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Section C: Data-Poor Environments

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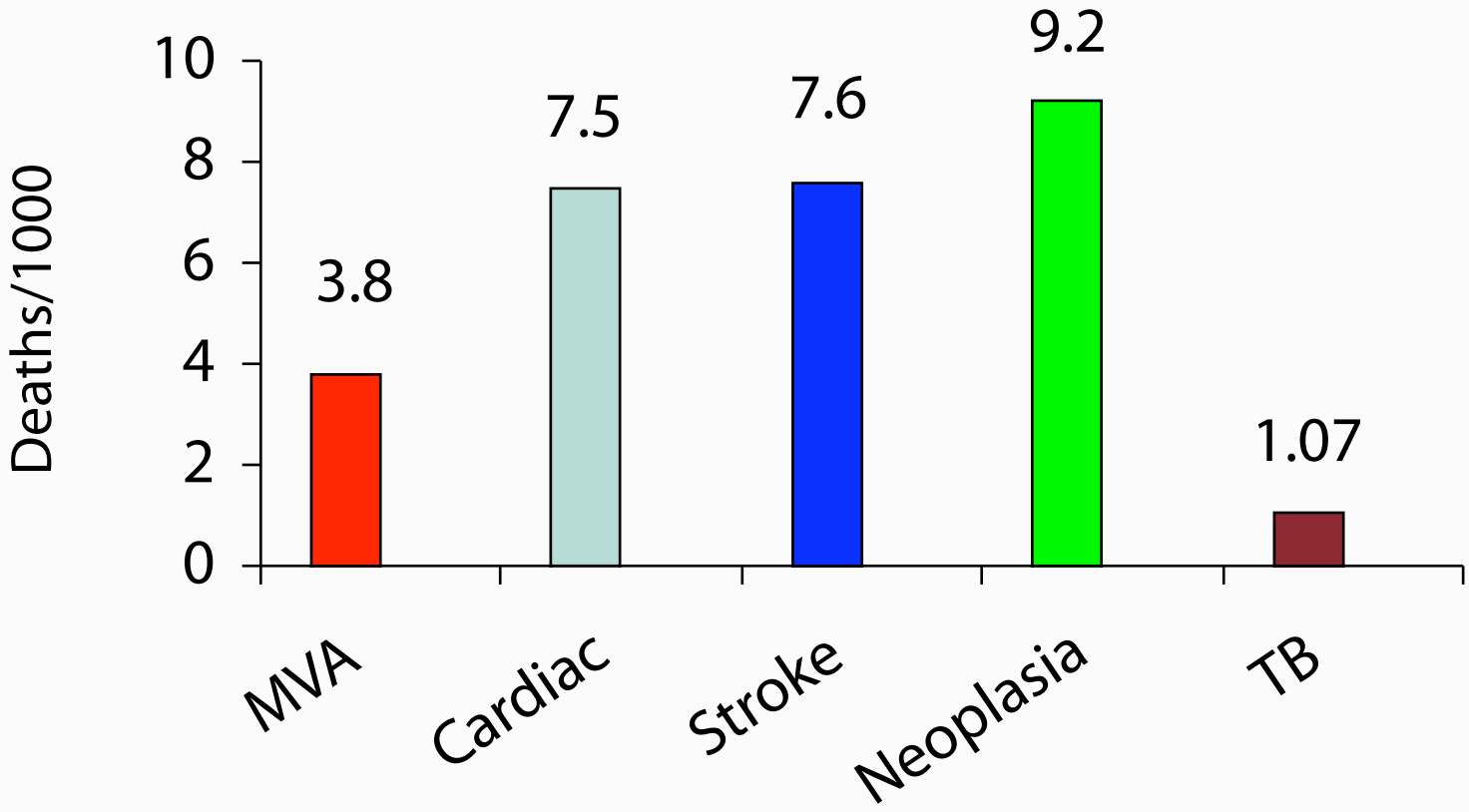
Crude Mortality Rates for Selected Diseases

- Crude mortality rates for selected diseases in Taiwan, 1988



Source: MacKinney, T. (1994). Asia P J Public Health, 7, 10–15.

Data

- In developed countries
  - Sources
    - Vital statistics
    - Hospital discharge summaries
    - Health surveys
  - Accurate
- In developing countries
  - Lack of vital statistics
  - Poor health information system
  - No reliable data on incidence or causes of death
  - True for injuries and other disease conditions

Source: Gaitcher, P. L. (1987). J Safety Res, 191–198.

Injury Mortality Data Problems: Investigation

- Investigation of injury data
  - Involves police, coroner, and pathologists
  - Poor communication
  - Long delays before investigation starts
  - Staff shortages

Source: WHO. (1988).

Injury Mortality Data Problems: Investigation

- Investigation of injury data
  - Inadequate lab tests
  - Lack of transport to remote areas
  - Under-reporting
    - For example, in Egypt, police data reported over 5,000 deaths resulting from MVA in 1987 whereas the MoH data for the same period reported just over 3,000 deaths
    - In 1995, the department of health in Taiwan reported 130% more fatalities from road crashes than the police

Source: WHO. (1988).

Injury Mortality Data Problems: Death Certificates

- Deaths recorded only in hospitals and only if death certificate completed
- Data biased heavily towards urban population (rural usually not recorded)
- Unrecorded deaths tend to bias the already small numerator, while the denominator used is the total population calculated by reasonably accurate census

Source: WHO. (1992).

Injury Mortality Data Problems: Misclassifications

- Injury deaths often attributed to other causes, e.g., cardiorespiratory arrest
- Cause listed as “injury” without provision of details
- Suicides often misclassified as unintentional or intent undetermined; more prevalent in societies averse to suicide
- In countries where state terrorism is widespread, many homicides and violent deaths remain unclassified

Source: (1991). Suic and Life Thr Beh, 21, 113–115.

Injury Mortality Data Problems: Police Reports

- Police reports and mortality
  - Capture only those fatalities with medico-legal significance, e.g, intentional, suspected intentional
  - Inefficiencies, poor communications, informal monetary exchanges—all cause substantial under-reporting of these fatalities
  - However, police data in developing countries should be considered a source of injury fatality information

Injury Mortality Consequences of Data Problems

- Lack of accurate data!
- Not possible to evaluate importance of injuries
- Lack of will to address the issue by politicians
- International comparisons difficult or impossible

Methods for Obtaining Injury Information

- Special surveys
- Community-based surveillance
- Mortality interviews/verbal autopsies
- Police reports
- Newspapers

Community-based Surveys

- Surveys of injury mortality in developing countries

Place	Investigators	Year	Population	Major Finding
Bangladesh	Zimicki	1990	Matlab Demographic Surveillance	Drowning leading cause of death in children
Papua New Guinea	Barrs	1991	Rural pop. 30,000	Injuries 4th leading cause of death, 50% intentional
Egypt	Grubb et al.	1988	Married women age 15–49	Injuries 3rd leading cause of death, 14% of all deaths
Nepal	Thapa	1989	6,300 rural villages	Injuries 4th leading cause of death

Community-based Surveillance—Bangladesh

- Study of the epidemiology of child deaths from drowning
- During 1983–95, drowning caused 10–25% of all deaths in children aged 1–4 years
- Risk increases with age of mother and with the number of children living in family

Source: Ahmad, M. K. et al. (1999). Int J Epid, 28, 306–11.

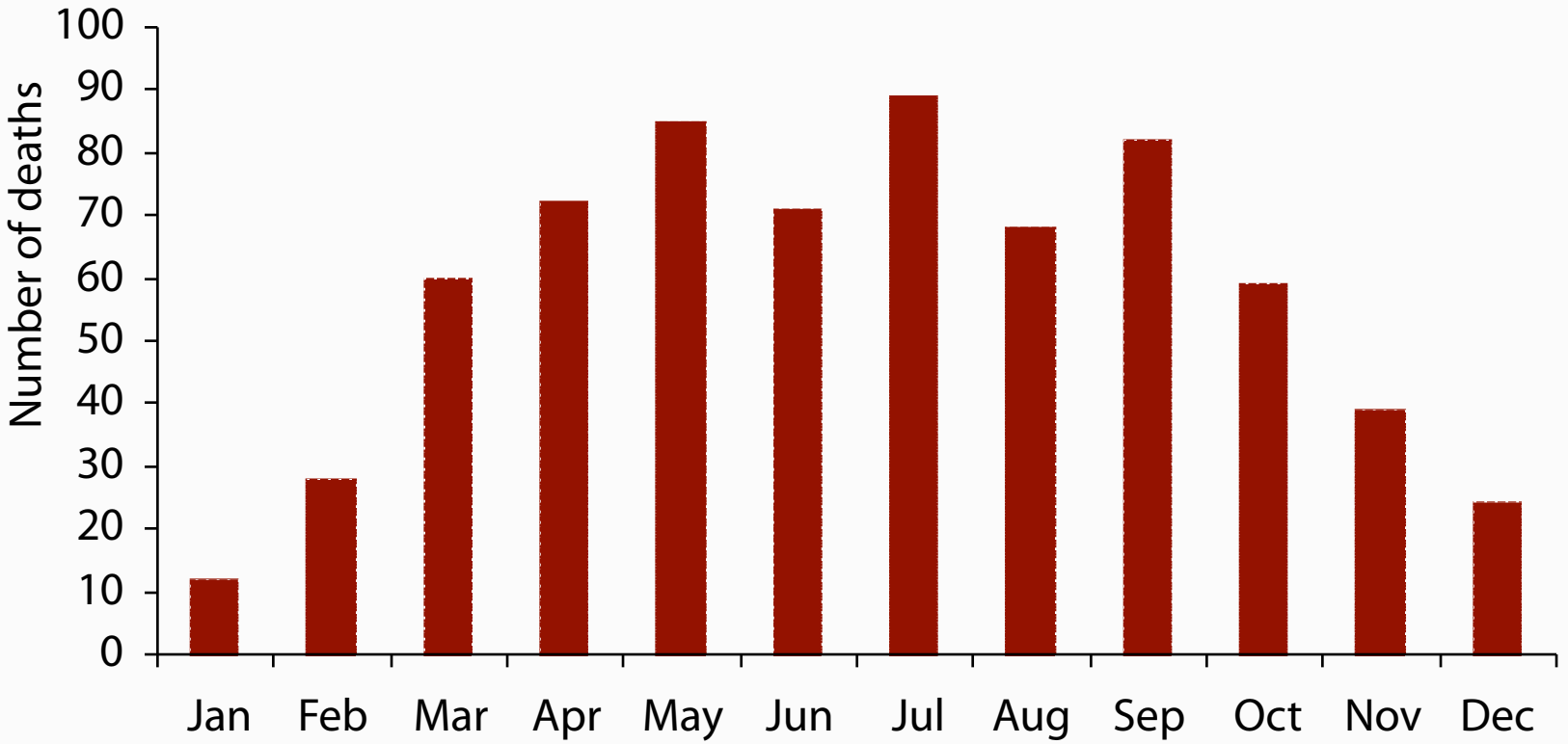
Community-based Surveillance—Bangladesh

- International Center for Diarrheal Disease Research, Bangladesh (ICDDR, B) maintains registration system of births, deaths, and migration in Matlab since 1966
- Injury deaths peak in July
- Shows greatest variability of all causes of deaths
- Percentage of injury deaths from drowning is 25% in January and 75% in September—great seasonal variation

Source: Becker, S., Weng, S. (1998). Int J Epid, 27, 814–823.

Seasonality of Drowning Deaths of Children

- Children, aged 1–4 years in Matlab, 1983–95



Source: Ahmed, M. K. et al. (2000). Int J Epid, 28, 306–311.

Verbal Autopsies

- Interview with relatives or companions of injury victims to determine the following
  - Cause of death
  - Type of injury by external cause
  - Circumstances of injury death

Source: Barrs. (1997).

Verbal Autopsies

- In Bangladesh
  - Verbal autopsy methodology found 8.8% of all deaths in children under five years of age caused by “injuries”
  - Injuries ranked third as cause of death after acute lower respiratory infection (18.9%) and diarrhea (13.3%)
- Very useful source of data in the absence of death certificates

Source: Baquie, A. H. et al. (1998). Bull World Health Organ, 76, 2, 161–171.

Police Reports

- Potential source of information about road sidecrashes and intentional injuries
- Data can be obtained directly from the local files of crash reports
- The development of a transport database which can be used to generate indicators to monitor trends in transport performance

Police Reports

- Considerable under-reporting
- Injuries of pedestrian and cyclists often under-reported

Newspapers: A Source of Injury Data?

- Public health surveillance essential for injury control
- Newspapers
  - Inexpensive form of potential information
  - Newspapers covered 96% of the fire fatalities and 78% of drownings over a 13-month period in North Carolina
  - Also increase public awareness about injury risks and protective measures

Source: Rainey, D. Y. A. (1992). J Public Health, 82, 745–746.

Surveillance for Injuries in Developing Countries

- Design issues
  - Purpose of surveillance
  - Consider realities associated in the setting
- Data issues
  - Use minimal data set for surveillance
  - Large data (many variables, increased cost) increased expectation of usefulness of surveillance system
  - Use local data

Source: Graitcer, P. L. (1992). Mor Mortal Wkly Rep CDC Surveill Summ, 41, 1, 15–20.

Limitations of Methods for Injury Data

- Few standards or guidelines
- Lack of population-based data (mostly facility-based)
- Inflexibility of existing data systems
- Inability to integrate different data systems
- Important data elements often not collected