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COVID-19 death counts 'substantial underestimation' of actual deaths for some Italian regions

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Official covid-19 death counts are likely to be a "substantial underestimation" of the actual number of deaths from the disease, at least for some Italian regions, concludes a study published by *The BMJ* today.

The findings, from an Italian city severely affected by the covid-19 pandemic, show that more residents died in March 2020 than in the entire previous year or in any single year since 2012, but that only about half of the deaths occurring during the recent outbreak were reported as confirmed covid-19 deaths.

The researchers say counting deaths from all causes (known as "all cause mortality") would yield a more complete picture of the pandemic's effects on population health.

The global spread of covid-19 has severely affected the Lombardy region of northern Italy. But although the reported death rates from covid-19 are high, the real figures could be even higher according to all cause mortality data.

In an effort to accurately determine deaths from covid-19, researchers analysed the change in all cause mortality over time in Nembro, a small city with a relatively stable population of around 11,500 in the province of Bergamo, Lombardy, northern Italy.

Their findings are based on monthly all cause mortality data between January 2012 and 11 April 2020, the number of confirmed deaths from covid-19 to 11 April 2020, and the weekly absolute number of deaths between 1 January and 4 April across recent years by age group and sex.

Monthly all cause mortality between January 2012 and February 2020 fluctuated around 10 per 1000 person years, with a maximum of 21.5 per 1000 person years.

In March 2020, monthly all cause mortality reached a peak of 154.4 per 1000 person years—for comparison, the corresponding rate for the same month in 2019 was only 14.3 per 1000 person years. For the first 11 days in April, this rate decreased to 23 per 1000 person years.

Of the 161 people who died between 23 February and 4 April 2020, none were aged 14 years or younger and 14 (8.7%) were aged between 15 and 64 years.

The observed increase in all cause deaths was largely driven by the increase in deaths among older people (65 years and older), especially men. Among those aged 75 years and older, 47 deaths were observed during the week of 8 March alone, 33 of which were in men.

This is a descriptive study, so it cannot establish a causal relationship, and the researchers acknowledge that some of the data might be provisional.

The authors point out that the steep increase in all cause mortality was even more pronounced after further analysis to test the robustness of the results, and their findings back up results from a recent larger report from more than 1000 Italian cities.

As such, they say that across Italian cities, all cause mortality has notably

increased because of the covid-19 pandemic, "but this increase is not being completely captured by officially reported statistics on confirmed covid-19 deaths."

They point to several factors that might have contributed to this discrepancy, such as shortages of tests to confirm cause of death and patients dying of indirect consequences of covid-19, such as the healthcare system crisis.

"These results suggest that the full implications of the covid-19 pandemic can only be completely understood if, in addition to confirmed deaths related to covid-19, consideration is also given to all cause mortality in a given region and time frame," they conclude.

More information: Use of all cause mortality to quantify the consequences effect of covid-19 in Nembro, Lombardy: descriptive study, *The BMJ* (2020). DOI: 10.1136/bmj.m1835

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