

# MEASUREMENT OF HEALTH STATUS

## Health Indicators

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# INDICATORS

- **Indicators are required to measure :**
  - ❖ the health status of community
  - ❖ to compare the health status of one country with that of another
  - ❖ for assessment of health care needs
  - ❖ for allocation of scarce resources
  - ❖ and for monitoring and evaluation of health services, activities and programmes.
- Indicators help to manage the extent to which the objectives and targets of a programme are being attained.

# WHAT IS A HEALTH INDICATOR

- Indicators are only an indication of a given situation or a reflection of that situation.
- **According to WHO guidelines for health programme evaluation; Indicators are defined as “variables which help to measure change”**

## WHAT IS A HEALTH INDICATOR

- Often they are used when these changes cannot be measured directly, as for example health or nutritional status.
- If measured sequentially over time they can indicate direction and speed of change and serves to compare different areas and groups of people at the same moment in time.

# CHARACTERISTICS OF HEALTH INDICATORS

Ideal Indicators should be:

- ❖ Valid
- ❖ Reliable
- ❖ Sensitive
- ❖ Specific
- ❖ Feasible
- ❖ Relevant

# What is an ideal Indicator

1. **Valid:** They should actually measure what are supposed to measure
2. **Reliable:** The answers should be the same measured by different people in similar circumstances.
3. **Sensitive:** They should be sensitive in the situation concerned
4. **Specific:** They should reflect changes on the situation concerned
5. **Feasible:** They should have the ability to obtain data needed
6. **Relevant:** They should contribute to the understanding of the phenomenon of interest

# CLASSIFICATION OF HEALTH INDICATORS

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 health
9. Socioeconomic Indicators
10. Health policy Indicators
11. Indicators Of quality of life
12. Other Indicators

# 1. MORTALITY INDICATORS

- a) Crude death rate: It is defined as the number of deaths per 1000 population per year in a community.
- b) Expectation Of life: It is defined as the average number of years that will be lived by those alive into a population if the current age-specific mortality rate persists.

# 1. MORTALITY INDICATORS

c) Infant mortality Rate: It is defined as the rate of deaths under one year of age in a given year divided by the total number of live births in the same year, usually expressed as a rate per 1000 live births.

d) Child mortality rate: It is defined as the number of deaths at ages 1-4 years in a given year, divided by 1000 children in that age group at the mid point of the year concerned.

# 1. MORTALITY INDICATORS

- e) Under 5 proportionate mortality rate: It is proportion of total deaths occurring in the under 5- age group.
- f) Maternal ( Puerperal ) mortality rate: It accounts for the greatest proportion of deaths among women of reproductive age in many of the developing world, although its importance is not always evident from official statistics.

# 1. MORTALITY INDICATORS

**g) Disease-specific mortality rate:** Mortality can be computed for specific diseases

**h) Proportional mortality rate:** The simplest measure to determine the burden of a disease on the community i.e the proportion of all deaths currently attributed to it.

## 2. MORBIDITY INDICATORS

- a) Incidence and prevalence
- b) Notification rates
- c) Attendance rates at out patient department health centres etc,
- d) Admission, readmission and discharge rates
- e) Duration of stay at hospital
- f) Spells of sickness or absence from work or school.

## 3.DISABILITY RATES

- Disability rates are based on the premise notion that health implies a full range of activities. The commonly used disability rates fall into two groups.
  - a) Event –type Indicators
  - b) Person-type indicators

## 3. DISABILITY RATES (cont)

### a) Event Type Indicators:

- Number of days of restricted activity
- Bed disability days
- Work- loss days (or school loss days) within specified period

### b) Person-type Indicators:

- **Limitation of mobility:** confined to bed, confined to home
- **Limitation of activity:** limitation to perform basic activities of daily living e.g, washing, dressing, and limitation to perform major activity, e.g, ability to work at job

# Sullivan's Index

- Sullivan's index ( **Expectation of life free of disability**) is computed by subtracting from life expectancy the probable duration of disability and inability to perform major activities, according to cross sectional data from the population surveys.

## ◎ HALE (Health Adjusted Life Expectancy)

- The name of indicator used to measure healthy life expectancy has been changed from Disability -adjusted life expectancy (DALE) to Health - adjusted life expectancy(HALE)
- HALE is based on life expectancy at birth includes an adjustment for time spent in poor health.
- It is most easily understood as the equivalent number of years in full health that a newborn can expect to live based on current rates of illness-health and mortality.

## ◎ DALY (Disability- Adjusted Life Years)

- Is the measure of the burden of a disease in a defined population and the effectiveness of interventions.
- DALYS express years of life lost to premature death and years lived with disability.
- **One DALY is “one lost year of a healthy**

## 4. NUTRITIONAL STATUS INDICATORS

- a) Anthropometric measurements of preschool children, e.g; weight and height, mid-arm circumference
- b) Heights (and some weights) of children at school entry
- c) Prevalence of low birth weight (less than 3 kg)

## 5. HEALTH CARE DELIVERY INDICATORS

- a) Doctor-population ratio
- b) Doctor-nurse ratio
- c) Population bed ratio
- d) Population per health sub centre
- e) Population per traditional birth attendant

➤ These indicators reflect the equity of distribution of health resources in different parts of the country and of the provision of health care

## 6. UTILIZATION RATES

- Utilization of services or actual coverage expressed as the proportion of people in of a service who actually receive it in a period, usually a year.
- Utilization rates give some indication of the care needed by a population, and therefore the health status of the population.
- A relationship exists between utilization of health care services and health needs and status.

## ◎ Examples of few Utilization Rates:

- a) Proportion of infants who are fully immunized against the EPI diseases.
- b) Proportion of pregnant women who receive antenatal care, or have their deliveries supervised by a trained birth attendant
- c) Percentages of the population using the methods of family planning
- d) Bed-occupancy rate (i.e. average daily patient census/average number of beds)
- e) Average length of stay (i.e. days of care rendered discharges)
- f) bed-turn over ratio (i.e. discharges/ average beds)

## 7. INDICATORS OF SOCIAL AND MENTAL HEALTH

- As long as valid positive indicators of social and mental health are scarce, it is necessary to use **indirect measures** like indicators of social and mental pathology. These include:
  - ❖ Suicide, homicide, other acts of violence, other crime, road traffic accidents, juvenile delinquency, alcohol and drug abuse.
  - ❖ To these may be added family violence, battered baby, battered wife syndrome, neglected youth in the neighbourhood.

## 8. ENVIRONMENTAL INDICATORS

- These Indicators reflect the quality of physical and biological environment in which diseases occur and in which people live.
- They include Indicators relating to pollution of air and water, radiation, solid wastes, noise, exposure to toxic substances in food or drink.
- Proportion of population having safe water and sanitation facilities.

## 9. SOCIOECONOMIC INDICATORS

- These Indicators do not directly measure They are of importance in interpretation of indicators of health care. These include:
  - a) Rate of population increase
  - b) Per capita GNP
  - c) Level of unemployment
  - d) Dependency ratio
  - e) Literacy rate, especially female literacy
  - f) Family size
  - g) Housing, the number of persons per room
  - h) Per capita calorie availability

## 10.HEALTH POLICY INDICATORS

- ◎ Single most important indicator:
  - a) Allocation of adequate resources.
- ◎ Relative Indicators:
  - a) Proportion of GNP spent on health services.
  - b) Proportion of GNP spent on health related activities. (Water supply and sanitation, housing and nutrition, community development)
  - c) Proportion of total health resources devoted to primary health care.

## 11. INDICATORS OF QUALITY OF LIFE

- 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 number of health indicators
- **“Physical Quality of Life Index”** is one such index, it consolidates three Indicators:
  - a) Infant mortality
  - b) Life expectancy at age one
  - c) Literacy

## 12. OTHER INDICATOR SER

### A. SOCIAL INDICATORS (12 categories By United N

1. Population
2. family formation
3. families and house holds
4. learning and educational services
5. earning activities
6. distribution of income
7. consumption and accumulation
8. social security and welfare services
9. health services and nutrition
10. housing and its environment
11. public order and safety
12. time use
13. leisure and culture
14. social stratification and mobility

## 12. OTHER INDICATOR SET

### **B. BASIC NEED INDICATORS:**

Those mentioned in “basic needs performance index” which includes:

1. **Calorie consumption**
  2. **Access to water**
  3. **Life expectancy**
  4. **Deaths due to diseases**
  5. **Illiteracy**
  6. **Doctors and nurses per population**
  7. **Rooms per person**
  8. **GNP per capita.**
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## 12. OTHER INDICATOR SETS

### C. HEALTH FOR ALL INDICATORS:

- ⦿ For monitoring progress for goal of Health for all by 2000 AD, WHO categorizes four Indicators:
  1. Health policy Indicators
  2. Social and economic indicators related to health
  3. Indicators for provision of health care
  4. health status indicators

## 12. OTHER INDICATOR SETS

### D. MILLENNIUM DEVELOPMENT GOAL INDICATORS:

- The MDG'S adopted by United Nations in year 2000, provides an opportunity for concerted action to improve global health
- It has eight goals, eighteen targets and eight Indicators.

# THANKS