The benefits of vaccines and how vaccination affects the process of immunity.

1. Every year, thousands of adults in the U.S. suffer serious health problems, are hospitalized, and even die from diseases that could be prevented by vaccines.

   Immunity is the ability of the human body to tolerate the presence of material indigenous to the body and to eliminate foreign material, providing protection from infectious disease. Vaccines, a type of Active Immunity, interact with the immune system and can produce an immune response similar to that produced by natural infection.

   Vaccines are important to:
   - Prevent illnesses
   - Help avoid death
   - Save trillions in societal costs.

   The CDC’s Epidemiology and Prevention of Vaccine-Preventable Diseases, also known as the Pink Book, is an all-inclusive textbook dedicated to understanding vaccine-preventable diseases (VPD) and the associated vaccines.

Methods of acquiring immunity

2. **Active Immunity**
   - Active immunity is a stimulation of the immune system to produce antigen-specific humoral (antibody) and cellular immunity. This type of immunity is usually permanent.

   **Passive Immunity**
   - Passive immunity is the transfer of an antibody produced by one human or animal to another. It provides protection against some infections, but this protection is temporary.

   **Community Immunity**
   - Community immunity (also referred to as herd immunity) refers to a situation in which a sufficient proportion of a population is immune to a certain infectious disease either through vaccination or natural disease. This limits the spread of the disease from person to person.

LBOH in the area of vaccine management

3. Local public health plays an integral role in providing community-based initiatives. Local public health nurses play a vital role in reaching populations who are in need of vaccinations. Public health nurses understand the key community organizations in their given area and can partner with them to reinforce the importance of vaccines. Health officials and their partners have to be creative in connecting with their target populations.

   Some things LBOH can do to implement population-based strategies for increasing immunization rates:
   - Participate in or sponsor a community health fair
   - Collaborate with senior centers and the Meals on Wheels program to identify homebound residents in need of vaccination
   - Hold clinics at food pantries and homeless shelters
Classification of Vaccines

There are two basic types of vaccines: live attenuated and inactivated. Additional types, such as polysaccharide and recombinant, are described in the Pink Book.

- **Live Attenuated Vaccines** are produced from live organisms (viruses or bacteria) that are weakened by chemical or physical processes. They must replicate in the body in order to produce an immune response.
  - Should NOT be given to immunosuppressed people
  - Usually effective with one dose
  - Produce an immune response similar to natural infection
  - Must replicate in the vaccinated person in order to be effective

- **Inactivated vaccines** are produced from organisms that have been killed by physical or chemical processes, and they can be whole cell or fractional. Inactivated vaccines are not alive and cannot replicate.
  - Generally require multiple doses
  - Periodic booster doses may be required
  - Made from viruses and bacteria that have been killed
  - Cannot cause disease

Massachusetts Immunization Information System (MIIS).

Beginning in 2010, state law requires vaccine administration to be reported to MIIS. This applies to all vaccines administered in the Commonwealth of Massachusetts, including the influenza vaccine.

Some of the stipulations within the legislation:
- MDPH establishment of an immunization registry
- Mandatory reporting of all immunizations administered in the state
- Data feed from the Massachusetts Registry of Vital Records and Statistics to MIIS

**Policy MGL Ch111 s24M** outlines information on system access, confidentiality, and requirements for reporting immunizations. It also describes a provider's duty to inform, in order to fulfill legal responsibilities, and a patient's right to object to data sharing across providers.

Obtaining and Managing Vaccines

LBOH have access to MDPH-supplied vaccines as outlined in the Childhood Vaccine Availability Table and the Adult Vaccine Availability Table. In order to receive state-supplied vaccines, all providers, including LBOH, must be enrolled in the MDPH Immunization Program and ensure they are following the MDPH Guidelines for Compliance with Federal and State Vaccine Administration Requirements.

In order to get and manage state-supplied vaccines, LBOH must use the MIIS Vaccine Management Module which allows for online state-supplied vaccine ordering, tracking and reporting vaccine usage to MDPH, inventory management, and annual provider enrollment information.