ADE AJOKE

CHO 300 level

Discuss immunization and prevention

Immunization is the process of giving a vaccine to help the body's immune system recognize and fight specific infections. A vaccine contains a harmless piece of a pathogen (such as a protein, weakened virus, or inactivated bacterium) that trains the immune system to remember the germ. If the person later encounters the real disease, the immune system can respond quickly and prevent illness or reduce its severity.

How Immunization Prevents Vaccine-Preventable Diseases

1. Creates immunity – The vaccine stimulates production of antibodies and memory cells that act faster than the natural infection would.

2. Reduces circulation of the pathogen – When enough people are immunized, the germ finds fewer hosts to infect, which lowers community transmission (herd immunity).

3. Limits outbreaks – High vaccination coverage makes it difficult for a disease to spread widely, so even occasional cases are quickly contained.

Key Steps to Prevent Vaccine-Preventable Diseases

- Follow the recommended schedule – Infants, children, adolescents, and adults each have specific vaccines (e.g., BCG, polio, measles-mumps-rubella, hepatitis B, HPV, influenza, COVID-19). Timely doses ensure optimal protection.

- Stay up-to-date – Keep track of booster shots (e.g., tetanus, diphtheria, pertussis, COVID-19) that wanne immunity over time.

- Vaccinate before exposure – Travelers should receive any needed vaccines well before visiting regions where diseases like yellow fever, typhoid, or hepatitis A are common.

- Maintain herd immunity – Aim for the coverage levels recommended by health authorities (often ≥90 % for diseases like measles) to protect those who cannot be vaccinated (e.g., immunocompromised individuals).

- Practice complementary preventive measures – Hand hygiene, safe food and water, vector control, and respiratory etiquette further reduce the chance of infection even when vaccination is incomplete.

Immunization-related prevention

Primary prevention – stops disease before it can occur.

1. Vaccination according to the national schedule (e.g., BCG, polio, measles, HPV).

2. Health education on vaccine benefits and safety.

3. Nutrition & lifestyle support (e.g., adequate vitamin A) to strengthen the immune system.

Secondary prevention – early detection and rapid intervention to limit spread.

1. Screening for vaccine-preventable diseases during routine visits (e.g., checking titers for hepatitis B).

2. Prompt outbreak response mass vaccination campaigns when a case is identified (e.g., measles ring-vaccination).

3.Contact tracing and prophylactic vaccination of close contacts (e.g., pertussis post-exposure prophylaxis).

Tertiary prevention reduces complications and disability after disease has occurred.

1. Antiviral or antibiotic treatment for breakthrough infections (e.g., oseltamivir for influenza).

2. Rehabilitation for post-infectious sequelae (e.g., physiotherapy after polio).

3.Support services (counseling, social support) for patients with long-term effects (e.g., congenital rubella syndrome).

These three levels work together: vaccination (primary) keeps most people healthy, early detection and outbreak control (secondary) limit cases, and treatment/rehabilitation (tertiary) mitigate the impact of any infections that still occur.

Immunization and prevention are the backbone of public health—vaccines train your immune system to recognize threats before they cause trouble, and simple habits (like hand-washing, mask-wearing, and staying active) cut the spread of infections.