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## **IMMUNIZATION AND PREVENTION**

### **A. INTRODUCTION**

Immunization is one of the most effective public health measures used to prevent infectious diseases. It protects individuals and communities by preparing the body's immune system to recognize and fight harmful organisms.

### **B. MEANING OF IMMUNIZATION**

Immunization is the process by which a person is made resistant or protected from an infectious disease, usually through the administration of vaccines. It helps the body's immune system recognize germs (such as viruses or bacteria) and respond quickly when exposed in the future.

### **C. TYPES OF IMMUNIZATION**

There are two major types:

#### a. Active Immunization

Involves giving weakened or killed forms of pathogens (vaccines).

The body produces its own antibodies and memory cells.

Provides long-term protection.

Example: BCG, OPV, Measles vaccine.

#### b. Passive Immunization

Ready-made antibodies are given to an individual.

Provides immediate but short-term protection.

Example: Anti-rabies serum, Anti-tetanus immunoglobulin.

### **D. HOW IMMUNIZATION WORKS**

1. Vaccine is introduced into the body.
2. The immune system recognizes it as foreign.
3. The body produces antibodies to fight it.
4. Memory cells remain ready to attack the real infection later.

This prevents illness or reduces severity when exposed to the real disease.

#### **E. IMPORTANCE OF IMMUNIZATION**

1. Protects individuals from dangerous diseases.
2. Prevents outbreaks and epidemics.
3. Reduces child morbidity and mortality.
4. Protects pregnant women and newborns.
5. Contributes to herd immunity (community immunity).
6. Saves healthcare costs by preventing disease.

#### **F. IMMUNIZATION SCHEDULE**

MINIMUM TARGET AGE OF CHILDREN	TYPE OF VACCINE	DOSAGE	ROUTE	SITE
AT BIRTH	BCG  OPV 0  HEP B	0.05mls  2drops  0.5mls	INTRADERMAL  ORAL  INTRAMUSCULAR	LEFT UPPER ARM  MOUTH  ANTEROLATERAL ASPECT OF RIGHT THIGH
6 WEEKS	OPV 1  IPV 1  PENTA 1	2 drops  0.5mls  0.5mls	ORAL  INTRAMUSCULAR  INTRAMUSCULAR	MOUTH  ANTEROLATERAL ASPECT OF RIGHT THIGH

	ROTA 1	5 drops	ORAL	ANTEROLATERAL ASPECT OF LEFT THIGH MOUTH
10 WEEKS	OPV 2  ROTA 2  PENTA 2	2 drops  5 drops  0.5mls	ORAL  ORAL  INTRAMUSCULAR	MOUTH  MOUTH  ANTEROLATERAL ASPECT OF LEFT THIGH
14 WEEKS	OPV 3  IPV 2  ROTA 3  PENTA 3	2drops  0.5mls  5drops  0.5mls	ORAL  INTRAMUSCULAR  ORAL  INTRAMUSCULAR	MOUTH  ANTEROLATERAL ASPECT OF RIGHT THIGH  MOUTH  ANTEROLATERAL ASPECT OF LEFT THIGH
6 MONTHS	VITAMIN A	100,000 IU	ORAL	MOUTH
9 MONTHS	MEASLES 1  YELLOW FEVER  MENINGITIS	0.5mls  0.5mls  0.5mls	SUBCUTANEOUS  SUBCUTANEOUS  INTRAMUSCULAR	LEFT UPPER ARM  RIGHT UPPER ARM  ANTEROLATERAL ASPECT OF LEFT THIGH
12 MONTHS	VITAMIN A	200,000 IU	ORAL	MOUTH
15 MONTHS	MEASLES 2	0.5mls	SUBCUTANEOUS	LEFT UPPER ARM

#### G.DISEASE PREVENTED BY IMMUNIZATION

- Tuberculosis
- Polio
- Diphtheria
- Pertussis (whooping cough)
- Tetanus
- Hepatitis B
- Haemophilus influenzae type B
- Pneumonia
- Rotavirus
- Measles
- Yellow fever
- Meningitis

## **H. PREVENTION IN PUBLIC HEALTH**

Prevention is aimed at reducing risk of diseases through various levels:

a. Primary Prevention

Prevent disease before it occurs.

Examples: Immunization, good sanitation, health education, proper nutrition.

b. Secondary Prevention

Early detection and treatment.

Examples: Screening tests, antenatal care, early diagnosis.

c. Tertiary Prevention

Managing disease to reduce complications and disability.

Examples: Rehabilitation, physiotherapy, long-term treatment.

## **I. BENEFIT OF IMMUNIZATION PROGRAM**

- 1.Controls preventable diseases.
- 2.Protects future generations.
- 3.Strengthens community health.
- 4.Helps achieve national and global health goals.

## **J. CHALLENGES AFFECTING IMMUNIZATION**

- 1.Myths and misinformation.
- 2.Poor access to healthcare facilities.
- 3.Vaccine hesitancy.
- 4.Cold chain issues.
- 5.Inadequate funding.

## **PREVENTION IN IMMUNIZATION**

### **A. INTRODUCTION**

Prevention is a key goal of public health. Immunization is one of the most effective preventive strategies used worldwide to reduce the burden of infectious diseases. Through vaccination, individuals and communities are protected from illnesses that once caused high rates of death and disability, especially among children.

## **B. MEANING OF PREVENTION IN IMMUNIZATION**

Prevention in immunization refers to the use of vaccines to stop the occurrence, spread, and complications of infectious diseases.

It involves giving vaccines at the right age, using proper techniques, and maintaining high coverage to ensure that diseases do not gain a chance to spread.

## **C. LEVEL OF PREVENTION IN IMMUNIZATION**

### **A. Primary Prevention**

This is the main focus of immunization.

Primary prevention aims to stop diseases before they start.

-How immunization serves as primary prevention:

-Vaccines stimulate the immune system to develop protection.

-They prevent initial infection.

-They reduce the chance of outbreaks in communities.

They protect vulnerable groups such as newborns, elderly, and immune-compromised individuals.

Examples:

BCG prevents tuberculosis.

OPV/IPV prevent polio.

Measles vaccine prevents measles infection.

### **B. Secondary Prevention**

Secondary prevention involves early detection and reducing severity of disease

In immunization:

It includes screening for missed vaccines, identifying under-immunized children, and giving catch-up vaccinations.

It also includes post-exposure vaccination, e.g.

-Rabies vaccine after animal bite

-Hepatitis B vaccine after exposure

-Tetanus toxoid after wound injuries

Secondary prevention reduces complications when exposure has already occurred.

### **C. Tertiary Prevention**

This focuses on reducing complications, disability, or death from diseases.

In immunization:

-People who survive diseases like tetanus or measles may still receive vaccines later to prevent future episodes.

Strengthening immunity in high-risk groups (pregnant women receiving tetanus vaccine to prevent neonatal tetanus).

Tertiary prevention ensures long-term protection and reduces disease recurrence

## **4. IMPORTANCE OF PREVENTION THROUGH IMMUNIZATION**

1. Reduces morbidity and mortality from childhood killer diseases.
2. Protects entire communities through herd immunity.
3. Prevents epidemics and outbreaks.
4. Reduces hospital admissions and burden on healthcare systems.
5. future generations by eliminating diseases (e.g., smallpox eradication).
6. Saves economic cost for families and governments.
7. Protects school children and workers from vaccine-preventable diseases.

## **5. STRATEGIES FOR EFFECTIVE PREVENTION THROUGH IMMUNIZATION**

### **1. Maintaining Effective Cold Chain**

Vaccines must be stored correctly to remain potent.

### **2. Health Education**

Communities must understand the importance of vaccines to reduce hesitancy.

3. Timely Vaccination

Vaccines should be given at the recommended age to ensure maximum protection.

4. High Immunization Coverage

Ensures herd immunity and reduces disease spread.

5. Outreach Services

Immunization teams visit hard-to-reach communities.

6. Surveillance of Vaccine-Preventable Diseases

Helps detect outbreaks early and respond quickly.

7. Monitoring Adverse Events Following Immunization (AEFI)

Ensures safety and builds public trust.

8. Catch-Up Immunization

Ensures unvaccinated or partially vaccinated children receive missed doses.