COVID-19 mortality assessment
The use of surveys and censuses to fill adult mortality data gaps

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Background: data sources on adult mortality
The pre-pandemic landscape

▶ Many LMICs lack sufficiently complete civil registration systems.

▶ Data on mortality levels and trends are collected during:

1. Periodic household surveys
2. Decennial censuses

Figure 1: Coverage of death registration in 2021, source: UNSD estimates
Data collection methods: recent household deaths

- Usually covers deaths of past 12 months
- Elicits age at death, possibly date of death
- Circumstances of the death

Figure 2: Mortality questionnaire of the 2021 Ghana census
Data collection methods: orphanhood

- Routinely included in censuses and surveys
- Requires indirect methods to generate mortality estimates
- Questions often only asked about parents of 0-17 years old

Figure 3: Orphanhood questions in the 2021 Ghana census
Data collection methods: siblings’ survival

- Included in DHS and growing number of other surveys
- Yields direct estimates of $45q_{15}$ and other indicators
- Primary source of maternal mortality data in many LMICs.

Figure 4: Maternal mortality section of the 2016 Ethiopia DHS
Pandemic-associated challenges
Limited data sources

- Data gaps remain in CRVS, possibly exacerbated by:
  - COVID-related restrictions
  - Fear and stigma.

- Epidemiological surveillance systems are also incomplete
  - Limited testing for SARS-CoV-2 in many LMICs
  - Do not measure the indirect effects of COVID-19 on mortality

- Rapid mortality surveillance systems only established in select cities/areas.
Surveys and censuses

- At same time, censuses and household surveys often postponed or cancelled since beginning of pandemic.

- Questionnaires and methodologies not adapted to measuring recent excess mortality
  - Reference periods are often short
  - Age groups most affected (e.g., older age groups) under-sampled
  - Limited sample size
  - Clustering of mortality in households and families
Technical advisory group on COVID-19 mortality assessment

- an advisory body of WHO, UN DESA and UN Member States

- Goal is to obtain accurate estimates of the number of deaths attributable to the pandemic

- Several working groups:
  - Global mortality estimates
  - Use of surveys and censuses to fill data gaps
  - Death registration
  - Summary metrics
  - Inequalities in COVID-19 mortality
UN/WHO working group

- Focus on:
  - Reviewing available survey/census methods for mortality data collection
  - Suggesting modifications/additions to capture recent excess mortality
  - Evaluating innovative methods and instruments

- Broad membership including academics, NSOs and members of UN system.
Emerging recommendations
Censuses

- Expanding the recall period for household deaths
  - Would allow covering entire pandemic period

- Collecting more detailed data on dates of deaths (e.g., month)
  - Would allow controlling for seasonality in measuring excess mortality.

- Expanding data collection on parental survival:
  - Collecting age at, and dates of, reported parental deaths to allow direct estimates
  - Expanding to all residents to generate data on survival at older ages
Surveys

- Similar modifications re: survey instruments
  - Strengthen data on HH deaths if collected
  - Include detailed assessment of parental survival

- Review sampling approaches: adopt sample sizes large enough to allow detection of excess mortality in recent periods

- Consider nested follow-up studies, e.g., verbal and social autopsies.
Cross-cutting

- Include direct question re: status of reported deaths in CRVS
- Allows documenting gender and other gaps in CRVS
- Facilitates adjustments/corrections of other data sources.

Figure 5: From Haider et al, (2021): completeness of death registration in Matlab
Innovations
Perspectives and new opportunities

- New questionnaires (e.g., networks)
- New modes of data collection (e.g., mobile phones)
- Complementary data sources (web sources, social media)

Figure 6: From RAMMPS project: noninferiority trial of the collection of mortality data by mobile phone

Figure 2: Differences in study outcomes between treatment and control groups