Rapid Mortality Surveillance

Introduction

UNESCAP STATS CAFÉ
15 December 2020

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Presentation Overview

1. Introduction

2. Description of a Rapid Mortality Surveillance System

3. Establishing Baseline Mortality, Excess Mortality Analysis and Data Use
Lack of Testing Leads to Global Uncertainty

- Counting COVID-19 ‘cases’ is fraught
  - Testing usually restricted to clinical settings
  - Many more non-fatal cases than can be confirmed – but how many?
- Counting COVID-19 deaths also complicated and may be delayed
  - Need to implement ICD rules
  - Systems that aren’t fully digitized may take time to produce data
Hospital Data Alone May Miss the Whole Picture

• Misses deaths that occur in the community
  • In many countries this is the norm
  • May be up to 70% of deaths

• This may increase under pandemic conditions
  • Over-stretched health care systems
  • Changes in care seeking behavior

• Need some means to account for these deaths as well
Rapid Surveillance of All Deaths

• Provides awareness of trajectory and distribution of health impacts
• To generate mortality information with speed and simplicity
• To count all deaths by age, sex, place of occurrence
• Avoids measurement ambiguity and delays in attempting to assign cause of death
• Creates ability to use cause of death data where already available to analyze excess mortality
• To leverage existing systems and fill performance gaps in CRVS system

Weekly number of deaths in 2020

Weekly number of deaths

Age group 65 years and above

Age group 0 to 64 years

Source: FSO – Cause of death statistics
Data status: 09.06.2020
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Facility-based reporting

Community-based reporting

Medico-Legal Death Investigation*
* where significant numbers of deaths are reported only through MLDI system

Excess Mortality Analysis

Historical / Baseline Mortality

Daily or Weekly Transmission

Decision Making

Vital Strategies
Additional System Considerations

- Selection of sites as representative as possible
  - Additional sites focused on vulnerable populations

- Five data elements for every death:
  - Date of death
  - Age at death
  - Sex
  - Location of usual residence
  - Place of death (in or outside of health facility)

- Historical source or estimate of baseline mortality
  - Particularly in countries where CRVS is not digitized

- What about cause?
  - Where feasible and will not slow reporting of total mortality
Outputs of Rapid Mortality Surveillance

• **Indicators:**
  - Number of deaths by age, sex, location
  - Death rates by age, sex, location

• **Percent deviation from historic/estimated average deaths by:**
  - Sex
  - Age groups: 0 – 14, 15 – 59, 60+, Total
  - Location of usual residence
  - Place of death (in or outside of a health facility)

*Creates the Ability to See Change from Historical Norms of Mortality*
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Historical Data and Excess Mortality Analysis

*Excess mortality = Reported deaths − Expected deaths*

- Calculating “expected deaths”
  - Ideally 3-5 years of historical mortality data by week, sex, and age categories
  - If no historical baseline data available
    - compare trends over time as implementation occurs
    - estimate mortality rates based upon population projections
- Adjust for admissions data (in facilities) and population data (in communities)
- TOOLS: excess mortality calculator, templates for facility- and community-based data, reference materials
Excess Mortality
Data Use

• Monitor direct and indirect mortality-related impact of event on the population and health care system
• Monitor impact of public health measures and mortality
• Identify specific high-risk groups and disparities in disease-burden
• Expose gaps in disease surveillance

Shared with decision-makers to inform action!
Conclusion

• Real-time mortality surveillance is critical for routinely monitoring public health and in emergencies

• Civil registration and vital statistics systems can be leveraged for real-time mortality surveillance and, where needed, mortality surveillance can be leveraged to strengthen CRVS systems

• Where real-time mortality surveillance is not available, short-term rapid mortality surveillance approaches can be used to establish real-time mortality data

• Rapid mortality surveillance approaches should leverage existing systems

• Real-time mortality surveillance can generate estimates of excess mortality, helps us understand disease transmission and epidemiology, help to identify and mitigate health threats
Resources

• https://www.who.int/publications/i/item/revealing-the-toll-of-covid-19

• Excess Mortality Calculator and Tools
• https://preventepidemics.org/covid19/resources/excess-mortality/