HEALTH INDICATORS

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Learning objectives

- Classification of Health indicators
- Characteristics of health indicators
- Uses of health indicators

INDICATOR ?

Definitions :

* A variable which helps to measure changes ,

directly or indirectly   (WHO,1981) .

* A statistic of direct normative interest which

facilitates concise , comprehensive, and balanced

judgments about conditions of major aspects of the

society.

HEALTH INDICATOR

A health indicator is "a characteristic of an individual, population, or environment which is subject to measurement and can be used to describe one or more aspects of the health of an individual or population."

Source:
Definition of Wellness web site
http://www.definitionofwellness.com/dictionary/health-indicator.html

Types of Indicators :

Five types

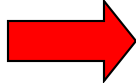∗ **Count / Number** ➡ **Measure without a denominator**

∗ **Proportion (%)** ➡ Numerator is part of denominator

* Rate

➡️ **Frequency of occurrence of an event during a specific time, usually expressed per "k" population (k=1000,10000,…). Rate is used to estimate probability or risk of occurrence of a disease or to assess the accessibility or coverage of health care system .**

* Ratio (per k) ➡️ Measure for which numerator is not included in denominator (e.g. sex ratio per 100 ; beds per 1000 population) .

* Index Aggregation of measurement of specific indicators .e.g. **Human development index:** a composite statistic of life expectancy, education, and income indices used to rank countries

Characteristics of Indicators

a. Should be valid, i.e., they should actually measure what they are supposed to measure;

b. reliable & objective, i.e., the answers should be the same if measured by different people in similar circumstances;

c. sensitive, i.e., they should be sensitive to changes in the situation concerned;

d. specific, i.e., they should reflect changes only in the situation concerned;

e. feasible, i.e., they should have the ability to obtain data needed, and;

f. relevant, i.e., they should contribute to the understanding of the phenomenon of interest.

Indicators may be classified as:

1. Mortality indicators
2. Morbidity indicators
3. Disability rates
4. Nutritional status indicators
5. Health care delivery indicators
6. Utilization rates
7. Indicators of social and mental health
8. Environmental indicators
9. Socio-economic indicators
10. Health policy indicators
11. Indicators of quality of life

1. Mortality indicators

a) *Crude death rate*

b) *Life expectancy at birth*

c) *Infant mortality rate*

d) *Child mortality rate*

e) *Maternal mortality rate*

f) *Disease-specific mortality*

g) *Proportional mortality rate*

a) *Crude death rate:* no.of deaths/1000 population/year in a given community. Usefulness for international comparisons is limited because it is influenced by the age-sex composition of the population.

b) *Life expectancy at birth:* the average no. of years that will be lived by those born alive into a population if the current age-specific mortality rates persist. It is highly influenced by the infant mortality rate where that is high. Estimated for both sexes separately.

c) *Infant mortality rate:* ratio of deaths under 1 year of age in a given year to the total no. of live births in the same year. Most universally accepted indicator of health status not only of infants, but also of whole population and of the socioeconomic conditions under which they live. It is a sensitive indicator of the availability, utilization and effectiveness of health care, particularly perinatal care.

d) *Child mortality rate:* no. of deaths at ages 1-4 in a given year/1000 children in that age group at the mid-point of the year concerned. Shows inadequate MCH services as well as insufficient nutrition, low immunization coverage and adverse environmental exposure.

e) *Maternal mortality ratio:* **Maternal death** is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. Maternal Mortality Ratio is the ratio of the number of maternal deaths per 100,000 live births. The MMR is used as a measure of the quality of a health care system.

f) *Disease-specific mortality:* mortality rates can be computed for specific diseases. E.g. deaths from cancer, cardiovascular diseases, accidents, diabetes etc.

g) Proportional mortality rate: the simplest measure of estimating the burden of a disease i.e., the proportion of all deaths currently attributed to it. E.g. CHD is the cause of 25-30% of all deaths in most western countries. *PMR* from communicable diseases indicates the magnitude of preventable mortality.

2) Morbidity Indicators

Used to supplement mortality data to describe the health status of a population. Morbidity statistics have also their own drawbacks; they tend to overlook a large no. of conditions which are subclinical or unapparent, i.e., the hidden part of the iceberg of disease. The following morbidity rates are used for assessing ill health in the community.

i.   Incidence & Prevalence

ii.   Notification rates

iii.   Attendance rates at out-patient departments, health centers, etc.

iv.   Admission, readmission and discharge rates

v.   Duration of stay in hospital &

vi.   Spells of sickness or absence from work or school.

3) Disability Rates

Disability rates are based on the premise that health implies a full range of daily activities. They fall into two groups

a. Event-type indicators
  i.   No of days of restricted activity
  ii.   Bed disability days
  iii. Work-loss (or school-loss days) within a specified period

b. Person-type indicators
  i.   Limitation of mobility
  ii.   Limitation of activity

Cont'd

Sullivan's index: computed by subtracting from the life expectancy the probable duration of bed disability and inability to perform major activities. For e.g. the expectation of life at birth for all persons in the USA in 1965 was 70.2 years, and the approximate expectation of life free of disability worked out to be 64.9 years. The most advanced indicators currently available.

DALY (Disability-Adjusted life years): Years of life lost to premature death and years lived with disability adjusted for the severity of the disability. One DALY is "one lost year of healthy life."

4) Nutritional status indicators

Nutritional status is a +ve health indicator.

a. Anthropometric measurements of preschool children, e.g., weight and height, MUAC;

b. Heights (& sometimes weights) of children at school entry; &

c. Prevalence of low birth weight (< 2.5kg).

5) Health care delivery indicators

- Doctor-population ratio

- Doctor-nurse ratio

- Population-bed ratio

- Population/health centre

- Population/traditional birth attendant

6) Utilization rates

Utilization of services- or actual coverage- is expressed as the proportion of people in need of a service who actually receive it in a given period, usually a year. For e.g.,

i.   Proportion of infants "fully immunized" against 9 EPI diseases

ii.   Proportion of pregnant women receiving antenatal care, or have their deliveries supervised by a TBA (Trained birth attendant)

iii. %age of population using the various FP (family planning)methods

7)Indicators of social and mental health

Suicide, homicide, RTAs, juvenile delinquency, alcohol and drug abuse, smoking, consumption of tranquillizers, family violence, battered-baby & battered-wife syndromes and neglected and abandoned youth in the neighborhood.

8) Environmental indicators

Reflect the quality of physical and biological environment of people. Indicators relating to pollution of air and water, radiation, solid wastes, noise, exposure to toxic substances in food or drink. Among these the most useful are

- %age of households with safe water in the home or within 15 minutes' walking distance
- Adequate sanitary facilities in the home or immediate vicinity.

9)Socio-economic indicators

Do not directly measure health. Nevertheless, they are of great importance in the interpretation of the indicators of health care.

a. Rate of population increase

b. Per capita GNP

c. Level of unemployment

d. Literacy rates, especially female literacy rates

e. Housing: the no of persons/room

10) Health policy indicators

The single most important indicator of political commitment is "allocation of adequate resources". Others are

a. Proportion of GNP spent on health services

b. Proportion of GNP spent on health-related activities (including water supply and sanitation, housing and nutrition, community development) and

c. Proportion of total health resources devoted to PHC

11) Indicators of quality of life

- Increasingly, mortality and morbidity data have been questioned as to whether they fully reflect the health status of a population.

- Quality of life is difficult to define and even more difficult to measure. Various attempts have been made to reach one composite index from a no. of indicators.

- The physical quality of life index is one such index. It consolidates 3 indicators, viz infant mortality, life expectancy at age 1, & literacy.

Data Sources for Common Indicators

- National Vital Statistics System (Birth, Mortality)
- Surveys (Behavioral Risk Factor Surveys--Adults and Youth, Health Interviews, Health and Nutrition Examination Surveys, EPI evaluation)
- Disease Surveillance Systems
- Health services administrative data (HMIS, hospital records, voluntary reporting, NGOs & UN agencies working with health sector)

How Are Health Indicators Used?

Indicators are powerful tools for monitoring and communicating critical information about population health.

Indicators are used to support **planning** (identify priorities, develop and target resources, identify benchmarks) and track **progress** toward broad community objectives.

Engagement of partners into civic and **collaborative action** (build awareness of problems and trends, generate interventions).

Inform policy makers, and can be used to promote **accountability** among governmental and non-governmental agencies.

Who Compiles Health Indicators?

•Reports are compiled at every jurisdictional level

• State and local level - Health departments, foundations and philanthropic organizations, businesses, educational, law enforcement, human services providers, and other civic leaders, faith organizations, universities, media.

• National – Federal government/private partnerships.

• International – (Organization for Economic cooperation and development)OECD, WHO