Olayanju Kabirat Olaitan
Epidemiology Assignment
CHO 3level

1. Meaning of Immunization

Immunization is the process by which a person becomes protected against a disease through the administration of vaccines.

A vaccine contains weakened, killed, or parts of a disease-causing organism. When introduced into the body, the vaccine triggers the immune system to produce antibodies and memory cells.

How Immunization Works

1. Vaccine Administration: A vaccine is injected or taken orally.
2. Immune Response: The immune system identifies the vaccine components as foreign and produces antibodies.
3. Formation of Memory Cells: The body stores information about the pathogen.
4. Future Protection: When the real pathogen enters the body, the immune system responds quickly and prevents the disease from developing.

Types of Immunization

1. Active Immunization

Active immunization occurs when the body produces its own antibodies after exposure to a vaccine. It provides long-lasting protection because memory cells remain in the body for many years.
Examples: Measles vaccine, Polio vaccine, COVID-19 vaccine.

2. Passive Immunization

Passive immunization involves giving a person ready-made antibodies. This provides immediate protection but lasts for a short period.
Examples: Tetanus immunoglobulin, Rabies immunoglobulin, Antivenom.

Importance of Immunization

- Prevents diseases such as measles, polio, tetanus, and tuberculosis.
- Reduces mortality among infants and young children.
- Promotes herd immunity, protecting those who cannot be vaccinated.
- Decreases outbreaks and epidemics in communities.
- Saves healthcare costs by preventing expensive treatments.

- Helps eradicate diseases (e.g., smallpox).

Common Childhood Immunizations

Most countries follow a national immunization schedule. Common vaccines include:

- BCG (Tuberculosis)
- DPT (Diphtheria, Pertussis, Tetanus)
- Polio Vaccine
- Hepatitis B
- Hib Vaccine
- Rotavirus Vaccine
- MMR (Measles, Mumps, Rubella)
- Varicella (Chickenpox)

2. Meaning of Prevention

Prevention is the act of reducing the risk of illness, injury, or other harmful events by taking steps to avoid them. It involves adopting healthy behaviors, improving the environment, and using medical services to stop diseases from developing or spreading.

Types of Prevention

1. Primary Prevention:
This aims to stop a disease or health problem before it begins.
Examples:

- Vaccination
- Eating a balanced diet
- Regular exercise
- Using mosquito nets
- Maintaining good hygiene

2. Secondary Prevention:
This focuses on early detection and quick treatment to prevent a disease from worsening.
Examples:

- Screening tests (blood pressure check, HIV testing, cancer screening)
- Regular medical check-ups
- Early diagnosis and prompt treatment

3. Tertiary Prevention:
This aims to reduce complications and improve the quality of life for people who already have a disease.
Examples:

- Rehabilitation after a stroke

- Physiotherapy
- Long-term medication to control chronic diseases (e.g., diabetes, hypertension)

Importance of Prevention

- Reduces the occurrence of diseases and injuries
- Lowers healthcare costs and hospital admissions
- Increases life expectancy
- Promotes a healthier environment
- Protects vulnerable populations such as children and the elderly
- Improves overall community well-being
- Helps control outbreaks and epidemics

Methods of Prevention

- Practicing good personal hygiene
- Eating nutritious food
- Exercising regularly
- Ensuring safe drinking water
- Getting vaccinated
- Avoiding harmful habits like smoking and excessive alcohol use
- Maintaining clean surroundings
- Using protective equipment (helmets, seat belts, masks)