Community Medicine Dept. Epidemiology

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Lecture 3-
General Epidemiology
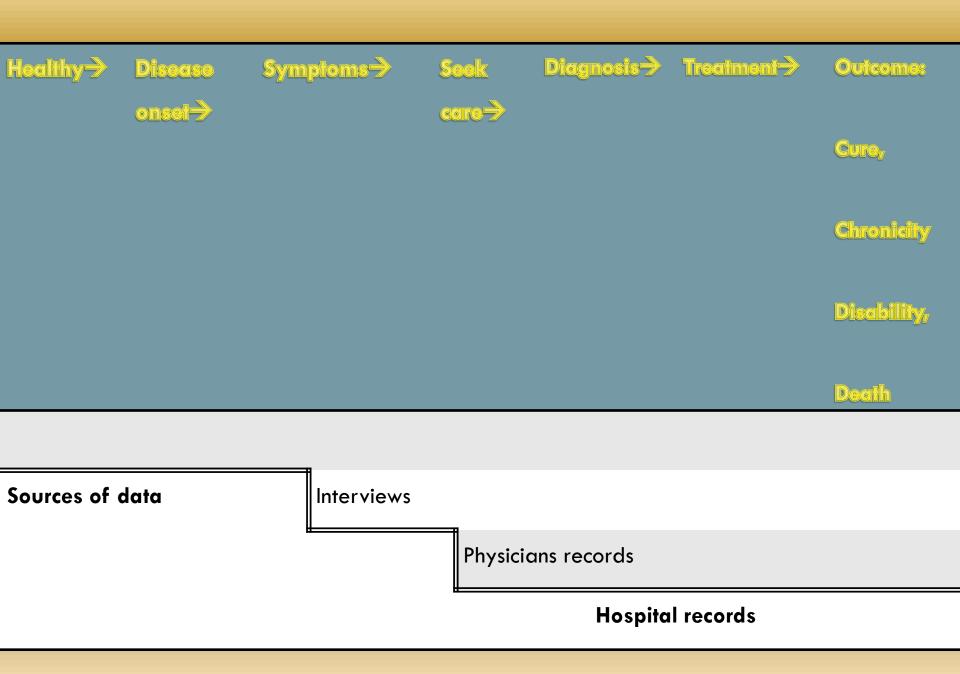
Objectives

By the end of the lecture, students will have an idea about;

- Sources of morbidity data
- Limitation for each source of data (hospital records, Interview)
- Limitation of mortality data
- Measurements in epidemiology

Epidemiological Data:

To examine the transmission of disease in human populations, we clearly need to be able to measure the frequency of disease occurrence (morbidity data) and of death from the disease (mortality data). For better understanding of how we collect epidemiological data we need to know the development and course of a disease in over a period of time in an individual.

Healthy→ Disease Symptoms→ Seek Diagnosis→ Treatment→ Outcome:

onset→ care→

Cure,

Chronicity

Disability,

Death

Sources of data Interviews

Physicians records

Hospital records

General sources of morbidity data:

1. Disease reporting e.g. communicable diseases, notifible diseases, cancer registry.
2. Data accumulated as a by product of health and accident insurance, disability insurance, life insurance companies, hospital insurance
3. Retirement records
4. Public assistance, aid to the blind, disabled.
5. Armed forces records
6. School administrations
7. Hospital and clinics
8. Absenteeism records from industry and schools.
9. Pre-employment and periodic physical examination in industry and schools.
10. Case-finding programs
11. Selective services records
12. Morbidity surveys on population samples.

Limitations of hospital data:

1. Hospital admissions are selective in relation to;
- Personal characteristics.
- Severity of disease
- Associated conditions
2. Admission polices.
- Hospital records are not designed to research. They may be:
- Incomplete, illegible or missing.
- Variable in diagnostic quality.
3. Populations at risk are generally not defined (catchment area for the hospital).

Limitations and possible errors of interview surveys data:

1. The persons with the disease my have no symptoms and may not be aware of the disease.
2. The person with the disease may have had symptoms but may not have had medical attention and therefore may not know the name of the disease.
3. The person with the disease may have had medical attention but the diagnosis may not have been made or conveyed to the person or the person may have misunderstood.
4. The respondent may not accurately recall an episode of illness or events and exposures related to the illness.

Limitations and possible errors of interview surveys data:

5. The respondent may be involved in litigation regarding the illness and may choose not to respond or may alter his or her response.
6. The respondent may provide information but the interviewer may not record it or may record it incorrectly.
7. The interviewer may not ask the question he or she is supposed to ask or may ask it incorrectly.
8. The interviewer may be biased by knowing the hypothesis being tested and may probe more intensively in one group of respondents than in another.
9. Problems of selection bias may occur, possibly including significant non-response rates.

Mortality data:

Most of our information about deaths comes from death certificates, in which deaths are coded according to the underlying cause (the cause that initiate the train of morbid events leading directly or indirectly to death).

Problems with mortality data are;

1. Difference in the quality of the data on the death certificate, the validity can be tested by comparing the death certificate data with the autopsy records and hospital records.
2. Deaths are coded according to the international classification of diseases (ICD), which is now in its 10th revision, may change the code every period and hence affect our judgment of disease trend in a community.
3. Changes in disease definition significantly affect the number of cases of the disease that are reported.

Measurements in epidemiology:

1. Measurements of mortality.
2. Measurements of morbidity
3. Measurements of disability.
4. Measurements of natality.

Measurements in epidemiology:

5. Measurements of the presence, absence or distribution of the characteristics or attributers of the disease.

6. Measurements of the presence, absence or distribution of the environmental and other factors suspected of causing the disease.

7. Measurements of the medical needs, health care facilities, utilization of health services and other health related events.

Thank You

Thank You

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