Introduction to completeness and coverage

Workshop on data analysis and report writing for civil registration based vital statistics

Nadi, Fiji
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Outline of presentation

• Difference between coverage and completeness

• Estimating completeness of civil registration

• Data Sources

• Timing: delayed registration

• Impact of COVID-19
Guidelines for estimating the completeness of civil registration of vital events

Guidelines were developed by ESCAP to support national statistical offices, ministries of health, and other relevant government and non-government agencies to better estimate the completeness of CRVS, in particular, the completeness of birth and death registration.
Difference between coverage and completeness

• These terms are often used synonymously, but there is an important difference:

  ➢ **Coverage** – a spatial metric to indicate the geographical ‘reach’ of CRVS systems

  ➢ **Completeness** – the proportion of vital events captured by the CRVS system

    ➢ **Content completeness** - how complete and reliable (by variable) is the unit record data (for the population covered), i.e. are there missing variables (age, sex, dates)?
Coverage

• A spatial metric to indicate the geographical ‘reach’ of a CRVS system

• E.g. Coverage of 80% indicates that residents in 80% of the country are able to access registration facilities

Coverage (%) = \frac{Population \text{ in administrative areas served by the CRVS system}}{Total \text{ population}} \times 100
Completeness

• The proportion of vital events registered in the CRVS system

  • E.g. If 900,000 births are registered, but the best estimate of the ‘true/observed’ number of births is 1,000,000, then estimated completeness is 90%

Completeness (%) = \( \frac{\text{Number of events registered}}{\text{Total number of events expected/observed}} \times 100 \)
If 550,000 births are registered, but the best estimate of the ‘true/observed’ number of births is 1,000,000, what is the estimated completeness rate?
Birth registration completeness (February 2021, United Nations Statistics Division)

Note: the boundaries and designations used on this map do not imply official endorsement or acceptance by the United Nations
Death registration completeness (February 2021, United Nations Statistics Division)

Note: the boundaries and designations used on this map do not imply official endorsement or acceptance by the United Nations
Importance of estimating registration completeness

• Computing registration completeness allows us to monitor the performance of the CRVS system:
  • How large is the gap to universal registration?
  • Is this gap diminishing over time?

• If possible, it can also be disaggregated by several variables to get a better sense of what needs improvement in the system?
  • Is coverage of birth registration the same for boys and girls?
  • Do some geographical areas/islands have lower registration rates?
Estimating completeness of civil registration

**Numerator**
Registered births/deaths from the Civil Register

**Denominator**
- Births/deaths from HIS
- Census data
- Administrative data (school enrolment, vaccination data)
- Indirect estimation of deaths
- Reverse-survival approaches applied to census data for number of births
- CBR or CDR * Total Population Size
- UNWPP estimates
Timing: delayed registration

- Completeness is usually estimated on a calendar-year basis.
  - Events may be registered outside the stipulated statutory period, but nevertheless, within the calendar year of occurrence.
  - These are classified as ‘late’ registrations

- However, there are two other circumstances in which the number of events registered may be affected when estimating completeness on a calendar-year basis:
  - Events registered in the statutory period, but in the calendar year following the year of occurrence
  - Late registrations in the calendar years following the year of occurrence
Registration delays

• Though not as critical as registration completeness, another key indicator of the performance of the CRVS system is the proportion of events that are registered in-time.
• The **legally stipulated time** is the time allotted by law to the registration of events.

- There usually is a tolerance period during which registrations are considered *late*.
- After this period (usually 1 year), registrations are considered *delayed*.

Analyzing delays can provide insights on issues faced by the registration system.

- The fewer late and delayed registrations, the better!
Impact of COVID-19

• Likely to have an impact on completeness estimates
  • Numerator: direct impact birth and death registration
  • Denominator: does the denominator allow for the effects of COVID-19

• Other impacts: temporary closure of registration offices; lock-downs; overburdening of offices with excess deaths, compromising registration of other vital events