

Provisional death counts and excess mortality, January 2020 to August 2021

Released at 8:30 a.m. Eastern time in *The Daily*, Monday, November 8, 2021

COVID-19 continues to affect communities and families in Canada. Beyond deaths attributed to the disease itself, the pandemic could also have indirect consequences that increase or decrease the number of deaths as a result of various factors, including delayed medical procedures; increased substance use; or declines in deaths attributable to other causes, such as influenza.

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.

From March 2020 to the beginning of July 2021, there were an estimated 19,488 excess deaths in Canada, or 5.2% 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, 25,465 deaths were directly attributed to COVID-19.

While COVID-19 claimed the lives of 6,255 Canadians from the end of January 2021 to the beginning of July 2021, significant excess mortality was not observed nationally during this time. However, some provinces, including Ontario, Saskatchewan, Alberta and British Columbia, experienced periods of excess mortality, generally coinciding with a higher number of deaths attributable to COVID-19 over the same period. In addition, British Columbia and Alberta saw periods of higher-than-expected mortality at the end of June 2021 and into July, when a heat wave gripped the two provinces.

As part of Statistics Canada's commitment to providing timely and relevant information on COVID-19 and its impact on Canadians, a new updated provisional dataset from the Canadian Vital Statistics Death Database, covering the period from January 2020 to August 2021, was released today. Updates were also made to the provisional death estimates, which have been adjusted, where possible, to account for the incomplete nature of the counts. The provisional estimates will continue to be revised in future releases, as more information is reported by provincial and territorial vital statistics agencies, and as estimation methods continue to be enhanced.

Today, Statistics Canada also launched a new portal, [Life expectancy and deaths statistics](#), with all the information collected and compiled by the agency on death in Canada—including the causes of death, life expectancy, cancer survival, excess mortality and other related topics—provided in one convenient location. The portal features a [Provisional deaths and excess mortality in Canada dashboard](#), which includes recent insights into trends in excess mortality as well as interactive data visualization tools.

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](#)." Detailed information on the causes of death in Canada for 2020 will be released on January 24, 2022.

References to the period from March 2020 to the beginning of July 2021 refer to the period from the week ending March 28, 2020, to the week ending July 10, 2021.

References to the period from the end of January 2021 to the beginning of July 2021 refer to the period from the week ending January 30, 2021, to the week ending July 10, 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](#).

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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) or Media Relations (613-951-4636; STATCAN.mediahotline-ligneinfomedias.STATCAN@canada.ca).