WEEK 1- INTRODUCTION TO DESCRIPTIVE EPIDEMIOLOGY

Epidemiology- is the study of the distribution of determinants of health states or events in specified populations, and the application of this study to prevent and control health problems

- Science behind *health populations*
- How disease is distributed and what factors cause disease in populations

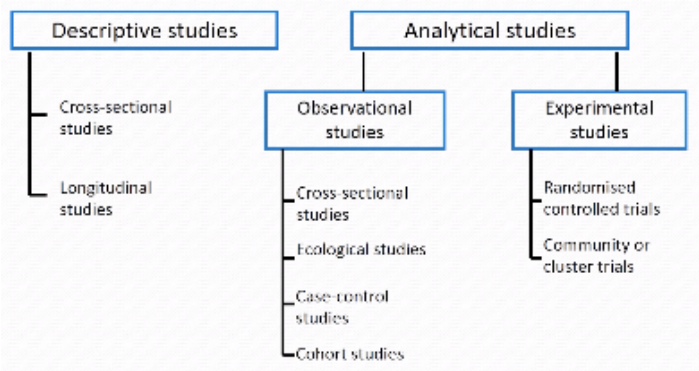
Scope and meaning

Epidemiology contributes to public health and health promotion by:

1. Determining extent of ill health or disease in community (BOD)
2. Identifying causes of disease (risk factors)
3. Studying the natural history and prognosis of ill health
4. Investigating disease outbreaks and epidemics
5. Evaluating existing and new preventative programs and services
6. Provide foundation for developing policy and regulation

Descriptive vs analytical

Descriptive	Analytical
▪ Focuses on describing health states and events and their distribution ▪ Person, place and time are some of the key descriptions of health and illness in populations	▪ Addresses the why question ▪ A range of more sophisticated methods or investigating the determinants of health and illness



Descriptive epidemiology

Uses:

- Extent and distribution of health states in the community
- Trends in the health states over time
- Natural history and prognosis of disease

Person

Count number of persons involved, calculate risk rates for persons affected and compare the number of people affected at different times/places

- Inherent characteristics of the population (age and sex) are commonly used to describe subgroups of a population
- Other characteristics; education, occupation, income or characteristics of health-related behaviours
- *Importance-* Descriptions of people who have a condition of interest provide or deliver programs to those that need them and provide cues to the risk factors for that condition.

Place

Geographic distribution of a condition

- Includes residence, schools and workplaces, birthplaces
- Administrative descriptors of place such as government area, city, state or country
- *Importance-* provides clues as to the source of infection or an environmental exposure to the possible means of transmission

Time

Occurrence of health state over time

- *Importance-* predict future, clues as to what is causing changes in conditions occurrence, examines the effectiveness of policies and programs

Cross- sectional study design

Provide a snapshot of the population at that time. Prevalence of disease (how many or what proportion). Usually collected through a survey, interviews, records

- **Population of interest:** may be general population or subgroup, this is the people we are trying to find something about
- **Study sample:** not usually possible to measure characteristics for entire population. The sample is a subset of the population which is representative so we can generalise findings
- Include some information that allows us to make comparisons between groups
- *Disadvantage:* Difficult to see whether exposure proceeded outcome
- *Advantage:* relatively quick and easy

Repeat cross-sectional study design

A cross-sectional study cannot provide information about time trends or the natural history or prognosis of disease. An alternative way of obtaining the sort of information that includes the passage of time is the repeat cross-sectional studies approach.

- Measurements made on **different** individuals at each time point (sample)
- *Disadvantage:* Variability between time points is the result of different individuals
- eg. regular surveys or interviews

Longitudinal study design

Useful for studying the natural history and prognosis of disease. These studies are a means of describing the occurrence of health related events over time.

- Follow a defined group through time (repeated measures on the **same** people)
- *Disadvantage:* retention of the same people over a long period may be an issue (dropout rate- can be unrepresentative of the population)