

# Provisional death counts and excess mortality, January 2020 to October 2021

Released at 8:30 a.m. Eastern time in *The Daily*, Monday, January 10, 2022

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Canada finds itself again in the midst of a COVID-19 surge with the emergence of the Omicron variant, and most provinces and territories are reporting infections in record numbers. In its commitment to keep Canadians informed of the effects of the pandemic, Statistics Canada today is releasing a new and updated provisional dataset from the Canadian Vital Statistics Death Database, covering the period from January 1, 2020 to November 6, 2021. The first case of the Omicron variant in Canada was reported at the end of November 2021. Statistics Canada will update, on a regular basis, data on excess deaths, causes of death and comorbidities as these data become available, in order to keep Canadians informed as the emergence of this new COVID-19 variant and the rollout of COVID-19 vaccines continue to influence the course of the pandemic in Canada and worldwide.

To understand both the direct and indirect consequences of the pandemic, it is important to measure excess mortality, which occurs when there are more deaths than expected in a given period. It should be noted that, even without a pandemic, there is always some year-to-year variation in the number of people who die in a given week. This means that the number of expected deaths should fall within a certain range of values. There is evidence of excess mortality when weekly deaths are consistently higher than the expected number, but especially when they exceed the range of what is expected over several consecutive weeks.

Based on the provisional data released today, an estimated 27,585 excess deaths were reported in Canada from March 2020 to the beginning of October 2021—6.3% more deaths than what would be expected were there no pandemic—after accounting for changes in the population, such as aging. Over this same period, 26,750 deaths occurred that were directly attributed to COVID-19.

## Excess mortality in early fall observed in Alberta and British Columbia

Similar to what was observed the previous year, from the start of August and into the fall of 2021, the overall number of deaths in Canada rose and significant excess mortality was observed nationally. From the first week of August to the last week of September, there were 2,829 excess deaths observed in Canada, or 6.0% more deaths than expected. This aligned with an increase in deaths directly attributed to COVID-19 through late summer and early fall. So far, there have been 810 reported deaths caused by COVID-19 over the same period.

This more recent period of national excess mortality was largely driven by Canada's westernmost provinces, Alberta and British Columbia. In Alberta, 1,570, or 21.8%, more deaths than expected were reported from the beginning of August to the end of October. Similarly, British Columbia saw an excess of 2,145 deaths, or 21.7%, over this same period.

The excess mortality observed in the two westernmost provinces is seen in both sexes and all age groups to differing degrees, though predominantly among those under the age of 85. Each province also saw an increase in the number of deaths attributed to COVID-19 during this time period. According to the provisional data, from the beginning of August to the end of October, Alberta and British Columbia saw, respectively, 335 and 430 deaths attributed to COVID-19 reported so far. At the same time, the coroner's or medical examiner's service in each province reported record number of deaths attributed to drug overdoses in 2020, and evidence presented by both investigative bodies suggests that this number will be surpassed in 2021.

Users are advised to exercise caution when using these provisional datasets. The data are provisional because they do not reflect all the deaths that occurred over that period. Certain deaths investigated by coroners or medical examiners often require lengthy investigations. As a result, it can take longer to report cause-of-death information for investigated deaths to Statistics Canada. Because of these reporting delays, the provisional data would underrepresent the true number of deaths attributed to certain causes, including suicides, during that period. More comprehensive data on causes of death will be available with the annual release of preliminary data covering the 2020 reference year, scheduled for January 24, 2022.

## Note to readers

The data released today are provisional, as they are not based on all the deaths that occurred during the reference period because of reporting delays, and because they do not include Yukon. Provisional death counts are based on what is reported to Statistics Canada by provincial and territorial vital statistics registries. Provisional death estimates have been adjusted to account for incomplete data, where possible. The numbers of excess deaths discussed in this analysis refer to provisional estimates. Information on the methods used can be found in the "Definitions, data sources and methods" section of the [Canadian Vital Statistics Death Database](#).

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

There are a number of ways to measure excess mortality, and each has its strengths and weaknesses. There are also a number of challenges with measuring excess mortality, most importantly properly estimating the number of expected deaths that would occur in a non-COVID-19 context as a basis for comparison with current death counts. Significant variations may be observed from year to year in the annual death counts, particularly in the least-populated provinces and the territories. Moreover, yearly death counts may be affected by changes in the composition of the population, in regard to age more particularly, and changes in mortality rates (e.g., reduced mortality). In the Canadian context, with an aging and growing population, the number of deaths has been steadily increasing in recent years and so a higher number of deaths in 2020 and 2021 would be expected regardless of COVID-19.

A second challenge is the difficulty of collecting timely death counts. Taking these considerations into account, the method chosen by Statistics Canada to estimate expected deaths—which has also been adopted by organizations in several other countries, including the US Centers for Disease Control and Prevention—is adapted from an infectious disease detection algorithm that has been largely utilized in the context of mortality surveillance in recent years.

The tabulation of causes of death is based on the underlying cause of death, which is defined by the World Health Organization as the disease or injury that initiated the train of events leading directly to death, or as the circumstances of the accident or violence that produced the fatal injury. The underlying cause of death is selected from the causes and conditions listed on the medical certificate of cause of death completed by a medical professional, medical examiner or coroner. More information on causes of death, including the certification and classification of COVID-19 deaths, can be found in the study "[COVID-19 death comorbidities in Canada](#)."

More information on excess mortality during the COVID-19 pandemic in Canada is available in the article "[Excess mortality in Canada during the COVID-19 pandemic](#)."

References to the period from March 2020 to the beginning of October 2021 refer to the period from the week ending March 28, 2020, to the week ending October 2, 2021.

References to the period from the beginning of August 2021 to the end of September 2021 refer to the period from the week ending August 7, 2021, to the week ending October 2, 2021.

References to the period from the beginning of August 2021 to the end of October 2021 refer to the period from the week ending August 7, 2021, to the week ending November 6, 2021.

**Available tables:** [13-10-0768-01](#), [13-10-0783-01](#), [13-10-0784-01](#), [13-10-0792-01](#) and [13-10-0810-01](#).

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

The portal [Life expectancy and deaths statistics](#), presenting information related to death in Canada, was updated today. It features a [Provisional deaths and excess mortality in Canada dashboard](#), which brings recent insights into the trends in excess mortality together with interactive data visualization tools.

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; [infostats@statcan.gc.ca](mailto:infostats@statcan.gc.ca)) or Media Relations ([statcan.mediahotline-ligneinformedias.statcan@statcan.gc.ca](mailto:statcan.mediahotline-ligneinformedias.statcan@statcan.gc.ca)).