

# Fifth Lecture

## Principles of Diseases Control

### Learning Objectives for the Lecture:

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

1. Define the concept of diseases control.
2. Describe the measures of disease control.
3. Differentiate between concepts of eradication and elimination of diseases.

### Concept of Diseases Control:

The term disease control describes the ongoing operations aimed at reducing the incidence of disease, the duration of disease and consequently the risk of transmission, the effects of infection, including both the physical and psychosocial complications and the financial burden to the community, reducing the mortality rate to locally acceptable level.

Control activities focus on primary prevention or secondary prevention, but most programs combine both.

### The principles of communicable diseases control are:

1. Notification
2. Early diagnosis and prompt treatment
3. Reporting
4. Isolation
5. Quarantine
6. Disinfection
7. Disinfestations
8. Immune-prophylaxis
9. Chemoprophylaxis
10. Health education
11. Environmental sanitation
12. Surveillance

#### **1. Notification:**

- Once an infectious disease has been detected for even suspected, it should be notified to the local health authority, whose responsibility is to

put into operation control measures including the provision of medical care to patients.

- Diseases required to be informed to the health department are termed “Notifiable disease”.
- They include (4) Principle epidemic diseases (PED).
  - The head of the family or any adult member of the family or doctor often makes notification to the administrative authorities of the community who in turn shall pass on the information to the nearest health authorities.

## **2. Early Diagnosis and Prompt Treatment:**

- Without EDPT, the infection will rapidly spread to the community
- Clinical diagnosis with epidemiological support is sufficient enough to warrant treatment and appropriate control measures
  - Treatment is targeted to the reservoir or source of infection. Proper and adequate treatment should be given in order to kill the infectious agents or to reduce the number of infectious agents in the reservoir or source.
  - Inadequate and improper treatment will reveal chronic cases, carrier state and drug resistant problems.
  - Clinically diagnosed causes must be confirmed by laboratory investigations and are reported.

## **3. Reporting**

- Reporting must be started from the area of an epidemic outbreak to WHO within 24 hours.
- There is definite detail procedure for reporting with specific forms.
- Clinically suspects will provide for provisional reports and instituting control measures without waiting for laboratory confirmation
- Reporting may be in anyways: Telephone, Telegrams, and E-mail etc.
- Confirmed cases: Clinically diagnosed with laboratory support and epidemiological background are reported in special forms

## **4. Isolation:**

- It is the separation of patient from other person for the communicable period of a particular disease

## 5. Quarantine

- It is the prohibition of movement of persons who have been exposed to communicable disease in order to prevent them from coming into contact with those not so exposed
- In this period, any members of the family are not allowed to move outside of their house, the whole village, a block of town or a sea vessel.

**a. Inner quarantine-** imposed on the infected house.

**b. Outer quarantine-** placed on the infected village or ward.

- The period for quarantine is the longest incubation period plus 2 days.
- It should be counted from the date of the 1st exposure to infection.

E.g. the persons who are in contact with cholera case from 1st to 3rd October should be quarantine for 7 days beginning from 3rd October.

## 6. Disinfections:

- It means killing of infectious agents outside the body by means of physical or chemical disinfectants
- There are two types of disinfection:

(a) Concurrent Disinfection, and

(b) Terminal Disinfection

## 8. Immune-prophylaxis:

- To prevent disease by giving immunizing agents.
- The main objective of immunization is to raise the Herd Immunity of the risk population.

It includes:

**a. Passive Immunization-** administration of prepared antibodies.

**b. Active Immunization-** administration of antigen in the forms of vaccines and toxoids.

## 9. Chemoprophylaxis:

- To prevent from the development of an infection or the progressive of an infection to actively manifest disease, some drugs can be administered.

- It is different from chemotherapy, which refers to the use of a drug to cure a recognizable infectious disease or to limit the further progress.

#### **10. Health Education:**

- The essential duty of every health worker is to educate the community about disease causation, clinical features, mode of transmission, prevention, importance of notification, immunization, personal hygiene and environmental sanitation, etc.

#### **11. Environmental Sanitation:**

- It is one of the important control measures in control of an outbreak

#### **12. Surveillance:**

- It is defined as “the exercise of continuous scrutiny of and watchfulness over the distribution and spread of infections and factors related there to”

For effective control it includes:

- a. Prompt investigation
- b. Laboratory confirmation of presumptive diagnosis.
- c. Finding out the source of infection, routes of transmission and identification of all others to whom the infection may have already passed.
- d. collection of morbidity and mortality data.

#### **Other Concepts of diseases Control**

##### **\*Disease Elimination**

Between control and eradication, an intermediate goal has been called as "regional elimination".

**Elimination as reduction to zero of the incidence of disease or infection in a defined geographical area.**

##### **\* Disease Eradication**

Eradication literally means to "tear out by roots"

**Eradication as permanent reduction to zero of the worldwide incidence of infection.**

To-date, only one disease has been eradicated, that is smallpox

control

elimination

eradication