

Akinwumi Awawu omoshalewa
300LEVEL

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DISCUSS IMMUNIZATION AND. PREVENTION

Immunization is a key public health measure that prevents a wide range of diseases by stimulating the body's immune system to build protection against specific infections, making it a powerful form of prevention. Vaccination is the process of administering a vaccine to a person, which works with the body's natural defenses to create immunity without causing the full-blown disease. This preventive strategy saves millions of lives annually by protecting individuals and communities from serious illnesses like measles, polio, tetanus, and diphtheria.

TYPES OF IMMUNIZATION

1. Live-attenuated vaccines

- (i) These vaccines use a weakened, live version of the virus or bacteria.
- (ii) They create a strong, long-lasting immune response.

Examples include the measles, mumps, and rubella (MMR) and varicella (chickenpox) vaccines.

2. Inactivated vaccines

- (i) These are made from a killed version of the germ.
- (ii) The immune response is not as strong as with live-attenuated vaccines, so multiple doses are often needed.

Examples include the polio (IPV), rabies, and hepatitis A vaccines.

3. Subunit, recombinant, polysaccharide, and conjugate vaccines

- (i) These vaccines contain only specific pieces of the germ, such as its protein, sugar, or capsid.
- (ii) Conjugate vaccines link a polysaccharide to a protein to improve the immune response in young children.

Examples include the hepatitis B, HPV, and meningococcal vaccines.

4. Toxoid vaccines

- (i) These vaccines target the harmful toxins produced by a bacterium instead of the germ itself.
- (ii) They create immunity to the effects of the toxin.

Examples include the tetanus and diphtheria vaccines.

5. mRNA vaccines

- (i) These vaccines deliver messenger RNA (mRNA) into cells, providing instructions for making a viral protein.
- (ii) The body's immune system then recognizes and builds a response to that protein, providing immunity.

Some COVID-19 vaccines use

Benefit of Immunization

1 Disease Prevention: Vaccines prevent diseases, disabilities. And death frozen 30 life threatening Infection, including measles, polio, tetanus. and hepatitis.

2 community protection ; when a high percentage of a community is vaccinated,. It creates herd immunity, which protects those who cannot be vaccinated. Such as infants or people with weakened immune systems.

3 Economic benefits; Immunization is one of the most cost-effective health investments. With a significant return in economic benefits due to reduced healthcare costs and increased.

4 Global health security; Immunization is crucial for preventing the spread of infectious diseases and maintaining global health security.

Challenges that face Immunization

1 Despite its success. Immunization programs face challenges like disruptions from events such as the COVID-19 pandemic, economic crises.

2. Misinformation and vaccine hesitancy can also hinder efforts to reach high levels of coverage

3. In some areas. Factors like ethnicity, religion, and geographic location can create barriers to consistent immunization.

Prevention of Immunization

Immunization prevents disease by stimulating the body's immune system to create immunity, making a person resistant to infection. The primary way this is achieved is through vaccination, which introduces a harmless amount of a virus or bacterium to the body, allowing it to build memory cells that protect against future infections. Key elements for prevention include following the recommended immunization schedule, ensuring high vaccine coverage in communities to achieve herd immunity, and using preventative measures alongside vaccination.

How immunization prevents diseases

1.Simulates immune response; vaccines introduce a weakened or inactive version of a pathogen to the body

2.Creates memory cells: The immune system responds by producing antibodies and memory cells.

3. Provides long-term protection: These memory cells allow the body to quickly and effectively fight off the disease if it encounters the actual pathogen in the future.

Types of prevention

There are (3) Three types of prevention.(1)primary prevention, (2)secondary prevention, (3)tertiary prevention.