

Study: Deaths involving sepsis in Canada, 2000 to 2011

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In 2011, 1 in 18 deaths in Canada involved sepsis, a serious condition where the immune system overreacts to an infection and can lead to multiple organ failure and death.

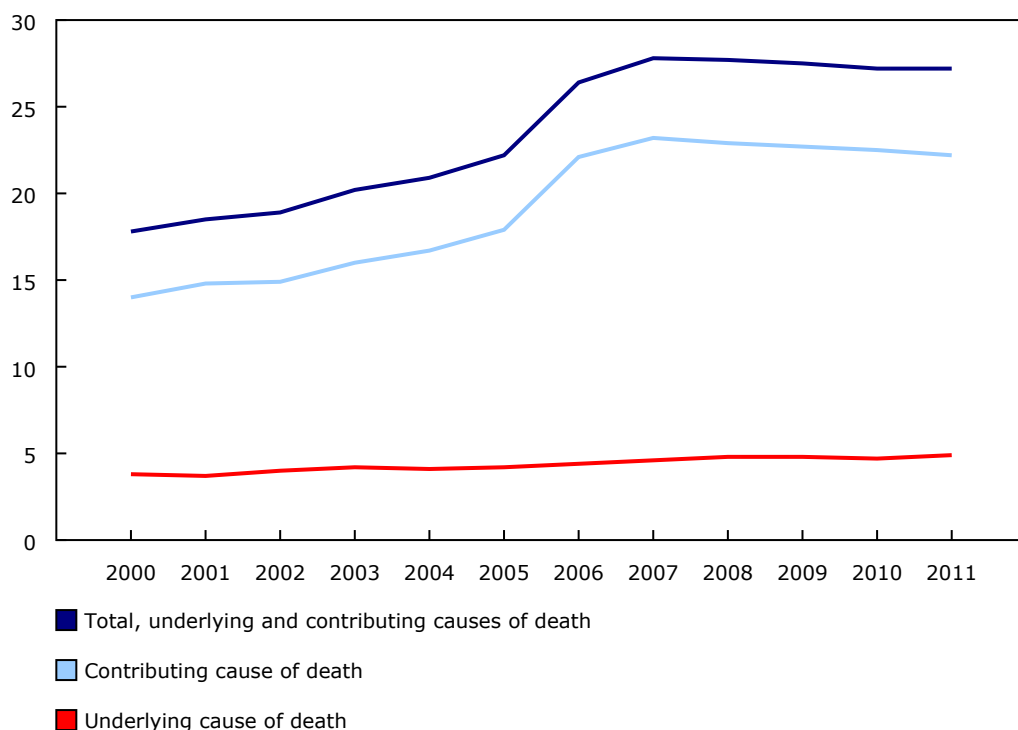
Sepsis can either be an underlying cause of death or a contributing cause. Underlying causes are the disease or injury that initiated the series of events that lead to the death. Contributing causes are other diseases or injuries that played a part in the death but were not recorded as the underlying cause of death.

This study marks the first time national Canadian estimates of sepsis-associated mortality are available, that is, deaths where sepsis was either an underlying or contributing cause of death. Previous national estimates of sepsis mortality, using administrative data sources, did not include deaths where sepsis was a contributing cause.

The age-standardized sepsis-associated mortality rate (underlying and contributing causes combined) for 2011 was 27.5 per 100,000 people. The rate increased by 4.1% annually from 2000 to 2004 and by 10.6% annually from 2004 to 2007. These increases were mostly driven by an increase in sepsis being recorded as a contributing cause of death on death certificates. The increase in the rate of deaths where sepsis was a contributing cause was almost three times higher than the increase in the rate of deaths where sepsis was the underlying cause. From 2007 to 2011, there was no significant change in the rate of sepsis-associated mortality.

Chart 1
Sepsis-associated mortality, by type of cause of death, age-standardized rates

deaths per 100,000 people



Source(s): Vital Statistics – Death Database ([3233](#)).



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In 2011, males (32 per 100,000) had a higher age-standardized rate of sepsis-associated mortality than females (24 per 100,000). Recently, however, the gap between the sexes has started to close. From 2007 to 2011, the sepsis-associated mortality rate among males decreased significantly, declining by 1.7% per year, while there was no significant change in the death rate for females during these years. As a result, the difference in the rates between males and females declined, from a gap of 10.5 deaths per 100,000 in 2007 to 7.9 per 100,000 in 2011.

From 2009 to 2011, 53.4% of deaths from infectious diseases involved sepsis. Sepsis contributed to almost one-quarter of all deaths from bacterial infections of the intestines (such as, e.coli and c.difficile), and to over 10% of all deaths from tuberculosis, viral infections involving skin lesions (such as, chicken pox and herpes zoster), human immunodeficiency virus (HIV) and viral hepatitis.

Note to readers

To allow more valid comparisons over time and between populations, age-standardized rates are used to control for differences in population age structure. The age-standardized rate is the rate that would occur if the population of interest had the same age structure as the standard population. The standard population used in this release is the July 1, 1991, Canadian population.

The statistics presented in this release are from the multiple-causes-of-death data, produced as part of Statistics Canada's [Vital Statistics – Death Database](#). This dataset includes the underlying and contributing causes of death for deaths that occurred after 1999. The Vital Statistics – Death Database includes demographic and cause of death information for all deaths recorded in all provincial and territorial vital statistics registries in Canada. Prior to 2010, some data were collected on Canadian residents who died in some American states; these deaths were excluded from this analysis. Starting with the 2010 reference year, data on Canadian residents who died in American states are no longer collected.

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

The article "[Deaths involving sepsis in Canada](#)" in *Health at a Glance* ([82-624-X](#)), is now available from the *Browse by key resource* module of our website under *Publications*.

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).