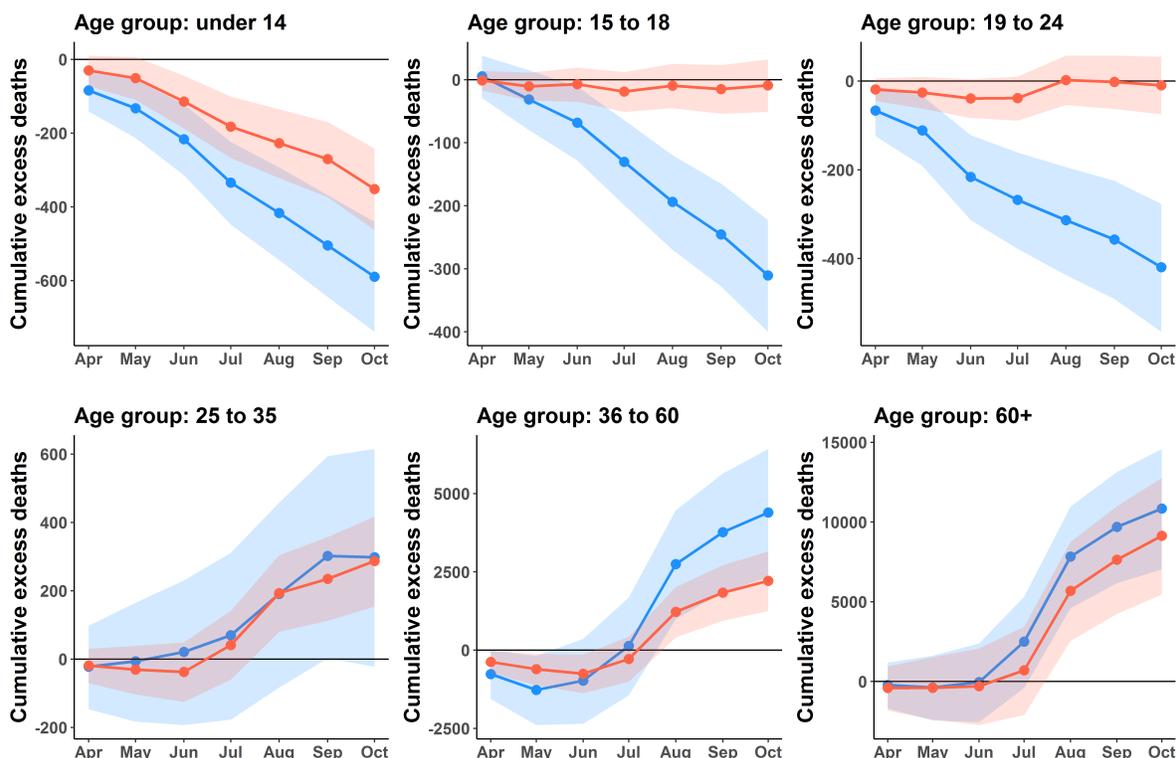


Estimation of Excess All-Cause Mortality Due to COVID-19 in Thailand

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Rationale and objective: Thailand has experienced the most prominent COVID-19 outbreak in 2021, resulting in a new record for COVID-19 cases and deaths. To assess the influence of the COVID-19 outbreak on mortality, we estimated excess all-cause and pneumonia mortality in Thailand during the COVID-19 outbreak from April to October 2021.

Summary: We used mortality from the previous 5 years to estimate the baseline number of deaths using generalized linear mixed models. The models were adjusted for seasonality and demographics. We found that, during the outbreak in 2021, there was a significant rise in excess fatalities, especially in the older age groups. The estimated cumulative excess death was 14.3% (95% CI: 8.6–18.8%) higher than the baseline. The results also showed that the excess deaths in males were higher than in females by approximately 26.3%. The excess deaths directly caused by the COVID-19 infections accounted for approximately 75.0% of the all-cause excess deaths. Furthermore, excess pneumonia deaths were also found to be 26.2% (95% CI: 4.8–46.0%) above baseline.



Graphical summary: Cumulative excess deaths by gender and age groups. Blue and orange lines represent men and women, respectively. Shaded areas indicate the 95% prediction intervals.

Outcome: Our findings showed that the COVID-19 outbreak in Thailand had a huge impact on mortality. During the outbreak in 2021, there was a significant rise in excess fatalities, especially in the older age groups. The increase in mortality was found to be higher in men than in women. It is worth stressing that up-to-date and reliable mortality data are essential to assess the impact of the COVID-19 pandemic. Our modeling results could potentially provide insights into the COVID-19 outbreaks and provide a guide for outbreak control and intervention.

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Related SDGs goal: 3. Good health and well-being.

Related publications:

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