

## Epidemiology in community health care

- Is the study of the determinants and distribution of health disease and injuries in human population.
- Offers CHN a specific methodology for assessing the health of aggregates.
- Provide a frame of reference for investigating and improving clinical practice in any setting.
- **Historical roots of epidemiology**
- Epidemic: disease occurrence exceed normal or expected frequency in a community region
- Pandemic: when epidemic distributed worldwide
- Endemic: when presence of disease or infectious agent in a geographical area.
- **Concepts basic to epidemiology**
  1. Host: susceptible human or animal who harbors and nourish a disease – causing agent.
  2. Agent: a factor or a cause or contributes to a health problem or condition.
  3. Environment: refers to all external factors surrounding the host that might influencing vulnerability or resistance.

### **Causality**

- Refers to the relationship between a cause and its effect.
- He purpose of epidemiology is to discover causal relationship in order to understand why conditions develop and offer effective prevention and protection.

### **Chain of causation**

1. Identify reservoir (where the causal agent can live and multiply).
  2. Agent must have portal of exist
  3. Portal of entry
- The unstable conditions unsanitary conditions and malnourished were all part of the causal chain
  - **Multiple causation:**
  - multiple causes of disease
  - Provide many points of interventions for prevention , health promotion, and treatment

## **Immunity**

- Refers to the host ability to resist a particular infectious disease causing agent.
- Types of immunity
  1. Passive
  2. Active
  3. Cross
  4. herd immunity

## **Risk**

- determine the chance that a disease or health problem will occur

- epidemiologist study population at risk
- relative risk ratio = **incidence of exposed group / incidence n unexpected group**

### **Natural history of disease or health conditions**

- progression of a disease occur in four stages:
  1. susceptibility
  2. exposure
  3. onset
  4. culmination

### **Causal relationship:**

- cross- sectional study
- retrospective study
- prospective study
- experimental study

### **Sources of information for epedemiologic study**

1. existing data
2. informal investigation
3. Scientific studies.

1. Existing data information includes

1. Vital statistics
2. Census data
3. Reportable diseases
4. Disease register

## 2. Informal studies

- through informal observation and description

## 3. Scientific study.

- carefully designed scientific studies

## **Methods in the epidemiologic investigation process**

- three approaches:
  1. descriptive
  2. analytic
  3. experimental

## **Descriptive**

- Includes investigation that seek to observe and describe patterns of health related conditions that naturally occur in a population.
- Measure of description:
  1. Counts
  2. Rates
- **Prevalence**: all people with a health condition existing in a given population at a given point in time.
- Prevalence rate: **no. of person with characteristic/ total no. population**
- **Incidence**: all new cases of disease or health condition appearing during a given time.
- Incidence rate: **no. of persons developing a disease/ total no. at risk per unit of time.**

### **Analytical epidemiology**

- go beyond simple descriptive or observation and seek to identify associations between a particular human disease or health problem and its possible causes.
- Three types
  1. Prevalence studies
  2. Case- control studies
  3. Cohort studies

### **Experimental epidemiology**

- Follows and builds on information gathered from descriptive and analytic approach.
- Are carried under carefully controlled conditions

## **Conducting epidemiologic research**

- Steps of epidemiologic research:
  1. Identify the problem
  2. Review literature
  3. Design the study
  4. Collect data
  5. Analyze the findings
  6. Develop conclusions and applications
  7. Disseminate the findings.