Week 6: Unit 5: Lecture 2

Health Status Indicators

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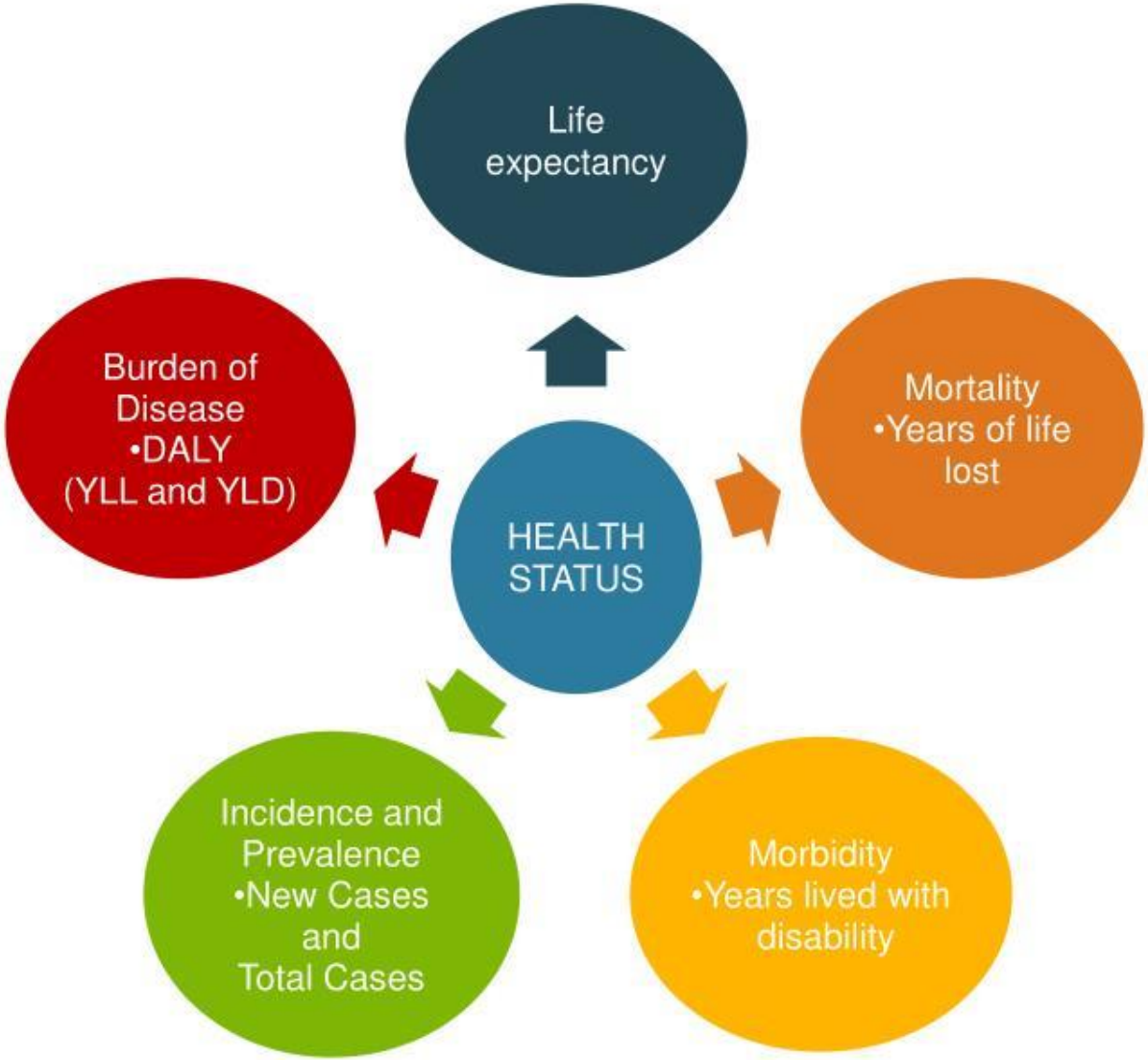
How do we measure health status

These terms are all 'Health Indicators'.



Impact indicators or Health status indicators:

- Important to provide a snapshot of the health status of a population but are slower to respond to policy, program, and practice changes.
- Impact indicators refer to the health status of the target population, for example children under 5 mortality
- These impact indicators (health status indicators) do not show progress over relatively short periods of time.
- That is why the health system assess the input- process- output- and outcome indicators in regular and frequent monitoring.

Health status indicators

- A health status indicator is a variable that provides a single numeric measurement of an aspect of health within a population for a specific period, normally a year.

Health status indicators

- They are measure of health status of the community and they are used to assess the changes in the level of health
- To assess state of the health of the community indicators can be:

✓ Rates

✓ Ratios

✓ Number (in a specific place and time).

Important Indicators for measurement of Health Status

- Life expectancy at birth
  - The average number of years a new-born baby could expect to live if current trends in mortality were to continue for the rest of the new-born's life
  - Good indicator of socioeconomic development

Important Indicators for measurement of Health Status

Crude Death Rate:

- Is considered a fair indicator of the comparative health of the people.
- It is defined as the number of deaths per 1000 population per year in a given community, usually the mid-year population
- The usefulness is restricted because it is influenced by the age-sex composition of the population, socioeconomic and socio-cultural environment of the communities.

Important Indicators for measurement of Health Status

Cause-specific mortality rate

- Is the mortality rate from a specified cause for a population. The numerator is the number of deaths attributed to a specific cause. The denominator remains the size of the population at the midpoint of the time period. The fraction is usually expressed per 100,000 population.
- Obtained from death certification but limited because of incomplete coverage

Important Indicators for measurement of Health Status

- **Infant mortality rate**
  - *The number of deaths in infants under one year of age in a given year per 1,000 live births in that year*
  - Indicator of health status of not only infants but also whole population & socioeconomic conditions
  - Sensitive indicator of availability, utilization & effectiveness of health care, particularly perinatal care.

Important Indicators for measurement of Health Status

- **Neonatal mortality rate**
  - Number of deaths during the first 28 days of life in a given year *per 1,000 live births in that year*
  - Associated with the availability and accessibility of neonatal Intensive Care Units

Important Indicators for measurement of Health Status

⦿ Under five child mortality rate

- *The probability that a new-born will die before reaching the age of five years, expressed as a number per 1,000 live births*
- Correlates with inadequate MCH services, malnutrition, low immunization coverage and environmental factors

Important Mortality indicators for measurement of Health Status

- The **maternal mortality ratio (MMR)** is defined as the number of maternal deaths during pregnancy or within 42 days after the termination of pregnancy per 100,000 live births during a year. Accidental deaths are excluded. It is calculated during a given year per 100,000 live births during the same period.
- The term maternal mortality rate is maternal deaths per 100,000 women in the reproductive age group – a rarely used statistic.
- Maternal death during pregnancy, childbirth, or postpartum is a tragedy with catastrophic impact on families and serves as an important indicator of the quality of a health system.

Morbidity Indicators

- Reveal the burden of ill health in a community, but do not measure the subclinical or inapparent disease states.

Incidence

$$\text{Incidence} = \frac{\text{Number of } \textit{new cases} \text{ during a time period}}{\text{Population at risk during that time period}}$$

- **Incidence is a rate**
- **Calculated for a given time period (time interval)**
- **Reflects risk of disease or condition**

Morbidity Indicators

Prevalence is a useful measure to quantify the burden of disease in a population at a given point in time. This is of particular use when planning health services.

Prevalence

- The amount of a disease at one particular point in time
- The *proportion* of people who have the disease
- Prevalence (%) =

$$\frac{\text{number of people with disease}}{\text{number of people in the population}} \times 100\%$$

Burden of disease indicators

DALYs: Disability Adjusted Life Years

- It is defined as the number of years of healthy life lost due to a certain disease whether due to premature mortality or disability.
- DALY scale is between 0-1. 0 implies perfect health while 1 equals death.
- It is the most used measure for the burden of illness globally
- DALYs are important for setting health services priorities and identifying the disadvantaged groups
- DALYs are important for targeting health interventions and measuring the effectiveness of the interventions
- DALYs Provide comparable measures for planning & evaluating programs and for comparing the health status of different countries

Burden of disease indicators

The Quality-Adjusted Life Year (QALY)

- Is a standardized measure of disease burden which combines both survival and health-related quality of life into a single index.
- QALY incorporates both quantity and quality of life
- The QALY score of 1 represents perfect health while 0 represents death.
- It provides a reasonable estimate of the amount of quality time (i.e., health benefit) an individual may experience as a result of a particular health program or intervention.
- QALYs are used for comparisons between programs or interventions...
- The QALYs guide decisions regarding the distribution of limited health care resources among competing health programs or interventions for a certain population.

Health status indicators are important because

• They are essential for monitoring and reporting data for decision making about population health.

•To inform policy makers to formulate evidence-based policies and to promote accountability among governmental and non-governmental agencies.

•They are critical for setting priorities, assessing the health status at baseline, planning, allocating resources, and monitoring progress towards better health status goals

• Needed for assessing the health problems and trends to create awareness, engage all the stakeholders in collaborative action and design interventions.

A good health status indicator

- Relevant – It measures what it is intended to measure; provides direct information about the result it intends to measure.
- Reliable – Consistently measurable in the same way by different people in similar circumstances.
- Sensitive - They should be sensitive to changes in the situation concerned
- Specific - They should reflect changes only in the situation concerned

A good health status indicator

- Feasible: with the available resources (human, physical, financial) , it is feasible to obtain high-quality data to measure that indicator.

- Is well understood at the global level and various comparability options are possible.

Agreed Upon

- All the stakeholders involved in the program, services or activities should agree that the indicator is relevant
  - Agreement between various health-system levels
  - Agreement between various national health programs and health services providers and managers.

Time Bound

Provides a measurement over periods of interest, with data available for all appropriate intervals

Timeliness considerations:

- Reporting schedules
- Recall periods
- Length of time over which change can be detected

Common mistakes in Indicator Selection

- Indicators not linked to program activities
- Poorly defined indicators
- Indicators that cannot realistically be collected
- Process indicators to measure outcomes and impacts
- Indicators that are insensitive to change
- Too many indicators

Common mistakes in Indicator Selection

Indicator does not accurately represent desired outcome

- Example: Access to effective treatment among children <5 years old with malaria
  - *Inappropriate indicators: % of children <5 years old who received artemisinin-based combination therapies (ACTs); % of people who received ACTs for malaria infection who are children <5*
  - *Better indicator: % of children <5 years old who were diagnosed with malaria in the past 2 weeks who received ACTs*
- What does it mean if inappropriate indicators increase? Decrease? Do they reflect the desired program effect?

Indicators in the Real world

- In an ideal world, indicators of highest quality should be used to evaluate program activities. However, in the **real world** and in field settings, many other factors may intervene. Ideal indicators may not be practical; the feasibility of certain indicator can be constrained by data availability and financial and human resources costs and requirements and needs of donors.

Take home message/ Good Health Indicators

- Provide information useful for decision making
- Are consistent with international standards and other reporting requirements, as appropriate
- Are defined in clear and unambiguous terms
- Have values that are:
  - Easy to interpret and explain
  - Precise, valid, and reliable measures
  - Comparable across relevant population groups, geography, and other program factors, as needed


Thank you