EPIDEMIOLOGY OF COMMUNICABLE DISEASES

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EPIDEMIOLOGY OF COMMUNICABLE DISEASES
LECTURE 1

- OBJECTIVES
  - To define (reservoir, source, carrier, zoonosis, communicable disease, and herd immunity)
  - To describe
    1. The Epidemiological models (Agent-host-environment) and (Time-place-person)
    2. Natural history of disease.
    3. The characteristics of agent, host, and environmental components that contribute to the epidemiology of communicable diseases.
THE COMPONENTS OF COMMUNICABLE DISEASES

-INFRINGEMENTS AGENTS

HUMAN RESERVOIR
- Carriers
- Why carriers are important in the epidemiology of some infections?

ANIMAL RESERVOIR

NON-LIVING RESERVOIR

*THE SOURCE OF INFECTION
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LECTURE 1

-ROUTE OF TRANSMISSION

-HOST FACTORS
  - Non-specific resistance
  - Specific resistance
  - Genetic Factors
  - Acquired factors

Factors affecting host immunity
  - Age
  - Sex
  - Pregnancy
  - Nutrition
  - Trauma and fatigue
  - Herd immunity
Objectives:
HOW to establish a program for the control of CD
HOW to assess the extent of an outbreak

ESTABLISHING A PROGRAMME
- RECOGNITION OF INFECTION
- NOTIFICATION OF DISEASES
- IDENTIFICATION OF THE SOURCE OF INFECTION

*The dynamic of infection

ASSESSMENT OF THE EXTENT OF OUTBREAK
METHODS OF CONTROL

Objectives:
To describe the main components of control

ELIMINATION OF THE RESERVOIR

1. Human reservoir
   - Isolation of patients
   - Quarantine
2. The zoonoses
3. Non-living reservoir
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LECTURE 3

- INTERRUPTION OF TRANSMISSION

- PROTECTION OF THE SUSCEPTIBLE HOST
  - Passive immunization
  - Active immunization
    Strategies for using active immunization
      - routine childhood immunization
      - epidemic control
    New vaccines
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STRATEGIES for the use of drugs in the control of communicable diseases
- mass chemotherapy
- selective population chemotherapy
- targeted chemotherapy

DRUG SPECIFICATION
- Efficacy
- Safety
- Simple regimens
- Acceptable
- Affordable
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ANTIMICROBIAL RESISTANCE

- overuse and misuse
- poor compliance
- self-medication
- counterfeit drugs
- poor control in hospitals poor standards of hygiene and environmental in hospitals
- use of antibiotics in animal husbandry, horticulture and aquaculture
- international travel and trade
3. SURVEILLANCE OF DISEASE:

Objectives:
To define surveillance
TO recognize the main features, objectives, types and techniques of surveillance

FEATRES:
-The systematic collection of all relevant data
- registration of deaths
- notification of disease and reporting of epidemics
- laboratory investigations
- data from routine screening
- investigation of individual cases and epidemics
- epidemiological surveys
data from clinics, health centers, hospitals, and other service institutions
- distribution of the animal reservoir and the vector
- Production, distribution, and of vaccines, sera, and drugs.
- Demographic and environmental data
- non-medical statistics e.g. consumption of specific foods
the orderly consolidation and evaluation of these data

The prompt dissemination of the results to those who need to know, particularly decision makers.
The techniques of surveillance are now being applied to the control of non-infectious disease.

- Environmental hazards
- Chronic non-communicable diseases
- Social problems.