

# Provisional death counts and excess mortality, January to April 2019 and January to April 2020

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COVID-19 continues to have unprecedented impacts on Canadians. Statistics Canada has adopted, and continues to adopt, new ways of working to provide Canadians with the data and insights they need to respond to COVID-19. To continue to meet the need for more timely information, an updated provisional dataset on deaths in Canada covering the first 18 weeks of 2020, ending May 2, is now available for 11 reporting provinces and territories. Data are not available for Ontario and Yukon.

While these provisional counts do not necessarily include all deaths that occurred during the reference period, particularly for the most recent weeks, the data allow for insights into excess mortality. The concept of excess mortality refers to a circumstance when there are more deaths during a period of time than expected given past trends.

Excess deaths are important to consider when understanding the direct and indirect impact of a pandemic such as COVID-19. Beyond deaths attributed to the virus itself, the pandemic may result in increased deaths from other causes. It is also important to note that not all excess deaths can necessarily be attributed to the pandemic, directly or indirectly, as other factors could also be at play including changes in population composition.

Even without a crisis, such as the COVID-19 pandemic, there is always some variation in the number of people who die in a given week from year to year. Excess mortality would occur when the number of reported weekly deaths is beyond the range of this typical variation. While excess mortality can be examined in various ways, this analysis focuses on instances where the number of people who died in a given week in 2020 was higher than the number of deaths for that same week in each of the five previous years. Further analysis based on other approaches, such as comparing with five-year averages, is also possible with the data released today.

## **Excess mortality observed in British Columbia, Quebec and Alberta since the beginning of the COVID-19 pandemic**

For 8 of the 11 reporting provinces and territories—Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba, Saskatchewan, the Northwest Territories and Nunavut—there was no clear evidence of excess mortality over the first 18 weeks of 2020. That is to say that the number of reported weekly deaths, in those jurisdictions, is within the range of previous annual figures.

However, Quebec, British Columbia, and Alberta all recorded some degree of excess mortality in the weeks since March 11, when the World Health Organization declared COVID-19 a pandemic. Excess mortality was observed for both sexes and appears to disproportionately affect those over the age of 85.

## **Weekly trends in excess mortality vary for British Columbia, Quebec and Alberta**

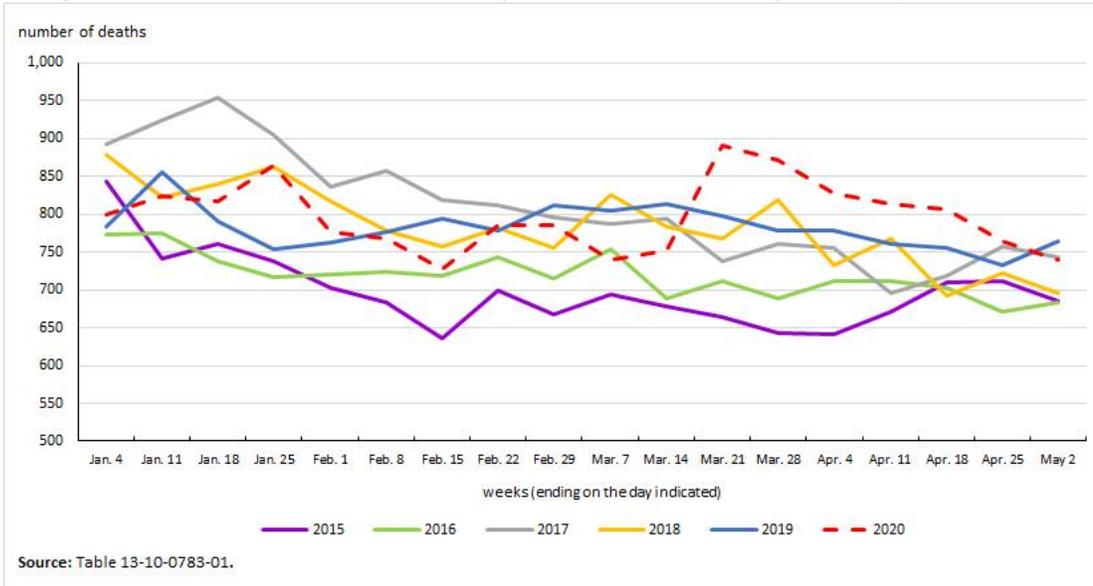
While there was evidence of excess mortality in British Columbia, Quebec and Alberta, the analysis for each of the first 18 weeks of 2020 (from January 4 to May 2) showed different patterns.

In British Columbia, excess mortality was observed from the week starting March 15 and ending March 21, 2020 to the week ending April 25 (Week 12 to Week 17). Over this period, there were 372 more deaths than in any of the previous five years for those same weeks. By Week 18 (ending May 2), the number of observed deaths had declined to similar figures from previous years.



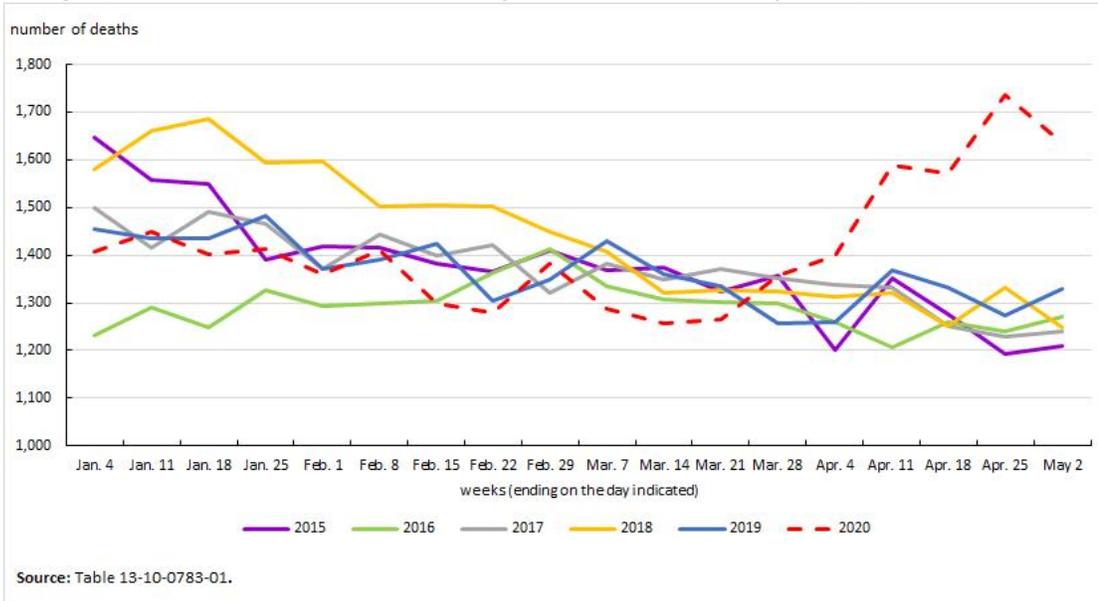
According to publically available figures, British Columbia had its first COVID-19 death in Week 11 (the week ending March 14, 2020) and reported 99 deaths attributed to COVID-19 over the six-week period from Week 12 to Week 17. While this suggests that there were more excess deaths over this period than reported deaths due to COVID-19, it should be noted that this may be due to other factors, such as changes in population composition or other underlying causes of mortality.

**Infographic 1 – Number of deaths by week from January to April, British Columbia, 2015 to 2020**



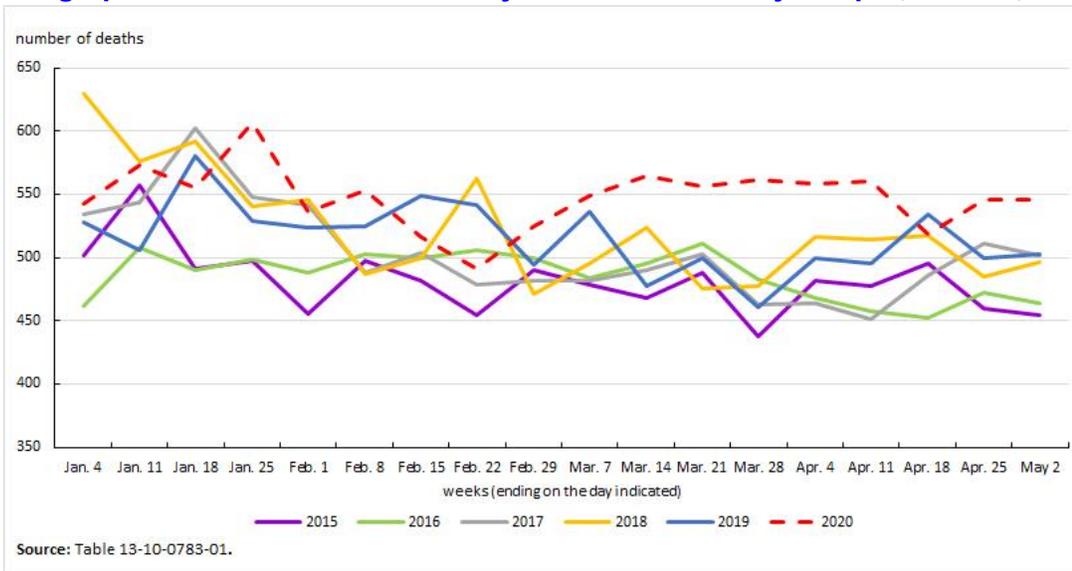
In Quebec, excess mortality was observed for six consecutive weeks starting in Week 13 (the week ending March 28, 2020). Over that period, there were 1,472 more deaths in 2020 than in any of the previous five years. There were 2,132 deaths attributed to COVID-19 over this same six-week period, with the first death attributed to COVID-19 occurring on March 18, 2020. As the provisional data continue to be updated with additional reported deaths, the observed number of deaths in Quebec for this period will continue to rise.

**Infographic 2 – Number of deaths by week from January to April, Quebec, 2015 to 2020**



For a seven-week period beginning in Week 9 (the week ending February 29, 2020), the weekly number of deaths in Alberta was above the figures for each of the previous five years. The figures for 2020 were higher than the five-year historical maximum by 402 deaths for this seven-week period. By comparison, there were 40 reported deaths due to COVID-19 over this seven-week period, with the first death occurring on March 19, suggesting that other factors, such as changes in population composition or increases in other causes of death, likely explain the higher number of observed deaths over this period. Higher numbers of deaths were also observed in Weeks 17 and 18.

**Infographic 3 – Number of deaths by week from January to April, Alberta, 2015 to 2020**



Statistics Canada will continue to update these data monthly, adding new weeks of data as they become available. The data will be announced through an official release in Statistics Canada's *The Daily*. In addition, future releases will include information on causes of death.

## Note to readers

The data released today are provisional death counts and may not match counts from other sources, such as media reports, or counts and estimates from provincial or territorial health authorities and other agencies.

Statistics Canada's ability to provide timely information depends on receiving information from the provinces and territories. For several jurisdictions, this information is typically sent within 30 days of the death event, while for others it is sent 30 to 60 days following the death event. Data for 2019 and the first 18 weeks of 2020 are being released for the Northwest Territories and the following eight provinces: Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Manitoba, Saskatchewan, Alberta and British Columbia. The data also include those deaths occurring in Nunavut up to April 25, 2020, and in New Brunswick up to January 9, 2020. The dataset includes demographic information on 237,843 people who died in these 11 jurisdictions and for whom Statistics Canada received information on or before June 1, 2020.

The data for Ontario are not available for release for 2019 and 2020 at this time. Data have not been received from Yukon since 2017.

These figures are provisional as they do not include all death events that occurred in the reference period, and the observed excess mortality may be understated as a result. This is particularly true for weeks occurring at the end of the period of observation. For 2019, coverage is close to 100% but some deaths may not yet be included if they required additional analysis. Coverage will vary from jurisdiction to jurisdiction based on various factors, including collection methods.

There are a number of ways to measure excess mortality. Following consultation with experts, this analysis takes a conservative approach where the number of people who died in a given period in 2020 is compared to the maximum number of deaths that occurred in the same period over the previous five years. For example, the number of deaths in Week 1 of 2020 was compared to the number of deaths for that same week in each of the previous five years. The week with the maximum number of deaths in the five years prior to 2020 was the maximum value used for comparison. Further analysis based on other approaches, such as comparing with five-year averages or by age and sex, is also possible with the data released today. As more data become available, such as information on the causes of death, Statistics Canada will continue to enhance its understanding of excess deaths.

The number of deaths in Canada related to COVID-19 as of April 30 comes from the Public Health Agency of Canada's COVID-19 Outbreak Update (consulted June 12). For the most recent information, please refer to the [Public Health Agency of Canada's website](#).

The week used here is as defined in several epidemiological studies, including those of the U.S. Centers for Disease Control and Prevention (CDC). CDC weeks start on a Sunday and end on a Saturday. They are numbered sequentially from 1 to 52, or 53 depending on the year. The first CDC week in a year ends on the first Saturday of January, provided it has at least four days in that calendar year. The first CDC week of a year may include a few days from the previous calendar year. Conversely, the first few days of a calendar year may be included in the last CDC week of the previous year. Since CDC weeks can overlap two months, they do not perfectly recreate calendar months or years.

Canada's national vital statistics system is a complex and decentralized system. It is based on collaboration between provincial and territorial vital statistics registrars and the federal government's representative, Statistics Canada. Civil registration of births, deaths, stillbirths and marriages is the responsibility of the provinces and territories. Each provincial and territorial registrar operates under its own provincial or territorial Vital Statistics Act. Statistics Canada is collaborating with provincial and territorial vital statistics offices to ensure they are all able to provide timely death data within the context of COVID-19, specifically on a weekly basis.

**Table 1**  
**Weekly statistics on deaths in Quebec, for the January-to-April period**

	2020	2015 to 2019		2020
	number of deaths	average number of deaths over the five-year period	highest weekly number of deaths in the five-year period	number of deaths due to COVID-19
<b>Weeks (ending on the day indicated)</b>				
January 4	1,408	1,481.6	1,646	0
January 11	1,448	1,472.2	1,660	0
January 18	1,401	1,481.8	1,686	0
January 25	1,414	1,452.2	1,595	0
February 1	1,361	1,409.6	1,596	0
February 8	1,411	1,410.2	1,503	0
February 15	1,300	1,402.6	1,505	0
February 22	1,279	1,391.4	1,501	0
February 29	1,381	1,388.4	1,449	0
March 7	1,288	1,384.6	1,431	0
March 14	1,257	1,342.2	1,373	0
March 21	1,264	1,332.0	1,372	4
March 28	1,358	1,317.6	1,356	18
April 4	1,398	1,274.8	1,339	53
April 11	1,587	1,315.6	1,367	214
April 18	1,572	1,274.0	1,331	516
April 25	1,737	1,253.8	1,331	641
May 2	1,636	1,259.4	1,328	690

Source(s): Table [13-10-0783-01](#).

**Table 2**  
**Weekly statistics on deaths in Alberta, for the January-to-April period**

	2020	2015 to 2019		2020
	number of deaths	average number of deaths over the five-year period	highest weekly number of deaths in the five-year period	number of deaths due to COVID-19
<b>Weeks (ending on the day indicated)</b>				
January 4	542	531.2	630	0
January 11	573	538.2	576	0
January 18	555	551.0	602	0
January 25	606	522.4	548	0
February 1	536	510.8	546	0
February 8	553	500.0	525	0
February 15	516	506.6	549	0
February 22	491	508.4	562	0
February 29	525	487.2	499	0
March 7	549	495.2	536	0
March 14	565	491.0	524	0
March 21	556	495.2	511	1
March 28	561	464.4	483	1
April 4	558	486.0	516	16
April 11	560	479.2	514	22
April 18	518	496.8	534	11
April 25	546	485.6	511	22
May 2	546	483.8	503	21

Source(s): Table [13-10-0783-01](#).

**Table 3**  
**Weekly statistics on deaths in British Columbia, for the January-to-April period**

	2020	2015 to 2019		2020
	number of deaths	average number of deaths over the five-year period	highest weekly number of deaths in the five-year period	number of deaths due to COVID-19
<b>Weeks (ending on the day indicated)</b>				
January 4	799	834.4	893	0
January 11	823	823.4	924	0
January 18	817	816.6	954	0
January 25	865	795.0	905	0
February 1	776	767.4	836	0
February 8	767	763.8	858	0
February 15	727	745.0	819	0
February 22	785	762.8	811	0
February 29	786	749.0	811	0
March 7	739	772.8	826	0
March 14	752	752.0	814	1
March 21	891	735.8	798	9
March 28	872	737.4	818	6
April 4	828	724.2	779	22
April 11	813	721.4	768	20
April 18	807	715.6	755	20
April 25	764	719.0	757	22
May 2	739	714.2	765	14

Source(s): Table [13-10-0783-01](#).

**Available tables:** [13-10-0768-01](#) and [13-10-0783-01](#).

**Definitions, data sources and methods:** survey number [3233](#).

For more information, or to enquire about the concepts, methods or data quality of this release, contact us (toll-free 1-800-263-1136; 514-283-8300; [STATCAN.infostats-infostats.STATCAN@canada.ca](mailto:STATCAN.infostats-infostats.STATCAN@canada.ca)) or Media Relations (613-951-4636; [STATCAN.mediahotline-ligneinfomedias.STATCAN@canada.ca](mailto:STATCAN.mediahotline-ligneinfomedias.STATCAN@canada.ca)).