Availability of national data for COVID-19 excess mortality estimates

William Msemburi, PhD
Technical Officer

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Reported COVID-19 death numbers

Why excess mortality?

Data availability to estimate excess
Overview of reported COVID-19 numbers

- As of August 22 2022, 593 million COVID-19 cases and 6.4 million deaths have been reported to WHO,
- Deaths concentrated in three regions, 44% Americas, 32% Europe and 13% South-East Asia (~89%)
- Upper middle income and high-income economy deaths ~83% of total (44% and 39%, respectively)

Data source: https://covid19.who.int/ accessed on August 10 2022
Reported numbers do not provide a complete picture

➢ Reported COVID-19 deaths under-estimate lives lost due to pandemic:
  • miss unreported COVID deaths due to variations in testing access, diagnostic capacity and how COVID-19 deaths are defined,
  • miss increases in other deaths linked to conditions prevailing since the pandemic began, e.g., overwhelmed health systems/patients avoiding care.

➢ Excess mortality is crucial for comprehensively quantifying impact:
  • defined as change in all-cause mortality (ACM) for specified location and time period during a crisis, compared to expected,
  • encompasses deaths from all causes (direct, indirect and other), gives measure of ‘whole system’ impact.

➢ Timely, reliable and complete data for estimating excess are limited:
  • only a subset of countries have complete electronic medical certification and fully functioning CRVs,
  • observed lag of 12-18 months after the end of a calendar for countries to submit COD data to WHO,
  • Attributes such as sex and age are missing from data from many countries,
What data are required to estimate excess deaths?

Sources: COVID-19 (https://covid19.who.int/), WHO draft estimates of excess mortality
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Other data challenges

➢ Age- and sex-specific all-cause data:
  • Even fewer countries had all-cause data disaggregated by age and sex for estimating excess mortality in 2020 (~80) and 2021 (~55),
  • Needed to standardize comparisons and extend impact to other measures such as life expectancy,
  • Concerns when adjusting for under-reporting by age/sex

➢ For many countries we have built a covariate model to predict excess:
  • Using covariates such as the reported COVID-19, test positivity, income grouping and containment measures – some quality and consistency concerns.
  • Limited to extrapolating effects estimated in countries typically different to the ones for which we are making inference.

➢ For a few countries we use the available subnational data:
  • Assuming proportional relationships observed in past persist into the pandemic and apply multinomial models
THANK YOU