Fourth Lecture

Strategies for Identifying Communicable and Non Communicable Diseases

Learning Objectives for the Lecture:

At the end of the lecture the student is going to be able to:

1. Identify the strategies of communicable and non-communicable diseases control.
2. Describe and define each strategy of disease control.

1. Screening: early detection for health problems to improve health outcomes, this measure involves application of a medical procedure or a test to an apparently healthy population who isn't yet symptomatic for the purpose of classifying them with respect to their likelihood of having the diseases.

The primary purpose of screening tests is to detect early disease or risk factors for disease in large numbers of apparently healthy individuals.

The purpose of a diagnostic test is to establish the presence (or absence) of disease as a basis for treatment decisions in symptomatic or screen positive individuals (confirmatory test). Some of the key differences are tabled below:

Table 1. Differences between screening and diagnostic tests

	Screening tests	Diagnostic tests
Purpose	To detect potential disease	To establish presence/absence of disease
Target population	Large numbers of asymptomatic, but potentially at risk individuals	Symptomatic individuals to establish diagnosis, or asymptomatic individuals with a positive screening test
Positive result threshold	generally chosen towards high sensitivity not to miss potential disease	Chosen towards high specificity (true negatives). More weight given to accuracy and precision than to patient acceptability
Positive result	Essentially indicates suspicion of disease (often used in combination with other risk factors) that warrants confirmation	Result provides a definite diagnosis
Cost	Cheap	Higher costs

A screening program, e.g. for breast cancer, consists of the following:

- A test procedure (in this case a mammogram)
- A defined group of people to be included (in this case women aged 50 to 69 years)
- The testing frequency (in this case every two years).

Types of Screening:

a. Mass screening: screening is aimed at large population groups that vary widely in their risk of the disease. Screening for visual impairment in elementary schools is another example of mass screening.

b. Multiple screening: This type of screening employs multiple screening tests at the same time. Thus, it may be used to detect the possibility of more than one

disease or condition. Paramilitary exams, for example, may use multiphase .screening to test for possible diabetes, hypertension, and hearing impairment

c. Targeted screening: This form of screening is applied only to groups at high risk for the disease .Screening for elevated blood lead levels among inner-city children is an example of selective screening. So is screening for tuberculosis among prison inmates.

d. Case-findings:

Case finding is a strategy for targeting resources at individuals or groups who are suspected to be at risk for a particular disease. It involves actively searching systematically for at risk people, rather than waiting for them to present with symptoms or signs of active disease. Examples of case finding include screening for cervical cancer using Pap tests.

Examples of Screening Tests:

Pap smear, mammogram, clinical breast exam, blood pressure determination, cholesterol level, eye examination/vision test, and urinalysis.

2. Surveillance: A continues and systematic monitoring of the occurrence and distribution of diseases and their determinants for their effective control and prevention. surveillance means to watch over with great attention, authority and often with suspicion.

Surveillance is defined as "the continuous scrutiny (inspection) of the factors that determine the occurrence and distribution of disease and other conditions of ill-health.

Monitoring:

Monitoring is "the performance and analysis of routine measurements aimed at detecting changes in the environment or health status of population" (Thus we have monitoring of air pollution, water quality, growth and nutritional status, etc).

Monitoring includes the collection, analysis and interpretation of relevant data and the distribution of information to all who need to know.

Objectives of Surveillance:

The main objectives of surveillance are:

a) to provide information about new and changing trends in the health status of a) population, e.g., Morbidity, mortality, nutritional status or other indicators and environmental hazards, health practices and other factors that may affect health

b) to provide feed-back which may be expected to modify the policy and the) and‹system itself and lead to redefinition of objectives

c) provide timely warning of public health disasters so that interventions can be) mobilized

The core functions in surveillance of any health event are:

1. Case Detection
2. Reporting
3. Investigation & Confirmation
4. Analysis & Interpretation
5. Action
6. Control / Response
7. Policy
8. Feedback