

Provisional death counts and excess mortality, January 2021 to December 2022

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In its commitment to keep Canadians informed of the consequences of the COVID-19 pandemic, Statistics Canada is releasing today new and updated provisional data on deaths, excess mortality and the causes of death from the Canadian Vital Statistics Death Database. To understand the direct and indirect effects 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 deaths in a given week. As such, 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.

According to the provisional data, Canada saw a period of significant excess deaths at the start of 2022. Over the eight-week period ending February 26, 2022, there were 8,595 excess deaths, or 17.4% more deaths than expected. While this corresponded with a period of increased COVID-19 activity—more than 6,590 deaths were directly attributed to the disease—it suggests that other factors might be contributing to the excess. For example, a record number of accidental poisonings (including drug overdoses) were reported in 2021.

Over these same eight weeks, in which Canada had its deadliest week of the pandemic so far, most provinces experienced periods of significant excess mortality including Newfoundland and Labrador, Nova Scotia, New Brunswick, Quebec, Ontario, Saskatchewan, Alberta, and British Columbia. This differed from previous periods of excess mortality, which were generally characterized by greater than expected mortality in the four largest provinces.

Nationally, the number of deaths fell within the range of what would be expected had there been no pandemic throughout March 2022. Starting in mid-April, however, a period of significant excess mortality was once again observed until early June. Over the course of these eight weeks, there were 3,828 (or 8.7%) more deaths than expected and at least 2,430 deaths attributed to COVID-19. The provinces that experienced this excess were Alberta, British Columbia and Saskatchewan.

Higher than expected mortality was observed again throughout much of the summer of 2022 and into early fall. At the national level, an estimated, 7,511 excess deaths (9.5% more than expected) were observed over the 15-week period ending October 8, 2022. And while the cause of death information is still quite incomplete, this most recent period (July to October 2022) of excess deaths seems to coincide with a period of increased COVID-19 activity, with at least 2,450 deaths attributed to the disease to date. Newfoundland and Labrador, Nova Scotia, Quebec, Saskatchewan, Alberta and British Columbia all experienced consecutive weeks of significant excess mortality during this period.

While all age groups experienced a greater than expected number of deaths in the periods of excess mortality in the spring and summer of 2022, younger Canadians (those under the age of 45) seem to have been affected disproportionately, accounting for under 6% of the deaths observed during these periods, but about 9% of the excess deaths.

Statistics Canada will continue to provide monthly insights on excess mortality and the causes of death using the most up-to-date information received from the provinces and territories.



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 those of 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 released today 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 several ways to measure excess mortality, and each has its strengths and weaknesses. There are also several challenges that come 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, especially in the least-populated provinces and the territories. Moreover, yearly death counts may be affected by changes in the composition of the population, particularly regarding age 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 increasing steadily in recent years, so a higher number of deaths in 2021 and 2022 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 used in the context of mortality surveillance in recent years.

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](#)."

Starting in September 2022, Quebec implemented electronic death registration, leading to timelier reporting of deaths in the province. While Statistics Canada has been adjusting the number of weekly deaths for reporting delays, the magnitude of these adjustments may no longer be applicable in Quebec.

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 [Life expectancy and deaths statistics](#) portal, presenting information related to death in Canada, was updated today. It features the [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) or Media Relations (statcan.mediahotline-ligneinfomedias.statcan@statcan.gc.ca).