NAME: FOLARIN AMEENAH OLUWATUNMISE
COURSE TITLE: EPIDEMIOLOGY OF COMMUNICABLE DISEASE
LEVEL:300LEVEL
DEPT: CHO

QUESTION

DISCUSS IMMUNIZATION AND PREVENTION AND CONTROL

Immunisation is a cornerstone of public health, playing a critical role in preventing infectious diseases. It works by introducing a weakened or inactive form of a pathogen (like a virus or bacteria) or its components into the body. This triggers the immune system to produce antibodies and memory cells, which are ready to fight off the real pathogen if encountered in the future.
Vaccines are developed through a rigorous process, including research, testing, and approval by regulatory agencies. They are one of the most effective medical interventions, saving millions of lives each year by preventing diseases like measles, polio, influenza, and many others.
Vaccination means giving someone a vaccine to protect them from specific diseases. It helps their body's immune system recognize and fight pathogens (like viruses or bacteria) without causing the disease itself. Think of it like training the body's defense system

Immunization is the process of making someone immune or resistant to a particular disease, typically through vaccination. It helps the body's immune system recognize and fight specific pathogens, providing protection against infections and diseases

Prevention and control of diseases involve a multi-faceted approach. This includes:

1. **Vaccination:** This is the most effective way to prevent many infectious diseases. Vaccines are available for diseases like measles, polio, influenza, and many others.
2. **Hygiene and Sanitation**: Practicing good hygiene, such as handwashing, and ensuring access to clean water and sanitation facilities can significantly reduce the spread of diseases.
3. **Vector Control:** For diseases spread by vectors (like mosquitoes or ticks), controlling the vector population through measures like insecticide use, eliminating breeding sites, and using protective measures like bed nets is essential.
4. **Surveillance and Early Detection**: Monitoring disease outbreaks, identifying cases early, and tracking the spread of diseases allows for prompt intervention and control measures.
5. **Treatment and Management**: Providing timely and appropriate treatment for infected individuals can prevent complications and reduce the risk of further transmission.
6. **Public Health Education**: Educating the public about disease prevention, symptoms, and the importance of seeking medical care can empower individuals to protect themselves and others.
7. Quarantine and Isolation: In certain situations, isolating infected individuals or quarantining those exposed to a disease can help to contain its spread.
8. **Environmental Control:** Addressing environmental factors that contribute to disease transmission, such as poor housing conditions or inadequate waste disposal, is also crucial.

The specific prevention and control measures used depend on the disease, its mode of transmission,

and the resources available. A comprehensive approach that combines multiple strategies is often the most effective way to protect

Vaccines are developed through a rigorous process, including research, testing, and approval by regulatory agencies. They are one of the most effective medical interventions, saving millions of lives each year by preventing diseases like measles, polio, influenza, and many others.

Vaccines can be administered through various routes, each designed to deliver the vaccine effectively and safely. The most common routes include intramuscular (IM), subcutaneous (SC), and oral administration.

Intramuscular (IM) injections involve injecting the vaccine into a muscle, such as the deltoid muscle in the upper arm or the vastus lateralis muscle in the thigh. This route is often used for vaccines that need to be absorbed quickly and stimulate a strong immune response. The volume of vaccine administered via IM is typically between 0.5 to 1.0 mL, but can sometimes be higher, depending on the specific vaccine.

Subcutaneous (SC) injections involve injecting the vaccine into the tissue layer between the skin and the muscle. This route is suitable for vaccines that are absorbed more slowly. Common sites for SC injections include the upper arm, thigh, or abdomen. The volume of vaccine administered via SC is usually 0.5 to 1.0 mL.

Oral vaccines are administered by mouth and are often used for vaccines that target the gut, such as those for rotavirus or some typhoid vaccines. The volume varies depending on the vaccine formulation.

Other routes of administration, though less common, include:

Intradermal (ID): Injection into the dermis layer of the skin.
Intranasal: Administration through the nose, often in the form of a spray.

The specific route and volume of vaccine administration depend on the vaccine type, the age of the patient, and the manufacturer's recommendations. Healthcare professionals are trained to administer vaccines correctly to ensure their effectiveness and minimize adverse reactions.

IMMUNISATION SCEHDULE

Vaccines by Age Group
At Birth
- *BCG (Tuberculosis)*: Intra-dermal, left upper arm
- *OPV0 (Oral Polio Vaccine)*: Oral, mouth
- *Hepatitis B*: Intramuscular, anterolateral aspect of right thigh

6 Weeks
- *Pentavalent 1 (DPT, Hep B, Hib)*: Intramuscular, anterolateral aspect of left thigh

- *OPV1*: Oral, mouth
- *Pneumococcal Conjugate Vaccine*: Intramuscular, anterolateral aspect of right thigh
- *Rotavirus Vaccine*: Oral, mouth

10 Weeks
- *Pentavalent 2 (DPT, Hep B, Hib)*: Intramuscular, anterolateral aspect of left thigh
- *OPV2*: Oral, mouth
- *Pneumococcal Conjugate Vaccine*: Intramuscular, anterolateral aspect of right thigh
- *Rotavirus Vaccine*: Oral, mouth

14 Weeks
- *Pentavalent 3 (DPT, Hep B, Hib)*: Intramuscular, anterolateral aspect of left thigh
- *OPV3*: Oral, mouth
- *Pneumococcal Conjugate Vaccine*: Intramuscular, anterolateral aspect of right thigh

6 Months
- *Vitamin A*: Oral, mouth

9 Months
- *Measles*: Subcutaneous, left upper arm
- *Yellow Fever*: Subcutaneous, right upper arm

12 Months
- *Meningococcal Conjugate Vaccine*: Intramuscular, anterolateral aspect of left thigh
- *Vitamin A*: Oral, mouth

15 Months
- *Measles 2nd Dose*: Subcutaneous, left upper arm

9 Years
- *HPV (Human Papillomavirus)*: Intramuscular, deltoid muscle (left upper arm)

Administration Routes
- *Intra-dermal (ID)*: BCG vaccine
- *Intramuscular (IM)*: Pentavalent, Pneumococcal Conjugate, Hepatitis B, HPV vaccines
- *Oral*: OPV, Rotavirus, Vitamin A vaccines
- *Subcutaneous (SC)*: Measles, Yellow Fever vaccines [1] [2] [3]