emphysema	22	7
Traumatic subdural haemorrhage	195	44
Tremor, unspecified	34	5
Trichilemmal cyst	12	<5
Tricuspid insufficiency	35	12
Tricuspid stenosis with insufficiency	<5	0
Tricuspid valve disease, unspecified	<5	<5
Tricyclic and tetracyclic antidepressants causing adverse effect in therapeutic use	6	<5
Trifascicular block	6	<5
Trigeminal neuralgia	35	<5
Trimalleolar fracture of ankle, closed	96	<5
Trimalleolar fracture of ankle, open	<5	0
Triplet pregnancy, delivered, with or without mention of antepartum condition	<5	0
Trochanteric bursitis	34	0
Tubal pregnancy	15	0
Tuberculosis of larynx, trachea and bronchus, without mention of bacteriological or histological con	<5	<5
Tuberculosis of lung, bacteriologically and histologically negative	<5	0
Tuberculosis of lung, confirmed by sputum microscopy with or without culture, without cavitation or	<5	0
Tuberculosis of lung, without mention of bacteriological or histological confirmation, with cavitati	<5	0
Tuberculosis of lung, without mention of bacteriological or histological confirmation, without cavit	<5	<5
Tuberculosis of other specified organs	<5	0
Tuberculous peripheral lymphadenopathy	<5	0
Tuberous sclerosis	<5	0
Tubulo-interstitial nephritis, not specified as acute or chronic	98	<5
Tumour lysis syndrome	39	8
Twin pregnancy, antepartum condition or complication	11	0
Twin pregnancy, delivered, with or without mention of antepartum condition	25	0
Twin, born in hospital, product of assisted reproductive technology (ART), delivered by caesarean	<5	0
Twin, born in hospital, product of assisted reproductive technology (ART), delivered vaginally	7	0
Twin, born in hospital, product of both spontaneous (NOS) ovulation and conception, delivered by caesarean	29	0
Twin, born in hospital, product of both spontaneous (NOS) ovulation and conception, delivered vaginally	18	0
Twins, both liveborn, pregnancy resulting from assisted reproductive technology (ART)	<5	0
Twins, both liveborn, pregnancy resulting from both spontaneous ovulation and conception	24	0
Twins, both stillborn, pregnancy resulting from both spontaneous ovulation and conception	<5	0
Tympanosclerosis	<5	0
Type 1 diabetes mellitus with advanced ophthalmic disease	<5	0
Type 1 diabetes mellitus with autonomic neuropathy	39	8
Type 1 diabetes mellitus with background retinopathy	<5	<5
Type 1 diabetes mellitus with certain circulatory complications	229	55
Type 1 diabetes mellitus with coma	<5	<5
Type 1 diabetes mellitus with diabetic cataract	<5	0
Type 1 diabetes mellitus with established or advanced kidney disease	153	34
Type 1 diabetes mellitus with foot ulcer (angiopathic) (neuropathic)	46	6
Type 1 diabetes mellitus with foot ulcer (angiopathic) (neuropathic) with gangrene	17	<5
Type 1 diabetes mellitus with hypoglycaemia	37	6
Type 1 diabetes mellitus with incipient diabetic nephropathy	<5	<5
Type 1 diabetes mellitus with ketoacidosis	170	82
Type 1 diabetes mellitus with ketoacidosis with lactic acidosis	5	<5
Type 1 diabetes mellitus with mononeuropathy	<5	0
Type 1 diabetes mellitus with multiple other complications	28	<5
Type 1 diabetes mellitus with musculoskeletal and connective tissue complication	7	0
Type 1 diabetes mellitus with other specified complication, not elsewhere classified	47	10
Type 1 diabetes mellitus with other specified kidney complication not elsewhere classified	108	21
Type 1 diabetes mellitus with periodontal complication	<5	0
Type 1 diabetes mellitus with peripheral angiopathy	9	<5
Type 1 diabetes mellitus with peripheral angiopathy with gangrene	<5	0
Type 1 diabetes mellitus with polyneuropathy	17	<5
Type 1 diabetes mellitus with poor control, so described	110	12
Type 1 diabetes mellitus with proliferative retinopathy	<5	0
Type 1 diabetes mellitus with skin and subcutaneous tissue complication	<5	0

Type 1 diabetes mellitus without (mention of) complication	253	12
Type 2 diabetes mellitus with advanced ophthalmic disease	13	0
Type 2 diabetes mellitus with autonomic neuropathy	72	8
Type 2 diabetes mellitus with background retinopathy	10	<5
Type 2 diabetes mellitus with certain circulatory complications	4595	948
Type 2 diabetes mellitus with coma	6	<5
Type 2 diabetes mellitus with established or advanced kidney disease	1488	290
Type 2 diabetes mellitus with foot ulcer (angiopathic) (neuropathic) with gangrene	144	13
Type 2 diabetes mellitus with foot ulcer (angiopathic)(neuropathic)	339	33
Type 2 diabetes mellitus with hypoglycaemia	222	30
Type 2 diabetes mellitus with incipient diabetic nephropathy	5	<5
Type 2 diabetes mellitus with ketoacidosis	121	62
Type 2 diabetes mellitus with ketoacidosis with lactic acidosis	6	<5
Type 2 diabetes mellitus with lactic acidosis	14	11
Type 2 diabetes mellitus with mononeuropathy	20	6
Type 2 diabetes mellitus with multiple other complications	296	33
Type 2 diabetes mellitus with musculoskeletal and connective tissue complication	16	<5
Type 2 diabetes mellitus with other retinopathy	9	<5
Type 2 diabetes mellitus with other specified complication, not elsewhere classified	894	166
Type 2 diabetes mellitus with other specified kidney complication not elsewhere classified	1463	352
Type 2 diabetes mellitus with other specified ophthalmic complication not elsewhere classified	<5	0
Type 2 diabetes mellitus with periodontal complication	<5	<5
Type 2 diabetes mellitus with peripheral angiopathy	257	19
Type 2 diabetes mellitus with peripheral angiopathy with gangrene	29	<5
Type 2 diabetes mellitus with polyneuropathy	117	12
Type 2 diabetes mellitus with poor control, so described	702	132
Type 2 diabetes mellitus with preproliferative retinopathy	<5	<5
Type 2 diabetes mellitus with proliferative retinopathy	<5	0
Type 2 diabetes mellitus with skin and subcutaneous tissue complication	11	<5
Type 2 diabetes mellitus without (mention of) complications	3568	228
Typhoid fever	<5	0
Typical atrial flutter	12	5
Ulcer of anus and rectum	14	<5
Ulcer of intestine	16	<5
Ulcer of lower limb, not elsewhere classified	188	19
Ulcer of oesophagus, acute with haemorrhage	9	0
Ulcer of oesophagus, acute without haemorrhage or perforation	5	<5
Ulcer of oesophagus, chronic or unspecified with haemorrhage	18	<5
Ulcer of oesophagus, chronic or unspecified with perforation	<5	0
Ulcer of oesophagus, chronic without haemorrhage or perforation	<5	0
Ulcer of oesophagus, unspecified as acute or chronic, without haemorrhage or perforation	24	<5
Ulcer of penis	<5	0
Ulceration of vulva in infectious and parasitic diseases classified elsewhere	5	0
Ulcerative (chronic) pancolitis	33	<5
Ulcerative (chronic) proctitis	6	<5
Ulcerative (chronic) rectosigmoiditis	7	0
Ulcerative colitis, unspecified	73	8
Umbilical hernia with gangrene	<5	<5
Umbilical hernia with obstruction, without gangrene	65	7
Umbilical hernia without obstruction or gangrene	140	13
Unavailability and inaccessibility of health-care facilities	7	0
Unavailability and inaccessibility of other helping agencies	12	0
Underfeeding of newborn	<5	0
Undescended testicle, bilateral	<5	0
Undescended testicle, unilateral	9	0
Undifferentiated schizophrenia	<5	0
Unemployment, unspecified	41	0
Unequal limb length (acquired)	<5	0
Unhappiness	<5	<5
Unicornate uterus	<5	0
Unifocal Langerhans-cell histiocytosis	<5	0
Unilateral or unspecified femoral hernia, with gangrene	<5	<5
Unilateral or unspecified femoral hernia, with obstruction, without gangrene	18	<5
Unilateral or unspecified inguinal hernia, with gangrene	<5	<5
Unilateral or unspecified inguinal hernia, with obstruction, without gangrene	63	5
Unilateral or unspecified inguinal hernia, without obstruction or gangrene	114	5
Unintentional cut, puncture, perforation or haemorrhage during aspiration, puncture and other cathet	11	<5
Unintentional cut, puncture, perforation or haemorrhage during aspiration, puncture and other catheterization	14	<5
Unintentional cut, puncture, perforation or haemorrhage during endoscopic examination	12	<5
Unintentional cut, puncture, perforation or haemorrhage during heart catheterization	6	<5
Unintentional cut, puncture, perforation or haemorrhage during infusion or transfusion	<5	<5
Unintentional cut, puncture, perforation or haemorrhage during kidney dialysis or other perfusion	<5	<5
Unintentional cut, puncture, perforation or haemorrhage during other surgical and medical care	19	10
Unintentional cut, puncture, perforation or haemorrhage during surgical operation	448	92
Unintentional cut, puncture, perforation or haemorrhage during unspecified surgical and medical care	<5	0
Unspecified abdominal hernia with obstruction, without gangrene	<5	<5
Unspecified abdominal hernia without obstruction or gangrene	9	0
Unspecified acute lower respiratory infection	37	0

Unspecified adverse effect of drug or medicament	63	9
Unspecified appendicitis	9	0
Unspecified behavioural and emotional disorders with onset usually occurring in childhood and adoles	<5	0
Unspecified car occupant injured in collision with other and unspecified motor vehicles in traffic a	<5	<5
Unspecified car occupant injured in collision with other and unspecified motor vehicles in traffic accident	<5	0
Unspecified complication following infusion, transfusion and therapeutic injection	10	<5
Unspecified complication of cardiac and vascular prosthetic device, implant and graft	12	<5
Unspecified complication of genitourinary prosthetic device, implant and graft	<5	0
Unspecified complication of internal orthopaedic prosthetic device, implant and graft	<5	0
Unspecified complication of internal prosthetic device, implant and graft	<5	0
Unspecified complication of procedure	7	<5
Unspecified condition associated with female genital organs and menstrual cycle	<5	0
Unspecified contact dermatitis due to other agents	<5	<5
Unspecified contact dermatitis, unspecified cause	15	<5
Unspecified contracted kidney	7	<5
Unspecified dementia	1453	55
Unspecified diabetes mellitus with advanced ophthalmic disease	<5	0
Unspecified diabetes mellitus with autonomic neuropathy	6	<5
Unspecified diabetes mellitus with certain circulatory complications	603	109
Unspecified diabetes mellitus with established or advanced kidney disease	114	16
Unspecified diabetes mellitus with foot ulcer (angiopathic) (neuropathic) with gangrene	9	0
Unspecified diabetes mellitus with foot ulcer (angiopathic) (neuropathic)	27	<5
Unspecified diabetes mellitus with hypoglycaemia	19	<5
Unspecified diabetes mellitus with ketoacidosis	19	12
Unspecified diabetes mellitus with ketoacidosis with lactic acidosis	<5	<5
Unspecified diabetes mellitus with lactic acidosis	<5	0
Unspecified diabetes mellitus with mononeuropathy	<5	0
Unspecified diabetes mellitus with multiple other complications	27	<5
Unspecified diabetes mellitus with musculoskeletal and connective tissue complication	5	<5
Unspecified diabetes mellitus with other retinopathy	<5	0
Unspecified diabetes mellitus with other specified complication, not elsewhere classified	88	12
Unspecified diabetes mellitus with other specified kidney complication not elsewhere classified	107	29
Unspecified diabetes mellitus with peripheral angiopathy	28	0
Unspecified diabetes mellitus with peripheral angiopathy with gangrene	8	<5
Unspecified diabetes mellitus with polyneuropathy	6	<5
Unspecified diabetes mellitus with poor control, so described	68	14
Unspecified diabetes mellitus without (mention of) complication	611	21
Unspecified dislocation of finger, closed	<5	0
Unspecified dislocation of finger, open	<5	0
Unspecified dislocation of glenohumeral joint, closed	9	<5
Unspecified dislocation of hip, closed	5	<5
Unspecified dislocation of knee, closed	<5	0
Unspecified disorder of psychological development	5	0
Unspecified effects of radiation	12	<5
Unspecified fall	662	44
Unspecified fracture of lower (distal) end of femur, closed	62	<5
Unspecified fracture of lower (distal) end of femur, open	<5	<5
Unspecified fracture of lower end of radius, closed	86	5
Unspecified fracture of lower end of radius, open	<5	0
Unspecified fracture of neck of femur, closed	278	11
Unspecified fracture of upper end of radius, open	<5	<5
Unspecified fracture of upper end of ulna, closed	<5	0
Unspecified frostbite of lower limb	<5	<5
Unspecified frostbite of upper limb	<5	0
Unspecified glomerular disorders in diabetes mellitus	1194	226
Unspecified infection and inflammatory reaction due to central venous catheter	16	5
Unspecified infection of urinary tract in pregnancy, antepartum condition or complication	<5	0
Unspecified infection of urinary tract in pregnancy, delivered, with or without mention of antepartum conditi	<5	0
Unspecified injury of abdomen, lower back and pelvis	9	0
Unspecified injury of ankle and foot	6	<5
Unspecified injury of forearm	<5	0
Unspecified injury of head	16	<5
Unspecified injury of heart without open wound into thoracic cavity	<5	0
Unspecified injury of hip and thigh	9	0
Unspecified injury of lower leg	8	0
Unspecified injury of lower limb, level unspecified	<5	0
Unspecified injury of lung without open wound into thoracic cavity	<5	0
Unspecified injury of neck	<5	<5
Unspecified injury of shoulder and upper arm	6	0
Unspecified injury of wrist and hand	<5	0
Unspecified intrauterine growth restriction [IUGR]	100	0
Unspecified jaundice	43	7
Unspecified kidney failure	46	11
Unspecified lesion of cervical spinal cord	<5	0
Unspecified lesion of lumbar spinal cord	5	<5
Unspecified lesion of thoracic spinal cord	<5	<5
Unspecified lump in breast	13	0
Unspecified malaria	<5	<5

Unspecified maternal hypertension, antepartum condition or complication	<5	0
Unspecified maternal hypertension, delivered, with or without mention of antepartum condition	16	0
Unspecified mental disorder due to brain damage and dysfunction and to physical disease	30	<5
Unspecified mental retardation without mention of impairment of behaviour	6	0
Unspecified mental retardation, other impairments of behaviour	5	0
Unspecified misadventure during surgical and medical care	<5	<5
Unspecified mood [affective] disorder	58	<5
Unspecified motor and non-motored transport sports and recreational activity	<5	0
Unspecified multiple injuries	<5	0
Unspecified mycosis	8	<5
Unspecified nephritic syndrome, diffuse membranous glomerulonephritis	<5	<5
Unspecified nephritic syndrome, diffuse mesangiocapillary glomerulonephritis	<5	0
Unspecified nephritic syndrome, focal and segmental glomerular lesions	<5	0
Unspecified nephritic syndrome, other	<5	0
Unspecified nephritic syndrome, unspecified	7	<5
Unspecified nonorganic psychosis	292	<5
Unspecified occupant of other all-terrain or other off road motor vehicle injured in nontraffic acci	5	<5
Unspecified occupant of other all-terrain or other off road motor vehicle injured in nontraffic accident	9	0
Unspecified occupant of special industrial vehicle injured in nontraffic accident	<5	0
Unspecified osteoporosis with pathological fracture, lower leg	<5	0
Unspecified osteoporosis with pathological fracture, multiple sites	<5	0
Unspecified osteoporosis with pathological fracture, other site	50	<5
Unspecified osteoporosis with pathological fracture, pelvic region and thigh	7	0
Unspecified osteoporosis with pathological fracture, upper arm	<5	0
Unspecified parametritis and pelvic cellulitis	<5	0
Unspecified place of occurrence	1129	112
Unspecified pre-existing hypertension complicating pregnancy, childbirth and the puerperium, delivered, with	7	0
Unspecified protein-energy malnutrition	173	34
Unspecified protozoal disease	<5	0
Unspecified renal colic	27	<5
Unspecified severe protein-energy malnutrition	8	<5
Unspecified snow and ice sports and recreational activity	<5	0
Unspecified spina bifida with hydrocephalus	6	<5
Unspecified staphylococcus as the cause of diseases classified to other chapters	27	8
Unspecified streptococcus as the cause of diseases classified to other chapters	15	<5
Unspecified superficial injury of wrist and hand	<5	0
Unspecified threat to breathing	<5	0
Unspecified trochanteric fracture, closed	65	<5
Unspecified trochanteric fracture, open	<5	0
Unspecified urinary incontinence	160	12
Unspecified viral encephalitis	9	<5
Unspecified viral hepatitis without hepatic coma	<5	0
Unspecified viral infection characterized by skin and mucous membrane lesions	5	0
Unspecified visual impairment (binocular)	9	0
Unstable angina	640	76
Unstable hip	<5	0
Unsteadiness on feet	55	6
Upper abdominal pain, unspecified	29	<5
Urethral abscess	<5	<5
Urethral discharge	<5	0
Urethral disorder, unspecified	<5	0
Urethral diverticulum	<5	0
Urethral fistula	19	<5
Urethral stricture, unspecified	63	8
Urethritis in diseases classified elsewhere	<5	0
Urgency of micturition	14	<5
Urinary calculus, unspecified	6	<5
Urinary catheterization as the cause of abnormal reaction or later complication, without mention of	55	5
Urinary catheterization as the cause of abnormal reaction or later complication, without mention of misadvent	63	10
Urinary tract infection, site not specified	3863	394
Urogenital trichomoniasis	<5	0
Urticaria, unspecified	9	<5
Uterovaginal prolapse, unspecified	38	0
Vaccine or biological substance, unspecified, causing adverse effect in therapeutic use	<5	<5
Vaginal delivery following previous caesarean section, delivered, with or without mention of antepartum condi	70	0
Vaginal enterocele	7	0
Vaginitis, vulvitis and vulvovaginitis in infectious and parasitic diseases classified elsewhere	44	5
Valgus deformity, not elsewhere classified	9	0
Valproic acid causing adverse effect in therapeutic use	<5	0
Vaping-related disorder	<5	<5
Varicella encephalitis	<5	0
Varicella with other complications	<5	0
Varicella without complication	<5	0
Varicose veins of lower extremities with both ulcer and inflammation	39	<5
Varicose veins of lower extremities with inflammation	43	<5
Varicose veins of lower extremities with ulcer	31	5
Varicose veins of lower extremity in pregnancy, antepartum condition or complication	<5	0
Varicose veins of lower extremity in pregnancy, delivered, with or without mention of antepartum condition	<5	0

Varicose veins of other specified sites	6	0
Varus deformity, not elsewhere classified	8	0
Vascular complications following a procedure, not elsewhere classified	184	55
Vascular complications following infusion, transfusion and therapeutic injection	16	<5
Vascular dementia, unspecified	223	11
Vascular disorder of intestine, unspecified	106	33
Vascular myelopathies	6	<5
Vascular parkinsonism	<5	<5
Vasculitis limited to skin, unspecified	8	0
Vasomotor rhinitis	<5	0
Venous complication in pregnancy, unspecified, antepartum condition or complication	<5	0
Venous complication in pregnancy, unspecified, delivered, with or without mention of antepartum condition	<5	0
Venous insufficiency (chronic)(peripheral)	17	<5
Ventricular fibrillation	93	65
Ventricular flutter	<5	<5
Ventricular premature depolarization	36	7
Ventricular septal defect	12	<5
Ventricular septal defect as current complication following acute myocardial infarction	<5	<5
Ventricular tachycardia	420	196
Verbosity and circumstantial detail obscuring reason for contact	<5	<5
Vertebro-basilar artery syndrome	<5	0
Vertigo of central origin	<5	0
Very low level of personal hygiene	<5	0
Vesical fistula, not elsewhere classified	8	0
Vesicointestinal fistula	64	9
Vesicoureteral-reflux-associated uropathy	<5	0
Vesicovaginal fistula	7	0
Vestibular neuronitis	8	0
Vibrio vulnificus as the cause of diseases classified to other chapters	<5	0
Victim of crime and terrorism	<5	0
Villonodular synovitis (pigmented), ankle and foot	<5	0
Villonodular synovitis (pigmented), lower leg	<5	0
Viral carditis	<5	<5
Viral conjunctivitis, unspecified	<5	0
Viral hepatitis complicating pregnancy, childbirth and the puerperium, antepartum condition or complication	<5	0
Viral hepatitis complicating pregnancy, childbirth and the puerperium, delivered, with or without mention of	10	0
Viral hepatitis complicating pregnancy, childbirth and the puerperium, postpartum condition or complication	<5	0
Viral infection, unspecified	36	<5
Viral intestinal infection, unspecified	32	<5
Viral meningitis, unspecified	7	0
Viral pneumonia, unspecified	8	<5
Viral vaccines causing adverse effect in therapeutic use	5	<5
Viral warts	8	0
Visible peristalsis	<5	0
Visual disturbance, unspecified	10	0
Visual field defects	79	5
Visual hallucinations	77	7
Vitamin B deficiency, unspecified	<5	0
Vitamin B12 deficiency anaemia due to intrinsic factor deficiency	5	0
Vitamin B12 deficiency anaemia, unspecified	20	<5
Vitamin D deficiency, unspecified	68	6
Vitreous haemorrhage	12	<5
Volvulus	36	7
Vomiting alone	124	14
Vomiting associated with other psychological disturbances	<5	0
Vomiting following gastrointestinal surgery	5	0
Vomiting in newborn	<5	0
Von Willebrand's disease	13	<5
Voyeurism	<5	0
Vulvar cyst	<5	0
Waldenström macroglobulinaemia	12	0
Walking	<5	0
Water-transport-related drowning and submersion without accident to watercraft, unspecified watercraft	<5	0
Web of larynx	<5	0
Webbed toes	<5	0
Wegener granulomatosis	13	<5
Wernicke's encephalopathy	28	<5
Wheezing	13	<5
While working for an income	<5	0
Whooping cough due to Bordetella pertussis	<5	0
Withdrawal symptoms from therapeutic use of drugs in newborn	<5	0
Wrist or foot drop (acquired)	38	6
Xerosis cutis	<5	0
Xray contrast media causing adverse effect in therapeutic use	51	18
Zoster encephalitis	5	<5
Zoster meningitis	<5	<5
Zoster ocular disease	9	<5
Zoster with other complications	10	<5

Zoster with other nervous system involvement	20	<5
Zoster without complication	55	5

TAB 9

2021	YAR 510031
This is Exhibit 9 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 9

Freedom of Information Document Number 2022-00110-HEA:

On January 21, 2022, I applied for the following FOIPOP information from the Department of Health and Wellness:

https://novascotia.ca/news/release/?id=20211029007

In this op-ed (link above) on October 29, 2021, by Dr. Robert Strang, Nova Scotia's Chief Medical Officer of Health, and Dr. Shelley Deeks, Deputy Chief Medical Officer of Health

They state:

Receiving the COVID-19 vaccine is one of the single most important steps you can take to protect yourself and others from this virus.

The science is clear: the benefits far outweigh any risk associated with COVID-19 vaccines.

1.) I would like to request all records, the evidence, the proof that what Dr. Robert Strang and Dr. Shelley Deeks is saying is true:

"That the COVID-19 vaccine is one of the single most important steps you can take to protect yourself and others from this virus." (What proof do they have that the vaccine is protecting people and others?)

2. I would like to receive a copy of "the science" that they reference in this statement as being clear - that shows that "the benefits (of the vaccines) far outweigh any risk associated with COVID-19 vaccines.

Please provide the risk-benefit analysis that they are referring too.

Date range for record search: September 30, 2021 to October 31, 2021.

Exhibit 9 is a true copy of what I received back: 2022-00110-HEA

click here to download 2022-00110-HEA

February 22, 2022

Shelly D Hipson
RR3
Shelburne, B0T 1W0

Sent via Email: shellyhipson@gmail.com

Dear Shelly Hipson:

Re: We cannot grant your request – 2022-00110-HEA

The Department of Health and Wellness received your application for access to information under the *Freedom of Information and Protection of Privacy Act* (the Act) on January 21, 2022.

In your application, you requested a copy of the following records:

> *https://novascotia.ca/news/release/?id=20211029007*
>
> *In this op-ed (link above) on October 29, 2021, by Dr. Robert Strang, Nova Scotia's Chief Medical Officer of Health, and Dr. Shelley Deeks, Deputy Chief Medical Officer of Health*
>
> *They state:*
>
> *Receiving the COVID-19 vaccine is one of the single most important steps you can take to protect yourself and others from this virus. The science is clear: the benefits far outweigh any risk associated with COVID-19 vaccines.*
>
> *1.) I would like to request all records, the evidence, the proof that what Dr. Robert Strang and Dr. Shelley Deeks is saying is true: "That the COVID-19 vaccine is one of the single most important steps you can take to protect yourself and others from this virus." (What proof do they have that the vaccine is protecting people and others?)*
>
> *2. I would like to receive a copy of "the science" that they reference in this statement as being clear - that shows that "the benefits (of the vaccines) far outweigh any risk associated with COVID-19 vaccines. Please provide the risk-benefit analysis that they are referring too. (Date Range for Record Search: From 09/30/2021 To 10/31/2021)*

We are refusing access to the records for the following reason pursuant to subsection 4(2) of the Act:

- The Act does not apply to the following kinds of information in the custody or control of a public body:
    - published information, material available for purchase and material that is a matter of public record.

Nova Scotia's Covid -19 response actions have been based on national and international guidance from the Public Health Agency of Canada (PHAC) and the World Health Organization (WHO). As the leading agencies for pandemic response nationally and internationally, both PHAC and WHO are continuously reviewing the evolving scientific evidence regarding COVID-19 and the effectiveness of various measures. These reviews are used to form their guidance, position statements, and other documents all of which are in the public domain.

The Government of Canada's resources, including COVID-19 guidance documents, are available at https://www.canada.ca/en/public-health/services/diseases/coronavirus-disease-covid-19.html

The WHO's resources, including COVID-19 technical guidance, are available at https://www.who.int/emergencies/diseases/novel-coronavirus-2019

The Department of Health and Wellness Public Health Branch continues to be in ongoing contact with PHAC and WHO as evidence has evolved throughout the pandemic. This includes as a participant in federal/provincial/territorial conversations, including committees and networks. This has enabled recommendations on public health measures to be informed by the most up to date evidence.

You have the right to ask for a review of this decision by the Information Access and Privacy Commissioner (formerly the Review Officer). You have 60 days from the date of this letter to exercise this right. If you wish to ask for a review, you may do so on Form 7, a copy of which is attached. Send the completed form to the Information Access and Privacy Commissioner, P.O. Box 181, Halifax, Nova Scotia B3J 2M4.

Please be advised that a de-identified copy of this disclosure letter and the attached response to your FOIPOP application will be made public after 14 days. The package will be posted online at https://openinformation.novascotia.ca/. The letter will not include your name, address, or any other personal information that you have supplied while making your application under FOIPOP.

Please contact Melinda Frelick at 902-424-6920 or by e-mail at melinda.frelick@novascotia.ca, if you need further assistance regarding this application.

Sincerely,

Craig Beaton
Associate Deputy Minister

TAB 10

2021	YAR 510031
This is Exhibit 10 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 10

Freedom of Information Document Number 2022-00626-HEA:

On April 21, 2022 I applied for the following FOIPOP information from the Department of Health and Wellness:

Amended May 2, 2022:

A breakdown of the following by month:

1. COVID-19 Cases broken down by month

a) unvaccinated - after having received 0 doses of any COVID-19 vaccine

b) unvaccinated - <14 days post first dose of any COVID-19 vaccine

c) partially vaccinated

d) fully vaccinated

(Date range January 2022- April 2022) A breakdown of the following by month

2. Vaccination Status of COVID-19 Deaths

a) unvaccinated - after having received 0 doses of any COVID-19 vaccine

b) unvaccinated - <14 days post first dose of any COVID-19 vaccine

c) partially vaccinated d) fully vaccinated

(Date range August 2021- April 2022)

3. All COVID-19 hospital visits, hospitalizations and ICU Hospitalizations broken down by month:

a) unvaccinated - after having received 0 doses of any COVID-19 vaccine

b) unvaccinated - <14 days post first dose of any COVID-19 vaccine

c) partially vaccinated d) fully vaccinated

(Date range August 2021- April 2022)

5. A continuation of Table 2, 3 and 4:

a). Number of COVID-19 doses administered, by dose number and month

(Date range January 2022- April 2022)

b). Number of Adverse Events Following COVID-19 Immunization (Non-Serious, Serious and Total), by month

(Date range August 2021- April 2022)

c). Number of Adverse Events Following COVID-19 Immunization, by reaction type and month

(Date range August 2021- April 2022)

6. Cumulative Data on the number of people who have experienced Serious Adverse Events who have

a) died

b) have a permanent disability

c) incapacity

d) required hospitalization or prolongation of existing hospitalization

(Total cumulative value as of April 19, 2022) Date range for record search: August 1, 2021/January 1, 2022 to April 30, 2022.

Exhibit 10 is a true copy of what I received back: **2022-00626-HEA.** **click here to download 2022-00626-HEA**

June 3, 2022

Shelly D Hipson
RR3
Shelburne, B0T 1W0

Sent via email: shellyhipson@gmail.com

Dear Shelly Hipson:

Re: You are entitled to the information you requested - 2022-00626-HEA

The Department of Health and Wellness received your application for access to information under the *Freedom of Information and Protection of Privacy Act* (the Act) on April 21, 2022.

In your application, you requested a copy of the following records:

Amended May 2, 2022:
A breakdown of the following by month:
1. COVID-19 Cases broken down by month
a) unvaccinated - after having received 0 doses of any COVID-19 vaccine
b) unvaccinated - <14 days post first dose of any COVID-19 vaccine
c) partially vaccinated
d) fully vaccinated
(Date range January 2022- April 2022)

A breakdown of the following by month:
2. Vaccination Status of COVID-19 Deaths
a) unvaccinated - after having received 0 doses of any COVID-19 vaccine
b) unvaccinated - <14 days post first dose of any COVID-19 vaccine
c) partially vaccinated
d) fully vaccinated
(Date range August 2021- April 2022)

3. All COVID-19 hospital visits, hospitalizations and ICU Hospitalizations broken down by month:
a) unvaccinated - after having received 0 doses of any COVID-19 vaccine
b) unvaccinated - <14 days post first dose of any COVID-19 vaccine
c) partially vaccinated
d) fully vaccinated
(Date range August 2021- April 2022)

5. A continuation of Table 2, 3 and 4:
a). Number of COVID-19 doses administered, by dose number and month
(Date range January 2022- April 2022)

b). Number of Adverse Events Following COVID-19 Immunization (Non-Serious, Serious and Total), by month
(Date range August 2021- April 2022)

c). Number of Adverse Events Following COVID-19 Immunization, by reaction type and month
(Date range August 2021- April 2022)

6. Cumulative Data on the number of people who have experienced Serious Adverse Events who have
a) died
b) have a permanent disability
c) incapacity
d) required hospitalization or prolongation of existing hospitalization
(Total cumulative value as of April 19, 2022)
(Date Range for Record Search: From 12/31/2020 To 4/19/2022)

Responsive records have been located and are attached.

You have the right to ask for a review of this decision by the Information Access and Privacy Commissioner (formerly the Review Officer). You have 60 days from the date of this letter to exercise this right. If you wish to ask for a review, you may do so on Form 7, a copy of which is attached. Send the completed form to the Information Access and Privacy Commissioner, P.O. Box 181, Halifax, Nova Scotia B3J 2M4.

Please be advised that a de-identified copy of this disclosure letter and the attached response to your FOIPOP application will be made public after 14 days. The package will be posted online at https://openinformation.novascotia.ca/. The letter will not include your name, address, or any other personal information that you have supplied while making your application under FOIPOP.

Please contact Melinda Frelick at 902-424-6920 or by e-mail at melinda.frelick@novascotia.ca, if you need further assistance regarding this application.

Sincerely,

Kathleen Trott
Associate Deputy Minister

Attachment

FOIPOP Request 2022-00626-HEA

Data Notes:

- Data source is Panorama and includes data for August 01, 2021 to April 30, 2022 (cumulative serious outcomes are, per the request, drawn from data going back to December 16, 2020.
    - Note that PCR testing criteria changed substantially during the reporting period (being primarily available to those age 50+)
    - Data entry of cases during the recent Omicron wave (corresponding roughly from 08DEC2021 to present) is incomplete.
    - Per the request, the unvaccinated category (defined below) has been split into those that have never received a dose of a COVID-19 vaccine, and those that are within 14 days of having received their first dose (i.e., considered to be not effectively immunized against SARS-CoV-2).
- Cases captured in this dataset are those that meet the Public Health Agency of Canada case definition (https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/national-case-definition.html#dec) :

    Confirmed case

    A person with confirmation of infection with SARS-CoV-2 documented by:

    - The detection of at least 1 specific gene target by a validated laboratory-based nucleic acid amplification test (NAAT) assay (e.g., real-time PCR or nucleic acid sequencing) performed at a community, hospital, or reference laboratory (the National Microbiology Laboratory or a provincial public health laboratory)
      or
    - The detection of at least 1 specific gene target by a validated point-of-care (POC) NAAT that has been deemed acceptable to provide a final result (i.e., does not require confirmatory testing)
      or
    - Seroconversion or diagnostic rise (at least 4-fold or greater from baseline) in viral specific antibody titre in serum or plasma using a validated laboratory-based serological assay for SARS-CoV-2

- Vaccine status definitions:

Unvaccinated	Individuals meeting the national confirmed case definition of COVID-19 and having illness onset: • <14 days post first dose of any COVID-19 vaccine • After having received 0 doses of any COVID-19 vaccine
Partially vaccinated	Individuals meeting the national confirmed case definition of COVID-19 and have illness onset: • =>14 days post first dose of any COVID-19 vaccine or • <14 days post second dose of any COVID-19 vaccine
Fully vaccinated	Individuals meeting the national confirmed case definition of COVID-19 and have illness onset: • >=14 days post second dose of any COVID-19 vaccine

Request:

Amended May 2, 2022:

A breakdown of the following by month:

1. COVID-19 Cases broken down by month

a) unvaccinated - after having received 0 doses of any COVID-19 vaccine

b) unvaccinated - <14 days post first dose of any COVID-19 vaccine

c) partially vaccinated

d) fully vaccinated

(Date range January 2022- April 2022)

A breakdown of the following by month:

2. Vaccination Status of COVID-19 Deaths

a) unvaccinated - after having received 0 doses of any COVID-19 vaccine

b) unvaccinated - <14 days post first dose of any COVID-19 vaccine

c) partially vaccinated

d) fully vaccinated

(Date range August 2021- April 2022)

3. All COVID-19 hospital visits, hospitalizations and ICU Hospitalizations broken down by month:

a) unvaccinated - after having received 0 doses of any COVID-19 vaccine

b) unvaccinated - <14 days post first dose of any COVID-19 vaccine

c) partially vaccinated

d) fully vaccinated

(Date range August 2021- April 2022)

5. A continuation of Table 2, 3 and 4:

a). Number of COVID-19 doses administered, by dose number and month

(Date range January 2022- April 2022)

b). Number of Adverse Events Following COVID-19 Immunization (Non-Serious, Serious and Total), by month

(Date range August 2021- April 2022)

c). Number of Adverse Events Following COVID-19 Immunization, by reaction type and month

(Date range August 2021- April 2022)

6. Cumulative Data on the number of people who have experienced Serious Adverse Events who have

a) died

b) have a permanent disability

c) incapacity

d) required hospitalization or prolongation of existing hospitalization

(Total cumulative value as of April 30, 2022)

Table 1. COVID-19 cases by immunization status (01JAN2022 to 30APR2022)

Month of Reporting	Unvaccinated	One Dose (< 14 Days)	One Dose (14+ Days)	Two or More Doses
JAN2022	341	43	149	2640
FEB2022	281	18	154	1475
MAR2022	244	3	106	1363
APR2022	338	1	110	1231

Table 2. COVID-19 hospitalizations by immunization status (01AUG2021 to 30APR2022)

Month of Reporting	Unvaccinated	One Dose (< 14 Days)	One Dose (14+ Days)	Two or More Doses
AUG2021	1	0	0	0
SEP2021	16	2	10	5
OCT2021	3	1	6	8
NOV2021	13	1	7	9
DEC2021	5	0	2	34
JAN2022	32	5	10	110
FEB2022	36	1	5	58
MAR2022	23	0	2	16
APR2022	30	0	4	28

Table 3. COVID-19 ICU admissions by immunization status (01AUG2021 to 30APR2022)

Month of Reporting	Unvaccinated	One Dose (< 14 Days)	One Dose (14+ Days)	Two or More Doses
AUG2021	0	0	0	0
SEP2021	2	0	2	2
OCT2021	2	1	1	0
NOV2021	3	1	4	5
DEC2021	2	0	1	5
JAN2022	6	4	1	21
FEB2022	9	0	2	12
MAR2022	7	0	1	2
APR2022	6	0	1	9

Table 4. COVID-19 deaths by immunization status (01AUG2021 to 30APR2022)

Month of Reporting	Unvaccinated	One Dose (< 14 Days)	One Dose (14+ Days)	Two or More Doses
AUG2021	0	0	0	0
SEP2021	2	0	0	3
OCT2021	2	0	0	1
NOV2021	2	0	1	7
DEC2021	1	0	1	7
JAN2022	15	0	1	51
FEB2022	17	2	4	21
MAR2022	9	0	2	18
APR2022	17	0	1	12

Table 5. New COVID-19 immunizations (01JAN2022 to 30APR2022)

Month of Reporting	1st Doses	2nd Doses	3rd Doses
JAN2022	13879	8156	302242
FEB2022	4947	25271	64540
MAR2022	1066	6110	10436
APR2022	888	2909	28035

Table 6. New adverse events following COVID-19 immunization by severity (01AUG2021 to 30APR2022)

Month of Reporting	Non-Serious	Serious	Total
AUG2021	57	5	62
SEP2021	23	6	29
OCT2021	39	8	47
NOV2021	28	11	39
DEC2021	26	5	31
JAN2022	27	3	30
FEB2022	24	27	51
MAR2022	36	8	44
APR2022	65	14	79

Table 7. New adverse events following COVID-19 immunization by type (01AUG2021 to 30APR2022)

Month of Reporting	Allergic Reaction	Local Reaction	Neurologic	Other	Missing Incomplete Data
AUG2021	22	7	12	21	0
SEP2021	5	6	8	10	0
OCT2021	13	1	10	22	1
NOV2021	7	2	3	24	3
DEC2021	7	4	8	12	0
JAN2022	13	2	3	12	0
FEB2022	8	3	7	33	0
MAR2022	16	2	6	20	0
APR2022	27	12	1	39	0

Table 8. Cumulative outcomes among Nova Scotians reporting serious adverse events following COVID-19 immunization (16DEC2020 to 30APR2022)

Recovered	Not Yet Recovered	Permanent Disability Incapacity	Death	Unknown
17	87	7	11	8

Note: Prolongation of an existing hospitalization is captured separately from the above outcomes; however, to the requested end-point, this event has been documented twice in the province's data.

* Vaccination status for the above tables is determined at time of case detection, not time of hospitalization or death.

TAB 11

2021	YAR 510031
This is Exhibit 11 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 11

Freedom of Information Document Number 2022-01349-HEA:

On August 29, 2022 I applied for the following FOIPOP information from the Department of Health and Wellness:

Copies of all records such as correspondence (emails, and letters) reports and documents sent to/given to/ reported to/received by Dr. Robert Strang from doctors, pharmacies, medical officers, hospital administration, long term care and nursing home administration - on the topic of COVID-19 vaccine adverse events/side-effects and deaths that have occurred since it was rolled out in our province.

This would include correspondence and reports on adverse events and deaths that are temporally associated with the vaccine that have not been clearly attributed to other causes that Dr. Robert Strang has had in his possession.

Date range for record search: December 7, 2020 to June 30, 2021 - First six months of the vaccine rollout.

Exhibit 11 is a true copy of what I received back: **2022-01349-HEA.** **click here to download 2022-01349-HEA**

December 21, 2022

Sent via email: shellyhipson@gmail.com

Dear Shelly Hipson:

Re: You are entitled to part of the information you requested – 2022-01349-HEA

The Department of Health and Wellness received your application for access to information under the *Freedom of Information and Protection of Privacy Act* (the Act) on August 29, 2022.

In your application, you requested a copy of the following records:

> *Amended September 21, 2022: Copies of all records such as correspondence (emails, and letters) reports and documents sent to/given to/ reported to/received by Dr. Robert Strang from doctors, pharmacies, medical officers, hospital administration, long term care and nursing home administration - on the topic of COVID-19 vaccine adverse events/side-effects and deaths that have occurred since it was rolled out in our province. This would include correspondence and reports on adverse events and deaths that are temporally associated with vaccine that have not been clearly attributed to other causes that Dr. Robert Strang has had in his possession. (Date Range for Record Search: amended to Dec 7, 2020-June 7, 2021)*

You are entitled to part of the records requested. However, we have removed some of the information from this record according to subsection 5(2) of the Act. The severed information is exempt from disclosure under the Act for the following reasons:

- Section 14: advice by or for a public body or minister.
  14(1): The head of a public body may refuse to disclose to an applicant information that would reveal advice, recommendations or draft regulations developed by or for a public body or a minister.

- Section 20: unreasonable invasion of personal privacy.
  20(1): The head of a public body shall refuse to disclose personal information to an applicant if the disclosure would be an unreasonable invasion of a third party's personal privacy.

The remainder of the records are enclosed.

You have the right to ask for a review of this decision by the Information Access and Privacy Commissioner (formerly the Review Officer). You have 60 days from the date of this letter to exercise this right. If you wish to ask for a review, you may do so on Form 7, a copy of which is attached. Send the completed form to the Information Access and Privacy Commissioner, P.O. Box 181, Halifax, Nova Scotia B3J 2M4.

Please be advised that a de-identified copy of this disclosure letter and the attached response to your FOIPOP application will be made public after 14 days. The package will be posted online at https://openinformation.novascotia.ca/. The letter will not include your name, address, or any other personal information that you have supplied while making your application under FOIPOP.

Please contact Melinda Frelick at 902-424-6920 or by e-mail at melinda.frelick@novascotia.ca, if you need further assistance regarding this application.

Sincerely,

Kathleen Trott
Associate Deputy Minister

Attachment

From:	Dean, Kelly E on behalf of Strang, Robert
To:	Dean, Kelly E
Subject:	Fw: For reference: Communication products on AEFIs and infection post-immunization
Date:	October 4, 2022 8:01:06 AM
Attachments:	PHAC_ML_Testing positive after vaccination_Jan21_FINAL_EN.docx PHAC_KM_Bells Palsy AEFI_2021-01-21_2054_FINAL BIL.docx PHAC_MLQA_Vaccine Safety_AEFI_2021_01_07_FINAL FR.docx PHAC_MLQA_Vaccine Safety_AEFI_2021_01_07_FINAL EN.docx

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From: Strang, Robert
Sent: Sunday, January 24, 2021 4:30 PM
To: Walsh, Tara A <Tara.Walsh@novascotia.ca>
Cc: Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>; Cole, Teri J <Teri.Cole@novascotia.ca>; Watson-Creed, Gaynor <Gaynor.Watson-Creed@novascotia.ca>
Subject: FW: For reference: Communication products on AEFIs and infection post-immunization
National media lines on some vaccine issues for you.
Rob

From: Auger, Julie (PHAC/ASPC) <julie.auger@canada.ca> **On Behalf Of** CCMOH SECRETARIAT / CMHC (PHAC/ASPC)
Sent: January 24, 2021 2:27 PM
To: Romano, Anna (PHAC/ASPC) <anna.romano@canada.ca>; Avis Gray <avis.gray@gov.mb.ca>; Brent Roussin <brent.roussin@gov.mb.ca>; Catherine Elliott <catherine.elliott@gov.yk.ca>; Simms, Colleen (Ext.) <colleensimms@gov.nl.ca>; Colleen Stockley <ColleenStockley@gov.nl.ca>; Dr. Barb Yaffe <barbara.yaffe@ontario.ca>; Henry, Bonnie (Ext.) <bonnie.henry@gov.bc.ca>; Hanley, Brendan (Ext.) <brendan.hanley@gov.yk.ca>; Emerson, Brian (Ext.) <brian.emerson@gov.bc.ca>; Muecke, Cristin (Ext.) <dr.cristin.muecke@gnb.ca>; Dr. David Williams <dr.david.williams@ontario.ca>; Dr. Deena Hinshaw <deena.hinshaw@gov.ab.ca>; Dr. Denise Werker <denise.werker1@health.gov.sk.ca>; Dr. George Giovinazzo <george.giovinazzo@cic.gc.ca>; Morrison, Heather (Ext.) <hgmorrison@gov.pe.ca>; Njoo, Howard (PHAC/ASPC) <howard.njoo@canada.ca>; Dr. James Worthington <dr.james.worthington@csc-scc.gc.ca>; Dr. Janice Fitzgerald <janice.fitzgerald@gov.nl.ca>; Russell, Jennifer (Ext.) <jennifer.russell@gnb.ca>; Dr. Michael Patterson <mpatterson@gov.nu.ca>; Strang, Robert <Robert.Strang@novascotia.ca>; Shahab, Saqib (Ext.) <saqib.shahab@health.gov.sk.ca>; Sharma, Supriya (HC/SC) <supriya.sharma@canada.ca>; Tam, Dr Theresa (PHAC/ASPC) <drtheresa.tam@canada.ca>; Wong, Tom (SAC/ISC) <tom.wong@canada.ca>; Cleary, Eilish (SAC/ISC) <eilish.cleary@canada.ca>; Evan Adams <evan.adams@fnha.ca>; Greg Haley <GREG.Haley@forces.gc.ca>; Arruda, Horacio (Ext.) <horacio.arruda@msss.gouv.qc.ca>; Kandola, Kami (Ext.) <kami_kandola@gov.nt.ca>; Philip Christoff <philip.christoff@gov.yk.ca>; Reka Gustafson <reka.gustafson@phsa.ca>; SK CMOH Single Window <OCMHO@health.gov.sk.ca>; Suzanne Fedorowich <suzanne.fedorowich@health.gov.sk.ca>; Tami Denomie <tami.denomie@health.gov.sk.ca>; Trish Merrithew <Trish.Merrithew-Mercredi@gov.ab.ca>; Vincent Beswick-Escanlar <VINCENT.BESWICK-ESCANLAR@forces.gc.ca>; YK Surveillance <YCDCsurveillance@gov.yk.ca>; Yves Jalbert <yves.jalbert@msss.gouv.qc.ca>
Cc: Ashley Halicki <Ashley.Halicki@gov.bc.ca>; Auger, Julie (PHAC/ASPC) <julie.auger@canada.ca>; Bailey Muir-Cressman <Bailey.Muir-Cressman@gov.yk.ca>; Barton, Kimby (PHAC/ASPC) <kimby.barton@canada.ca>; Bent, Stephen (PHAC/ASPC) <stephen.bent@canada.ca>; Carol Kurbis

<Carol.Kurbis@gov.mb.ca>; Carter, Luke (HC/SC) <luke.carter@canada.ca>; CCMOH SECRETARIAT / CMHC (PHAC/ASPC) <phac.ccmoh.secretariat-cmhc.aspc@canada.ca>; Charos, Gina (PHAC/ASPC) <gina.charos@canada.ca>; Cindy Kruger <cindy.kruger@csc-scc.gc.ca>; Rogers, Cindy (Ext.) <cindy.rogers@health.gov.sk.ca>; Colleen Dudar <Colleen.Dudar@gov.mb.ca>; Sabapathy, David (Ext.) <dsabapathy@gov.pe.ca>; David, Renee (PHAC/ASPC) <renee.david@canada.ca>; Davies, Stephanie (PHAC/ASPC) <stephanie.davies@canada.ca>; Dawn Osciak <dawn.osciak@gov.mb.ca>; Panchyshyn, Debbie (Ext.) <debbie.panchyshyn@gov.mb.ca>; Denis, Joel (PHAC/ASPC) <joel.denis@canada.ca>; Diane Lu <Diane.Lu@forces.gc.ca>; Donna Milne <Donna.Milne@gov.yk.ca>; Elaine Barrett-Cramer <Elaine.Barrett-Cramer@cic.gc.ca>; Look, Elaine (Ext.) <elaine_look@gov.nt.ca>; Elmslie, Kim (PHAC/ASPC) <kim.elmslie@canada.ca>; Arnold, Eric (PHAC/ASPC) <eric.arnold@canada.ca>; Evans, Cindy (PHAC/ASPC) <cindy.evans@canada.ca>; Everitt, Louisa (PHAC/ASPC) <louisa.everitt@canada.ca>; Fournier, Sarah (PHAC/ASPC) <sarah.fournier@canada.ca>; Gillian MacDonald <Gillian.MacDonald2@ontario.ca>; Guenette, Tara-Lynn (PHAC/ASPC) <tara-lynn.guenette@canada.ca>; Hamel, Sonia (PHAC/ASPC) <sonia.hamel@canada.ca>; Heidi Liston <Heidi.Liston@gnb.ca>; Henry, Erin (PHAC/ASPC) <erine.henry@canada.ca>; Hill, Allison (HC/SC) <allison.hill@canada.ca>; Hostrawser, Bonnie (PHAC/ASPC) <bonnie.hostrawser@canada.ca>; HPOC PHM / COPS MSP (PHAC/ASPC) <phac.hpoc.phm-msp.cops.aspc@canada.ca>; Ingraham, Erin (HC/SC) <erin.ingraham@canada.ca>; Sherren, Janice (Ext.) <jesherren@gov.pe.ca>; Jasmine Pawa <jpawa@gov.nu.ca>; Jazz Atwal <Jazz.Atwal@gov.mb.ca>; Jennifer White <jennifer.white2@gov.mb.ca>; Jocelyn LeBlond <Jocelyn.LeBlond@health.gov.sk.ca>; Johnatha Smith <Jonathan.Smith@CSC-SCC.GC.CA>; Follett, Juanita (Ext.) <juanitafollett@gov.nl.ca>; Karen Scherle <Karen.Scherle@health.gov.sk.ca>; Cadorette, Katie (HC/SC) <katie.cadorette@canada.ca>; Dean, Kelly E <Kelly.Dean@novascotia.ca>; King2, Arlene (PHAC/ASPC) <arlene.king2@canada.ca>; Seeds, Laura (Ext.) <laura.seeds@ontario.ca>; Laurel Thompson <Laurel.Thompson@gov.bc.ca>; Hunter, Laurie (PHAC/ASPC) <laurie.hunter@canada.ca>; Lebans, Anne (PHAC/ASPC) <anne.lebans@canada.ca>; Lewis, Darlene (SAC/ISC) <darlene.lewis@canada.ca>; Lior, Lee (PHAC/ASPC) <lee.lior@canada.ca>; Lori Carpenter <lori.carpenter@fnha.ca>; Lori Isaac <Lori.Isaac@gov.bc.ca>; Yeo, Lyn (Ext.) <lyn.yeo@health.gov.sk.ca>; MacDonald2, Tammy (PHAC/ASPC) <tammy.macdonald2@canada.ca>; MacKenzie, Sara (HC/SC) <sara.mackenzie@canada.ca>; Maureen Carew <MAUREEN.CAREW@forces.gc.ca>; Maher, Maurica (Ext.) <maurica.maher@forces.gc.ca>; McCarney, Jane (PHAC/ASPC) <jane.mccarney@canada.ca>; McDonald, Alexa (PHAC/ASPC) <alexa.mcdonald@canada.ca>; McGarr, Holly (PHAC/ASPC) <holly.mcgarr@canada.ca>; McLeod, Robyn (PHAC/ASPC) <robyn.mcleod@canada.ca>; McNeill, Robin (PHAC/ASPC) <robin.mcneill@canada.ca>; Conly, Meghan (HC/SC) <meghan.conly@canada.ca>; Sveinson, Michelle (Ext.) <michelle.sveinson@gov.mb.ca>; Mitra, Debjani (PHAC/ASPC) <debjani.mitra@canada.ca>; NB Secretariat <NB-PT-PHNC-Secretariat@gnb.ca>; Paddle, Lisa (PHAC/ASPC) <lisa.paddle@canada.ca>; Huber, Pamela (PHAC/ASPC) <pamela.huber@canada.ca>; Pamela MacMillan <Pamela.Macmillan@gnb.ca>; Pat Seaman <pat.seaman@gnb.ca>; Penny Higdon <penny.higdon@gnb.ca>; Ponic, Pamela (PHAC/ASPC) <pamela.ponic@canada.ca>; Rachel Comeau <rachel.comeau@gnb.ca>; Rachel Mailhot <Rachel.mailhot@cic.gc.ca>; Almond, Richard (Ext.) <richard.almond@gov.bc.ca>; Richard Baydack <Richard.Baydack@gov.mb.ca>; Robinson, Kerry (PHAC/ASPC) <kerry.robinson@canada.ca>; Romano, Anna (PHAC/ASPC) <anna.romano@canada.ca>; Russo, Laura (HC/SC) <laura.russo@canada.ca>; Rutledge-Taylor, Katie (PHAC/ASPC) <katie.rutledge-taylor@canada.ca>; Salvadori, Marina (PHAC/ASPC)

<marina.salvadori@canada.ca>; Poirier, Samantha (Ext.) <samantha.poirier@gnb.ca>; Siu, Winnie (PHAC/ASPC) <winnie.siu@canada.ca>; Smith, Cheryl (HC/SC) <cheryl.smith@canada.ca>; Taylor, Stephanie (Ext.) <stephanie.taylor@gov.bc.ca>; Sylvie Poirier <Sylvie.Poirier@msss.gouv.qc.ca>; Cidsc Secretariat (PHAC/ASPC) <phac.cidsc.secretariat.aspc@canada.ca>; Taylor, Dorcas (PHAC/ASPC) <dorcas.taylor@canada.ca>; Cole, Teri J <Teri.Cole@novascotia.ca>; Tracey Aylward <TraceyAylward@gov.nl.ca>; Vanessa Blyan <Vanessa.Blyan@gov.ab.ca>

Subject: For reference: Communication products on AEFIs and infection post-immunization

Dear SAC members,

Please find attached for your reference the following media lines/key messages:

- AEFI (EN & FR)
- Bells Palsy (EN)
- Testing positive after immunization (EN, FR to follow)

Additional communication products will be shared as they become available.

In addition, the COVID-19 Vaccination in Canada Report has now been posted based on available data. The web report provides daily updates on the total number of vaccines administered as of 11:00AM, as well as weekly updates on vaccines distributed and vaccination coverage every Friday.

https://health-infobase.canada.ca/covid-19/vaccination-coverage/

https://sante-infobase.canada.ca/covid-19/couverture-vaccinale/

Weekly updates on AEFIs can also be found here:

https://infobase-dev.com/covid/vaccine-safety/index-en.html

https://infobase-dev.com/covid/vaccine-safety/index-fr.html

Regards,

SAC Secretariat

Public Health Agency of Canada | Agence de la santé publique du Canada

January 21, 2021

Media Lines

Testing positive for COVID-19 after one dose of the vaccine

Issue Statement: Media have reported on multiple individuals who have tested positive for COVID-19 despite having been vaccinated. Media attention on these scenarios is expected to continue. These media lines explain how such a situation may arise.

Key Messages:

- There are multiple reasons a person may become infected with COVID-19 after being vaccinated. A person may have been previously exposed to the virus or exposed shortly after vaccination, before the body has had time to create an immune response.
- Health Canada authorized the Pfizer-BioNTech and Moderna vaccines as two-dose regimens.
- The immune system usually requires 7-14 days after vaccination to begin to create a response that offers protection against COVID-19. A vaccine is thought to offer maximum protection 14 days after the second dose.
- Clinical trails data indicates that both approved vaccines are 95% effective after two doses; however, they are not 100% effective. This means they may not work for a small percentage of recipients.

On asymptomatic infections before vaccination:

- Symptoms can take up to 14 days to appear after exposure to the virus, and some people never develop symptoms at all (asymptomatic). This means it's possible to be unknowingly infected with COVID-19 before vaccination.
- Those who are infected with the virus at the time they are given the vaccine, or shortly thereafter, are unlikely to be protected by the vaccine, as the immune system usually requires 7-14 days to build a response.
- However, someone who was previously infected by the COVID-19 virus but is no longer infected can be immunized to help protect against possible future disease.

On the time needed to build an immune response after vaccination:

- The immune system usually requires 7-14 days after vaccination to create a response that offers protection against COVID-19. A vaccine is thought to offer maximum protection 14 days after the second dose.
- This means that it's possible to become infected within the first 14 days following vaccination, before the body has a chance to create an effective immune response
- The majority of participants in the Pfizer-BioNTech COVID-19 vaccine clinical trial received the second dose 21 to 27 days apart, and efficacy analyses in the Pfizer-

BioNTech clinical trial included participants who received their second dose 19-42 days after their first dose.

- Efficacy analyses in the Moderna clinical trial included participants who received their second dose 22 to 42 days after their first dose.

Questions and Answers

Q1. If the second dose is not administered within Health Canada's authorized dosing regimen, should Canadians still receive that second dose?

If administration of the second dose of a COVID-19 vaccine is delayed, the second dose should still be given as soon as possible. People do not need to restart a vaccine series as a result of delays between doses. That's because those delays do not generally reduce the final immune response in most multi-dose vaccine products.

Q2. Can a vaccinated person get COVID-19?

The currently authorized COVID-19 vaccines have demonstrated safety and high efficacy (approx. 95%), in the short term, against symptomatic laboratory-confirmed COVID-19 disease from one to two weeks after receiving the full two-dose series. However, as the vaccines are not 100% effective, they may not work for a small percentage of recipients.

Q3. Can vaccinated people spread the virus to others?

There is limited evidence on whether someone who received the vaccine is still able to spread the virus. Everyone must continue following public health measures, regardless of vaccination with COVID-19 vaccines, to protect themselves, their loved ones, as well as people and communities at risk of more severe disease or outcomes from COVID-19. To do this, you need to continue to:

- Follow the guidance of your local public health authority
- Stay home and isolate if you have any symptoms of COVID-19, even if mild
- Limit close contacts to only those in your immediate household
- Maintain a physical distance from people outside of your immediate household
- Avoid the 3C's as much as possible: closed spaces, crowded places, and close interactions (e.g., close-range conversations). Risk is higher in settings where these factors overlap or involve activities such as singing, shouting or heavy breathing (e.g., during exercise).
- Practice regular hand hygiene, respiratory etiquette and avoid touching your eyes, nose and mouth
- Clean and disinfect your personal surfaces and objects
- Limit your outings to only essential activities, especially if you are at risk of more severe disease or outcomes from COVID-19
- Wear a non-medical mask, in situations and settings where they are recommended
- Reduce personal non-essential travel

Q4. Is it true that you can get COVID-19 from the vaccine?

No, you can't get COVID-19 from the vaccine. Many vaccines are being studied to see if they will prevent COVID-19, and Health Canada is expediting reviews of all COVID-19 vaccine submissions.

Some of the vaccine candidates (including AstraZeneca and Janssen) that are most advanced in development are viral vector-based vaccines. These types of vaccines use a harmless virus (in this case, the adenovirus that can cause the common cold) as a delivery system. The vector virus used is not the virus that causes COVID-19.

Once injected into the body, the virus contained within the vaccine produces the SARS-CoV-2 spike protein. It does its job and then goes away. Through this process, the body is able to mount a strong immune response against the spike protein without exposing you to the virus that causes COVID-19.

The two vaccines currently authorized in Canada are messenger RNA vaccines (called mRNA vaccines). mRNA vaccines are a new type of vaccine that don't contain viruses or bacteria. Instead, they contain instructions that teach our cells how to make antigen proteins that will trigger an immune response. Once triggered, our body then makes antibodies and other immune responses. These immune responses help us fight the infection to prevent us from getting sick. You can't get infected from mRNA vaccines.

Q5. Could the antibodies from the COVID-19 vaccine result in a false positive test result?

Two kinds of tests are currently available for COVID-19:

- A test for active infection (diagnostic) that tells you if you have a current COVID-19 infection. This is done using a swab from your nose or throat, or a saliva sample. These tests are expected to continue to perform accurately in vaccinated individuals.
- An antibody (serology) test tells you if you, at some point, were exposed to the virus and had a COVID-19 infection. These tests can also identify if a person was vaccinated. They are not used to diagnose a current COVID-19 viral infection. This test is done using a sample of your blood.

For more information on testing, visit Canada.ca/coronavirus.

Public Health Agency of Canada | Agence de la santé publique du Canada

FINAL January 22, 2021

Key Messages

Bell's Palsy and AEFI's (Adverse Events Following Immunization)

Issue Statement: The issue of people developing Bell's Palsy—an unexplained episode of facial muscle weakness or paralysis— after getting certain vaccinations has been more prevalent in the media. Media calls are expected, so back-pocket messages have been developed to be included in the AEFI MLQ&A package.

Key Messages:

- The rates of Bell's Palsy, or facial paralysis, reported in the clinical trials for both the Pfizer-BioNTech and Moderna vaccines were no higher than those observed in the general population.
- Health Canada and the Public Heath Agency of Canada (PHAC) continue to monitor for Bell's Palsy through post-market surveillance, which also involves vaccine manufacturers and provinces and territories.
- While there have been reports of Bell's Palsy following COVID-19 vaccination, an assessment of causality has not yet been established.
- NACI (National Advisory Committee on Immunization) is monitoring the evidence and will adjust recommendations on use of the vaccine as needed.

Principaux messages

- Le taux de cas de paralysie de Bell (paralysie faciale) signalés dans les essais cliniques des fabricants de vaccins Pfizer-BioNTech et Moderna n'est pas plus élevé que celui observé dans la population générale.
- Santé Canada et l'Agence de la santé publique du Canada (ASPC) continue de surveiller les cas de paralysie de Bell par son mécanisme de surveillance post-commercialisation, qui mobilise également les fabricants de vaccins ainsi que les provinces et les territoires.
- Des cas de paralysie de Bell ont été signalés à la suite de l'administration d'un vaccin contre la COVID-19, toutefois, aucun lien de causalité n'a encore été établi.
- Le CCNI (Comité consultatif national de l'immunisation) surveille les preuves et, au besoin, modifiera les recommandations relatives à la vaccination.

Health Canada Santé Canada

FINAL – January 7, 2021

Media Lines

Adverse Events Following Immunization web updates

Issue Statement: COVID-19 vaccination began in provinces and territories the week of December 13, 2020. Transparent communications around how many people have been vaccinated against COVID-19, and how many people have reported adverse events is essential in building public trust and increasing vaccine acceptance among Canadians. Starting on January 8, Health Canada and the Public Health Agency of Canada will begin publishing a weekly web update on reported adverse events following immunization.

Principaux messages

- En date du 23 décembre 2020, Santé Canada a autorisé l'utilisation de deux vaccins contre la COVID-19 au Canada, l'un fabriqué par Pfizer-BioNTech et l'autre, par Moderna.

- Santé Canada a homologué les deux vaccins après un examen scientifique complet et indépendant de leur innocuité, de leur efficacité et de leur qualité.

- Comme tous les médicaments, les vaccins peuvent entraîner des effets secondaires et des réactions, aussi appelés événements indésirables.

- Certains événements indésirables sont décelés pendant le processus d'essais cliniques, mais de nouveaux problèmes peuvent apparaître une fois qu'un produit de santé est offert sur le marché parce qu'il est utilisé par un bien plus grand nombre de personnes.

- Les événements indésirables peuvent être aussi bénins qu'une douleur à l'endroit de l'injection ou une faible fièvre, ou de nature beaucoup plus grave (p. ex. réaction allergique). Il faut s'attendre à ce que des événements indésirables se produisent, et cela n'entraînera pas nécessairement de changements à l'homologation d'un vaccin.

- Le Canada a en place un robuste système de surveillance de l'innocuité des vaccins qui mobilise de manière proactive les professionnels de la santé, les fabricants de vaccins, les provinces, les territoires, l'Agence de la santé publique du Canada (ASPC) et Santé Canada.

- Le gouvernement du Canada est déterminé à communiquer rapidement des renseignements accessibles et factuels pour aider les membres de la population canadienne à prendre des décisions éclairées à propos de la vaccination.

- Dans le contexte de l'engagement continu du gouvernement du Canada en matière d'ouverture et de transparence, Santé Canada et l'ASPC fourniront à la population canadienne des mises à jour hebdomadaires au sujet des événements indésirables associés aux vaccins (EIAV), aussi appelés effets secondaires suivant l'immunisation (ESSI), sur Canada.ca.

- Ces mises à jour hebdomadaires sur le Web présenteront de l'information concernant les déclarations d'EIAV transmises au Système canadien de surveillance des effets secondaires suivant l'immunisation (SCSESSI) et à la base de données Canada Vigilance de Santé Canada.

- À ce jour, Santé Canada et l'ASPC ont reçu des signalements d'événements indésirables suivant l'administration d'un des vaccins contre la COVID-19 homologués au Canada; du nombre, il n'y a pas d'événements indésirables inattendus ou qui suscitent des préoccupations par rapport à l'innocuité des vaccins. Les détails sont affichés ici : https://sante-infobase.canada.ca/covid-19/securite-vaccins/

Questions et réponses

Q1. Qu'est-ce qu'un événement indésirable associé aux vaccins (EIAV)?

Un événement indésirable associé aux vaccins (EIAV), aussi appelé effet secondaire suivant l'immunisation (ESSI), est un fait médical qui se produit après qu'une personne ait reçu un vaccin et qui peut être causé par ce vaccin. Est considéré comme un événement indésirable tout cas de l'une ou l'autre de ces situations :

- maladie, symptôme ou signe défavorable ou non intentionnel;
- résultat de laboratoire anormal (notamment le résultat d'une culture indiquant une cellulite [infection de peau] au site d'injection).

Q2. Qu'est-ce qu'un événement indésirable associé aux vaccins (EIAV) grave ou un événement indésirable d'intérêt particulier (EIIP)?

Un événement indésirable est considéré comme grave dans n'importe laquelle de ces circonstances :

- s'il entraîne la mort;
- s'il met la vie en danger;
- s'il exige l'hospitalisation du patient ou la prolongation d'une hospitalisation en cours;
- s'il entraîne une incapacité ou un handicap persistent ou important;
- s'il entraîne une anomalie congénitale.

Un événement indésirable d'intérêt particulier (grave ou non) est une préoccupation d'ordre scientifique et médical propre au vaccin d'un fabricant qui exige un suivi permanent et une communication rapide. Les fabricants de vaccins et Santé Canada font le suivi des événements indésirables d'intérêt particulier associés aux vaccins contre la COVID-19.

Q3. Où pouvons-nous trouver de l'information sur le nombre de personnes chez qui des événements indésirables associés aux vaccins (EIAV) sont survenus?

Le Canada a en place un robuste système de surveillance de l'innocuité des vaccins après leur mise sur le marché pour la détection d'événements indésirables rares pouvant se produire après l'homologation de vaccins. À compter de janvier 2021, Santé Canada et l'ASPC fourniront à la population canadienne des rapports hebdomadaires sur le Web au sujet des données tirées du Système canadien de surveillance des effets secondaires suivant l'immunisation (SCSESSI) de la base de données Canada Vigilance de Santé Canada. Ces rapports fourniront à la population canadienne de l'information transparente à propos des événements indésirables survenus après l'administration de vaccins contre la COVID-19. Les données seront regroupées

en fonction de caractéristiques démographiques, du nom du vaccin en cause, de la raison de la gravité des événements indésirables et du type d'événement indésirable.

Les données d'innocuité tirées des essais cliniques menés avec les vaccins contre la COVID-19 homologués montrent que les événements indésirables survenus (p. ex. douleur au site d'injection, fatigue, courbatures) étaient surtout bénins ou modérément graves, comme c'est le cas pour les autres vaccins. En raison de la taille de la population, il se pourrait que des événements indésirables qui n'ont pas été relevés au cours des essais cliniques soient signalés au fur et à mesure que le nombre de personnes vaccinées au Canada augmentera. Dans l'éventualité où des problèmes liés à l'innocuité sont confirmés, Santé Canada n'hésitera pas à prendre les mesures qui s'imposent.

Q4. L'ASPC fera-t-elle rapport sur le pourcentage de personnes ayant reçu chaque vaccin une fois que l'utilisation d'un plus grand nombre de vaccins aura été autorisée au Canada?

Oui, l'Agence de la santé publique du Canada (ASPC) recevra les données des provinces et des territoires concernant la couverture vaccinale de chaque vaccin, une fois que l'utilisation d'un plus grand nombre de vaccins aura été autorisée au Canada, et fera rapport à ce sujet. Un lien vers ces renseignements sera affiché sur la page des rapports sur les événements indésirables associés aux vaccins (EIAV).

Q5. L'ASPC publiera-t-elle la ventilation provinciale et territoriale des événements indésirables?

L'ASPC diffusera des rapports hebdomadaires dont les données seront regroupées en fonction de caractéristiques démographiques, du nom du vaccin en cause, de la raison de la gravité des événements indésirables et du type d'événement indésirable, mais ne divulguera pas la ventilation par administration. Cette approche garantira la transparence à l'égard de la population canadienne dans le respect des considérations relatives à la protection de la confidentialité.

Q6. Pourquoi est-ce important de déclarer un événement indésirable associé à un vaccin (EIAV)?

La déclaration d'un événement indésirable associé à un vaccin (EIAV) fournit de l'information cruciale requise pour déceler et évaluer les problèmes concernant l'innocuité des vaccins qui peuvent constituer un risque pour la santé publique. Cette information est utilisée de concert avec d'autres renseignements relatifs à l'innocuité des vaccins pour déterminer s'il faut prendre des mesures afin de protéger la santé et la sécurité de la population canadienne. Ces mesures peuvent inclure d'avertir la population canadienne des possibles effets secondaires, de modifier l'utilisation recommandée du produit ou de retirer le produit du marché.

Les personnes chez qui un EIAV se produit devraient le signaler à un professionnel de la santé. Les professionnels de la santé doivent remplir le Formulaire de rapport des effets secondaires suivant l'immunisation qui convient pour leur province ou leur territoire et l'acheminer aux autorités de santé publique de la région.

Q7. Qu'en est-il si un événement indésirable associé à un vaccin (EIAV) est signalé?

Santé Canada est résolu à protéger la santé et la sécurité de la population canadienne et a en place un système d'examen scientifique rigoureux de l'innocuité des vaccins et de leur efficacité à prévenir les maladies qu'ils ciblent.

Avant que tout vaccin puisse être distribué au Canada, il doit être homologué au moyen du système d'examen scientifique rigoureux de Santé Canada. Santé Canada n'homologue pas un vaccin à moins que des données probantes démontrent que ses avantages l'emportent sur ses risques. Les programmes de santé publique au Canada recommandent de nombreux vaccins pour empêcher les gens de contracter des maladies. Ces vaccins sont administrés à de grandes quantités de personnes en santé. C'est pourquoi il est particulièrement important de réglementer l'innocuité, l'efficacité et la qualité des vaccins. Les événements indésirables associés aux vaccins (EIAV) vont de réactions bénignes (p. ex. courbatures, contusions, légers maux de tête) jusqu'à de très rares réactions graves (p. ex. paralysie, atteintes nerveuses). En plus de l'examen scientifique, il y a aussi des systèmes de production de rapports en place pour la surveillance de l'innocuité des vaccins en continu.

Une fois que la vente d'un vaccin est autorisée, les fabricants ont l'obligation de continuer de présenter de l'information sur l'innocuité et l'efficacité de ce vaccin, de surveiller et de signaler tout EIAV possible ainsi que de prendre des mesures pour atténuer les risques. Santé Canada n'hésitera pas à intervenir dans l'éventualité où un nouveau problème touchant l'innocuité est découvert ou si un problème connu s'aggrave.

Toute personne qui est témoin ou qui subit un effet secondaire associé à un vaccin est vivement encouragée à le déclarer à un professionnel de la santé. Les professionnels de la santé ont l'obligation de déclarer les EIAV aux autorités de santé publique de la région. Les autorités de santé publique les signalent ensuite à l'Agence de la santé publique du Canada (ASPC).

Les déclarations d'EIAV transmises à l'ASPC par les administrations fédérale, provinciales et territoriales (FPT) sont rassemblées dans le Système canadien de surveillance des effets secondaires suivant l'immunisation (SCSESSI). Les déclarations d'événements indésirables graves sont présentées à l'ASPC dans les sept jours suivant leur réception par les administrations. Les administrations FPT déclarent aussi à l'ASPC tout signalement de décès dans les 24 heures suivant leur prise de connaissance de la situation. Les déclarations d'événements indésirables graves sont traitées le jour ou le lendemain de leur communication, et l'examen du dossier médical s'amorce dans les trois jours suivant la fin du traitement des données. Si les nombres ou les taux d'EIAV dépassent les nombres ou les taux de fond établis en fonction des normes internationales, un avertissement en matière d'innocuité sera diffusé, ce qui entraînera la prise de diverses mesures. Ces mesures peuvent inclure d'avertir la population canadienne des possibles effets secondaires, de modifier l'utilisation recommandée du produit ou de retirer le produit du marché.

Q8. Quelle forme prendra un programme de soutien en cas de lésions causées par un vaccin?

L'Agence de la santé publique du Canada (ASPC), en collaboration avec les provinces et les territoires, travaille actuellement à la mise en œuvre d'un programme de soutien en cas de lésions causées par un vaccin (PSLV) pancanadien sans égard à la responsabilité. L'établissement d'un PSLV permettra au Canada de renforcer sa stratégie globale en matière de vaccination, ce qui l'aidera à demeurer concurrentiel quant à l'accès aux nouveaux vaccins au fur et à mesure qu'ils sont offerts et, en définitive, à protéger la population canadienne. Cette

mesure permettra aussi au Canada de se mettre au diapason de ses homologues du G7, qui offrent tous un PSLV national.

Comme la portée de ce programme fait actuellement l'objet de discussions avec les provinces et les territoires, aucun autre détail ne peut être divulgué pour le moment.

Q9. L'innocuité d'un vaccin fait-elle l'objet d'une surveillance de la part du gouvernement du Canada après son homologation?

Le Canada dispose d'un système robuste et bien établi de surveillance des vaccins. Une fois un vaccin sur le marché, Santé Canada et l'Agence de la santé publique du Canada surveilleront les effets indésirables après l'immunisation, en collaboration avec les provinces, les territoires et le fabricant.

La base de données Canada Vigilance de Santé Canada est le programme canadien de surveillance des vaccins sur le marché qui permet de recueillir et d'évaluer les signalements d'effets indésirables présumés pour les produits de santé vendus au Canada. La surveillance des produits offerts sur le marché permet à Santé Canada de surveiller le profil d'innocuité de produits de santé une fois qu'ils sont sur le marché pour veiller à ce que les avantages continuent de l'emporter sur les risques.

Les fabricants de vaccins sont tenus de continuer à recueillir des données sur l'innocuité et l'efficacité à long terme de leurs produits. Pfizer et BioNTech, par exemple, feront un suivi des participants des essais cliniques pendant au moins deux ans après l'administration de la deuxième dose du vaccin. Santé Canada continuera d'évaluer toutes les données accessibles sur l'innocuité des vaccins provenant des études cliniques et de la surveillance après la mise en marché et n'hésitera pas à prendre les mesures appropriées, le cas échéant, pour protéger la santé et la sécurité des Canadiens, notamment, avertir la population canadienne des possibles effets secondaires, modifier l'utilisation recommandée du produit ou même retirer le produit du marché.

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: Serious AEFI in LTC resident
Date: October 4, 2022 8:00:21 AM

From: Strang, Robert
Sent: Thursday, January 28, 2021 5:35 PM
To: Carew, Maureen <Maureen.Carew@novascotia.ca>; Watson-Creed, Gaynor <Gaynor.Watson-Creed@novascotia.ca>
Subject: RE: Serious AEFI in LTC resident

Thanks for the heads up.
Rob

From: Carew, Maureen <Maureen.Carew@novascotia.ca>
Sent: January 28, 2021 5:26 PM
To: Watson-Creed, Gaynor <Gaynor.Watson-Creed@novascotia.ca>; Strang, Robert <Robert.Strang@novascotia.ca>
Subject: Serious AEFI in LTC resident

Hi Rob and Gaynor
In case you receive any queries, I am looking into a AEFI following the death of a resident vaccinated in a LTCF 20(1) female received Moderna Covid-19 vaccine 20(1) and died 20(1)
20(1)
20(1) There is a temporal association but I don't think a causal one. I will be obtaining more information on cause of death etc but wanted you to be aware.
Maureen

Maureen Carew MD, MSc, FRCPC
Medical Officer of Health
Nova Scotia Department of Health and Wellness
Maureen.Carew@novascotia.ca
Tel: 613-404-6815

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: AEFI - Encephalopathy
Date: October 4, 2022 7:58:36 AM

From: Strang, Robert
Sent: Friday, April 16, 2021 7:07 PM
To: Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>
Cc: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Subject: Re: AEFI - Encephalopathy

Can you send any details you have

Rob

Sent from my iPhone

> On Apr 16, 2021, at 7:03 PM, Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca> wrote:
>
> Doesn't sound like the one I'm hearing about…
>
> **From:** Deeks, Shelley <Shelley.Deeks@novascotia.ca>
> **Sent:** April 16, 2021 6:51 PM
> **To:** Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>; Strang, Robert <Robert.Strang@novascotia.ca>
> **Subject:** Fw: AEFI - Encephalopathy
>
> This is with Moderna
>
> ---
>
> **From:** Carew, Maureen <Maureen.Carew@novascotia.ca>
> **Sent:** Friday, April 16, 2021 6:36 PM
> **To:** Cole, Teri J <Teri.Cole@novascotia.ca>; Deeks, Shelley <Shelley.Deeks@novascotia.ca>; SURVEILLANCEDHW <SURVEILLANCEDHW@novascotia.ca>
> **Subject:** AEFI - Encephalopathy
>
> Hi everyone
> Please be aware of an AEFI reported today of confirmed encephalopathy in a 20(1) male. Received Moderna 20(1) and developed neurological symptoms 20(1) 20(1) Will send an update when more information becomes available. I have asked the PHN to enter in Panorama.
> Maureen
> Maureen Carew MD, MSc, FRCPC
> Medical Officer of Health

Nova Scotia Department of Health and Wellness
Maureen.Carew@novascotia.ca
Tel: 613-404-6815

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: SBAR Serious AEFI VITT
Date: October 4, 2022 7:57:08 AM

From: Strang, Robert
Sent: Tuesday, June 1, 2021 10:45 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; Kiritsis, Tony <Tony.Kiritsis@novascotia.ca>; Walsh, Tara A <Tara.Walsh@novascotia.ca>
Cc: Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>; Chouinard, Vanessa P <Vanessa.Chouinard@novascotia.ca>
Subject: RE: SBAR Serious AEFI VITT

Thanks Shelley and good from me too.
Rob

From: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Sent: June 1, 2021 8:30 PM
To: Kiritsis, Tony <Tony.Kiritsis@novascotia.ca>; Walsh, Tara A <Tara.Walsh@novascotia.ca>; Strang, Robert <Robert.Strang@novascotia.ca>
Cc: Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>; Chouinard, Vanessa P <Vanessa.Chouinard@novascotia.ca>
Subject: RE: SBAR Serious AEFI VITT

See red suggestions below. 14(1)

14(1)

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: Kiritsis, Tony <Tony.Kiritsis@novascotia.ca>
Sent: June 1, 2021 7:57 PM
To: Walsh, Tara A <Tara.Walsh@novascotia.ca>; Strang, Robert <Robert.Strang@novascotia.ca>
Cc: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>; Chouinard, Vanessa P <Vanessa.Chouinard@novascotia.ca>
Subject: RE: SBAR Serious AEFI VITT

Below is what was drafted today, from which we can pull a line or two for tomorrow. 14(1)

14(1)

COVID-19/HEALTH/WELLNESS--Province Reports First VITT Case

14(1)

14(1)

[redacted]

Tony Kiritsis
Communications Advisor
Department of Health and Wellness

From: Walsh, Tara A <Tara.Walsh@novascotia.ca>
Sent: June 1, 2021 6:15 PM
To: Strang, Robert <Robert.Strang@novascotia.ca>
Cc: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>; Chouinard, Vanessa P <Vanessa.Chouinard@novascotia.ca>; Kiritsis, Tony <Tony.Kiritsis@novascotia.ca>
Subject: Re: SBAR Serious AEFI VITT

I can yes. We have a separate rls drafted that tony can share now that we have these details.

Sent from my iPhone

> On Jun 1, 2021, at 6:03 PM, Strang, Robert <Robert.Strang@novascotia.ca> wrote:
>
> Thanks. 14(1) [redacted] but would like Comms to comment.
> Suggest we bring to PO for their awareness before we include in tomorrow's release. Tara, can you do this through Jane?
> Rob
>
> **From:** Deeks, Shelley <Shelley.Deeks@novascotia.ca>
> **Sent:** June 1, 2021 5:57 PM
> **To:** Strang, Robert <Robert.Strang@novascotia.ca>; Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>; Walsh, Tara A <Tara.Walsh@novascotia.ca>; Chouinard, Vanessa P <Vanessa.Chouinard@novascotia.ca>
> **Subject:** SBAR Serious AEFI VITT
>
> Hi all
> The VITT case has now been reported. Below is the detail.
> Abbreviated SBAR with medical detail removed; 14(1); 20(1) [redacted]

14(1); 20(1)

Please let me know what else is needed. Team can now report to PHAC tomorrow.

Client Demographics	Male 20(1)
Situation	Serious AEFI-Client received 1st dose of Astra Zeneca 20(1) 20(1) symptoms including progressive headache
Background	20(1)
Assessment	Reportable To PHAC Fits temporal criteria VITT occurred within 42 days.
Recommendations	Second dose whether it be Moderna or Pfizer to be determined by Specialist.

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM

Deputy Chief Medical Officer of Health

Department of Health and Wellness

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: COVID AEFIs
Date: October 4, 2022 8:01:12 AM

From: Strang, Robert
Sent: Wednesday, December 23, 2020 4:48 PM
To: Fleming, Sarah A <Sarah.Fleming@novascotia.ca>
Cc: Watson-Creed, Gaynor <Gaynor.Watson-Creed@novascotia.ca>; Cole, Teri J <Teri.Cole@novascotia.ca>; Billard, Bev A <Bev.Billard@novascotia.ca>
Subject: Re: COVID AEFIs

Thank you Sarah. No questions from me at this time.

Rob

Sent from my iPhone

> On Dec 23, 2020, at 4:40 PM, Fleming, Sarah A <Sarah.Fleming@novascotia.ca> wrote:
>
> Hi everyone,
> Just wanted to make you aware that we had 2 reports of AEFIs from the immunization clinics.
> -1 20(1) symptoms included swollen and tingling lips. It was recommended that the client should consult with Shelly MacNeil before receiving the 2nd dose of vaccine.
> -1 20(1) symptoms included eye redness and itchiness of the eyes, forearm and neck. It was recommended that the client could proceed with the next dose of vaccine with monitoring.
> Both AEFIs were reviewed by MOHs and reported to PHAC.
> Although these AEFIs occurred 20(1) we were not sent notification until last night and today. We are going to follow-up with Krissy Rose-Muise to determine the status of the development of and SOP and training for AEFI reporting. If that documentation is not ready we may want to send a reminder to NSH Public Health about the reporting process so that we are notified in a timely manner.
> Let me know if you have any questions.
> Thanks,
> Sarah
> Sarah Fleming
> Senior Epidemiologist
> Nova Scotia Department of Health and Wellness
> Barrington Tower, 4th Floor

1894 Barrington Street, P.O. Box 488
Halifax, NS B3J 2R8
Ph. 902-943-9877
sarah.fleming@novascotia.ca

From:	Dean, Kelly E on behalf of Strang, Robert
To:	Dean, Kelly E
Subject:	Fw: For information: Media Lines on AEFIs
Date:	October 4, 2022 8:01:26 AM
Attachments:	ML_vaccine_adverse reactions-general_2020-12-23.docx ATT00001.htm

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From: Strang, Robert
Sent: Thursday, December 24, 2020 11:19 AM
To: Walsh, Tara A <Tara.Walsh@novascotia.ca>
Cc: Cole, Teri J <Teri.Cole@novascotia.ca>; Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>
Subject: Fwd: For information: Media Lines on AEFIs
FYI

Rob

Sent from my iPhone

Begin forwarded message:

> **From:** "CCMOH SECRETARIAT / CMHC (PHAC/ASPC)" <phac.ccmoh.secretariat-cmhc.aspc@canada.ca>
> **Date:** December 24, 2020 at 10:51:38 AM AST
> **To:** "Romano, Anna (PHAC/ASPC)" <anna.romano@canada.ca>, Avis Gray <Avis.Gray@gov.mb.ca>, Brent Roussin <Brent.roussin@gov.mb.ca>, Catherine Elliott <catherine.elliott@gov.yk.ca>, "Simms, Colleen (Ext.)" <colleensimms@gov.nl.ca>, Colleen Stockley <ColleenStockley@gov.nl.ca>, "Dr. Barb Yaffe" <barbara.yaffe@ontario.ca>, "Henry, Bonnie (Ext.)" <bonnie.henry@gov.bc.ca>, "Hanley, Brendan (Ext.)" <brendan.hanley@gov.yk.ca>, "Emerson, Brian (Ext.)" <brian.emerson@gov.bc.ca>, "Muecke, Cristin (Ext.)" <dr.cristin.muecke@gnb.ca>, "Dr. David Williams" <Dr.David.Williams@ontario.ca>, "Dr. Deena Hinshaw" <deena.hinshaw@gov.ab.ca>, "Dr. Denise Werker" <denise.werker1@health.gov.sk.ca>, "Dr. George Giovinazzo" <george.giovinazzo@cic.gc.ca>, "Morrison, Heather (Ext.)" <hgmorrison@gov.pe.ca>, "Njoo, Howard (PHAC/ASPC)" <howard.njoo@canada.ca>, "Dr. James Worthington" <dr.james.worthington@csc-scc.gc.ca>, "Dr. Janice Fitzgerald" <janice.fitzgerald@gov.nl.ca>, "Russell, Jennifer (Ext.)" <jennifer.russell@gnb.ca>, "Dr. Michael Patterson" <MPatterson@GOV.NU.CA>, "Strang, Robert" <Robert.Strang@novascotia.ca>, "Shahab, Saqib (Ext.)" <saqib.shahab@health.gov.sk.ca>, "Sharma, Supriya (HC/SC)" <supriya.sharma@canada.ca>, "Tam, Dr Theresa (PHAC/ASPC)" <drtheresa.tam@canada.ca>, "Wong, Tom (SAC/ISC)" <tom.wong@canada.ca>, "Cleary, Eilish (SAC/ISC)" <eilish.cleary@canada.ca>, Evan Adams <Evan.Adams@fnha.ca>, Greg Haley <GREG.Haley@forces.gc.ca>, "Arruda,

Horacio (Ext.)" <horacio.arruda@msss.gouv.qc.ca>, "Kandola, Kami (Ext.)" <kami_kandola@gov.nt.ca>, Philip Christoff <Philip.christoff@gov.yk.ca>, Reka Gustafson <reka.gustafson@phsa.ca>, SK CMOH Single Window <OCMHO@health.gov.sk.ca>, Suzanne Fedorowich <Suzanne.Fedorowich@health.gov.sk.ca>, Tami Denomie <tami.denomie@health.gov.sk.ca>, Trish Merrithew <Trish.Merrithew-Mercredi@gov.ab.ca>, Vincent Beswick-Escanlar <VINCENT.BESWICK-ESCANLAR@forces.gc.ca>, YK Surveillance <YCDCSurveillance@gov.yk.ca>, Yves Jalbert <Yves.Jalbert@msss.gouv.qc.ca>
Cc: Ashley Halicki <Ashley.Halicki@gov.bc.ca>, "Auger, Julie (PHAC/ASPC)" <julie.auger@canada.ca>, Bailey Muir-Cressman <Bailey.Muir-Cressman@gov.yk.ca>, "Barton, Kimby (PHAC/ASPC)" <kimby.barton@canada.ca>, "Bent, Stephen (PHAC/ASPC)" <stephen.bent@canada.ca>, Carol Kurbis <Carol.Kurbis@gov.mb.ca>, "Carter, Luke (HC/SC)" <luke.carter@canada.ca>, "CCMOH SECRETARIAT / CMHC (PHAC/ASPC)" <phac.ccmoh.secretariat-cmhc.aspc@canada.ca>, "Charos, Gina (PHAC/ASPC)" <gina.charos@canada.ca>, Cindy Kruger <cindy.kruger@csc-scc.gc.ca>, "Rogers, Cindy (Ext.)" <cindy.rogers@health.gov.sk.ca>, Colleen Dudar <colleen.dudar@gov.mb.ca>, "Sabapathy, David (Ext.)" <dsabapathy@gov.pe.ca>, "David, Renee (PHAC/ASPC)" <renee.david@canada.ca>, "Davies, Stephanie (PHAC/ASPC)" <stephanie.davies@canada.ca>, Dawn Osciak <dawn.osciak@gov.mb.ca>, "Panchyshyn, Debbie (Ext.)" <debbie.panchyshyn@gov.mb.ca>, "Denis, Joel (PHAC/ASPC)" <joel.denis@canada.ca>, Diane Lu <diane.lu@forces.gc.ca>, Donna Milne <Donna.Milne@gov.yk.ca>, Elaine Barrett-Cramer <elaine.barrett-cramer@cic.gc.ca>, "Look, Elaine (Ext.)" <elaine_look@gov.nt.ca>, "Elmslie, Kim (PHAC/ASPC)" <kim.elmslie@canada.ca>, "Evans, Cindy (PHAC/ASPC)" <cindy.evans@canada.ca>, "Everitt, Louisa (PHAC/ASPC)" <louisa.everitt@canada.ca>, "Fournier, Sarah (PHAC/ASPC)" <sarah.fournier@canada.ca>, Gillian MacDonald <gillian.macdonald2@ontario.ca>, "Guenette, Tara-Lynn (PHAC/ASPC)" <tara-lynn.guenette@canada.ca>, "Hamel, Sonia (PHAC/ASPC)" <sonia.hamel@canada.ca>, Heidi Liston <Heidi.Liston@gnb.ca>, "Henry, Erin (PHAC/ASPC)" <erine.henry@canada.ca>, "Hill, Allison (HC/SC)" <allison.hill@canada.ca>, "Hostrawser, Bonnie (PHAC/ASPC)" <bonnie.hostrawser@canada.ca>, "HPOC PHM / COPS MSP (PHAC/ASPC)" <phac.hpoc.phm-msp.cops.aspc@canada.ca>, "Ingraham, Erin (HC/SC)" <erin.ingraham@canada.ca>, "Sherren, Janice (Ext.)" <jesherren@gov.pe.ca>, Jasmine Pawa <jpawa@gov.nu.ca>, Jazz Atwal <Jazz.Atwal@gov.mb.ca>, Jennifer White <jennifer.white2@gov.mb.ca>, Jocelyn LeBlond <Jocelyn.LeBlond@health.gov.sk.ca>, Johnatha Smith <Jonathan.Smith@CSC-SCC.GC.CA>, "Follett, Juanita (Ext.)" <juanitafollett@gov.nl.ca>, Karen Scherle <Karen.Scherle@health.gov.sk.ca>, "Cadorette, Katie (HC/SC)" <katie.cadorette@canada.ca>, "Dean, Kelly E" <Kelly.Dean@novascotia.ca>, "King2, Arlene (PHAC/ASPC)" <arlene.king2@canada.ca>, "Seeds, Laura (Ext.)" <laura.seeds@ontario.ca>, Laurel Thompson <laurel.thompson@gov.bc.ca>, "Hunter, Laurie (PHAC/ASPC)" <laurie.hunter@canada.ca>, "Lebans, Anne (PHAC/ASPC)" <anne.lebans@canada.ca>, "Lewis, Darlene (SAC/ISC)" <darlene.lewis@canada.ca>, "Lior, Lee (PHAC/ASPC)" <lee.lior@canada.ca>,

Lori Carpenter <lori.carpenter@fnha.ca>, "Yeo, Lyn (Ext.)" <lyn.yeo@health.gov.sk.ca>, "MacDonald2, Tammy (PHAC/ASPC)" <tammy.macdonald2@canada.ca>, "MacKenzie, Sara (HC/SC)" <sara.mackenzie@canada.ca>, Maureen Carew <maureen.carew@forces.gc.ca>, "Maher, Maurica (Ext.)" <maurica.maher@forces.gc.ca>, "McCarney, Jane (PHAC/ASPC)" <jane.mccarney@canada.ca>, "McGarr, Holly (PHAC/ASPC)" <holly.mcgarr@canada.ca>, "McLeod, Robyn (PHAC/ASPC)" <robyn.mcleod@canada.ca>, "McNeill, Robin (PHAC/ASPC)" <robin.mcneill@canada.ca>, "Conly, Meghan (HC/SC)" <meghan.conly@canada.ca>, "Sveinson, Michelle (Ext.)" <michelle.sveinson@gov.mb.ca>, "Mitra, Debjani (PHAC/ASPC)" <debjani.mitra@canada.ca>, NB Secretariat <NB-PT-PHNC-Secretariat@gnb.ca>, "Paddle, Lisa (PHAC/ASPC)" <lisa.paddle@canada.ca>, "Huber, Pamela (PHAC/ASPC)" <pamela.huber@canada.ca>, Pamela MacMillan <pamela.macmillan@gnb.ca>, Pat Seaman <pat.seaman@gnb.ca>, Penny Higdon <penny.higdon@gnb.ca>, "Ponic, Pamela (PHAC/ASPC)" <pamela.ponic@canada.ca>, Rachel Comeau <rachel.comeau@gnb.ca>, Rachel Mailhot <rachel.mailhot@cic.gc.ca>, "Almond, Richard (Ext.)" <richard.almond@gov.bc.ca>, Richard Baydack <Richard.Baydack@gov.mb.ca>, "Robinson, Kerry (PHAC/ASPC)" <kerry.robinson@canada.ca>, "Romano, Anna (PHAC/ASPC)" <anna.romano@canada.ca>, "Russo, Laura (HC/SC)" <laura.russo@canada.ca>, "Rutledge-Taylor, Katie (PHAC/ASPC)" <katie.rutledge-taylor@canada.ca>, "Salvadori, Marina (PHAC/ASPC)" <marina.salvadori@canada.ca>, "Poirier, Samantha (Ext.)" <samantha.poirier@gnb.ca>, "Siu, Winnie (PHAC/ASPC)" <winnie.siu@canada.ca>, "Smith, Cheryl (HC/SC)" <cheryl.smith@canada.ca>, "Taylor, Stephanie (Ext.)" <stephanie.taylor@gov.bc.ca>, Sylvie Poirier <sylvie.poirier@msss.gouv.qc.ca>, "Cidsc Secretariat (PHAC/ASPC)" <phac.cidsc.secretariat.aspc@canada.ca>, "Taylor, Dorcas (PHAC/ASPC)" <dorcas.taylor@canada.ca>, "Cole, Teri J" <Teri.Cole@novascotia.ca>, Tracey Aylward <traceyaylward@gov.nl.ca>, Vanessa Blyan <vanessa.blyan@gov.ab.ca>

Subject: For information: Media Lines on AEFIs

Dear SAC members,

You will find attached media lines regarding AEFIs. Please note that the French version will follow.

The media lines will be posted on CNPHI for ease of reference.

Thank you

SAC Secretariat

Health Canada Santé Canada

December 22, 2020, 10:17 a.m.

Media Lines

Vaccine adverse reactions – general

Issue Statement: With the roll-out of COVID-19 vaccines across Canada, reports of adverse events following immunization are expected and will lead to media questions.

Key Messages:

- Like any medication, vaccines can cause side effects and reactions.
- Some adverse events are identified during the clinical trial process; however, new issues can arise once a health product is on the market because it is being used by a much larger number of people.
- Adverse events could be as mild as soreness at the site of injection or a slight fever, or more serious in nature, such as an allergic reaction. Such events are to be expected, and will not necessarily change the risk/benefit profile of a vaccine.
- Canada has a strong vaccine safety monitoring system in place that involves healthcare professionals, vaccine manufacturers, the provinces and territories, the Public Health Agency of Canada, and Health Canada.
- Health Canada will examine and assess any new safety concerns brought to its attention and will take appropriate action if any new safety issues are confirmed. This could include communicating new risks to Canadians and healthcare providers or changing the recommended use of the product.

Supplementary Messages on allergic reactions:

- Some individuals may experience serious allergic reactions to vaccines. Warnings about allergic reactions are included in the product monographs of all vaccines, including those for COVID-19 vaccines and in educational materials for health care professionals and for consumers.
- In addition, measures are to be in place at COVID-19 vaccination clinics to identify and manage allergic reactions if they arise.
- People with allergies to any of the ingredients in a COVID-19 vaccine should not receive that vaccine. People with a history of serious allergic reactions to other vaccines, a drug or a food should speak to their health professional before receiving a COVID-19 vaccine.

Questions and Answers:

Q1. What is the difference between an adverse event following immunization (AEFI) and a side effect?

An AEFI is any health problem that happens following immunization but is not necessarily caused by the vaccine. Post-market surveillance of vaccines in Canada includes monitoring AEFIs in order to:

- continuously assess the safety of marketed vaccines in Canada;

- identify increases in the frequency or severity of previously identified vaccine-related reactions;
- identify previously unknown AEFIs that could possibly be related to a vaccine;
- identify areas that require further investigation and/or research; and,
- provide timely information on AEFI reporting profiles for vaccines marketed in Canada that can help inform immunization programs and guidelines.

Side effects are those AEFI that are known to be related to the vaccine. The majority are minor reactions, but sometimes more serious events can occur. This can include rare serious events such as allergic reactions or other events that result in hospitalization or an extended hospital stay, chronic or significant disability, death, or that are life threatening.

Side effects include known unpleasant or negative side effects caused by a particular vaccine. Usually, vaccine side effects are minor and go away on their own within a few days.

Q2. Should Canadians expect short-term side effects following vaccination with the Pfizer-BioNTech vaccine?

No serious safety concerns were identified in the Pfizer-BioNTech vaccine clinical trials.

Mild side effects were reported by clinical trial participants, including:

- injection site pain (84.1%)
- fatigue (62.9%)
- headache (55.1%)
- muscle pain (38.3%)
- chills (31.9%)
- joint pain (23.6%)
- fever (14.2%)

Some of the reported side effects, including fever, were more frequent after the second dose. In clinical tests, adverse events were generally milder and less frequent in those over 55 years of age.

Vaccine providers are asked to report AEFIs through local public health officials and to follow AEFI reporting requirements that are specific to their province or territory. Any serious or unexpected adverse event felt to be temporally related to vaccination should be reported immediately.

Q3. What about long-term side effects? How can we know Canadians who get the vaccine now won't experience adverse effects years from now?

Health Canada is reviewing vaccines to treat COVID-19 under the *Interim Order Respecting the Importation, Sale and Advertising of Drugs for Use in Relation to COVID-19*. The Interim Order allows Health Canada to expedite the review and approval of COVID-19 drugs and vaccines, while maintaining Canada's high standards for safety, efficacy and quality.

Canada has a robust and well-established vaccine safety surveillance system. Once the vaccine is on the market, Health Canada and the Public Health Agency of Canada will monitor for any adverse events after immunization, in collaboration with the provinces and territories and the manufacturer.

All vaccines have potential risks associated with them, though most (95%) occur in the first 42 days following immunization.

Vaccine manufacturers are expected to continue to collect information about the long-term safety and effectiveness of their products. Pfizer and BioNTech, for example, will be following clinical trial participants for at least two years after receiving the second dose of the vaccine. Health Canada will continue to review all the available safety data from clinical studies and post-market surveillance and will not hesitate to take appropriate action, if required, to protect the health and safety of Canadians. This could include warning Canadians about potential side effects, changing the recommended use of the product, or even removing the product from the market.

To further support Health Canada's efforts to monitor the safety of COVID-19 vaccines, the Interim Order provides the authority to impose terms and conditions on any authorization at any time, such as risk mitigation measures and additional assessments of safety information.

At this time, safety data from clinical trials show that these new generation vaccines are performing similarly to other vaccines. If any safety issues are confirmed, Health Canada will not hesitate to take appropriate action.

Q4. How should Canadians report adverse events following immunization?

Individuals who experience an adverse event following immunization should report it to a healthcare professional. Healthcare professionals should complete the Adverse Events Following Immunization (AEFI) Form appropriate to their province or territory and send it to their local Health Unit.

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: AEFI event
Date: October 4, 2022 8:00:47 AM

From: Strang, Robert
Sent: Thursday, January 14, 2021 4:30 PM
To: Carew, Maureen <Maureen.Carew@novascotia.ca>; Watson-Creed, Gaynor <Gaynor.Watson-Creed@novascotia.ca>
Subject: RE: AEFI event

Thanks.
Rob

From: Carew, Maureen <Maureen.Carew@novascotia.ca>
Sent: January 14, 2021 4:19 PM
To: Strang, Robert <Robert.Strang@novascotia.ca>; Watson-Creed, Gaynor <Gaynor.Watson-Creed@novascotia.ca>
Subject: AEFI event

Hi Rob and Gaynor

I wanted you to be aware of an AEFI event 20(1) following the second dose of Pfizer vaccine. The individual is 20(1) who had some generalized itchiness after 20(1) first dose of Pfizer vaccine. 20(1) was referred to 20(1) through Shelly McNeil for assessment to determine the requirement for a second dose 20(1) 20(1) 20(1). Following the second dose 20(1) the individual immediately experienced a headache, increasing itchiness, was flushed and experienced a feeling of fullness in the throat and tongue. 20(1)

I don't have a status report on the person at this time but will follow-up with 20(1) I wanted you both to be aware.

Did you want to discuss?

thanks,

Maureen
Maureen Carew MD, MSc, FRCPC
Medical Officer of Health, Long-Term Care and COVID19 response
Department of Health and Wellness

email: maureen.carew@novascotia.ca
tel: 1-613-404-6815

Not responsive

From: Carew, Maureen <Maureen.Carew@novascotia.ca>
Sent: April 15, 2021 6:29 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Cc: Sommers, Ryan <Ryan.Sommers@nshealth.ca>; Cram, Jennifer <Jennifer.Cram@nshealth.ca>
Subject: Re: AEFIs today

Not responsive

Some unusual AEFIs have come in today– stroke, thrombotic events (PE), thrombocytenia alone (no thrombosis with thrombocytopenia).

Maureen
Maureen Carew MD, MSc, FRCPC
Medical Officer of Health
Nova Scotia Department of Health and Wellness
Maureen.Carew@novascotia.ca
Tel: 613-404-6815

TAB 12

2021	YAR 510031
This is Exhibit 12 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 12

Freedom of Information Document Number 2022-01408-HEA:

On September 8, 2022 I applied for the following FOIPOP information from the Department of Health and Wellness:

The number of people who have died a) 14 days, b) one month, c) two months, d) three months, e) four months, f) five months, g) six months, h) seven months, i) eight months, j) nine months, k) 10 months, l) 11 months, m) 12 months, n) 12 months + after getting a COVID-19 vaccine

a.) by dose (broken down into 1 dose less than 14 days, 1 dose and 14 days have passed, 2 doses, 2 doses + booster or three doses, 4 doses)

b.) by age (0-12, 13-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100+)

c.) All information in categories of what they died from – for example, clots, stroke, heart attack, aneurism, still born, myocarditis, (Pfizer lists 8 pages of adverse events in their safety data which I have attached)

Date range for record search: December 13, 2020 to September 6, 2022.

Exhibit 12 is a true copy of what I received back: 2022-01408-HEA**.** **click here to download 2022-01408-HEA**

Please note in the Data Notes on Page 1 that the government is only collecting information on "Other events" within 1 month.

The clear conclusion here is that deaths from the vaccine are not being recorded after one month.

October 11, 2022

Shelly D Hipson
RR3
Shelburne, B0T 1W0

Dear Shelly D Hipson:

Re: You are entitled to the information you requested - 2022-01408-HEA

The Department of Health and Wellness received your application for access to information under the *Freedom of Information and Protection of Privacy Act* (the Act) on September 8, 2022.

In your application, you requested a copy of the following records:

> *The number of people who have died a) 14 days, b) one month, c) two months, d) three months, e) four months, f) five months, g) six months, h) seven months, i) eight months, j) nine months, k) 10 months, l) 11 months, m) 12 months, n) 12 months + after getting a COVID-19 vaccine*
>
> *a.) by dose (broken down into 1 dose less than 14 days, 1 dose and 14 days have passed, 2 doses, 2 doses + booster or three doses, 4 doses)*
>
> *b.) by age (0-12, 13-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100+)*
>
> *c.) All information in categories of what they died from – for example, clots, stroke, heart attack, aneurism, still born, myocarditis, (Pfizer lists 8 pages of adverse events in their safety data which I have attached) ((Date Range for Record Search: From 12/13/2020 To 9/6/2022)*

Responsive records have been located and are attached.

You have the right to ask for a review of this decision by the Information Access and Privacy Commissioner (formerly the Review Officer). You have 60 days from the date of this letter to exercise this right. If you wish to ask for a review, you may do so on Form 7, a copy of which is attached. Send the completed form to the Information Access and Privacy Commissioner, P.O. Box 181, Halifax, Nova Scotia B3J 2M4.

Please be advised that a de-identified copy of this disclosure letter and the attached response to your FOIPOP application will be made public after 14 days. The package will be posted online at https://openinformation.novascotia.ca/. The letter will not include your name, address or any other personal information that you have supplied while making your application under FOIPOP.

Please contact Tim Gregory at 902-223-4957 or by e-mail at timothy.gregory@novascotia.ca, if you need further assistance regarding this application.

Sincerely,

Kathleen Trott
Associate Deputy Minister

Attachment

FOIPOP Request 2022-1408-HEA

Data Notes:

- Data sources are Panorama for all Adverse Events Following Immunization (AEFI)
- AEFI: Adverse Event Following Immunization
    - The numbers included in the report reflect the number of AEFIs with a status of "Review complete", "Review complete, follow-up required" or "Follow-up complete"
      AND
      a PHAC report date entered into Panorama
- The information system captures people who die after receipt of COVID-19 vaccine but these reports do not imply a causal relationship between the vaccine and the adverse event. Some unrelated medical events occur by chance after immunization, especially when thousands of people are being vaccinated.
- An AEFI is any untoward medical occurrence which is temporally related to immunization (i.e. follows immunization) and which does not necessarily have a causal relationship with the usage of the vaccine. The adverse event may be any unfavourable or unintended sign, abnormal laboratory finding, symptom or disease.
- The temporal criteria (i.e., when an adverse event would be considered temporally related to immunization, even if no causal relationship is determined) varies depending on the type of event reported. In general, events meet the temporal criteria in the following circumstances:
    - Localized events occurring within 7 days* following immunization
    - Systemic events occurring within 7 days* following immunization
    - Allergic events occurring within 48 hours* following immunization
    - Neurologic events occurring within 56 days* following immunization
    - Other events within 1 month* following immunization

*Or less, depending on reported event.

Request:

The number of people who have died a) 14 days, b) one month, c) two months, d) three months, e) four months, f) five months, g) six months, h) seven months, i) eight months, j) nine months, k) 10 months, l) 11 months, m) 12 months, n) 12 months + after getting a COVID-19 vaccine

a.) by dose (broken down into 1 dose less than 14 days, 1 dose and 14 days have passed, 2 doses, 2 doses + booster or three doses, 4 doses)

b.) by age (0-12, 13-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100+)

c.) All information in categories of what they died from – for example, clots, stroke, heart attack, aneurism, still born, myocarditis, (Pfizer lists 8 pages of adverse events in their safety data which I have

Response:

Table 1. Fatal AEFIs by vaccine-death interval group	
Interval Group	Count
0-14 days	8
15 days - 1 month	3
2 months	0
3 months	0
4 months	0
5 months	0
6 months	0
7 months	0
8 months	0
9 months	0
10 months	0
11 months	0
12 months	0
12+ months	0

Table 2. Fatal AEFIs by dose	
Dose Group	Count
1 Dose (<14 days)	4
1 Dose (>=14 days)	1
2 Doses	5
3 Doses	1
4 Doses	0

Table 3. Fatal AEFIs by age group	
Age Group	Count
0-12 years	0
13-20 years	0
21-30 years	0
31-40 years	0
41-50 years	0
51-60 years	2
61-70 years	1
71-80 years	4
81-90 years	4
91-100+ years	0

It is not possible to present cause of death information given the small number of deaths and the need to protect individual citizens' privacy. However, three of the eleven deaths explicitly state that the vaccination is not believed to have contributed to the death.

TAB 13

2021	YAR 510031
This is Exhibit 13 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 13

Freedom of Information Document Number: 2021-01663-HEA

On September 14, 2021, I applied for the following FOI information from the Department of Health and Wellness:

According to this article: https://www.cbc.ca/news/canada/nova-scotia/nova-scotia-covid-19-vaccine-passport-1.6168189

"(Dr.)Strang said proof of vaccination will help keep communities safe, ensure children and youth can safely attend school, and protect the health-care system and its providers."

All records that support this statement - that this is true - that proof of vaccination will keep communities safe, ensure children and youth can safely attend school, and protect the health care system and its providers. That proof of vaccination to enter such things as restaurants, bars, concerts, movies and fitness facilities provides safety against COVID-19.

Date range for record search: April 1, 2021 to September 7, 2021.

Exhibit 13 is a true copy of what I received back.

click here to download 2021-01663-HEA

October 14, 2021

Shelly D Hipson
RR3
Shelburne, B0T 1W0

Dear Shelly D Hipson:

Re: We do not have the information you asked for – 2021-01663-HEA

The Department of Health and Wellness received your application for access to information under the *Freedom of Information and Protection of Privacy Act* (the Act) on September 14, 2021.

In your application, you requested a copy of the following records:

> *According to this article: https://www.cbc.ca/news/canada/nova-scotia/nova-scotia-covid-19-vaccine-passport-1.6168189*
>
> *FROM THE ARTICLE: "Strang said proof of vaccination will help keep communities safe, ensure children and youth can safely attend school, and protect the health-care system and its providers."*
>
> *All records that support this statement - that this is true - that proof of vaccination will keep communities safe, ensure children and youth can safely attend school, and protect the health care system and its providers. That proof of vaccination to enter such things as restaurants, bars, concerts, movies and fitness facilities provides safety against COVID-19. ((Date Range for Record Search: From 4/1/2021 To 9/7/2021)*

After a file search, we have located no records responsive to your application. Therefore, it is my understanding, pursuant to clause 7(2)(b) of the Act, that Health and Wellness does not have custody or control of records which would respond to your application.

I am unaware of a department or agency which would hold such records.

You have the right to ask for a review of this decision by the Information Access and Privacy Commissioner (formerly the Review Officer). You have 60 days from the date of this letter to exercise this right. If you wish to ask for a review, you may do so on Form 7, a copy of which is attached. Send the completed form to the Information Access and Privacy Commissioner, P.O. Box 181, Halifax, Nova Scotia B3J 2M4.

Please be advised that a de-identified copy of this disclosure letter and the attached response to your FOIPOP application will be made public after 14 days. The package will be posted online at https://openinformation.novascotia.ca/. The letter will not include your name,

address or any other personal information that you have supplied while making your application under FOIPOP.

Please contact Tim Gregory at 902-424-3773 or by e-mail at timothy.gregory@novascotia.ca, if you need further assistance regarding this application.

Sincerely,

Craig Beaton
Associate Deputy Minister

Attachment

TAB 14

2021	YAR 510031
This is Exhibit 14 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 14

Freedom of Information Document Number: 2021-00345-HEA

On February 27, 2023, I applied for the following FOIPOP information from the Department of Health and Wellness:

All emails, records, reports, and correspondence sent and received by Dr. Shelley Deeks, Deputy Chief Medical Officer of Health, on the topic of people who had Adverse Events Following Immunization (AEFI) after receiving any of the COVID-19 vaccines. (no personal identifying information.)

Date Range for Record Search: From 12/15/2020 To 02/26/2023)

Exhibit 14 is a true copy of what I received back: **click here to download FOIPOP 2023-00345-HEA**

From: Carew, Maureen
To: Cole, Teri J
Cc: Deeks, Shelley
Subject: Re: AEFI report: Thrombosis
Date: April 14, 2021 12:45:24 PM

Hi Teri and Shelley – in follow-up, 20(1) Good news.

Maureen

Maureen Carew MD, MSc, FRCPC
Medical Officer of Health
Nova Scotia Department of Health and Wellness
Maureen.Carew@novascotia.ca
Tel: 20(1)

From: "Cole, Teri J" <Teri.Cole@novascotia.ca>
Date: Tuesday, April 13, 2021 at 5:48 PM
To: "Carew, Maureen" <Maureen.Carew@novascotia.ca>
Cc: "Deeks, Shelley" <Shelley.Deeks@novascotia.ca>
Subject: Re: AEFI report: Thrombosis

Thanks for the heads up Maureen.

Sent from my iPhone

> On Apr 13, 2021, at 5:44 PM, Carew, Maureen <Maureen.Carew@novascotia.ca> wrote:
>
> Hi Shelley Yes they have entered in Panorama.
>
> Maureen
>
> Maureen Carew MD, MSc, FRCPC
> Medical Officer of Health
> Nova Scotia Department of Health and Wellness
> Maureen.Carew@novascotia.ca
> Tel: 20(1)

From: "Deeks, Shelley" <Shelley.Deeks@novascotia.ca>
Date: Tuesday, April 13, 2021 at 4:27 PM
To: "Carew, Maureen" <Maureen.Carew@novascotia.ca>
Cc: "Cole, Teri J" <Teri.Cole@novascotia.ca>
Subject: Re: AEFI report: Thrombosis

Thanks Maureen. Did the team enter the info as an AEFI?

Sent from my iPhone

> On Apr 13, 2021, at 5:01 PM, Carew, Maureen <Maureen.Carew@novascotia.ca> wrote:
>
> Hi Shelley and Teri
>
> I received an AEFI report 20(1) regarding a 20(1) who developed a DVT 20(1) after receiving Astra Zeneca which was administered on 20(1)
> 20(1)
>
> Maureen
>
> Maureen Carew MD, MSc, FRCPC
> Medical Officer of Health
> Nova Scotia Department of Health and Wellness
> Maureen.Carew@novascotia.ca
> Tel: 20(1)

Not responsive

From: Carew, Maureen <Maureen.Carew@novascotia.ca>
Sent: April 15, 2021 6:29 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Cc: Sommers, Ryan <Ryan.Sommers@nshealth.ca>; Cram, Jennifer <Jennifer.Cram@nshealth.ca>
Subject: Re: AEFIs today

Not responsive

Some unusual AEFIs have come in today– stroke, thrombotic events (PE), thrombocytenia alone (no thrombosis with thrombocytopenia).

Maureen
Maureen Carew MD, MSc, FRCPC
Medical Officer of Health
Nova Scotia Department of Health and Wellness
Maureen.Carew@novascotia.ca
Tel: 20(1)

From: Fleming, Sarah A
To: Deeks, Shelley; Strang, Robert; Barbrick, Tracey L; Cole, Teri J
Subject: Serious AEFI Update
Date: April 16, 2021 3:42:12 PM

Hello everyone,

Two additional serious AEFIs have been reported this week in the immunization summary. The total number of serious AEFIs is now four. Please see the summary below:

1. Pfizer, Other neurologic diagnosis – Ischemic CVA
   20(1)
2. Pfizer, Other serious or unexpected event - dyspnea, fatigue, chills
   20(1)

Please let me know if you have any questions.

Thank you,
Sarah

Sarah Fleming
Senior Epidemiologist
Nova Scotia Department of Health and Wellness

Barrington Tower, 4th Floor
1894 Barrington Street, P.O. Box 488
Halifax, NS B3J 2R8

Ph. 902-943-9877
sarah.fleming@novascotia.ca

From: Carew, Maureen
To: Cole, Teri J; Deeks, Shelley; SURVEILLANCEDHW
Subject: AEFI - Encephalopathy
Date: April 16, 2021 6:36:39 PM

Hi everyone

Please be aware of an AEFI reported today of confirmed encephalopathy in a 20(1)
Received Moderna 20(1) and developed neurological symptoms 20(1)
20(1) Will send an update when more information becomes available. I have asked the PHN to enter in Panorama.

Maureen

Maureen Carew MD, MSc, FRCPC
Medical Officer of Health
Nova Scotia Department of Health and Wellness
Maureen.Carew@novascotia.ca
Tel: 20(1)

From: Fleming, Sarah A
To: Deeks, Shelley; Strang, Robert; Barbrick, Tracey L; Cole, Teri J
Subject: Serious AEFI
Date: April 19, 2021 2:44:04 PM

Hello everyone,

An additional serious AEFI was reported in today's immunization summary. The total number of serious AEFIs is now five. Please see the summary below:

- Pfizer, Other neurologic diagnosis – Ischemic Stroke
  20(1)

Please let me know if you have any questions.

Thank you,
Sarah

Sarah Fleming
Senior Epidemiologist
Nova Scotia Department of Health and Wellness

Barrington Tower, 4th Floor
1894 Barrington Street, P.O. Box 488
Halifax, NS B3J 2R8

Ph. 902-943-9877
sarah.fleming@novascotia.ca

From: Carew, Maureen
To: Deeks, Shelley; Cole, Teri J; SURVEILLANCEDHW; Strang, Robert
Subject: AEFI report: serious, death
Date: April 19, 2021 2:54:23 PM

Hi all

Just letting you know about a death in 20(1) reported post Pfizer vaccine in 20(1) male 20(1) 20(1) This death will be entered in Panorama. Will look into the details with the attending physician 20(1)

Maureen

Maureen Carew MD, MSc, FRCPC
Medical Officer of Health
Nova Scotia Department of Health and Wellness
Maureen.Carew@novascotia.ca
Tel: 20(1)

From: Fleming, Sarah A
To: Deeks, Shelley; Strang, Robert; Barbrick, Tracey L; Cole, Teri J
Subject: Serious AEFI Update
Date: April 29, 2021 10:22:33 AM

Hello everyone,

Two additional serious AEFIs have been reported since last week. The total number of serious AEFIs is now seven. Please see the summary below:

- Pfizer, Other serious event – non-ST elevation MI
  20(1)
- Pfizer, Reactive arthritis
  20(1)

Please let me know if you have any questions.

Thank you,
Sarah

Sarah Fleming
Senior Epidemiologist
Nova Scotia Department of Health and Wellness

Barrington Tower, 4th Floor
1894 Barrington Street, P.O. Box 488
Halifax, NS B3J 2R8

Ph. 902-943-9877
sarah.fleming@novascotia.ca

From: Deeks, Shelley
To: Billard, Bev A; Cole, Teri J
Cc: Whynot, Lesley; Strang, Robert
Subject: FW: Serious AEFI - possible VITT to AZ vaccine, clt ID 20(1)
Date: May 18, 2021 5:46:29 PM
Attachments: image002.png
image003.jpg

Hi Bev and Teri

Forwarding the information below pertaining to a case being investigated for VITT which already seems to meet case definition for probable TTS. More information to follow, but in terms of VVWG/PHAC not sure when they are asking for a heads up.

Thanks
Shelley

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: Whynot, Lesley <Lesley.Whynot@nshealth.ca>
Sent: May 18, 2021 4:22 PM
To: 20(1)
Cc: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; Shivakumar, Sudeep <Sudeep.Shivakumar@nshealth.ca>; 20(1) @dal.ca
Subject: FW: Serious AEFI - possible VITT to AZ vaccine, clt ID# 20(1)

Hi 20(1)
I received report below on this patient as an adverse event following COVID-19 immunization. Sounds like the case is in your care.

Dr. Shivakumar has been providing hematology consult assistance to Public Health and the Special Immunization Clinic Network with managing potential vaccine adverse event cases. I just wanted you to be aware of their availability if you feel it would be helpful to have their involvement.

Please don't hesitate to reach out if we can be of any assistance.

Thanks kindly,

Lesley Whynot, MD, CCFP
Physician Lead, AEFI Management, Nova Scotia Health & Wellness
Assistant Professor, Dept. Family Medicine, Dalhousie University
20(1) cell
lesley.whynot@nshealth.ca

From: St. Pierre, Noella
Sent: May 18, 2021 4:10 PM
To: Whynot, Lesley
Subject: RE: Serious AEFI - possible VITT to AZ vaccine, clt ID# 20(1)

Hi Lesley,
Yes, it was at 20(1) and the name of the consult report was from 20(1)
20(1)
Hope that helps
Noella

From: Whynot, Lesley
Sent: Tuesday, May 18, 2021 4:08 PM
To: COVID-19 AEFIs <CovidAEFI@nshealth.ca>
Cc: St. Pierre, Noella <Noella.St.Pierre@nshealth.ca>; McGinnis, Carmel <Carmel.McGinnis@nshealth.ca>; Piek, Krista <Krista.Piek@nshealth.ca>
Subject: RE: Serious AEFI - possible VITT to AZ vaccine, clt ID 20(1)

Hi Noella,
Do you know who the consulting physician is that is working this client up for VITT? Is client at 20(1)
20(1) or elsewhere?
Thanks!

Lesley Whynot, MD, CCFP
Physician Lead, AEFI Management, Nova Scotia Health & Wellness
Assistant Professor, Dept. Family Medicine, Dalhousie University
20(1) cell
lesley.whynot@nshealth.ca

From: COVID-19 AEFIs
Sent: May 18, 2021 3:22 PM
To: Whynot, Lesley
Cc: St. Pierre, Noella; McGinnis, Carmel; Piek, Krista
Subject: FW: Serious AEFI - possible VITT to AZ vaccine, clt ID 20(1)

Hi Dr Whynot,
Please see the SBAR below.
Thanks,

Kimberly McClellan BScN, RN, CCHN ©
Public Health Services
600 Abenaki Road, Truro, NS
Cell: 18(1)(a)
Confidential Fax: 902-892-2614
General Fax: 902-893-5839
www.nshealth.ca

From: COVID-19 AEFIs

Sent: Tuesday, May 18, 2021 11:09 AM
To: COVID-19 AEFIs <CovidAEFI@nshealth.ca>
Subject: Serious AEFI - possible VITT to AZ vaccine

Here's the SBAR for 20(1)
Completed by Noella & Carmel

Client Demographics	• 20(1) **male,** 20(1) **ID** 20(1)
Situation	20(1) 20(1) Being investigated for VITT.
Background	Background: 20(1) Describe the event: • AZ vaccine, 1st dose, lot #4120Z029 , administered on 20(1) 20(1)

20(1)

Assessment

Recommendations

	20(1)
Questions for MOH	

NSHA_colour_logo.jpg

Noella St Pierre, RN, MN
Public Health Nurse
Covid-19 AEFI Response team
Public Health
Cell: 18(1)(a)
Fax: 902-481-5889
CovidAEFI@nshealth.ca

PATIENT/CLIENT FEEDBACK? Every day, we learn from patients, clients and families. When you tell us about your experience - good or bad – it helps us improve the care and service we provide. We'd love to hear your compliments and/or concerns. You can share these directly with your health care provider(s) or unit/department manager, or you can contact our Patient Relations team. For the Patient Relations Contact in the Halifax Regional Municipality, Eastern Shore and West Hants Areas call Toll Free: 1-844-884-4177 or Email: healthcareexperience@nshealth.ca.

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: SBAR Serious AEFI VITT
Date: October 4, 2022 7:57:08 AM

From: Strang, Robert
Sent: Tuesday, June 1, 2021 10:45 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; Kiritsis, Tony <Tony.Kiritsis@novascotia.ca>; Walsh, Tara A <Tara.Walsh@novascotia.ca>
Cc: Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>; Chouinard, Vanessa P <Vanessa.Chouinard@novascotia.ca>
Subject: RE: SBAR Serious AEFI VITT

Thanks Shelley and good from me too.
Rob

From: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Sent: June 1, 2021 8:30 PM
To: Kiritsis, Tony <Tony.Kiritsis@novascotia.ca>; Walsh, Tara A <Tara.Walsh@novascotia.ca>; Strang, Robert <Robert.Strang@novascotia.ca>
Cc: Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>; Chouinard, Vanessa P <Vanessa.Chouinard@novascotia.ca>
Subject: RE: SBAR Serious AEFI VITT

See red suggestions below. 14(1)

14(1)

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: Kiritsis, Tony <Tony.Kiritsis@novascotia.ca>
Sent: June 1, 2021 7:57 PM
To: Walsh, Tara A <Tara.Walsh@novascotia.ca>; Strang, Robert <Robert.Strang@novascotia.ca>
Cc: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>; Chouinard, Vanessa P <Vanessa.Chouinard@novascotia.ca>
Subject: RE: SBAR Serious AEFI VITT

Below is what was drafted today, from which we can pull a line or two for tomorrow. 14(1)

14(1)

COVID-19/HEALTH/WELLNESS--Province Reports First VITT Case

14(1)

14(1)

Tony Kiritsis
Communications Advisor
Department of Health and Wellness

From: Walsh, Tara A <Tara.Walsh@novascotia.ca>
Sent: June 1, 2021 6:15 PM
To: Strang, Robert <Robert.Strang@novascotia.ca>
Cc: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>; Chouinard, Vanessa P <Vanessa.Chouinard@novascotia.ca>; Kiritsis, Tony <Tony.Kiritsis@novascotia.ca>
Subject: Re: SBAR Serious AEFI VITT

I can yes. We have a separate rls drafted that tony can share now that we have these details.

Sent from my iPhone

> On Jun 1, 2021, at 6:03 PM, Strang, Robert <Robert.Strang@novascotia.ca> wrote:
>
> Thanks. 14(1) but would like Comms to comment.
> Suggest we bring to PO for their awareness before we include in tomorrow's release. Tara, can you do this through Jane?
> Rob
>
> **From:** Deeks, Shelley <Shelley.Deeks@novascotia.ca>
> **Sent:** June 1, 2021 5:57 PM
> **To:** Strang, Robert <Robert.Strang@novascotia.ca>; Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>; Walsh, Tara A <Tara.Walsh@novascotia.ca>; Chouinard, Vanessa P <Vanessa.Chouinard@novascotia.ca>
> **Subject:** SBAR Serious AEFI VITT
>
> Hi all
> The VITT case has now been reported. Below is the detail.
> Abbreviated SBAR with medical detail removed; 14(1); 20(1)

14(1); 20(1)

Please let me know what else is needed. Team can now report to PHAC tomorrow.

Client Demographics	Male 20(1)
Situation	Serious AEFI-Client received 1st dose of Astra Zeneca 20(1) 20(1) symptoms including progressive headache
Background	20(1)
Assessment	Reportable To PHAC Fits temporal criteria VITT occurred within 42 days.
Recommendations	Second dose whether it be Moderna or Pfizer to be determined by Specialist.

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM

Deputy Chief Medical Officer of Health

Department of Health and Wellness

From: Whynot, Lesley
To: Deeks, Shelley; episupport; Billard, Bev A; Cole, Teri J
Subject: Serious AEFIs- Fw: Client ID 20(1) AEFI 20(1) stroke/thrombus 20(1)
Date: June 8, 2021 1:10:01 PM
Attachments: image001.png

Hi all,
Two serious AEFIs to report:

20(1) M, Pfizer 20(1)
20(1)
This case is arguably not an AEFI 20(1) but we decided to report.

Today- see case below.
PHN is continuing to gather information on the case.

From: Whynot, Lesley
Sent: June 8, 2021 1:05 PM
To: COVID-19 AEFIs
Cc: Piek, Krista; St. Pierre, Noella
Subject: Re: Client ID 20(1) AEFI 20(1) stroke/thrombus 20(1)

Hi Noella,

Thanks for the detailed SBAR.
Let's wait until we have all relevant medical history, and find out what specialist consultation is happening with this case. It's important to make sure we have all the details around any risk factors for thrombotic stroke.

I may run this case by our hematologist before determining next steps.
Keep me posted.
Thanks,

Lesley Whynot, MD, CCFP
Physician Lead, AEFI Management, Nova Scotia Health & Wellness
Assistant Professor, Dept. Family Medicine, Dalhousie University
20(1) cell
lesley.whynot@nshealth.ca

From: COVID-19 AEFIs
Sent: June 8, 2021 11:39:26 AM
To: Whynot, Lesley
Cc: Piek, Krista; St. Pierre, Noella
Subject: Client ID 20(1) AEFI 20(1) stroke/thrombus 20(1)

Hi Dr Whynot,
Please see SBAR below.
Thanks,

Kimberly McClellan BScN, RN, CCHN ©
Public Health Services
600 Abenaki Road, Truro, NS
Cell: 18(1)(a)
Confidential Fax: 902-892-2614
General Fax: 902-893-5839
www.nshealth.ca

From: COVID-19 AEFIs
Sent: Tuesday, June 8, 2021 11:19 AM
To: COVID-19 AEFIs <CovidAEFI@nshealth.ca>

Subject: Client ID 20(1) serious AEFI - stroke/trombus 20(1)

Good morning,

Here's the SBAR on serious AEFI with client 20(1) with stroke/probable blood clot.

Best regards,

Noella

Client Demographics	• 20(1) **female** 20(1) **ID** 20(1)
Situation	20(1) post-vaccination with 1st dose of Moderna vaccine, administered 20(1) 20(1)
Background	Background: 20(1) Describe the event: • Moderna, 1st dose, lot # 3002331, administered on 20(1)

20(1)

•

•

	20(1)
Assessment	
Recommendations	
Questions for MOH	

From: Sommers, Ryan
Sent: Tue, 5 Apr 2022 18:48:13 +0000
To: Deeks, Shelley
Subject: RE: Weekly COVID AEFI summary from MOH Nov 26- Dec2

I replied to your initial email – let me know your thoughts on getting the AEFI team to produce a regular report.

Ryan

Dr. Ryan Sommers, MD, CCFP, FRCPC (PHPM)
Senior Regional Medical Officer of Health and Senior Medical Director Public Health
Nova Scotia Health Authority
Family Physician

Colchester East Hants Health Centre
Public Health Services
Level 1 / Wing B
600 Abenaki Road
Truro, Nova Scotia
B2N 5A1
Office: (902) 893 – 5820
Fax: (902) 893 – 2614
Email: ryan.sommers@nshealth.ca
www.nshealth.ca

From: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Sent: Tuesday, April 5, 2022 9:59 AM
To: Sommers, Ryan <Ryan.Sommers@nshealth.ca>
Subject: FW: Weekly COVID AEFI summary from MOH Nov 26- Dec2

Here is an example of the information I received from Lesley, which allowed me to maintain line of sight on serious AEFIs. I would like this to continue if possible.

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: Whynot, Lesley <Lesley.Whynot@nshealth.ca>
Sent: December 10, 2021 11:13 AM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Cc: Billard, Bev A <Bev.Billard@novascotia.ca>; episupport <episupport@nshealth.ca>; Boland, Melissa L <Melissa.Boland@novascotia.ca>; Fleming, Sarah A <Sarah.Fleming@novascotia.ca>
Subject: Weekly COVID AEFI summary from MOH Nov 26- Dec2

Summary of AEFIs that have come across my desk Dec 3-Dec 9. Any questions welcome. **Pls note the peri/myocarditis cases are separated out for clarity.**

Allergic- possible anaphylaxis (0)

Other possible allergic

20(1)

20(1)

rash/ 20(1)

Neurological

20(1) Bell's palsy

20(1) migraines

query Bell's palsy 20(1) F, 20(1)

Other non-serious

20(1) rheumatologic flare 20(1)

20(1) exacerbation complex pain syndrome

20(1) RA

20(1) ISRR

20(1) flare- lichen planus

Serious Hospitalized

20(1) vestibulopathy(hospitalized), flare- lichen planus- 20(1)

Serious Death (0)

Pericarditis/Myocarditis (0)

Other

20(1) chest pain NYD 20(1)

20(1) old case, chest pain NYD 20(1)

20(1) giant cell arteritis- not within timeframe

Lesley Whynot, MD, CCFP

Physician Lead, AEFI Management, Nova Scotia Health & Wellness

Assistant Professor, Dept. Family Medicine, Dalhousie University

20(1) cell

lesley.whynot@nshealth.ca

From: Deeks, Shelley
Sent: Tue, 12 Apr 2022 17:54:24 +0000
To: McIsaac, Kathryn
Subject: FW: Monthly AEFI Report (April 2022)
Attachments: 20220404_Monthly AEFI Report_KMW.final.docx

I know I do not review anymore, but just to flag that AEFI versus AEFIs is not consistent. AEFI is singular (an adverse event) and AEFIs is plural (many adverse events). I also see that there is an AEFI's. I suspect comms will catch it but wanted to flag.

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: Wilson, Kevin Michael <Kevin.Wilson@novascotia.ca>
Sent: April 12, 2022 2:29 PM
To: Tobin, Lisa A <Lisa.Tobin@novascotia.ca>
Cc: McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>; Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Subject: Monthly AEFI Report (April 2022)

Hi Lisa,

Please find attached the AEFI report for the month (covering up to the end of March). It's been reviewed by another epi and a couple of rounds of review by Katie.

Cheers,

Kevin

Adverse Events Following Immunization (AEFI) with COVID-19 Vaccines in Nova Scotia
December 16, 2020 to March 31, 2022

This Report in Context

- Nova Scotia has administered 2,262,186 doses of COVID-19 vaccine since December 16, 2020 (+20,133 in the last month).
- There have been 752 Adverse Events Following Immunization (AEFI) (+30 in the last month)
- The majority of AEFIs in Nova Scotia were non-serious (83.3%) and 16.8% were serious
- The risk of any AEFIs is low (33.2 per 100k doses administered). The risk of serious AEFI's is also low (5.6 per 100k doses administered)
- In comparison, the rate of AEFIs reported in Canada, to date are:
  - 38 non-serious events per 100k doses administered 10 serious adverse events per 100k doses administered.[i]
- Females report more AEFIs than males
- Those aged 30-64 report the most AEFIs. Those aged 5-17 years old report the fewest AEFIs

Overall Summary of Adverse Events Following Immunization

Between December 16, 2020 and March 31, 2022 Nova Scotia has administered 2,262,186 doses of COVID 19 vaccine and has received a total 752 reports of adverse events following immunization.

Table 1:Number and rate of AEFI reported following immunization for COVID-19, December 16, 2020 to March 31, 2022

	Number	Per 100k Doses
Total AEFIs	752	33.2
Non-Serious AEFIs	626	27.7
Serious AEFIs	126	5.6

Table 2: Number and rate of AEFI reported following immunization for COVID-19, by vaccine product, December 16, 2020 to March 31, 2022

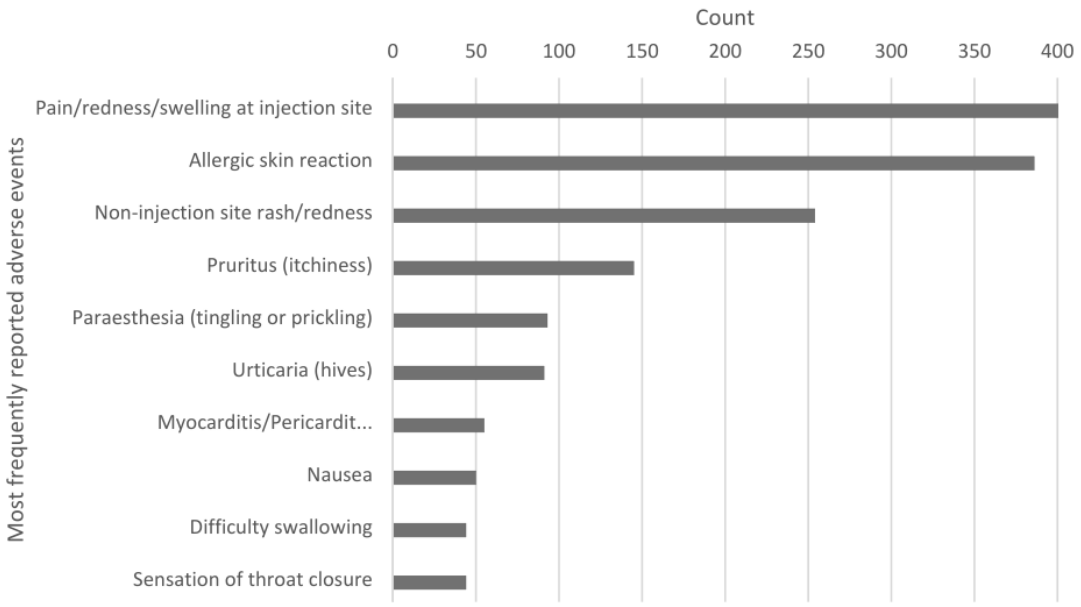
	Pfizer	Moderna	COVISHIELD/AZ	Unknown/Other	Total
Total number of AEFIs reported	449	239	60	4	752
Number of Non-Serious AEFIs	386	182	54	4	626
Number of Serious AEFIs	63	57	6	0	126
Total number of doses administered	1513851	684446	61899	1990	2262186
Total AEFI reported per 100,000 doses	29.6	34.9	96.9	201.0	33.2
Serious AEFI reported per 100,000 doses	4.2	8.3	9.7	0.0	5.6

Table 3: Number and rate of AEFI reported following immunization for COVID-19, by age group and sex, December 16, 2020 to March 31, 2022

Age Group	Female		Male		Total	
	N	Rate per 100,000 doses	N	Rate per 100,000 doses	N	Rate per 100,000 doses
5-17*	16	17.8	10	10.8	26	14.2
18-29	62	38.5	38	24.9	100	31.9
30-49	191	63.4	51	18.9	242	42.4
50-64	165	55.3	54	19.9	219	38.4
65-79	80	32.0	49	21.5	129	27.0
80+	25	28.9	11	18.4	36	24.6
Total	539	45.4	213	19.8	752	33.2

*2 AEFI report in children 5-11 years of age

Figure 1: Number of the ten most frequently reported adverse events following immunization for COVID-19, December 16, 2020 to March 31, 2022



**An AEFI report may contain multiple adverse events. The total adverse event-specific counts may not equal the total number of AEFI reports. This does not include AEFIs classified in the composite "Other" category.*

Serious Adverse Events Following Immunization Summary

An event is serious if it occurs within a specified time period after vaccination and it results in hospitalization, is life threatening, or results in death.[ii] These reports do not imply a causal relationship between the vaccine and the adverse event. As more Nova Scotians are vaccinated, a greater number of adverse events that are incidental to vaccination will be reported.

Between December 16, 2020 and March 31, 2022, there have been a total 126 Serious Adverse Events Following Immunization reported in Nova Scotia.

116 of these adverse event reports required hospitalization

2 of these adverse event reports resulted in permanent disability

There were 10 reports of death within 30 days of vaccination. Reports of death are events temporally associated with vaccine that have not been clearly attributed to other causes. A preliminary review of these events indicated that none were clearly attributable to the vaccine.

Adverse Events of Special Interest Following Immunization

There are three adverse events of special interest (AESI) following immunization which are being actively monitored in Canada as safety signals. Nova Scotia has reported 62 cases of adverse events of interest.

Myocarditis/Pericarditis

- 55 cases
- Cases ranged from 18 to 71 years of age
- 67% (n=37) cases among adolescents/young adults under 30 years of age
- 89% (n=49) occurred after dose 2; one case occurred after dose 3
- 73% (n=40) required hospitalization
- 91% (n=50) occurred within 7 days of vaccination
- 69% (n=38) occurred after vaccination with Moderna; 31% (n=17) occurred after vaccination with Pfizer

Guillain-Barre Syndrome

- 5 cases have occurred in total;
    - 2 cases occurred after Moderna vaccination (both after dose 1)
    - 2 cases occurred after Pfizer vaccination (1 after dose 1; 1 after dose 2)
    - 1 case occurred after COVISHIELD/AstraZeneca vaccine (after dose 1)

Vaccine-Induced Immune Thrombotic Thrombocytopenia (VITT)

- 2 cases have occurred in total
    - 2 cases occurred after vaccination with COVISHIELD/AstraZeneca

DATA NOTES

Data Sources:
Nova Scotia data: Panorama and CanImmunize

Definitions

Adverse Events Following Immunization (AEFI): A serious or non-serious reaction experienced by a patient following immunization.

The numbers included in the report reflect the number of AEFIs with a status of "Review complete", "Review complete, follow-up required" or "Follow-up complete" AND a Public Health Agency of Canada report date entered into Panorama

Serious AEFI: An adverse event following immunization that has resulted in at least one of the following:

- hospitalization or prolongation of existing hospitalization
- permanent disability
- death

Non-Serious AEFI: An adverse event following immunization that has resulted in at least one of the following:

- a reaction that did not require hospitalization or prolongation of existing hospitalization
- a reaction that did not result in permanent disability
- a reaction that did not result in death

Adverse Events of Special Interest (AESI): Adverse Events of Special Interest are reactions that are of special interest because they are monitored at a national and international level.

Safety Signal: When an Adverse Event Following Immunization occurs at greater than expected frequency for a specific vaccine type or within a specific population group

[i] https://health-infobase.canada.ca/covid-19/vaccine-safety/
[ii] https://health-infobase.canada.ca/covid-19/vaccine-safety/

From: Deeks, Shelley
Sent: Thu, 14 Apr 2022 18:24:50 +0000
To: Sommers, Ryan
Subject: RE: Weekly AEFI summary

Thanks!

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: Sommers, Ryan <Ryan.Sommers@nshealth.ca>
Sent: April 14, 2022 12:52 PM
To: Nejat, Amir <Amir.Nejat@nshealth.ca>
Cc: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Subject: Weekly AEFI summary

Hey Amir

Thanks for connecting today

As discussed, can you please send us a weekly breakdown of any significant AEFIs you dealt with each week.

Below is an example of what Lesley used to provide Shelley (I've included Shelley on this email). It's broken down by category and include the pano ID. As you can see, we don't need a lot of information.

Let's start next week. You can send us something at the end of the Week (Friday) or send us the weekly review the following Monday.

Reply back if you have any questions or comments.

Thanks

Kindly,

Ryan

Example

Allergic- possible anaphylaxis (0)

Other possible allergic

20(1)

20(1)

20(1) rash/ 20(1)

Neurological

20(1) Bell's palsy
20(1) migraines
query Bell's palsy 20(1) F, 20(1)

Other non-serious

20(1) rheumatologic flare 20(1)
20(1) exacerbation complex pain syndrome
20(1) 20(1) RA
20(1) ISRR
20(1) flare- 20(1)

Serious Hospitalized

20(1) vestibulopathy(hospitalized), 20(1)

Serious Death (0)

Pericarditis/Myocarditis (0)

Other

20(1) chest pain NYD 20(1)
20(1) old case, chest pain NYD 20(1)
20(1) giant cell arteritis- not within timeframe

Dr. Ryan Sommers, MD, CCFP, FRCPC (PHPM)
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Nova Scotia Health Authority
Family Physician

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From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: MOH AEFIS summary June 7-11
Date: January 10, 2023 9:16:10 AM

From: Strang, Robert
Sent: Sunday, June 13, 2021 10:18 AM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Subject: Re: MOH AEFIS summary June 7-11

Will be interesting. So we do have serology for specific cases?

Rob

Sent from my iPhone

> On Jun 13, 2021, at 9:47 AM, Deeks, Shelley <Shelley.Deeks@novascotia.ca> wrote:
>
> Having some conversations re the COVID toes case, as I am hoping we can get PCR testing to see if actually had history of infection.
>
> ***Shelley Deeks, MD, MHSc, FRCPC, FAFPHM***
> ***Deputy Chief Medical Officer of Health***
> Department of Health and Wellness
>
> ---
>
> **From:** Whynot, Lesley <Lesley.Whynot@nshealth.ca>
> **Sent:** June 12, 2021 5:33 PM
> **To:** Deeks, Shelley <Shelley.Deeks@novascotia.ca>; episupport <episupport@nshealth.ca>; Billard, Bev A <Bev.Billard@novascotia.ca>; Cole, Teri <Teri.Cole@iwk.nshealth.ca>
> **Subject:** MOH AEFIS summary June 7-11
>
> Hi this is a quick summary of all 24 AEFIs that have come across my desk June 7-11. Some may not yet completed in Panorama. Any questions welcome. Let me know if you need me to sort these a little differently .
>
> **Allergic- possible anaphylaxis (3)**
> 20(1) Pfizer
> Pfizer
> Pfizer
>
> **Other possible allergic (5)**
> 20(1) Pfizer ORS
> Pfizer

20(1) Mod
Pfizer
Pfizer

Neurological (1)

20(1) Pfizer 20(1) F, seizure 20(1)

Other non-serious (8)

20(1) Mod 20(1) F, erythema multiforme rash 20(1)
20(1)
20(1) Mod 20(1) M, petechial rash/?hives 20(1)
Mod F, hyperthyroidism, 20(1)
20(1) Pfz 20(1) F , "?pericarditis" on AEFI form but NO findings on investigations indicating this, 20(1)
20(1)
20(1) Mod 20(1) M, ITP 20(1)
Mod 20(1) M, PE 20(1) more information requested
20(1) Mod 20(1) F, vitreous detachment
Mod 20(1) F, rash toes 20(1)
20(1)

Serious Hospitalized (6)

20(1) Pfizer 20(1) M, cardiac arrhythmia, 20(1)
Mod 20(1) F, thrombotic stroke 20(1)
20(1) Pfizer 20(1) F, pericarditis 20(1)
20(1)
20(1) Mod 20(1) F, ischemic stroke, 20(1)
20(1)
20(1) Pfizer 20(1) F, ischemic stroke, 20(1)
20(1)
20(1) Mod 20(1) F, hemorrhagic stroke 20(1)
20(1)

Serious Death (1)

20(1) Mod 20(1) F, PE 20(1)

Lesley Whynot, MD, CCFP
Physician Lead, AEFI Management, Nova Scotia Health & Wellness
Assistant Professor, Dept. Family Medicine, Dalhousie University
20(1) cell
lesley.whynot@nshealth.ca

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: MOH AEFIs June 14- 18
Date: January 10, 2023 9:15:55 AM

From: Strang, Robert
Sent: Monday, June 21, 2021 8:17 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Subject: Re: MOH AEFIs June 14- 18

So we would have to acknowledge a singe case but with few details due to privacy.

Rob

Sent from my iPhone

> On Jun 21, 2021, at 8:11 PM, Deeks, Shelley <Shelley.Deeks@novascotia.ca> wrote:

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: Whynot, Lesley <Lesley.Whynot@nshealth.ca>
Sent: June 18, 2021 6:14 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; episupport <episupport@nshealth.ca>; Billard, Bev A <Bev.Billard@novascotia.ca>; Cole, Teri <Teri.Cole@iwk.nshealth.ca>
Subject: MOH AEFIs June 14- 18

Hi this is a quick summary of all 20 AEFIs that have come across my desk June 14-18. Some may not yet be completed in Panorama. Any questions welcome. Let me know if you need me to sort these a little differently .

Allergic- possible anaphylaxis (4)

20(1) Pfizer
Pfizer
Pfizer
20(1) Mod

Other possible allergic (2)

20(1) Mod
20(1) Pfizer

Neurological (0)

Other non-serious (5)

20(1) Pfizer ISRR
20(1) Mod 2nd dose, 20(1) M, ?pericarditis (questionable- 20(1)
Pfizer ISRR
20(1) Pfizer 20(1) F, HTN, tachycardia 20(1)
Mod Rash toes 20(1)

Serious Hospitalized (5)

20(1) Pfizer 20(1) F Seizure/ischemic stroke (?vasculitis) 20(1)
20(1)
20(1) Mod, 2nd dose, 20(1) M, **pericarditis** 20(1)
20(1)
20(1) Pfizer 20(1) F, STEMI 20(1)
Pfizer F, bilat PE, 20(1)

20(1) Pfizer 20(1) M, colitis 20(1)

Serious Death (0)

Other
(Old cases open > 4 weeks that needed sorting)
20(1) Serious 20(1) PE,- 20(1) case to be closed
20(1) ? PEG allergy 20(1)
20(1) Serious, 20(1) polyarthritis 20(1) 1st dose Pfizer, 20(1)

20(1) Mod 20(1) M, 20(1) IJ thrombus, 20(1) not reported b/c of time frame

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Physician Lead, AEFI Management, Nova Scotia Health & Wellness
Assistant Professor, Dept. Family Medicine, Dalhousie University
20(1) cell
lesley.whynot@nshealth.ca

From: Nejat, Amir
To: Deeks, Shelley; Sommers, Ryan
Subject: Re: AEFI June
Date: July 9, 2022 10:25:27 PM
Attachments: image001.jpg

Hi,

Any questions please let me know.

. ID #20(1) post-Pfizer 20(1) - AEFI reported - Pain, redness & swelling

2. ID #20(1) - generalized rash, 20(1) post 1st , 2nd booster Pfizer

3. ID #20(1) Ongoing hives 20(1) post-vaccination, Moderna
4. ID #20(1) covid-mRNA-Moderna Flare-up of gout

5. ID #20(1) covid Neuropathic pain
2nd dose Pfizer.

6. ID #20(1) Pfizer-20(1) rhabdomyolysis

7. ID #20(1) Pfizer 1st booster ,Difficulty walking/stiff joints post-vaccination
8. ID #20(1) AEFI - 20(1) upper arm swelling, with generalized rash 20(1)
9. ID #20(1) Pfizer- Lt arm pain, 20(1)

10. ID #20(1) pfizer& thrombocytopenia and AKI

11. Client ID 20(1) pfizer thrombocytopenia

12. Client ID 20(1)
Pfizer and possible CRVO - vision loss

Not responsive

15. ID #20(1) Pfizer vaccine
20(1) seizures, with possible onset 20(1) post-vaccination - 1st dose of mRNA vaccine.

Cheers,

Amir

From: Nejat, Amir
Sent: July 4, 2022 11:12:34 AM
To: Deeks, Shelley; Sommers, Ryan
Subject: Re: AEFI June

Sure,
Will send you the updated list.

Sorry for the confusion.

Amir

From: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Sent: July 4, 2022 8:48:18 AM
To: Nejat, Amir; Sommers, Ryan
Subject: RE: AEFI June

Thanks Amir – not all of the AEFIs below have a vaccine that is listed – in order to understand that list, it would be helpful to have which vaccine the AEFIs are associated with. Is that clearer?

For example: ID 20(1) Parotiditis 20(1)

Is this post COVID or mumps vaccine?

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: Nejat, Amir <Amir.Nejat@nshealth.ca>
Sent: June 30, 2022 10:57 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; Sommers, Ryan <Ryan.Sommers@nshealth.ca>
Subject: Re: AEFI June

Sorry Shelley,
I seemed to miss your questions.
I am reviewing COVID and Non COVID AEFIs if that's what you meant?

Cheers,

Amir

From: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Sent: June 14, 2022 2:27:33 PM
To: Nejat, Amir; Sommers, Ryan
Subject: RE: AEFI June

Thanks Amir. To assist with understanding, are the AEFIs without a vaccine all COVID?

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health

Department of Health and Wellness

From: Nejat, Amir <Amir.Nejat@nshealth.ca>
Sent: June 14, 2022 1:56 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; Sommers, Ryan <Ryan.Sommers@nshealth.ca>
Subject: Re: AEFI June

Hi Shelley and Ryan,

Below please find the AEFIs reviewed early June.

Cheers,

Amir

Not responsive

Page 37 to/à Page 40

Withheld

Not responsive

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: Client ID # 20(1) SBAR, AEFI - myocarditis, 20(1)
Date: January 10, 2023 9:15:09 AM

From: Strang, Robert
Sent: Monday, July 12, 2021 2:54 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Cc: Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>
Subject: Re: Client ID 20(1) - SBAR, AEFI - myocarditis, 20(1)

Concerning

Rob

Sent from my iPhone

> On Jul 12, 2021, at 2:51 PM, Deeks, Shelley <Shelley.Deeks@novascotia.ca> wrote:
>
> For awareness.
>
> ***Shelley Deeks, MD, MHSc, FRCPC, FAFPHM***
> ***Deputy Chief Medical Officer of Health***
> Department of Health and Wellness
>
> ---
>
> **From:** Deeks, Shelley
> **Sent:** July 12, 2021 2:51 PM
> **To:** 'Whynot, Lesley' <Lesley.Whynot@nshealth.ca>; episupport <episupport@nshealth.ca>; Billard, Bev A <Bev.Billard@novascotia.ca>
> **Subject:** RE: Client ID #20(1) - SBAR, AEFI - myocarditis, 20(1)
>
> Thanks Lesley – and the team knows to send surveillance information to DHW now and update later. This is critical as we are looking at this both provincially but also nationally.
>
> Bev – how many cases have you reported from NS to PHAC?
>
> Shelley
>
> ***Shelley Deeks, MD, MHSc, FRCPC, FAFPHM***
> ***Deputy Chief Medical Officer of Health***
> Department of Health and Wellness
>
> ---
>
> **From:** Whynot, Lesley <Lesley.Whynot@nshealth.ca>
> **Sent:** July 12, 2021 2:43 PM
> **To:** Deeks, Shelley <Shelley.Deeks@novascotia.ca>; episupport <episupport@nshealth.ca>; Billard, Bev A <Bev.Billard@novascotia.ca>
> **Subject:** Fw: Client ID #20(1) - SBAR, AEFI - myocarditis, 20(1)

Hi FYI this is the first of a couple of newly reported pericarditis/myocarditis cases coming in this week.

Lesley Whynot, MD, CCFP
Physician Lead, AEFI Management, Nova Scotia Health & Wellness
Assistant Professor, Dept. Family Medicine, Dalhousie University
20(1) cell
lesley.whynot@nshealth.ca

From: COVID-19 AEFIs
Sent: July 12, 2021 12:41 PM
To: Whynot, Lesley
Cc: MacLellan, Kristin
Subject: Client ID 20(1) SBAR, AEFI - myocarditis, 20(1)

Hi Dr Whynot,

We have several myocarditis/pericarditis reports that we received today. This is the first one.
Noella

From: MacLellan, Kristin <Kristin.MacLellan@nshealth.ca>
Sent: Monday, July 12, 2021 12:23 PM
To: COVID-19 AEFIs <CovidAEFI@nshealth.ca>
Subject: Client ID 20(1) SBAR, AEFI - myocarditis, 20(1)

Hi Noella – here is my SBAR

Thanks,
Kristin

Client Demographics	**Client ID** 20(1) **M CZ**
Situation	20(1) 20(1) Client received Moderna (Lot# 052C21A) 20(1) 20(1) and Pfizer (lot# EW0221) 20(1) 20(1) myocarditis. 20(1)
Background	20(1)

	20(1)
Assessment	
Recommendations	
Questions for MOH	

<image001.png>

Kristin MacLellan, RN, BScN, MPH
Public Health Nurse
Covid AEFI Response Team
Tel: 18(1)(a)
For information on Covid 19, please visit
www.novascotia.ca/coronavirus

Coronavirus (COVID-19) - Government of Nova Scotia, Canada

www.novascotia.ca

Government of Nova Scotia's response to the COVID-19 pandemic.

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: MOH weekly AEFI summary August 9-12
Date: January 10, 2023 9:13:53 AM

From: Strang, Robert
Sent: Friday, August 13, 2021 1:42 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Cc: Whynot, Lesley <Lesley.Whynot@nshealth.ca>
Subject: RE: MOH weekly AEFI summary August 9-12

Thank you both.

Rob

From: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Sent: August 13, 2021 8:23 AM
To: Strang, Robert <Robert.Strang@novascotia.ca>
Cc: Whynot, Lesley <Lesley.Whynot@nshealth.ca>
Subject: FW: MOH weekly AEFI summary August 9-12

FYI – Lesley will send directly to you while I am away.

Cheers
Shelley

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: Whynot, Lesley <Lesley.Whynot@nshealth.ca>
Sent: August 12, 2021 6:20 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; Billard, Bev A <Bev.Billard@novascotia.ca>; episupport <episupport@nshealth.ca>
Subject: MOH weekly AEFI summary August 9-12

Summary of AEFIs that have come across my desk Mon Aug 9- Thur Aug 12. This is only for 4 days, as tomorrow's cases will be rolled into next week, because we are moving to a Fri-Thurs cycle. Some cases may not yet be completed in Panorama. Any questions welcome.

Pls note the peri/myocarditis cases are separated out into their own category for clarity, and some may have changed from probable to confirmed, etc. since my original review and **several cases were changed to to non-cardiac since originally reported**. All cardiac cases have been reported to PHAC according to investigating PHNs.

Allergic- possible anaphylaxis

20(1) Pfz2

Pfz2

20(1) Pfz2

Other possible allergic

20(1) Pfz1 20(1) , 20... M, local soft tissue swelling, 20(1)

Neurological (0)

Other non-serious

20(1) Pfz2, costochondritis
Pfz2, chest pain NYD 20(1) F, 20(1)
20(1) Mod1, 20F, chest pain/ISRR (originally reported as chest pain)
20(1) Pfz2, 20F, reported as chest pain-20(1)
Pfz2, 20M, reported as chest pain/?cardiac, 20(1)
20(1) Pfz1, 20F, flare inflammatory oligoarthritis 20(1)
20(1) Pfz2, (originally reported as probable Myocarditis) 20F 20(1)
20(1)

Serious Hospitalized (0)

Serious Death (0)

Cardiac

20(1) Pfz2, 20M, 20(1) probable pericarditis, 20(1)

Other

20(1) Mod2, (originally possible myocarditis) 20(1) F 20(1)
20(1) did not feel vaccine related, not reported to PHAC

Lesley Whynot, MD, CCFP
Physician Lead, AEFI Management, Nova Scotia Health & Wellness
Assistant Professor, Dept. Family Medicine, Dalhousie University
20(1) cell
lesley.whynot@nshealth.ca

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: Weekly AEFI MOH Summary August 16-20 2021
Date: January 10, 2023 9:13:37 AM

From: Strang, Robert
Sent: Sunday, August 22, 2021 9:33 PM
To: Whynot, Lesley <Lesley.Whynot@nshealth.ca>; Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Cc: Billard, Bev A <Bev.Billard@novascotia.ca>; episupport <episupport@nshealth.ca>; Fleming, Sarah A <Sarah.Fleming@novascotia.ca>
Subject: RE: Weekly AEFI MOH Summary August 16-20 2021

Thank you Lesley

Rob

From: Whynot, Lesley <Lesley.Whynot@nshealth.ca>
Sent: August 21, 2021 9:50 AM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; Strang, Robert <Robert.Strang@novascotia.ca>
Cc: Billard, Bev A <Bev.Billard@novascotia.ca>; episupport <episupport@nshealth.ca>; Fleming, Sarah A <Sarah.Fleming@novascotia.ca>
Subject: Weekly AEFI MOH Summary August 16-20 2021

Good morning,
Summary of AEFIs that have come across my desk Aug 13- 19 . Sorry for delay, we had a power outage here most of yesterday. Some cases may not yet be completed in Panorama.
Of note- 3 cases of facial nerve palsy, plus one unconfirmed case.
One death-20(1) details below.
NO cases of myo/pericarditis this week!
Any questions welcome.

Allergic- possible anaphylaxis
20(1) F, Pfz2

Other possible allergic
20(1)

Neurological
20(1) **probable Bell's Palsy** (still investigating) 20(1) Mod1, 20(F
Bell's Palsy, 20(1) Mod2, 20(M,
20(1) **Bell's palsy vs TGNeuralgia**, 20(1) Pfz1, 20F, 20(1)
Bell's Palsy, 20(1) Pfz 2, 20M
20(1) bilateral leg pain/paresthesia 20(1) Pfz1, 20(1)
optic neuritis, 20(1) Pfz1, 20(1)
20(1)
20(1) paresthesia face, 20(1) Mod2, 20F

Other non-serious
20(1) ISRR (reported as neuro symptoms)
20(1) (old case from May) 20F 20(1)
20(1) leg cramps
ISRR vs TIA, 20M, Pfz1, 20(1)
chest pain NYD, (ruled non-cardiac) 20(1) Mod2, 20F
ISRR/pseudoseizures, 20F, Mod2
20(1) Mod2, 20(M 20(1)
20(1)
20(1) rash toes, 20(1) Pfz2 20(M

20(1) chest pain/fever (cardiac ruled out), 20(1) Pfz2, 20(M, 20(1)
vertigo 20(1) Pfz1 20 F
20(1) palpitations, Pfz2, 20 M
20(1) chest pain NYD 20(1) ost Pfz2, 20 M,
20(1) ISRR (reported as allergy)
20(1) abdominal pain, 20(20(1)
ISRR (reported as neuro sx)

Serious Hospitalized

20(1) Mod2, 20M, 20(1)
20(1)

Serious Death

20(1) CVA, 20(1) Mod2, 20(M, 20(1)
20(1)

Lesley Whynot, MD, CCFP
Physician Lead, AEFI Management, Nova Scotia Health & Wellness
Assistant Professor, Dept. Family Medicine, Dalhousie University
20(1) cell
lesley.whynot@nshealth.ca

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: MOH AEFI weekly summary Aug 20-26
Date: January 10, 2023 9:13:17 AM

From: Strang, Robert
Sent: Friday, August 27, 2021 11:46 AM
To: Whynot, Lesley <Lesley.Whynot@nshealth.ca>; Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Cc: Billard, Bev A <Bev.Billard@novascotia.ca>; Fleming, Sarah A <Sarah.Fleming@novascotia.ca>; episupport <episupport@nshealth.ca>
Subject: RE: MOH AEFI weekly summary Aug 20-26

Thank you for this and your ongoing work in this important component of our vaccine program.

Rob

From: Whynot, Lesley <Lesley.Whynot@nshealth.ca>
Sent: August 27, 2021 10:45 AM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; Strang, Robert <Robert.Strang@novascotia.ca>
Cc: Billard, Bev A <Bev.Billard@novascotia.ca>; Fleming, Sarah A <Sarah.Fleming@novascotia.ca>; episupport <episupport@nshealth.ca>
Subject: MOH AEFI weekly summary Aug 20-26

Good morning,
Summary of AEFIs that have come across my desk Aug 20-27 . Some cases may not yet be completed in Panorama.
* Death reported last week changed to stroke 20(1) as date of death was found to be incorrect.
One possible (low likelihood) peri/myocarditis 20(1) see below.
One confirmed GBS and one query GBS 20(1)
20(1)
Any questions welcome.

Allergic- possible anaphylaxis
20(1) Pfz2, 20(1)

Other possible allergic (0)

Neurological
20(1) Pfz2, ?GBS 20(1)
20(1) Pfz2, GBS 20(F, 20(1)
20(1)
20(1) Pfz1 paresthesia arm/face
Pfz1, persistent headaches
20(1) Pfz1 paresthesias, 20(1)

Other non-serious
20(1) AZ, (old case from April), thrombocytopenia 20(1)
Pfz2, fatigue/myalgias, 20(1)
20(1) Mod2, chest pain NYD 20(1)
20(1) Pfz1, hyperthyroidism, 20(1) determined not reportable
20(1) Pfz1, ISRR 20(1)
20(1) Pfz1, palpitations (PVCs)
20(1) Mod2 vision changes (not an AEFI)
20(1) Pfz1, chest pain/palpitations 20(F 20(1)
20(1)

Serious Hospitalized

20(1) Mod2. (reported last week as death, but dates incorrect)- 20(1)
20(1)

Serious Death (0)

Lesley Whynot, MD, CCFP
Physician Lead, AEFI Management, Nova Scotia Health & Wellness
Assistant Professor, Dept. Family Medicine, Dalhousie University
20(1) cell
lesley.whynot@nshealth.ca

From: Deeks, Shelley
Sent: Fri, 4 Nov 2022 16:30:42 +0000
To: Strang, Robert;Heatley, Jennifer G
Subject: FW: Quarterly AEFI Report Draft
Attachments: 20221018_Quarterly_AEFI Report.v4.docx, 20221018_Quarterly_AEFI Report.v4.pdf

Hi both

Rob I typically forward these to you.

Jen do you want me to send to you as well.

My response to Jenna: Jenna – to put in perspective, if another diagnosis is reached for something that is reported as an AEFI, the case would no longer meet the AEFI criteria. This is one reason that data change over time

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>
Sent: November 4, 2022 11:25 AM
To: MacQueen, Jenna <Jenna.MacQueen@novascotia.ca>; Tobin, Lisa A <Lisa.Tobin@novascotia.ca>
Cc: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Subject: RE: Quarterly AEFI Report Draft

Hi Jenna:

We did a triple check of the data and GBS did decrease by 1. Shelley Deeks has designated approval of the AEFI report to me. She is cc'ed for her awareness.

Please go ahead and post the AEFI report.

NOVA SCOTIA
Health and Wellness

Katie McIsaac, PhD
she/her/hers
Scientific Strategy and Surveillance Specialist
Public Health Branch
Cell: 902-717-0543
Email: Kathryn.mcisaac@novascotia.ca

I live and work on Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People

From: MacQueen, Jenna <Jenna.MacQueen@novascotia.ca>
Sent: November 2, 2022 10:28 AM
To: Tobin, Lisa A <Lisa.Tobin@novascotia.ca>; McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>
Subject: RE: Quarterly AEFI Report Draft

Thanks Lisa and Katie. No edits from me.

Just one question for you that I would like to confirm. I see the note that says:

- There have been 703 Adverse Events Following Immunization (AEFI). The decline from previous quarterly reporting stems from ongoing data cleaning and updates to patient records as more information becomes available.

Is this also true for the 1 less case of Guillain-Barre Syndrome?

Also has this been approved by Dr. Deeks and ready for me to get it PDF'd to be posted online?

Thanks,
Jenna

From: Tobin, Lisa A <Lisa.Tobin@novascotia.ca>
Sent: November 2, 2022 8:47 AM
To: McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>; MacQueen, Jenna <Jenna.MacQueen@novascotia.ca>
Subject: RE: Quarterly AEFI Report Draft

Jenna – heads up that this will be our last quarterly AEFI report and that we will be moving to an annual report going forward. An annual schedule is consistent with best practices for AEFI reporting and Shelley has approved this timing shift.

Lisa

From: McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>
Sent: November 1, 2022 8:55 PM
To: MacQueen, Jenna <Jenna.MacQueen@novascotia.ca>
Cc: Wilson, Kevin Michael <Kevin.Wilson@novascotia.ca>; Tobin, Lisa A <Lisa.Tobin@novascotia.ca>
Subject: FW: Quarterly AEFI Report Draft

Good evening Jenna:

Please find attached the quarterly AEFI report, for the quarter June 1-September 30,2022.

Please let us know if you have any questions or suggestions.

NOVA SCOTIA
Health and Wellness

Katie McIsaac, PhD
she/her/hers
Scientific Strategy and Surveillance Specialist
Public Health Branch
Cell: 902-717-0543
Email: Kathryn.mcisaac@novascotia.ca

I live and work on Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People

---

From: Wilson, Kevin Michael <Kevin.Wilson@novascotia.ca>
Sent: October 31, 2022 4:59 PM
To: Tobin, Lisa A <Lisa.Tobin@novascotia.ca>
Cc: McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>
Subject: RE: Quarterly AEFI Report Draft

Hi Lisa,

Please find attached the PDF version of the quarterly AEFI report.

Cheers,

Kevin

From: McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>
Sent: October 25, 2022 5:53 PM
To: Wilson, Kevin Michael <Kevin.Wilson@novascotia.ca>
Cc: Tobin, Lisa A <Lisa.Tobin@novascotia.ca>
Subject: RE: Quarterly AEFI Report Draft

Kevin, please disregard the last version. There was a comment that wasn't included in the highlights section.

NOVA SCOTIA
Health and Wellness

Katie McIsaac, PhD
she/her/hers
Scientific Strategy and Surveillance Specialist
Public Health Branch
Cell: 902-717-0543
Email: Kathryn.mcisaac@novascotia.ca

I live and work on Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People

From: McIsaac, Kathryn
Sent: October 25, 2022 5:51 PM
To: Wilson, Kevin Michael <Kevin.Wilson@novascotia.ca>
Cc: Tobin, Lisa A <Lisa.Tobin@novascotia.ca>
Subject: RE: Quarterly AEFI Report Draft

Thanks for that additional information, Kevin.

Some minor changes. After we incorporate these, we should send to comms. Remind me of the SOP? Do you send to comms or do I?

NOVA SCOTIA
Health and Wellness

Katie McIsaac, PhD
she/her/hers
Scientific Strategy and Surveillance Specialist
Public Health Branch
Cell: 902-717-0543
Email: Kathryn.mcisaac@novascotia.ca

I live and work on Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People

From: Wilson, Kevin Michael <Kevin.Wilson@novascotia.ca>
Sent: October 25, 2022 3:20 PM
To: McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>
Cc: Tobin, Lisa A <Lisa.Tobin@novascotia.ca>
Subject: RE: Quarterly AEFI Report Draft

Hi Katie,

Here's the updated draft.

In my audit, I found that while most of the AEFIs falling out of the analysis were be re-classified as non-reportable, a sub-set were having the type of AEFI re-classified but remained reportable. The code was designed to select AEFIs based on the PHAC report date, but this actually updates whenever changes are made to the case record, and so several AEFIs were in Panorama but not showing up in the output because they were edited after the end of the reporting period (up to 30SEP2022). I've changed the code filter based on the date the AEFI was reported to public health, which doesn't auto-update when changes were made. This has returned ~20 AEFIs to the analysis cohort for the current period.

Kevin

From: McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>
Sent: October 21, 2022 10:45 AM
To: Wilson, Kevin Michael <Kevin.Wilson@novascotia.ca>
Cc: Tobin, Lisa A <Lisa.Tobin@novascotia.ca>
Subject: RE: Quarterly AEFI Report Draft

Thanks Kevin for this update. It's very helpful.

NOVA SCOTIA
Health and Wellness

Katie McIsaac, PhD
she/her/hers
Scientific Strategy and Surveillance Specialist
Public Health Branch
Cell: 902-717-0543
Email: Kathryn.mcisaac@novascotia.ca

I live and work on Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People

---

From: Wilson, Kevin Michael <Kevin.Wilson@novascotia.ca>
Sent: October 21, 2022 10:43 AM
To: McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>
Cc: Tobin, Lisa A <Lisa.Tobin@novascotia.ca>
Subject: RE: Quarterly AEFI Report Draft

Hi Katie,

I've asked the NSH Epis to refresh the non-MSI file (it's not currently being updated as all counts have switch to the MSI system). If it's completed today, I'll have the audit results ready for Monday morning. If there are complications with the update, then the audit will start some time on Monday.

Kevin

From: McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>
Sent: Thursday, October 20, 2022 11:56 AM
To: Wilson, Kevin Michael <Kevin.Wilson@novascotia.ca>
Cc: Tobin, Lisa A <Lisa.Tobin@novascotia.ca>
Subject: RE: Quarterly AEFI Report Draft

Hi Kevin:

Here are my comments.

I know we had briefly discussed the change in AEFI data at the end of day Tuesday, but I note there is a big difference in the number / rate AEFI reported. It's important that we understand why people who were not MSI eligible were included before but not now. We will put it on the list of things to discuss at our meeting next week.

Much appreciated,

Katie McIsaac, PhD

NOVA SCOTIA
Health and Wellness

she/her/hers
Scientific Strategy and Surveillance Specialist
Public Health Branch
Cell: 902-717-0543
Email: Kathryn.mcisaac@novascotia.ca

I live and work on Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People

---

From: Wilson, Kevin Michael <Kevin.Wilson@novascotia.ca>
Sent: October 19, 2022 4:31 PM
To: McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>
Subject: Quarterly AEFI Report Draft

Hi Katie,

Please find attached the draft version of this quarter's AEFI report.

Cheers,

Kevin

Adverse Events Following Immunization (AEFI) with COVID-19 Vaccines in Nova Scotia
December 16, 2020 to September 30, 2022

This Report in Context

- This quarterly report on adverse events following immunization (AEFI) with COVID-19 vaccine includes new AEFI reported between July 1, 2022 and September 30, 2022
- Nova Scotia has administered 2,478,183 doses of COVID-19 vaccine since the start of the COVID-19 immunization program (December 16, 2020) and 108,420 doses in the last quarter.
- There have been 703 Adverse Events Following Immunization (AEFI). The decline from previous quarterly reporting stems from ongoing data cleaning and updates to patient records as more information becomes available.
- The majority of AEFI in Nova Scotia (80.9%) were non-serious; 19.1% were serious
- The rate of AEFI reported in Nova Scotia is low (28.4 per 100k doses administered) and decreased slightly over this quarter. The rate of serious AEFI reported is also low (5.4 per 100k doses administered) and remained stable over this quarter.
- In comparison, the rate of AEFI reported in Canada, to date are:
    - 46 non-serious events per 100k doses administered
    - 12 serious adverse events per 100k doses administered.[i]
- AEFI are reported more often in females than males
- AEFI are reported most often in those aged 30-64 years and least often in those aged less than 18 years.
- In this quarter, COVID-19 immunizations were authorized for use in children aged 6 months to five years; to-date, no AEFI have been reported in this age group in Nova Scotia.

Overall Summary of Adverse Events Following Immunization

Between December 16, 2020 and September 30, 2022 Nova Scotia has administered 2,478,183 doses of COVID-19 vaccine and has received a total 703 reports of adverse events following immunization.

Table 1: Number and rate of AEFI reported following immunization for COVID-19, December 16, 2020 to September 30, 2022

	Number	Per 100k Doses Adminsitered
Total AEFIs	703	28.4
Non-serious AEFIs	569	23.0
Serious AEFIs	134	5.4

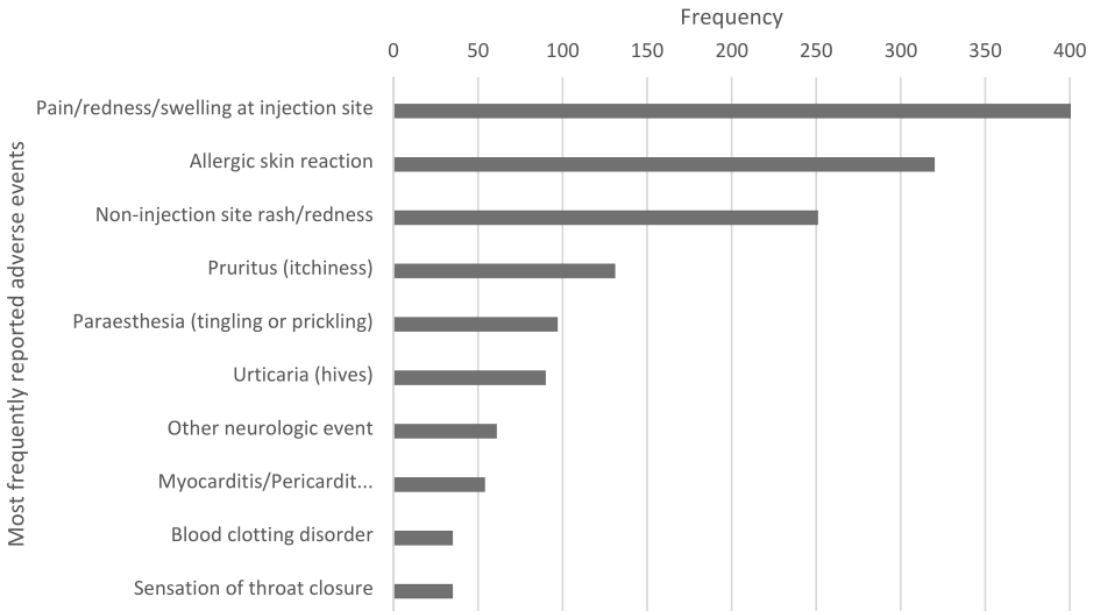
Table 2: Number and rate of AEFI reported following immunization for COVID-19, by vaccine product, December 16, 2020 to September 30, 2022

	Pfizer	Moderna	COVISHIELD/AZ	Unknown/Other	Total
Total Number of AEFIs Reported	416	227	51	9	703
Number of non-serious AEFIs	348	168	45	8	569
Number of serious AEFIs	68	59	6	1	134
Total Number of Doses Administered	1643401	750811	62734	21237	2478183
Total AEFI reporting rate per 100,000 doses	25.3	30.2	81.3	42.4	28.4
Serious AEFI reporting rate per 100,000 doses	4.1	7.9	9.6	4.7	5.4

Table 3: Number and rate of AEFI reported following immunization for COVID-19, by age group and sex, December 16, 2020 to September 30, 2022

Age Group	Female		Male		Total	
	N	Rate per 100,000 doses	N	Rate per 100,000 doses	N	Rate per 100,000 doses
<5	0	0.0	0	0.0	0	0.0
5-17*	19	18.4	13	12.2	32	15.3
18-29	52	30.8	38	23.9	90	27.5
30-49	175	55.9	48	17.2	223	37.7
50-64	145	44.9	51	17.5	196	31.9
65-79	76	25.7	52	19.6	128	22.8
80+	22	21.8	12	17.4	34	20.0
Total	489	37.4	214	18.3	703	28.4

Figure 1: Number of the ten most frequently reported adverse events following immunization for COVID-19, December 16, 2020 to September 30, 2022



**An AEFI report may contain multiple adverse events. The total adverse event-specific counts may not equal the total number of AEFI reports. This does not include AEFIs classified in the composite "Other" category.*

Serious Adverse Events Following Immunization Summary

An event is serious if it occurs within a specified time period after vaccination and it results in hospitalization, is life threatening, or results in death.[ii] These reports do not imply a causal relationship between the vaccine and the adverse event. As more Nova Scotians are vaccinated, a greater number of adverse events that are incidental to vaccination will be reported.

Between December 16, 2020 and September 30, 2022, there have been a total 127 Serious Adverse Events Following Immunization reported in Nova Scotia.

115 of these adverse event reports required hospitalization

1 of these adverse event reports resulted in permanent disability

There were 11 reports of death within 30 days of vaccination. Reports of death are events temporally associated with vaccine that have not been clearly attributed to other causes. A preliminary review of these events indicated that none were clearly attributable to the vaccine.

Adverse Events of Special Interest Following Immunization

There are three adverse events of special interest (AESI) following immunization which are being actively monitored in Canada as safety signals. Nova Scotia has reported 65 cases of adverse events of interest.

Myocarditis/Pericarditis

- 57 cases
- Cases ranged from 18 to 86 years of age
- 63.2% (n=39) cases among adolescents/young adults under 30 years of age
- 86% (n=49) occurred after dose 2; one case occurred after dose 3; two after dose 4
- 74% (n=42) required hospitalization
- 90% (n=57) occurred within 7 days of vaccination
- 68% (n=39) occurred after vaccination with Moderna; 31% (n=32) occurred after vaccination with Pfizer

Guillain-Barre Syndrome

- 4 cases have occurred in total;
    - 1 cases occurred after Moderna vaccination (after dose 1)
    - 2 cases occurred after Pfizer vaccination (1 after dose 1; 1 after dose 2)
    - 1 case after COVISHIELD/AstraZeneca (dose 1)

Vaccine-Induced Immune Thrombotic Thrombocytopenia (VITT)

- 2 cases have occurred in total
    - 2 cases occurred after vaccination with COVISHIELD/AstraZeneca

DATA NOTES

Data Sources:

Nova Scotia data: Panorama and CanImmunize

Definitions

Adverse Events Following Immunization (AEFI): A serious or non-serious reaction experienced by a patient following immunization.

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Safety Signal: When an Adverse Event Following Immunization occurs at greater than expected frequency for a specific vaccine type or within a specific population group

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[i] https://health-infobase.canada.ca/covid-19/vaccine-safety/
[ii] https://health-infobase.canada.ca/covid-19/vaccine-safety/

Adverse Events Following Immunization (AEFI) with COVID-19 Vaccines in Nova Scotia
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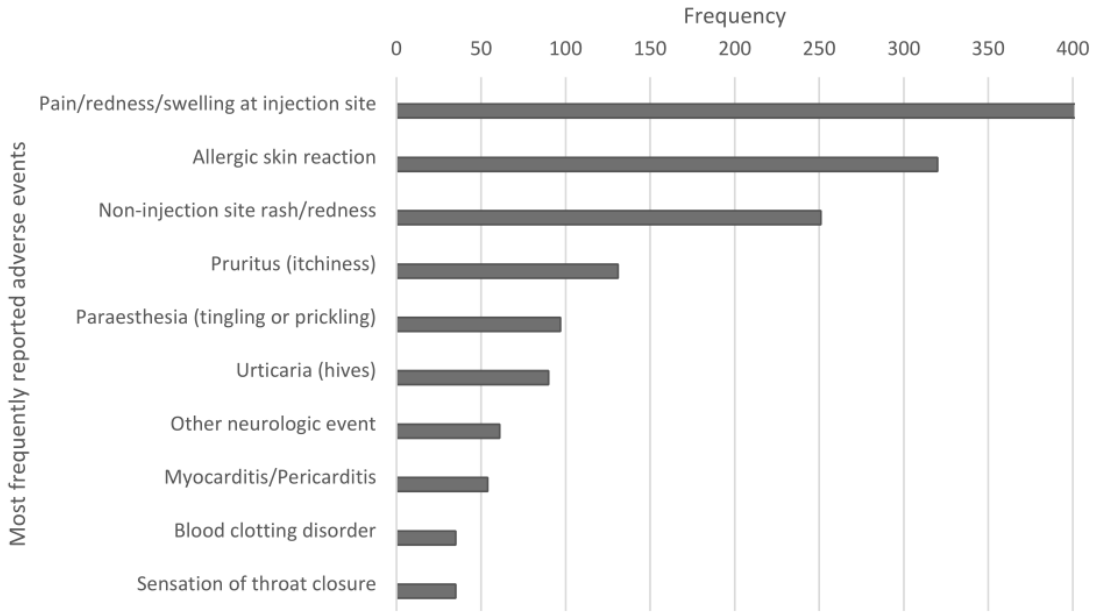

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DATA NOTES

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Nova Scotia data: Panorama and CanImmunize

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---

[i] https://health-infobase.canada.ca/covid-19/vaccine-safety/
[ii] https://health-infobase.canada.ca/covid-19/vaccine-safety/

From: Deeks, Shelley
Sent: Tue, 8 Nov 2022 18:46:31 +0000
To: McIsaac, Kathryn
Subject: RE: Quarterly AEFI Report Draft

Thanks Katie. This is really helpful

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>
Sent: November 8, 2022 1:58 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Subject: RE: Quarterly AEFI Report Draft

Hi Shelley:

The previous GBS patient was knocked out of the most recent report because they were a BC resident. All doses were administered in BC and they developed symptoms while visiting NS.

Kevin is revamping the AEFI report. AEFI from Ancestral and bivalent vaccines will be included in the annual report.

NOVA SCOTIA
Health and Wellness

Katie McIsaac, PhD
she/her/hers
Scientific Strategy and Surveillance Specialist
Public Health Branch
Cell: 902-717-0543
Email: Kathryn.mcisaac@novascotia.ca

I live and work on Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People

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From: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Sent: November 4, 2022 1:28 PM
To: McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>
Subject: RE: Quarterly AEFI Report Draft

Just to you. Do we know why the GBS was reclassified?

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>
Sent: November 4, 2022 11:25 AM
To: MacQueen, Jenna <Jenna.MacQueen@novascotia.ca>; Tobin, Lisa A <Lisa.Tobin@novascotia.ca>
Cc: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Subject: RE: Quarterly AEFI Report Draft

Duplicate

Page 68 to/à Page 71

Withheld

Duplicate

From: Deeks, Shelley
Sent: Thu, 15 Dec 2022 15:31:17 +0000
To: Dean, Kelly E;Strang, Robert;Tobin, Lisa A
Subject: FW: COVID-19 Weekly AEFI Report - May 27, 2021
Attachments: 20210527 COVID-19 AEFI Summary.pdf

This is the weekly report I am referring to

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: SURVEILLANCEDHW <SURVEILLANCEDHW@novascotia.ca>
Sent: May 27, 2021 5:18 PM
To: Arseneau, Marc <Marc.Arseneau@nshealth.ca>; Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>; Billard, Bev A <Bev.Billard@novascotia.ca>; Carew, Maureen <Maureen.Carew@novascotia.ca>; Chouinard, Vanessa P <Vanessa.Chouinard@novascotia.ca>; Cole, Teri J <Teri.Cole@novascotia.ca>; Cram, Jennifer <Jennifer.Cram@nshealth.ca>; Davis, Heather <Heather.Davis@novascotia.ca>; Deeks, Shelley <Shelley.Deeks@novascotia.ca>; episupport <episupport@nshealth.ca>; Fleming, Sarah A <Sarah.Fleming@novascotia.ca>; Heatley, Jennifer G <Jennifer.Heatley@novascotia.ca>; McClellan, Kim <Kim.McClellan@nshealth.ca>; Nichols, Michaela <Michaela.Nichols@novascotia.ca>; Patel, Alkesh <Alkesh.Patel@novascotia.ca>; Piek, Krista <Krista.Piek@nshealth.ca>; Sommers, Ryan <Ryan.Sommers@nshealth.ca>; Strang, Robert <Robert.Strang@novascotia.ca>; Whynot, Lesley <Lesley.Whynot@nshealth.ca>; Wilson, Maria <Maria.Wilson@novascotia.ca>; Zygmunt, Austin J <AustinJ2.Zygmunt@nshealth.ca>
Subject: COVID-19 Weekly AEFI Report - May 27, 2021

Hello,

Please see attached the Weekly COVID-19 AEFI Report.

Thank you,
DHW Surveillance Team

NOVEL CORONAVIRUS (COVID-19)

novascotia.ca/coronavirus

NOVA SCOTIA

Nova Scotia COVID-19 AEFI Summary: 27 May 2021, 16:00 †

NS Dept. Health & Wellness

†Immunization and AEFI data valid to 07:00 day of report. See Data Notes for more details.

Highlights

- There were 23 new AEFIs reported this week (May 20-26, 2021)
  - 8 serious (34.8%), 15 non-serious (65.2%)
  - *6 of the serious AEFIs are deaths that were not previously reported due to a data error. All of these deaths occurred in April and earlier in May.*
  - 6 Moderna (26.1%), 12 Pfizer (52.2%), 5 COVISHEILD/ASTRAZENECA (21.7%)
- Allergic reactions were the most commonly reported AEFIs this week (n=10, 38.5%)
- The serious AEFIs (excluding deaths) reported this week were classified as:
  - Neurologic event: Encephalopathy/Encephalitis
  - Other serious or unexpected events: Pulmonary Embolism

Summary of AEFI Details

Table 1. Summary of all COVID-19 AEFI reports received by COVID-19 vaccine product, December 16, 2020-May 26, 2021

	Pfizer	Moderna	COVISHIELD/AZ	Total
Total Number of AEFIs Reported	127	40	43	210
Number of non-serious AEFIs	110	35	41	186
Number of serious AEFIs	17	5	2	24
Total Number of Doses Administered	368402	115552	58199	542196
Total AEFI reporting rate per 100,000 doses	34.5	34.6	73.9	38.7
Serious AEFI reporting rate per 100,000 doses	4.6	4.3	3.4	4.4
Canadian total AEFI reporting rate per 100,000 doses*	30.9			

*https://health-infobase.canada.ca/covid-19/vaccine-safety/. Data valid up to May 14, 2021

Table 2. Number and rate of COVID-19 AEFI reports by age group and gender, December 16, 2020-May 26, 2021

Age Group	Female		Male		Total	
	N	Rate per 100,000 doses	N	Rate per 100,000 doses	N	Rate per 100,000 doses
<16	0	0.0	0	0.0	0	0.0
16-49	49	56.8	6	10.3	55	10.1
50-64	65	63.2	16	18.4	81	14.9
65-79	40	48.8	14	19.1	54	10.0
80+	14	43.6	6	29.3	20	3.7
Total	168	55.4	42	17.6	210	38.7
Canadian Totals*	4415	43.3	907	10.9	5488	30.9

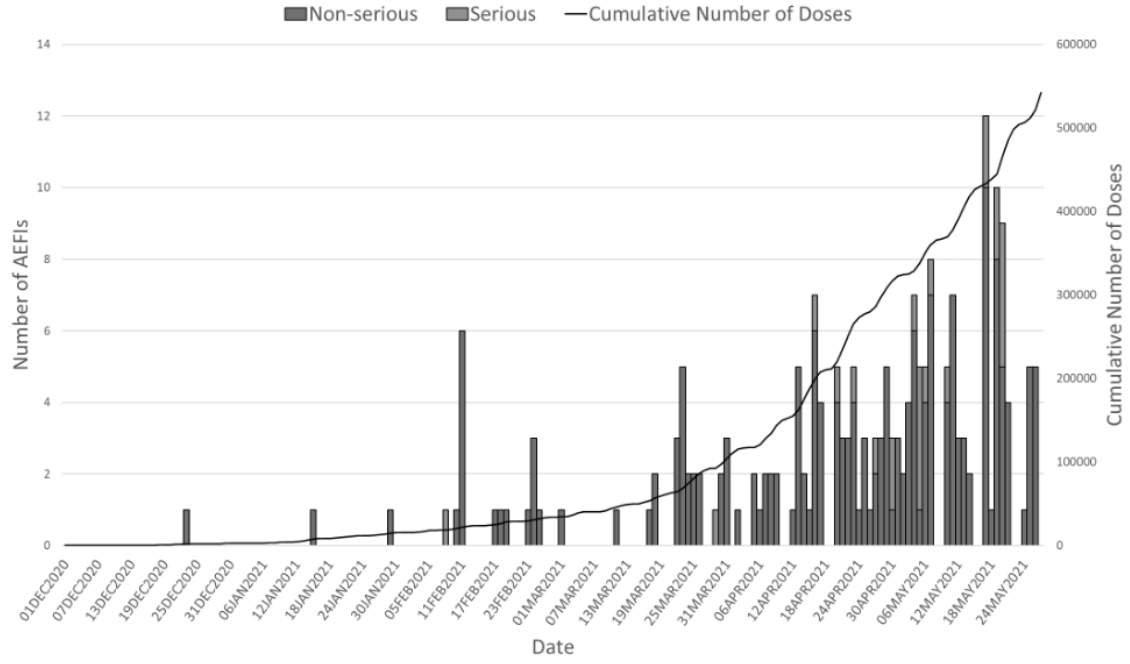
*https://health-infobase.canada.ca/covid-19/vaccine-safety/. Data valid up to May 14, 2021

Table 3. Summary of all COVID-19 AEFI reports received by reaction type, December 16, 2020-May 26, 2021

Reaction Type	Non-serious		Serious		Total
	n	%	n	%	
Local	28	100.0%	0	0.0%	28
Allergic	99	97.1%	3	2.9%	102
Neurologic	27	81.8%	6	18.2%	33
Other	30	66.7%	15	33.3%	45
Missing	2	100.0%	0	0.0%	2
Total	186	88.6%	24	11.4%	210

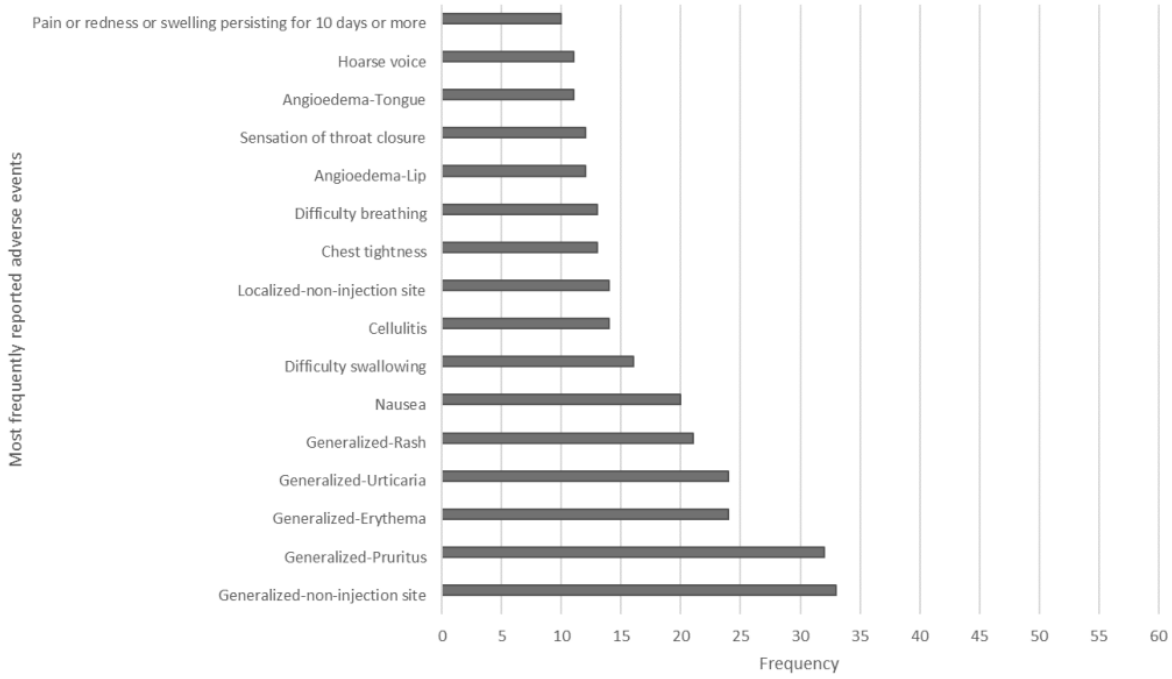
**Note: Definitions for reaction type categories are included in the data notes

Figure 1. Number of COVID-19 AEFI reports received and cumulative doses administered by week, December 16, 2020-May 26, 2021



[1]Date of AEFI report is based on the PHAC report date. Date of doses administered is based on immunization date.

Figure 2. Most frequently reported COVID-19 adverse events (serious and non-serious), December 16, 2020-May 26, 2021 (n=577*)



*Each overall AEFI report can include multiple adverse events

Serious AEFI Summary

Hospitalizations (n=18)

All of the reported serious AEFIs (n=18), excluding deaths, have required hospitalization. Only 2 of these cases have been classified as recovered 20(1) A summary of these 18 serious AEFIs are included below:

- 2 reports of neurologic symptoms
  20(1)
- 20(reports of myocardial infarction

20(1)

Deaths (n=6)

20(1) of the deaths 20(1) were individuals aged 65+. 20(1) death 20(1) was an individual in the 50-64 age group. A summary of the six deaths are included below:

20(1)

DATA NOTES

Data Sources:
Nova Scotia data**:** Panorama and CanImmunize
Canadian data**:** https://health-infobase.canada.ca/covid-19/vaccine-safety/

Definitions
AEFI: Adverse events following immunization

- The numbers included in the report reflect the number of AEFIs with a status of "Review complete", "Review complete, follow-up required" or "Follow-up complete"
  AND
  a PHAC report date entered into Panorama

Serious AEFI: An adverse event following immunization that has resulted in AT LEAST one of the following:

- Hospitalization or prolongation of existing hospitalization;
- Death or permanent disability/incapacity

Non-serious AEFI: An adverse event following immunization that does not meet the criteria for a serious AEFI (as described above) and meets the criteria below:

- A reaction that did not require hospitalization or prolongation of existing hospitalization
- A reaction that did not result in death or permanent disability/incapacity

**Reaction Type:

Local reaction:

- Local reaction at or near vaccination site include the following:
  - Infected abscess
  - Sterile abscess
  - Cellulitis
  - Reaction crosses joint
  - Lymphadenitis
  - Other, specify

Allergic reaction:

- Allergic and Allergic-like events include the following:
  - Anaphylaxis
  - Oculo-Respiratory Syndrome (ORS)
  - Other allergic events
- Allergic reactions are further classified into the following categories:
  - Skin/mucosal
  - Cardio-vascular
  - Respiratory
  - Gastrointestinal

Neurologic reaction:

- Neurologic events include the following:
  - Meningitis
  - Encephalopathy/Encephalitis
  - Guillain-Barre Syndrome (GBS)
  - Bell's Palsy

- Other Paralysis
- Seizure
- Anaesthesia
- Paraesthesia
- Other neurologic diagnosis, specify

Other reaction:

- Other events include the following:
  - Hypotonic-Hyporesponsive Episode (age <2 years)
  - Persistent crying
  - Intussusception
  - Arthritis
  - Parotitis
  - Rash (non-allergic)
  - Thrombocytopenia
  - Severe vomiting
  - Severe diarrhea
  - Fever ≥ 38.0°C
  - Other serious or unexpected event(s) not listed

From: Deeks, Shelley
Sent: Thu, 15 Dec 2022 18:43:32 +0000
To: Tobin, Lisa A
Cc: Dean, Kelly E;Stevens, Catherine L
Subject: FW: COVID-19 Weekly AEFI Report - May 13, 2021
Attachments: 20210513 COVID-19 AEFI Summary.pdf

It is these weekly AEFI reports we are referring to. I am not certain is this was the first one, but was May 2021

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: SURVEILLANCEDHW <SURVEILLANCEDHW@novascotia.ca>
Sent: May 13, 2021 7:55 PM
To: Billard, Bev A <Bev.Billard@novascotia.ca>; Carew, Maureen <Maureen.Carew@novascotia.ca>; Cole, Teri J <Teri.Cole@novascotia.ca>; Cram, Jennifer <Jennifer.Cram@nshealth.ca>; Davis, Heather <Heather.Davis@novascotia.ca>; Deeks, Shelley <Shelley.Deeks@novascotia.ca>; episupport <episupport@nshealth.ca>; Fleming, Sarah A <Sarah.Fleming@novascotia.ca>; Nichols, Michaela <Michaela.Nichols@novascotia.ca>; Patel, Alkesh <Alkesh.Patel@novascotia.ca>; Sommers, Ryan <Ryan.Sommers@nshealth.ca>; Strang, Robert <Robert.Strang@novascotia.ca>; Whynot, Lesley <Lesley.Whynot@nshealth.ca>; Wilson, Maria <Maria.Wilson@novascotia.ca>; Zygmunt, Austin J <AustinJ2.Zygmunt@nshealth.ca>
Subject: COVID-19 Weekly AEFI Report - May 13, 2021

Hello,

Please see attached the new Weekly COVID-19 AEFI Report. This report will now be produced on Thursdays.

Thank you,
DHW Surveillance Team

NOVEL CORONAVIRUS (COVID-19)

novascotia.ca/coronavirus

NOVA SCOTIA

Nova Scotia COVID-19 AEFI Summary: 13 May 2021, 16:00 †

NS Dept. Health & Wellness

†Immunization and AEFI data valid to 07:00 day of report. See Data Notes for more details.

Highlights

- There were 32 new AEFIs reported this week (May 6-12, 2021)
  - 1 serious (3%), 31 non-serious (97% total)
  - 6 Moderna (19%), 17 Pfizer (53%), 9 COVISHEILD/ASTRAZENECA (28%)
- Allergic reactions were the most commonly reported AEFIs this week (n=21, 65%)
- The serious AEFI reported this week was classified as an Other serious or unexpected event.
  - Progressive dyspnea, fatigue, chills, Pfizer, required hospitalization

Summary of AEFI Details

Table 1. Summary of all COVID-19 AEFI reports received by COVID-19 vaccine product, December 16, 2020-May 12, 2021

	Pfizer	Moderna	COVISHIELD/AZ	Total
Total Number of AEFIs Reported	105	31	34	170
Number of non-serious AEFIs	93	33	30	156
Number of serious AEFIs	12	1	1	14
Total Number of Doses Administered	267720	76907	58088	402733
Total AEFI reporting rate per 100,000 doses	39.2	40.3	58.5	42.2
Serious AEFI reporting rate per 100,000 doses	4.5	1.3	1.7	3.5
Canadian total AEFI reporting rate per 100,000 doses*	33.9			

*https://health-infobase.canada.ca/covid-19/vaccine-safety/. Data valid up to April 30, 2021

Table 2. Number and rate of COVID-19 AEFI reports by age group and gender, December 16, 2020-May 12, 2021

Age Group	Female		Male		Total	
	N	Rate per 100,000 doses	N	Rate per 100,000 doses	N	Rate per 100,000 doses
<16	0	0.0	0	0.0	0	0.0
16-49	40	92.3	6	29.4	46	11.4
50-64	50	63.8	15	24.2	65	16.1
65-79	32	40.8	9	12.9	41	10.2
80+	13	42.2	5	25.4	18	4.5
Total	135	58.4	35	20.4	170	42.2
Canadian Totals*	3709	47.9	691	11.5	4546	33.9

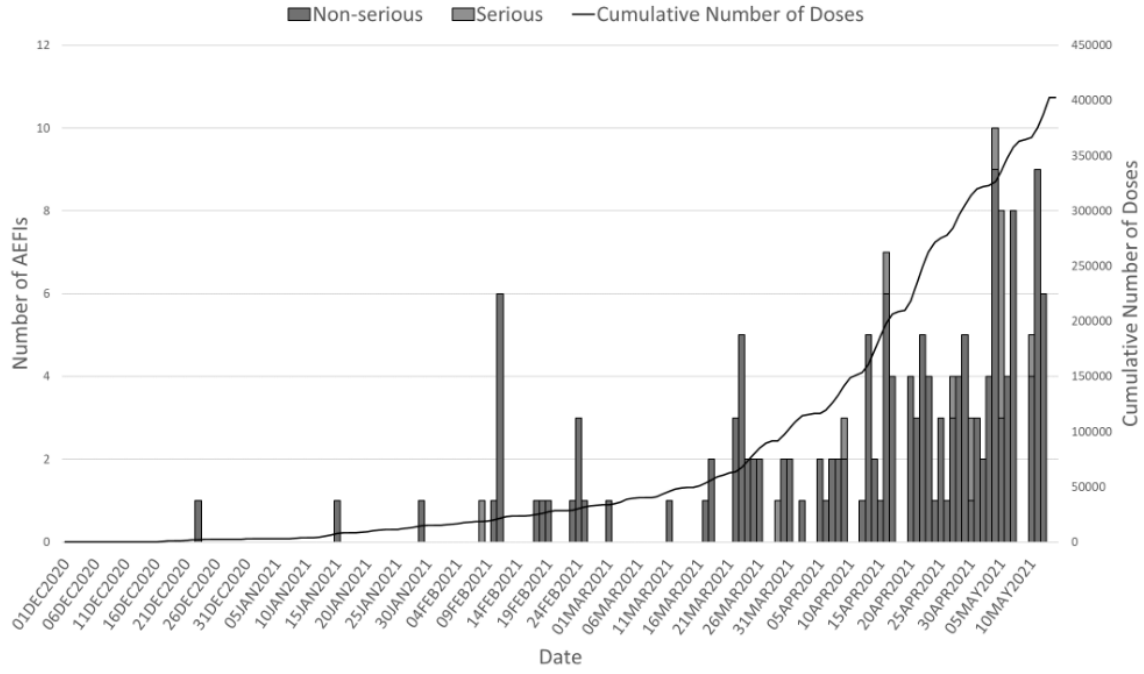
*https://health-infobase.canada.ca/covid-19/vaccine-safety/. Data valid up to April 30, 2021

Table 3. Summary of all COVID-19 AEFI reports received by reaction type, December 16, 2020-May 12, 2021

Reaction Type	Non-serious		Serious		Total
	n	%	n	%	
Local	24	100.0%	0	0.0%	24
Allergic	82	97.6%	2	2.4%	84
Neurologic	21	84.0%	4	16.0%	25
Other	27	77.1%	8	22.9%	35
Missing	2	100.0%	0	0.0%	2
Total	156	91.8%	14	8.2%	170

**Note: Definitions for reaction type categories are included in the data notes

Figure 1. Number of COVID-19 AEFI reports received and cumulative doses administered by week, December 16, 2020-May 12, 2021



[†]Date of AEFI report is based on the PHAC report date. Date of doses administered is based on immunization date.

Serious AEFI Summary

Hospitalizations (n=14)

All of the reported serious AEFIs (n=14) have required hospitalization. Only 20 of these cases have been classified as recovered 20(1) A summary of these 14 serious AEFIs are included below:

- 20 reports of neurologic symptoms
  20(1)
- 20 reports of myocardial infarction

20(1)

Deaths (n=0)

- No deaths attributed to administration of COVID-19 vaccine have been reported to date.

DATA NOTES

Data Sources:
Nova Scotia data**:** Panorama and CanImmunize
Canadian data**:** https://health-infobase.canada.ca/covid-19/vaccine-safety/

Definitions
AEFI: Adverse events following immunization

- The numbers included in the report reflect the number of AEFIs with a status of "Review complete", "Review complete, follow-up required" or "Follow-up complete"
  AND
  a PHAC report date entered into Panorama

Serious AEFI: An adverse event following immunization that has resulted in AT LEAST one of the following:

- Hospitalization or prolongation of existing hospitalization;
- Death or permanent disability/incapacity

Non-serious AEFI: An adverse event following immunization that does not meet the criteria for a serious AEFI (as described above) and meets the criteria below:

- A reaction that did not require hospitalization or prolongation of existing hospitalization
- A reaction that did not result in death or permanent disability/incapacity

**Reaction Type:

Local reaction:

- Local reaction at or near vaccination site include the following:
  - Infected abscess
  - Sterile abscess
  - Cellulitis
  - Reaction crosses joint
  - Lymphadenitis
  - Other, specify

Allergic reaction:

- Allergic and Allergic-like events include the following:
  - Anaphylaxis
  - Oculo-Respiratory Syndrome (ORS)
  - Other allergic events
- Allergic reactions are further classified into the following categories:
  - Skin/mucosal
  - Cardio-vascular
  - Respiratory
  - Gastrointestinal

Neurologic reaction:

- Neurologic events include the following:
  - Meningitis
  - Encephalopathy/Encephalitis
  - Guillain-Barre Syndrome (GBS)
  - Bell's Palsy

- Other Paralysis
- Seizure
- Anaesthesia
- Paraesthesia
- Other neurologic diagnosis, specify

Other reaction:

- Other events include the following:
  - Hypotonic-Hyporesponsive Episode (age <2 years)
  - Persistent crying
  - Intussusception
  - Arthritis
  - Parotitis
  - Rash (non-allergic)
  - Thrombocytopenia
  - Severe vomiting
  - Severe diarrhea
  - Fever ≥ 38.0°C
  - Other serious or unexpected event(s) not listed

From: Deeks, Shelley
Sent: Thu, 16 Feb 2023 19:40:42 +0000
To: Strang, Robert
Subject: FW: Annual AEFI Report for COVID-19 Immunizations
Attachments: covid19_aefi_annual_final.pdf, covid19_aefi_annual_final.docx

For awareness. Information has been added as per feedback

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>
Sent: February 14, 2023 4:26 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Subject: FW: Annual AEFI Report for COVID-19 Immunizations

AEFI sent to CNS

NOVA SCOTIA
Health and Wellness

Katie McIsaac, PhD
she/her/hers
Scientific Strategy and Surveillance Specialist
Public Health Branch
Cell: 902-717-0543
Email: Kathryn.mcisaac@novascotia.ca

I live and work on Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People

---

From: Wilson, Kevin Michael <Kevin.Wilson@novascotia.ca>
Sent: February 14, 2023 2:36 PM
To: MacQueen, Jenna <Jenna.MacQueen@novascotia.ca>
Cc: Tobin, Lisa A <Lisa.Tobin@novascotia.ca>; McIsaac, Kathryn <Kathryn.McIsaac@novascotia.ca>
Subject: Annual AEFI Report for COVID-19 Immunizations

Hi Jenna,

Please find attached the new annual report for COVID-19 immunizations for the 2022 calendar year in both Word and PDF formats.

Cheers,

Kevin

Novel Coronavirus (COVID-19)

NOVA SCOTIA

NovaScotia.ca/Coronavirus

Adverse Events Following Immunization (AEFIs) with COVID-19 Vaccines in Nova Scotia (01JAN2022 to 31DEC2022):

31 January, 2023

Public Health Branch
Nova Scotia Department of Health and Wellness

Highlights:

- In 2022, a total of 807,927 doses of COVID-19 vaccine were administered, with the vast majority being 3rd, 4th, and 5th doses.
- A total of 62 AEFIs were reported to the province (52 non-serious AEFIs, 10 serious AEFIs).
- AEFIs were most commonly reported following the third dose in the immunization series (10.1 per 100k 3rd doses administered vs 7.7 across all doses administered).
- AEFIs were reported more often in females (9.0 per 100k doses) than in males (6.2 per 100k doses). Serious AEFIs were more reported more often in males (1.6 per 100k) than in females (0.9 per 100k)
- Pain and redness at the injection site was the most commonly reported AEFI (21.6% of all AEFIs). Seizures were the most commonly reported serious AEFI (33% of all serious AEFIs)
- There were 6 adverse events of special interest following immunization reported in the 2022 calendar year: 5 were cases of myocarditis/pericarditis; and 1 was a case of thrombocytopenia.
- A total of eight hospitalizations and one death were reported.

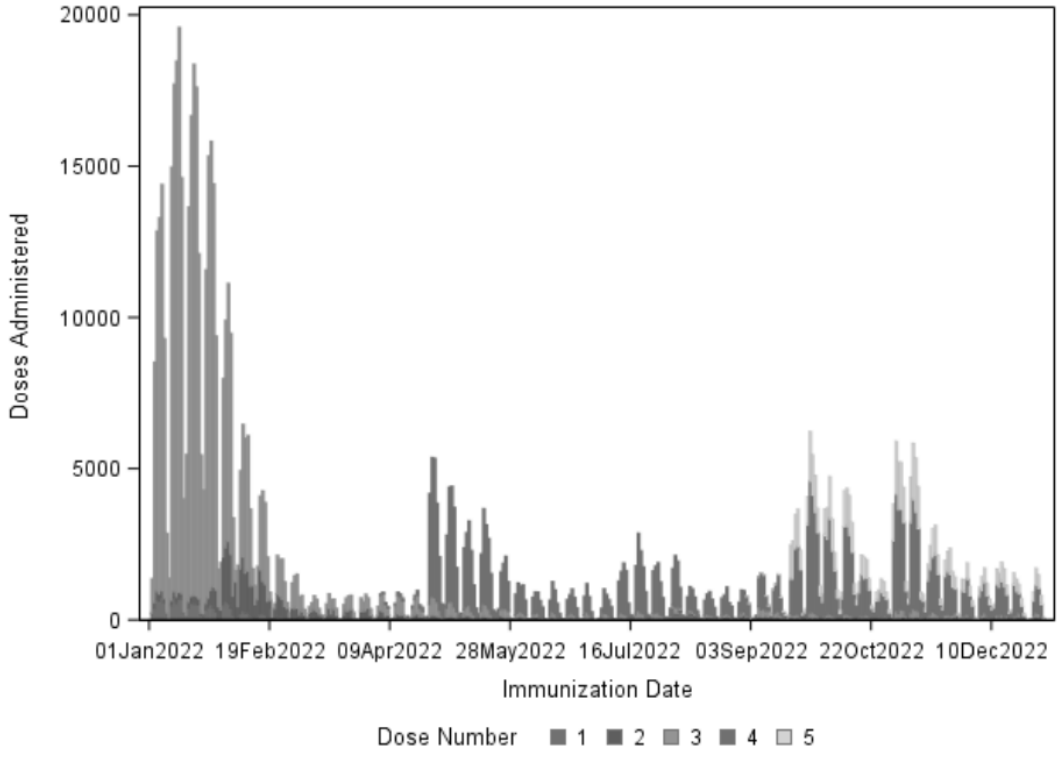
Novel Coronavirus (COVID-19)

NOVA SCOTIA

NovaScotia.ca/Coronavirus

Doses Administered

Figure 1. COVID-19 vaccine doses administered by dose number in the current reporting period (01JAN2022 to 31DEC2022) (N = 807927)



Adverse Events Following Immunization (AEFI)

Table 1. Adverse events following immunization with any COVID-19 vaccine (01JAN2022 to 31DEC2022) by dose number and severity

	Reaction Severity					
	Non-Serious		Serious		Total	
Dose Number	N	Per 100k Doses	N	Per 100k Doses	N	Per 100k Doses
1	2	7.1	0	0.0	2	7.1
2	1	2.0	2	4.0	3	6.0
3	38	9.1	4	1.0	42	10.1
4	10	3.9	4	1.6	14	5.5
5	1	1.7	0	0.0	1	1.7
Total	52	6.4	10	1.2	62	7.7

Notes:

- Dose number represents the total lifetime doses.

Novel Coronavirus (COVID-19)

NOVA SCOTIA

NovaScotia.ca/Coronavirus

Table 2. Number and rate of adverse events following immunization with any COVID-19 vaccine (01JAN2022 to 31DEC2022) by age, sex and reaction severity

	All AEFIs						Serious AEFIs					
	Males		Females		Total		Males		Females		Total	
Age Group	N	Per 100k Doses	N	Per 100k Doses	N	Per 100k Doses	N	Per 100k Doses	N	Per 100k Doses	N	Per 100k Doses
6 mo-11 years	2	8.0	1	4.2	3	6.1	1	4.0	0	0.0	1	2.0
12-19 years	3	20.9	1	6.7	4	13.7	0	0.0	0	0.0	0	0.0
20-39 years	1	1.8	7	10.1	8	6.4	80	0.0	0	0.0	0	0.0
40-59 years	9	9.4	17	15.3	26	12.6	264	4.2	0	0.0	4	1.9
60-79 years	6	4.0	9	5.4	15	4.8	0	0.0	3	1.8	3	1.0
80+ years	2	5.9	4	8.5	6	7.4	1	3.0	1	2.1	2	2.5
Total	**23**	**6.2**	**39**	**9.0**	**62**	**7.7**	**6**	**1.6**	**4**	**0.9**	**10**	**1.2**

Table 3. Number and rate of adverse events following immunization with any COVID-19 vaccine (01JAN2022 to 31DEC2022) by brand and severity

	Doses Administered	All AEFIs		Serious AEFIs	
Product	N	N	Per 100k Doses	N	Per 100k Doses
Other (total)	**358**	**0**	**0.0**	**0**	**0.0**
Astrazeneca	65	0	0.0	0	0.0
Janssen	293	0	0.0	0	0.0
Moderna (total)	**329664**	**27**	**8.2**	**4**	**1.2**
Moderna (original)	220950	24	10.9	4	1.8
Moderna (low-dose)	6044	0	0.0	0	0.0
Moderna (bivalent)	102670	3	2.9	0	0.0
Pfizer (total)	**463138**	**29**	**6.3**	**5**	**1.1**
Pfizer (original)	329435	27	8.2	5	1.5
Pfizer (infant)	373	0	0.0	0	0.0
Pfizer (pediatric)	47083	2	4.2	0	0.0
Pfizer (bivalent)	86247	0	0.0	0	0.0

Table 4. Adverse events following immunization with any COVID-19 vaccine (01JAN2022 to 31DEC2022) by reaction type and severity

	Reaction Severity		
	Non-Serious	Serious	Total
Reaction Type			
Allergic	14	0	14
Local	7	0	7
Neurological	4	2	6
Other	27	8	35

Notes:

- Pfizer doses are categorized as pediatric (5-11 years) and infant (6 months to 4 years).
- AEFI without a known brand name are not listed in **Table** 3; however, they are captured in other tables and figures throughout this report.
- Many adverse events do not fall into one of the major types of reactions (allergic, local, or neurological) and are captured as “other”. A more detailed description of the most common adverse events can be found in **Figures 2a/b**

Novel Coronavirus (COVID-19)

NOVA SCOTIA

NovaScotia.ca/Coronavirus

Figure 2a. Ten most common non-serious AEFIs (01JAN2022 to 31DEC2022) [N = 52]

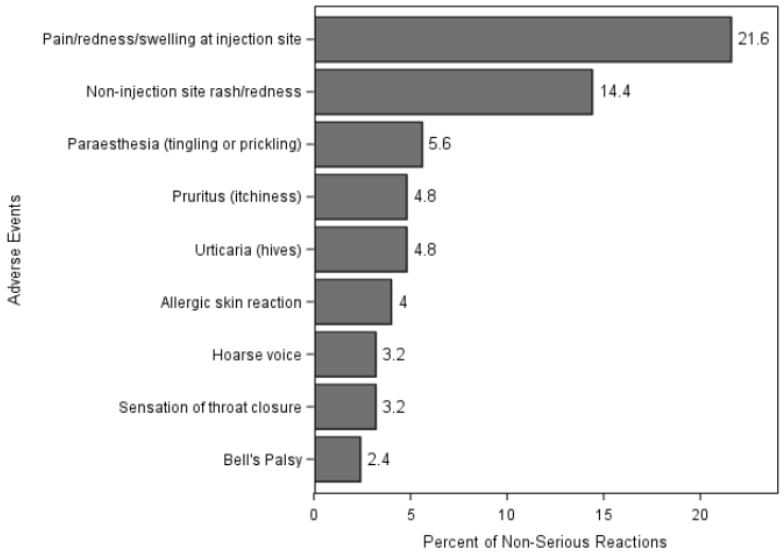
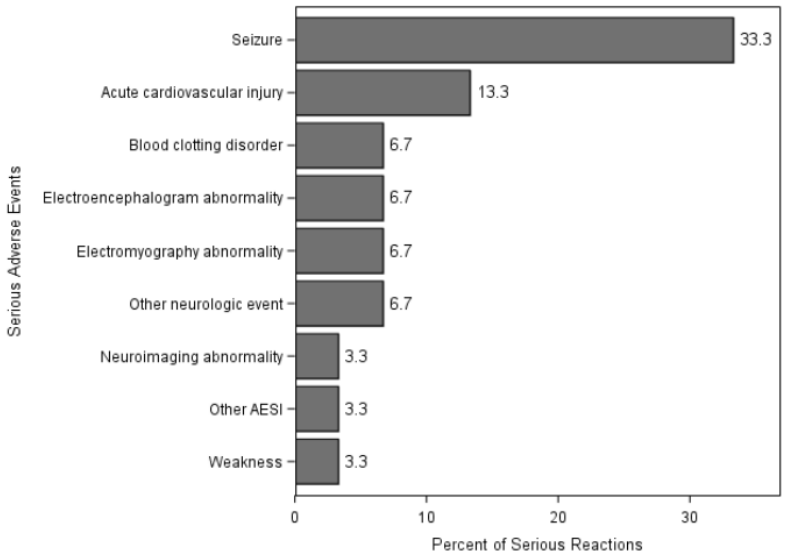


Figure 2b. Ten serious AEFIs (01JAN2022 to 31DEC2022) [N = 10]



Notes:

- Each adverse event can generate multiple described reactions. As such, the frequencies will not sum to, or be proportional to, the number of reported AEFIs
- A category of AEFIs labeled “other serious or unexpected event” are not shown but are relatively frequent (8% of all reactions). These primarily include recurring conditions (e.g., gout, cancer, etc).

Adverse Events Following Immunization (AESI)

There are three adverse events of special interest (AESI) following COVID-19 immunization which are being actively monitored in Canada as safety signals. Nova Scotia received 6 reports of AESIs.

Table 5. Adverse events of special interest following immunization (AESI) with any COVID-19 vaccine (01JAN2022 to 31DEC2022)

AESI	N	Median Age	Age Range
Myocarditis/Pericarditis	5	48	19 - 86
Thrombocytopenia	1	70	N/A
Guillain-Barre Syndrome	0	N/A	N/A

Serious Adverse Events Following Immunization

An event is serious if it occurs within a specified time period after vaccination and it results in hospitalization, is life threatening, or results in death.[i] These reports do not imply a causal relationship between the vaccine and the adverse event. As more Nova Scotians are vaccinated, a greater number of adverse events that are incidental to vaccination will be reported.

Table 6 summarizes the serious adverse events following immunization. Between January 1, 2022 and December 31, 2022, there were 10 Serious Adverse Events Following Immunization reported in Nova Scotia.

8 of these adverse event reports required hospitalization.

1 of these adverse event reports resulted in permanent disability.

There was 1 report of death within 30 days of vaccination. Reports of death are events temporally associated with vaccine that have not been clearly attributed to other causes. A preliminary review of these events indicated that none were clearly attributable to the vaccine.

Table 6. Outcomes of adverse events of following immunization with any COVID-19 vaccine (01JAN2022 to 31DEC2022)

Outcome	N	Median Age	Age Range
Hospitalizations	8	49	7 - 86
Permanent Disability/Incapacity	1	78	N/A
Deaths	1	80	N/A

Data Sources and Notes:

Data Sources:
Nova Scotia data: Panorama and CanImmunize

Definitions

Adverse Events Following Immunization (AEFI): A serious or non-serious reaction experienced by a patient following immunization.

The numbers included in the report reflect the number of AEFIs with a status of "Review complete", "Review complete, follow-up required" or "Follow-up complete" AND a Public Health Agency of Canada report date entered into Panorama

Serious AEFI: An adverse event following immunization that has resulted in at least one of the following:

- hospitalization or prolongation of existing hospitalization
- permanent disability
- death

Non-Serious AEFI: An adverse event following immunization that has resulted in at least one of the following:

- a reaction that did not require hospitalization or prolongation of existing hospitalization
- a reaction that did not result in permanent disability
- a reaction that did not result in death

Adverse Events of Special Interest (AESI): Adverse Events of Special Interest are reactions that are of special interest because they are monitored at a national and international level.

Safety Signal: When an Adverse Event Following Immunization occurs at greater than expected frequency for a specific vaccine type or within a specific population group

[i] https://health-infobase.canada.ca/covid-19/vaccine-safety/

Novel Coronavirus (COVID-19)

NOVA SCOTIA

NovaScotia.ca/Coronavirus

Adverse Events Following Immunization (AEFIs) with COVID-19 Vaccines in Nova Scotia (01JAN2022 to 31DEC2022):

31 January, 2023

Public Health Branch
Nova Scotia Department of Health and Wellness

Highlights:

- In 2022, a total of 807,927 doses of COVID-19 vaccine were administered, with the vast majority being 3rd, 4th, and 5th doses.
- A total of 62 AEFIs were reported to the province (52 non-serious AEFIs, 10 serious AEFIs).
- AEFIs were most commonly reported following the third dose in the immunization series (10.1 per 100k 3rd doses administered vs 7.7 across all doses administered).
- AEFIs were reported more often in females (9.0 per 100k doses) than in males (6.2 per 100k doses). Serious AEFIs were more reported more often in males (1.6 per 100k) than in females (0.9 per 100k)
- Pain and redness at the injection site was the most commonly reported AEFI (21.6% of all AEFIs). Seizures were the most commonly reported serious AEFI (33% of all serious AEFIs)
- There were 6 adverse events of special interest following immunization reported in the 2022 calendar year: 5 were cases of myocarditis/pericarditis; and 1 was a case of thrombocytopenia.
- A total of eight hospitalizations and one death were reported.

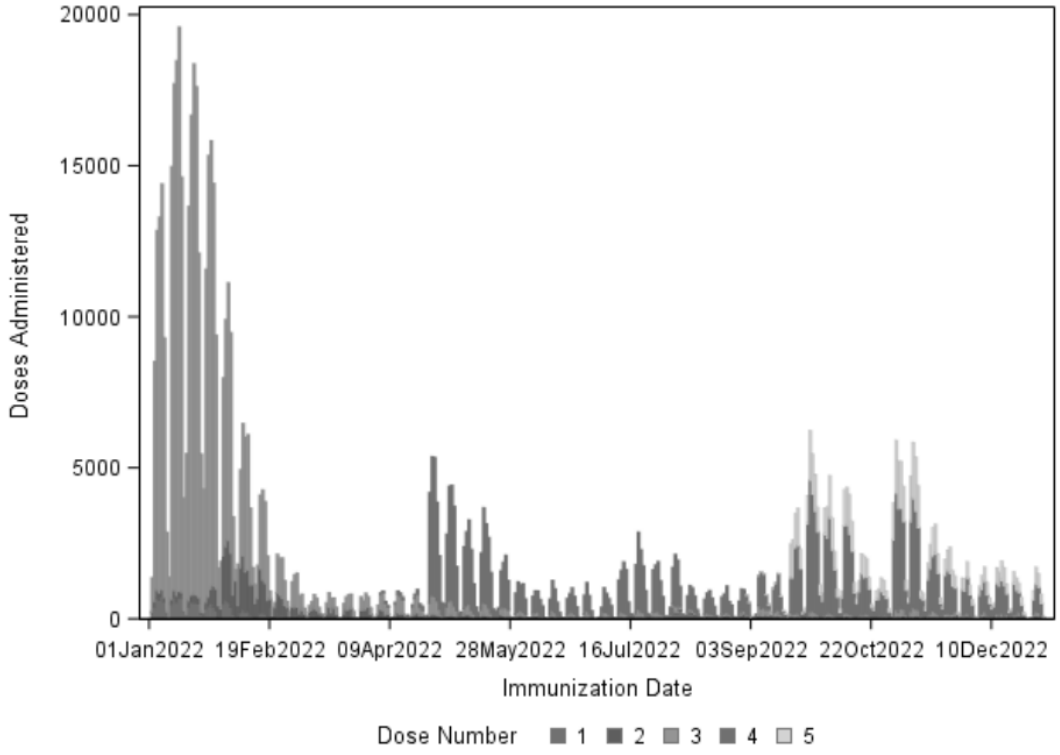
Doses Administered

Novel Coronavirus (COVID-19)

NOVA SCOTIA

NovaScotia.ca/Coronavirus

Figure 1. COVID-19 vaccine doses administered by dose number in the current reporting period (01JAN2022 to 31DEC2022) (N = 807927)



Adverse Events Following Immunization (AEFI)

Table 1. Adverse events following immunization with any COVID-19 vaccine (01JAN2022 to 31DEC2022) by dose number and severity

	Reaction Severity					
	Non-Serious		Serious		Total	
Dose Number	N	Per 100k Doses	N	Per 100k Doses	N	Per 100k Doses
1	2	7.1	0	0.0	2	7.1
2	1	2.0	2	4.0	3	6.0
3	38	9.1	4	1.0	42	10.1
4	10	3.9	4	1.6	14	5.5
5	1	1.7	0	0.0	1	1.7
Total	52	6.4	10	1.2	62	7.7

Notes:

- Dose number represents the total lifetime doses.

Table 2. Number and rate of adverse events following immunization with any COVID-19 vaccine (01JAN2022 to 31DEC2022) by age, sex and reaction severity

	All AEFIs						Serious AEFIs					
	Males		Females		Total		Males		Females		Total	
Age Group	N	Per 100k Doses	N	Per 100k Doses	N	Per 100k Doses	N	Per 100k Doses	N	Per 100k Doses	N	Per 100k Doses
6 mo-11 years	2	8.0	1	4.2	3	6.1	1	4.0	0	0.0	1	2.0
12-19 years	3	20.9	1	6.7	4	13.7	0	0.0	0	0.0	0	0.0
20-39 years	1	1.8	7	10.1	8	6.4	80	0.0	0	0.0	0	0.0
40-59 years	9	9.4	17	15.3	26	12.6	264	4.2	0	0.0	4	1.9
60-79 years	6	4.0	9	5.4	15	4.8	0	0.0	3	1.8	3	1.0
80+ years	2	5.9	4	8.5	6	7.4	1	3.0	1	2.1	2	2.5
Total	**23**	**6.2**	**39**	**9.0**	**62**	**7.7**	**6**	**1.6**	**4**	**0.9**	**10**	**1.2**

Table 3. Number and rate of adverse events following immunization with any COVID-19 vaccine (01JAN2022 to 31DEC2022) by brand and severity

	Doses Administered	All AEFIs		Serious AEFIs	
Product	N	N	Per 100k Doses	N	Per 100k Doses
Other (total)	**358**	**0**	**0.0**	**0**	**0.0**
Astrazeneca	65	0	0.0	0	0.0
Janssen	293	0	0.0	0	0.0
Moderna (total)	**329664**	**27**	**8.2**	**4**	**1.2**
Moderna (original)	220950	24	10.9	4	1.8
Moderna (low-dose)	6044	0	0.0	0	0.0
Moderna (bivalent)	102670	3	2.9	0	0.0
Pfizer (total)	**463138**	**29**	**6.3**	**5**	**1.1**
Pfizer (original)	329435	27	8.2	5	1.5
Pfizer (infant)	373	0	0.0	0	0.0
Pfizer (pediatric)	47083	2	4.2	0	0.0
Pfizer (bivalent)	86247	0	0.0	0	0.0

Table 4. Adverse events following immunization with any COVID-19 vaccine (01JAN2022 to 31DEC2022) by reaction type and severity

	Reaction Severity		
	Non-Serious	Serious	Total
Reaction Type			
Allergic	14	0	14
Local	7	0	7
Neurological	4	2	6
Other	27	8	35

Notes:

- Pfizer doses are categorized as pediatric (5-11 years) and infant (6 months to 4 years).
- AEFI without a known brand name are not listed in **Table** 3; however, they are captured in other tables and figures throughout this report.
- Many adverse events do not fall into one of the major types of reactions (allergic, local, or neurological) and are captured as “other”. A more detailed description of the most common adverse events can be found in **Figures 2a/b**

Novel Coronavirus (COVID-19)

NOVA SCOTIA

NovaScotia.ca/Coronavirus

Figure 2a. Ten most common non-serious AEFIs (01JAN2022 to 31DEC2022) [N = 52]

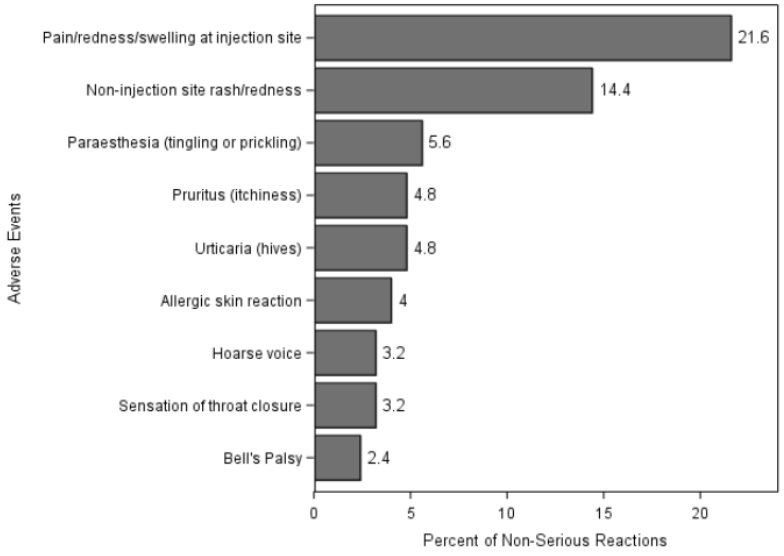
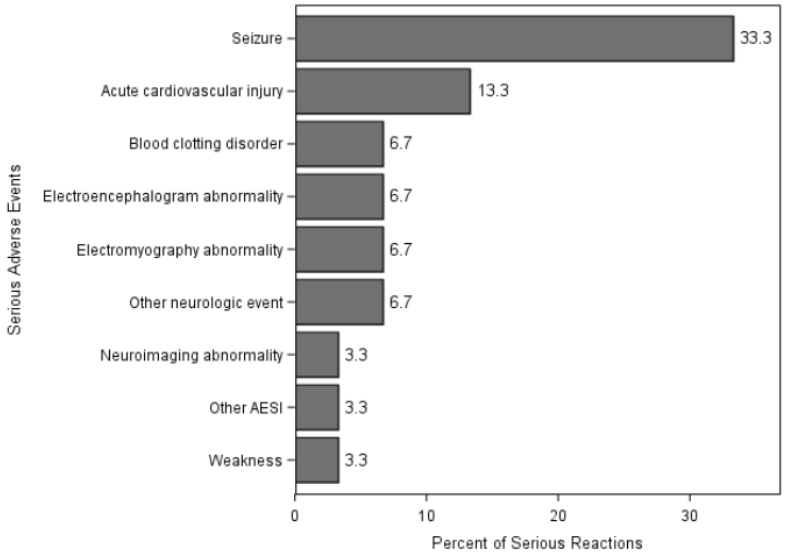


Figure 2b. Ten serious AEFIs (01JAN2022 to 31DEC2022) [N = 10]



Notes:

- Each adverse event can generate multiple described reactions. As such, the frequencies will not sum to, or be proportional to, the number of reported AEFIs
- A category of AEFIs labeled “other serious or unexpected event” are not shown but are relatively frequent (8% of all reactions). These primarily include recurring conditions (e.g., gout, cancer, etc).

Adverse Events Following Immunization (AESI)

There are three adverse events of special interest (AESI) following COVID-19 immunization which are being actively monitored in Canada as safety signals. Nova Scotia received 6 reports of AESIs.

Table 5. Adverse events of special interest following immunization (AESI) with any COVID-19 vaccine (01JAN2022 to 31DEC2022)

AESI	N	Median Age	Age Range
Myocarditis/Pericarditis	5	48	19 - 86
Thrombocytopenia	1	70	N/A
Guillain-Barre Syndrome	0	N/A	N/A

Serious Adverse Events Following Immunization

An event is serious if it occurs within a specified time period after vaccination and it results in hospitalization, is life threatening, or results in death.[i] These reports do not imply a causal relationship between the vaccine and the adverse event. As more Nova Scotians are vaccinated, a greater number of adverse events that are incidental to vaccination will be reported.

Table 6 summarizes the serious adverse events following immunization. Between January 1, 2022 and December 31, 2022, there were 10 Serious Adverse Events Following Immunization reported in Nova Scotia.

8 of these adverse event reports required hospitalization.

1 of these adverse event reports resulted in permanent disability.

There was 1 report of death within 30 days of vaccination. Reports of death are events temporally associated with vaccine that have not been clearly attributed to other causes. A preliminary review of these events indicated that none were clearly attributable to the vaccine.

Table 6. Outcomes of adverse events of following immunization with any COVID-19 vaccine (01JAN2022 to 31DEC2022)

Outcome	N	Median Age	Age Range
Hospitalizations	8	49	7 - 86
Permanent Disability/Incapacity	1	78	N/A
Deaths	1	80	N/A

Data Sources and Notes:

Data Sources:
Nova Scotia data: Panorama and CanImmunize

Definitions

Adverse Events Following Immunization (AEFI): A serious or non-serious reaction experienced by a patient following immunization.

The numbers included in the report reflect the number of AEFIs with a status of "Review complete", "Review complete, follow-up required" or "Follow-up complete" AND a Public Health Agency of Canada report date entered into Panorama

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- hospitalization or prolongation of existing hospitalization
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- death

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- a reaction that did not require hospitalization or prolongation of existing hospitalization
- a reaction that did not result in permanent disability
- a reaction that did not result in death

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[i] https://health-infobase.canada.ca/covid-19/vaccine-safety/

TAB 15

2021	YAR 510031
This is Exhibit 15 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 15

Freedom of Information Document Number: 2021-02124-HEA

On December 22, 2022, I applied for the following FOIPOP information from the Department of Health and Wellness:

Copies of ALL records such as correspondence (emails, and letters), reports and documents, briefings sent to/given to/ reported to/received by Dr. Robert Strang from doctors, pharmacies, medical officers, hospital administration, long term care and nursing home administration and anyone else who was responsible for rolling out the vaccines in this province - on the topic of COVID-19 vaccine adverse events/side-effects and deaths that have occurred since it was rolled out in our province.

This would include correspondence and reports on adverse events and deaths that are temporally associated with vaccine that have not been clearly attributed to other causes that Dr. Robert Strang, Shelley Deeks, and the Minister have had in their possession.

Date Range for Record Search: amended to June 7, 2021 to September 7, 2021

Exhibit 15 is a true copy of what I received back.

March 2, 2023

Shelly Hipson
Sent via email: shellyhipson@gmail.com

Dear Shelly Hipson:

Re: You are entitled to part of the information you requested – 2022-02124-HEA

The Department of Health and Wellness received your application for access to information under the *Freedom of Information and Protection of Privacy Act* (the Act) on December 22, 2022.

In your application, you requested a copy of the following records:

> *Copies of ALL records such as correspondence (emails, and letters), reports and documents, briefings sent to/given to/ reported to/received by Dr. Robert Strang from doctors, pharmacies, medical officers, hospital administration, long term care and nursing home administration and anyone else who was responsible for rolling out the vaccines in this province - on the topic of COVID-19 vaccine adverse events/side-effects and deaths that have occurred since it was rolled out in our province. This would include correspondence and reports on adverse events and deaths that are temporally associated with vaccine that have not been clearly attributed to other causes that Dr. Robert Strang, Shelley Deeks, and the Minister have had in their possession. (Date Range for Record Search: amended to June 7, 2021 to September 7, 2021)*

You are entitled to part of the records requested. However, we have removed some of the information from this record according to subsection 5(2) of the Act. The severed information is exempt from disclosure under the Act for the following reason:

- Section 20: unreasonable invasion of personal privacy.
  20(1): The head of a public body shall refuse to disclose personal information to an applicant if the disclosure would be an unreasonable invasion of a third party's personal privacy.

The remainder of the records are enclosed.

You have the right to ask for a review of this decision by the Information Access and Privacy Commissioner (formerly the Review Officer). You have 60 days from the date of this letter to exercise this right. If you wish to ask for a review, you may do so on Form 7, a copy of which is attached. Send the completed form to the Information Access and Privacy Commissioner, P.O. Box 181, Halifax, Nova Scotia B3J 2M4.

Please be advised that a de-identified copy of this disclosure letter and the attached response to your FOIPOP application will be made public after 14 days. The package will be posted online at https://openinformation.novascotia.ca/. The letter will not include your name,

address, or any other personal information that you have supplied while making your application under FOIPOP.

Please contact Melinda Frelick at 902-424-6920 or by e-mail at melinda.frelick@novascotia.ca, if you need further assistance regarding this application.

Yours truly,

Kathleen Trott
Associate Deputy Minister

Attachment

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: MOH AEFIS summary June 7-11
Date: January 10, 2023 9:16:10 AM

From: Strang, Robert
Sent: Sunday, June 13, 2021 10:18 AM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Subject: Re: MOH AEFIS summary June 7-11

Will be interesting. So we do have serology for specific cases?

Rob

Sent from my iPhone

> On Jun 13, 2021, at 9:47 AM, Deeks, Shelley <Shelley.Deeks@novascotia.ca> wrote:
>
> Having some conversations re the COVID toes case, as I am hoping we can get PCR testing to see if actually had history of infection.
>
> ***Shelley Deeks, MD, MHSc, FRCPC, FAFPHM***
> ***Deputy Chief Medical Officer of Health***
> Department of Health and Wellness
>
> ---
>
> **From:** Whynot, Lesley <Lesley.Whynot@nshealth.ca>
> **Sent:** June 12, 2021 5:33 PM
> **To:** Deeks, Shelley <Shelley.Deeks@novascotia.ca>; episupport <episupport@nshealth.ca>; Billard, Bev A <Bev.Billard@novascotia.ca>; Cole, Teri <Teri.Cole@iwk.nshealth.ca>
> **Subject:** MOH AEFIS summary June 7-11
>
> Hi this is a quick summary of all 24 AEFIs that have come across my desk June 7-11. Some may not yet completed in Panorama. Any questions welcome. Let me know if you need me to sort these a little differently .
>
> **Allergic- possible anaphylaxis (3)**
> 20(1) Pfizer
> Pfizer
> Pfizer
>
> **Other possible allergic (5)**
> 20(1) Pfizer ORS
> Pfizer

20(1) Mod
Pfizer
Pfizer

Neurological (1)

20(1) Pfizer 20(1) F, seizure 20(1)

Other non-serious (8)

20(1) Mod 20(1) F, erythema multiforme rash 20(1)
20(1)
20(1) Mod 20(1) M, petechial rash/?hives 20(1)
Mod 20(1) F, hyperthyroidism, 20(1)
20(1) Pfz 20(1) F , "?pericarditis" on AEFI form but NO findings on investigations indicating this, 20(1)
20(1)
20(1) Mod 20(1) M, ITP 20(1)
Mod 20(1) M, PE 20(1) more information requested
20(1) Mod 20(1) F, vitreous detachment
Mod 20(1) F, rash toes 20(1)
20(1)

Serious Hospitalized (6)

20(1) Pfizer 20(1) M, cardiac arrhythmia, 20(1)
Mod 20(1) F, thrombotic stroke 20(1)
Pfizer 20(1) F, pericarditis 20(1)
20(1)
20(1) Mod 20(1) F, ischemic stroke, 20(1)
20(1)
20(1) Pfizer 20(1) F, ischemic stroke, 20(1)
20(1)
20(1) Mod 20(1) F, hemorrhagic stroke 20(1)
20(1)

Serious Death (1)

20(1) Mod 20(1) F, PE 20(1)

Lesley Whynot, MD, CCFP
Physician Lead, AEFI Management, Nova Scotia Health & Wellness
Assistant Professor, Dept. Family Medicine, Dalhousie University
20(1) cell
lesley.whynot@nshealth.ca

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: MOH AEFIs June 14- 18
Date: January 10, 2023 9:15:55 AM

From: Strang, Robert
Sent: Monday, June 21, 2021 8:17 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Subject: Re: MOH AEFIs June 14- 18

So we would have to acknowledge a singe case but with few details due to privacy.

Rob

Sent from my iPhone

> On Jun 21, 2021, at 8:11 PM, Deeks, Shelley <Shelley.Deeks@novascotia.ca> wrote:

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: Whynot, Lesley <Lesley.Whynot@nshealth.ca>
Sent: June 18, 2021 6:14 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; episupport <episupport@nshealth.ca>; Billard, Bev A <Bev.Billard@novascotia.ca>; Cole, Teri <Teri.Cole@iwk.nshealth.ca>
Subject: MOH AEFIs June 14- 18

Hi this is a quick summary of all 20 AEFIs that have come across my desk June 14-18. Some may not yet be completed in Panorama. Any questions welcome. Let me know if you need me to sort these a little differently .

Allergic- possible anaphylaxis (4)

20(1) Pfizer
Pfizer
Pfizer
20(1) Mod

Other possible allergic (2)

20(1) Mod
20(1) Pfizer

Neurological (0)

Other non-serious (5)

20(1) Pfizer ISRR
20(1) Mod 2nd dose, 20(1) M, ?pericarditis (questionable-20(1)
20(1) Pfizer ISRR
20(1) Pfizer 20(1) F, HTN, tachycardia 20(1)
Mod Rash toes 20(1)

Serious Hospitalized (5)

20(1) Pfizer 20(1) F Seizure/ischemic stroke (?vasculitis) 20(1) 20(1)
20(1)
20(1) Mod, 2nd dose, 20(M, **pericarditis** 20(1)
20(1)
20(1) Pfizer 20(1) F, STEMI 20(1)
Pfizer 20(1 F, bilat PE, 20(1)

20(1) Pfizer 20(1) M, colitis 20(1)

Serious Death (0)

Other
(Old cases open > 4 weeks that needed sorting)
20(1) Serious 20(1) PE,- 20(1) ,case to be closed
20(1) ? PEG allergy - 20(1)
20(1) - Serious, 20(1) polyarthritis 20(1) 1st dose Pfizer, 20(1)

20(1) - Mod 20(1) M, 20(1) IJ thrombus, 20(1) not reported b/c of time frame

Lesley Whynot, MD, CCFP
Physician Lead, AEFI Management, Nova Scotia Health & Wellness
Assistant Professor, Dept. Family Medicine, Dalhousie University
20(1) cell
lesley.whynot@nshealth.ca

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: Client ID # 561592 ZM - SBAR, AEFI - myocarditis, hospitalization
Date: January 10, 2023 9:15:09 AM

From: Strang, Robert
Sent: Monday, July 12, 2021 2:54 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Cc: Barbrick, Tracey L <Tracey.Barbrick@novascotia.ca>
Subject: Re: Client ID #20(1) - SBAR, AEFI - myocarditis, 20(1)

Concerning

Rob

Sent from my iPhone

> On Jul 12, 2021, at 2:51 PM, Deeks, Shelley <Shelley.Deeks@novascotia.ca> wrote:
>
> For awareness.
>
> ***Shelley Deeks, MD, MHSc, FRCPC, FAFPHM***
> ***Deputy Chief Medical Officer of Health***
> Department of Health and Wellness
>
> ---
>
> **From:** Deeks, Shelley
> **Sent:** July 12, 2021 2:51 PM
> **To:** 'Whynot, Lesley' <Lesley.Whynot@nshealth.ca>; episupport <episupport@nshealth.ca>; Billard, Bev A <Bev.Billard@novascotia.ca>
> **Subject:** RE: Client ID #20(1) - SBAR, AEFI - myocarditis, 20(1)
>
> Thanks Lesley – and the team knows to send surveillance information to DHW now and update later. This is critical as we are looking at this both provincially but also nationally.
>
> Bev – how many cases have you reported from NS to PHAC?
>
> Shelley
>
> ***Shelley Deeks, MD, MHSc, FRCPC, FAFPHM***
> ***Deputy Chief Medical Officer of Health***
> Department of Health and Wellness
>
> ---
>
> **From:** Whynot, Lesley <Lesley.Whynot@nshealth.ca>
> **Sent:** July 12, 2021 2:43 PM
> **To:** Deeks, Shelley <Shelley.Deeks@novascotia.ca>; episupport <episupport@nshealth.ca>; Billard, Bev A <Bev.Billard@novascotia.ca>
> **Subject:** Fw: Client ID #20(1) - SBAR, AEFI - myocarditis, 20(1)

Hi FYI this is the first of a couple of newly reported pericarditis/myocarditis cases coming in this week.

Lesley Whynot, MD, CCFP
Physician Lead, AEFI Management, Nova Scotia Health & Wellness
Assistant Professor, Dept. Family Medicine, Dalhousie University
20(1) cell
lesley.whynot@nshealth.ca

From: COVID-19 AEFIs
Sent: July 12, 2021 12:41 PM
To: Whynot, Lesley
Cc: MacLellan, Kristin
Subject: Client ID # 20(1) - SBAR, AEFI - myocarditis, 20(1)

Hi Dr Whynot,

We have several myocarditis/pericarditis reports that we received today. This is the first one.
Noella

From: MacLellan, Kristin <Kristin.MacLellan@nshealth.ca>
Sent: Monday, July 12, 2021 12:23 PM
To: COVID-19 AEFIs <CovidAEFI@nshealth.ca>
Subject: Client ID 20(1) - SBAR, AEFI - myocarditis, 20(1)

Hi Noella – here is my SBAR

Thanks,
Kristin

Client Demographics	**Client ID** 20(1) **M CZ**
Situation	20(1) 20(1) Client received Moderna (Lot# 052C21A) 20(1) 20(1) and Pfizer (lot# EW0221) 20(1) 20(1) myocarditis. 20(1)
Background	20(1)

	20(1)
Assessment	
Recommendations	
Questions for MOH	

<image001.png>

Kristin MacLellan, RN, BScN, MPH
Public Health Nurse
Covid AEFI Response Team
Tel: 902-956-0923
For information on Covid 19, please visit
www.novascotia.ca/coronavirus

Coronavirus (COVID-19) - Government of Nova Scotia, Canada

www.novascotia.ca

Government of Nova Scotia's response to the COVID-19 pandemic.

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: MOH weekly AEFI summary August 9-12
Date: January 10, 2023 9:13:53 AM

From: Strang, Robert
Sent: Friday, August 13, 2021 1:42 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Cc: Whynot, Lesley <Lesley.Whynot@nshealth.ca>
Subject: RE: MOH weekly AEFI summary August 9-12

Thank you both.

Rob

From: Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Sent: August 13, 2021 8:23 AM
To: Strang, Robert <Robert.Strang@novascotia.ca>
Cc: Whynot, Lesley <Lesley.Whynot@nshealth.ca>
Subject: FW: MOH weekly AEFI summary August 9-12

FYI – Lesley will send directly to you while I am away.

Cheers
Shelley

Shelley Deeks, MD, MHSc, FRCPC, FAFPHM
Deputy Chief Medical Officer of Health
Department of Health and Wellness

From: Whynot, Lesley <Lesley.Whynot@nshealth.ca>
Sent: August 12, 2021 6:20 PM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; Billard, Bev A <Bev.Billard@novascotia.ca>; episupport <episupport@nshealth.ca>
Subject: MOH weekly AEFI summary August 9-12

Summary of AEFIs that have come across my desk Mon Aug 9- Thur Aug 12. This is only for 4 days, as tomorrow's cases will be rolled into next week, because we are moving to a Fri-Thurs cycle. Some cases may not yet be completed in Panorama. Any questions welcome.

Pls note the peri/myocarditis cases are separated out into their own category for clarity, and some may have changed from probable to confirmed, etc. since my original review and **several cases were changed to to non-cardiac since originally reported**. All cardiac cases have been reported to PHAC according to investigating PHNs.

Allergic- possible anaphylaxis

20(1) Pfz2
Pfz2
Pfz2

Other possible allergic

20(1) Pfz1 (second look at request of SiC), 20 M, local soft tissue swelling, 20(1)

Neurological (0)

Other non-serious

20(1) Pfz2, costochondritis
Pfz2, chest pain NYD 20(1) F, 20(1)
20(1) Mod1, 20 F, chest pain/ISRR (originally reported as chest pain)
20(1) Pfz2, 2 F, reported as chest pain- 20(1)
Pfz2, 20 M, reported as chest pain/?cardiac, 20(1)
20(1) Pfz1, 20 F, flare inflammatory oligoarthritis 20(1)
20(1) Pfz2, (originally reported as probable Myocarditis) 2 F 20(1)
20(1)

Serious Hospitalized (0)

Serious Death (0)

Cardiac

20(1) Pfz2, 2 M, 20(1) probable pericarditis, 20(1)

Other

20(1) Mod2, (originally possible myocarditis) 20(1) F 20(1)
20(1) did not feel vaccine related, not reported to PHAC

Lesley Whynot, MD, CCFP
Physician Lead, AEFI Management, Nova Scotia Health & Wellness
Assistant Professor, Dept. Family Medicine, Dalhousie University
20(1) cell
lesley.whynot@nshealth.ca

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: Weekly AEFI MOH Summary August 16-20 2021
Date: January 10, 2023 9:13:37 AM

From: Strang, Robert
Sent: Sunday, August 22, 2021 9:33 PM
To: Whynot, Lesley <Lesley.Whynot@nshealth.ca>; Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Cc: Billard, Bev A <Bev.Billard@novascotia.ca>; episupport <episupport@nshealth.ca>; Fleming, Sarah A <Sarah.Fleming@novascotia.ca>
Subject: RE: Weekly AEFI MOH Summary August 16-20 2021

Thank you Lesley

Rob

From: Whynot, Lesley <Lesley.Whynot@nshealth.ca>
Sent: August 21, 2021 9:50 AM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; Strang, Robert <Robert.Strang@novascotia.ca>
Cc: Billard, Bev A <Bev.Billard@novascotia.ca>; episupport <episupport@nshealth.ca>; Fleming, Sarah A <Sarah.Fleming@novascotia.ca>
Subject: Weekly AEFI MOH Summary August 16-20 2021

Good morning,
Summary of AEFIs that have come across my desk Aug 13- 19 . Sorry for delay, we had a power outage here most of yesterday. Some cases may not yet be completed in Panorama.
Of note- 3 cases of facial nerve palsy, plus one unconfirmed case.
One death- 20(1) details below.
NO cases of myo/pericarditis this week!
Any questions welcome.

Allergic- possible anaphylaxis
20(1) F, Pfz2

Other possible allergic
20(1)

Neurological
20(1) **probable Bell's Palsy** (still investigating) 20(1) Mod1, 20 F
20(1) **Bell's Palsy,** 20(1) Mod2, 20 M,
20(1) **Bell's palsy vs TGNeuralgia**, 20(1) Pfz1, 20 F, 20(1)
20(1) **Bell's Palsy,** 20(1) Pfz 2, 20 M
20(1) bilateral leg pain/paresthesia, 20(1) Pfz1, 20(1)
20(1) optic neuritis, 20(1) Pfz1, 20(1)
20(1)
20(1) paresthesia face, 20(1) Mod2, 20 F

Other non-serious
20(1) ISRR (reported as neuro symptoms)
(old case from May) 20 F 20(1)
20(1) leg cramps
ISRR vs TIA, 20 M, Pfz1, 20(1)
chest pain NYD, (ruled non-cardiac) 20(1) Mod2, 20 F
ISRR/pseudoseizures 20 F, Mod2
20(1) 20(1) Mod2, 20 M 20(1)
20(1)
20(1) rash toes, 20(1) Pfz2, 20 M

20(1) chest pain/fever (cardiac ruled out), 20(1) M, 20(1)
vertigo 20(1) Pfz1, 20 F
20(1) palpitations, Pfz2, 20 M
20(1) chest pain NYD 20(1) Pfz2, 20 M,
20(1) ISRR (reported as allergy)
20(1) abdominal pain, 20 F 20(1)
ISRR (reported as neuro sx)

Serious Hospitalized
20(1) 20(1) Mod2, 20(M, 20(1)
20(1)

Serious Death
20(1) CVA, 20(1) Mod2, 20 M, 20(1)
20(1)

Lesley Whynot, MD, CCFP
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Assistant Professor, Dept. Family Medicine, Dalhousie University
20(1) cell
lesley.whynot@nshealth.ca

From: Dean, Kelly E on behalf of Strang, Robert
To: Dean, Kelly E
Subject: Fw: MOH AEFI weekly summary Aug 20-26
Date: January 10, 2023 9:13:17 AM

From: Strang, Robert
Sent: Friday, August 27, 2021 11:46 AM
To: Whynot, Lesley <Lesley.Whynot@nshealth.ca>; Deeks, Shelley <Shelley.Deeks@novascotia.ca>
Cc: Billard, Bev A <Bev.Billard@novascotia.ca>; Fleming, Sarah A <Sarah.Fleming@novascotia.ca>; episupport <episupport@nshealth.ca>
Subject: RE: MOH AEFI weekly summary Aug 20-26

Thank you for this and your ongoing work in this important component of our vaccine program.

Rob

From: Whynot, Lesley <Lesley.Whynot@nshealth.ca>
Sent: August 27, 2021 10:45 AM
To: Deeks, Shelley <Shelley.Deeks@novascotia.ca>; Strang, Robert <Robert.Strang@novascotia.ca>
Cc: Billard, Bev A <Bev.Billard@novascotia.ca>; Fleming, Sarah A <Sarah.Fleming@novascotia.ca>; episupport <episupport@nshealth.ca>
Subject: MOH AEFI weekly summary Aug 20-26

Good morning,
Summary of AEFIs that have come across my desk Aug 20-27 . Some cases may not yet be completed in Panorama.
* Death reported last week changed to stroke 20(1) as date of death was found to be incorrect.
One possible (low likelihood) peri/myocarditis case, 20(1) see below.
One confirmed GBS and one query GBS- 20(1)
20(1)
Any questions welcome.

Allergic- possible anaphylaxis
20(1) Pfz2, SIC 20(1)

Other possible allergic (0)

Neurological
20(1) Pfz2, ?GBS 20(1)
Pfz2, GBS, 20F, 20(1)
20(1)
20(1) Pfz1 paresthesia arm/face
Pfz1, persistent headaches
20(1) Pfz1 paresthesias, 20(1)

Other non-serious
20(1) AZ, (old case from April), thrombocytopenia, 20(1)
20(1) Pfz2, fatigue/myalgias, 20(1)
Mod2, chest pain NYD 20(1)
20(1) Pfz1, hyperthyroidism, 20(1) determined not reportable
20(1) Pfz1, ISRR 20(1)
Pfz1, palpitations (PVCs)
20(1) Mod2 vision changes (not an AEFI)
20(1) Pfz1, chest pain/palpitations, 20F, 20(1)
20(1)

Serious Hospitalized

20(1) Mod2, (reported last week as death, but dates incorrect)- changed to CVA 20(1)
20(1)

Serious Death (0)

Lesley Whynot, MD, CCFP
Physician Lead, AEFI Management, Nova Scotia Health & Wellness
Assistant Professor, Dept. Family Medicine, Dalhousie University
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lesley.whynot@nshealth.ca

TAB 16

2021	YAR 510031
This is Exhibit 16 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 16

Freedom of Information Document Number: 2021-01108-HEA

On June 15, 2021, I applied for the following FOIPOP information from the Department of Health and Wellness:

Copies of All scientific data, correspondence and studies that justify/support the government's actions (1) to lock down and restrict the freedom of movement of Nova Scotians and (2) the wearing of face masks -reduce the spread of Covid-19 held by staff within any program, branch, or office in the department that has been working on the development and implementation of COVID-19 government restrictions as outlined above.

The below excerpt is part of the response I received:

"*Nova Scotia's Covid -19 response actions have been based on national and international guidance from the Public Health Agency of Canada (PHAC) and the World Health Organization (WHO). As the leading agencies for pandemic response nationally and internationally, both PHAC and WHO are continuously reviewing the evolving scientific evidence regarding COVID-19 and the effectiveness of various measures*."

Date Range for Record Search: March 1, 2020 to June 3, 2021

Exhibit 16 is a true copy of what I received back.

NOVA SCOTIA
Health and Wellness
Office of the Deputy Minister

PO Box 488
Halifax, Nova Scotia
Canada B3J 2R8

902 424-7570 T
902-424-4570 F
novascotia.ca/dhw

September 9, 2021

Shelly Hipson
RR3, Shelburne
Nova Scotia B0T1W0

Dear Shelly Hipson:

Re: You are entitled to part of the information you requested – 2021-01108-HEA

The Department of Health and Wellness received your application for access to information under the *Freedom of Information and Protection of Privacy Act* on June 15, 2021.

In your application, you requested a copy of the following records:

> *All scientific data, correspondence and studies that justify/support the government's actions (1) to lock down and restrict the freedom of movement of Nova Scotians and (2) the wearing of face masks - reduce the spread of Covid-19 held by staff within any program, branch, or office in the department that has been working on the development and implementation of COVID-19 government restrictions as outlined above. (Date Range for Record Search: From 3/1/2020 To 6/3/2021)*

You are entitled to part of the records requested. However, we have removed some of the information from this record according to subsection 5(2) of the *Act.* The severed information is exempt from disclosure under the Act for the following reasons:

1. Section 14: Advice to public body or minister

   Section 14(1) The head of a public body may refuse to disclose to an applicant information that would reveal advice, recommendations or draft regulations developed by or for a public body or a minister.

2. Section 16: Information that would reveal information that is subject to solicitor-client privilege according to Section 16:

   Section 16 The head of a public body may refuse to disclose to an applicant information that is subject to solicitor-client privilege.

3. Section 20: Information that would be an unreasonable invasion of the privacy of individuals mentioned in the records

   Section 20 (1) The head of a public body shall refuse to disclose personal information to an applicant if the disclosure would be an unreasonable invasion of a third party's personal privacy

We are refusing access to a portion of the records for the following reason pursuant to subsection 4(2) of the Act:

Section 4(2)(a): Published Material

The Act does not apply to the following kinds of information in the custody or control of a public body:

- published information, material available for purchase and material that is a matter of public record.

The remainder of the records are enclosed.

Nova Scotia's Covid - 19 response actions have been based on national and international guidance from the Public Health Agency of Canada (PHAC) and the World Health Organization (WHO). As the leading agencies for pandemic response nationally and internationally, both PHAC and WHO are continuously reviewing the evolving scientific evidence regarding COVID-19 and the effectiveness of various measures. These reviews are used to form their guidance, position statements, and other documents all of which are in the public domain.

The Government of Canada's resources, including COVID-19 guidance documents, are available at https://www.canada.ca/en/public-health/services/diseases/coronavirus-disease-covid-19.html.

The WHO's resources, including COVID-19 technical guidance, are available at https://www.who.int/emergencies/diseases/novel-coronavirus-2019.

The Department of Health and Wellness Public Health Branch continues to be in ongoing contact with PHAC and WHO as evidence has evolved throughout the pandemic. This includes as a participant in federal/provincial/territorial conversations, including committees and networks. This has enabled recommendations on public health measures to be informed by the most up to date evidence.

You have the right to ask for a review of this decision by the Information Access and Privacy Commissioner (formerly the Review Officer). You have 60 days from the date of this letter to exercise this right. If you wish to ask for a review, you may do so on Form 7, a copy of which is attached. Send the completed form to the Information Access and Privacy Commissioner, P.O. Box 181, Halifax, Nova Scotia B3J 2M4.

Please be advised that a de-identified copy of this disclosure letter and the attached response to your FOIPOP application will be made public after 14 days. The package will be posted online at https://openinformation.novascotia.ca/. The letter will not include your name, address or any other personal information that you have supplied while making your application under FOIPOP.

Please contact Tim Gregory at 902-424-3773 or by e-mail at timothy.gregory@novascotia.ca, if you need further assistance regarding this application.

Sincerely,

Craig Beaton
Associate Deputy Minister

Attachment

From:	Office of the Chief Medical Officer of Health
To:	Strang, Robert; Watson-Creed, Gaynor; Sommers, Ryan; Kempkens, Daniela; Cram, Jennifer; Jackman, Jessica F; Sarbu, Claudia; Earle, Lynda inc#478781 kg; Hmidan, Cara-Leah; Piek, Krista; Burghgraef, Paula; Jackman, Jessica F; MacNeil, Cheryl
Cc:	Dean, Kelly E; O"Toole, Gary; Best, Angela; Hebb, Catherine W; Arseneau, Marc; DeSantis, Marcia; Broesch, James; Holmes, Elaine; Cole, Teri J; Passerini, Linda; Ryan, Colleen F; Boland, Melissa L; Billard, Bev A; Nichols, Michaela; Dohoo, Carolyn; Wuite, Sara; Shaver, Ali
Subject:	OCMOH Position Statement - COVID-19 and the Use of Non-Medical Masks in the Community – May 8, 2020
Date:	May 13, 2020 3:01:29 PM
Attachments:	OCMOH Position Statement - NMM 20200508.pdf

Good afternoon,

The OCMOH Position Statement, *COVID-19 and the Use of Non-Medical Masks in the Community* dated May 8, 2020, has been approved for circulation to Public Health. This document has been posted on the *Information for Professionals - Emerging Issues* section of the CDPC website which may be found here: https://novascotia.ca/dhw/cdpc/coronavirus-documents.asp

This document outlines:

- recommendations and considerations for the use of a non-medical mask in the prevention of community transmission of COVID-19
- safe and appropriate practices when wearing a non-medical mask

Please distribute this information to individuals/teams within Public Health as needed.

The website also has information for the general public: https://novascotia.ca/coronavirus/staying-healthy/#masks

Office of the Chief Medical Officer of Health
Position Statement: COVID-19 and the Use of Non-Medical Masks in the Community
May 8, 2020

Position

The Office of the Chief Medical Officer of Health (OCMOH) recognizes that there are many questions about the use of non-medical masks (NMMs) to prevent the community transmission of COVID-19.

The use of NMMs in the community needs to be considered along with other core personal public health measures for the prevention of COVID-19. These are:

- staying informed, being prepared and following public health advice
- proper hand hygiene and respiratory etiquette
- physical distancing of 2 metres (6 feet) from others outside of your household
- avoidance of touching one's face, mouth, nose or eyes
- increased cleaning of common, high touch surfaces (e.g. counter tops, doorknobs, taps) in one's personal environment (home, personal workspace) with a disinfecting cleaning product
- staying at home when symptomatic or ill
- staying at home as much as possible if at high risk of severe illness
- reducing personal non-essential travel

The OCMOH **recommends** that individuals in the community wear a NMM if they have respiratory symptoms (cough, sneezing), and, will be in close contact with others or when going out to access medical care or other essential health services.

Given the evidence of transmission of the virus that causes COVID-19 by asymptomatic or mildly symptomatic people, **consideration should be given** to the use of a NMM by anyone in situations when exposure to crowded public spaces is unavoidable and consistent physical distancing is not possible (i.e. public transportation, stores and shopping areas and group living situations). If used widely and correctly and on a risk basis, NMMs can reduce viral transmission. The safe and appropriate use[1] of a NMM is an additional public health practice that can be taken to protect others.

NMMs should[1]:

- allow for easy breathing
- fit securely to the head with ties or ear loops
- maintain their shape after washing and drying

- be changed as soon as possible if damp or dirty
- be comfortable and not require frequent adjustment
- be made of at least 2 layers of tightly woven material fabric (such as cotton or linen)
- be large enough to completely and comfortably cover the nose and mouth without gaping

NMMs should not[1]:

- be shared with others
- impair vision or interfere with tasks
- be placed on children under the age of 2 years
- be made of plastic or other non-breathable materials
- be secured with tape or other inappropriate materials
- be made exclusively of materials that easily fall apart, such as tissues
- be placed on anyone unable to remove them without assistance or anyone who has trouble breathing

The OCMOH continues to monitor evidence on the use of NMMs and local spread of COVID-19. As evidence and understanding of community transmission evolves, the recommendations and guidance in this position statement may change.

Background

The use of masks for the general public has been reviewed as a possible consideration among various COVID-19 pandemic mitigation strategies. The Public Health Agency of Canada has provided advice that Canadians can use NMMs along with physical distancing, hand hygiene, and other measures to limit the transmission of COVID-19[1]. The World Health Organization revised guidance[2] on the use of masks in the context of COVID-19, emphasizing conservation of medical masks for healthcare workers, the importance of other infection prevention measures, and providing a framework[3] for decision makers when considering public masking.

Globally, medical masks are in short supply and their use should be reserved for health care workers. The use of NMMs in the community setting has not been well evaluated. There is no definitive research demonstrating that wearing a NMM in the community protects the person wearing it. However, the use of a NMM is potentially beneficial in preventing an infected person from transmitting virus by limiting spread of respiratory droplets. This may be particularly valuable in settings outside of the person's household. Wearing a NMM is not a substitute for physical distancing, hand washing and other core personal public health measures.

References

1. https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/prevention-risks/about-non-medical-masks-face-coverings.html

2. https://www.who.int/publications-detail/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak

3. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-on-covid-19-and-masks

Boland, Melissa L

From: Boland, Melissa L
Sent: May 19, 2020 2:50 PM
To: Preeper, Andrew R
Subject: RE: NMM website language
Attachments: Mask update May 19_AP_MB.docx

Ok, 14(1)

Thanks,
Melissa

From: Preeper, Andrew R <Andrew.Preeper@novascotia.ca>
Sent: May 19, 2020 2:44 PM
To: Boland, Melissa L <Melissa.Boland@novascotia.ca>
Subject: RE: NMM website language

14(1)

From: Boland, Melissa L
Sent: May 19, 2020 2:20 PM
To: Preeper, Andrew R <Andrew.Preeper@novascotia.ca>
Subject: RE: NMM website language

Hi Andrew-

14(1)

Thanks,
Melissa

From: Preeper, Andrew R <Andrew.Preeper@novascotia.ca>
Sent: May 19, 2020 2:03 PM
To: Boland, Melissa L <Melissa.Boland@novascotia.ca>
Subject: RE: NMM website language

See attached. Are you ok with this? 14(1)
14(1)

From: Boland, Melissa L
Sent: May 19, 2020 9:22 AM

339

To: Preeper, Andrew R <Andrew.Preeper@novascotia.ca>
Subject: NMM website language

Hi Andrew-

Based on PHAC's new recommendation with the caveat that PH officials will make their own recommendations based on epi and rates of transmission, below is what I am proposing. 14(1)

14(1)

Thanks,

Melissa

14(1)

From:	Doyle-Bedwell, George H
To:	Stevens, Catherine L; alkesh.patel@medportal.ca; Armstrong, Brooke J; Billard, Bev A; Boland, Melissa L; Bourke, Kevin; Broesch, James; Cole, Teri J; Comeau, Jeannette; Cram, Jennifer; Davis, Heather; Davis, Ian; Dean, Kelly E; Earle, Lynda inc#478781 kg; Fairbairn, Heather J; Fuller, Adrian M; Hatchette, Todd; Holmes, Elaine; Howlett, Todd; Jackman, Jessica F; Kempkens, Daniela; Lamb, Alyson; MacDonald, Tammy; McNeil, Shelly; O"Toole, Gary; Passerini, Linda; Preeper, Andrew R; Rankin, Carole E; Ryan, Colleen F; Sarbu, Claudia; Strang, Robert; Watson-Creed, Gaynor; White, Noma; Wilson, Rod; Wong-Petrie, Karen; Barro, Kimberlee X; Boutilier, Andy P; Sommers, Ryan
Cc:	Doyle-Bedwell, George H
Subject:	RE: OCMOH IMT Meeting
Date:	June 3, 2020 1:31:39 PM
Attachments:	Chu, Schünemann et al (Jun 1 2020) - Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19.pdf MacIntyre & Wang (Jun 1 2020) - Lancet Comment - Physical distancing, face masks, and eye protection to prevention of COVID-19.pdf

Dear All:

Here are some reviews of the Lancet article for your review.

Thank you
Take Care
George

From: Doyle-Bedwell, George H <George.Doyle-Bedwell@novascotia.ca>
Sent: June 3, 2020 12:56 PM
To: Stevens, Catherine L <Catherine.L.Stevens@novascotia.ca>; alkesh.patel@medportal.ca; Armstrong, Brooke J <Brooke.Armstrong@novascotia.ca>; Billard, Bev A <Bev.Billard@novascotia.ca>; Boland, Melissa L <Melissa.Boland@novascotia.ca>; Bourke, Kevin <Kevin.Bourke@nshealth.ca>; Broesch, James <James.Broesch@nshealth.ca>; Cole, Teri J <Teri.Cole@novascotia.ca>; Comeau, Jeannette <Jeannette.Comeau@iwk.nshealth.ca>; Cram, Jennifer <Jennifer.Cram@nshealth.ca>; 20(1) @gmail.com>; Davis, Ian <Ian.Davis@nshealth.ca>; Dean, Kelly E <Kelly.Dean@novascotia.ca>; Earle, Lynda inc#478781 kg <Lynda.Earle@nshealth.ca>; Fairbairn, Heather J <Heather.Fairbairn@novascotia.ca>; Fuller, Adrian M <Adrian.Fuller@novascotia.ca>; Hatchette, Todd <Todd.Hatchette@nshealth.ca>; Holmes, Elaine <Elaine.Holmes@novascotia.ca>; Howlett, Todd <Todd.Howlett@nshealth.ca>; Jackman, Jessica F <JessicaF.Jackman@nshealth.ca>; Kempkens, Daniela <Daniela.Kempkens@nshealth.ca>; Lamb, Alyson <Alyson.Lamb@iwk.nshealth.ca>; MacDonald, Tammy <Tammy.MacDonald@nshealth.ca>; McNeil, Shelly <Shelly.McNeil@nshealth.ca>; O'Toole, Gary <Gary.OToole@nshealth.ca>; Passerini, Linda <Linda.Passerini@novascotia.ca>; Preeper, Andrew R <Andrew.Preeper@novascotia.ca>; Rankin, Carole E <Carole.Rankin@novascotia.ca>; Ryan, Colleen F <Colleen.Ryan@novascotia.ca>; Sarbu, Claudia <Claudia.Sarbu@nshealth.ca>; Strang, Robert <Robert.Strang@novascotia.ca>; Watson-Creed, Gaynor <Gaynor.Watson-Creed@novascotia.ca>; White, Noma <NomaR.White@nshealth.ca>; 20(1) @gmail.com>; Wong-Petrie, Karen <Karen.Wong-Petrie@novascotia.ca>; Barro, Kimberlee X <Kimberlee.Barro@novascotia.ca>; Boutilier, Andy P <Andy.Boutilier@novascotia.ca>; Sommers, Ryan <Ryan.Sommers@nshealth.ca>
Cc: Doyle-Bedwell, George H <George.Doyle-Bedwell@novascotia.ca>
Subject: RE: OCMOH IMT Meeting

Dear All:

Here is the Lancet article we discussed on today's OCMOH IMT call. Thank you, Dr. Watson-Creed, for sending it!

Enjoy

Take Care
George

Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis

*Derek K Chu, Elie A Akl, Stephanie Duda, Karla Solo, Sally Yaacoub, Holger J Schünemann, on behalf of the COVID-19 Systematic Urgent Review Group Effort (SURGE) study authors**

Summary

Background Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causes COVID-19 and is spread person-to-person through close contact. We aimed to investigate the effects of physical distance, face masks, and eye protection on virus transmission in health-care and non-health-care (eg, community) settings.

Methods We did a systematic review and meta-analysis to investigate the optimum distance for avoiding person-to-person virus transmission and to assess the use of face masks and eye protection to prevent transmission of viruses. We obtained data for SARS-CoV-2 and the betacoronaviruses that cause severe acute respiratory syndrome, and Middle East respiratory syndrome from 21 standard WHO-specific and COVID-19-specific sources. We searched these data sources from database inception to May 3, 2020, with no restriction by language, for comparative studies and for contextual factors of acceptability, feasibility, resource use, and equity. We screened records, extracted data, and assessed risk of bias in duplicate. We did frequentist and Bayesian meta-analyses and random-effects meta-regressions. We rated the certainty of evidence according to Cochrane methods and the GRADE approach. This study is registered with PROSPERO, CRD42020177047.

Findings Our search identified 172 observational studies across 16 countries and six continents, with no randomised controlled trials and 44 relevant comparative studies in health-care and non-health-care settings (n=25 697 patients). Transmission of viruses was lower with physical distancing of 1 m or more, compared with a distance of less than 1 m (n=10 736, pooled adjusted odds ratio [aOR] 0·18, 95% CI 0·09 to 0·38; risk difference [RD] –10·2%, 95% CI –11·5 to –7·5; moderate certainty); protection was increased as distance was lengthened (change in relative risk [RR] 2·02 per m; $p_{interaction}$=0·041; moderate certainty). Face mask use could result in a large reduction in risk of infection (n=2647; aOR 0·15, 95% CI 0·07 to 0·34, RD –14·3%, –15·9 to –10·7; low certainty), with stronger associations with N95 or similar respirators compared with disposable surgical masks or similar (eg, reusable 12–16-layer cotton masks; $p_{interaction}$=0·090; posterior probability >95%, low certainty). Eye protection also was associated with less infection (n=3713; aOR 0·22, 95% CI 0·12 to 0·39, RD –10·6%, 95% CI –12·5 to –7·7; low certainty). Unadjusted studies and subgroup and sensitivity analyses showed similar findings.

Interpretation The findings of this systematic review and meta-analysis support physical distancing of 1 m or more and provide quantitative estimates for models and contact tracing to inform policy. Optimum use of face masks, respirators, and eye protection in public and health-care settings should be informed by these findings and contextual factors. Robust randomised trials are needed to better inform the evidence for these interventions, but this systematic appraisal of currently best available evidence might inform interim guidance.

Funding World Health Organization.

Published Online
June 1, 2020
https://doi.org/10.1016/
S0140-6736(20)31142-9

See Online/Comment
https://doi.org/10.1016/
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*Study authors are listed in the appendix and at the end of the Article

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See Online for appendix

Introduction

As of May 28, 2020, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has infected more than 5·85 million individuals worldwide and caused more than 359 000 deaths.[1] Emergency lockdowns have been initiated in countries across the globe, and the effect on health, wellbeing, business, and other aspects of daily life are felt throughout societies and by individuals. With no effective pharmacological interventions or vaccine available in the imminent future, reducing the rate of infection (ie, flattening the curve) is a priority, and prevention of infection is the best approach to achieve this aim.

SARS-CoV-2 spreads person-to-person through close contact and causes COVID-19. It has not been solved if

Research in context

Evidence before this study

We searched 21 databases and resources from inception to May 3, 2020, with no restriction by language, for studies of any design evaluating physical distancing, face masks, and eye protection to prevent transmission of the viruses that cause COVID-19 and related diseases (eg, severe acute respiratory syndrome [SARS] and Middle East respiratory syndrome [MERS]) between infected individuals and people close to them (eg, household members, caregivers, and health-care workers). Previous related meta-analyses have focused on randomised trials and reported imprecise data for common respiratory viruses such as seasonal influenza, rather than the pandemic and epidemic betacoronaviruses causative of COVID-19 (severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2]), SARS (SARS-CoV), or MERS (MERS-CoV). Other meta-analyses have focused on interventions in the health-care setting and have not included non-health-care (eg, community) settings. Our search did not retrieve any systematic review of information on physical distancing, face masks, or eye protection to prevent transmission of SARS-CoV-2, SARS-CoV, and MERS-CoV.

Added value of this study

We did a systematic review of 172 observational studies in health-care and non-health-care settings across 16 countries and six continents; 44 comparative studies were included in a meta-analysis, including 25 697 patients with COVID-19, SARS, or MERS. Our findings are, to the best of our knowledge, the first to rapidly synthesise all direct information on COVID-19 and, therefore, provide the best available evidence to inform optimum use of three common and simple interventions to help reduce the rate of infection and inform non-pharmaceutical interventions, including pandemic mitigation in non-health-care settings. Physical distancing of 1 m or more was associated with a much lower risk of infection, as was use of face masks (including N95 respirators or similar and surgical or similar masks [eg, 12–16-layer cotton or gauze masks]) and eye protection (eg, goggles or face shields). Added benefits are likely with even larger physical distances (eg, 2 m or more based on modelling) and might be present with N95 or similar respirators versus medical masks or similar. Across 24 studies in health-care and non-health-care settings of contextual factors to consider when formulating recommendations, most stakeholders found these personal protection strategies acceptable, feasible, and reassuring but noted harms and contextual challenges, including frequent discomfort and facial skin breakdown, high resource use linked with the potential to decrease equity, increased difficulty communicating clearly, and perceived reduced empathy of care providers by those they were caring for.

Implications of all the available evidence

In view of inconsistent guidelines by various organisations based on limited information, our findings provide some clarification and have implications for multiple stakeholders. The risk for infection is highly dependent on distance to the individual infected and the type of face mask and eye protection worn. From a policy and public health perspective, current policies of at least 1 m physical distancing seem to be strongly associated with a large protective effect, and distances of 2 m could be more effective. These data could also facilitate harmonisation of the definition of exposed (eg, within 2 m), which has implications for contact tracing. The quantitative estimates provided here should inform disease-modelling studies, which are important for planning pandemic response efforts. Policy makers around the world should strive to promptly and adequately address equity implications for groups with currently limited access to face masks and eye protection. For health-care workers and administrators, our findings suggest that N95 respirators might be more strongly associated with protection from viral transmission than surgical masks. Both N95 and surgical masks have a stronger association with protection compared with single-layer masks. Eye protection might also add substantial protection. For the general public, evidence shows that physical distancing of more than 1 m is highly effective and that face masks are associated with protection, even in non-health-care settings, with either disposable surgical masks or reusable 12–16-layer cotton ones, although much of this evidence was on mask use within households and among contacts of cases. Eye protection is typically underconsidered and can be effective in community settings. However, no intervention, even when properly used, was associated with complete protection from infection. Other basic measures (eg, hand hygiene) are still needed in addition to physical distancing and use of face masks and eye protection.

SARS-CoV-2 might spread through aerosols from respiratory droplets; so far, air sampling has found virus RNA in some studies[2–4] but not in others.[5–8] However, finding RNA virus is not necessarily indicative of replication-competent and infection-competent (viable) virus that could be transmissible. The distance from a patient that the virus is infective, and the optimum person-to-person physical distance, is uncertain. For the currently foreseeable future (ie, until a safe and effective vaccine or treatment becomes available), COVID-19 prevention will continue to rely on non-pharmaceutical interventions, including pandemic mitigation in community settings.[9] Thus, quantitative assessment of physical distancing is relevant to inform safe interaction and care of patients with SARS-CoV-2 in both health-care and non-health-care settings. The definition of close contact or potentially exposed helps to risk stratify, contact trace, and develop guidance documents, but these definitions differ around the globe.

To contain widespread infection and to reduce morbidity and mortality among health-care workers and others in contact with potentially infected people, jurisdictions have issued conflicting advice about physical or social distancing. Use of face masks with or

without eye protection to achieve additional protection is debated in the mainstream media and by public health authorities, in particular the use of face masks for the general population;[10] moreover, optimum use of face masks in health-care settings, which have been used for decades for infection prevention, is facing challenges amid personal protective equipment (PPE) shortages.[11]

Any recommendations about social or physical distancing, and the use of face masks, should be based on the best available evidence. Evidence has been reviewed for other respiratory viral infections, mainly seasonal influenza,[12,13] but no comprehensive review is available of information on SARS-CoV-2 or related betacoronaviruses that have caused epidemics, such as severe acute respiratory syndrome (SARS) or Middle East respiratory syndrome (MERS). We, therefore, systematically reviewed the effect of physical distance, face masks, and eye protection on transmission of SARS-CoV-2, SARS-CoV, and MERS-CoV.

Methods

Search strategy and selection criteria

To inform WHO guidance documents, on March 25, 2020, we did a rapid systematic review.[14] We created a large international collaborative and we used Cochrane methods[15] and the GRADE approach.[16] We prospectively submitted the systematic review protocol for registration on PROSPERO (CRD42020177047; appendix pp 23–29). We have followed PRISMA[17] and MOOSE[18] reporting guidelines (appendix pp 30–33).

From database inception to May 3, 2020, we searched for studies of any design and in any setting that included patients with WHO-defined confirmed or probable COVID-19, SARS, or MERS, and people in close contact with them, comparing distances between people and COVID-19 infected patients of 1 m or larger with smaller distances, with or without a face mask on the patient, or with or without a face mask, eye protection, or both on the exposed individual. The aim of our systematic review was for quantitative assessment to ascertain the physical distance associated with reduced risk of acquiring infection when caring for an individual infected with SARS-CoV-2, SARS-CoV, or MERS-CoV. Our definition of face masks included surgical masks and N95 respirators, among others; eye protection included visors, faceshields, and goggles, among others.

We searched (up to March 26, 2020) MEDLINE (using the Ovid platform), PubMed, Embase, CINAHL (using the Ovid platform), the Cochrane Library, COVID-19 Open Research Dataset Challenge, COVID-19 Research Database (WHO), Epistemonikos (for relevant systematic reviews addressing MERS and SARS, and its COVID-19 Living Overview of the Evidence platform), EPPI Centre living systematic map of the evidence, ClinicalTrials.gov, WHO International Clinical Trials Registry Platform, relevant documents on the websites of governmental and other relevant organisations, reference lists of included papers, and relevant systematic reviews.[19,20] We hand-searched (up to May 3, 2020) preprint servers (bioRxiv, medRxiv, and Social Science Research Network First Look) and coronavirus resource centres of *The Lancet*, *JAMA*, and *N Engl J Med* (appendix pp 3–5). We did not limit our search by language. We initially could not obtain three full texts for evaluation, but we obtained them through interlibrary loan or contacting a study author. We did not restrict our search to any quantitative cutoff for distance.

Data collection

We screened titles and abstracts, reviewed full texts, extracted data, and assessed risk of bias by two authors and independently, using standardised prepiloted forms (Covidence; Veritas Health Innovation, Melbourne, VIC, Australia), and we cross-checked screening results using artificial intelligence (Evidence Prime, Hamilton, ON, Canada). We resolved disagreements by consensus. We extracted data for study identifier, study design, setting, population characteristics, intervention and comparator characteristics, quantitative outcomes, source of funding

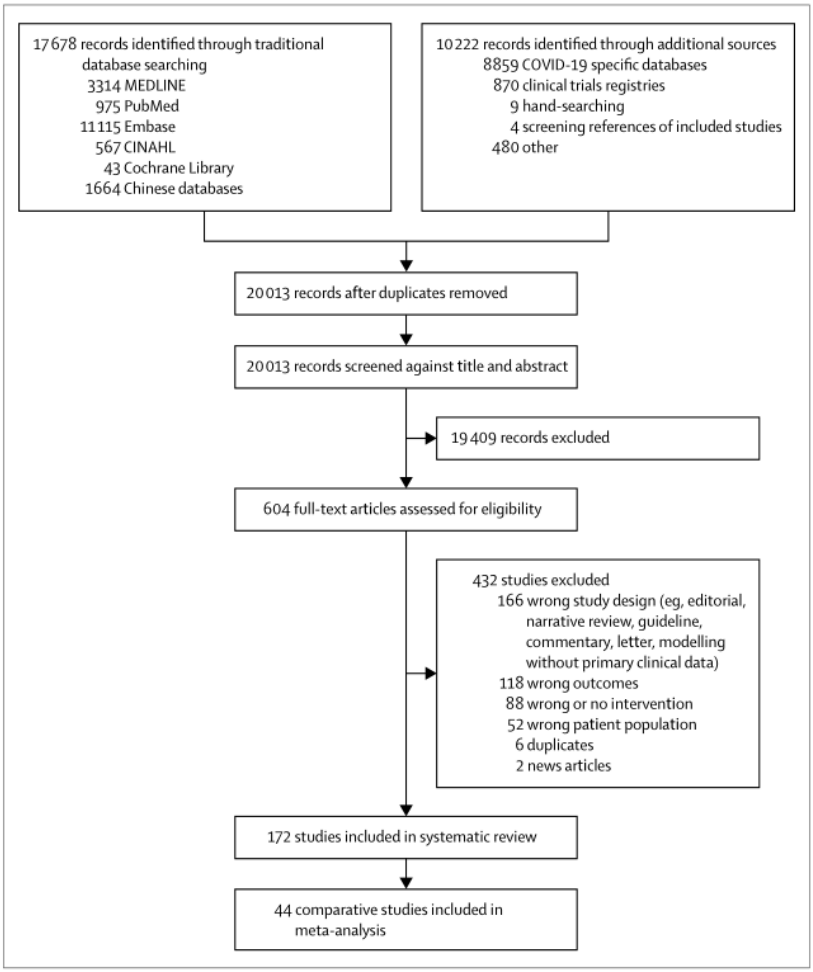


Figure 1: **Study selection**

	Population size (n)	Country	Setting	Disease caused by virus	Case definition (WHO)	Adjusted estimates	Risk of bias*
Alraddadi et al (2016)[34]	283	Saudi Arabia	Health care	MERS	Confirmed	Yes	********
Arwady et al (2016)[35]	79	Saudi Arabia	Non-health care (household and family contacts)	MERS	Confirmed	No	******
Bai et al (2020)[36]	118	China	Health care	COVID-19	Confirmed	No	*****
Burke et al (2020)[37]	338	USA	Health care and non-health care (including household and community)	COVID-19	Confirmed	No	****
Caputo et al (2006)[38]	33	Canada	Health care	SARS	Confirmed	No	*****
Chen et al (2009)[39]	758	China	Health care	SARS	Confirmed	Yes	*******
Cheng et al (2020)[40]	226	China	Non-health care (household and family contacts)	COVID-19	Confirmed	No	******
Ha et al (2004)[42]	117	Vietnam	Health care	SARS	Confirmed	No	**
Hall et al (2014)[43]	48	Saudi Arabia	Health care	MERS	Confirmed	No	***
Heinzerling et al (2020)[44]	37	USA	Health care	COVID-19	Confirmed	No	****
Ho et al (2004)[45]	372	Taiwan	Health care	SARS	Confirmed	No	********
Ki et al (2019)[47]	446	South Korea	Health care	MERS	Confirmed	No	******
Kim et al (2016)[48]	9	South Korea	Health care	MERS	Confirmed	No	*****
Kim et al (2016)[49]	1169	South Korea	Health care	MERS	Confirmed	No	******
Lau et al (2004)[50]	2270	China	Non-health care (households)	SARS	Probable	Yes	******
Liu et al (2009)[51]	477	China	Health care	SARS	Confirmed	Yes	*****
Liu et al (2020)[52]	20	China	Non-health care (close contacts)	COVID-19	Confirmed	No	*******
Loeb et al (2004)[53]	43	Canada	Health care	SARS	Confirmed	No	**
Ma et al (2004)[54]	426	China	Health care	SARS	Confirmed	Yes	*********
Nishiura et al (2005)[55]	115	Vietnam	Health care	SARS	Confirmed	Yes	********
Nishiyama et al (2008)[56]	146	Vietnam	Health care	SARS	Confirmed	Yes	******
Olsen et al (2003)[57]	304	China	Non-health care (airplane)	SARS	Confirmed	No	******
Park et al (2004)[58]	110	USA	Health care	SARS	Confirmed	No	**********
Park et al (2016)[59]	80	South Korea	Health care	MERS	Confirmed and probable	No	***
Peck et al (2004)[60]	26	USA	Health care	SARS	Confirmed	No	*********
Pei et al (2006)[61]	443	China	Health care	SARS	Confirmed	No	********
Rea et al (2007)[62]	8662	Canada	Non-health care (community contacts)	SARS	Probable	No	****
Reuss et al (2014)[63]	81	Germany	Health care	MERS	Confirmed	No	*****
Reynolds et al (2006)[64]	153	Vietnam	Health care	SARS	Confirmed	No	***
Ryu et al (2019)[65]	34	South Korea	Health care	MERS	Confirmed	No	******
Scales et al (2003)[66]	69	Canada	Health care	SARS	Probable	No	**
Seto et al (2003)[67]	254	China	Health care	SARS	Confirmed	Yes	********
Teleman et al (2004)[68]	86	Singapore	Health care	SARS	Confirmed	Yes	********
Tuan et al (2007)[69]	212	Vietnam	Non-health care (household and community contacts)	SARS	Confirmed	Yes	******
Van Kerkhove et al (2019)[46]	828	Saudi Arabia	Non-health care (dormitory)	MERS	Confirmed	Yes	********
Wang et al (2020)[41]	493	China	Health care	COVID-19	Confirmed	Yes	****

(Table 1 continues on next page)

	n	Country	Setting	Disease caused by virus	Case definition (WHO)	Adjusted estimates	Risk of bias*
(Continued from previous page)							
Wang et al (2020)[70]	5442	China	Health care	COVID-19	Confirmed	No	*****
Wiboonchutikul et al (2016)[71]	38	Thailand	Health care	MERS	Confirmed	No	*****
Wilder-Smith et al (2005)[72]	80	Singapore	Health care	SARS	Confirmed	No	********
Wong et al (2004)[73]	66	China	Health care	SARS	Confirmed	No	*****
Wu et al (2004)[74]	375	China	Non-health care (community)	SARS	Confirmed	Yes	********
Yin et al (2004)[75]	257	China	Health care	SARS	Confirmed	Yes	******
Yu et al (2005)[76]	74	China	Health care	SARS	Confirmed	No	*******
Yu et al (2007)[77]	124 wards	China	Health care	SARS	Confirmed	Yes	*******

Across studies, mean age was 30–60 years. SARS=severe acute respiratory syndrome. MERS=Middle East respiratory syndrome. *The Newcastle-Ottawa Scale was used for the risk of bias assessment, with more stars equalling lower risk.

Table 1: **Characteristics of included comparative studies**

and reported conflicts of interests, ethics approval, study limitations, and other important comments.

Outcomes

Outcomes of interest were risk of transmission (ie, WHO-defined confirmed or probable COVID-19, SARS, or MERS) to people in health-care or non-health-care settings by those infected; hospitalisation; intensive care unit admission; death; time to recovery; adverse effects of interventions; and contextual factors such as acceptability, feasibility, effect on equity, and resource considerations related to the interventions of interest. However, data were only available to analyse intervention effects for transmission and contextual factors. Consistent with WHO, studies generally defined confirmed cases with laboratory confirmation (with or without symptoms) and probable cases with clinical evidence of the respective infection (ie, suspected to be infected) but for whom confirmatory testing either had not yet been done for any reason or was inconclusive.

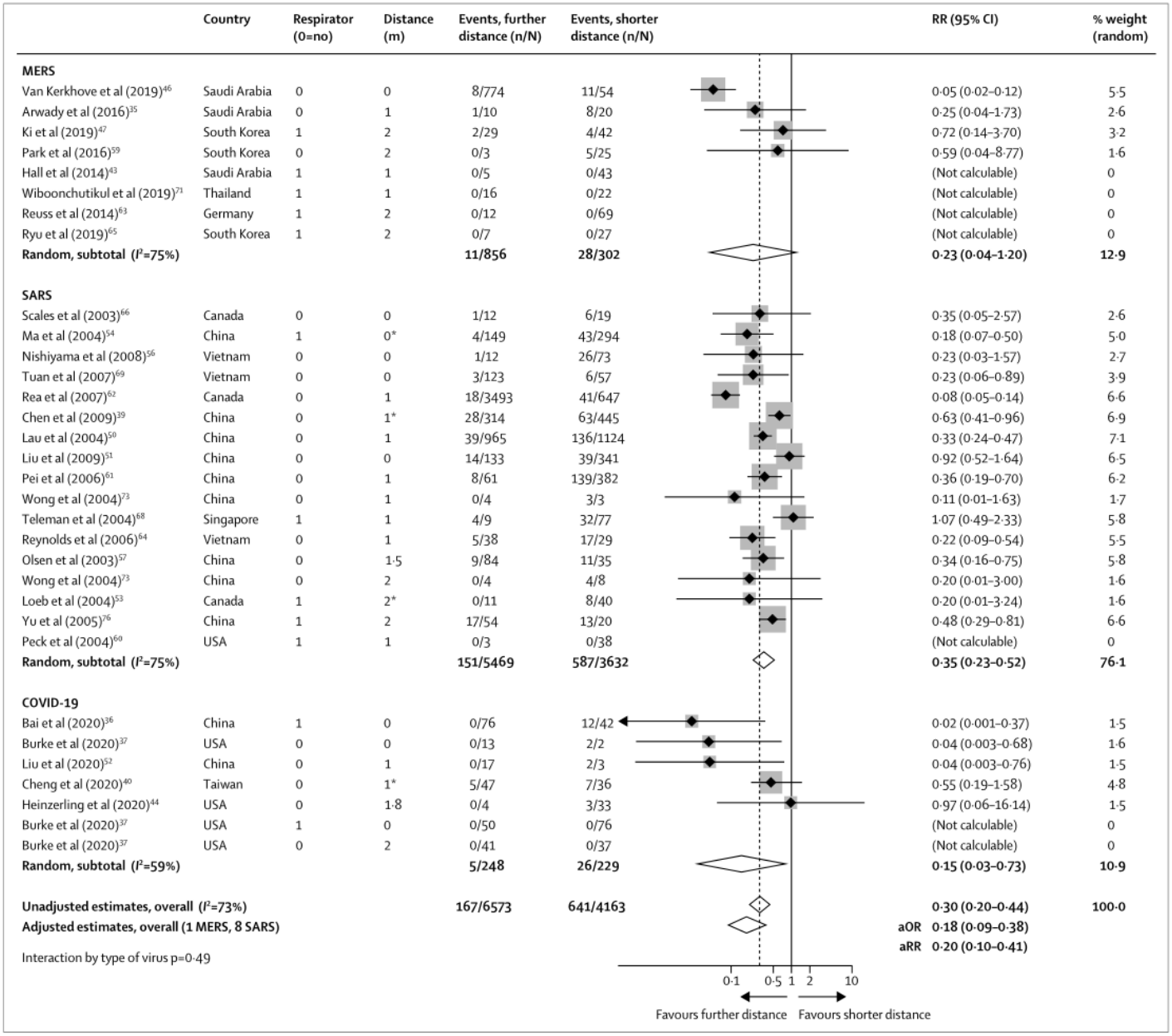
Data analysis

Our search did not identify any randomised trials of COVID-19, SARS, or MERS. We did a meta-analysis of associations by pooling risk ratios (RRs) or adjusted odds ratios (aORs) depending on availability of these data from observational studies, using DerSimonian and Laird random-effects models. We adjusted for variables including age, sex, and severity of source case; these variables were not the same across studies. Because between-study heterogeneity can be misleadingly large when quantified by I^2 during meta-analysis of observational studies,[21,22] we used GRADE guidance to assess between-study heterogeneity.[21] Throughout, we present RRs as unadjusted estimates and aORs as adjusted estimates.

We used the Newcastle-Ottawa scale to rate risk of bias for comparative non-randomised studies corresponding to every study's design (cohort or case-control).[23,24] We planned to use the Cochrane Risk of Bias tool 2.0 for randomised trials,[25] but our search did not identify any eligible randomised trials. We synthesised data in both narrative and tabular formats. We graded the certainty of evidence using the GRADE approach. We used the GRADEpro app to rate evidence and present it in GRADE evidence profiles and summary of findings tables[26,27] using standardised terms.[28,29]

For more on the **GRADEpro app** see https://www.gradepro.org

We analysed data for subgroup effects by virus type, intervention (different distances or face mask types), and setting (health care *vs* non-health care). Among the studies assessing physical distancing measures to prevent viral transmission, the intervention varied (eg, direct physical contact [0 m], 1 m, or 2 m). We, therefore, analysed the effect of distance on the size of the associations by random-effects univariate meta-regressions, using restricted maximum likelihood, and we present mean effects and 95% CIs. We calculated tests for interaction using a minimum of 10 000 Monte Carlo random permutations to avoid spurious findings.[30] We formally assessed the credibility of potential effect-modifiers using GRADE guidance.[21] We did two sensitivity analyses to test the robustness of our findings. First, we used Bayesian meta-analyses to reinterpret the included studies considering priors derived from the effect point estimate and variance from a meta-analysis of ten randomised trials evaluating face mask use versus no face mask use to prevent influenza-like illness in health-care workers.[31] Second, we used Bayesian meta-analyses to reinterpret the efficacy of N95 respirators versus medical masks on preventing influenza-like illness after seasonal viral (mostly influenza) infection.[13] For these sensitivity analyses, we used hybrid Metropolis-Hastings and Gibbs sampling, a 10 000 sample burn-in, 40 000 Markov chain Monte Carlo samples, and we tested non-informative and sceptical priors (eg, four time variance)[32,33] to inform



	Country	Respirator (0=no)	Distance (m)	Events, further distance (n/N)	Events, shorter distance (n/N)	RR (95% CI)	% weight (random)
MERS							
Van Kerkhove et al (2019)[46]	Saudi Arabia	0	0	8/774	11/54	0·05 (0·02–0·12)	5·5
Arwady et al (2016)[35]	Saudi Arabia	0	1	1/10	8/20	0·25 (0·04–1·73)	2·6
Ki et al (2019)[47]	South Korea	1	2	2/29	4/42	0·72 (0·14–3·70)	3·2
Park et al (2016)[59]	South Korea	0	2	0/3	5/25	0·59 (0·04–8·77)	1·6
Hall et al (2014)[43]	Saudi Arabia	1	1	0/5	0/43	(Not calculable)	0
Wiboonchutikul et al (2019)[71]	Thailand	1	1	0/16	0/22	(Not calculable)	0
Reuss et al (2014)[63]	Germany	1	2	0/12	0/69	(Not calculable)	0
Ryu et al (2019)[65]	South Korea	1	2	0/7	0/27	(Not calculable)	0
Random, subtotal (I^2=75%)				**11/856**	**28/302**	**0·23 (0·04–1·20)**	**12·9**
SARS							
Scales et al (2003)[66]	Canada	0	0	1/12	6/19	0·35 (0·05–2·57)	2·6
Ma et al (2004)[54]	China	1	0*	4/149	43/294	0·18 (0·07–0·50)	5·0
Nishiyama et al (2008)[56]	Vietnam	0	0	1/12	26/73	0·23 (0·03–1·57)	2·7
Tuan et al (2007)[69]	Vietnam	0	0	3/123	6/57	0·23 (0·06–0·89)	3·9
Rea et al (2007)[62]	Canada	0	1	18/3493	41/647	0·08 (0·05–0·14)	6·6
Chen et al (2009)[39]	China	0	1*	28/314	63/445	0·63 (0·41–0·96)	6·9
Lau et al (2004)[50]	China	0	1	39/965	136/1124	0·33 (0·24–0·47)	7·1
Liu et al (2009)[51]	China	0	0	14/133	39/341	0·92 (0·52–1·64)	6·5
Pei et al (2006)[61]	China	0	1	8/61	139/382	0·36 (0·19–0·70)	6·2
Wong et al (2004)[73]	China	0	1	0/4	3/3	0·11 (0·01–1·63)	1·7
Teleman et al (2004)[68]	Singapore	1	1	4/9	32/77	1·07 (0·49–2·33)	5·8
Reynolds et al (2006)[64]	Vietnam	0	1	5/38	17/29	0·22 (0·09–0·54)	5·5
Olsen et al (2003)[57]	China	0	1·5	9/84	11/35	0·34 (0·16–0·75)	5·8
Wong et al (2004)[73]	China	0	2	0/4	4/8	0·20 (0·01–3·00)	1·6
Loeb et al (2004)[53]	Canada	1	2*	0/11	8/40	0·20 (0·01–3·24)	1·6
Yu et al (2005)[76]	China	1	2	17/54	13/20	0·48 (0·29–0·81)	6·6
Peck et al (2004)[60]	USA	1	1	0/3	0/38	(Not calculable)	0
Random, subtotal (I^2=75%)				**151/5469**	**587/3632**	**0·35 (0·23–0·52)**	**76·1**
COVID-19							
Bai et al (2020)[36]	China	1	0	0/76	12/42	0·02 (0·001–0·37)	1·5
Burke et al (2020)[37]	USA	0	0	0/13	2/2	0·04 (0·003–0·68)	1·6
Liu et al (2020)[52]	China	0	1	0/17	2/3	0·04 (0·003–0·76)	1·5
Cheng et al (2020)[40]	Taiwan	0	1*	5/47	7/36	0·55 (0·19–1·58)	4·8
Heinzerling et al (2020)[44]	USA	0	1·8	0/4	3/33	0·97 (0·06–16·14)	1·5
Burke et al (2020)[37]	USA	1	0	0/50	0/76	(Not calculable)	0
Burke et al (2020)[37]	USA	0	2	0/41	0/37	(Not calculable)	0
Random, subtotal (I^2=59%)				**5/248**	**26/229**	**0·15 (0·03–0·73)**	**10·9**
Unadjusted estimates, overall (I^2=73%)				**167/6573**	**641/4163**	**0·30 (0·20–0·44)**	**100·0**
Adjusted estimates, overall (1 MERS, 8 SARS)						**aOR 0·18 (0·09–0·38)**	
						aRR 0·20 (0·10–0·41)	
Interaction by type of virus p=0·49							

Figure 2: **Forest plot showing the association of COVID-19, SARS, or MERS exposure proximity with infection**
SARS=severe acute respiratory syndrome. MERS=Middle East respiratory syndrome. RR=relative risk. aOR=adjusted odds ratio. aRR=adjusted relative risk. *Estimated values; sensitivity analyses excluding these values did not meaningfully alter findings.

mean estimates of effect, 95% credibility intervals (CrIs), and posterior distributions. We used non-informative hyperpriors to estimate statistical heterogeneity. Model convergence was confirmed in all cases with good mixing in visual inspection of trace plots, autocorrelation plots, histograms, and kernel density estimates in all scenarios. Parameters were blocked, leading to acceptance of approximately 50% and efficiency greater than 1% in all cases (typically about 40%). We did analyses using Stata version 14.3.

Role of the funding source

The funder contributed to defining the scope of the review but otherwise had no role in study design and data collection. Data were interpreted and the report drafted and submitted without funder input, but according to contractual agreement, the funder provided review at the time of final publication. The corresponding author had full access to all data in the study and had final responsibility for the decision to submit for publication.

	Studies and participants	Relative effect (95% CI)	Anticipated absolute effect (95% CI), eg, chance of viral infection or transmission		Difference (95% CI)	Certainty*	What happens (standardised GRADE terminology)[29]
			Comparison group	Intervention group			
Physical distance ≥1 m *vs* <1 m	Nine adjusted studies (n=7782); 29 unadjusted studies (n=10 736)	aOR 0·18 (0·09 to 0·38); unadjusted RR 0·30 (95% CI 0·20 to 0·44)	Shorter distance, 12·8%	Further distance, 2·6% (1·3 to 5·3)	−10·2% (−11·5 to −7·5)	Moderate†	A physical distance of more than 1 m probably results in a large reduction in virus infection; for every 1 m further away in distancing, the relative effect might increase 2·02 times
Face mask *vs* no face mask	Ten adjusted studies (n=2647); 29 unadjusted studies (n=10 170)	aOR 0·15 (0·07 to 0·34); unadjusted RR 0·34 (95% CI 0·26 to 0·45)	No face mask, 17·4%	Face mask, 3·1% (1·5 to 6·7)	−14·3% (−15·9 to −10·7)	Low‡	Medical or surgical face masks might result in a large reduction in virus infection; N95 respirators might be associated with a larger reduction in risk compared with surgical or similar masks§
Eye protection (faceshield, goggles) *vs* no eye protection	13 unadjusted studies (n=3713)	Unadjusted RR 0·34 (0·22 to 0·52)¶	No eye protection, 16·0%	Eye protection, 5·5% (3·6 to 8·5)	−10·6% (−12·5 to −7·7)	Low‖	Eye protection might result in a large reduction in virus infection

Table based on GRADE approach.[26–29] Population comprised people possibly exposed to individuals infected with SARS-CoV-2, SARS-CoV, or MERS-CoV. Setting was any health-care or non-health-care setting. Outcomes were infection (laboratory-confirmed or probable) and contextual factors. Risk (95% CI) in intervention group is based on assumed risk in comparison group and relative effect (95% CI) of the intervention. All studies were non-randomised and evaluated using the Newcastle-Ottawa Scale; some studies had a higher risk of bias than did others but no important difference was noted in sensitivity analyses excluding studies at higher risk of bias; we did not further rate down for risk of bias. Although there was a high I^2 value (which can be exaggerated in non-randomised studies)[21] and no overlapping CIs, point estimates generally exceeded the thresholds for large effects and we did not rate down for inconsistency. We did not rate down for indirectness for the association between distance and infection because SARS-CoV-2, SARS-CoV, and MERS-CoV all belong to the same family and have each caused epidemics with sufficient similarity; there was also no convincing statistical evidence of effect-modification across viruses; some studies also used bundled interventions but the studies include only those that provide adjusted estimates. aOR=adjusted odds ratio. RR=relative risk. SARS-CoV-2=severe acute respiratory syndrome coronavirus 2. SARS-CoV=severe acute respiratory syndrome coronavirus. MERS-CoV=Middle East respiratory syndrome coronavirus. *GRADE category of evidence; high certainty (we are very confident that the true effect lies close to that of the estimate of the effect); moderate certainty (we are moderately confident in the effect estimate; the true effect is probably close to the estimate, but it is possibly substantially different); low certainty (our confidence in the effect estimate is limited; the true effect could be substantially different from the estimate of the effect); very low certainty (we have very little confidence in the effect estimate; the true effect is likely to be substantially different from the estimate of effect). †The effect is very large considering the thresholds set by GRADE, particularly at plausible levels of baseline risk, which also mitigated concerns about risk of bias; data also suggest a dose–response gradient, with associations increasing from smaller distances to 2 m and beyond, by meta-regression; we did not rate up for this domain alone but it further supports the decision to rate up in combination with the large effects. ‡The effect was very large, and the certainty of evidence could be rated up, but we made a conservative decision not to because of some inconsistency and risk of bias; hence, although the effect is qualitatively highly certain, the precise quantitative effect is low certainty. §In a subgroup analysis comparing N95 respirators with surgical or similar masks (eg, 12–16-layer cotton), the association was more pronounced in the N95 group (aOR 0·04, 95% CI 0·004–0·30) compared with other masks (0·33, 0·17–0·61; $p_{interaction}$=0·090); there was also support for effect-modification by formal analysis of subgroup credibility. ¶Two studies[54,75] provided adjusted estimates with n=295 in the eye protection group and n=406 in the group not wearing eye protection; results were similar to the unadjusted estimate (aOR 0·22, 95% CI 0·12–0·39). ‖The effect is large considering the thresholds set by GRADE assuming that ORs translate into similar magnitudes of RR estimates; this mitigates concerns about risk of bias, but we conservatively decided not to rate up for large or very large effects.

Table 2: **GRADE summary of findings**

Results

We identified 172 studies for our systematic review from 16 countries across six continents (figure 1; appendix pp 6–14, 41–47). Studies were all observational in nature; no randomised trials were identified of any interventions that directly addressed the included study populations. Of the 172 studies, 66 focused on how far a virus can travel by comparing the association of different distances on virus transmission to people (appendix pp 42–44). Of these 66 studies, five were mechanistic, assessing viral RNA, virions, or both cultured from the environment of an infected patient (appendix p 45).

44 studies were comparative[34–77] and fulfilled criteria for our meta-analysis (n=25 697; figure 1; table 1). We used these studies rather than case series and qualitative studies (appendix pp 41–47) to inform estimates of effect. 30 studies[34,37,41–45,47–51,53–56,58–61,64–70,72,74,75] focused on the association between use of various types of face masks and respirators by health-care workers, patients, or both with virus transmission. 13 studies[34,37–39,47,49,51,54,58,60,61,65,75] addressed the association of eye protection with virus transmission.

Some direct evidence was available for COVID-19 (64 studies, of which seven were comparative in design),[36,37,40,41,44,52,70] but most studies reported on SARS (n=55) or MERS (n=25; appendix pp 6–12). Of the 44 comparative studies, 40 included WHO-defined confirmed cases, one included both confirmed and probable cases, and the remaining three studies included probable cases. There was no effect-modification by case-definition (distance $p_{interaction}$=0·41; mask $p_{interaction}$=0·46; all cases for eye protection were confirmed). Most studies reported on bundled interventions, including different components of PPE and distancing, which was usually addressed by statistical adjustment. The included studies all occurred during recurrent or novel outbreak settings of COVID-19, SARS, or MERS.

Risk of bias was generally low-to-moderate after considering the observational designs (table 1), but both within studies and across studies the overall findings were similar between adjusted and unadjusted estimates. We did not detect strong evidence of publication bias in the body of evidence for any intervention (appendix pp 15–18). As we did not use case series data to inform estimates of effect of each intervention, we did not systematically rate risk of bias of these data. Therefore, we report further only those studies with comparative data.

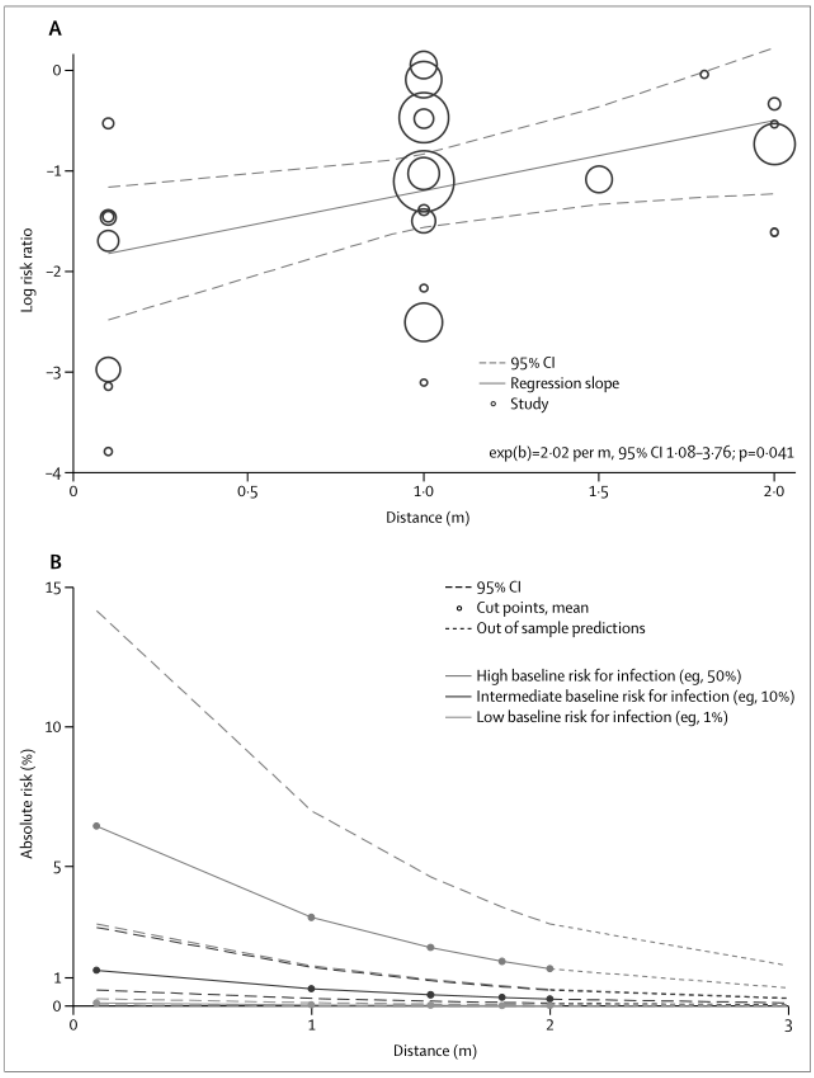
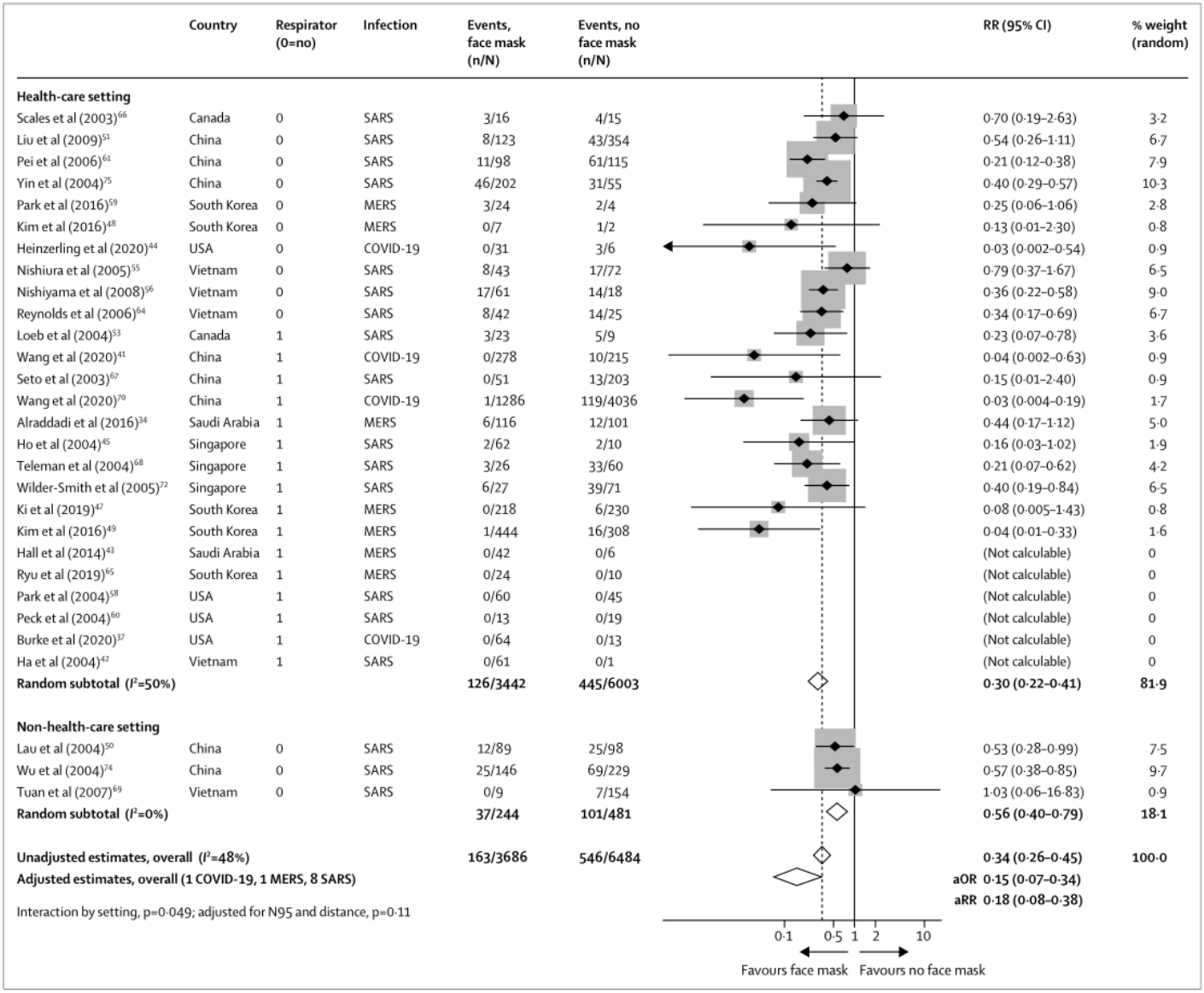


Figure 3: **Change in relative risk with increasing distance and absolute risk with increasing distance**
Meta-regression of change in relative risk with increasing distance from an infected individual (A). Absolute risk of transmission from an individual infected with SARS-CoV-2, SARS-CoV, or MERS-CoV with varying baseline risk and increasing distance (B). SARS-CoV-2=severe acute respiratory syndrome coronavirus 2. SARS-CoV=severe acute respiratory syndrome coronavirus. MERS-CoV=Middle East respiratory syndrome coronavirus.

Across 29 unadjusted and nine adjusted studies,[35–37,39,40,43,44,46,47,50–54,56,57,59–66,68,69,71,73,76] a strong association was found of proximity of the exposed individual with the risk of infection (unadjusted n=10736, RR 0·30, 95% CI 0·20 to 0·44; adjusted n=7782, aOR 0·18, 95% CI 0·09 to 0·38; absolute risk [AR] 12·8% with shorter distance *vs* 2·6% with further distance, risk difference [RD] –10·2%, 95% CI –11·5 to –7·5; moderate certainty; figure 2; table 2; appendix p 16). Although there were six studies on COVID-19, the association was seen irrespective of causative virus ($p_{interaction}$=0·49), health-care setting versus non-health-care setting ($p_{interaction}$=0·14), and by type of face mask ($p_{interaction}$=0·95; appendix pp 17, 19). However, different studies used different distances for the intervention. By meta-regression, the strength of association was larger with increasing distance (2·02 change in RR per m, 95% CI 1·08 to 3·76; $p_{interaction}$=0·041; moderate credibility subgroup effect; figure 3A; table 2). AR values with increasing distance given different degrees of baseline risk are shown in figure 3B, with potential values at 3 m also shown.

Across 29 unadjusted studies and ten adjusted studies,[34,37,41–45,47–51,53–56,58–61,64–70,72,74,75] the use of both N95 or similar respirators or face masks (eg, disposable surgical masks or similar reusable 12–16-layer cotton masks) by those exposed to infected individuals was associated with a large reduction in risk of infection (unadjusted n=10170, RR 0·34, 95% CI 0·26 to 0·45; adjusted studies n=2647, aOR 0·15, 95% CI 0·07 to 0·34; AR 3·1% with face mask *vs* 17·4% with no face mask, RD –14·3%, 95% CI –15·9 to –10·7; low certainty; figure 4; table 2; appendix pp 16, 18) with stronger associations in health-care settings (RR 0·30, 95% CI 0·22 to 0·41) compared with non-health-care settings (RR 0·56, 95% CI 0·40 to 0·79; $p_{interaction}$=0·049; low-to-moderate credibility for subgroup effect; figure 4; appendix p 19). When differential N95 or similar respirator use, which was more frequent in health-care settings than in non-health-care settings, was adjusted for the possibility that face masks were less effective in non-health-care settings, the subgroup effect was slightly less credible ($p_{interaction}$=0·11, adjusted for differential respirator use; figure 4). Indeed, the association with protection from infection was more pronounced with N95 or similar respirators (aOR 0·04, 95% CI 0·004 to 0·30) compared with other masks (aOR 0·33, 95% CI 0·17 to 0·61; $p_{interaction}$=0·090; moderate credibility subgroup effect; figure 5). The interaction was also seen when additionally adjusting for three studies that clearly reported aerosol-generating procedures ($p_{interaction}$=0·048; figure 5). Supportive evidence for this interaction was also seen in within-study comparisons (eg, N95 had a stronger protective association compared with surgical masks or 12–16-layer cotton masks); both N95 and surgical masks also had a stronger association with protection versus single-layer masks.[38,39,51,53,54,61,66,67,75]

We did a sensitivity analysis to test the robustness of our findings and to integrate all available information on face mask treatment effects for protection from COVID-19. We reconsidered our findings using random-effects Bayesian meta-analysis. Although non-informative priors showed similar results to frequentist approaches (aOR 0·16, 95% CrI 0·04–0·40), even using informative priors from the most recent meta-analysis on the effectiveness of masks versus no masks to prevent influenza-like illness (RR 0·93, 95% CI 0·83–1·05)[31] yielded a significant association with protection from COVID-19 (aOR 0·40, 95% CrI 0·16–0·97; posterior probability for RR <1, 98%). Minimally informing (25% influence with or without four-fold smaller mean effect size) the most recent and rigorous meta-analysis of the effectiveness of N95



	Country	Respirator (0=no)	Infection	Events, face mask (n/N)	Events, no face mask (n/N)	RR (95% CI)	% weight (random)
Health-care setting							
Scales et al (2003)[66]	Canada	0	SARS	3/16	4/15	0·70 (0·19–2·63)	3·2
Liu et al (2009)[51]	China	0	SARS	8/123	43/354	0·54 (0·26–1·11)	6·7
Pei et al (2006)[61]	China	0	SARS	11/98	61/115	0·21 (0·12–0·38)	7·9
Yin et al (2004)[75]	China	0	SARS	46/202	31/55	0·40 (0·29–0·57)	10·3
Park et al (2016)[59]	South Korea	0	MERS	3/24	2/4	0·25 (0·06–1·06)	2·8
Kim et al (2016)[48]	South Korea	0	MERS	0/7	1/2	0·13 (0·01–2·30)	0·8
Heinzerling et al (2020)[44]	USA	0	COVID-19	0/31	3/6	0·03 (0·002–0·54)	0·9
Nishiura et al (2005)[55]	Vietnam	0	SARS	8/43	17/72	0·79 (0·37–1·67)	6·5
Nishiyama et al (2008)[56]	Vietnam	0	SARS	17/61	14/18	0·36 (0·22–0·58)	9·0
Reynolds et al (2006)[64]	Vietnam	0	SARS	8/42	14/25	0·34 (0·17–0·69)	6·7
Loeb et al (2004)[53]	Canada	1	SARS	3/23	5/9	0·23 (0·07–0·78)	3·6
Wang et al (2020)[41]	China	1	COVID-19	0/278	10/215	0·04 (0·002–0·63)	0·9
Seto et al (2003)[67]	China	1	SARS	0/51	13/203	0·15 (0·01–2·40)	0·9
Wang et al (2020)[70]	China	1	COVID-19	1/1286	119/4036	0·03 (0·004–0·19)	1·7
Alraddadi et al (2016)[34]	Saudi Arabia	1	MERS	6/116	12/101	0·44 (0·17–1·12)	5·0
Ho et al (2004)[45]	Singapore	1	SARS	2/62	2/10	0·16 (0·03–1·02)	1·9
Teleman et al (2004)[68]	Singapore	1	SARS	3/26	33/60	0·21 (0·07–0·62)	4·2
Wilder-Smith et al (2005)[72]	Singapore	1	SARS	6/27	39/71	0·40 (0·19–0·84)	6·5
Ki et al (2019)[47]	South Korea	1	MERS	0/218	6/230	0·08 (0·005–1·43)	0·8
Kim et al (2016)[49]	South Korea	1	MERS	1/444	16/308	0·04 (0·01–0·33)	1·6
Hall et al (2014)[43]	Saudi Arabia	1	MERS	0/42	0/6	(Not calculable)	0
Ryu et al (2019)[65]	South Korea	1	MERS	0/24	0/10	(Not calculable)	0
Park et al (2004)[58]	USA	1	SARS	0/60	0/45	(Not calculable)	0
Peck et al (2004)[60]	USA	1	SARS	0/13	0/19	(Not calculable)	0
Burke et al (2020)[37]	USA	1	COVID-19	0/64	0/13	(Not calculable)	0
Ha et al (2004)[42]	Vietnam	1	SARS	0/61	0/1	(Not calculable)	0
Random subtotal (I^2=50%)				**126/3442**	**445/6003**	**0·30 (0·22–0·41)**	**81·9**
Non-health-care setting							
Lau et al (2004)[50]	China	0	SARS	12/89	25/98	0·53 (0·28–0·99)	7·5
Wu et al (2004)[74]	China	0	SARS	25/146	69/229	0·57 (0·38–0·85)	9·7
Tuan et al (2007)[69]	Vietnam	0	SARS	0/9	7/154	1·03 (0·06–16·83)	0·9
Random subtotal (I^2=0%)				**37/244**	**101/481**	**0·56 (0·40–0·79)**	**18·1**
Unadjusted estimates, overall (I^2=48%)				**163/3686**	**546/6484**	**0·34 (0·26–0·45)**	**100·0**
Adjusted estimates, overall (1 COVID-19, 1 MERS, 8 SARS)						**aOR 0·15 (0·07–0·34)**	
						aRR 0·18 (0·08–0·38)	
Interaction by setting, p=0·049; adjusted for N95 and distance, p=0·11							

Figure 4: **Forest plot showing unadjusted estimates for the association of face mask use with viral infection causing COVID-19, SARS, or MERS**
SARS=severe acute respiratory syndrome. MERS=Middle East respiratory syndrome. RR=relative risk. aOR=adjusted odds ratio. aRR=adjusted relative risk.

respirators versus medical masks in randomised trials (OR 0·76, 95% CI 0·54–1·06)[13] with the effect-modification seen in this meta-analysis on COVID-19 (ratio of aORs 0·14, 95% CI 0·02–1·05) continued to support a stronger association of protection from COVID-19, SARS, or MERS with N95 or similar respirators versus other face masks (posterior probability for RR <1, 100% and 95%, respectively).

In 13 unadjusted studies and two adjusted studies,[34,37-39,47,49,51,54,58,60,61,65,75] eye protection was associated with lower risk of infection (unadjusted n=3713, RR 0·34, 95% CI 0·22 to 0·52; AR 5·5% with eye protection *vs* 16·0% with no eye protection, RD –10·6%, 95% CI –12·5 to –7·7; adjusted n=701, aOR 0·22, 95% CI 0·12 to 0·39; low certainty; figure 6; table 2; appendix pp 16–17).

Across 24 studies in health-care and non-health-care settings during the current pandemic of COVID-19, previous epidemics of SARS and MERS, or in general use, looking at contextual factors to consider in recommendations, most stakeholders found physical distancing and use of face masks and eye protection acceptable, feasible, and reassuring (appendix pp 20–22). However, challenges included frequent discomfort, high resource use linked with potentially decreased equity, less clear communication, and perceived reduced empathy of care providers by those they were caring for.

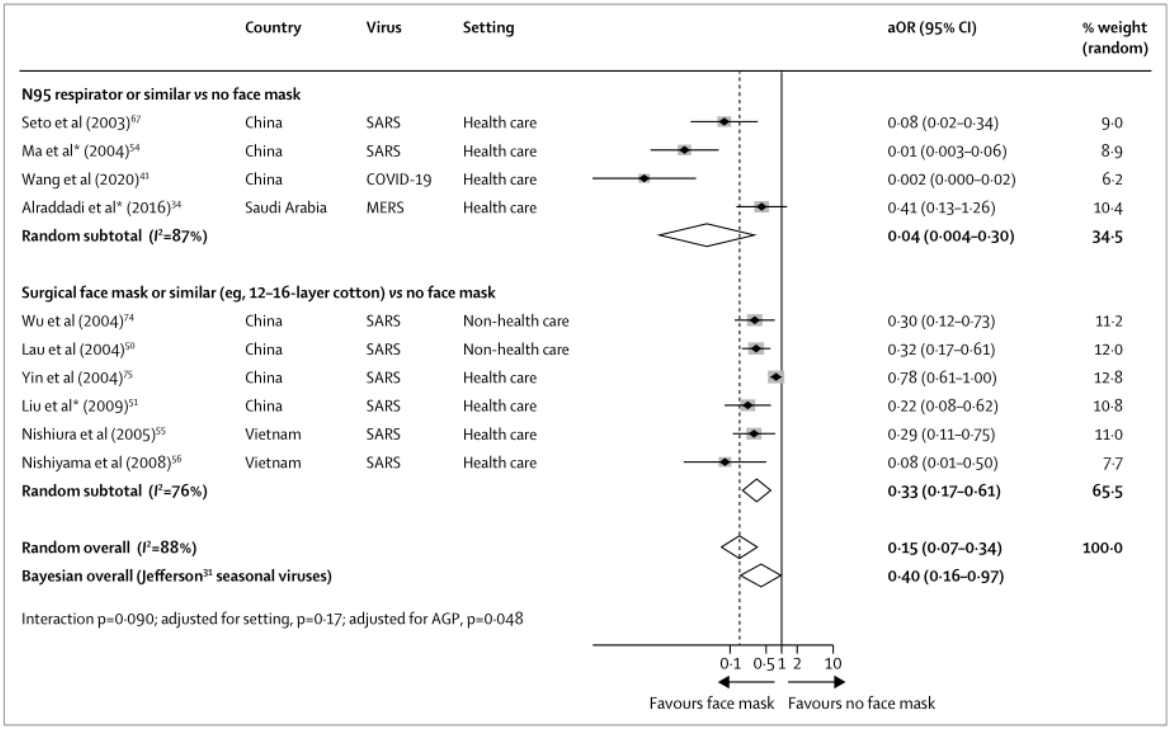


Figure 5: **Forest plot showing adjusted estimates for the association of face mask use with viral infection causing COVID-19, SARS, or MERS**
SARS=severe acute respiratory syndrome. MERS=Middle East respiratory syndrome. RR=relative risk. aOR=adjusted odds ratio. AGP=aerosol-generating procedures. *Studies clearly reporting AGP.

Discussion

The findings of this systematic review of 172 studies (44 comparative studies; n=25 697 patients) on COVID-19, SARS, and MERS provide the best available evidence that current policies of at least 1 m physical distancing are associated with a large reduction in infection, and distances of 2 m might be more effective. These data also suggest that wearing face masks protects people (both health-care workers and the general public) against infection by these coronaviruses, and that eye protection could confer additional benefit. However, none of these interventions afforded complete protection from infection, and their optimum role might need risk assessment and several contextual considerations. No randomised trials were identified for these interventions in COVID-19, SARS, or MERS.

Previous reviews are limited in that they either have not provided any evidence from COVID-19 or did not use direct evidence from other related emerging epidemic betacoronaviruses (eg, SARS and MERS) to inform the effects of interventions to curtail the current COVID-19 pandemic.[13,19,31,78] Previous data from randomised trials are mainly for common respiratory viruses such as seasonal influenza, with a systematic review concluding low certainty of evidence for extrapolating these findings to COVID-19.[13] Further, previous syntheses of available randomised controlled trials have not accounted for cluster effects in analyses, leading to substantial imprecision in treatment effect estimates. In between-study and within-study comparisons, we noted a larger effect of N95 or similar respirators compared with other masks. This finding is inconsistent with conclusions of a review of four randomised trials,[13] in which low certainty of evidence for no larger effect was suggested. However, in that review, the CIs were wide so a meaningful protective effect could not be excluded. We harmonised these findings with Bayesian approaches, using indirect data from randomised trials to inform posterior estimates. Despite this step, our findings continued to support the ideas not only that masks in general are associated with a large reduction in risk of infection from SARS-CoV-2, SARS-CoV, and MERS-CoV but also that N95 or similar respirators might be associated with a larger degree of protection from viral infection than disposable medical masks or reusable multilayer (12–16-layer) cotton masks. Nevertheless, in view of the limitations of these data, we did not rate the certainty of effect as high.[21] Our findings accord with those of a cluster randomised trial showing a potential benefit of continuous N95 respirator use over medical masks against seasonal viral infections.[79] Further high-quality research, including randomised trials of the optimum physical distance and the effectiveness of different types of masks in the general population and for health-care workers' protection, is urgently needed. Two trials are registered to better inform the optimum use of face masks for COVID-19 (NCT04296643 [n=576] and

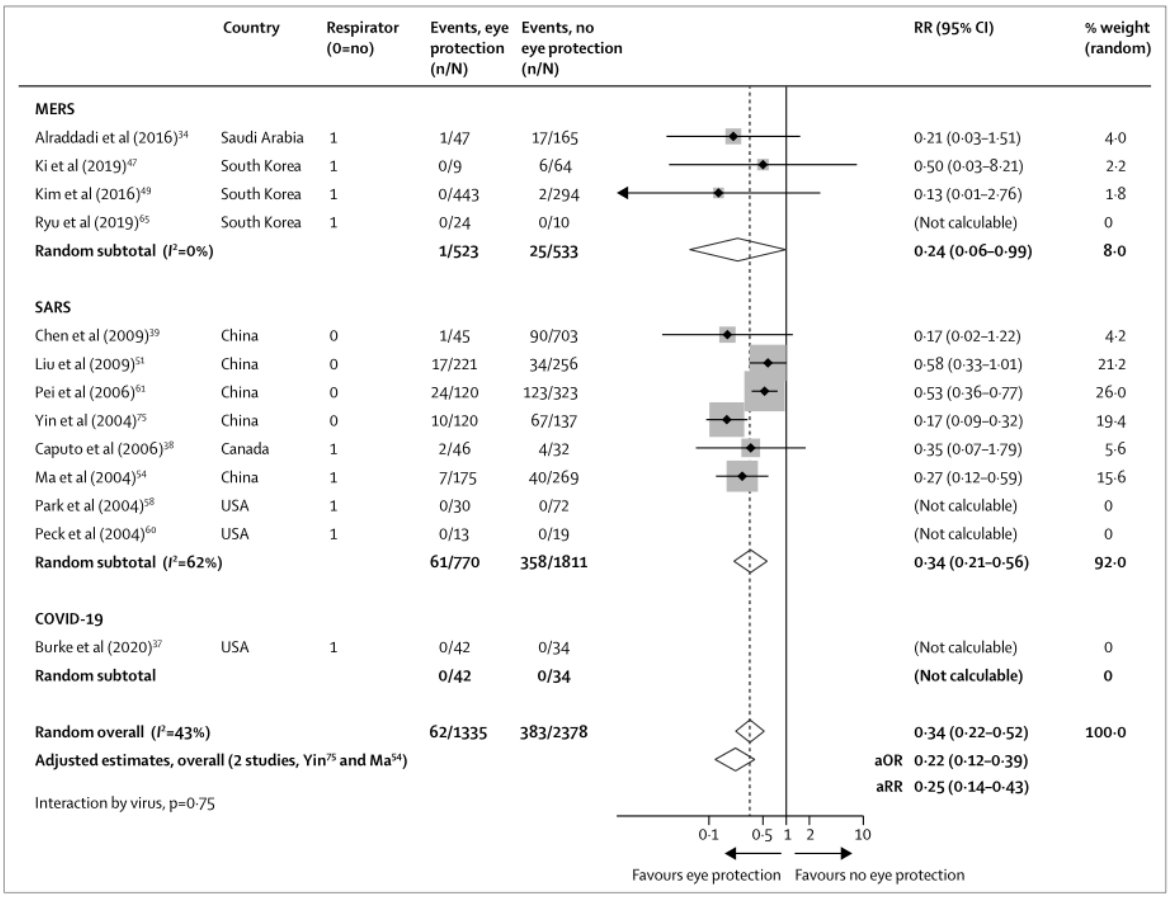


Figure 6: **Forest plot showing the association of eye protection with risk of COVID-19, SARS, or MERS transmission**
Forest plot shows unadjusted estimates. SARS=severe acute respiratory syndrome. MERS=Middle East respiratory syndrome. RR=relative risk. aOR=adjusted odds ratio. aRR=adjusted relative risk.

NCT04337541 [n=6000]). Until such data are available, our findings represent the current best estimates to inform face mask use to reduce infection from COVID-19. We recognise that there are strong, perhaps opposing, sentiments about policy making during outbreaks. In one viewpoint, the 2007 SARS Commission report stated:

> "...recognize, as an aspect of health worker safety, the precautionary principle that reasonable action to reduce risk, such as the use of a fitted N95 respirator, need not await scientific certainty".[80]

> "...if we do not learn from SARS and we do not make the government fix the problems that remain, we will pay a terrible price in the next pandemic".[81]

A counter viewpoint is that the scientific uncertainty and contextual considerations require a more nuanced approach. Although challenging, policy makers must carefully consider these two viewpoints along with our findings.

We found evidence of moderate certainty that current policies of at least 1 m physical distancing are probably associated with a large reduction in infection, and that distances of 2 m might be more effective, as implemented in some countries. We also provide estimates for 3 m. The main benefit of physical distancing measures is to prevent onward transmission and, thereby, reduce the adverse outcomes of SARS-CoV-2 infection. Hence, the results of our current review support the implementation of a policy of physical distancing of at least 1 m and, if feasible, 2 m or more. Our findings also provide robust estimates to inform models and contact tracing used to plan and strategise for pandemic response efforts at multiple levels.

The use of face masks was protective for both health-care workers and people in the community exposed to infection, with both the frequentist and Bayesian analyses lending support to face mask use irrespective of setting. Our unadjusted analyses might, at first impression, suggest use of face masks in the community setting to be less effective than in the health-care setting, but after accounting for differential N95 respirator use between health-care and non-health-care settings, we did not detect any striking differences in effectiveness of

face mask use between settings. The credibility of effect-modification across settings was, therefore, low. Wearing face masks was also acceptable and feasible. Policy makers at all levels should, therefore, strive to address equity implications for groups with currently limited access to face masks and eye protection. One concern is that face mask use en masse could divert supplies from people at highest risk for infection.[10] Health-care workers are increasingly being asked to ration and reuse PPE,[82,83] leading to calls for government-directed repurposing of manufacturing capacity to overcome mask shortages[84] and finding solutions for mask use by the general public.[84] In this respect, some of the masks studied in our review were reusable 12–16-layer cotton or gauze masks.[51,54,61,75] At the moment, although there is consensus that SARS-CoV-2 mainly spreads through large droplets and contact, debate continues about the role of aerosol,[2–8,85,86] but our meta-analysis provides evidence (albeit of low certainty) that respirators might have a stronger protective effect than surgical masks. Biological plausibility would be supported by data for aerosolised SARS-CoV-2[5–8] and preclinical data showing seasonal coronavirus RNA detection in fine aerosols during tidal breathing,[87] albeit, RNA detection does not necessarily imply replication and infection-competent virus. Nevertheless, our findings suggest it plausible that even in the absence of aerosolisation, respirators might be simply more effective than masks at preventing infection. At present, there is no data to support viable virus in the air outside of aerosol generating procedures from available hospital studies. Other factors such as super-spreading events, the subtype of health-care setting (eg, emergency room, intensive care unit, medical wards, dialysis centre), if aerosolising procedures are done, and environmental factors such as ventilation, might all affect the degree of protection afforded by personal protection strategies, but we did not identify robust data to inform these aspects.

Strengths of our review include adherence to full systematic review methods, which included artificial intelligence-supported dual screening of titles and abstracts, full-text evaluation, assessment of risk of bias, and no limitation by language. We included patients infected with SARS-CoV-2, SARS-CoV, or MERS-CoV and searched relevant data up to May 3, 2020. We followed the GRADE approach[16] to rate the certainty of evidence. Finally, we identified and appraise a large body of published work from China, from which much evidence emerged before the pandemic spread to other global regions.

The primary limitation of our study is that all studies were non-randomised, not always fully adjusted, and might suffer from recall and measurement bias (eg, direct contact in some studies might not be measuring near distance). However, unadjusted, adjusted, frequentist, and Bayesian meta-analyses all supported the main findings, and large or very large effects were recorded. Nevertheless, we are cautious not to be overly certain in the precise quantitative estimates of effects, although the qualitative effect and direction is probably of high certainty. Many studies did not provide information on precise distances, and direct contact was equated to 0 m distance; none of the eligible studies quantitatively evaluated whether distances of more than 2 m were more effective, although our meta-regression provides potential predictions for estimates of risk. Few studies assessed the effect of interventions in non-health-care settings, and they primarily evaluated mask use in households or contacts of cases, although beneficial associations were seen across settings. Furthermore, most evidence was from studies that reported on SARS and MERS (n=6674 patients with COVID-19, of 25 697 total), but data from these previous epidemics provide the most direct information for COVID-19 currently. We did not specifically assess the effect of duration of exposure on risk for transmission, although whether or not this variable was judged a risk factor considerably varied across studies, from any duration to a minimum of 1 h. Because of inconsistent reporting, information is limited about whether aerosol-generating procedures were in place in studies using respirators, and whether masks worn by infected patients might alter the effectiveness of each intervention, although the stronger association with N95 or similar respirators over other masks persisted when adjusting for studies reporting aerosol-generating medical procedures. These factors might account for some of the residual statistical heterogeneity seen for some outcomes, albeit I^2 is commonly inflated in meta-analyses of observational data,[21,22] and nevertheless the effects seen were large and probably clinically important in all adjusted studies.

Our comprehensive systematic review provides the best available information on three simple and common interventions to combat the immediate threat of COVID-19, while new evidence on pharmacological treatments, vaccines, and other personal protective strategies is being generated. Physical distancing of at least 1 m is strongly associated with protection, but distances of up to 2 m might be more effective. Although direct evidence is limited, the optimum use of face masks, in particular N95 or similar respirators in health-care settings and 12–16-layer cotton or surgical masks in the community, could depend on contextual factors; action is needed at all levels to address the paucity of better evidence. Eye protection might provide additional benefits. Globally collaborative and well conducted studies, including randomised trials, of different personal protective strategies are needed regardless of the challenges, but this systematic appraisal of currently best available evidence could be considered to inform interim guidance.

Contributors

DKC, EAA, SD, KS, SY, and HJS designed the study. SY, SD, KS, and HJS coordinated the study. SY and LH designed and ran the literature search. All authors acquired data, screened records, extracted data, and assessed risk of bias. DKC did statistical analyses. DKC and HJS wrote the report. All authors provided critical conceptual input, analysed and interpreted data, and critically revised the report.

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Declaration of interests
ML is an investigator of an ongoing clinical trial on medical masks versus N95 respirators for COVID-19 (NCT04296643). All other authors declare no competing interests.

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Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Chu DK, Akl EA, Duda S, et al. Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis. *Lancet* 2020; published online June 1. https://doi.org/10.1016/S0140-6736(20)31142-9.

Supplementary material

Physical distancing, face masks, and eye protection to prevent person-person SARS-CoV2 and COVID-19 transmission: A systematic review and meta-analysis

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Appendix 1. Search strategies for the different databases ran on March 26, 2020. Preprint and coronavirus searches were run daily until May 3, 2020.

We developed the search strategy with the assistance of an information specialist experienced with systematic reviews (LH). Two information specialists (Ms. Neera Bhatnagar and Ms. Aida Farha) peer reviewed the search strategy. Other members of the team, particularly the content experts provided feedback to the search strategy. The strategies combined medical subject headings (MeSH) and keywords for the two following concepts: COVID-19 and personal protection by any of physical distancing, masks, or eye protection. PubMed search terms were informed by the Biomedical Information of the Dutch Library Association specialists curated search blocks at https://blocks.bmi-online.nl/catalog/397.

Medline (OVID)

Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Daily 1946 to March 26, 2020

1 (pneumonia/ or pneumonia, viral/ or exp Viruses/) and (exp Disease Outbreaks/ or exp Epidemiology/ or Epidemiology.fs.) (104129)

2 coronaviridae/ or exp coronavirus/ or exp Coronavirus Infections/ or exp Betacoronavirus/ (15998)

3 (Betacoronavirus or Beta-coronavirus or Coronavirus* or COVID).mp. (14380)

4 1 or 2 or 3 (121096)

5 limit 4 to ez="20191101-20200325" (1524)

6 (("2019" adj (novel or new) adj corona*) or ("2019" adj (CoV or nCoV)) or (coronavirus adj (disease adj "2019")) or COVID19 or COVID-19 or ((Novel or New) adj Corona*) or SARS2 or SARS-CoV-2 or (SARS adj2 (coronaviridae or coronavirus)) or ((sars or Coronavirus) adj "2") or nCov or 2019ncov).mp. (4983)

7 5 or 6 (5522)

8 (Mask? or facemask? or face-mask? or ppe or (body adj substance* adj isolati*) or bsi or (infect* adj prevent* adj control*) or ipc or N95 or ffp or ffp1 or ffp3 or ffp2 or (filter* adj face adj piece) or ((face or respiratory or eye) adj2 (shield or equipment? or protect* or cover*)) or ((airborne or air-borne or droplet*) adj precau*) or N99 or N97 or respirator? or goggle? or ((patient? or person* or individual?) adj1 isolat*) or distanc* or space or spacing or separation or (aerosol adj generat* adj procedur*) or ((safety or protective) adj (supply or supplies or device* or equipment? or material* or measure* or gear?)) or (safely adj1 equipped) or meter? or metre? or foot or feet or (non-pharm* adj intervention*) or ((physical or person*) adj (intervention* or barrier? or protect*)) or transmission* or contamination? or shedding? or fomite? or gap? or ((head or face) adj cover?) or (protective adj clothing?)).mp. or masks/ or protective devices/ or personal protective equipment/ or respiratory protective devices/ or Eye Protective Devices/ (2489045)

9 7 and 8 (3314)

PubMed

Search Query

#7 Search ((((#4 OR #5))) AND (((mask[tw] OR masks[tw] OR facemask[tw] OR facemasks[tw] OR face-mask[tw] OR face-masks[tw] OR PPE[tw] OR body substance isolation*[tw] OR bsi[tw] OR infection prevention control*[tw] OR ipc[tw] OR N95[tw] OR ffp[tw] OR ffp1[tw] OR ffp3[tw] OR ffp2[tw] OR N97[tw] OR N99[tw] OR physical barrier*[tw] OR physical intervention*[tw] OR physical protection*[tw] OR personal protection*[tw] OR person protection*[tw] OR transmission[tw] OR transmissions[tw] OR contamination[tw] OR contaminations[tw] OR shedding[tw] OR fomite[tw] OR gap[tw] OR gaps[tw] OR non-pharm intervention*[tw] OR non-pharmaceutical intervention*[tw] OR distancing[tw] OR space [tw] OR distances[tw] OR spacing[tw] OR separation[tw] OR respirator[tw] OR respirators[tw] OR aerosol-generating procedure*[tw] OR patient isolation*[tw] OR patient isolator*[tw] OR person isolation[tw] OR person isolator*[tw] OR individual isolation[tw] OR individual isolator*[tw] OR filtering face piece[tw] OR filtering face piece*[tw] OR [tw] OR face protection*[tw] OR face shield*[tw] OR face protective device*[tw] OR face protective gear*[tw] OR eye protection*[tw] OR eye shield*[tw] OR eye protective device*[tw] OR eye protective gear*[tw] OR airborne precaution*[tw] OR droplet precautions*[tw] OR safety supply*[tw] OR safety supplies*[tw] OR safety device*[tw] OR safety equipment*[tw] OR safety measure*[tw] OR safety gear*[tw] OR protective supply*[tw] OR protective supplies*[tw] OR protective device*[tw] OR protective equipment*[tw] OR protective measure*[tw] OR protective gear*[tw] OR person isolation[tw] OR personal isolation[tw] OR individual isolation[tw] OR respirator[tw] OR respirators[tw] OR respiratory protection*[tw] OR respiratory protective device*[tw] OR respiratory protective supply*[tw] OR respiratory protective supplies*[tw] OR respiratory protective equipment*[tw] OR respiratory protective gear*[tw] OR safely equipped*[tw] OR meter[tw] OR metre[tw] OR foot[tw] OR feet[tw] OR meters[tw] OR metres[tw] OR head cover*[tw] OR face cover*[tw] OR eye cover*[tw] OR goggle*[tw] OR protective clothing*[tw])) OR ((((("Masks"[Mesh:NoExp]) OR "Protective Devices"[Mesh]) OR "Personal Protective Equipment"[Mesh:NoExp]) OR "Respiratory Protective Devices"[Mesh:NoExp] OR "Eye Protective Devices"[Mesh:NoExp])))

#6 Search ((#4 OR #5))

#5 Search (((2019-novel-corona* OR 2019-new-corona* OR novel-corona* OR new-corona* OR 2019-Cov OR 2019-nCov OR nCov OR coronavirus disease-2019 OR SARS2 OR SARS-2 OR SARS-CoV-2 OR sars cORona* OR CORonavirus-2 OR 2019ncov)))

#4 Search ((((#1 OR #2 OR #3) AND 2019/11:2020/03 [crdt])))

#3 Search (((BetacORonavirus[tw] OR Beta-cORonavirus[tw] OR corona[tw] OR corona'[tw] OR corona's[tw] OR OR coronaviral[tw] OR coronavirdae[tw] OR coronavirida[tw] OR coronaviridae[tw] OR coronaviridea[tw] OR coronaviridiae[tw] OR coronavirinae[tw] OR coronavirion[tw] OR coronavirions[tw] OR coronavirologists[tw] OR coronavirology[tw] OR coronaviroses[tw] OR coronavirous[tw] OR coronavirues[tw] OR coronavirus[tw] OR coronavirus'[tw] OR coronavirus's[tw] OR

coronaviruscpe[tw] OR coronaviruse[tw] OR coronaviruses[tw] OR coronaviruses'[tw] OR coronaviruslike[tw] OR coronaviser[tw] OR coronaviurs[tw] OR coronaviuses[tw] OR coronavrius[tw] OR coronavvirus[tw] OR COVID[tw])))
#2 Search ((((pneumonia[Mesh:noexp] OR pneumonia, viral[Mesh:noexp] OR Viruses[Mesh]) and ("Disease Outbreaks"[Mesh] OR Epidemiology[Mesh] OR Epidemiology [Mesh subject heading])))
#1 Search (((cORonaviridae[Mesh:noexp] OR cORonavirus[Mesh] OR "Coronavirus Infections"[Mesh] OR BetacORonavirus[Mesh])))

EMBASE

No.	Query
#18	#7 AND #17
#17	#8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16
#16	'mask'/de OR 'protective equipment'/de OR 'respiratory protection'/de OR 'eye mask'/de
#15	meter$:ti,ab,kw OR metre$:ti,ab,kw OR foot:ti,ab,kw OR feet:ti,ab,kw OR (('non pharm*' NEXT/0 intervention*):ti,ab,kw) OR (((physical OR person*) NEXT/0 (intervention* OR barrier$ OR protect*)):ti,ab,kw) OR transmission*:ti,ab,kw OR contamination$:ti,ab,kw OR shedding$:ti,ab,kw OR fomite$:ti,ab,kw OR gap$:ti,ab,kw
#14	((filter* NEXT/0 face NEXT/0 piece):ti,ab,kw) OR (((face OR respiratory OR eye) NEAR/2 (shield OR equipment$ OR protect* OR cover$)):ti,ab,kw)
#13	((safety OR protective) NEXT/0 (supply OR supplies OR device* OR equipment? OR material* OR measure* OR gear$)) AND ti,ab,kw OR ((safely NEAR/1 equipped):ti,ab,kw)
#12	distanc*:ti,ab,kw OR space:ti,ab,kw OR spacing:ti,ab,kw OR separation:ti,ab,kw OR ((aerosol NEXT/0 generat* NEXT/0 procedur*):ti,ab,kw)
#11	(((airborne OR 'air borne' OR droplet$) NEXT/0 precau*):ti,ab,kw) OR n99:ti,ab,kw OR n97:ti,ab,kw OR goggle$:ti,ab,kw OR respirator$:ti,ab,kw OR (((patient$ OR person* OR individual$) NEXT/0 isolat*):ti,ab,kw)
#10	((filter* NEXT/0 face NEXT/0 piece):ti,ab,kw) OR (((face OR respiratory) NEAR/2 (shield OR equipment$ OR protect*)):ti,ab,kw)
#9	'ppe':ti,ab,kw OR ((body NEXT/0 substance$ NEXT/0 isolati*):ti,ab,kw) OR bsi:ti,ab,kw OR ((infect* NEXT/0 prevent* NEXT/0 control*):ti,ab,kw) OR ipc:ti,ab,kw OR n95:ti,ab,kw OR ffp:ti,ab,kw OR ffp1:ti,ab,kw OR ffp3:ti,ab,kw OR ffp2:ti,ab,kw
#8	mask$:ti,ab,kw OR facemask$:ti,ab,kw OR 'face mask':ti,ab,kw
#7	#5 OR #6
#6	((2019 NEXT/0 novel):ti,ab,kw) OR ((2019 NEXT/0 cov):ti,ab,kw) OR ((coronavirus NEXT/0 disease NEXT/0 2019):ti,ab,kw) OR covid19:ti,ab,kw OR 'covid 19':ti,ab,kw OR (((novel OR new) NEXT/0 corona*):ti,ab,kw) OR sars2:ti,ab,kw OR 'sars cov 2':ti,ab,kw OR ((sars NEAR/2 coronaviridae):ti,ab,kw) OR coronavirus:ti,ab,kw OR sars:ti,ab,kw OR ((coronavirus NEXT/0 '2'):ti,ab,kw) OR ncov:ti,ab,kw OR 2019ncov:ti,ab,kw
#5	#4 AND [1-11-2019]/sd
#4	#1 OR #2 OR #3
#3	betacoronavirus:ti,ab,kw OR 'beta coronavirus':ti,ab,kw OR coronavirus*:ti,ab,kw OR covid:ti,ab,kw
#2	'coronaviridae'/exp OR 'coronavirus infection'/exp OR 'betacoronavirus'/exp
#1	('pneumonia'/de OR 'virus pneumonia'/de OR 'virus'/exp) AND ('epidemic'/exp OR 'epidemiology'/exp OR epidemiology:lnk)

CINAHL (OVID)

Cochrane Library

ID	Search	Hits
#1	MeSH descriptor: [Pneumonia, Viral] this term only	51
#2	MeSH descriptor: [Pneumonia] this term only	1976
#3	MeSH descriptor: [Viruses] explode all trees	8746
#4	#1 OR #2 OR #3	10734
#5	MeSH descriptor: [Disease Outbreaks] explode all trees	262
#6	MeSH descriptor: [Epidemiology] explode all trees	37
#7	(Epidemiology):ti,ab,kw	48587
#8	#5 OR #6 OR #7	48682
#9	#4 AND #8	1315
#10	MeSH descriptor: [Coronaviridae] this term only	0
#11	MeSH descriptor: [Coronavirus] explode all trees	11
#12	MeSH descriptor: [Coronavirus Infections] explode all trees	12
#13	MeSH descriptor: [Betacoronavirus] explode all trees	10
#14	(Betacoronavirus or Beta-coronavirus or Coronavirus* or COVID):ti,ab,kw	98
#15	#9 OR #10 OR #11 OR #12 OR #13 OR #14 with Cochrane Library publication date Between Nov 2019 and Mar 2020	44
#16	((2019 NEXT (novel or new) NEXT corona*)):ti,ab,kw	8

#17 (("2019" NEXT (CoV or nCoV)) or (coronavirus NEXT (disease NEXT "2019")) or COVID19 or COVID-19 or ((Novel or New) NEXT Corona*) or SARS2 or SARS-CoV-2 or (SARS NEAR/2 (coronaviridae or coronavirus)) or ((sars or Coronavirus) NEXT "2") or nCov or 2019ncov):ti,ab,kw 118
#18 #15 OR #16 OR #17 145
#19 MeSH descriptor: [Masks] this term only 475
#20 MeSH descriptor: [Protective Devices] this term only 207
#21 MeSH descriptor: [Personal Protective Equipment] this term only 19
#22 MeSH descriptor: [Respiratory Protective Devices] this term only 66
#23 MeSH descriptor: [Eye Protective Devices] this term only 65
#24 (Mask? OR facemask? OR face-mask? OR ppe OR (body NEAR substance* NEAR isolati*) OR bsi OR (infect* NEAR prevent* NEAR control*) OR ipc OR N95 OR ffp OR ffp1 OR ffp3 OR ffp2 OR (filter* NEAR face NEAR piece) OR ((face OR respiratORy OR eye) NEXT/2 (shield OR equipment? OR protect* OR cover*)) OR ((airbORne OR air-bORne OR droplet*) NEAR precau*) OR N99 OR N97 OR respiratOR? OR goggle? OR ((patient? OR person* OR individual?) NEXT/1 isolat*) OR distanc* OR space OR spacing OR separation OR (aerosol NEAR generat* NEAR procedur*) OR ((safety OR protective) NEAR (supply OR supplies OR device* OR equipment? OR material* OR measure* OR gear?)) OR (safely NEAR/1 equipped) OR meter? OR metre? OR foot OR feet OR (non-pharm* NEAR intervention*) OR ((physical OR person*) NEAR (intervention* OR barrier? OR protect*)) OR transmission* OR contamination? OR shedding? OR fomite? OR gap? OR ((head or face) NEXT cover?) OR (protective NEXT clothing?)):ti,ab,kw 161945
#25 #19 OR #20 OR #21 OR #22 OR #23 OR #24 161945
#26 #18 AND #25 43

China National Knowledge Infrastructure (CNK)I 中国知网--topic words searching in Chinese
新型冠状病毒性肺炎，新冠肺炎，新型冠状病毒，冠状病毒感染，冠状病毒肺炎，冠状病毒，COVID-19

Science Chinese Biomedical Literature Database (SinoMed)—field searching in Chinese
("2019冠状病毒"[常用字段:智能] OR "新型冠状病毒"[常用字段:智能] OR "新冠肺炎"[常用字段:智能] OR "2019-nCoV"[常用字段:智能] OR "SARS-CoV-2"[常用字段:智能] OR "Novel coronavirus"[常用字段:智能] OR "nCoV"[常用字段:智能] OR "Emerging Coronaviruses"[常用字段:智能] OR "new coronavirus"[常用字段:智能] OR "COVID-19"[常用字段:智能] OR "coronavirus"[常用字段:智能] AND ("Wuhan"[常用字段] OR "Hubei"[常用字段] OR "China"[常用字段])) AND 2019-2020[日期]

Appendix 2. Characteristics of included studies

Study ID[Reference]	Study Design	Country	Setting	Virus
Alameer 2015(1)	Non-comparative	Saudi Arabia	Healthcare setting	MERS
Alanazi 2018(2)	Non-comparative	Saudi Arabia	Healthcare setting	MERS
Alfaraj 2018(3)	Comparative NRS	Saudi Arabia	Non-healthcare setting	MERS
Alraddadi 2016(4)	Comparative NRS	Saudi Arabia	Healthcare setting	MERS
Al-Tawfiq 2019(5)	Qualitative	Saudi Arabia	Healthcare setting	MERS
Assiri 2013(6)	Non-comparative	Saudi Arabia	Healthcare setting	MERS
Bai 2020(7)	Non-comparative	China	Non-healthcare setting	COVID-19
Bai 2020(8)	Comparative	China	Healthcare setting	COVID-19
Barratt 2019(9)	Qualitative	Australia	Healthcare setting	Other
Baseer 2016(10)	Qualitative	Saudi Arabia	Healthcare setting	MERS
Booth 2005(11)	Mechanistic	Canada	Healthcare setting	SARS
Cai 2020(12)	Contextual factors - qualitative or quantiative	China	Non-healthcare setting	COVID-19
Cao 2020(13)	Non-comparative	China	Non-healthcare setting	COVID-19
Caputo 2006(14)	Comparative NRS	Canada	Healthcare setting	SARS
Chau 2010(15)	Qualitative	China	Healthcare setting	Other
Chen 2004(16)	Non-comparative	Taiwan	Healthcare setting	SARS
Chen 2009(17)	Comparative NRS - Cohort	China	Healthcare setting	SARS
Chen 2020(18)	Contextual factors - qualitative or quantiative	China	Non-healthcare setting	COVID-19
Chen 2020(19)	Non-comparative	China	Non-healthcare setting	COVID-19
Chen 2020(20)	Comparative NRS	China	Non-healthcare setting	COVID-19
Chen 2020(21)	Non-comparative	China	Healthcare setting	COVID-19
Cheng 2020(22)	Non-comparative - mechanistic	China	Healthcare setting	COVID-19
Chia 2005(23)	Qualitative	Singapore	Healthcare setting	SARS
Christian 2004(24)	Non-comparative - Case series	Canada	Healthcare setting	SARS
Chughtai 2015(25)	Qualitative	Vietnam	Healthcare setting	Other

Study ID[Reference]	Study Design	Country	Setting	Virus
Chughtai 2020(26)	Qualitative	Australia	Healthcare setting	Other
Cui 2020(27)	Comparative NRS	China	Non-healthcare setting	COVID-19
Du 2020(28)	Comparative NRS	China	Non-healthcare setting	COVID-19
El Bushra 2016(29)	Non-comparative - Case series	Saudi Arabia	Healthcare setting	MERS
Fan 2020(30)	Comparative NRS - Cohort	China	Healthcare setting	COVID-19
Feng 2020(31)	Non-comparative	China	Non-healthcare setting	COVID-19
Fix 2019(32)	Qualitative	United States of America	Healthcare setting	SARS
Gan 2020(33)	Comparative NRS	China	Non-healthcare setting	COVID-19
Goh 2019(34)	Qualitative	Singapore	Healthcare setting	NA
Gomersall 2006(35)	Non-comparative - Cohort (but all received the intervention)	China	Healthcare setting	SARS
Ha 2004(36)	Comparative NRS - Cohort	Vietnam	Healthcare setting	SARS
Hall 2014(37)	Comparative NRS - Cohort	Saudi Arabia	Healthcare setting	MERS
Hines 2019(38)	Qualitative	United States of America	Healthcare setting	Other
Ho 2003(39)	Non-comparative - Case series	China	Healthcare setting	SARS
Ho 2004(40)	Comparative NRS - Cohort	Singapore	Healthcare setting	SARS
Ho 2012(41)	Qualitative	China	Healthcare setting	Other
Honarbakhsh 2018(42)	Qualitative	Iran	Healthcare setting	Other
Huang 2011(43)	Qualitative	Taiwan	Healthcare setting	Respiratory infectious diseases
Hunter 2016(44)	Non-comparative - Case series	United Arabic Emirates	Healthcare setting	MERS
Huynh 2020(45)	Contextual factors - qualitative or quantiative	Vietnam	Non-healthcare setting	COVID-19
Jia 2020(46)	Non-comparative	China	Healthcare setting	COVID-19
Jiang 2020(47)	Qualitative	China	Healthcare setting	COVID-19
Kang 2018(48)	Qualitative	South Korea	Healthcare setting	MERS
Kao 2004(49)	Qualitative	China	Healthcare setting	SARS
Khalid 2016(50)	Qualitative	Saudi Arabia	Healthcare setting	MERS
Khoo 2005(51)	Qualitative	China	Healthcare setting	SARS

Study ID[Reference]	Study Design	Country	Setting	Virus
Ki 2019(52)	Comparative NRS - Cohort	South Korea	Healthcare setting	MERS
Kim 2016(53)	Comparative NRS - Cohort	South Korea	Healthcare setting	MERS
Kinlay 2015(54)	Qualitative	United States of America	Healthcare setting	NA
Knapp 2008(55)	Qualitative	United States of America	Healthcare setting	Other
Lau 2003(56)	Qualitative	China	Non-healthcare setting	SARS
Lau 2004(57)	Comparative NRS - Cohort	China	Non-healthcare setting	SARS
Lau 2007(58)	Qualitative	China	Non-healthcare setting	Other
Li 2020(59)	Comparative NRS	China	Non-healthcare setting	COVID-19
Li 2020(60)	Non-comparative	China	Non-healthcare setting	COVID-19
Li 2020(61)	Non-comparative	China	Healthcare setting	COVID-19
Li 2020(62)	Comparative NRS	China	Non-healthcare setting	COVID-19
Li 2020(63)	Non-comparative	China	Non-healthcare setting	COVID-19
Li 2020(64)	Contextual factors - qualitative or quantiative	China	Non-healthcare setting	COVID-19
Lim 2004(65)	Qualitative	Singapore	Non-healthcare setting	SARS
Lin 2020(66)	Non-comparative	China	Non-healthcare setting	COVID-19
Liu 2009(67)	Comparative NRS - Cohort	China	Healthcare setting	SARS
Liu 2020(68)	Non-comparative	China	Non-healthcare setting	COVID-19
Liu 2020(69)	Non-comparative	China	Non-healthcare setting	COVID-19
Liu 2020(70)	Non-comparative	China	Non-healthcare setting	COVID-19
Liu 2020(71)	Comparative NRS	China	Non-healthcare setting	COVID-19
Liu 2020(72)	Comparative NRS	China	Non-healthcare setting	COVID-19
Liu 2020(73)	Comparative NRS	China	Non-healthcare setting	COVID-19
Loeb 2004(74)	Comparative NRS - Cohort	Canada	Healthcare setting	SARS
Loh 2004(75)	Qualitative	Malaysia	Healthcare setting	SARS
Lu 2003(76)	Non-comparative	China	Healthcare setting	SARS
Luo 2020(77)	Non-comparative	China	Non-healthcare setting	COVID-19
Ma 2004(78)	Comparative NRS	China	Healthcare setting	SARS

Study ID[Reference]	Study Design	Country	Setting	Virus
Ma 2020(79)	Comparative NRS	China	Healthcare setting	COVID-19
MacIntyre 2015(80)	RCT	Vietnam	Healthcare setting	Other
MacIntyre 2016(81)	RCT	China	Healthcare setting	Respiratory infectious diseases
Marchand-Senecal 2020(82)	Non-comparative - Case series	Canada	Healthcare setting	COVID-19
Maroldi 2017(83)	Qualitative	Brazil		Other
Matthews Pillemer 2015(84)	Qualitative	United States of America, China, Taiwan and Singapore	Non-healthcare setting	SARS
Moore 2005(85)	Qualitative	Canada	Healthcare setting	SARS
Mukerji 2017(86)	Qualitative	China	Healthcare setting	Respiratory infection (Clinical respiratory illness [CRI])
Nichol 2008(87)	Qualitative	Canada	Healthcare setting	SARS
Nichol 2013(88)	Qualitative	Canada	Healthcare setting	Occupational transmission
Nishiura 2005(89)	Comparative NRS - Cohort	Vietnam	Healthcare setting	SARS
Nishiyama 2008(90)	Comparative NRS	Vietnam	Healthcare setting	SARS
Ofner-Agostini 2006(91)	Non-comparative - Case series	Canada	Healthcare setting	SARS
Olsen 2003(92)	Comparative NRS - Cohort	China	Non-healthcare setting	SARS
Ong 2020(93)	Mechanistic	Singapore	Healthcare setting	SARS
Ou 2020(94)	Comparative NRS	China	Non-healthcare setting	COVID-19
Park 2004(95)	Comparative NRS - Cohort	United States of America	Healthcare setting	SARS
Park 2015(96)	Non-comparative - Case series	South Korea	Healthcare setting	MERS
Park 2016(97)	Comparative NRS - Cohort	South Korea	Healthcare setting	MERS
Park 2020(98)	Non-comparative	South Korea	Healthcare setting	MERS
Parker 2006(99)	Qualitative	Canada	Healthcare setting	SARS
Peck 2004(100)	Comparative NRS - Cohort	United States of America	Healthcare setting	SARS
Pei 2006(101)	Comparative NRS - Cohort	China	Healthcare setting	SARS
Qi 2020(102)	Contextual factors - qualitative or quantiative	China	Healthcare setting	COVID-19
Qian 2020(103)	Comparative NRS	China	Non-healthcare setting	COVID-19

Study ID[Reference]	Study Design	Country	Setting	Virus
Qian 2020(104)	Non-comparative	China	Healthcare setting	COVID-19
Qiu 2020(105)	Non-comparative	China	Non-healthcare setting	COVID-19
Rabaan 2017(106)	Qualitative	Saudi Arabia	Healthcare setting	MERS
Radonovich 2019(107)	Qualitative	United States of America	NR	Viral respiratory infections
Rea 2007(108)	Comparative NRS - Cohort	Canada	Non-healthcare setting	SARS
Reuss 2014(109)	Comparative NRS	Germany	Healthcare setting	MERS
Reynolds 2006(110)	Comparative NRS - Cohort	Vietnam	Healthcare setting	SARS
Rozenbojm 2015(111)	Qualitative	Canada	Healthcare setting	Other
Ryu 2019(112)	Comparative NRS - Cohort (but none infected)	South Korea	Healthcare setting	MERS
Scales 2003(113)	Comparative NRS	Canada	Healthcare setting	SARS
Seto 2003(114)	Comparative NRS - Cohort	China	Healthcare setting	SARS
Shen 2020(115)	Comparative NRS	China	Healthcare setting	COVID-19
Shigayeva 2007(116)	Qualitative	Canada	Healthcare setting	SARS
Siu 2016(117)	Qualitative	China	Healthcare setting	SARS
Sun 2020(118)	Non-comparative	China	Non-healthcare setting	COVID-19
Tan 2006(119)	Qualitative	Singapore	Healthcare setting	SARS
Tang 2004(120)	Qualitative	Hong Kong		SARS
Tang 2005(121)	Qualitative	Singapore	Healthcare setting	SARS
Teleman 2004(122)	Comparative NRS - Cohort	Singapore	Healthcare setting	SARS
Tian 2020(123)	Non-comparative	China	Healthcare setting	COVID-19
Timen 2010(124)	Qualitative	Netherlands	Healthcare setting	NA
Tuan 2007(125)	Comparative NRS - Cohort	Vietnam	Non-healthcare setting	SARS
Turnberg W 2008(126)	Qualitative	Washington	Healthcare setting	None
Twu 2003(127)	Non-comparative - Case series	Taiwan	Healthcare setting	SARS
Varia 2003(128)	Non-comparative - Case series	Canada	Healthcare setting	SARS
Visentin 2009(129)	Qualitative	Canada	Healthcare setting	SARS
Wang 2015(130)	RCT - Cluster RCT	Saudi Arabia	Non-healthcare setting	MERS and other respiratory viruses

Study ID[Reference]	Study Design	Country	Setting	Virus
Wang 2020(131)	Comparative NRS	China	Non-healthcare setting	COVID-19
Wang 2020(132)	Non-comparative	China	Non-healthcare setting	COVID-19
Wang 2020(133)	Comparative NRS	China	Non-healthcare setting	COVID-19
Wang 2020(134)	Contextual factors - qualitative or quantiative	China	Healthcare setting	COVID-19
Wiboonchutikul 2016(135)	Comparative NRS	Thailand	Healthcare setting	MERS
Wilder-Smith 2005(136)	Comparative NRS - Cohort	Singapore	Healthcare setting	SARS
Wizner 2016(137)	Qualitative	United States of America	Healthcare setting	SARS
Wong 2004(138)	Qualitative	China	NR	SARS
Wong 2005(139)	Qualitative	China	NR	SARS
Wong 2013(140)	Qualitative – RCT + EtD	China	NR	Other
Wu 2004(141)	Comparative NRS	China	Healthcare setting	SARS
Wu 2020(142)	Non-comparative	China	Non-healthcare setting	COVID-19
Wu 2020(143)	Qualitative	China	Healthcare setting	COVID-19
Wu 2020(144)	Non-comparative - Case series	China	Healthcare setting	COVID-19
Xiang 2020(145)	Non-comparative	China	Non-healthcare setting	COVID-19
Xiao 2020(146)	Non-comparative	China	Non-healthcare setting	COVID-19
Xie 2020(147)	Non-comparative - Case series	China	NR	COVID-19
Yang 2011(148)	Non-comparative + EtD	China	NR	Respiratory infection (Clinical respiratory illness [CRI])
Yang 2020(149)	Comparative NRS	China	Non-healthcare setting	COVID-19
Yang 2020(150)	Non-comparative	China	Healthcare setting	COVID-19
Yin 2004(151)	Comparative NRS - Cohort	China	Healthcare setting	SARS
Yu 2005(152)	Comparative NRS - Cohort	China	Healthcare setting	SARS
Yu 2007(153)	Comparative NRS - Cohort (cluster, not by patient)	China	Healthcare setting	SARS
Yu 2020(154)	Non-comparative	China	Non-healthcare setting	COVID-19
Yue 2020(155)	Non-comparative	China	Healthcare setting	COVID-19

Study ID[Reference]	Study Design	Country	Setting	Virus
Zeng 2020(156)	Comparative NRS	China	Non-healthcare setting	COVID-19
Zhang 2020(157)	Comparative NRS	China	Non-healthcare setting	COVID-19
Zhang 2020(158)	Non-comparative	China	Non-healthcare setting	COVID-19
Zhang 2020(159)	Non-comparative	China	Non-healthcare setting	COVID-19
Zhao 2020(160)	Comparative NRS	China	Healthcare setting	COVID-19
Zhou 2020(161)	Non-comparative	China	Healthcare setting	COVID-19
Zhou 2020(162)	Non-comparative	China	Non-healthcare setting	COVID-19
Zhu 2020(163)	Contextual factors - qualitative or quantiative	China	Non-healthcare setting	COVID-19
Zhuang 2020(164)	Non-comparative	China	Non-healthcare setting	COVID-19

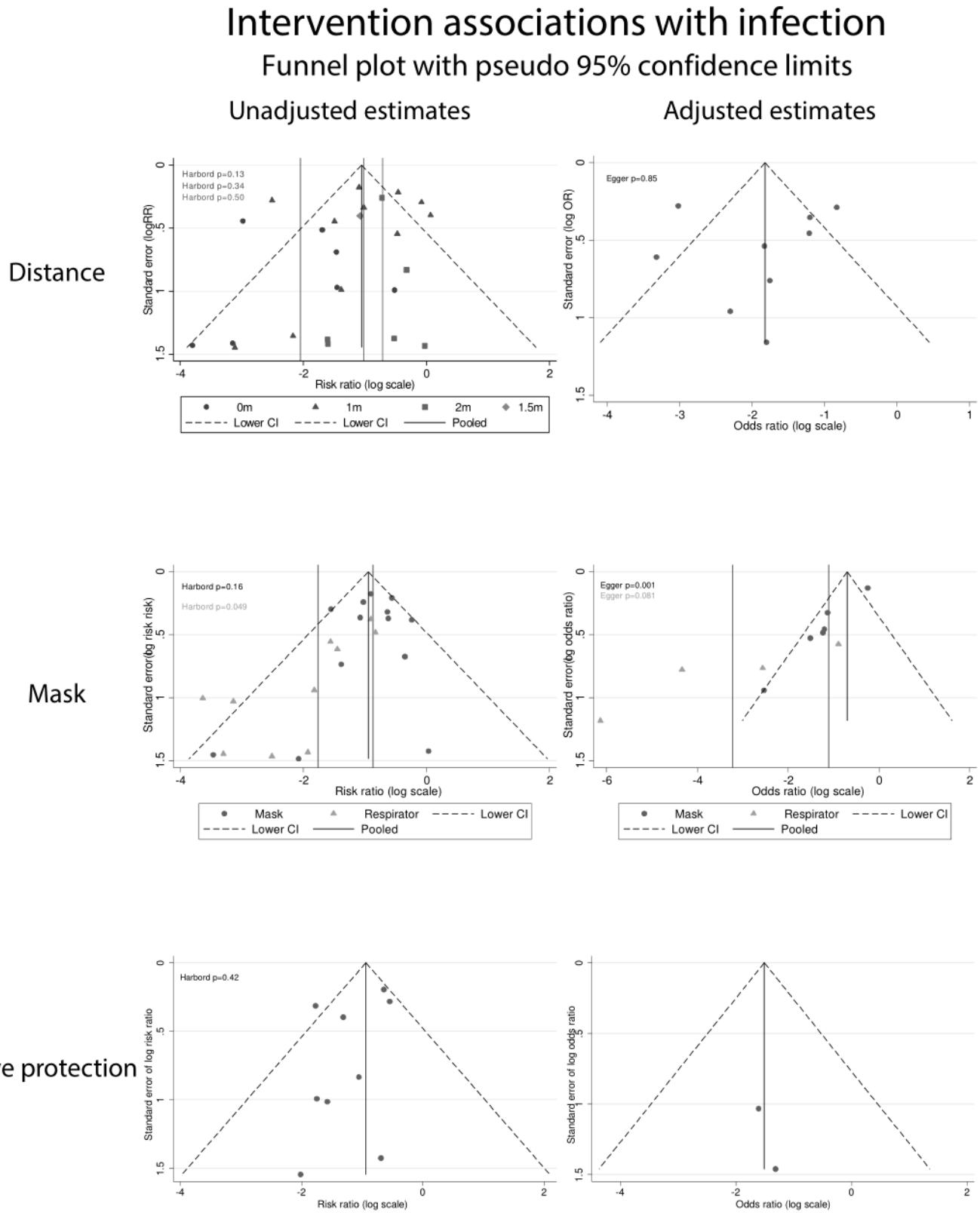
Appendix 3. Newcastle-Ottawa for non-randomized studies, for the outcome of disease transmission

Study	Selection*	Comparability	Outcome/Exposure	Overall Rating (more stars = lower risk of bias)	Disease
Alraddadi 2016	★★★	★★	★★★	★★★★★★★★	MERS
Arwady 2016	★★★	-	★★★	★★★★★★	MERS
Bai 2020	★★	-	★★★	★★★★★	COVID-19
Burke 2020	★★★	-	★	★★★★	COVID-19
Caputo 2006	★★	-	★★★	★★★★★	SARS
Chen 2009	★★★★	★★	★	★★★★★★★	SARS
Cheng 2020	★★★	-	★★	★★★★★	COVID-19
Fan 2020	★★	-	★★	★★★★	COVID-19
Ha 2004	★★	-	-	★★	SARS
Hall 2014	★★★	-	-	★★★	MERS
Heinzerling 2020	★★	-	★★	★★★★	COVID-19
Ho 2004	★★★	★★	★★★	★★★★★★★★	SARS
Ki 2019	★★	★★	★★★	★★★★★★	MERS
Kim 2016	★★★★	-	★★	★★★★★★	MERS
Kim 2016	★★★★	-	★★	★★★★★★	MERS
Lau 2004	★★★	★★	★★	★★★★★★★	SARS
Liu 2009	★★★	★	★	★★★★★	SARS
Liu ZQ 2020	★★★★	-	★★★	★★★★★★★	COVID-19
Loeb 2004	★★	-	-	★★	SARS
Ma 2004	★★★★	★★	★★★	★★★★★★★★★	SARS
Nishiura 2005	★★★	★★	★★★	★★★★★★★★	SARS
Nishiyama 2008	★★	★★	★★	★★★★★★	SARS
Olsen 2003	★★★	-	★★★	★★★★★★	SARS
Park 2004	★★★★	★★	★★★★	★★★★★★★★★★	SARS

Park 2016	★★	-	★	★★★	MERS
Peck 2004	★★★★	★★	★★★	★★★★★★★★★	SARS
Pei 2006	★★★	★★	★★★	★★★★★★★★	SARS
Rea 2007	★★	-	★★	★★★★	SARS
Reuss 2014	★★★	-	★★	★★★★★	MERS
Reynolds 2006	★★	-	★	★★★	SARS
Ryu 2019	★★★	★	★★★	★★★★★★★	MERS
Scales 2003	★★	-	-	★★	SARS
Seto 2003	★★★★	★★	★★	★★★★★★★★	SARS
Teleman 2004	★★★★	★★	★★	★★★★★★★★	SARS
Tuan 2007	★★	★★	★★	★★★★★★	SARS
Wang QP 2020	★★★	-	★★	★★★★★	COVID-19
Wiboonchutikul 2016	★★	-	★★★	★★★★★	MERS
Wilder-Smith 2005	★★★	★★	★★★	★★★★★★★★	SARS
Wong TW 2004	★★★	-	★★	★★★★★	SARS
Wu 2004	★★★★	★★	★★	★★★★★★★★	SARS
Wu 2020	★★	-	★★	★★★★	COVID-19
Yin 2004	★★★★	★★	-	★★★★★★	SARS
Yu 2005	★★★	★	★★★	★★★★★★★	SARS
Yu 2007	★★★	★★	★★	★★★★★★★	SARS

*For each category, A single dash (-) indicates no stars, and therefore high risk of bias.

Appendix 4. Funnel plots



Appendix 5. Evidence Profiles

Author(s): Derek K. Chu, Elie Akl, Amena El-Harakeh, Antonio Bognanni, Tamara Lotfi, Mark Loeb, Aida Farha, Anisa Hajizadeh, Anna Bak, Ariel Izcovich, Carlos A. Cuello-Garcia, Chen Chen, David James Harris, Ewa Borowiack, Fatimah Chamseddine, Finn Schünemann, Gian Paolo Morgano, Giovanna Elsa Ute Muti Schünemann, Guang Chen, Hong Zhao, Ignacio Neumann, Jeffrey Chan, Joanne Khabsa, Layal Hneiny, Leila Harrison, Maureen Smith, Nesrine Rizk, Paolo Giorgi Rossi, Pierre AbiHanna, Rayane El-Khoury, Rosa Stalteri, Tejan Baldeh, Thomas Piggott, Yuan Zhang, Zahra Saad, Assem Khamis, Marge Reinap, Stephanie Duda, Karla Solo, Sally Yaacoub, Holger Schünemann

Question: Should physical distancing of more than one meter compared to one meter or less, masks versus no masks, and/or eye protection versus no eye protection be used to prevent disease transmission to people exposed to patients infected or suspected to be with COVID-19?

Setting: Any (Healthcare and non-healthcare)

Bibliography: Chu et al. prepared for publication

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Intervention	Control	Relative (95% CI)	Absolute (95% CI)		
Infection with COVID-19 (follow up: range 10 days to more days; assessed with: COVID-19, SARS, MERS infection)												
9	observational studies A physical distance of more than one meter vs less than one meter	not serious [a]	not serious [b]	not serious [c,d]	not serious	strong association [e,f]	97/5065 (1.9%) [g]	347/2717 (12.8%)	**aOR 0.18** (0.09 to 0.38)	**102 fewer per 1,000** (from 115 fewer to 75 fewer)	⨁⨁⨁◯ MODERATE	CRITICAL
10	observational studies Masks vs no masks	not serious i	not serious [h]	not serious i	not serious	none [k]	145/1066 (13.6%)	197/1134 (17.4%)	**aOR 0.15** (0.07 to 0.34)	**143 fewer per 1,000** (from 159 fewer to 107 fewer)	⨁⨁◯◯ LOW	CRITICAL
13	observational studies Eye protection (face shield, goggles)	not serious n	not serious [m]	not serious [o]	not serious	none [p]	62/1335 (4.6%)	388/2378 (16.3%)	**RR 0.34** (0.22 to 0.52) [l]	**108 fewer per 1,000** (from 127 fewer to 78 fewer)	⨁⨁◯◯ LOW	CRITICAL

CI: Confidence interval; **OR:** Odds ratio

a. All studies were non-randomized and evaluated using the Newcastle-Ottawa Scale. Some studies had higher risk of bias than others but there was no important difference in the sensitivity analyses excluding studies at higher risk of bias. We did not further rate down for risk of bias.

b. Although there was a high I2 value and lack of overlapping confidence intervals, all point estimates of the studies exceeded the thresholds for large effects and we did not rate down for inconsistency.

c. We did not rate down for indirectness for the association between distance and infection because the SARS and COVID-19 viruses all belong to the same family and have each caused epidemics with sufficient similarity; there was also no convincing statistical evidence of effect modification across viruses

d. Some studies included the use of masks, but subgroup analysis did not reveal important differences. Some studies also used bundled interventions and the effect of distances could not be evaluated in isolation but the studies shown here include only those that provide adjusted estimates. We did not rate down for intervention indirectness.

e. The effect is large considering the thresholds set by GRADE assuming that the odds ratios translate into similar magnitudes of relative risk estimates. This also mitigated concerns about risk of bias.

f. The data suggest a dose-response gradient with associations increasing from smaller distances to 2 meters and beyond. This was also suggested by a meta-regression. We did not rate up for this domain alone but in combination with the large effects.

g. One of the studies, did report the raw data but only the adjusted estimates.

h. Although there was a high I2 value, all point estimates of the studies were relatively large and the confidence intervals were overlapping and we did not rate down for inconsistency.

i. All studies were non-randomized and evaluated using the Newcastle-Ottawa Scale. Some studies had higher risk of bias than others but there was no important difference in the sensitivity analyses excluding studies at higher risk of bias. We did not further rate down for risk of bias.

j. We did not rate down for indirectness for the association between eye protection and infection because the SARS and COVID-19 belong to the same family and are considered sufficiently similar. Some studies also used bundled interventions and the effect of distances could not be evaluated in isolation but the studies shown here include only those that provide adjusted estimates. We did not rate down for intervention indirectness.

k. The effect is large considering the thresholds set by GRADE assuming that the odds ratio translate into similar magnitudes of relative risk estimates. This mitigate concerns about risk of bias but all studies were unadjusted and risk of bias still too high to rate up for large effects.

l. Two of these studies (Ma 2004 and Yin 2004) provided adjusted estimates with a total of 295 in the goggles group and 107 in the group not wearing goggles. The results were similar to the unadjusted estimate (OR 0.22, 95% CI 0.12 - 0.39).

m. Although there was a high I2 value, all point estimates of the studies were relatively large and the confidence intervals were overlapping and we did not rate down for inconsistency.

n. All studies were non-randomized and evaluated using the Newcastle-Ottawa Scale. Some studies had higher risk of bias than others but there was no important difference in the sensitivity analyses excluding studies at higher risk of bias. We did not further rate down for risk of bias.

o. We did not rate down for indirectness for the association between eye protection and infection because the SARS and COVID-19 belong to the same family and are considered sufficiently similar. Some studies also used bundled interventions and the effect of distances could not be evaluated in isolation but the studies shown here include only those that provide adjusted estimates. We did not rate down for intervention indirectness.

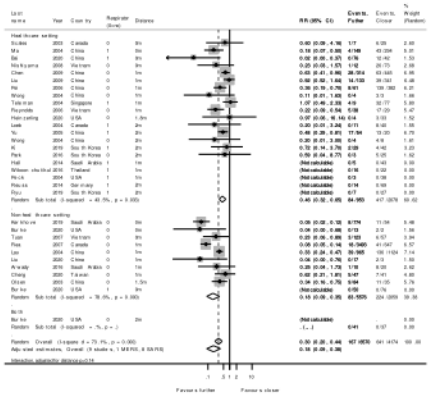
p. The effect is large considering the thresholds set by GRADE assuming that the odds ratio translate into similar magnitudes of relative risk estimates. This mitigate concerns about risk of bias but all studies were unadjusted and risk of bias still too high to rate up for large effects.

Appendix 6. Forest plots of additional analyses

Appendix 6. Forest plots of additional analyses

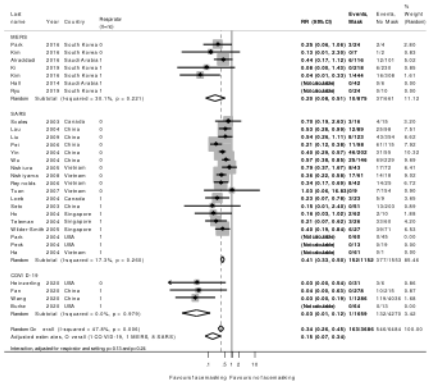
Association of exposure proximity with infection
Sub-divided by setting and intervention

Setting



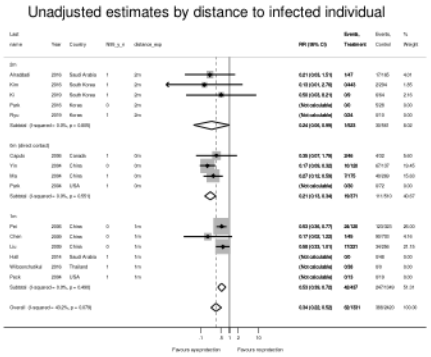
Association of mask use with infection
Sub-divided by population and setting

Virus

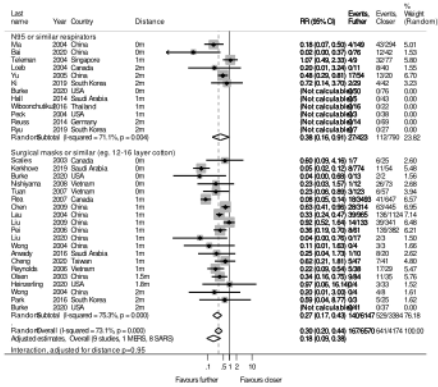


Association of eye protection with infection
Sub-divided by intervention

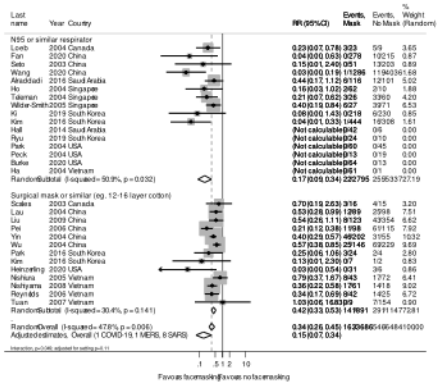
Unadjusted estimates by distance to infected individual



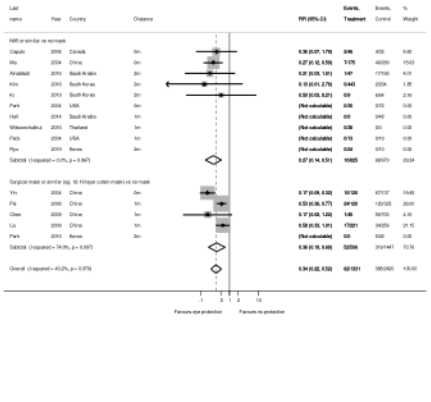
Facemask



Facemask



Unadjusted estimates by N95 or similar (1) or not (0)



Appendix 7. Sensitivity analyses, and Bayesian Meta-analyses

	Distancing		Masks		Eye protection	
	Unadjusted	**Adjusted**	**Unadjusted**	**Adjusted**	**Unadjusted**	**Adjusted**
Sensitivity analyses						
Bayesian Influenza RCTs (mean=0.93, SD of logRR=0.57)			0.54 (95%CrI 0.43-0.82)	0.40 (95%CrI 0.16-0.97)		
Exclude Preprints	0.32 (0.21-0.48)	0.15 (0.07-0.31)	0.38 (0.31-0.48)	0.21 (0.10-0.43)	0.34 (0.22-0.52)	0.22 (0.12-0.39)
Fixed effect model	0.34 (0.29-0.40)	0.16 (0.12-0.22)	0.32 (0.27-0.38)	0.16 (0.12-0.22)	0.36 (0.28-0.46)	0.22 (0.12-0.39)
Hartung-Knapp-Sidik-Jonkman random effects model	0.30 (0.20-0.44)	0.15 (0.08-0.30)	0.34 (0.25-0.47)	0.15 (0.08-0.30)	0.34 (0.22-0.51)	0.22 (0.04-1.27)

Bayesian meta-analysis if MacIntyre 2013(165) cluster RCT used as likelihood function (OR 0.50 [95%CI 0.34-0.74]), posterior probability for OR<1 of N95 masks being more protective versus medical masks = 98.4%.

Pooled unadjusted odds ratios were similar to risk ratios:
Distancing: OR 0.22 (0.14- 0.35)
Masks: OR 0.22 (0.15- 0.32)
Eye protection: OR 0.26 (0.16-0.45)

Exclusion of Seto from adjusted estimates, because about 54% of its population used N95 masks, did not change the findings: aOR 0.03 (0.001-0.56)

The pooled aORs for studies with the various types of facemasks were:
N95 or similar respirators: 0.04 (0.004-0.30)

versus

Surgical masks: 0.20 (0.06-0.63)
12-16 multilayer cotton masks: 0.33 (0.10-1.03)
Surgical masks or multilayer cotton masks: 0.31 (0.16-0.53)
Test for interaction of surgical versus multilayer cotton masks, $p_{interaction} = 0.91$

Appendix 8. Credibility assessment of potential effect modifiers (modified from GRADE inconsistency guidelines to include 'other considerations')

Outcome	COVID-19, SARS, MERS viral transmission		
Potential effect modifier **Criteria**	Distance dose-response	N95 or similar versus surgical mask or similar (eg. 12-16 layer cotton)	Healthcare versus non-healthcare settings for mask use
Is the subgroup variable a characteristic specified at baseline (in contrast with after randomization)?	Yes	Yes	Yes
Is the subgroup difference suggested by comparisons within rather than between studies?	No	Yes, the included studies report a potential hierarchy of least protective being no mask, paper mask, disposable or 12-16 layer reusable cotton mask, then N95 or similar respirator	No
Does statistical analysis suggest that chance is an unlikely explanation for the subgroup difference?	Possibly, mean > 1 with wide CIs expected from few studies at each cut point, p=0.041	Yes, p=0.033 Bayesian analyses also support this with posterior probability of RR<1 being >95%.	Possibly, p=0.049 in univariate meta-regression, and when controlling for differential N95 use between settings, still low at p=0.11
Did the hypothesis precede rather than follow the analysis, and include a hypothesized direction that was subsequently confirmed?	Yes	Yes	Yes
Was the subgroup hypothesis one of a small number tested?	Yes	Yes	Yes
Is the subgroup difference consistent across studies and across important outcomes?	Consistent with findings with other interventions presented here	Yes across studies	No
Does external evidence (biological or sociological rationale) support the hypothesized subgroup difference?	Yes, it would be expected that the further away one is from a person with infection that transmits by droplets, that the further distances lead to decreased risk of infection.	The increased filtration capacity of respirators would be expected to have enhanced protection against viral droplets, or smaller versions of such droplets or aerosols.	Possibly, some hypothesize that mask use in non-healthcare settings can lead to self-inoculation virus through mechanisms such as improper use or touching the mask with contaminated hands, but there is no definitive evidence with hard outcomes that community-based mask interventions are ineffective or harmful.
Absence of other considerations that would decrease confidence of true effect-modification?	Imprecision. Association primarily based on unadjusted data, albeit estimates of unadjusted and adjusted data were similar.	Although influenza is very different from pandemic COVID-19, SARS, MERS, it provides very indirect and limited RCT data suggesting no difference, albeit the Bayesian analyses here attempt to account for that.	Imprecision, particularly few community-focused studies
Criteria fulfilled, out of 8 (not an absolute cutoff)	**5**	**6-7**	**3-4**
Overall credibility of subgroup analysis	**MODERATE**	**MODERATE-HIGH**	**LOW-MODERATE**

Low credibility, likely spurious; Moderate credibility, plausible, possibly even likely, but some important doubt remains; High credibility, Likely convincing.

Appendix 9. Summary of contextual factor data

Resource use

Two qualitative and two cross-sectional studies reported on data related to the cost and resource use in the management of SARS (51, 65), MERS (5) and coronavirus (83). The four studies were conducted in Hong Kong, Brazil, Singapore and Saudi Arabia. Khoo et al. (2005) reported the cost of 3M powered air-purifying respirators (PAPR) to be US$860 and Stryker PARP US$580 as compared to N95 (US$0.70) (51). In another study, health workers perceived the management of SARS as a burden which costs hundreds of millions; with direct operating expenditure (e.g., medical supplies, personal protective equipment, and screening) costing US$110 million(65). Malordi et al. (2017) highlighted the consequences of the lack of resources which include inadequate training on measures to prevent disease transmission(83). Al-Tawfiq et al. (2019) highlighted a monthly added cost of $16,400 for infection control items, such as hand sanitizers, soap, surgical masks, and N95 respirators during MERS outbreak in one hospital in Saudi Arabia (5). A survey of health workers in a hospital (doctors, nurses and respiratory therapists, n=51) showed that the majority of health workers (84%) preferred using PAPR over N-95 respirators when treating suspected SARS patients despite its high cost (51).

Acceptability

Six qualitative studies conducted in China and one cross-sectional study conducted in Vietnam reported on the acceptability of physical distancing and/or wearing masks as preventive measures for COVID-19.

Acceptability by visitors of suspected or confirmed COVID-19 cases

Wang et al. (2020) carried out an online survey to investigate the protective behaviors of visitors accompanying hospitalized patients during COVID-19 pandemic (134). 208 questionnaires were collected, and the survey showed that 85% of visitors accompanying suspected COVID-19 cases wear masks while present in the hospital.

Acceptability by the public

Four qualitative studies presented information on the willingness of residents in China to wear masks in public places and to avoid crowds (18, 64, 102, 166). The four studies used online questionnaires to survey members of the public and the samples were respectively, n=1,138 (64), n=917 (166), n=3,083 (102), and n=4,016 (18). Across the four studies, most of the participants reflected high willingness to wear masks in public places (95%, 99%, 97%, 94% respectively). In terms of social gatherings, the majority of the participants across three of the studies favored avoiding crowded areas (91%, 96%, 97% respectively) (18, 64, 102).

Another survey conducted in Vietnam (n=345) found that the risk perception of COVID-19 threat significantly increased the likelihood of wearing medical masks ($p<0.01$). The increased likelihood of wearing masks was also shown to increase with age (45).

Acceptability by college students

A survey to assess the knowledge and protective behaviors among college students (n=22,302 online questionnaires) in China during COVID-19 pandemic(12), found that 99% of students were willing to avoid close contact with others (less than 1 meter), 95% considered avoiding crowded places as an important way to control the epidemic, and 99% reported wearing a mask in public places for week prior to being surveyed.

Acceptability by healthcare workers

A cross-sectional survey (56) performed in the context of the SARS epidemic in Hong Kong, assessed various precautionary measures from the viewpoint of 1,397 residents. Most of the respondents believed that SARS could be transmitted via direct body contact with patients (84%) and via respiratory droplets (97%). The perceived risk of transmission increased during the escalating phase of the epidemic (52%) and declined during a later stage (36%).

During the first phase of the epidemic, respondents reported a significant increase in the application of preventive measures such as avoiding going outside and avoiding crows, which dropped at a later stage. Those who perceived avoiding crowded places as an effective preventive measure (OR: 31.564, 95% CI: 15.610 -63.824) were likely to avoid crowded places. In terms of the acceptability of wearing masks, most of the respondents (95%) regarded this action as a 'civic responsibility' and reflected commitment to wearing masks in public places. Those who perceived wearing a mask as an efficacious means of prevention (OR: 7.151, 95% CI: 4.245-12.045) were more likely than others to wear a mask (56).

Five studies conducted on health professionals (including medical staff and nurses) in primary health care and hospital settings showed that an increase in the perceptions and awareness of risk of transmission of SARS was associated with better adherence to preventive measures including wearing masks and eye protection (32, 75, 83, 88, 116).

A cross-sectional quantitative survey of dental health professionals (n=406) working in dental facilities in Saudi Arabia showed good practices related to making patients with MERS infection wear masks during transport (84%). However, knowledge was relatively limited (56.4%) about the need to wear a mask within a 90 cm distance from a patient under droplet precaution care (10). Another cross-sectional survey of health workers (N=10,236) was conducted about the appropriateness of using PAPR and N95 respirators in

public hospitals and polyclinics during the SARS outbreak in Singapore (23). Among doctors (n=873), nurses (n=4,404), and clerical staff (n=921), 99.5%, 99% and 97% respectively viewed N95 respirator to be an adequate protection against SARS.

A cross-sectional study (two surveys) was conducted to assess the use of personal protective equipment among medical students during and after the SARS outbreak in a teaching hospital in Hong Kong and study its impact on their personal hygiene practice when they contacted patients (139). Prior to the SARS outbreak, none of the students wore masks during history taking and physical examination. In the 2004 survey, 86.1% and 93.8% of students wore masks during history taking and physical examination, respectively.

Another study (secondary data analysis) conducted in Saudi Arabia evaluating the use of masks before and during MERS showed an increase in the use of both, surgical masks (from 2,947.4 to 10,283.9 per 1,000 patient-days) and N-95 respirators (from 22 to 232 per 1,000 patient-days) ($p < .0000001$) (5).

Feasibility

In this section, we summarized barriers and facilitators to the implementation and sustainability of using masks based on findings from the included studies. Among barriers, we identified:

Barriers to the use of protective masks

A study showed that N-95 respirators was perceived by health workers as uncomfortable during the SARS outbreak (48). N95 respirators often developed cracks in the chin area for small-jawed female health professionals and the overlapping parts of different PPE items were ill-fitted (e.g., gaps between goggles and N95 respirator) (48).

Family physicians (n=7) in Singapore stressed on the physical discomfort during prolonged use of the N-95 mask (e.g., breathing difficulty, headache, development of allergic facial rash around the mask) in a qualitative study employing interviews about factors that influence the use of PPE during the SARS outbreak (119) . In this study, family physicians in Singapore also showed that the use of the N-95 mask led to difficulty in communication with patients who had adverse reaction (i.e., worries and concern as PPE was a sign that the physician could have been exposed to SARS) (119). In addition, Khoo et al. (2005) showed that PAPR made most of the health workers (64%) feel that they looked frightening to their patients when using it (51).

Another qualitative study used 15 focus group discussions to examine the perceptions of health workers (n=105) in Canada regarding factors associated with self-protective behavior during the SARS outbreak (85). This study identified mask fitting and uncomfortable PPE to be among the barriers to effective use of PPE.

Absence of a monitoring system

Moore et al. (2005) showed that barriers to the use of protective wear included deficiencies in the tracking system to monitor the development, delivery and evaluation of training in infection control (85).

Lack of adherence to available guidance

In a qualitative study among health professionals (n=26) in the Netherlands about barriers to implementing infection prevention and control guidelines during crises, respondents highlighted the below as potential reasons for the lack of adherence to guidelines during outbreaks such as SARS (124):

- lack of imperative or precise wording
- lack of easily identifiable instructions specific to each profession
- lack of concrete performance targets
- lack of timely and adequate guidance on personal protective equipment and other safety measures

Other barriers that were described in the included studies were the shortage of PPE and cost due to bulk purchase (119), lack of consistent policies for quarantining individuals, reuse of masks, and deficiencies in decision regarding the assignment of patients to negative pressure rooms (85).

Facilitators to the use of protective masks

Most of the health workers perceived both types of PAPR (3M and Stryker) to be easy or relatively easy to use (74% and 91%) with an acceptable level of visual impairment attributable to the PAPR (98% and 95% for the 3M and Stryker PAPR, respectively) (51).

Perceived susceptibility and perceived benefits

A survey about factors influencing the wearing of facemasks for the prevention of SARS among adult Chinese (n=1329) in Hong Kong showed that 61% of respondents reported consistent use of facemasks to prevent SARS and the following predicting factors (120):

- Awareness of the risks and serious consequences associated with SARS: respondents who felt more susceptible to contracting SARS (OR = 2.575; CI = 1.586, 4.181) and those who perceived SARS as having more serious consequences (OR =1.176; CI = 0.909, 1.521) were more likely to wear facemasks.
- Awareness of the benefits of wearing facemasks: respondents who believed greater benefits in wearing facemasks (OR = 1.354; CI = 1.019, 1.800) were more likely to wear facemasks.

Appendix 10. PROSPERO Registration number

Registration number CRD42020177047

NIHR | National Institute for Health Research

PROSPERO

International prospective register of systematic reviews

A rapid systematic review of physical distancing with or without masks and with or without eye protection to prevent COVID-19 transmission between patients with confirmed COVID-19 infection and other people, including health care workers

Holger Schunemann, Derek Chu, Elie Akl, Mark Loeb, Sally Yaacoub, Layal Hneiny, Neera Bhatnagar, Aida Farha, Ray Yuan Zhang, Ariel Izcovich, Ignacio Neumann, Carlos Cuello Garcia, Finn Schünemann, Giovanna Muti-Schünemann, Gian Paolo Morgano, Tamara Lotfi, Thomas Piggott, Ewa Borowiack, Anna Bak, Tejan Baldeh, Rosa Stalteri, Anisa Hajizadeh, Leila Harrison, Hong Zhao, Guang Chen, Antonio Bognanni, Marge Reinap, Paolo Giorgi Rossi

Citation

Holger Schunemann, Derek Chu, Elie Akl, Mark Loeb, Sally Yaacoub, Layal Hneiny, Neera Bhatnagar, Aida Farha, Ray Yuan Zhang, Ariel Izcovich, Ignacio Neumann, Carlos Cuello Garcia, Finn Schünemann, Giovanna Muti-Schünemann, Gian Paolo Morgano, Tamara Lotfi, Thomas Piggott, Ewa Borowiack, Anna Bak, Tejan Baldeh, Rosa Stalteri, Anisa Hajizadeh, Leila Harrison, Hong Zhao, Guang Chen, Antonio Bognanni, Marge Reinap, Paolo Giorgi Rossi. A rapid systematic review of physical distancing with or without masks and with or without eye protection to prevent COVID-19 transmission between patients with confirmed COVID-19 infection and other people, including health care workers. PROSPERO 2020 CRD42020177047 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42020177047

Review question

From patients infected with COVID-19, what distance can the COVID-19 virus travel (mechanistic question)? What is the impact on people maintaining at least one meter distance compared to a smaller distance from a patient or suspected patient with COVID-19 on droplet transmission (intervention question)?

Sub-questions:

(1) With or without a mask on the patient;

(2) With or without a mask and with or without eye protection on the non-infected person

Searches

We will search the following electronic databases:

• PubMed, MEDLINE, EMBASE, CINAHL, and the Cochrane Library from 2019 to current date.

We will search the following Chinese electronic databases:

• WHO Chinese database

• CNKI (http://new.oversea.cnki.net/index/)

• China Biomedical Literature Service (http://www.sinomed.ac.cn/login.do)

In addition, we will search the following COVID-19 specific databases from 2019 to current date

• Epistemonikos COVID-19 L·OVE platform (https://app.iloveevidence.com/loves/5e6fdb9669c00e4ac072701d);

• EPPI Centre living systematic map of the evidence (http://eppi.ioe.ac.uk/cms/Projects/DepartmentofHealthandSocialCare/Publishedreviews/COVID-19Livingsystematicmapoftheevidence/tabid/3765/Default.aspx);

• CORD-19 (https://www.kaggle.com/allen-institute-for-ai/CORD-19-research-challenge);

• COVID-19 Research Database maintained by the World Health Organization (https://www.who.int/emergencies/diseases/novel-coronavirus-2019/global-research-on-novel-coronavirus-2019-ncov)

We will conduct a search for ongoing trials using the U.S. National Library of Medicine Register of Clinical Trials (ClinicalTrials.gov) and the WHO International Clinical Trials Registry Platform (ICTRP). We will hand-search the reference lists of the included papers. We will also review the studies included in any identified relevant systematic reviews.

Search strategy combines relevant medical subject headings (MeSH) and keywords, which include "COVID-19", and "corona virus". PubMed search terms are informed by https://blocks.bmi-online.nl/catalog/397. The search strategy has been drafted by Ms. Layal Hneiny and is being peer reviewed by two information specialists (Ms. Neera Bhatnagar and Ms. Aida Farha). Finalized search strategies will be available on March 26, 2020 but the final draft can be found in the appendix.

Content experts will search websites of governmental and organizational websites for relevant grey literature documents.

Additional search strategies to identify indirect evidence on SARS and MERS will also be constructed and peer-reviewed by information specialists. This latter search will focus on systematic reviews.

Types of study to be included

No restrictions will be placed on study design. However, evidence will be prioritized by study design as follows: i) randomized controlled trials; ii) non-randomized comparative studies; iii) non-comparative studies (i.e., case reports, case series); iv) qualitative studies. We will exclude single case reports if non-randomized studies comparative studies provide the same certainty of evidence. We will also review modelling studies. For the question addressing how far the virus can travel we will consider mechanistic human studies.

Condition or domain being studied

Infections and infestations, respiratory disorders

Participants/population

Studies focused on patients with confirmed COVID-19 infection [or SARS or MERS] and people in close contact with them, including health care workers, will be eligible for inclusion. Other related populations to consider are:

• individuals with suspected COVID-19 infection who are waiting to be tested (e.g., presenting to a lab, emergency department, or dedicated clinic to get tested), or cannot be tested (because of lack of resources)

• individuals with suspected or confirmed COVID-19 infection (whether symptomatic or not) who are in isolation in non-healthcare settings (e.g., at home, and other dedicated spaces such as stadiums and tents)?

Intervention(s), exposure(s)

At least one meter distance between people and COVID-19 infected patients:

(1) With or without a mask on the patient;

(2) With or without a mask and with or without eye protection on the HCW.

Subgroups:

• Masks include surgical mask and N95 mask among others; Similar names for N95 are:

o FFP2 (Europe EN 149-2001)

o KN95 (China GB2626-2006)

o P2 (Australia/New Zealand AS/NZA 1716:2012)

o Korea 1st class (Korea KMOEL - 2017-64)

o DS (Japan JMHLW-Notification 214, 2018)

• Eye protection include visors, shields, and goggles among others

Comparator(s)/control
less than one meter of physical distancing

Main outcome(s)
· Transmission
· Risk of transmission to members of the community (herd immunity)
· Acceptability by different stakeholders (patient, HCW, individuals handling the dead bodies, health authorities) (e.g., possibly as a surrogate for harms if people are not wearing masks or eye protection)
· Unintended harms of distancing (e.g., when providing care) and of using masks or eye protection, stigmatization
· COVID19 infection (confirmed)
· COVID19 probable case
· ICU admission
· Hospitalization
· Death
· (Time to) Recovery

* Measures of effect

relative risks, odds ratios, risk difference, narrative summary

Additional outcome(s)
Droplet transmission (as measured by infection of others and confirmed by serological or microbiological or virolgical testing)

* Measures of effect

narrative

Data extraction (selection and coding)
A single reviewer will extract data using a piloted form and a second reviewer will verify all extracted data. Minimal data will be extracted addressing the following domains: study identifier; study design; setting; population characteristics; intervention and comparator characteristics; outcomes (quantitative if possible); source of funding and reported conflicts of interests; ethical approval; study limitations or other important comments.

Risk of bias (quality) assessment
One reviewer will perform risk of bias assessments and a second reviewer will verify all assessments. We will use the Cochrane risk of bias tool (version 2) for randomized controlled trials, and Newcastle Ottawa scale for non-randomized studies.

Strategy for data synthesis
We will synthesize data in both tabular and narrative formats. We anticipate our outcomes to be dichotomous, such as transmission, and therefore they will be analyzed as pooled risk ratios (RRs), if they are unadjusted estimates. If there are adjusted odds ratios from multivariable regression reported in the studies, then these will be pooled as adjusted odds ratios (aORs). These will be summarized using random effects meta-analysis using the DerSimonian and Laird random effects model, with heterogeneity calculated from the Mantel-Haenszel model. If there are time to event outcomes, shared frailty cox prorportional hazards models will be completed, with validation of the assumption of proportionality. This may necessitate digitization of Kaplan-Meier curves from published studies. All summary measures will be reported with an accompanying 95% confidence interval.

We anticipate that traditional statistical measures of heterogeneity will be less informative than established criteria per GRADE. Because of the poor performance of I^2 to quantify true heterogeneity, then we will accept

any magnitude of I^2 for meta-analysis. Nevertheless, we will collect the I^2 statistic, but comment on its limitations in the presentation of final product. We will also accept any number of study for comparative or non comparative meta-analysis. Summary measures will include absolute and relative risks for the outcomes outlined above, displayed using funnel plots and calculated using random effects models. Publication bias will also be assessed visually using funnel plots and Harbord's modification to Egger test, or if adjusted odds ratios are used, then Egger's original test. If necessary, mean and SD will be calculated from medians and IQR or range by the method of Wan (BMC Medical Research Methodology201414:135).

If there are only non-comparative studies, then we will meta-analyze these by proportions (ie. incidence of outcome per report [eg. numerator=events of transmission, denominator=total exposed]. In the presence of sparse data, we will give preference to the logit transformation when completing this, otherwise we will use the Freeman-Tukey double arcsine transformation.

The synthesis of contextual factors (acceptability, etc.) will be narrative.

Subgroup effects will be analysed by meta-regression with tests of interaction by 10, 000 Monte-Carlo permutations to calculate p values to avoid spurious findings.

Sensitivity analyses will include analysis by fixed effect and Knapp-Hartung-Sidik-Jonkman random effects model. We will also employ Bayesian meta-analyses of existing literature on the efficacy of mask use to prevent viral transmission, using as charitable assumptions as plausible that the RCT data represent the true effect estimates. This will include shrinking the effect estimate of the observational data, decreasing its weight (ie. increasing its variance as a prior) or both. We will also employ noninformative priors.

Data analyses will be performed using STATA 14.3. GRADEpro GDT will be used to construct the summary of findings table.

The analyses and reporting of the review will be done according to the PRISMA and MOOSE guidelines. A single reviewer will grade the certainty of the evidence using the GRADE approach and a second reviewer will verify all assessments. If applicable, we will follow published guidance for rating the certainty in evidence in the absence of a single estimate of effect. Evidence will be presented using GRADE Evidence Profiles developed in the GRADEpro (www.gradepro.org) software.

Analysis of subgroups or subsets

Health care workers versus non health care workers, by mask type, with or without goggles or eye protection

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Type and method of review
Epidemiologic, Meta-analysis, Narrative synthesis, Systematic review

Anticipated or actual start date
25 March 2020

Anticipated completion date
28 April 2020

Funding sources/sponsors
World Health Organization, McMaster University, and American University of Beirut

Conflicts of interest

Language
English

Country
Argentina, Canada, Chile, China, Denmark, Germany, Italy, Lebanon

Stage of review
Review Ongoing

Subject index terms status
Subject indexing assigned by CRD

Subject index terms
COVID-19; Health Personnel; Humans; Infections; Masks; severe acute respiratory syndrome coronavirus 2

Date of registration in PROSPERO
16 April 2020

Date of first submission
28 March 2020

Stage of review at time of this submission

Stage	Started	Completed
Preliminary searches	Yes	No
Piloting of the study selection process	Yes	No
Formal screening of search results against eligibility criteria	Yes	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

The record owner confirms that the information they have supplied for this submission is accurate and complete and they understand that deliberate provision of inaccurate information or omission of data may be construed as scientific misconduct.

The record owner confirms that they will update the status of the review when it is completed and will add publication details in due course.

Versions

16 April 2020

Appendix 11. PRISMA checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	4
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	4-6
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	4
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	4-6
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	5-6
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	Appendix
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	5-6
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	5-7
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	5-7
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	7
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	7-8
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	7-8

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	7-8
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	7-8
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	9, Fig 1
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	9, Table 1, Appendix
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	10, Table 1, Appendix
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	10-12, Fig 2-4
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	10-12, Figs 2-4 Table 2
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	Table 2, Appendix
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	10-12, Appendix
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	13
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	16
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	17
FUNDING			

Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	8

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

Appendix 11 continued – MOOSE checklist

Reporting of background should include	Page/Location
Problem definition	3-4
Hypothesis statement	3-4
Description of study outcome(s)	6
Type of exposure or intervention used	5-6
Type of study designs used	5-6
Study population	5-6
Reporting of search strategy should include	
Qualifications of searchers (eg, librarians and investigators)	5-6, Appendix
Search strategy, including time period included in the synthesis and keywords	5-6, Appendix
Effort to include all available studies, including contact with authors	5-6, Appendix
Databases and registries searched	5-6, Appendix
Search software used, name and version, including special features used (eg, explosion)	5-6, Appendix
Use of hand searching (eg, reference lists of obtained articles)	5-6, Appendix
List of citations located and those excluded, including justification	Figure 1, Appendix
Method of addressing articles published in languages other than English	5-6
Method of handling abstracts and unpublished studies	5-6
Description of any contact with authors	5-6
Reporting of methods should include	
Description of relevance or appropriateness of studies assembled for assessing the hypothesis to be tested	5-6
Rationale for the selection and coding of data (eg, sound clinical principles or convenience)	5-7
Documentation of how data were classified and coded (eg, multiple raters, blinding, and interrater reliability)	5-7
Assessment of confounding (eg, comparability of cases and controls in studies where appropriate)	5-7
Assessment of study quality, including blinding of quality assessors; stratification or regression on possible predictors of study results	7
Assessment of heterogeneity	7
Description of statistical methods (eg, complete description of fixed or random effects models, justification of whether the chosen models account for predictors of study results, dose-response models, or cumulative meta-analysis) in sufficient detail to be replicated	7-8
Provision of appropriate tables and graphics	Figures 1-4, Table 1-2, Appendix
Reporting of results should include	
Graphic summarizing individual study estimates and overall estimate	Figures 2-4, Appendix
Table giving descriptive information for each study included	Table 1, Appendix
Results of sensitivity testing (eg, subgroup analysis)	9-12, Appendix
Indication of statistical uncertainty of findings	9-12, Figures 2-4, Table 2
Reporting of discussion should include	
Quantitative assessment of bias (eg, publication bias)	16
Justification for exclusion (eg, exclusion of non-English-language citations)	16
Assessment of quality of included studies	Table 2, 13
Reporting of conclusions should include	
Consideration of alternative explanations for observed results	16
Generalization of the conclusions (ie, appropriate for the data presented and within the domain of the literature review)	13-14
Guidelines for future research	14-15
Disclosure of funding source	8

References for the Supplementary material

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Physical distancing, face masks, and eye protection for prevention of COVID-19

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The choice of various respiratory protection mechanisms, including face masks and respirators, has been a vexed issue, from the 2009 H1N1 pandemic to the west African Ebola epidemic of 2014,[1] to the current COVID-19 pandemic. COVID-19 guidelines issued by WHO, the US Centers for Disease Control and Prevention, and other agencies have been consistent about the need for physical distancing of 1–2 m but conflicting on the issue of respiratory protection with a face mask or a respirator.[2] This discrepancy reflects uncertain evidence and no consensus about the transmission mode of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). For eye protection, data are even less certain. Therefore, the systematic review and meta-analysis by Derek Chu and colleagues in *The Lancet*[3] is an important milestone in our understanding of the use of personal protective equipment (PPE) and physical distancing for COVID-19. No randomised controlled trials were available for the analysis, but Chu and colleagues systematically reviewed 172 observational studies and rigorously synthesised available evidence from 44 comparative studies on SARS, Middle East respiratory syndrome (MERS), COVID-19, and the betacoronaviruses that cause these diseases.

The findings showed a reduction in risk of 82% with a physical distance of 1 m in both health-care and community settings (adjusted odds ratio [aOR] 0·18, 95% CI 0·09–0·38). Every additional 1 m of separation more than doubled the relative protection, with data available up to 3 m (change in relative risk [RR] 2·02 per m; $p_{interaction}$=0·041). This evidence is important to support community physical distancing guidelines and shows risk reduction is feasible by physical distancing. Moreover, this finding can inform lifting of societal restrictions and safer ways of gathering in the community.

The 1–2 m distance rule in most hospital guidelines is based on out-of-date findings from the 1940s, with studies from 2020 showing that large droplets can travel as far as 8 m.[4] To separate droplet and airborne transmission is probably somewhat artificial, with both routes most likely part of a continuum for respiratory transmissible infections.[4] Protection against presumed droplet infections by use of respirators, but not masks,[5] supports a continuum rather than discrete states of droplet or airborne transmission. Both experimental and hospital studies have shown evidence of aerosol transmission of SARS-CoV-2.[6–8] One study found viable virus in the air 16 h after aerosolisation and showed greater airborne propensity for SARS-CoV-2 compared with SARS-CoV and MERS-CoV.[6]

Chu and colleagues reported that masks and respirators reduced the risk of infection by 85% (aOR 0·15, 95% CI 0·07–0·34), with greater effectiveness in health-care settings (RR 0·30, 95% CI 0·22–0·41) than in the community (0·56, 0·40–0·79; $p_{interaction}$=0·049). They attribute this difference to the predominant use of N95 respirators in health-care settings; in a sub-analysis, respirators were 96% effective (aOR 0·04, 95% CI 0·004–0·30) compared with other masks, which were 77% effective (aOR 0·33, 95% CI 0·17–0·61; $p_{interaction}$=0·090). The other important finding for health workers by Chu and colleagues was that eye protection resulted in a 78% reduction in infection (aOR 0·22, 95% CI 0·12–0·39); infection via the ocular route might occur by aerosol transmission or self-inoculation.[9]

For health-care workers on COVID-19 wards, a respirator should be the minimum standard of care. This study by Chu and colleagues should prompt a review of all guidelines that recommend a medical mask for health workers caring for COVID-19 patients. Although medical masks do protect, the occupational health and safety of health workers should be the highest priority and the precautionary principle should be applied. Preventable infections in health workers can result not only in deaths but also in large numbers of health workers being quarantined and nosocomial outbreaks. In the National Health Service trusts in the UK, up to one in five health workers have been infected with COVID-19,[10] which is an unacceptable risk for front-line workers. To address global shortages of PPE, countries should take responsibility for scaling up production rather than expecting health workers to work in suboptimum PPE.[11]

Chu and colleagues also report that respirators and multilayer masks are more protective than are single layer masks. This finding is vital to inform the

proliferation of home-made cloth mask designs, many of which are single-layered. A well designed cloth mask should have water-resistant fabric, multiple layers, and good facial fit.[12] This study supports universal face mask use, because masks were equally effective in both health-care and community settings when adjusted for type of mask use. Growing evidence for presymptomatic and asymptomatic transmission of SARS-CoV-2[13] further supports universal face mask use and distancing. In regions with a high incidence of COVID-19, universal face mask use combined with physical distancing could reduce the rate of infection (flatten the curve), even with modestly effective masks.[14] Universal face mask use might enable safe lifting of restrictions in communities seeking to resume normal activities and could protect people in crowded public settings and within households. Masks worn within households in Beijing, China, prevented secondary transmission of SARS-CoV-2 if worn before symptom onset of the index case.[15] Finally, Chu and colleagues reiterate that no one intervention is completely protective and that combinations of physical distancing, face mask use, and other interventions are needed to mitigate the COVID-19 pandemic until we have an effective vaccine. Until randomised controlled trial data are available, this study provides the best specific evidence for COVID-19 prevention.

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From: Holmes, Elaine
To: Cole, Teri J
Subject: FW: Lancet Article
Date: June 5, 2020 11:24:49 AM

From: Strang, Robert <Robert.Strang@novascotia.ca>
Sent: June 5, 2020 11:21 AM
To: Holmes, Elaine <Elaine.Holmes@novascotia.ca>; Kempkens, Daniela <Daniela.Kempkens@nshealth.ca>; Earle, Lynda inc#478781 kg <Lynda.Earle@nshealth.ca>; Watson-Creed, Gaynor <Gaynor.Watson-Creed@novascotia.ca>; Jackman, Jessica F <JessicaF.Jackman@nshealth.ca>; Cram, Jennifer <Jennifer.Cram@nshealth.ca>; Sarbu, Claudia <Claudia.Sarbu@nshealth.ca>; Sommers, Ryan <Ryan.Sommers@nshealth.ca>
Subject: FW: Lancet Article

From: Comeau, Jeannette <Jeannette.Comeau@iwk.nshealth.ca>
Sent: June 5, 2020 1:19 AM
To: Strang, Robert <Robert.Strang@novascotia.ca>; Watson-Creed, Gaynor <Gaynor.Watson-Creed@novascotia.ca>
Cc: Johnston, Lynn <Lynn.Johnston@nshealth.ca>; Davis, Ian <Ian.Davis@nshealth.ca>; MacDonald, Tammy <Tammy.MacDonald@nshealth.ca>
Subject: Lancet Article

Hi Rob,

Lynn, Ian and I discussed the Lancet article and Lynn wrote a response that I think is excellent and so have copied for you as follows:

The article actually does not tell us anything that we did not already know (probably not surprising), although having it put together in a systematic review/meta-analysis is nice to see, and the appendix has a wealth of information.

Some observations:

1) In this study, all patients were symptomatic by definition. Most of the settings were in-hospital, which may not reflect risk of transmission from less symptomatic/ill individuals (i.e. those who never seek medical attention or are well enough to go home). The studies included patients with SARS, MERS, and COVID-19, with the preponderance of studies being with non-COVID-19 patients.
2) All of the studies were observational, with the associated inherent bias difficulties. Most studies reported on bundled interventions, making it difficult to tease out the effect of individual interventions. Information on whether there were AGMPs was limited, as was information on whether the patients also wore masks.
3) Physical distancing was strongly associated with protection.
4) Face mask **could** result in a large reduction in risk of infection. When comparing N95s to no face mask, they offered greater protection than did face masks when compared to no face mask. However, none of the studies comparing face masks specifically to no face mask included COVID-19. Furthermore, N95s were not compared to face masks directly. The authors themselves say "in view of the limitations of these data, we did not rate the certainty of effect as high".
5) Eye protection might provide additional benefits.
6) Authors' conclusion: "Globally collaborative and well conducted studies, including randomized

trials, of different personal protective strategies are needed regardless of the challenges, but this systematic appraisal of currently best available evidence could be considered to inform interim guidance. "

What is our current guidance?

1 (=3rd observation): 2 metre distance from symptomatic patients regardless of their wearing a mask

2 (=4th observation): wear a face mask when providing care to a symptomatic patient. Wear an N95 when
doing an AGMP.

3 (=5th observation): wear eye protection when providing care to a symptomatic patient

While some may see this study as demonstrating superiority of N95s, it actually does not (and cannot by virtue of its methodology). I see it as in keeping with our recommendations and experience. Although we have had only a small number of inpatients with COVID-19 in NS, we have no conclusive evidence of health care associated transmission to health care workers when precautions were followed (droplet and contact). We will continue to monitor that closely, as well as all evidence as it emerges. But, this study supports what we have seen for years with other viral infections, including 2 randomized trials of masks compared to respirators that did not demonstrate superiority of one over the other.

So ultimately, the article really does support many of the IPAC measures we have put in place over the past few months, and the conclusion around N95 masks being superior to surgical face masks is overstepped (although as Lynn points out, they did qualify this statement). Additionally, the reinforcement of the impact of physical distancing underlines its importance both as an IPAC and PH measure to prevent transmission.

Hope this is helpful - would be happy to chat more.

Jeannette

Jeannette Comeau, MD MSc FRCPC FAAP
Pediatric Infectious Diseases Consultant
Assistant Professor, Dalhousie University

Medical Director, Infection Prevention and Control
Medical Lead, Antimicrobial Stewardship
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5850/5980 University Ave
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Tel: +1 902 470-6480
Fax: +1 902 470-7232
Email: j.comeau@dal.ca

From: Strang, Robert
To: Watson-Creed, Gaynor; Holmes, Elaine; Cole, Teri J
Cc: Doyle-Bedwell, George H
Subject: RE: Updated guidance from WHO - masks
Date: June 8, 2020 5:18:00 PM
Attachments: image001.gif

The key statement in it is "in areas with widespread transmission…" which I see as consistent with the PHAC guidance and our NS position.
Rob

From: Watson-Creed, Gaynor <Gaynor.Watson-Creed@novascotia.ca>
Sent: June 8, 2020 4:22 PM
To: Strang, Robert <Robert.Strang@novascotia.ca>; Holmes, Elaine <Elaine.Holmes@novascotia.ca>; Cole, Teri J <Teri.Cole@novascotia.ca>
Cc: Doyle-Bedwell, George H <George.Doyle-Bedwell@novascotia.ca>
Subject: Updated guidance from WHO - masks
file:///C:/Users/watsongz/Downloads/WHO-2019-nCov-IPC_Masks-2020.4-eng.pdf
Significant implications of this new guidance from WHO. Was discussed at TAC today. Will likely come to SAC – worthy of our internal discussion soon…
G

Health and Wellness

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Deputy Chief Medical Officer of Health
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902-424-0550 Fax
Twitter: @gwchealth

I acknowledge that I reside and work in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People. This territory is covered by the "Treaties of Peace and Friendship" which Mi'kmaq and Wolastoqiyik (Maliseet) People first signed with the British Crown in 1725. The treaties did not deal with surrender of lands and resources but in fact recognized Mi'kmaq and Wolastoqiyik (Maliseet) title and established the rules for what was to be an ongoing relationship between nations.

Masking during the COVID-19 pandemic – An update of the evidence | National Collaborating Centre for Environmental Health | NCCEH - CCSNE

Office of the Chief Medical Officer of Health
Position Statement: COVID-19 and the Use of Non-Medical Masks in the Community
Updated July 7, 2020

Position

The Office of the Chief Medical Officer of Health (OCMOH) recognizes that there are many questions about the use of non-medical masks (NMMs) to prevent the community transmission of COVID-19. As Nova Scotia continues to lift public health restrictions, including the introduction of the Atlantic bubble, the OCMOH has enhanced the guidance regarding NMMs as a proactive measure to assist in preventing the potential increased transmission of COVID-19. This document is an update of the statement published on June 26, 2020.

The use of NMMs in the community needs to be considered along with other core personal public health measures as a layered approach for the prevention of COVID-19. These are:

- staying informed, being prepared and following public health advice
- staying at home when symptomatic or ill
- proper hand hygiene and respiratory etiquette
- physical distancing of 2 metres (6 feet) from others outside of your household
- avoidance of touching one's face, mouth, nose or eyes
- increased cleaning of common, high touch surfaces (e.g. counter tops, doorknobs, taps) in one's personal environment (home, personal workspace) with a disinfecting cleaning product
- staying at home as much as possible if at high risk of severe illness
- reducing personal non-essential travel

The OCMOH **now strongly recommends** that individuals in the community wear a NMM if they have respiratory symptoms (cough, sneezing), and, will be in contact with others or when going out to access medical care or other essential health services.

Given the evidence of COVID-19 transmission by asymptomatic or mildly symptomatic people, the easing of public health restrictions and the increased risk of disease importation, including the introduction of the Atlantic bubble, the OCMOH recommendation around use of NMMs has evolved. The OCMOH **now strongly recommends** the use of a NMM by anyone in situations when exposure to crowded public spaces is unavoidable and consistent physical distancing is not possible (i.e. public transportation, stores, shopping areas and group living situations). If used widely and correctly and on a risk basis, NMMs can reduce viral transmission. The safe and appropriate use[1,2] of a NMM is an additional public health practice that can be taken to protect others.

NMMs should[1,2]:

- allow for easy breathing
- fit securely to the head with ties or ear loops
- be changed as soon as possible if damp or dirty

- be laundered with hot, soapy water and thoroughly dried whenever damp or dirty
- maintain their shape after washing and drying
- be comfortable and not require frequent adjustment
- be made of at least 2 layers of tightly woven material fabric (such as cotton or linen)
- be large enough to completely and comfortably cover the nose and mouth without gaping
- be stored in a clean paper bag until worn again
- be discarded in a plastic lined garbage bin after use if they cannot be washed

NMMs should not[1,2]:

- be shared with others
- impair vision or interfere with tasks
- be placed on children under the age of 2 years
- be made of plastic or other non-breathable materials
- be secured with tape or other inappropriate materials
- be made exclusively of materials that easily fall apart, such as tissues
- have tears or holes
- be used when damp, dirty or damaged
- be removed to talk to someone
- be hung from your neck or ears
- be placed on anyone unable to remove them without assistance or anyone who has trouble breathing

The OCMOH continues to monitor evidence on the use of NMMs and local spread of COVID-19. As evidence and understanding of community transmission evolves, the recommendations and guidance in this position statement may change.

Background

The use of masks for the general public has been reviewed as a possible consideration among various COVID-19 pandemic mitigation strategies. The Public Health Agency of Canada has provided advice that Canadians can use NMMs along with physical distancing, hand hygiene, and other measures to limit the transmission of COVID-19[1]. The World Health Organization (WHO) interim guidance[3] on the use of masks in the context of COVID-19, emphasizes that the use of a mask alone is insufficient to decrease the risk of respiratory virus transmission. Other personal and community level measures should also be adopted to limit the spread of COVID-19. The various types of NMMs with different fabrics, layering sequences and shapes have not been systematically compared and evaluated, however the WHO[3] does provide guidance regarding NMM fabric selection, construction and mask management advice. Globally, medical masks are in short supply and their use should be reserved for health care workers and at-risk individuals when indicated[3].

There is no definitive research demonstrating that wearing a NMM in the community protects the person wearing it. However, the use of a NMM is potentially beneficial in preventing an infected person from transmitting virus by limiting spread of respiratory droplets. This may be particularly valuable in settings outside of the person's household. There are populations who may not be able to wear a NMM and so, refraining from judgment and kindness is important. Wearing a NMM is not a substitute for physical distancing, hand washing and other core personal public health measures.

References

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3. https://www.who.int/publications/i/item/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak

From:	Holmes, Elaine
To:	Boland, Melissa L; Cole, Teri J; Ryan, Colleen F; Passerini, Linda
Subject:	FW: Mask wearing at seated gatherings
Date:	July 29, 2020 7:09:39 AM
Attachments:	if-ppih-covid-19-sag-mask-use-in-community-rapid-review.pdf ATT00001.htm

FYI

From: Strang, Robert <Robert.Strang@novascotia.ca>
Sent: July 28, 2020 8:32 PM
To: Johnston, Lynn <Lynn.Johnston@nshealth.ca>
Cc: Comeau, Jeannette <Jeannette.Comeau@iwk.nshealth.ca>; Kempkens, Daniela <Daniela.Kempkens@nshealth.ca>; Davis, Ian <Ian.Davis@nshealth.ca>; McNeil, Shelly <Shelly.McNeil@nshealth.ca>; Holmes, Elaine <Elaine.Holmes@novascotia.ca>; Sommers, Ryan <Ryan.Sommers@nshealth.ca>; Cram, Jennifer <Jennifer.Cram@nshealth.ca>; Patel, Alkesh <Alkesh.Patel@novascotia.ca>; Hatchette, Todd <Todd.Hatchette@nshealth.ca>
Subject: Re: Mask wearing at seated gatherings

Thanks Lynn. I am well aware of this review and it, along with other reviews and position statements have informed the PH position on masks.

Rob

Sent from my iPhone

> On Jul 28, 2020, at 8:18 PM, Johnston, Lynn <Lynn.Johnston@nshealth.ca> wrote:
>
> Sending along a good synthesis of mask use in public. Almost a month old, but I am not aware of anything newer. I am sure you are aware of Alberta's excellent rapid reviews, but you may not have seen this one.
> LJ
> Lynn Johnston, MD MSc FRCPC
> Room 5014 ACC, 5780 University Ave
> Halifax, NS B3H 1V7
> 902-473-5553 (p); 473-7394 (f)
>
> _____
> From: Johnston, Lynn
> Sent: July 28, 2020 8:44 AM
> To: Strang, Robert; Comeau, Jeannette; Kempkens, Daniela
> Cc: Davis, Ian; McNeil, Shelly; Holmes, Elaine; Sommers, Ryan; Cram, Jennifer; Patel,

Alkesh; Hatchette, Todd
Subject: Re: Mask wearing at seated gatherings

Thank you Rob for taking the time to share your perspective. I think discussion is always great. I am sure we could debate the points further, but I suspect we have heard them all many times already!
Lynn

Sent from my BlackBerry 10 smartphone on the Bell network.
Original Message
From: Strang, Robert
Sent: Monday, July 27, 2020 10:36 PM
To: Johnston, Lynn; Comeau, Jeannette; Kempkens, Daniela
Cc: Davis, Ian; McNeil, Shelly; Holmes, Elaine; Sommers, Ryan; Cram, Jennifer; Patel, Alkesh; Hatchette, Todd
Subject: RE: Mask wearing at seated gatherings

Lynn,

A few comments back.
1) the main point on mandatory masking now is to change social norms and greatly increase overall mask use in indoor public places, knowing that this will take several weeks to take effect. Waiting until we have increased virus circulating to do this is too late plus a high rate of mask use ahead of virus re-introduction can help limit the rate of virus spread.

2) While there may not be definitive evidence on this there is enough for every credible PH organization to now have clear recommendations on the importance of general mask use as part of the overall package of PH preventive measures

3) Churches, theatres are not packed as we have clear limits on the gathering numbers that are allowed. That was the whole point of my question - if we have limits on numbers and distancing is there a need for masking while people are sitting?

4) We are not planning an enforcement focus on the use of masks due mostly to the challenges of monitoring "medical reason for not wearing a mask" without creating a huge burden in the health care system as well as the high likelihood of marginalized populations being the focus of enforcement. So no ,churches etc would not be fined if people do not wear a mask.

14(1)

Rob

-----Original Message-----
From: Johnston, Lynn <Lynn.Johnston@nshealth.ca>
Sent: July 27, 2020 7:54 PM
To: Comeau, Jeannette <Jeannette.Comeau@iwk.nshealth.ca>; Kempkens, Daniela <Daniela.Kempkens@nshealth.ca>
Cc: Davis, Ian <Ian.Davis@nshealth.ca>; McNeil, Shelly <Shelly.McNeil@nshealth.ca>; Strang, Robert <Robert.Strang@novascotia.ca>; Holmes, Elaine <Elaine.Holmes@novascotia.ca>; Sommers, Ryan <Ryan.Sommers@nshealth.ca>; Cram, Jennifer <Jennifer.Cram@nshealth.ca>; Patel, Alkesh <Alkesh.Patel@novascotia.ca>; Hatchette, Todd <Todd.Hatchette@nshealth.ca>
Subject: RE: Mask wearing at seated gatherings

Well, I will probably not add anything that will further the decision, but cannot help but give an opinion.

First of all, I would love to see the study showing that masking substantially reduces the amount of virus entering immediate air space and either persisting in that air space (droplet nuclei) or settling into common surfaces. Most of the studies I have seen have been experiments or demonstrations of what does not come our of the mouth when something is over it (not a shock) and not natural events and the evidence of efficacy more theoretical than anything. So, 14(1) 14(1) There are so many more important things we could be doing (like testing and being more diligent about physical distancing and crowd control). To me, 14(1) hopefully the public will not be tired and cynical when that time comes. 14(1) 14(1) 14(1)

In any event, if churches and theatres are packed, of course physical distancing is impossible. However, when is the last time any of you have been in a packed church or movie theatre? Can there not be crowd control there as there is supposed to be in a restaurant? Quite frankly, 14(1) 14(1)

I think we are getting hung up on the small stuff. My guess is that 14(1) 14(1) 14(1) By the way, does this mean there will be fines for the churches or will all their little old folks be getting medical exemptions. How is that safer?

20(1)

LJ

Lynn Johnston, MD MSc FRCPC
Room 5014 ACC, 5780 University Ave
Halifax, NS B3H 1V7
902-473-5553 (p); 473-7394 (f)

From: Comeau, Jeannette
Sent: July 27, 2020 11:59 AM
To: Kempkens, Daniela
Cc: Davis, Ian; McNeil, Shelly; Strang, Robert; Holmes, Elaine; Sommers, Ryan; Cram, Jennifer; Patel, Alkesh; Hatchette, Todd; Johnston, Lynn
Subject: Re: Mask wearing at seated gatherings

Hi Rob,

I agree with Ian and Shelly's thoughts and was also thinking about hand hygiene in the context of taking the mask on and off. Really, the hands should be washed before touching the face (mask) and then also before putting it back on. Additionally, the mask should be stored in a clean dry place (ideally not crumpled in a pocket or purse which I'm sure many are). 14(1)

14(1)

Jeannette

> On Jul 27, 2020, at 11:57, Kempkens, Daniela <Daniela.Kempkens@nshealth.ca> wrote:
>
> Hi Rob,
>
> The MOHs talked about this at our morning meeting as well.
>
> Taking into account density and number of people in a space, duration of events as well as the likelihood of people laughing, singing, etc. 14(1)
>
> 14(1)
>
> 14(1)

MOHS, please add if I forgot anything.

Daniela

-----Original Message-----

From: Davis, Ian

Sent: Monday, July 27, 2020 10:27 AM

To: McNeil, Shelly <Shelly.McNeil@nshealth.ca>; 'Strang, Robert' <Robert.Strang@novascotia.ca>; Holmes, Elaine <Elaine.Holmes@novascotia.ca>; Sommers, Ryan <Ryan.Sommers@nshealth.ca>; Kempkens, Daniela <Daniela.Kempkens@nshealth.ca>; Cram, Jennifer <Jennifer.Cram@nshealth.ca>; Patel, Alkesh <Alkesh.Patel@novascotia.ca>; Hatchette, Todd <Todd.Hatchette@nshealth.ca>; Comeau, Jeannette <Jeannette.Comeau@iwk.nshealth.ca>; Johnston, Lynn <Lynn.Johnston@nshealth.ca>

Subject: RE: Mask wearing at seated gatherings

Rob

I would agree that there is little chance that people are going to be able to physically distance in these settings except potentially once they are sitting and that is even going to be difficult to ensure. On the other hand as you know masks are only an additional level of protection and physical distancing is still the most effective means to limit transmission so wouldn't want people to think that they could pack into a theatre or church and sit side by side at 100% capacity just because they are wearing a mask. I would think that 14(1)

14(1)

Ian

-----Original Message-----

From: McNeil, Shelly

Sent: Monday, July 27, 2020 9:19 AM

To: 'Strang, Robert' <Robert.Strang@novascotia.ca>; Holmes, Elaine <Elaine.Holmes@novascotia.ca>; Sommers, Ryan <Ryan.Sommers@nshealth.ca>; Kempkens, Daniela <Daniela.Kempkens@nshealth.ca>; Cram, Jennifer <Jennifer.Cram@nshealth.ca>; Patel, Alkesh <Alkesh.Patel@novascotia.ca>; Hatchette, Todd <Todd.Hatchette@nshealth.ca>; Comeau, Jeannette <Jeannette.Comeau@iwk.nshealth.ca>; Johnston, Lynn <Lynn.Johnston@nshealth.ca>; Davis, Ian <Ian.Davis@nshealth.ca>

Subject: RE: Mask wearing at seated gatherings

I think this is a tough one- when I think about the layout of theatre, it, it the seats are approximately 1 foot apart and the rows are generously 2 feet apart, and the average group is 2-4 people seated together, 14(1)

14(1)

14(1) That said, they make most of their money on food and drink so I can see why the pushback. 14(1)

14(1)

My thoughts

Shelly

Not responsive

Cheers

Shelly

-----Original Message-----

From: Strang, Robert [mailto:Robert.Strang@novascotia.ca]

Sent: Monday, July 27, 2020 7:25 AM

To: Holmes, Elaine <Elaine.Holmes@novascotia.ca>; Sommers, Ryan <Ryan.Sommers@nshealth.ca>; Kempkens, Daniela <Daniela.Kempkens@nshealth.ca>; Cram, Jennifer <Jennifer.Cram@nshealth.ca>; Patel, Alkesh <Alkesh.Patel@novascotia.ca>; McNeil, Shelly <Shelly.McNeil@nshealth.ca>; Hatchette, Todd <Todd.Hatchette@nshealth.ca>; Comeau, Jeannette <Jeannette.Comeau@iwk.nshealth.ca>; Johnston, Lynn <Lynn.Johnston@nshealth.ca>; Davis, Ian <Ian.Davis@nshealth.ca>

Subject: Mask wearing at seated gatherings

I am seeking your opinion on whether the mandatory masking in public places should include people attending seated events such as movies, theatre, worship services once they are seated with appropriate physical distance from others or other family or close social groups as per the gathering requirements in the PH order.

As it is now written masking would be required under the PH order. The rationale for this is that even with distancing masking substantially reduces the amount of virus entering immediate air space and either persisting in that air space (droplet nuclei) or settling into common surfaces.

I have been getting questions about this all weekend asking why seated physically distanced is not sufficient and asking that masks not be required in these situations.

I have the next couple of days to amend the order Before it takes effect on July 32st so any feedback would be appreciated.

BTW, we will be clarifying in the order that performers and officiants at gatherings will not need to wear a mask while doing activities that involve speaking or singing.

Thanks,

Rob

Sent from my iPhone

COVID-19 Scientific Advisory Group Rapid Response Report

Key Research Question: What is the effectiveness of wearing medical masks, including home-made masks, to reduce the spread of COVID-19 in the community? [Updated June 19, 2020]

Context

- On June 5th, 2020, the WHO, despite a limited evidence base, provided guidance on the continuous use of medical masks by health workers and caregivers in areas of known or suspected community transmission regardless of whether direct care to COVID-19 patients is being provided. In addition they provided guidance to decision makers using a risk based approach for the use of masks in areas with community transmission of COVID-19 when physical distancing is difficult (ie. public transit, shops, or other confined or crowded spaces).
- On May 20, 2020, the Public Health Agency of Canada recommended that non-medical masks be used in settings where it is not possible to maintain a 2-metre physical distance. The federal transportation minister then mandated mask use on planes, rail transport, and ships.
- The government of Alberta has initiated distribution of 20 million, single-use non-medical masks to the community which appear to be of high grade (with a 3 layer design, purporting a 96% filtration rate for particles up to 3 um and Delta-R 1.7 which would meet FFP2 requirements).
- Community mask use is now either encouraged or mandatory in over 80 countries, with many jurisdictions encouraging but not mandating the use of cloth masks; however, some countries such as Australia and New Zealand continue to not recommend community masking and have achieved low rates of COVID activity despite the lack of this particular intervention.
- Shortages of medical (procedure, surgical masks) masks and N95 masks for health care workers persist globally and nationally.
- With a focus on recovery and relaxation of social distancing in the context of the stabilization of the initial wave of the pandemic, the general population is returning to community and workplace settings where social distancing will not always be possible, which is driving interest in, and controversies around the use of cloth and home-made masks.

Key Messages from the Evidence Summary

- As medical masks are often bundled with other IPC interventions and have variable compliance, clinical trials on the effectiveness of medical masks have been challenging. Systematic reviews of randomized controlled trials in health care settings have not demonstrated a significant reduction in acute respiratory infections, (ARIs), ILIs or laboratory confirmed viral infections with medical mask use although it is acknowledged there were methodological flaws and smaller underpowered studies in the data analyzed.
- There is a paucity of clinical evidence in favor of using medical masks in the community, with multiple randomized trials demonstrating mixed results which when pooled demonstrate no significant reduction in acute respiratory infections (ARIs), ILIs or laboratory confirmed viral infections. There are some lower quality studies showing a reduction in viral infection rates in households, in transmission of viral respiratory infections in the context of mass gatherings, and in university residences when combined with hand hygiene interventions.
- However, while systematic reviews of randomized clinical trials fail to show significant benefit with medical mask use in community settings, more observational and case-control studies

(both at higher risk of bias), have suggested that masks are protective.

- The reasons for the lack of significant reduction for ARIs in the randomized trials is complex and may include: study design, setting, and human factors associated with wearing masks including low compliance with mask wearing, lack of concomitant hand hygiene, inoculation via the conjunctiva, frequent facial touching and mask adjustment leading to inoculation events, risk compensation behaviours, and self-contamination with inappropriate mask doffing. These possibilities have not been rigorously assessed.
- Laboratory studies investigating the efficacy of masks in filtering viral particles as well as studies in medical settings with laboratory based endpoints for bacterial respiratory pathogens (*Pseudomonas aeruginosa and Mycobacterium tuberculosis*) point to a theoretical benefit to medical mask use as a form of source control (protecting others from the wearer). There are no laboratory studies with SARS-CoV-2 and only one looking at other human coronaviruses.
- There are modelling studies and ecological data suggesting a benefit to medical mask use in the community via a reduction in viral transmission rates (R0) across wide ranges of community transmission levels. While these models are suggestive, they have significant inherent bias based on multiple assumptions including assumptions around mask efficacy in preventing transmission, and bundled interventions.
- Based on lab-based bioaerosol and NaCl aerosol studies, medical masks are superior to homemade cloth masks, but non-medical masks and optimally constructed home-made masks may offer some protection in reducing dispersion of droplets. Laboratory-based studies are of highly variable quality, with only a few studies using industry approved filtration efficiency testing methods.
- The newly released guidance from the World Health Organization suggests decision makers advising on non-medical mask use should take into consideration features of filtration efficiency (FE), breathability, number (and combination) of materials used, shape, coating and maintenance of cloth masks. The WHO suggests minimum Q (filter quality factor) score of the material chosen of 3 (three) based on expert consensus and engineering science and industry standards. They further suggest an optimal combination of material for non-medical masks should include three layers:

  1) an innermost layer of a hydrophilic material (e.g. cotton or cotton blends);

  2), an outermost layer made of hydrophobic material (e.g., polypropylene, polyester, or their blends) and

  3) a middle hydrophobic layer of synthetic non-woven material such as polypropylene, or a cotton layer which may enhance filtration or retain droplets

- There is limited evidence of harms related to community mask wearing with no studies identified that have systematically looked at potential harms. Such harms could include behavioral modifications such as risk compensation/non-adherence to social distancing or optimal hand hygiene practices, self-contamination, induction of facial rashes, and increasing real or perceived breathing difficulties. There are also concerns about poor compliance or tolerance of masks in children or those with cognitive challenges and communication difficulties.
- The only clinical study to examine cloth mask efficacy in preventing repiratory virus transmission was in a healthcare setting, comparing continuous cloth or medical masks use to usual practice. Among the comparator (usual practice) group, a large percentage of individuals used medical masks for part of the time. The study had significant methodological issues but did demonstrate

a significantly higher respiratory viral infection event rate of HCW using a 2-ply cotton cloth masks when compared with the use of standard practice. (Macintyre et al, 2015)

- Pre-symptomatic transmission and asymptomatic transmission of SARS-CoV-2 have been described but the degree to which they contribute to community spread is unclear, At this point, there is no direct evidence that the use of a medical or homemade cloth mask or the wider use of masks in the community significantly reduces this risk. For more information, refer to the Asymptomatic Transmission of SARS-CoV-2 rapid review.

Committee Discussion

There was agreement that although the evidence base is poor, the use of masks in the community is likely to be useful in reducing transmission from community based infected persons, particularly those with symptomatic illness. One member was very concerned, and there was some agreement, that a focus on mask-use could lead to a reduced sense of personal risk, i.e. risk compensation. There is some evidence demonstrating less attention to social distancing and hand hygiene as the mainstays of prevention in a community setting. It was noted that while there is evidence from observational studies that medical masks may reduce ARIs and ILIs in health care settings, that there is no clinical trial evidence that use of non-medical or medical masks in the community reduces viral transmission.

There was agreement that there is insufficient information to make a firm recommendation for the use of home-made (non-medical) masks in the community. In the face of difficulties in quantifying risk of asymptomatic transmission and potential benefit outweighing the harms of wider use of home-made masks in the community, several committee members felt strongly that we should carefully balance the recommendation for community use to reflect the precautionary principle as well as evidence gaps. One member felt that to achieve the maximum population benefit, the majority of people should be wearing masks in settings where physical distancing cannot be maintained. To account for these controversies, which were mostly based on uncertainties in the evidence, a Research Gaps section has been added.

There was concern that we may be over-emphasizing the potential harm associated with the use of non-medical masks in the community, and there was general but not unanimous agreement to reduce this emphasis and focus on the need for systematic research looking at benefits and harms with clinical outcomes.

This update was predominantly based on the WHO revised advice, but it was noted that there is little new evidence aside from information on filtration efficiency of different home-made masks since our last update. There remains a lack of data demonstrating benefit of cloth masks as currently used in the community, beyond lab based filtration studies. There remains a significant disconnect between RCTs and observational study results of community mask use, and significant confounding and bias in ecologic trials. Since the last version of this review, there is very little new data except new syntheses of previous studies, new modeling studies, and some new collations of cloth filtration characteristics. One reviewer commented on the system level issues with supporting medical and non-medical mask use in the community as important elements in addition to the patient level harms.

One reviewer highlighted the importance of identifying specific level of guidance and evidence provided by the updated advice from the WHO. As little additional evidence was highlighted in this review, the emphasis of the WHO report was discussed: “the process of interim guidance development during emergencies consists of a transparent and robust process of evaluation of the available evidence on benefits and harms, synthesized through expedited systematic reviews and expert consensus-building facilitated by methodologists. This process also considers, as much as possible, potential resource implications, values and preferences, feasibility, equity, ethics and research gaps” (WHO, June 5,

2020). Therefore more specific description of the document, recommendations and the risk-based approach to community mask use with consideration of local epidemiology has been incorporated. (https://www.who.int/publications/i/item/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak)

Lastly, committee members felt that the research gaps section should better highlight the remaining uncertainties regarding mask use in the community, and how they might be addressed. This would include better information about optimal mask construction, as well as more robust evidence about their impact on clinically relevant measures of benefit and harm. Finally, additional details about compliance with medical and non-medical mask use in the community would be helpful.

Recommendations

1. In light of concerns around PPE shortages, medical masks should continue to be prioritized for HCWs in direct patient care roles. HCWs should continue to wear medical masks whenever providing direct patient care and whenever social distancing is not possible in health care settings.
2. In the community, medical mask use should be prioritized for those with any symptoms suggestive of COVID-19, as a form of source control. Community caregivers of potentially infectious COVID-19 patients and care providers for those who are more vulnerable to severe infection in the household setting should also wear medical or well-constructed non-medical masks as a form of protection.
3. In settings where social distancing cannot be maintained, medical masks or high-quality non-medical masks should be encouraged as a form of protection for those vulnerable to severe COVID-19 infection outcomes. Vulnerable populations include those over 60 and those with comorbidities or immunosuppression.
4. Evaluation of the extent of community transmission of SARS-CoV-2 is required to continually assess the risks and benefits of community mask use in various situations, although there is insufficient evidence to recommend specific epidemiologic thresholds for this purpose. This is consistent with WHO guidance which advises decision makers to apply a risk-based approach focusing on specific criteria when considering or encouraging the use of masks for the general public that incorporates consideration of local epidemiology. The WHO encourages use of a well-constructed non-medical mask, designed according to the available evidence from materials engineering science, as a possible method of reducing risk of transmission of COVID-19 when social distancing is not possible. Situations where this may be particularly relevant include: on public transportation, workplaces necessitating close proximity to other workers or the public, or when entering and exiting public buildings.
5. In light of widespread interest in masks and anecdotal evidence of potentially harmful, inappropriate use by the public, health officials should widely communicate the need for both optimal mask construction and mask “etiquette”. It is important to strengthen the messaging that their use not replace the need for maintaining social distancing and hand hygiene as more important strategies to prevent transmission of COVID-19; and the need to not touch the mask, to replace when soiled or wet and ensure appropriate laundering. Current advice on when and how to wear home-made or non-medical masks is available at: https://www.albertahealthservices.ca/topics/Page16997.aspx#prev

Research Gaps

1. While there is some additional evidence, there is a need for further research into the optimal construction and fabric composition of home-made or non-medical masks and their efficacy in protection against transmission or acquisition of SARS-CoV-2.
2. Currently, we only have theoretical benefit demonstrated in laboratory studies of the filtration capabilities of cloth masks. Further studies assessing population benefits and harms of home-made (non-medical) masks are urgently required. These studies should include RCTs that assess clinical outcomes.
3. Studies evaluating the frequency and compliance of mask use by individuals in clinical and community settings, potentially using longitudinal surveys and/or contact tracing data would be of benefit while awaiting more rigorous trial results.

Summary of Evidence

Since the last update on April 21, 2020, the World Health Organization has provided new guidance on the use of masks in the community. There has also been a significant number of new studies examining their use. However, there is only one new clinical study. The remainder of the studies have been multiple new systematic reviews and meta-analyses of previously published clinical studies, modelling studies, and laboratory-based studies of various homemade materials.

International guidelines and practices for use of masks in the community setting:

World Health Organization guidance on the use of masks in the community

On June 5th, the WHO provided an update to prior guidance from April 6th. 2020.
The process of interim guidance development during emergencies consists of a transparent and robust process of evaluation of the available evidence on benefits and harms, synthetized through expedited systematic reviews and expert consensus-building facilitated by methodologists. This process also considers, as much as possible, potential resource implications, values and preferences, feasibility, equity, ethics and research gaps (https://www.who.int/publications/i/item/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak).

The primary differences with this update included:
Updated information on transmission from symptomatic, pre-symptomatic and asymptomatic people infected with COVID-19, as well as an update of the evidence of all sections of this document;
• New guidance on the targeted continuous use of medical masks by health workers working in clinical areas in health facilities in geographical areas with community transmission1 of COVID-19;
• Updated guidance and practical advice for decision-makers on the use of medical and non-medical masks by the general public using a risk-based approach;
• New guidance on non-medical mask features and characteristics, including choice of fabric, number and combination of layers, shape, coating and maintenance. (**WHO, June 2020)**
(see Table 1 in the Appendix).

As it relates to the: Targeted continuous medical mask use by health workers in areas of known or suspected COVID-19 community transmission, the updated WHO guidance document suggests the following guidance: (WHO, June 5, 2020)

In the context of locations/areas with known or suspected community transmission or intense outbreaks

of COVID-19, WHO provides the following guidance:
• Health workers, including community health workers and caregivers, who work in clinical areas should continuously wear a medical mask during their routine activities throughout the entire shift; apart from when eating and drinking and changing their medical mask after caring for a patient who requires droplet/contact precautions for other reasons;
• According to expert opinion, it is particularly important to adopt the continuous use of masks in potential higher transmission risk areas including triage, family physician/GP practices, outpatient departments, emergency rooms, COVID-19 specified units, haematological, cancer, transplant units, long-term health and residential facilities;
• When using medical masks throughout the entire shift, health workers should make sure that:
    - the medical mask is changed when wet, soiled, or damaged;
    - the medical mask is not touched to adjust it or displaced from the face for any reason; if this happens, the mask should be safely removed and replaced; and hand hygiene performed;
    - the medical mask (as well as other personal protective equipment) is discarded and changed after caring for any patient on contact/droplet precautions for other pathogens;
• Staff who do not work in clinical areas do not need to use a medical mask during routine activities (e.g., administrative staff);
• Masks should not be shared between health workers and should be appropriately disposed of whenever removed and not reused;
• A particulate respirator at least as protective as a US National Institute for Occupational Safety and Health-certified N95, N99, US FDA surgical N95, European Union standard FFP2 or FFP3, or equivalent, should be worn in settings for COVID-19 patients where AGPs are performed (see WHO recommendations above). In these settings, this includes its continuous use by health workers throughout the entire shift, when this policy is implemented.

To be fully effective, continuous wearing of a medical mask by health workers, throughout their entire shift, should be implemented along with other measures to reinforce frequent hand hygiene and physical distancing among health workers in shared and crowded places where mask use may be unfeasible such as cafeterias, dressing rooms, etc.

The following potential harms and risks should be carefully taken into account when adopting this approach of targeted continuous medical mask use, including:
• self-contamination due to the manipulation of the mask by contaminated hands;
• potential self-contamination that can occur if medical masks are not changed when wet, soiled or damaged;
• possible development of facial skin lesions, irritant dermatitis or worsening acne, when used frequently for long hours
• masks may be uncomfortable to wear;
• false sense of security, leading to potentially less adherence to well recognized preventive measures such as physical distancing and hand hygiene;
• risk of droplet transmission and of splashes to the eyes, if mask wearing is not combined with eye protection;
• disadvantages for or difficulty wearing them by specific vulnerable populations such as those with mental health disorders, developmental disabilities, the deaf and hard of hearing community, and children;
• difficulty wearing them in hot and humid environments.(**WHO, June 5, 2020)**

As it relates to the WHO updated Advice to decision makers on the use of masks for the general public

WHO advises decision makers to apply a risk-based approach focusing on the following criteria when considering or encouraging the use of masks for the general public:

Taking into account the available studies evaluating pre- and asymptomatic transmission, a growing compendium of observational evidence on the use of masks by the general public in several countries, individual values and preferences, as well as the difficulty of physical distancing in many contexts, WHO has updated its guidance to advise that to prevent COVID-19 transmission effectively in areas of community transmission, governments should encourage the general public to wear masks in specific situations and settings as part of a comprehensive approach to suppress SARS-CoV-2 transmission . WHO advises decision makers to apply a risk-based approach focusing on the following criteria when considering or encouraging the use of masks for the general public:

1. Purpose of mask use: if the intention is preventing the infected wearer transmitting the virus to others (that is, source control) and/or to offer protection to the healthy wearer against infection (that is, prevention).
2. Risk of exposure to the COVID-19 virus:
- due to epidemiology and intensity of transmission in the population: if there is community transmission and there is limited or no capacity to implement other containment measures such as contact tracing, ability to carry out testing and isolate and care for suspected and confirmed cases.
- depending on occupation: e.g., individuals working in close contact with the public (e.g., social workers, personal support workers, cashiers).
3. Vulnerability of the mask wearer/population: for example, medical masks could be used by older people, immunocompromised patients and people with comorbidities, such as cardiovascular disease or diabetes mellitus, chronic lung disease, cancer and cerebrovascular disease.
4. Setting in which the population lives: settings with high population density (e.g. refugee camps, camp-like settings, those living in cramped conditions) and settings where individuals are unable to keep a physical distance of at least 1 metre (3.3 feet) (e.g. public transportation).
5. Feasibility: availability and costs of masks, access to clean water to wash non-medical masks, and ability of mask wearers to tolerate adverse effects of wearing a mask.
6. Type of mask: medical mask versus non-medical mask

Based on these criteria, (Table 1 in appendix) provides practical examples of situations where the general public should be encouraged to wear a mask and it indicates specific target populations and the type of mask to be used according to its purpose. The decision of governments and local jurisdictions whether to recommend or make mandatory the use of masks should be based on the above criteria, and on the local context, culture, availability of masks, resources required, and preferences of the population.

Masking recommendations
The following link provides a list of countries recommending or requiring community use of masks:
https://masks4all.co/what-countries-require-masks-in-public/
It is updated daily.

Mask provision

Foreseeing impending medical mask shortages, Taiwan enlisted multiple interventions to try to prevent them. These included: state-controlled production and distribution of medical masks with daily, individual, name-based rations of masks (at modest cost) distributed at local drugstore and free provision of masks for school-aged children. South Korea also implemented state control over manufacturing and now provides a weekly ration of two masks (https://www.nytimes.com/2020/04/01/opinion/covid-face-mask-shortage.html).

In Japan (https://english.kyodonews.net/news/2020/04/67ad0dfcd954-delivery-of-cloth-masks-from-govt-starts.html), Hong Kong (https://www.qmask.gov.hk/about/), and Singapore (https://www.gov.sg/article/when-should-i-wear-a-mask) mass-manufactured, re-usable, cloth masks are being provided to citizens. In Hong Kong, pre-registered, low-income families may also receive 5 disposable medical masks per week for 10 weeks at vending machine dispensers (https://finance.yahoo.com/news/world-development-mask-dispensers-live-133000505.html).

The city of Los Angeles is providing garment manufacturers with crude guidelines on sewing non-medical masks (https://www.dropbox.com/s/x9myr2t9mhxd4zo/COVID_Mask-Manufacturer-Packet.pdf?dl=0) that can then be sold to the public.

Current evidence on COVID-19 Transmission:

It is accepted that SARS-CoV-2 is transmitted via droplets (<5 μm) expelled when a patient sneezes or coughs. However, the exact distance droplets can travel has been called into question **(Bourouiba, 2020)**. Others have also posited the possibility of SARS-CoV-2 transmission through ordinary speech (**Asadi S et al, 2020)**. There is also increasing concern regarding pre-symptomatic, pauci-symptomatic, or rarely, asymptomatic transmission of COVID-19, wherein individuals have RT-PCR detectable SARS-CoV-2 from nasal or throat swabs prior to or without development of symptoms **(Bai et al. 2020, Chan et al. 2020, Pan et al. 2020, Kimball et al. 2020, Wei et al. 2020,** and **Li et al. 2020)**. It also appears that viral loads are highest during the early symptomatic phase **(To et al. 2002, Wolfel et al. 2020,** and **Bai et al. 2020**) or even the pre-symptomatic stage. Indeed, **He et al. 2020** infer that infectiousness may peak on or before symptom onset and through modelling, estimate that up to 44% of secondary cases were infected during the index cases' pre-symptomatic stage. Therefore, the main theoretical benefit of masks during the COVID-19 pandemic would be as a form of source control to minimize dispersion of the expelled viral particles from individuals unknowingly transmitting disease.

For more information, refer to the Asymptomatic Transmission of SARS-CoV-2 Rapid Review.

Clinical studies and systematic reviews examining use of medical masks to prevent transmission of COVID-19:

One new clinical study has examined masks for prevention of COVID-19 transmission in the community, specifically, in the household setting. **Wang Y et al, 2020** undertook a retrospective study of 335 people (124 families) to determine characteristics and practices of both the source case and their contacts that were predictors of secondary transmission. They determined that if one or more members of the household (either the primary case or their contacts) wore a mask *before* development of symptoms, there was a 79% reduction in transmission (OR=0.21, 95% CI: 0.06 to 0.79). In another study of 105 cases (imported from Wuhan to other centres) and 392 household contacts, the overall attack rate in households was 16.9%, but was 0% in households of 14 index patients who reportedly self isolated (used masks, dining separately, and residing alone within the home) upon (not before) symptom development (Wei Li et al, 2020).

Clinical evidence for the use of medical masks in mixed settings (clinical and community) prior to COVID-19 has been well summarized in three separate systematic reviews and meta-analyses (**Jefferson et al. 2011, Offeddu et al. 2017, Saunders-Hastings et al, 2017)**. Offeddu et al. focused only on health-care settings, Jefferson et al. 2011 and Saunders-Hasting et al. 2017 looked at mixed settings. All three reviews reported methodologic concerns related to the randomized trials that were often under-powered and prone to reporting biases. Offeddu et al, did a meta-analysis of RCTs comparing any mask (medical or N95) to no masks. They found that masks conferred significant protection against self-reported clinical respiratory illness (RR = 0.59; 95% CI: 0.46–0.77) and influenza-like illness (RR = 0.34; 95% CI: 0.14–0.82) but only a non-statistically significant effect against laboratory-confirmed viral infections. A meta-analysis of observational studies noted a protective effect of medical masks vs. no mask (OR = 0.13; 95% CI: 0.03–0.62) against SARS. Jefferson et al, 2011 undertook a meta-analysis of seven case-control studies (~50% of participants were not health care workers) with 3216 participants and found fewer acute respiratory infections with medical mask use, OR 0.32, 95% CI 0.26 to 0.39. Of all physical interventions (including hand hygiene, gowns and gloves), masks were the most effective. In a meta-analysis of three case-control studies (19% of the participants being in a household setting), Saunders-Hastings et al. found that medical masks provided a non-significant protective effect against pandemic influenza (OR = 0.53; 95% CI 0.16–1.71; I 2 = 48%).

Clinical evidence for the use of masks in the community setting (only) has also been examined, with three systematic reviews by **Brainard et al, 2020 (preprint), MacIntyre et al, 2015, and Barasheed et al, 2016.** Brainard et al, 2020 identified 31 different studies (including pre-post, cross-sectional, case-control, observational, and randomized controlled trials). 12 studies were RCTs. These authors found the evidence to be of low to very low certainty and concluded that “the evidence is not sufficiently strong to support widespread use of facemasks as a protective measure against COVID-19. However, there is enough evidence to support the use of facemasks for short periods of time by particularly vulnerable individuals when in transient higher risk situations.**”** MacIntyre et al. 2015, identified 9 RCTs of facemasks in diverse settings (households and community), and with varied designs and interventions (ie. combination hand washing and facemasks). Due to the heterogeneity, no meta-analysis was undertaken. The results were inconclusive. A copy of the table summarizing these 9 articles is provided in **Table 2** of the **Appendix**. In general, the RCTs included use of a surgical grade facemask but the observational studies did not provide adequate description of the types of masks used.
Barasheed et al. 2016**,** pooled the results of 13 heterogeneously designed studies examining the effectiveness of medical masks at preventing variably defined acute respiratory infection endpoints arising during the Hajj pilgrimage. Based on studies which the authors deemed to be of “average” quality, they found a small, statistically significant benefit (RR 0.89, 95% CI 0.84-0.94). However, pooling of studies of vastly different design may be considered inappropriate from an analytic perspective and it is possible this small difference disappears when a more appropriate pooling is done.

Since the completion of the last review, multiple new systematic reviews, with or without meta-analyses, have been completed. They almost exclusively re-examined the studies already included in the reviews mentioned above.
Any setting:

- **Chu et al, 2020** did a systematic review and meta-analysis **of observational studies** (using frequentist, Bayesian meta-analysis, and random effects meta-regressions) to look at the impact of physical distancing, masks, and eye protection. Their analysis was limited to studies of coronaviruses (SARS-CoV-2, SARS-CoV, and MERS-CoV). They did not identify any

randomized controlled trials. They found any masks (N95, medical mask, or 12-16 layer cotton) reduced risk of infection (unadjusted n=10,170, RR 0.34, 95% CI 0.26-0.45; adjusted studied n=2647, aOR 0.15, 95% CI 0.07-0.34) when compared to no mask. When only medical *or* 12-16 layer cotton masks were compared with no mask, the protective effect was diminished but persisted (aOR 0·33, 95% CI 0·17–0·61). There was no comparison of medical masks to cotton masks. When only the 3 community-based studies were included, masks remained protective (RR 0.56, 95% CI 0.40-0.79). Using the GRADE category of evidence, the findings were deemed to be of low certainty. This study was limited by the observational nature of the studies included which are subject to significant bias.

- **Jefferson et al, 2020** (pre-print) updated their previous review looking at physical interventions to stop the spread of respiratory viruses, this time focusing only on **randomized and cluster randomized trials**. 14 trials assessed the impact of mask wearing. Looking at general population, there was no reduction in ILI cases (RR 0.93, 9% CI 0.83 to 1.05) nor in laboratory-confirmed influenza (RR 0.84, 95% CI 0.61-1.17). No benefit was identified in health care workers either.
- **Liang et al. (pre-print)** examined use of any type of mask in any setting in preventing respiratory virus transmission. In the subgroup of non-HCW, a protective effect was found with a pooled OR of 0.53 (95% CI=0.36 - 0.79), this effect persisted in both household (OR=0.60, 95% CI=0.37-0.97) and the non-household settings (OR=0.44, 95% CI=0.33-0.59). The RCTs included in this study scored 3 or 4/5 on the Jadad scale, but it should be noted that this a quality assessment tool whose use is discouraged by the Cochrane Collaboration with concerns of its ability to detect bias.
- **MacIntyre R and Chughtai AA, 2020** looked only at randomized controlled trials. Including eight trials in community settings, and concluded that when masks were used by ill individuals, their well contacts were protected. Of note, these findings were dissimilar from many others in that among health care workers in clinical settings, they found that only continual use of respirators was beneficial, with medical masks found to be less effective and cloth masks were even less effective than medical masks.

Community settings only:

- **Wei et al. (pre-print)** did a systematic review and meta-analysis of 8 RCTs examining any type of mask in the community setting. Masks lowered the risk of developing ILI (pooled RR=0.81, 95% CI: 0.70-0.95).
- In a pre-registered, rapid review using Bayseian analysis, **Pereski et al. (pre-print)** identified 21 studies examining incidence of ILI (variably reported) in the community. All masks types were considered. 1/11 RCTs and 6/10 observational studies found that masks reduced incidence of ILI. They found that while RCTs showed a moderate likelihood of a *small* effect of wearing medical masks in the community to reduce self-reported ILI, the risk of reporting bias was high. The evidence for reduction of clinically or lab-confirmed infection was equivocal. By contrast, observational studies showed that masks reduced incidence of ILI but there was a high risk of confounding and reporting bias. The difference in the findings between RCTs and observational studies was also noted previously by **Brainard et al.**

Cloth masks only:

- **Mondal et al. (pre-print)** looked at the utility of cloth masks in any setting. They included both clinical and non-clinical studies, in what can be more accurately described as a scoping review. They found two clinical studies, only one of which assessed the clinical effectiveness of cloth masks. This was the study by **MacIntyre et al, 2015** which is discussed later in this review. In the laboratory studies, cloth mask filtration efficiency was highly variable, between 3-95%, likely reflecting the highly variable materials and measurement techniques.

Laboratory based studies examining use of medical masks to prevent transmission of COVID-19:
Given the challenges of clinical studies, another approach has been to directly measure the efficacy of medical masks in both filtering exhaled respiratory viruses and in providing a barrier to entrance of pathogens.

In the only laboratory study to look at coronaviruses, **Leung et al, April 2020** found that coronaviruses could be detected in respiratory droplets (>5um) and aerosols (<5 uM) in 3/10 (30%) and 4/10 (40%) of samples collected without medical masks, respectively. They did not detect any virus in respiratory droplets or aerosols collected from participants wearing medical masks.

Multiple other studies have examined the use of masks for preventing spread of other respiratory pathogens. **Milton et al, 2013** found that medical masks reduced influenza viral copy numbers in exhaled samples by ~3-25 fold (depending on the size of the particle). **Johnson et al, 2009** could detect influenza in all samples of exhaled breath where a mask was not worn but detected no influenza virus by RT-PCR with medical masks. In two separate studies medical masks reduced the release of *Pseudomonas aeruginosa* in patients with cystic fibrosis both when worn for short **(Stockwell et al, 2018)** and longer durations **(Stockwell et al, 2018). Dharmadhikari et al, 2012**, examined the benefit of medical masks as a form of source control on a multi-drug resistant tuberculosis ward where exhaust air from patients is delivered to guinea pig exposure chambers. Compared to patients who did not wear a masks, patients who did wear a mask infected 56% fewer guinea-pigs (36/90 vs 69/90 infected guinea pigs).

Two studies have examined the effectiveness of medical masks to protect the wearer, as a barrier against viral bioaerosols. Ma et al, 2020 found that compared with one-layer of polyester, medical masks blocked 97.15% of avian influenza viral bioaerosols while a 4-layer homemade mask blocked 95.15%. The high efficacy rates of the masks may have been related to the unrealistically tight seals in the model used. **Makison-Booth et al, 2013** realistically adhered masks to the face of a mannequin and then measured the amount of viable live influenza virus from the air in front and behind of five different types of surgical masks. They found that medical masks reduced exposure to aerosolized influenza virus by approximately 6-fold.
Thus, the preponderance of lab-based studies (Milton et al 2013, Johnson et al, 2009, Stockwell et al. 2018, Stockwell et al. 2018, Dharmadhikari et al, 2012, and Leung et al, 2020) suggest the benefit of a mask is as a method of source control with reduction of the amount of respiratory virus released by exhaled particles. That is, the public would be protected from respiratory spread of infection from the mask wearer.

Other studies (modelling, ecological, anecdotal, etc) examining use of medical masks to prevent transmission of COVID-19:

Influenza transmission models:
Brienen et al, 2010 developed a population transmission model to explore the impact of population-wide mask use on an influenza pandemic. They assumed that the reduction in infection risk would be proportional to the reduction in exposure to the virus based on particle retention by the mask and mask coverage (number of people appropriately wearing masks). It is unknown if this assumption is valid. They concluded that masks could lower the basic reproduction number, at least delaying, if not containing, an influenza outbreak. A detailed transmission model by **Trachet et al, 2009;** however was less optimistic, concluding that while 10% of the population using N95 masks could result in a 20% reduction in H1N1, even 50% of the population wearing medical masks would only results in a 6%

reduction in number of cumulative cases. In their model, **Yan et al, 2019,** found that at a population-level compliance of 50%, all types of masks—except low-filtration surgical mask—could reduce prevalence of influenza outbreak to <5%. At a compliance rate of 80%, low-filtration surgical masks (not otherwise defined) could reduce prevalence by 50%.

COVID-19 models: In a model assessing various local interventions, **Tian et al, 2020 (preprint)** estimated reductions in the basic reproduction number *R*0 of SARS-CoV-2 with different interventions. Assuming masks reduce *R*0 by a factor $(1 - epm)^2$, where *e* is the efficacy of trapping viral particles inside the mask, and *pm* is the percentage of the population that wears masks – for example, if 50% of the population wears a mask and the mask has a 50% efficacy at trapping particles, *R*0 could drop to 1.35 (down from ~2.4). It is unknown if this assumption is valid.

Eikenberry et al. 2020 developed a mathematical model that adapted the SEIR model of Breinen et al. and Trachet et al. to the COVID19 pandemic epidemiologic parameters and then looked at the impact of varying mask efficacy and compliance rates on transmissions and epidemiologic outcomes (death, hospitalizations). They found that 80% coverage of masks that are only 20% effective could still reduce the effective transmission rate by 1/3. Applied to a case study of Washington state, this could translate into a reduction in mortality of 24-65%. **Javid et al, 2020 (pre-print)** created a simple, proof of principle, SIR model, assuming that masks reduced transmission by 8-16%. Like Eikenberry et al. where there was more mortality benefit seen in areas of lower transmission, Javid et al. noted a more substantial reduction on deaths when the effective R approached 1. Finally, **Worby et al, 2020 (pre-print)** created a SEIRD model to test various strategies for mask allocation (ie. different percentage of allocation to symptomatic vs asymptomatic individuals; or to the elderly population). First, they found that the more effective the mask, the lower the population uptake required. That is, deaths could be reduced by 65% with 15% coverage of a highly effective mask (75%) whereas they would be reduced by only 10% with 30% coverage with a low effectiveness mask (25% containment). In terms of mask allocation, they identified that prioritizing the elderly and maintaining a supply for identified infectious cases is a superior strategy to random distribution.

It should be noted that all the modelling studies listed vary the effectiveness of masks in the model; however, they do not assume that masks can carry harms that could outweigh benefits.

In an ecologic study, **Lo JY et al, 2005** found that in the setting of “community hygienic measures” promotion during the SARS 2003 epidemic in Hong Kong, where ~76% of individuals were wearing masks, the proportion of positive specimens of other respiratory viruses dropped significantly in 2003. A similar finding has been noted in Hong Kong since February 2020, where again mask use has increased with the COVID19 outbreak **(Leung et al, 2020). Kenyon et al. (pre-print)** compared countries who had implemented mask use vs no-mask use (as a binary outcome). At the time of the analysis, 8/49 countries promoted universal mask use. After adjusting for date of the first COVID-19 diagnosis in the country and testing intensity, they found that masking resulted in an average decrease of 326 cases per 1,000,000 inhabitants (linear coefficient -326, -601 to -51, p=0.021). These studies do not allow the effect of masks to be separated from other community measures, including social distancing with school closure, public space closures, hand hygiene, and household hygiene campaigns. When undertaking ecological comparisons, it should be noted that countries such as New Zealand, Australia, Denmark, and Switzerland have had success at containment of their epidemics without the use of universal masking.

There are also two case cluster reports outlining the benefits of community mask use. It is unclear if medical or non-medical masks were used. **Zhang et al, 2013** assessed transmission of influenza A virus on two flights from the United States to China. None of the 9 influenza-infected passengers, compared with 47% (15/32) of control-passengers wore a face mask. Unfortunately, this report does not include any information regarding the location of the other passenger relative to the index case. **Liu et al, 2020** report a case of a SARS-CoV-2 infected male who took two separate buses to return to his hometown. On the first 2-hour bus ride, he did not wear a mask and 5/39 passengers were infected. By contrast, on his second ride, a 50-minute ride, he wore a mask and 0/14 passengers were infected. While **Schwartz et al. 2020** do not focus on the use of a mask by the source case, the source case was masked during a flight from China to Toronto where no SARS-CoV-2 transmissions were identified.

Studies of cloth masks:

Clinical studies

The only clinical study of cloth masks is a cluster randomized trial of cloth masks at all times vs medical masks at all times (2 masks/8h) vs a standard practice arm in hospitals in Vietnam **(Macintyre et al, 2015)**. In this study, cloth mask users had higher rates of ILI compared with the control arm, RR=6.64, 95% CI 1.45 to 28.65 and more laboratory-confirmed virus, RR=1.72, 95% CI 1.01 to 2.94. Compared to medical masks, the RR for ILI was 13.25 in the cloth mask arm and 3.8 in the control (mixed) arm. A possible hypothesis for the worse outcome with cloth masks is that when they become wet, they are more likely to trap viral particles. Alternatively, there may be inadequate washing of the masks.

However, a methodologic concern was that the control arm consisted of high rates of mask wear. Specifically, in the control arm, (170/458) 37% used medical masks and (245/458) 53% used a combination of medical masks and cloth masks, with 24% of control arm participants wearing masks for more than 70% of working hours (versus 57% of participants in the other 2 arms adherent to masks for >70% of working hours). This renders the comparison to have been consistent cloth mask use, to consistent medical mask use, to inconsistent use of any mask type. Therefore, while the study may have conclusively shown the superiority of medical masks to cloth masks in preventing infection acquisition in a health-care setting, it cannot be used to reliably evaluate cloth masks to no masks in a community setting. Given the sudden interest in cloth-mask use, the authors published a response to their own article on March 30, 2020 **(MacIntyre et al. 2020)** wherein they state that HCW should not work without adequate PPE but if they choose to work with a cloth masks, thorough and daily disinfection is required to prevent potential harms. In another commentary, the same author (**MacIntyre CR and Hasanain SJ, 2020)** supports universal masking, stating "There is more evidence supporting face mask use in the community than hand hygiene including in RCTs which compare both interventions directly, so it is inconsistent to advocate hand hygiene as a sound principle but not masks."

Laboratory based studies

Several contemporary and historical studies have looked at whether homemade masks are able to reduce the physical spread of droplets by the mask wearer. In a laser-light scattering experiment, **Anfinrud et al. 2020**, qualitatively showed that while regular speech resulted in droplets ranging in size from 20 to 500 μm, a slightly damp washcloth over the mouth could decrease these forward moving particles. After assessing the filtration performance of a variety of household fabrics (using NaCl aerosols of smaller size than droplets), **Rangesamy et al, 2010** concluded that while markedly inferior to N95 respirators, the filtration rate of some household materials was comparable to surgical masks. **Davies et al, 2013** found that masks made from cotton t-shirt fabric had a filtration

efficiency of viral particles of ~50% as compared to ~90% for medical masks and that medical masks were 3 times more effective in blocking transmission than homemade masks. **Dato et al. 2006,** also found some protection against an aerosol challenge with the use of a homemade cotton mask.

We identified two studies examining the theoretical benefit of homemade masks in reducing personal risk of exposure to particles. As previously noted**, Ma et al. 2020,** found a homemade mask of one polyester cloth layer and 4 layers of kitchen paper to be as effective as medical masks in providing protection against avian influenza virus bioaerosols. However, an artificially tight seal may have been present in this model. **van der Sande et al, 2008** found that medical masks provided about twice as much protection as homemade masks against the entrance of particles. Notably and unlike other groups, they did not find that masks significantly prevented outward dispersal.

Since the last update, we identified multiple other laboratory-based studies investigating filtration efficiency, 3 of which were completed since the last update.

Historical studies

- **Greene et al, 1961** had volunteers wear muslin and flannel masks (the standard for medical masks at the time) in a contained chamber. Bacterial recovery on agar sedimentation plates was dramatically reduced (by 88% to >99% depending on the particle size).
- **Quesnel et al, 1975** used a similar chamber to Green et al. and volunteers were asked to try 4 disposable medical masks and one cotton mask. The filtration efficiency of the cotton mask (after 30 minutes of wear) for larger droplets (>3 μm) >99%.

***Air pollution and fine particulate matter (aerosol) studies* (<2.5 μm)**

- A study by **Shakya et al. 2017**, that was assessing filtration potential of cloth masks for fine particulate matter (air pollution related study) noted that the filtration efficiency of three particle sizes (30, 100, and 500 nm) ranged from 15% to 57%, thus they felt that cloth masks would be of limited utility for particles<2.5 μm.
- **Jung et al, 2014**, also assessed a variety of masks for protection against aerosols. Their testing adhered to the Korean Food and Drug Administration (KFDA) [similar to the European Union (EU) protocol] and the National Institute for Occupational Safety and Health (NIOSH) protocols. 44 different types of masks were tested. On average, the aerosols used for testing were less than 2.5 **μm.** The filtration efficiency of medical masks was only about 60% and only in the 2-12% range for cloth handkerchiefs. Pressure drop was also measured. They found that “general masks” and handkerchiefs provided little protection against aerosols.
- **Jang et al, 2015 [only available in Korean; abstract was reviewed],** using polydisperse NaCl aerosols (0.3~10 μm), compared five commercial cloth masks vs. a respirator. The filtration efficiencies varied from 9.5-28.5% as compared with 91% by the respirator but increased by 1.7-6.8 times after folding to create multiple layers. Washing once reduced filtration efficiency. The authors warned that cloth masks were inadequate in protecting against particulate matter.

Bioaerosol and polydisperse NaCl aerosol studies

- **Rodriguez-Palacios et al, 2020 (pre-print)** used household spray bottles filled with a bacterial suspension to see whether various textiles could prevent dispersion of the bacterial solution (which they said mimicked a sneeze) onto agar containing Petri dishes. All the fabrics used, even in one layer, reduced droplet dispersion to <30cm. As a double layer, they were as effective as medical masks and reduced droplet dispersion to <10cm. The relevance of this model is questionable.

- **Wang et al, 2020 (pre-print)** used industry approved standardized tests to compare 17 different fabrics against approved medical masks. Testing pressure difference (breathability), particle filtration efficiency, bacterial filtration efficiency, and resistance to surface wetting, they found that only 3 materials would pass industry standards. The results showed that three double-layer materials including double-layer medical non-woven fabric (example, polypropylene) medical non-woven fabric plus non-woven shopping bag, and medical non-woven fabric plus granular tea towel could meet all the standards of breathability, particle filtration efficiency (>30%), and resistance to surface wetting, and were close to the standard of the bacterial filtration efficiency (>95%).
- **Aydin et al, 2020 (preprint)** compared one brand of medical mask to a variety of homemade fabrics to assess for: efficiency of blocking droplets, breathability, weight, hydrophilicity, and texture. To measure droplet blockage (or filtration) efficiency, they used a metered-dose inhaler (MDI) loaded with fluorescent beads, of similar size to SARS-CoV-2 virus (70-100nm). A petri dish covered with the various materials was then held 36mm and 300mm away from the MDI and the number of fluorescent beads penetrating through to the petri dish were measured. In this study, even one layer of a 100% cotton t-shirt had 91% efficiency. And while a blend of cotton and polyester had only 40% efficiency, this increased to 99.98% with 3 layers. They concluded that multiple fabrics were comparable to a medical mask in terms of filtration and breathability. However, a 2-3 layer cotton/polyester blend was the closest; despite being far less hydrophobic. Of note, the materials appear to have been tightly adhered to the petri dish.
- **Konda et al, 2020** also tested a variety of household materials. They introduced a polydisperse NaCl aerosol into a mixing chamber, where it passed through the material being tested (held down tightly by a clamp). They analyzed particle size with two different particle analyzers and followed the protocol used for testing face respirators in compliance with the NIOSH 42 CFR Part 84 test protocol. For droplets >300nm, several materials had filtration efficiency equivalent to a medical mask (>95% efficiency), including even one layer of a high thread count cotton. However, the authors recommended a hybrid fabric (cotton + silk) that could leverage both mechanical and electrostatic properties. Furthermore, the authors found that even small gaps (hole of 1% surface area) could reduce filtration efficiency by 60%, highlighting the importance of a tight fit
- **Zhao et al, 2020** evaluated common materials using a modified version of the NIOSH standard test procedure for N95 respirator approval. They used NaCl aerosols (0.075 ± 0.02 μm), without taking real-world leakage from around the mask into account, to identify the material with the highest filtration quality factor (Q) – a metric that results from a high filtration efficiency (low penetration) with low pressure drop. They identified that polypropylene spunbound, a material commonly found in reusable bags, had the optimal Q. While the filtration efficiency was ~6-10% (which was similar to the other fabrics tested), if it were triboelectrically charged or multiple layers were added, its filtration efficiency improved without a concomitant increase in pressure. In fact, as compared with the medical masks they tested (~19-33% filtration efficiency), the five-layer polypropylene had a filtration efficiency of ~50% with a lower pressure drop.

Though there are now many different laboratory studies to draw from, the variability of the methodology of the studies and the variability in their findings make their interpretation challenging. Taken together, these studies suggest that non-medical masks can act as a barrier to outward dispersion of droplets (but not particles <2.5 μm). For that reason, WHO states that non-medical masks “should only be considered for source control (used by infected persons) in community settings and not for prevention”.

Despite the challenges of interpreting non-medical mask studies, a non-medical mask standard has been developed by the French Standardization Association (AFNOR Group) (https://www.afnor.org/en/faq-barrier-masks/). AFNOR Group defines minimum performance in terms of filtration (minimum 70% solid particle filtration or droplet filtration) and breathability (maximum pressure difference of 0.6 mbar/cm2 or maximum inhalation resistance of 2.4 mbar and maximum exhalation resistance of 3 mbar).

In addition, in its latest interim guidance report (https://www.who.int/publications/i/item/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak), WHO has now provided guidance on the optimal composition and construction of non-medical masks. They advise that when decision-makers are providing recommendations on masks, they should take filtration efficiency, breathability, number and combination of materials used, shape, coating and maintenance into account. Using the filter quality factor "Q" metric, which is a function of filtration efficiency and breathability (with higher values being better), they advise the following mask composition:

a) Inner layer of a hydrophilic material (cotton or cotton blend)
b) Outer layer of a hydrophilic material (ie. polypropylene, polyester or blend)
c) Middle hydrophobic layer of a synthetic non-material such as polypropylene or a cotton layer

Table 3 in the **Appendix** provides a list of different materials with their corresponding filter quality factor as well as filtration efficiency and breathability.

In terms of fit, they also recommend a tightly-fitted flat-fold or duckbill shape.
(WHO, June 5, 2020)

Theoretical sociological benefits and harms of mask use in COVID-19:

From a sociologic perspective, some have noted that if mask wearing were widespread and not just limited to those who are feeling ill, it would reduce the stigma associated with their use and increase the likelihood of their use in ill individuals. Similarly, mask use may act as a visual cue reminding individuals to maintain physical distance and act as visible signal of social solidarity (preprint, **Howard et al. 2020**). In terms of acting as a visual cue, **Seres et al, 2020** undertook a field experiment where they randomized 300 individuals to "exposure" to an individual wearing a mask vs no-mask. Specifically, the *experimenter* was randomly assigned to wear a mask or not. Then, they took the last position in line-ups (ie. a supermarket, store) and noted the distance with which the subsequent customer would stand. Individuals kept a statistically significantly further distance when someone was wearing a mask. Subsequent survey data suggested this was because it was perceived that a masked person preferred more distance.

Finally, it is becoming increasingly clear that racial minorities are disproportionately impacted by COVID-19 (**Hooper et al, 2020)**. In addition to underlying co-morbidities and structural inequalities (ie. lack of access to healthcare), this discrepancy may be attributed to living conditions and employment. As **Yang, 2020** stated "social distancing is a privilege". For instance, outside of LTC outbreaks, most outbreaks in Calgary, Alberta are occurring at warehouses and workplaces (https://www.alberta.ca/covid-19-alberta-data.aspx#toc-1) where social distancing either cannot be or is not being enforced. Mandatory masking, with provision of masks and targeted education about mask hygiene, may be particularly helpful in such settings.

There are also several possible harms associated with widespread mask use. There is concern that moisture retention could increase the risk of infection which is one possible interpretation of the McIntyre study. Masks may also increase the frequency with which individuals touch their face. There is also concern regarding self-contamination of the hands or face with improper donning and doffing technique. In an observational study of ~10,000 pedestrians in Hong Kong in February 2020, 94% of individuals wore masks (84% of which were medical masks). However, 13% of individuals wore them incorrectly, with 5% wearing them inside out or upside-own and 5% wearing them too low **(Tam et al, 2020).**

The importance of risk-compensation in population-level health interventions has been called into question **(B Pless, 2016).** However, the potential harms of masks in creating a false sense of security and consequent neglect of physical distancing or hand hygiene is raised by the World Health Organization **(WHO, 2020).** A recent study by **Yan et al, 2020 (pre-print)** used smart device location data to determine the time spent at home and at various public locations before and after mask mandates were implemented in 36 different states. They accounted for weather patterns, re-openings orders, and time since stay-at-home orders were implemented. They found that masks mandates were associated with an increase of 4% (20-30 minutes) of time outside the home per day and they specifically noted more trips to restaurants. This suggests that for mask to be beneficial, their efficacy in reducing transmission needs to exceed the increased risk associated with a 4% increase in time away from home.

Another concern is related to the environmental impact of mass use of medical masks. For instance, the sheer numbers of disposable masks that would be required in China would be around 900 million daily and would pose significant disposal challenges **(Wang MW et al, 2020).** Safe disposal concern are already arising throughout Asia (https://www.bangkokpost.com/opinion/opinion/1924908/face-mask-crisis-of-another-design)

Another major concern is the risk of PPE shortages for HCW who are more frequently exposed to SARS-CoV-2 than the general public. Indeed, there have been shortages globally, with some countries banning or threatening to ban export of medical masks (https://www.cnbc.com/2020/04/03/coronavirus-trump-to-ban-export-of-protective-gear-after-slamming-3m.html), and with reports of hoarding and price gouging.

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Date of first assessment: April 3, 2020

(If applicable) Date of re-assessment: June 19, 2020

Authorship and Committee Members

This report was written and updated by Leyla Asadi and scientifically reviewed by Elizabeth Mackay (primary reviewer), Lynora Saxinger (co-chair), and Nelson Lee. The full Scientific Advisory Group was involved in discussion and revision of the document: Braden Manns (co-chair), John Conly, Alexander Doroshenko, Shelley Duggan, Andrew McRae, Jeremy Slobodan, James Talbot, Brandie Walker, and Nathan Zelyas.

COVID-19 Scientific Advisory Group Rapid Response Report

Appendix

The literature search was conducted by Lauren Seal from the AHS Knowledge Resource Service. The literature search was last updated on May 14, 2020.

Medline/PubMed

1 exp Coronavirus/ or exp Coronavirus Infections/ or coronaviru*.mp. or "corona virus*".mp. or ncov*.mp. or n-cov*.mp. or COVID-19.mp. or COVID19.mp. or COVID-2019.mp. or COVID2019.mp. or SARS-COV-2.mp. or SARSCOV-2.mp. or SARSCOV2.mp. or SARSCOV19.mp. or Sars-Cov-19.mp. or SarsCov-19.mp. or SARSCOV2019.mp. or Sars-Cov-2019.mp. or SarsCov-2019.mp. or "severe acute respiratory syndrome cov 2".mp. or "2019 ncov".mp. or "2019ncov".mp. (18987)

2 Masks/ (4203)

3 mask.mp. (28586)

4 masks.mp. (15768)

5 facemask.mp. (1101)

6 "face-mask".mp. (2557)

7 (face adj2 mask*).mp. (3254)

8 2 or 3 or 4 or 5 or 6 or 7 (37583)

9 homemade.mp. (2899)

10 home-made.mp. (2094)

11 "home made".mp. (2094)

12 handmade.mp. (505)

13 "hand made".mp. (346)

14 hand-made.mp. (346)

15 handcraft*.mp. (335)

16 hand-craft*.mp. (321)

17 "hand craft*".mp. (321)

18 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 (6424)

19 8 and 18 (32)

20 8 or 19 (37583)

21 1 and 20 (140)

22 limit 21 to last year (19)

CINAHL

S1	(MH "Coronavirus+")	
S2	(MH "Coronavirus Infections+")	
S3	coronaviru*	
S4	"corona virus"	
S5	ncov*	
S6	n-cov*	
S7	COVID-19 OR COVID19 OR COVID-2019 OR COVID2019	
S8	SARS-COV-2 OR SARSCOV-2 OR SARSCOV2 OR SARSCOV19 OR SARS-COV-19 OR SARSCOV-19 OR SARSCOV2019 OR SARS-COV-2019 OR SARSCOV-2019	
S9	"severe acute respiratory syndrome cov 2" OR "severe acute respiratory syndrome coronavirus*"	
S10	"2019 ncov" OR 2019ncov OR Hcov*	
S11	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10	
S12	(MH "Masks")	2,140
S13	mask OR masks OR facemask OR face-mask OR face N2 mask OR medical N2 mask OR face N2 cover*	10,693
S14	S12 OR S13	10,693
S15	homemade OR home-made OR "home made" OR handmade OR hand-made OR "hand made" OR handcraft* OR hand-craft* OR "hand craft*"	2,013
S16	S14 AND S15	10
S17	S14 OR S16	10,693
S18	S11 AND S17	87
S19	S11 AND S17	Limiters - Published Date: 20190101-20201231

12

TRIP Pro/Google Scholar/Google/ LitCovid/CEBM/ /Twitter/WHO/Stanford Medicine/REACTing/Nebraska Medicine COVID-19 resources/CAIC-RT – COVID-19 Capacity Tool/NEJM/ The Oakes Academy Coronavirus Clinical Collaboration/CochraneLibrary

("covid-19" OR coronavirus OR COVID19 OR “corona virus” OR ncov OR “n-cov” OR “covid-2019” OR covid2019 OR “SARS-COV-2” OR “sarscov-2” OR sarscov2 OR sarscov19 OR “sars-cov-19” or “sarscov-19” OR sarscov2019 OR “sars-cov-2019” OR “severe acute respiratory syndrome”) AND (mask OR facemask OR “face-mask” OR “face mask” OR “face cover” OR “face covering” OR “homemade mask” OR “home-made mask” OR “handmade mask” OR “hand-made mask” OR “handcrafted mask” OR “hand-crafted mask”)

(mask OR facemask OR “face-mask” OR “face mask” OR “face cover” OR “face covering” OR “homemade mask” OR “home-made mask” OR “handmade mask” OR “hand-made mask” OR “handcrafted mask” OR “hand-crafted mask”)

mask

facemask

face covering

Critical Appraisal

Table 2. Summary of quality assessment results for articles included in this review

				Mixed Methods Appraisal Tool Criteria:	
	Reference	Peer reviewed?	Type of evidence	Are there clear research questions or a clearly identified issue?	Is the collected data or presented evidence appropriate to address the research questions or issue?
1.	Jefferson T, Del Mar CB, Dooley L, Ferroni E, Al-Ansary LA, Bawazeer GA, van Driel ML, Nair S, Jones MA, Thorning S, et al. 2011. Physical interventions to interrupt or reduce the spread of respiratory viruses. The Cochrane Database of Systematic Reviews. 2011(7):CD006207.	☒ Yes	Systematic review and meta-analysis	☒ Yes	☒ Yes

2.	Offeddu V, Yung CF, Low MSF, Tam CC. 2017. Effectiveness of masks and respirators against respiratory infections in healthcare workers: A systematic review and meta-analysis. Clinical Infectious Diseases : An Official Publication of the Infectious Diseases Society of America. 65(11):1934-42.	☒ Yes	Systematic review and meta-analysis	☒ Yes	☒ Yes
3	Saunders-Hastings P, Crispo JAG, Sikora L, Krewski D. 2017. Effectiveness of personal protective measures in reducing pandemic influenza transmission: A systematic review and meta-analysis. Epidemics. 20(C):1-20.	☒ Yes	Systematic review and meta-analysis	☒ Yes	☒ Yes
4	Brainard J ea. 2020. Facemasks and similar barriers to prevent respiratory illness such as COVID-19: A rapid systematic review.	☐ No (pre-print)	Systematic review and meta-analysis	☒ Yes	☒ Yes
5	WHO. Advice on the use of masks in the context of COVID19. Available at: https://www.who.int/publications-detail/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak .		WHO guidelines		
6	MacIntyre CR, Chughtai AA. 2015. Facemasks for the prevention of infection in healthcare and community settings. BMJ : British Medical Journal. 350(apr09 1):h694.	☒ Yes	Review article	☒ Yes	☒ Yes
7	MacIntyre CR, Seale H, Dung TC, Hien NT, Nga PT, Chughtai AA, Rahman B, Dwyer DE, Wang Q. 2015. A cluster randomised trial of cloth masks compared with medical masks in healthcare workers. BMJ Open. 5(4):e006577.	☒ Yes	Cluster randomzied trial	☒ Yes	☒ Yes
8	Leung, N.H.L., Chu, D.K.W., Shiu, E.Y.C. *et al.* Respiratory virus shedding in exhaled breath and efficacy of face masks. *Nat Med* (2020). https://doi.org/10.1038/s41591-020-0843-2	☒ Yes	Randomzied lab-based trial	☒ Yes	☒ Yes
9	Davies A, Thompson K, Giri K, Kafatos G, Walker J, Bennett A. 2013. Testing the efficacy of homemade masks: Would they protect in an influenza pandemic? Disaster Medicine and Public Health Preparedness. 7(4):413-8.	☒ Yes	Laboratory	☒ Yes	☒ Yes
10	Makison Booth C, Clayton M, Crook B, Gawn JM. 2013. Effectiveness of surgical masks against influenza bioaerosols. Journal of Hospital Infection. 84(1):22-6.	☒ Yes	Laboratory	☒ Yes	☒ Yes

APPENDIX

Table 1: Situations and types of masks recommended for use in the community (from the World Health Organization, June 2020 interim guidance "Advise on the use of masks in the context of COVID-19")

https://www.who.int/publications/i/item/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak

Situations/settings	Population	Purpose of mask use	Type of mask to consider wearing if recommended locally
Areas with known or suspected widespread transmission and limited or no capacity to implement other containment measures such as physical distancing, contact tracing, appropriate testing, isolation and care for suspected and confirmed cases.	General population in public settings, such as grocery stores, at work, social gatherings, mass gatherings, closed settings, including schools, churches, mosques, etc.	Potential benefit for source control	Non-medical mask
Settings with high population density where physical distancing cannot be achieved; surveillance and testing capacity, and isolation and quarantine facilities are limited	People living in cramped conditions, and specific settings such as refugee camps, camp-like settings, slums	Potential benefit for source control	Non-medical mask
Settings where a physical distancing cannot be achieved (close contact)	General public on transportation (e.g., on a bus, plane, trains) Specific working conditions which places the employee in close contact or potential close contact with others e.g., social workers, cashiers, servers	Potential benefit for source control	Non-medical mask
Settings where physical distancing cannot be achieved and increased risk of infection and/or negative outcomes	Vulnerable populations: • People aged ≥60 years • People with underlying comorbidities, such as cardiovascular disease or diabetes mellitus, chronic lung disease, cancer, cerebrovascular disease, immunosuppression	Protection	Medical mask
Any setting in the community*	Persons with any symptoms suggestive of COVID-19	Source control	Medical mask

*This applies to any transmission scenario

Table 2. Summary of high level evidence (GRADE guidelines) on facemasks in the household setting (from: Raina MacIntyre, and Abrar Ahmad Chughtai BMJ 2015;350:bmj.h694)

Study, year of publication	Design, participants	Mask type, intervention	Outcome	Results	Comments, limitations, biases
Cowling[11] 2008	• Cluster RCT • 198 index cases and household contacts • Hong Kong	• Medical masks • Hand hygiene • Control	• Self reported influenza symptoms • Laboratory confirmed influenza (by culture or RT-PCR) in household	• No significant difference in rates of laboratory confirmed influenza (OR 1.16, 95% CI 0.31 to 4.34) and ILI (0.88, 0.34 to 2.27) in the medical masks arm versus control arm	• Both index cases and household contacts used medical masks • This pilot study was small and underpowered • Compliance 45% in index cases and 21% in household contacts • Compliance data showed that some index cases in the control and hand hygiene arms used medical masks
Cowling[12] 2009	• Cluster RCT • 407 index cases and 794 household contacts • Hong Kong	• Hand hygiene • Masks + hand hygiene • Control (education)	• Self reported influenza symptoms • Laboratory confirmed influenza (by RT-PCR) in household	• No significant difference in rate of laboratory confirmed influenza in three arms • Significant difference if masks + hand hygiene together applied within 36 hours of illness (OR 0.33, 0.13 to 0.87) • Hand hygiene alone was not significant	• No separate medical mask arm, making it difficult to evaluate the efficacy of masks • Both index cases and household contacts used masks • Compliance 49% in index cases and 26% in household contacts using masks • Compliance data showed that some index cases in the control and hand hygiene arms used medical masks
MacIntyre[13] 2009	• Cluster RCT • 145 child index cases and well adult household contacts • Australia	• Medical masks for contacts • P2 respirators (equivalent to N95) for contacts • Control	• Self reported ILI • Laboratory confirmed respiratory infection	• No significant difference in ILI and laboratory confirmed respiratory infections in all three arms • Adherent use of P2 or medical masks significantly reduced the risk of ILI (HR 0.26, 0.09 to 0.77)	• Only household contacts used medical masks • Low compliance: 21% of household contacts wore masks often/always
Aiello[14] 2010	• Cluster RCT • 1437 well university residents • Michigan, USA	• Medical masks • Medical masks + hand hygiene • Control	• Self reported ILI • Laboratory confirmed influenza (by culture or RT-PCR)	• No significant difference in ILI in three arms • Significant reduction in ILI in the medical masks + hand hygiene arm over 4-6 weeks (P<0.05)	• Self reported ILI • Not all ILI cases (n=368) were laboratory tested (n=94) • No data on compliance
Larson[15] 2010	• Block RCT • 617 households • Manhattan, USA	• HE • HE + hand sanitiser • HE + hand sanitiser + medical masks	• Self reported ILI • Self reported URI • Laboratory confirmed influenza through culture	• No significant difference in rates of URI, ILI, or laboratory confirmed influenza between the three arms • Significantly lower secondary attack rates of URI/ILI/influenza in the HE	• No separate medical masks group • Household contacts used medical masks • Low compliance and around half of household in the masks arm used
Canini[16] 2010	• Cluster RCT • 105 index cases and 306 households • France	• Medical mask (as source control to be used by index case) • Control	• Self reported ILI in household	• No significant difference in the rates of ILI between the two arms (OR 0.95, 0.44 to 2.05)	• Trial stopped early owing to low recruitment and influenza A/H1N1-pdm09 in subsequent year
Simmerman[17] 2011	• Cluster RCT • 465 index patients and their families • Thailand	• Hand hygiene • Hand hygiene + medical masks • Control	• Self reported ILI • Laboratory confirmed influenza by PCR and serology in family members	• No significant difference in secondary influenza infection rates between hand hygiene arm (OR 1.20, 0.76 to 1.88) and hand hygiene plus medial masks arm (1.16, 0.74 to 1.82)	• No separate medical mask group • Owing to H1N1 pandemic, hand and respiratory hygiene campaigns and mask use substantially increased among the index cases (from 4% to 52%) and families (from 17.6% to 67.7%) in control arm
Aiello[18] 2012	• Cluster RCT • 1178 university residents • Michigan, USA	• Medical masks • Medical masks + hand hygiene • Control	• Clinically diagnosed and laboratory confirmed influenza (by RT-PCR)	• No overall difference in ILI and laboratory confirmed influenza in three arms • Significant reduction in ILI in the medical masks + hand hygiene arm over 3-6 weeks (P<0.05)	• Good compliance: medical mask + hand hygiene group used masks for 5.08 h/day (SD 2.23) and medical mask group used masks for 5.04 h/day (SD 2.20) • Self reported ILI • Effect may have been due to hand hygiene because medical masks alone not significant
Suess[19] 2012	• Cluster RCT • 84 index cases and 218 household contacts • Berlin, Germany	• Masks • Masks + hand hygiene • Control	• Laboratory confirmed influenza infection and ILI	• No significant difference in rates of laboratory confirmed influenza and ILI in all arms by intention to treat analysis • The risk of influenza was significantly lower if data from two intervention arms (masks and masks + hand hygiene) were pooled and intervention was applied within 36 hours of the onset of symptoms (OR 0.16, 0.03 to 0.92)	• Around 50% participants wore masks "mostly" or "always" • Participants paid to provide respiratory samples

CI=confidence interval; CRI=clinical respiratory infection; HCW=healthcare worker; HE=health education; HR=hazard ratio; ILI=influenza-like illness; OR=odds ratio; PCR=polymerase chain reaction; RCT=randomised controlled trial; RR=relative risk. RT=reverse transcriptase; SD=standard deviation; URI=upper respiratory tract infection.

Table 3. Non-medical mask filtration efficiency, pressure drop and filter quality factor* (from the World Health Organization, June 2020 interim guidance "Advise on the use of masks in the context of COVID-19" Adapted from Jung et al, 2014 and Zhao et al, 2020)

https://www.who.int/publications/i/item/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak

Table 3. Non-medical mask filtration efficiency, pressure drop and filter quality factor*

Material	Source	Structure	Initial Filtration Efficiency (%)	Initial Pressure drop (Pa)	Filter quality factor, Q ** (kPa^{-1})
Polypropylene	Interfacing material, purchased as-is	Spunbond (Nonwoven)	6	1.6	16.9
Cotton 1	Clothing (T-shirt)	Woven	5	4.5	5.4
Cotton 2	Clothing (T-shirt)	Knit	21	14.5	7.4
Cotton 3	Clothing (Sweater)	Knit	26	17	7.6
Polyester	Clothing (Toddler wrap)	Knit	17	12.3	6.8
Cellulose	Tissue paper	Bonded	20	19	5.1
Cellulose	Paper towel	Bonded	10	11	4.3
Silk	Napkin	Woven	4	7.3	2.8
Cotton, gauze	N/A	Woven	0.7	6.5	0.47
Cotton, handkerchief	N/A	Woven	1.1	9.8	0.48
Nylon	Clothing (Exercise pants)	Woven	23	244	0.4

* This table refers only to materials reported in experimental peer-reviewed studies. The filtration efficiency, pressure drop and Q factor are dependent on flow rate. ** According to expert consensus, three (3) is the minimum Q factor recommended.

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From: Doyle-Bedwell, George H
To: Holmes, Elaine; Cole, Teri J; Billard, Bev A; Watson-Creed, Gaynor; Strang, Robert
Cc: Doyle-Bedwell, George H
Subject: Mask Quick Lit Search
Date: July 14, 2020 2:19:41 PM
Importance: High

Dear All:

Thank you Elaine for the call, it helped me get my head around this. I ran a quick two pronged internet search using some or all of these key words: COVID, Non Medical Masks, Masks, Community, Contraindications as both a general browser search (google) and more focused in PubMed. There was nothing on Masks COVID Community and Contraindications in PubMed.

All the material that I was able to find is here: G:\PH\Medical\EMERGENCY PLANNING\COVID-19\Masks\Medical Evidence NMM

I was not able to find much at all and nothing beyond the Canadian Thoracic Society (CTS) Paper (which we had already) which stated:

- We recommend that all patients with underlying lung disease follow this recommendation to reduce the risk of spreading the SARS-CoV-2 virus.
- If patients cannot tolerate wearing this added protection, we recommend that they avoid or minimize circumstances in which physical distancing is not possible.
- There is NO evidence that wearing a face mask will exacerbate (cause a 'flare up' of) an underlying lung condition.

Moreover, the references in the CTS paper did not directly tie to reasons not to wear a mask. Most focused on the effectiveness of the masks (at least in their titles).

I looked at the following materials:

- Canadian Thoracic Society recommendations regarding the use of face masks by the public during the SARS-CoV-2 (COVID-19) pandemic
- BCCDC Advice on Masking
- CDC Effectiveness of Cloth Masks
- PHAC Guidance on Non Medical Masks and Face Coverings
- WHO Advice on the use of masks in the context of

COVID-19 (2020 June 05)

The WHO guidance is the most in depth but it does not contain suggests of when not to wear masks nor any contraindications to mask wearing. They do mention those who cannot tolerate a mask should use tissues if they sneeze, etc.

I further did key word searches on the documents themselves: should not, cannot, contraindicated, health risk and the only places where those key words got a hit were in regard to social distancing, mask cleaning, etc. Nothing about why someone would be medically contraindicated to where a mask.

I think there was some mention of not using masks in the SAC discussion on high performance athletes.

I was talking with both Elaine and Dr. Strang on this 14(1)

14(1)

Thank you
Take Care
George

Page 123 to/à Page 136

Withheld

16

TAB 17

2021	YAR 510031
This is Exhibit 17 referred to in the affidavit of Shelly Hipson sworn before me on November _____, 2024 _____ Notary Public signature and seal	

EXHIBIT 17

Freedom of Information Document Number: 2022-00455-SNSIS

On March 15th, 2022 I applied for the following FOIPOP information from Service Nova Scotia Internal Services:

Records providing total number of deaths per month in Nova Scotia for 2019, 2020, 2021 and so far in 2022.

Records that show a breakdown with totals of cause of deaths for 2019, 2020 and 2021. (For example a breakdown of how many died of cancer, heart disease, suicide, drug overdose, kidney failure etc. for the above years)

Date range for record search: 2019, 2020, 2021 and so far in 2022.

Attached as Exhibit 17 is a true copy of the email that I received back: 2022-00455-SNSIS.

Note: 2019 and 2020 are complete. 2021 and 2022 are incomplete) click here to download 2022-00455-SNSIS

Please note:

1. Years 2021 and 2022 are incomplete
2. Diseases of the Respiratory System are identified in Section “X” of this document.
3. COVID-19 is considered a disease of the respiratory system.
4. In 2019, 9772 people died in Nova Scotia from all causes.
5. In 2019, there were 455 males and 441 females who died from diseases of the respiratory system which totals 896 deaths.
6. Zero were from COVID-19.
7. In 2020, 9,964 people died in Nova Scotia from all causes.
8. In 2020, there were 433 males and 394 females who died from diseases of the respiratory system which totals 827 deaths.

a) The data shows that 66 died of COVID-19 but this number did not increase the overall deaths from respiratory illnesses.
b) COVID-19 totalled 66 deaths out of the 9,964 total deaths in the province.
c) The increase of 192 overall deaths between years 2019 and 2020 are not due to deaths from diseases of the respiratory system.
d) In the pandemic year, 2020, deaths from Diseases of the Respiratory System decreased by 69 deaths.
e) This record contributes to the conclusion that there was no evidence of a serious pandemic involving the respiratory system in 2020.

March 30, 2022

Shelly D Hipson
RR3
Shelburne, B0T 1W0

Dear Shelly D Hipson:

Re: You are entitled to the information you requested - 2022-00455-SNSIS

Service Nova Scotia and Internal Services received your application for access to information under the *Freedom of Information and Protection of Privacy Act* on March 15, 2022.

In your application, you requested a copy of the following records:

> *Records providing total number of deaths per month in Nova Scotia for 2019, 2020, 2021 and so far in 2022.*
>
> *Records that show a breakdown with totals of cause of deaths for 2019, 2020 and 2021. (For example a breakdown of how many died of cancer, heart disease, suicide, drug overdose, kidney failure etc. for the above years) (Date Range for Record Search: From 12/31/2019 To 3/11/2022)*

Responsive records have been located and are attached. Please note that the figures for the years 2021 and 2022 should be considered provisional as the information is not yet complete.

You have the right to ask for a review of this decision by the Information Access and Privacy Commissioner (formerly the Review Officer). You have 60 days from the date of this letter to exercise this right. If you wish to ask for a review, you may do so on Form 7, a copy of which is attached. Send the completed form to the Information Access and Privacy Commissioner, P.O. Box 181, Halifax, Nova Scotia B3J 2M4.

Please be advised that a de-identified copy of this disclosure letter and the attached response to your FOIPOP application will be made public after 14 days. The package will be posted online at https://openinformation.novascotia.ca/. The letter will not include your name, address or any other personal information that you have supplied while making your application under FOIPOP.

Please contact Micah Pirk O'Connell at 902-424-4879 or by e-mail at Micah.PirkOConnell@novascotia.ca, if you need further assistance regarding this application.

Yours truly,

Joanne Munro
Deputy Minister

Attach.

Number of deaths per month, Nova Scotia

	2019	2020	2021	2022
January	920	888	862	873
February	804	821	812	230*
March	936	888	850	
April	807	865	759	
May	783	847	874	
June	774	716	790	
July	767	805	776	
August	791	757	816	
September	701	802	837	
October	807	813	881	
November	818	883	907	
December	864	879	908	
Total	9772	9964	10072	1103

* Not all deaths for Feburary and March 2022 have been registered

DEATHS BY CAUSE FOR NOVA SCOTIA
EVENTS OCURRING Between 1-Jan-19 and 31-Dec-19

Intestinal infections due to other specified organisms

M	4
F	13

Gastroenteritis and colitis of unspecified origin

M	0
F	11

Respiratory tuberculosis

M	1
F	0

Menincoccal infection

M	0
F	1

Septicemia

M	31
F	30

Other zoonotic and bacterial diseases

M	4
F	7

Herpesviral (herpes simplex) infections

M	0
F	1

Viral hepatitis

M	4
F	1

Unspecified human immunodeficiency virus (HIV) disease

M	1
F	0

All other and unspecified viral diseases

M	1
F	5

Mycoses

M	0
F	1

All other and unspecified infectious and parasitic diseases and their sequelae

M	2
F	2

I. Certain infectious and parasitic diseases TOTAL

M 49
F 72
Malignant neoplasms Of tongue

M 5
F 6
Malignant neoplasms of pharynx

M 14
F 3
Malignant neoplasm of other and unspecified sites within the lip, oral cavity and pharynx

M 12
F 7
Malignant neoplasms of esophagus

M 70
F 16
Malignant neoplasms of stomach

M 31
F 28
Malignant neoplasms of small intestine

M 6
F 4
Malignant neoplasms of colon

M 112
F 90
Malignant neoplasms rectosigmoid junction and rectum

M 62
F 47
Malignant neoplasms of anus and anal canal

M 2
F 4
Malignant neoplasms of liver

M 48
F 23
Malignant neoplasms intrahepatic bile duct carcinoma

M 14
F 24
Malignant neoplasms of gallbladder and extrahepatic bile ducts

M 3
F 4
Malignant neoplasms of pancreas

M 74

F 71

Malignant neoplasms of other and ill-defined digestive organs

M 31
F 32

Malignant neoplasms of nasal cavity, middle ear and accessory sinuses

M 0
F 1

Malignant neoplasms of larynx

M 10
F 4

Malignant neoplasms of trachea, bronchus and lung

M 384
F 323

Malignant neoplasms of thymus, heart, mediastinum and pleura

M 1
F 2

Malignant neoplasms of bone and articular cartilage

M 4
F 0

Malignant melanoma of skin

M 29
F 14

Other malignant neoplasms of skin

M 7
F 7

Mesothelioma

M 11
F 4

Malignant neoplasms of other mesothelial and soft tissue

M 8
F 11

Malignant neoplasm of breast

M 2
F 208

Malignant neoplasms of vulva and vagina

M 0
F 13

Malignant neoplasms of cervix uteri

M 0
F 13

Malignant neoplasms of corpus uteri and uterus, part unspecified

M 0
F 35
Malignant neoplasms of ovary

M 0
F 63
Malignant neoplasms of other and unspecified female genital organs

M 0
F 3
Malignant neoplasms of prostate

M 140
F 0
Malignant neoplasms of penis and other and unspecified male genital organs

M 4
F 0
Malignant neoplasms of kidney and renal pelvis

M 56
F 21
Malignant neoplasms of bladder

M 52
F 29
Malignant neoplasms of other and unspecified sites within the urinary tract

M 17
F 8
Malignant neoplasm of eye and adnexa

M 1
F 3
Malignant neoplasms of brain

M 51
F 25
Malignant neoplasms of other parts of central nervous system

M 0
F 1
Malignant neoplasms of thyroid and other endocrine glands

M 7
F 7
Other malignant neoplasms of other and unspecified sites

M 81
F 86
Hodgkin's disease

M 2
F 0
Non-Hodgkin's lymphoma

M 50
F 39
Malignant neoplasms of other and unspecified lymphoid, hematopoietic and related tissue

M 2
F 1
Malignant immunoproliferative diseases

M 4
F 0
Multiple myeloma and malignant plasma cell neoplasms

M 23
F 14
Lymphoid leukemia

M 14
F 10
Myeloid leukemia

M 18
F 24
Monocytic leukemia

M 3
F 0
Other and unspecified leukemia

M 6
F 5
Malignant neoplasms SUB-TOTAL

M 1,467
F 1,333
Benign neoplasms of eye, brain and other parts of central nervous system

M 1
F 5
Benign neoplasms of other and unspecified sites

M 1
F 2
Benign neoplasms SUB-TOTAL

M 2
F 7
Neoplasms of uncertain or unknown behavior of specified sites

M 25
F 23
Neoplasm of uncertain or unknown behavior of unspecified sites

M 0
F 2

II. Neoplasms TOTAL

M 1,494
F 1,365

Nutritional anemias

M 0
F 1

Hemolytic anemias

M 4
F 0

Aplastic anemias

M 2
F 1

Acute posthemorrhagic and other anemias

M 4
F 9

Coagulation defects, purpura and other hemorrhagic conditions

M 3
F 1

Other diseases of blood and blood-forming organs

M 3
F 0

Certain disorders involving the immune mechanism

M 2
F 1

III. Diseases of the blood + blood-forming organs + certain disorders involving the immune mechanism TOTAL

M 18
F 13

Disorders of thyroid gland

M 0
F 6

Diabetes mellitus

M 164
F 152

Disorders of adrenal glands

M 1
F 0

Other endocrine diseases

M 2
F 0

Other and unspecified malnutrition

M 0

F 3

Obesity and other hyperalimentation

M 10

F 11

Cystic fibrosis

M 1

F 4

Volume depletion, disorders of fluid, electrolyte and acid-based balance

M 6

F 11

Other metabolic disorders

M 29

F 25

IV. Endocrine, nutritional and metabolic diseases TOTAL

M 213

F 212

Organic dementia

M 325

F 573

Other and unspecified organic mental disorders

M 7

F 8

Mental and behavioral disorders due to use of alcohol

M 27

F 7

Mental and behavioral disorders due to other psychoactive substance use

M 1

F 0

Schizophrenia, schizotypal and delusional disorders

M 2

F 0

Mood (affective) disorders

M 3

F 7

Other and unspecified mental and behavioral disorders

M 1

F 1

V. Mental and behavioral disorders TOTAL

M 366

F 596

Meningitis

M 0
F 1
Other inflammatory diseases of central nervous system

M 1
F 2
Parkinson's disease

M 70
F 33
Alzheimer's disease

M 63
F 143
Multiple sclerosis

M 7
F 10
Epilepsy

M 1
F 1
Transient cerebral ischemic attacks and related syndromes

M 2
F 1
Infantile cerebral palsy

M 3
F 5
All other diseases of nervous system

M 79
F 58
VI. Diseases of the nervous system TOTAL

M 226
F 254
VII. Diseases of the eye and adnexa TOTAL

M 0
F 1
Rheumatic mitral valve diseases

M 5
F 5
Rheumatic aortic valve diseases

M 0
F 1
Disorders of both mitral and aortic valves

M 1
F 2
Other chronic rheumatic heart diseases

M 6
F 3
Essential (primary) hypertension

M 12
F 25
Hypertensive heart disease

M 25
F 52
Hypertensive renal disease

M 9
F 16
Hypertensive heart and renal disease

M 4
F 6
Acute myocardial infarction

M 221
F 163
Other acute ischemic heart diseases

M 13
F 14
Atherosclerotic cardiovascular disease, so described

M 74
F 25
All other forms of chronic ischemic heart disease

M 356
F 211
Pulmonary embolism

M 11
F 10
Other pulmonary heart disease and diseases of pulmonary circulation

M 6
F 15
Acute and subacute endocarditis

M 3
F 4
Diseases of pericardium and acute myocarditis

M 1
F 0
Nonrheumatic mitral valve disorders

M 3
F 5

Nonrheumatic aortic valve disorders

M 48
F 35

All other diseases of endocardium

M 6
F 7

Cardiomyopathy

M 27
F 17

Conduction disorders and cardiac dysrhythmias

M 69
F 102

Congestive heart failure

M 64
F 71

Other and unspecified heart failure

M 22
F 16

Myocarditis, unspecified and myocardial degeneration

M 0
F 1

All other and ill-defined forms of heart disease

M 9
F 6

Subarachnoid hemorrhage

M 6
F 11

Intracerebral and other intracranial hemorrhage

M 49
F 51

Cerebral infarction

M 14
F 38

Stroke, not specified as hemorrhage or infarction

M 102
F 165

Other cerebrovascular diseases and their sequelae

M 28
F 38

Atherosclerosis

M 4

F 6

Aortic aneurysm and dissection

M 48
F 27

Other diseases of arteries, arterioles and capillaries

M 24
F 20

Phlebitis, thrombophlebitis, venous embolism and thrombosis

M 8
F 4

All other and unspecified disorders of circulatory system

M 0
F 3

IX. Diseases of the circulatory system TOTAL

M 1,278
F 1,175

Acute pharyngitis and tonsillitis

M 1
F 0

Influenza

M 14
F 28

Viral pneumonia, not elsewhere classified

M 1
F 1

Bacterial pneumonia

M 2
F 2

Pneumonia due to other or unspecified organisms

M 65
F 83

Unspecified acute lower respiratory infection

M 1
F 1

Other diseases of upper respiratory tract

M 1
F 0

Bronchitis, not specified as acute or chronic

M 1
F 0

Chronic bronchitis

M 0
F 1
Emphysema

M 17
F 6
Other chronic obstructive pulmonary disease

M 251
F 245
Asthma

M 1
F 6
Bronchiectasis

M 2
F 1
Pneumoconioses and chemical effects

M 3
F 0
Pneumonitis due to food and vomit

M 26
F 12
Suppurative and necrotic conditions of lower respiratory tract

M 3
F 2
Pleural effusion and plaque

M 2
F 2
All other diseases of respiratory system

M 64
F 50
X. Diseases of the respiratory system TOTAL

M 455
F 441
Diseases of pulp and periapical tissues

M 1
F 0
Diseases of esophagus

M 6
F 10
Gastric ulcer

M 2
F 3
Duodenal ulcer

M 10
F 3
Peptic ulcer, site unspecified

M 1
F 5
Gastritis and duodenitis

M 0
F 2
Dyspepsia and other diseases of stomach and duodenum

M 2
F 2
Diseases of appendix

M 1
F 2
Hernia

M 9
F 8
Crohn's disease and ulcerative colitis

M 2
F 1
Vascular disorders and obstruction of intestine without hernia

M 32
F 43
Diverticular disease of intestine

M 10
F 15
Other diseases of intestines and peritoneum.

M 15
F 4
Diseases of peritoneum

M 4
F 0
Alcoholic liver disease

M 35
F 16
Fibrosis and cirrhosis of liver

M 35
F 22
Other diseases of liver

M 17
F 17

Cholelithiasis and other disorders of gallbladder

M 15
F 13

Acute Pancreatitis

M 8
F 9

Other diseases of the pancreas

M 4
F 4

Other disorders of biliary tract and pancreas

M 3
F 4

All other diseases of digestive system

M 21
F 28

XI. Diseases of the digestive system TOTAL

M 233
F 212

Infections of skin and subcutaneous tissue

M 8
F 7

Other and unspecified diseases of skin and subcutaneous tissue

M 2
F 3

XII. Diseases of the skin and subcutaneous tissue TOTAL

M 10
F 10

Rheumatoid arthritis and related inflammatory polyarthropathies

M 3
F 6

Systemic lupus erythematosus

M 1
F 0

Other arthropathies and related disorders

M 8
F 15

Dorsopathies

M 1
F 2

Soft tissue disorders

M 3

F 3

Osteoporosis

M 0

F 4

Other osteopathies, chondropathies and disorders of musculoskeletal system + connective tissues

M 4

F 4

XIII. Diseases of the musculoskeletal system and connective tissue TOTAL

M 20

F 34

Nephrotic syndrome

M 0

F 1

Renal tubulo-interstitial diseases

M 7

F 9

Renal failure

M 50

F 63

Urolithiasis

M 2

F 1

Urinary tract infection, site not specified

M 27

F 31

Other diseases of urinary system

M 2

F 3

Hyperplasia of prostate

M 5

F 0

Other diseases of male genital organs

M 2

F 0

Noninflammatory disorders of female genital tract

M 0

F 3

XIV. Diseases of the genitourinary system TOTAL

M 95

F 111

Obstetric embolism

M 0
F 1
Indirect obstetric deaths

M 0
F 2
XV. Pregnancy, childbirth and the puerperium TOTAL

M 0
F 3
Newborn affected by maternal factors and by complications of pregnancy, labor and delivery

M 4
F 1
Disorders related to short gestation and low birth weight, not elsewhere classified

M 1
F 0
Birth trauma

M 0
F 1
Intrauterine hypoxia and birth asphyxia

M 1
F 0
Other respiratory conditions originating in the perinatal period

M 1
F 1
Infections specific to the perinatal period

M 3
F 0
Other and unspecified conditions originating in the perinatal period

M 3
F 6
XVI. Certain conditions originating in the perinatal period TOTAL

M 13
F 9
Spina bifida

M 0
F 1
All other congenital malformations of nervous system

M 2
F 2
Congenital malformations of heart

M 6
F 4
Other congenital malformations of circulatory system

M 0
F 1
Congenital malformations of respiratory system

M 0
F 1
Other congenital malformations and deformations

M 4
F 11
Down's syndrome

M 2
F 3
All other chromosomal abnormalities, not elsewhere classified

M 3
F 3
XVII. Congenital malformations, deformations and chromosomal abnormalities TOTAL

M 17
F 26
Senility

M 3
F 8
Other ill-defined and unknown causes of mortality

M 38
F 40
All other symptoms,signs + abnormal clinical + laboratory findings, not elsewhere classified

M 3
F 13
XVIII. Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified TOTAL

M 44
F 61
Pedestrian involved in collision with motor vehicle

M 0
F 1
Pedal cyclist involved in collision with motor vehicle

M 0
F 1
Motorcyclist involved in any accident except collision with railway train

M 7
F 0
Occupant of motor vehicle involved in collision with other (non-motorized) road vehicle,

M 4
F 1

Occupant of car, pickup truck or van involved in collision with other motor vehicle

M 6
F 3

Occupant of motor vehicle involved in non-collision accident

M 6
F 2

Occupant of special-use motor vehicle involved in any accident

M 8
F 1

Other and unspecified motor vehicle accidents

M 15
F 15

Other and unspecified land transport accidents

M 4
F 0

Water transport accidents

M 3
F 0

Other and unspecified transport accidents and their sequelae

M 5
F 1

Fall on same level

M 81
F 108

Fall from one level to another

M 3
F 5

Unspecified fall

M 31
F 48

Accidental discharge of firearms

M 1
F 0

Accidental drowning and submersion

M 7
F 2

Accidental inhalation + ingestion of objects causing obstruction of respiratory tract

M 1
F 4

Other accidental and unspecified threats to breathing

M 0

F 1

Accidental exposure to electric current

M 1
F 0

Accidental exposure to smoke, fire and flames

M 4
F 6

Accidental contact with heat and hot substances.

M 0
F 1

Accidental poisoning by and exposure to drugs and other biological substances

M 37
F 14

Accidental poisoning by and exposure to other and unspecified solid or liquid substances

M 1
F 2

All other and unspecified accidents and their sequelae

M 26
F 20

Intentional self-poisoning (suicide) by and exposure to drugs + other biological substance

M 9
F 11

Intentional self-poisoning (suicide) by and exposure to other gases and vapors

M 5
F 0

Intentional self-harm (suicide) by hanging, strangulation and suffocation

M 50
F 11

Intentional self-harm (suicide) by discharge of firearms

M 25
F 2

Intentional self-harm (suicide) by jumping from a high place

M 6
F 0

Intentional self-harm (suicide) by all other and unspecified means and their sequelae

M 5
F 0

Assault (homicide) by hanging, strangulation and suffocation

M 1
F 0

Assault (homicide) by discharge of firearms

M	3
F	0

Assault (homicide) by sharp object

M	1
F	0

Assault (homicide) by all other and unspecified means and their sequelae

M	1
F	1

Poisoning by and exposure to drugs and biological substances, undetermined intent

M	1
F	2

All other and unspecified events of undetermined intent and their sequelae

M	1
F	1

Drugs + biological substances causing adverse effects in therapeutic use, + their sequelae

M	1
F	1

Misadventures to patients during medical and surgical care and their sequelae

M	1
F	0

Other complications of medical and surgical care and their sequelae

M	2
F	3

XX. External causes of mortality TOTAL

M	363
F	268

XXI. Unknown Underlying Cause TOTAL

M	5
F	10

TOTALS	
M	4,899
F	4,873

DEATHS BY CAUSE FOR NOVA SCOTIA
EVENTS OCURRING Between 1-Jan-20 and 31-Dec-20

Intestinal infections due to other specified organisms

M 8
F 12

Gastroenteritis and colitis of unspecified origin

M 5
F 10

Septicemia

M 17
F 28

Other zoonotic and bacterial diseases

M 8
F 5

Herpesviral (herpes simplex) infections

M 1
F 0

Zoster (herpes zoster)

M 1
F 2

Viral hepatitis

M 4
F 2

Human immunodeficiency virus (HIV) disease resulting in infectious and parasitic diseases

M 1
F 0

Human immunodeficiency virus (HIV) disease resulting in malignant neoplasms

M 0
F 1

All other and unspecified viral diseases

M 2
F 3

Mycoses

M 1
F 0

All other and unspecified infectious and parasitic diseases and their sequelae

M 1
F 0

I. Certain infectious and parasitic diseases TOTAL

M 50
F 65
Malignant neoplasms Of tongue

M 8
F 2
Malignant neoplasms of pharynx

M 14
F 5
Malignant neoplasm of other and unspecified sites within the lip, oral cavity and pharynx

M 11
F 4
Malignant neoplasms of esophagus

M 71
F 20
Malignant neoplasms of stomach

M 32
F 16
Malignant neoplasms of small intestine

M 3
F 1
Malignant neoplasms of colon

M 88
F 85
Malignant neoplasms rectosigmoid junction and rectum

M 61
F 41
Malignant neoplasms of anus and anal canal

M 2
F 4
Malignant neoplasms of liver

M 28
F 12
Malignant neoplasms intrahepatic bile duct carcinoma

M 17
F 22
Malignant neoplasms of gallbladder and extrahepatic bile ducts

M 8
F 7
Malignant neoplasms of pancreas

M 100

F 86

Malignant neoplasms of other and ill-defined digestive organs

M 23
F 25

Malignant neoplasms of nasal cavity, middle ear and accessory sinuses

M 1
F 0

Malignant neoplasms of larynx

M 15
F 1

Malignant neoplasms of trachea, bronchus and lung

M 402
F 364

Malignant neoplasms of thymus, heart, mediastinum and pleura

M 1
F 1

Malignant neoplasms of bone and articular cartilage

M 4
F 5

Malignant melanoma of skin

M 23
F 18

Other malignant neoplasms of skin

M 16
F 6

Mesothelioma

M 5
F 1

Kaposi's sarcoma

M 1
F 0

Malignant neoplasms of other mesothelial and soft tissue

M 18
F 6

Malignant neoplasm of breast

M 4
F 166

Malignant neoplasms of vulva and vagina

M 0
F 16

Malignant neoplasms of cervix uteri

M 0
F 15
Malignant neoplasms of corpus uteri and uterus, part unspecified

M 0
F 43
Malignant neoplasms of ovary

M 0
F 56
Malignant neoplasms of other and unspecified female genital organs

M 0
F 1
Malignant neoplasms of prostate

M 162
F 0
Malignant neoplasms of testis

M 1
F 0
Malignant neoplasms of penis and other and unspecified male genital organs

M 3
F 0
Malignant neoplasms of kidney and renal pelvis

M 43
F 23
Malignant neoplasms of bladder

M 55
F 18
Malignant neoplasms of other and unspecified sites within the urinary tract

M 19
F 9
Malignant neoplasm of eye and adnexa

M 0
F 1
Malignant neoplasms of brain

M 41
F 28
Malignant neoplasms of other parts of central nervous system

M 1
F 0
Malignant neoplasms of thyroid and other endocrine glands

M 6
F 8
Other malignant neoplasms of other and unspecified sites

M 93
F 83
Hodgkin's disease

M 5
F 1
Non-Hodgkin's lymphoma

M 53
F 53
Malignant neoplasms of other and unspecified lymphoid, hematopoietic and related tissue

M 4
F 0
Malignant immunoproliferative diseases

M 2
F 1
Multiple myeloma and malignant plasma cell neoplasms

M 33
F 14
Lymphoid leukemia

M 13
F 5
Myeloid leukemia

M 35
F 16
Monocytic leukemia

M 1
F 0
Other and unspecified leukemia

M 4
F 4
Malignant neoplasms SUB-TOTAL

M 1,522
F 1,293
Benign neoplasms of eye, brain and other parts of central nervous system

M 2
F 2
Benign neoplasms of other and unspecified sites

M 2
F 4
Benign neoplasms SUB-TOTAL

M 4
F 6

Neoplasms of uncertain or unknown behavior of specified sites

M 27
F 34

Neoplasm of uncertain or unknown behavior of unspecified sites

M 0
F 1

II. Neoplasms TOTAL

M 1,553
F 1,334

Nutritional anemias

M 1
F 2

Hemolytic anemias

M 0
F 1

Acute posthemorrhagic and other anemias

M 5
F 13

Coagulation defects, purpura and other hemorrhagic conditions

M 3
F 2

Other diseases of blood and blood-forming organs

M 0
F 1

Certain disorders involving the immune mechanism

M 3
F 3

III. Diseases of the blood + blood-forming organs + certain disorders involving the immune mechanism TOTAL

M 12
F 22

Disorders of thyroid gland

M 2
F 4

Diabetes mellitus

M 191
F 170

Disorders of adrenal glands

M 0
F 2

Other endocrine diseases

M 1

F 2

Other and unspecified malnutrition

M 1
F 3

Obesity and other hyperalimentation

M 9
F 19

Cystic fibrosis

M 2
F 1

Volume depletion, disorders of fluid, electrolyte and acid-based balance

M 2
F 7

Other metabolic disorders

M 28
F 24

IV. Endocrine, nutritional and metabolic diseases TOTAL

M 236
F 232

Organic dementia

M 304
F 531

Other and unspecified organic mental disorders

M 3
F 6

Mental and behavioral disorders due to use of alcohol

M 29
F 7

Mental and behavioral disorders due to other psychoactive substance use

M 2
F 2

Schizophrenia, schizotypal and delusional disorders

M 6
F 1

Mood (affective) disorders

M 2
F 3

Neurotic, stress-related and somatoform disorders

M 0
F 1

Mental retardation

M 0
F 1
V. Mental and behavioral disorders TOTAL

M 346
F 552
Meningitis

M 0
F 1
Other inflammatory diseases of central nervous system

M 3
F 1
Parkinson's disease

M 66
F 28
Alzheimer's disease

M 88
F 179
Multiple sclerosis

M 10
F 20
Epilepsy

M 4
F 3
Infantile cerebral palsy

M 3
F 5
All other diseases of nervous system

M 85
F 57
VI. Diseases of the nervous system TOTAL

M 259
F 294
VII. Diseases of the eye and adnexa TOTAL

M 0
F 1
VIII. Diseases of the ear and mastoid process TOTAL

M 0
F 2
Acute rheumatic fever

M 1
F 0
Rheumatic mitral valve diseases

M 1
F 5
Disorders of both mitral and aortic valves

M 1
F 1
Other chronic rheumatic heart diseases

M 2
F 5
Essential (primary) hypertension

M 15
F 27
Hypertensive heart disease

M 69
F 52
Hypertensive renal disease

M 10
F 15
Hypertensive heart and renal disease

M 4
F 14
Acute myocardial infarction

M 218
F 152
Other acute ischemic heart diseases

M 17
F 12
Atherosclerotic cardiovascular disease, so described

M 50
F 15
All other forms of chronic ischemic heart disease

M 411
F 212
Pulmonary embolism

M 11
F 12
Other pulmonary heart disease and diseases of pulmonary circulation

M 12
F 20
Acute and subacute endocarditis

M 4
F 1

Diseases of pericardium and acute myocarditis

M 0
F 2

Nonrheumatic mitral valve disorders

M 6
F 5

Nonrheumatic aortic valve disorders

M 38
F 37

All other diseases of endocardium

M 6
F 2

Cardiomyopathy

M 32
F 16

Conduction disorders and cardiac dysrhythmias

M 57
F 87

Congestive heart failure

M 54
F 66

Other and unspecified heart failure

M 8
F 7

Myocarditis, unspecified and myocardial degeneration

M 2
F 2

All other and ill-defined forms of heart disease

M 5
F 15

Subarachnoid hemorrhage

M 9
F 22

Intracerebral and other intracranial hemorrhage

M 59
F 53

Cerebral infarction

M 22
F 24

Stroke, not specified as hemorrhage or infarction

M 122

F 171

Other cerebrovascular diseases and their sequelae

M 15
F 26

Atherosclerosis

M 2
F 6

Aortic aneurysm and dissection

M 36
F 28

Other diseases of arteries, arterioles and capillaries

M 29
F 25

Phlebitis, thrombophlebitis, venous embolism and thrombosis

M 7
F 16

All other and unspecified disorders of circulatory system

M 2
F 1

IX. Diseases of the circulatory system TOTAL

M 1,337
F 1,154

Influenza

M 5
F 6

Bacterial pneumonia

M 1
F 1

Pneumonia due to other or unspecified organisms

M 54
F 46

Acute bronchitis and bronchiolitis

M 1
F 0

Unspecified acute lower respiratory infection

M 0
F 1

Other diseases of upper respiratory tract

M 3
F 1

Emphysema

M 14
F 7
Other chronic obstructive pulmonary disease

M 231
F 216
Asthma

M 4
F 10
Bronchiectasis

M 1
F 4
Pneumoconioses and chemical effects

M 8
F 0
Pneumonitis due to food and vomit

M 14
F 15
Suppurative and necrotic conditions of lower respiratory tract

M 1
F 1
Pleural effusion and plaque

M 3
F 2
Covid-19

M 27
F 39
All other diseases of respiratory system

M 64
F 45
X. Diseases of the respiratory system TOTAL

M 433
F 394
Diseases of pulp and periapical tissues

M 0
F 1
Diseases of salivary glands

M 1
F 0
Diseases of esophagus

M 7
F 12
Gastric ulcer

M 3
F 2
Duodenal ulcer

M 7
F 4
Peptic ulcer, site unspecified

M 1
F 6
Dyspepsia and other diseases of stomach and duodenum

M 0
F 1
Diseases of appendix

M 1
F 0
Hernia

M 6
F 12
Crohn's disease and ulcerative colitis

M 3
F 8
Vascular disorders and obstruction of intestine without hernia

M 35
F 32
Diverticular disease of intestine

M 13
F 8
Other diseases of intestines and peritoneum.

M 6
F 14
Diseases of peritoneum

M 3
F 4
Alcoholic liver disease

M 52
F 25
Fibrosis and cirrhosis of liver

M 31
F 23
Other diseases of liver

M 33
F 16

Cholelithiasis and other disorders of gallbladder

M 12
F 11

Acute Pancreatitis

M 8
F 10

Other diseases of the pancreas

M 2
F 2

Other disorders of biliary tract and pancreas

M 6
F 3

All other diseases of digestive system

M 20
F 21

XI. Diseases of the digestive system TOTAL

M 250
F 216

Infections of skin and subcutaneous tissue

M 7
F 7

Other and unspecified diseases of skin and subcutaneous tissue

M 4
F 5

XII. Diseases of the skin and subcutaneous tissue TOTAL

M 11
F 12

Rheumatoid arthritis and related inflammatory polyarthropathies

M 5
F 6

Systemic lupus erythematosus

M 1
F 0

Other arthropathies and related disorders

M 10
F 17

Dorsopathies

M 2
F 2

Soft tissue disorders

M 4

F 1

Osteoporosis

M 1
F 3

Other osteopathies, chondropathies and disorders of musculoskeletal system + connective tissues

M 1
F 8

XIII. Diseases of the musculoskeletal system and connective tissue TOTAL

M 24
F 37

Nephrotic syndrome

M 0
F 1

Other and unspecified glomerular diseases

M 2
F 1

Renal tubulo-interstitial diseases

M 3
F 1

Renal failure

M 48
F 63

Urolithiasis

M 5
F 5

Other and unspecified disorders of kidney

M 1
F 0

Urinary tract infection, site not specified

M 16
F 47

Other diseases of urinary system

M 2
F 2

Hyperplasia of prostate

M 8
F 0

Other diseases of male genital organs

M 4
F 0

Inflammatory diseases of female pelvic organs

M 0
F 3
Noninflammatory disorders of female genital tract

M 0
F 3
XIV. Diseases of the genitourinary system TOTAL

M 89
F 126
Newborn affected by maternal factors and by complications of pregnancy, labor and delivery

M 3
F 3
Disorders related to short gestation and low birth weight, not elsewhere classified

M 2
F 1
Birth trauma

M 1
F 0
Intrauterine hypoxia and birth asphyxia

M 0
F 1
Other respiratory conditions originating in the perinatal period

M 0
F 1
Infections specific to the perinatal period

M 1
F 0
Other and unspecified conditions originating in the perinatal period

M 3
F 1
XVI. Certain conditions originating in the perinatal period TOTAL

M 10
F 7
Spina bifida

M 0
F 1
Congenital malformations of heart

M 4
F 5
Other congenital malformations of circulatory system

M 1
F 1
Other congenital malformations and deformations

M 4
F 1
Down's syndrome

M 2
F 4
All other chromosomal abnormalities, not elsewhere classified

M 1
F 1
XVII. Congenital malformations, deformations and chromosomal abnormalities TOTAL

M 12
F 13
Senility

M 1
F 3
Other ill-defined and unknown causes of mortality

M 116
F 51
All other symptoms,signs + abnormal clinical + laboratory findings, not elsewhere classified

M 10
F 12
XVIII. Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified TOTAL

M 127
F 66
Pedestrian involved in collision with motor vehicle

M 1
F 0
Pedal cyclist involved in collision with motor vehicle

M 1
F 0
Motorcyclist involved in any accident except collision with railway train

M 8
F 0
Other motor vehicle accident involving collision with railway train

M 1
F 0
Occupant of car, pickup truck or van involved in collision with other motor vehicle

M 4
F 8
Occupant of motor vehicle involved in non-collision accident

M 2
F 1

Occupant of special-use motor vehicle involved in any accident

M 5
F 1

Other and unspecified motor vehicle accidents

M 23
F 6

Other and unspecified land transport accidents

M 1
F 0

Water transport accidents

M 1
F 0

Other and unspecified transport accidents and their sequelae

M 2
F 1

Fall on same level

M 69
F 131

Fall from one level to another

M 9
F 6

Unspecified fall

M 43
F 52

Accidental drowning and submersion

M 3
F 1

Accidental inhalation + ingestion of objects causing obstruction of respiratory tract

M 5
F 7

Other accidental and unspecified threats to breathing

M 0
F 1

Accidental exposure to smoke, fire and flames

M 3
F 0

Accidental poisoning by and exposure to drugs and other biological substances

M 33
F 11

Accidental poisoning by and exposure to other and unspecified solid or liquid substances

M 2

F 0

Accidental poisoning by and exposure to other gases and vapors

M 1
F 0

All other and unspecified accidents and their sequelae

M 34
F 20

Intentional self-poisoning (suicide) by and exposure to drugs + other biological substance

M 7
F 6

Intentional self-poisoning (suicide) by exposure to unspecified solid or liquid substance + vapors

M 0
F 1

Intentional self-harm (suicide) by hanging, strangulation and suffocation

M 46
F 9

Intentional self-harm (suicide) by discharge of firearms

M 16
F 1

Intentional self-harm (suicide) by jumping from a high place

M 2
F 0

Intentional self-harm (suicide) by all other and unspecified means and their sequelae

M 16
F 3

Assault (homicide) by discharge of firearms

M 8
F 9

Assault (homicide) by sharp object

M 3
F 1

Assault (homicide) by bodily force

M 1
F 0

Assault (homicide) by all other and unspecified means and their sequelae

M 7
F 1

Poisoning by and exposure to drugs and biological substances, undetermined intent

M 0
F 3

Discharge of firearms, undetermined intent

M	1
F	0

All other and unspecified events of undetermined intent and their sequelae

M	0
F	1

Other legal intervention and their sequelae

M	2
F	0

Other complications of medical and surgical care and their sequelae

M	7
F	7

XX. External causes of mortality TOTAL

M	367
F	288

Unknown Underlying Cause

M	11
F	22

XXI. Unknown Underlying Cause TOTAL

M	11
F	22

TOTALS	
M	5,127
F	4,837

DEATHS BY CAUSE FOR NOVA SCOTIA
EVENTS OCURRING Between 1-Jan-21 and 31-Dec-21

Intestinal infections due to other specified organisms

M 2
F 0

Gastroenteritis and colitis of unspecified origin

M 0
F 3

Septicemia

M 6
F 13

Other zoonotic and bacterial diseases

M 2
F 1

Viral hepatitis

M 1
F 1

Human immunodeficiency virus (HIV) disease resulting in infectious and parasitic diseases

M 2
F 0

All other and unspecified viral diseases

M 1
F 0

Mycoses

M 1
F 0

All other and unspecified infectious and parasitic diseases and their sequelae

M 0
F 1

I. Certain infectious and parasitic diseases TOTAL

M 15
F 19

Malignant neoplasms Of tongue

M 5
F 0

Malignant neoplasms of pharynx

M 3
F 3

Malignant neoplasm of other and unspecified sites within the lip, oral cavity and pharynx

M 6
F 5

Malignant neoplasms of esophagus

M 30
F 3

Malignant neoplasms of stomach

M 11
F 11

Malignant neoplasms of small intestine

M 1
F 3

Malignant neoplasms of colon

M 25
F 26

Malignant neoplasms rectosigmoid junction and rectum

M 22
F 12

Malignant neoplasms of liver

M 14
F 3

Malignant neoplasms intrahepatic bile duct carcinoma

M 10
F 8

Malignant neoplasms of gallbladder and extrahepatic bile ducts

M 1
F 3

Malignant neoplasms of pancreas

M 28
F 21

Malignant neoplasms of other and ill-defined digestive organs

M 6
F 9

Malignant neoplasms of larynx

M 4
F 0

Malignant neoplasms of trachea, bronchus and lung

M 105
F 110

Malignant neoplasms of thymus, heart, mediastinum and pleura

M 0

F 2

Malignant neoplasms of bone and articular cartilage

M 1
F 0

Malignant melanoma of skin

M 8
F 7

Other malignant neoplasms of skin

M 5
F 0

Mesothelioma

M 4
F 0

Malignant neoplasms of other mesothelial and soft tissue

M 5
F 1

Malignant neoplasm of breast

M 2
F 50

Malignant neoplasms of vulva and vagina

M 0
F 2

Malignant neoplasms of cervix uteri

M 0
F 7

Malignant neoplasms of corpus uteri and uterus, part unspecified

M 0
F 16

Malignant neoplasms of ovary

M 0
F 27

Malignant neoplasms of other and unspecified female genital organs

M 0
F 1

Malignant neoplasms of prostate

M 64
F 0

Malignant neoplasms of testis

M 1
F 0

Malignant neoplasms of kidney and renal pelvis

M 9
F 5
Malignant neoplasms of bladder

M 19
F 6
Malignant neoplasms of other and unspecified sites within the urinary tract

M 5
F 2
Malignant neoplasms of brain

M 13
F 12
Malignant neoplasms of thyroid and other endocrine glands

M 1
F 1
Other malignant neoplasms of other and unspecified sites

M 24
F 27
Hodgkin's disease

M 1
F 0
Non-Hodgkin's lymphoma

M 12
F 12
Malignant neoplasms of other and unspecified lymphoid, hematopoietic and related tissue

M 0
F 1
Multiple myeloma and malignant plasma cell neoplasms

M 10
F 5
Lymphoid leukemia

M 5
F 0
Myeloid leukemia

M 10
F 10
Other and unspecified leukemia

M 1
F 1
Malignant neoplasms SUB-TOTAL

M 471
471
F 413

413

Benign neoplasms of eye, brain and other parts of central nervous system

M 1
F 0

Benign neoplasms of other and unspecified sites

M 0
F 1

Benign neoplasms SUB-TOTAL

M 1
F 1

Neoplasms of uncertain or unknown behavior of specified sites

M 14
F 5

Neoplasm of uncertain or unknown behavior of unspecified sites

M 0
F 1

II. Neoplasms TOTAL

M 486
F 420

Hemolytic anemias

M 1
F 0

Aplastic anemias

M 1
F 1

Acute posthemorrhagic and other anemias

M 3
F 5

Coagulation defects, purpura and other hemorrhagic conditions

M 1
F 2

Other diseases of blood and blood-forming organs

M 0
F 1

Certain disorders involving the immune mechanism

M 2
F 1

III. Diseases of the blood + blood-forming organs + certain disorders involving the immune mechanism TOTAL

M 8
F 10

Disorders of thyroid gland

M 0
F 1
Diabetes mellitus

M 64
F 47
Other endocrine diseases

M 0
F 2
Other nutritional deficiencies

M 1
F 0
Obesity and other hyperalimentation

M 2
F 2
Volume depletion, disorders of fluid, electrolyte and acid-based balance

M 4
F 4
Other metabolic disorders

M 10
F 8
IV. Endocrine, nutritional and metabolic diseases TOTAL

M 81
F 64
Organic dementia

M 76
F 157
Other and unspecified organic mental disorders

M 3
F 2
Mental and behavioral disorders due to use of alcohol

M 9
F 2
Mental and behavioral disorders due to other psychoactive substance use

M 1
F 0
V. Mental and behavioral disorders TOTAL

M 89
F 161
Other inflammatory diseases of central nervous system

M 1
F 0
Parkinson's disease

M 32
F 9
Alzheimer's disease

M 25
F 40
Multiple sclerosis

M 5
F 2
Epilepsy

M 1
F 0
Infantile cerebral palsy

M 0
F 2
All other diseases of nervous system

M 19
F 19
VI. Diseases of the nervous system TOTAL

M 83
F 72
Rheumatic mitral valve diseases

M 0
F 1
Disorders of both mitral and aortic valves

M 1
F 0
Other chronic rheumatic heart diseases

M 2
F 1
Essential (primary) hypertension

M 11
F 8
Hypertensive heart disease

M 15
F 14
Hypertensive renal disease

M 1
F 5
Hypertensive heart and renal disease

M 3
F 1

Acute myocardial infarction

M 90
F 45

Other acute ischemic heart diseases

M 2
F 6

Atherosclerotic cardiovascular disease, so described

M 17
F 7

All other forms of chronic ischemic heart disease

M 120
F 61

Pulmonary embolism

M 5
F 3

Other pulmonary heart disease and diseases of pulmonary circulation

M 5
F 7

Acute and subacute endocarditis

M 1
F 2

Diseases of pericardium and acute myocarditis

M 2
F 0

Nonrheumatic mitral valve disorders

M 1
F 2

Nonrheumatic aortic valve disorders

M 12
F 18

All other diseases of endocardium

M 3
F 2

Cardiomyopathy

M 7
F 5

Conduction disorders and cardiac dysrhythmias

M 23
F 17

Congestive heart failure

M 20

F 21

Other and unspecified heart failure

M 4
F 4

All other and ill-defined forms of heart disease

M 1
F 2

Subarachnoid hemorrhage

M 4
F 3

Intracerebral and other intracranial hemorrhage

M 17
F 18

Cerebral infarction

M 9
F 7

Stroke, not specified as hemorrhage or infarction

M 32
F 42

Other cerebrovascular diseases and their sequelae

M 8
F 7

Atherosclerosis

M 4
F 2

Aortic aneurysm and dissection

M 14
F 10

Other diseases of arteries, arterioles and capillaries

M 9
F 10

Phlebitis, thrombophlebitis, venous embolism and thrombosis

M 3
F 3

IX. Diseases of the circulatory system TOTAL

M 446
F 334

Pneumonia due to other or unspecified organisms

M 8
F 17

Unspecified acute lower respiratory infection

M 0
F 1
Other diseases of upper respiratory tract

M 1
F 0
Bronchitis, not specified as acute or chronic

M 0
F 1
Emphysema

M 1
F 2
Other chronic obstructive pulmonary disease

M 59
F 51
Asthma

M 1
F 1
Bronchiectasis

M 0
F 1
Pneumoconioses and chemical effects

M 3
F 0
Pneumonitis due to food and vomit

M 8
F 3
Other lung diseases due to external agents

M 0
F 1
Covid-19

M 0
F 2
All other diseases of respiratory system

M 25
F 13
X. Diseases of the respiratory system TOTAL

M 106
F 93
Diseases of esophagus

M 4
F 0
Gastric ulcer

M 1
F 0
Duodenal ulcer

M 6
F 1
Peptic ulcer, site unspecified

M 1
F 0
Gastritis and duodenitis

M 2
F 0
Dyspepsia and other diseases of stomach and duodenum

M 1
F 0
Diseases of appendix

M 1
F 0
Hernia

M 5
F 3
Crohn's disease and ulcerative colitis

M 1
F 2
Vascular disorders and obstruction of intestine without hernia

M 9
F 14
Diverticular disease of intestine

M 0
F 2
Other diseases of intestines and peritoneum.

M 1
F 2
Diseases of peritoneum

M 1
F 1
Alcoholic liver disease

M 15
F 9
Fibrosis and cirrhosis of liver

M 6
F 8

Other diseases of liver

M 12
F 2

Cholelithiasis and other disorders of gallbladder

M 5
F 5

Acute Pancreatitis

M 2
F 2

Other diseases of the pancreas

M 0
F 1

Other disorders of biliary tract and pancreas

M 3
F 3

All other diseases of digestive system

M 5
F 7

XI. Diseases of the digestive system TOTAL

M 81
F 62

Infections of skin and subcutaneous tissue

M 3
F 2

Other and unspecified diseases of skin and subcutaneous tissue

M 3
F 2

XII. Diseases of the skin and subcutaneous tissue TOTAL

M 6
F 4

Rheumatoid arthritis and related inflammatory polyarthropathies

M 0
F 2

Other arthropathies and related disorders

M 4
F 4

Dorsopathies

M 0
F 1

Osteoporosis

M 0

F 1

Other osteopathies, chondropathies and disorders of musculoskeletal system + connective tissues

M 2
F 1

XIII. Diseases of the musculoskeletal system and connective tissue TOTAL

M 6
F 9

Nephrotic syndrome

M 0
F 1

Other and unspecified glomerular diseases

M 2
F 1

Renal tubulo-interstitial diseases

M 2
F 3

Renal failure

M 11
F 20

Urolithiasis

M 1
F 0

Urinary tract infection, site not specified

M 5
F 6

Other diseases of urinary system

M 2
F 0

Hyperplasia of prostate

M 1
F 0

Other diseases of male genital organs

M 1
F 0

XIV. Diseases of the genitourinary system TOTAL

M 25
F 31

Newborn affected by maternal factors and by complications of pregnancy, labor and delivery

M 0
F 2

Other and unspecified conditions originating in the perinatal period

M 1
F 0
XVI. Certain conditions originating in the perinatal period TOTAL

M 1
F 2
Spina bifida

M 0
F 1
All other congenital malformations of nervous system

M 1
F 0
Congenital malformations of heart

M 1
F 0
Other congenital malformations of circulatory system

M 1
F 0
Other congenital malformations and deformations

M 2
F 3
Down's syndrome

M 3
F 1
XVII. Congenital malformations, deformations and chromosomal abnormalities TOTAL

M 8
F 5
Senility

M 2
F 2
Other ill-defined and unknown causes of mortality

M 12
F 12
All other symptoms,signs + abnormal clinical + laboratory findings, not elsewhere classified

M 2
F 4
XVIII. Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified TOTAL

M 16
F 18
Motorcyclist involved in any accident except collision with railway train

M 2
F 0
Occupant of car, pickup truck or van involved in collision with other motor vehicle

M 1
F 0
Occupant of special-use motor vehicle involved in any accident

M 3
F 0
Other and unspecified motor vehicle accidents

M 6
F 3
Water transport accidents

M 2
F 0
Other and unspecified transport accidents and their sequelae

M 3
F 0
Fall on same level

M 24
F 37
Fall from one level to another

M 6
F 0
Unspecified fall

M 12
F 13
Accidental drowning and submersion

M 2
F 1
Accidental inhalation + ingestion of objects causing obstruction of respiratory tract

M 2
F 1
Accidental exposure to smoke, fire and flames

M 4
F 1
Accidental poisoning by and exposure to drugs and other biological substances

M 16
F 4
Accidental poisoning by and exposure to other and unspecified solid or liquid substances

M 0
F 2
All other and unspecified accidents and their sequelae

M 13
F 12

Intentional self-poisoning (suicide) by and exposure to drugs + other biological substance

M 3
F 7

Intentional self-poisoning (suicide) by and exposure to other gases and vapors

M 0
F 2

Intentional self-harm (suicide) by hanging, strangulation and suffocation

M 16
F 4

Intentional self-harm (suicide) by discharge of firearms

M 6
F 0

Intentional self-harm (suicide) by jumping from a high place

M 1
F 1

Intentional self-harm (suicide) by all other and unspecified means and their sequelae

M 2
F 0

Assault (homicide) by hanging, strangulation and suffocation

M 0
F 1

Assault (homicide) by discharge of firearms

M 3
F 0

Assault (homicide) by sharp object

M 1
F 0

Assault (homicide) by blunt object

M 1
F 0

Other complications of medical and surgical care and their sequelae

M 1
F 1

XX. External causes of mortality TOTAL

M 130
F 90

Unknown Underlying Cause

M 3,698
F 3,398

XXI. Unknown Underlying Cause TOTAL

M 3,695

F	3,396
TOTALS	
M	5,285
F	4,791