Descriptive epidemiology

- Classifies the occurrence of disease according to the variables of person, place, and time.
- Concerned with characterizing the amount and distribution of health and disease within a population.
- Provides information for the prevention of disease, design of interventions, and conduct of additional research.

Aims of a descriptive study

- Evaluation of trends in health and disease
- Provide a basis for planning, provision, and evaluation of health services
- Identify problems to be studied by analytic methods

Evaluation of trends

- Monitoring known disease
- Identifying emerging problems
- Comparisons are made between populations, geographical areas, and time periods.

Basis of planning

- Identify populations with increased public health problems that may be best to target for an intervention.

Identify problems for future analytic studies

- Descriptive data can lead to research questions that need to be answered by further study.
Study design

• There is a natural progression of study designs.

• The choice of a study design is dependent upon how much we know about possible situations, the length of the disease, and the frequency of exposure or disease.

Case Reports

• An account of a single occurrence of a noteworthy health incident or a small collection of health events.

• Can serve as an early warning signal of a serious health event.

• Since publication takes time, the MMWR is often the source in which they are published.

Case Series

• Larger collection of cases of disease, often grouped consecutively and listing common features

Cross sectional study

• Study in which exposure and disease are collected at the same time. People are selected for the study because they are in a population of interest.

• Bridge between descriptive and analytical as it can address a specific research question.

Epidemiologic inference from descriptive data

• Provide a basis for generating hypotheses.

• Can be used to draw conclusions about the relationships between exposure and outcome

Person variables

• Demographic variables
  – Age, gender, race, ethnicity, SES
  – Marital status, nativity, migration, religion
  – Age
    • One of the most important factors
  – Gender
    • There are differences between men and women. Traditionally women were studied less frequently
  – Race/ethnicity
    • Many differences may actually be due to differences in SES
Studying race

- U.S. Census Bureau classifies race into 5 major categories:
  - White
  - Black
  - American Indian and Alaska Native
  - Asian
  - Native Hawaiian and other Pacific Islander
- People can choose multiple categories
- Ethnicity – Hispanic/non-Hispanic is not a race

Studying SES

- SES is often a combination of income, education, and type of occupation.
- Some challenges as family size is a factor in identifying family income.
- Sometimes only one measure is used as often education is easier to obtain.
- The Bureau of Labor Statistics has a listing for categorizing occupational.

Place variables

- Large differences between developed and developing countries
- Large differences within countries
  - Climate differences
  - Economic differences
- Urban-rural differences
  - Many agricultural exposures
  - Localized patterns of disease

Time variables

- Secular trends
  - Changes in disease over time
- Seasonal trends
  - Common in infectious disease
- Point epidemic
  - Response to an infection or an environmental exposure that took place in a given location
- Clustering
  - A closely grouped series of events in relation to time or place or both

SUMMARY