

# “Data Science with Open Canada Data” Seminar

Ottawa, 8 April 2022

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# Three Official sources

[ 1 ] COVID-19 Daily Epidemiology Update, Public Health Agency of Canada  
<https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html>  
Archives: [web.archive.org](http://web.archive.org) ([www.ivim.ca/data.phac1](http://www.ivim.ca/data.phac1))

[ 2 ] Canadian COVID-19 vaccination safety report, Public Health Agency of Canada, <https://health-infobase.canada.ca/covid-19/vaccine-safety/>

**Spreadsheet with all data and calculations: [www.ivim.ca/data](http://www.ivim.ca/data)**

[ 3 ] Statistics Canada, Canadian Vital Statistics - Death database . Provisional weekly death counts, by selected grouped causes of death.  
<https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310081001>

**Dashboard that tracks death causes over time: [www.ivim.ca/app](http://www.ivim.ca/app)**

# Agenda

## Part 1: Weekly update from Canada (Dmitry)

- New Logistics - going public: [www.IVIM.ca/data/seminar](http://www.IVIM.ca/data/seminar)
  - Website redevelopment
- New development (dashboard) - Implemented:
  - Plot: Odds of deaths for populations
  - Plot: Absolute weekly deaths stats vs/ weekly vaccine SAR stats
- New outputs:
  - Concern submitted to OAG (bias in official reports)
  - Open Letter Chief Science Advisor of Canada prepared - contact DG@
- New results (data from [PHAC-1])

## Part 2: Building a tool to extract data from PDF reports (Jason)

- Examples: PHAC reports, UK deaths reports, Pfizer released documents
- Wish-list: Intelligent keyword search, tables detection, automated abstracts ...
- Feedback requested



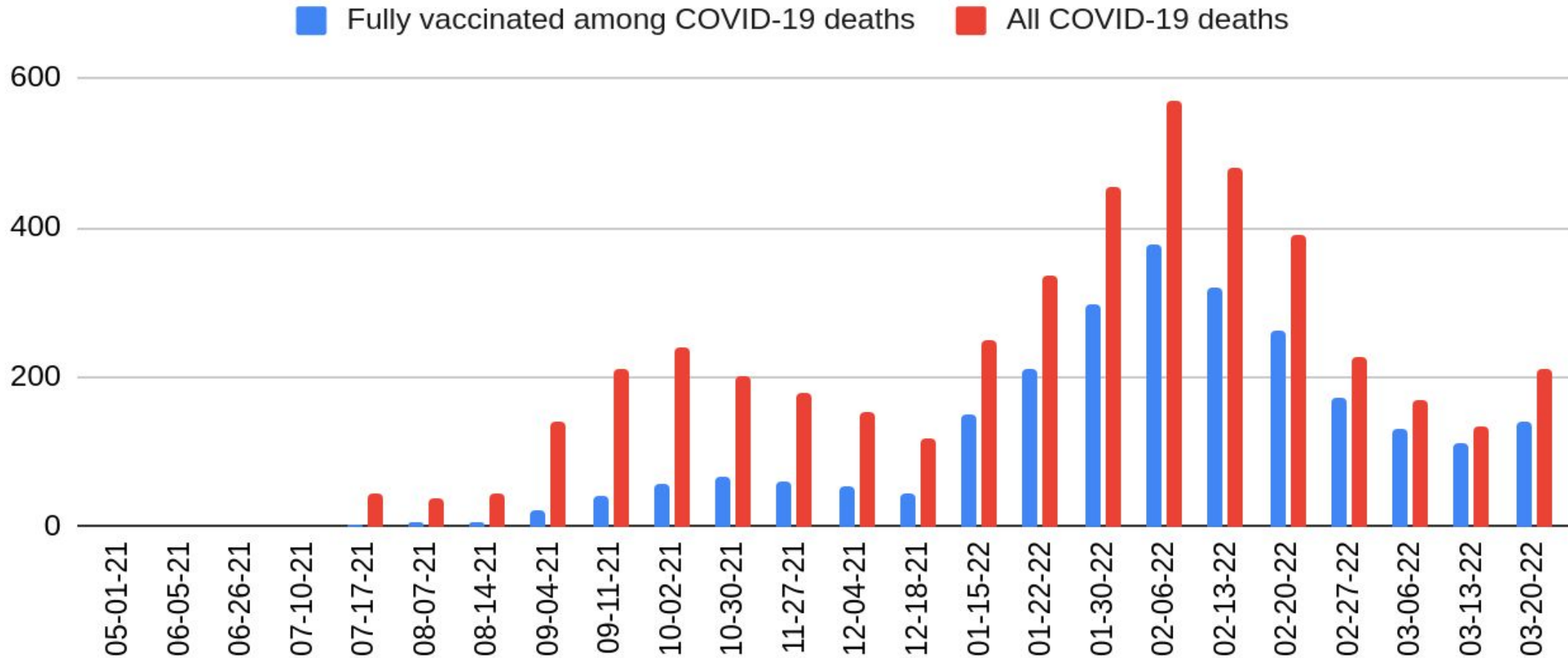
# Implemented: Three vaccine efficacy metrics (This week | Last week)

1. Weekly counts recomputed from reported numbers. Percentage of Fully-vaccinated among Cases based on Weekly counts
  - a. 228 | 134 “COVID-deaths” reported Nation-wide, all ages combined
  - b. 66% | 84% of these “COVID-deaths” were of Fully Vaxed
2. Chance of complication once infected by vaccination status. Increase of risk of complication from COVID (unvaxed vs. vaxed)
  - a.
3. Proportions affected by COVID in each vaccination group (per million)

# Absolute weekly stats (compared to that of [other death causes](#) and SAR)

## 'COVID deaths' in Canada

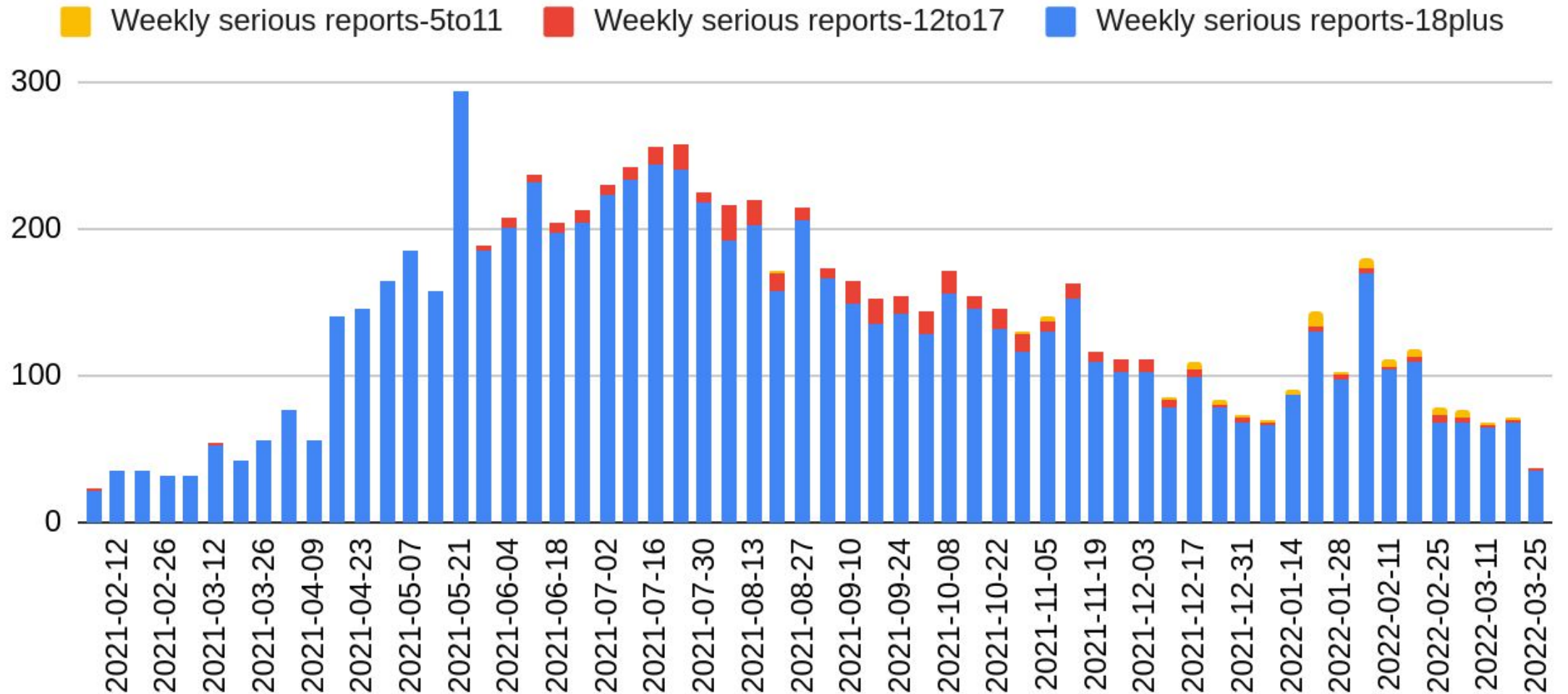
Includes 'Deaths with COVID' and 'Deaths from COVID' (Data: Public Health Agency of Canada)



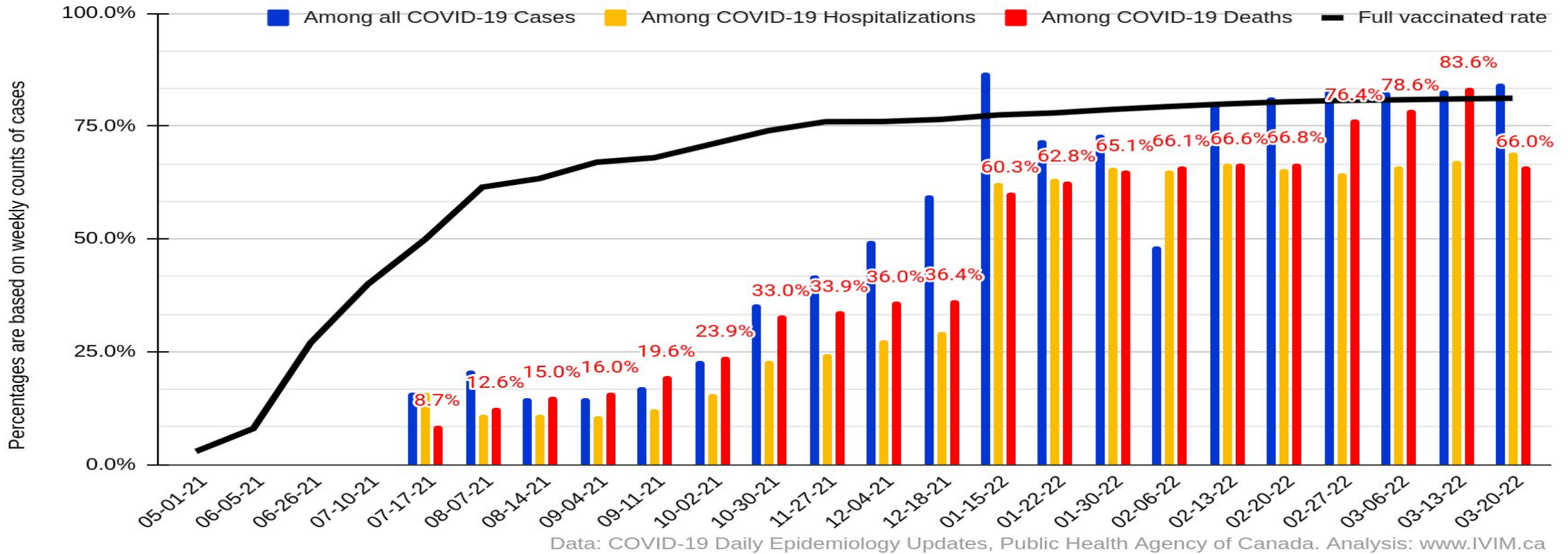
# Weekly SAR stats

## COVID-19 vaccine serious adverse reactions in Canada

Source: <https://health-infobase.canada.ca/covid-19/vaccine-safety>.



# Percentage of Fully Vaccinated among COVID-19 Cases



All Ages Combined			Weekly counts recomputed from reported numbers																				
Date cached on (cached reports)			Numbers below are computed as difference between numbers reported in two consecutive reports, averaged over (3) weeks.																				
As of:			Cases					Hospitalizations					Deaths										
Full vaccinated rate			0 doses: Unvaxxed	1 dose: Not yet protected	1 dose: Partially vaxxed	2+ doses: Fully vaxxed	3 doses: with booster	Total	Fully vaxxed / Total (%)	0 doses: Unvaxxed	1 dose: Not yet protected	1 dose: Partially vaxxed	2+ doses: Fully vaxxed	3 doses: with booster	Total	Fully vaxxed / Total (%)	0 doses: Unvaxxed	1 dose: Not yet protected	1 dose: Partially vaxxed	2+ doses: Fully vaxxed	3 doses: with booster	Total	Fully vaxxed / Total (%)
04-05-22	03-20-22	81.2%	3,145	36	655	20,901	9,664	24,737	84.5%	365	4	43	919	484	1,330	69.1%	64	1	7	140	64	212	66.0%
03-31-22	03-13-22	81.0%	2,906	35	562	17,025	9,764	20,528	82.9%	415	4	47	964	516	1,429	67.4%	24	-2	0	112	69	134	83.6%



## Vaccination rates

### Population size

38,246,108    5,927,509    1,580,202    30,738,397    17,212,661

All  
 0 doses: Cumulative percent of UNVACCINATED  
 Cumulative percent of partially vaccinated people  
 Cumulative percent of fully vaccinated people  
 Cumulative percent of fully vaccinated people with an additional dose

100%	15.3%	3.5%	81.2%	46.8%
100%	15.3%	3.7%	81.0%	46.5%
100%	15.4%	3.8%	80.9%	46.1%
100%	15.4%	3.9%	80.7%	45.7%
100%	15.5%	4.1%	80.4%	45.1%
100%	15.6%	4.5%	79.9%	44.0%
100%	15.8%	4.9%	79.4%	42.6%
100%	16.0%	5.3%	78.7%	40.5%
100%	16.2%	5.8%	77.9%	37.2%
100%	16.6%	5.9%	77.5%	33.5%

## Proportions affected by COVID in each vaccination group (per million)

Number of cases in Group / Group size \* 1,000,000

### COVID Deaths\*

### Risk increase (averaged over 5 weeks):

0 doses	1 dose	2+ doses	3 doses	all	0 doses / 1 dose	0 doses / 2+ doses	1 doses / 2+ doses	0 doses / 3 doses	1 doses / 3 doses	2+ doses / 3 doses
11	5	5	4	6	4.17	1.89	0.47	0.90	1.35	2.80
4	0	4	4	4	4.37	1.95	0.32	0.89	2.44	3.31
6	1	4	4	4	3.72	2.13	0.39	0.86	3.54	4.18
9	1	6	6	6	3.48	2.24	0.46	0.84	3.84	4.68
20	5	9	8	10	3.40	2.36	0.56	1.60	0.58	3.02
24	8	10	22	13	3.36	2.40	0.62	1.46	0.46	0.63
29	9	12	20	15	3.36	2.38	0.71	1.75	0.60	3.22
23	7	10	9	12	3.56	2.50	0.70			
18	5	7		9	3.80	2.62	0.69			
14	4	5		7	3.86	2.74	0.71			

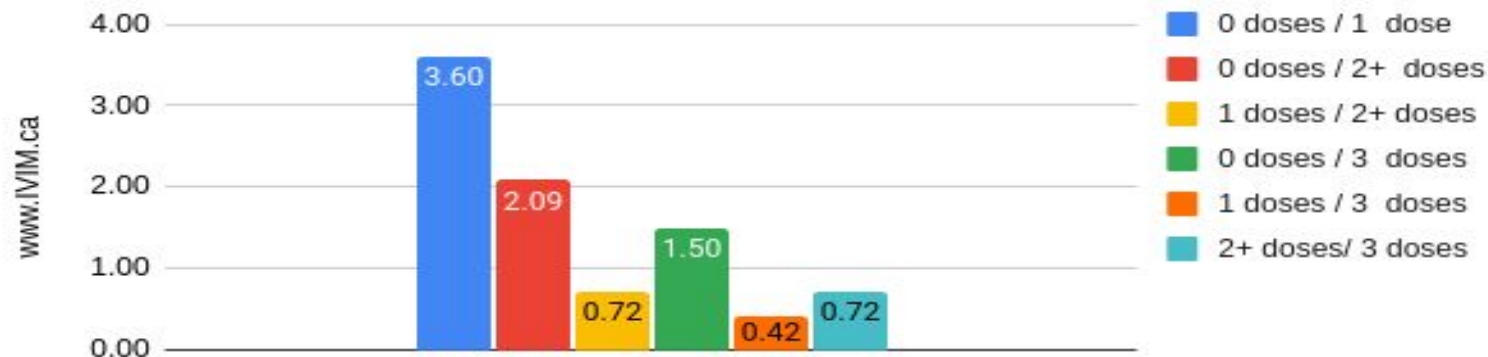
### Totals since January 30, 2022

0 doses / 1 dose	0 doses / 2+ doses	1 doses / 2+ doses	0 doses / 3 doses	1 doses / 3 doses	2+ doses / 3 doses					
103	29	49	69	57	3.60	2.09	0.72	1.50	0.42	0.72

\* 'COVID Deaths/Hospitalizations' include Deaths/Hospitalizations 'from COVID' and Deaths/Hospitalizations 'with COVID'

## Increase of Risk of COVID deaths

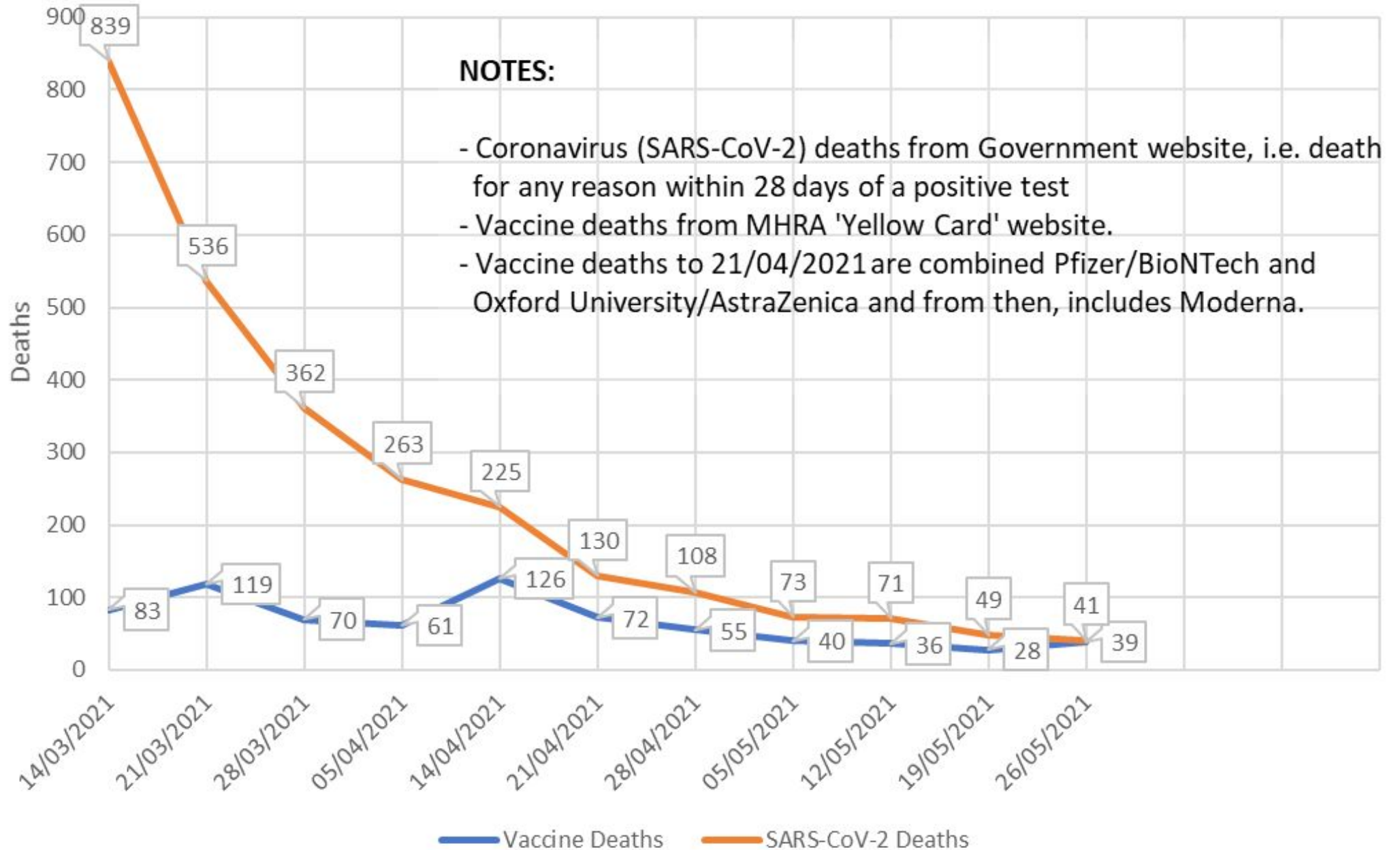
Data: COVID-19 Daily Epidemiology Update (2022-02-06 - 2022-03-20)





UK:

## SARS-CoV-2 deaths 'with' coronavirus and 'after' a vaccine





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This tool looks at pdfs and searches them for keywords. Results are displayed by document and page number with links to the documents matching the keyword(s)

Usage:

1. Choose one or more PDFs from the list
2. Enter one or more keywords to find
3. Press the 'Search' button
4. Consider getting a coffee (or [donating](#))

## Keywords finder

Location of PDFs

PDFs (23)

PHAC

Choose from:

- [2022-01-05-PHAC1.pdf](#)
- [2022-01-07-PHAC1.pdf](#)
- [2022-01-22-PHAC1.pdf](#)
- [2022-02-04-PHAC1.pdf](#)
- [2022-03-04-PHAC1.pdf](#)

You have selected:

- [2022-01-05-PHAC1.pdf](#)
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Keywords (seperate with commas)

NOTE: Searches are case sensitive

Show  entries

Filter:

Filename	Keyword	Page	Line	Text
<a href="#">2022-01-05-PHAC1.pdf</a>	severe outcomes	21	1	Characteristics and severe outcomes associated unvaccinated, partially vaccinated and
<a href="#">2022-01-05-PHAC1.pdf</a>	Cases not yet protected	21	8	Cases not yet protected 4.6% 6.0% 7.2%
<a href="#">2022-01-05-PHAC1.pdf</a>	severe outcomes	21	31	Table 2. Characteristics and severe outcomes associated unvaccinated, partially vaccinated
<a href="#">2022-01-05-PHAC1.pdf</a>	severe outcomes	22	9	Fully vaccinated individuals diagnosed with COVID-19 were significantly protected from severe outcomes.
<a href="#">2022-01-05-PHAC1.pdf</a>	severe outcomes	22	16	Table 3. Risk of severe outcomes among fully vaccinated cases compared to
<a href="#">2022-01-05-PHAC1.pdf</a>	severe outcomes	22	27	Note: Due to the nature of the dataset (i.e. confirmed cases of COVID-19 in Canada), the odds of severe outcomes
<a href="#">2022-01-05-PHAC1.pdf</a>	Cases not yet protected	22	43	Cases not yet protected from vaccination include those whose episode date occurred less than 14 days after their
<a href="#">2022-01-07-PHAC1.pdf</a>	severe outcomes	21	1	Characteristics and severe outcomes associated unvaccinated, partially vaccinated and
<a href="#">2022-01-07-PHAC1.pdf</a>	Cases not yet protected	21	8	Cases not yet protected 4.6% 6.0% 7.2%
<a href="#">2022-01-07-PHAC1.pdf</a>	severe outcomes	21	31	Table 2. Characteristics and severe outcomes associated unvaccinated, partially vaccinated

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