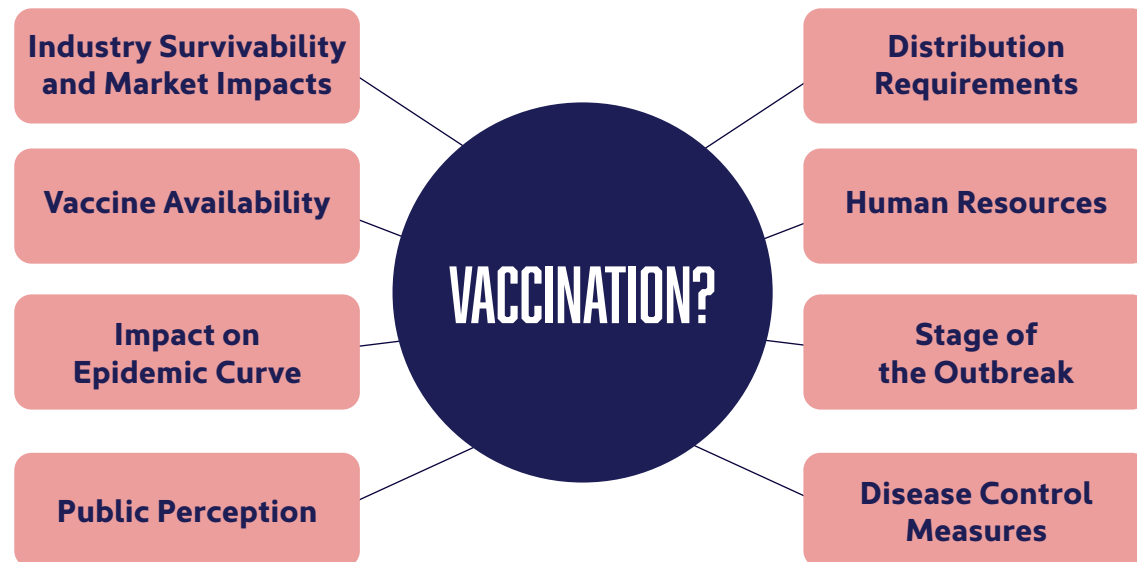


# VACCINATION

The control of a Foreign Animal Disease (FAD) outbreak may require large-scale vaccination of livestock or poultry to minimize the impact on animal and public health, ensure continuity of the U.S. food supply, and minimize the impact on the economy and the environment. Emergency vaccination strategies are tools to consider early during an FAD response if appropriate vaccines are available in sufficient quantities. The National Veterinary Stockpile (NVS) is a USDA APHIS Veterinary Services resource and the nation's repository of veterinary countermeasures, including animal vaccines and other critical veterinary supplies.

## VACCINATION STRATEGIC PLANNING

Decisions regarding which vaccines to use and which animals to vaccinate will vary with the disease involved, species affected, and stage of the outbreak. The methodology of vaccine distribution and planning for vaccine implementation must be planned in advance.

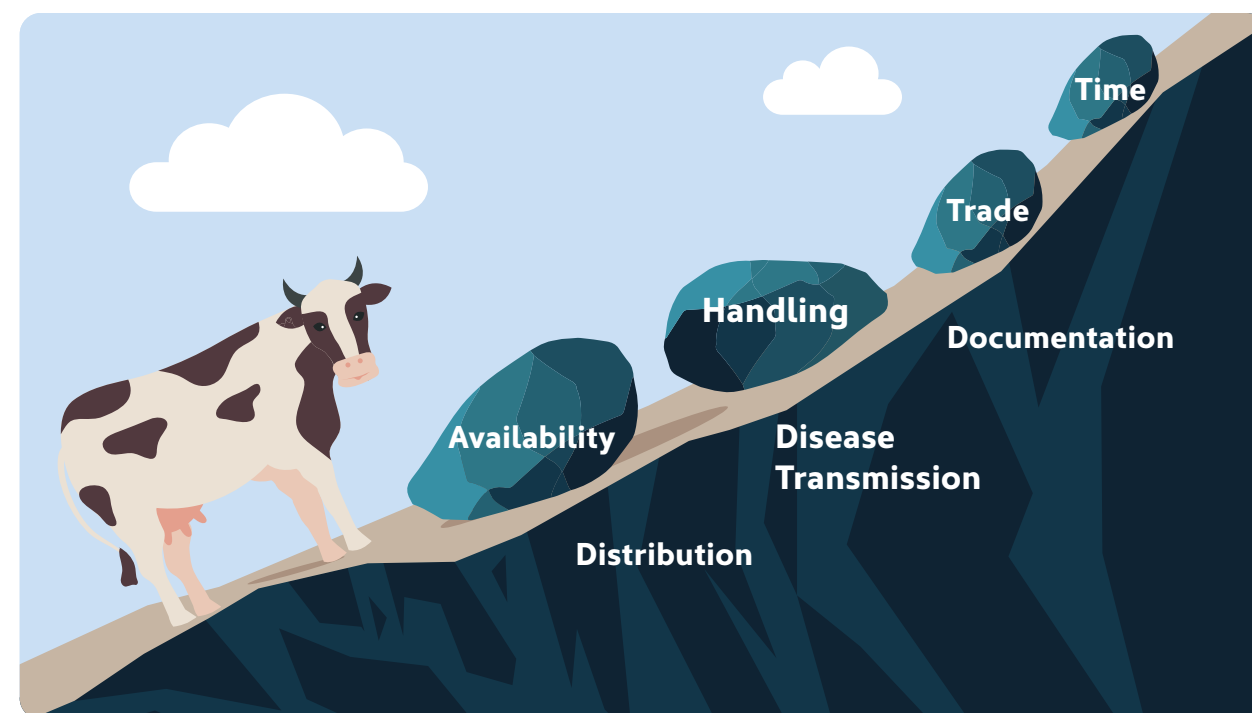
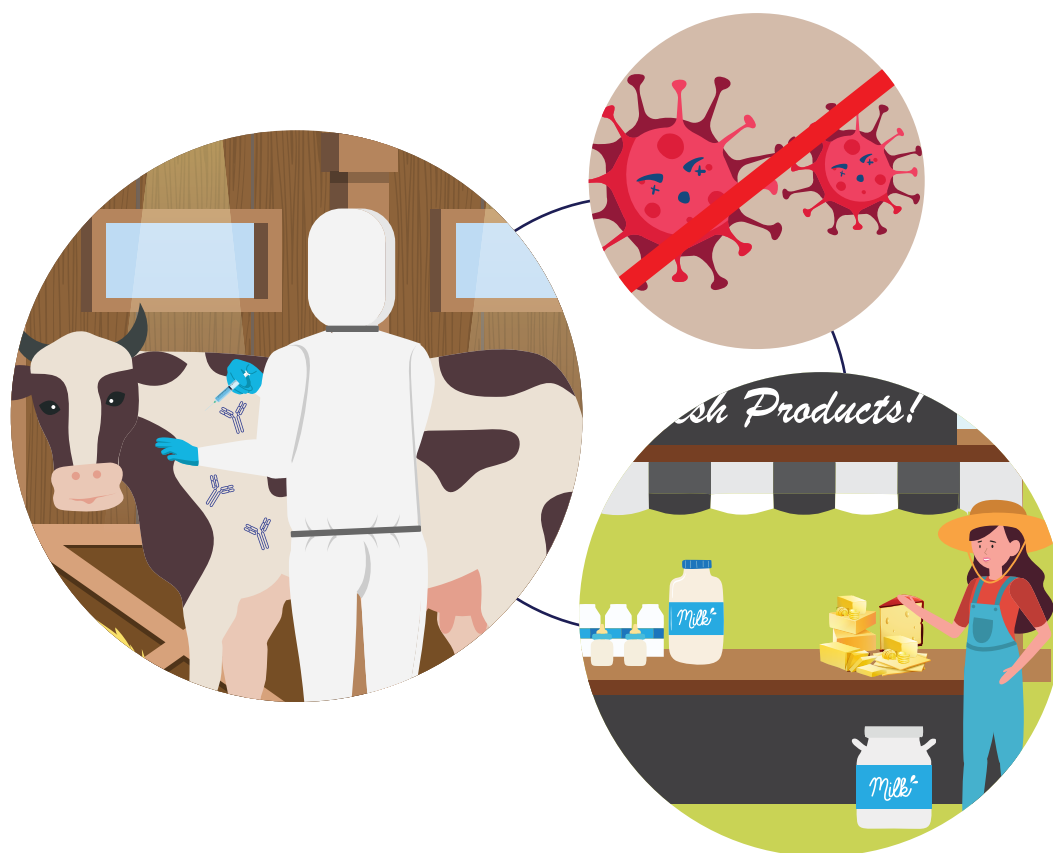


## CHALLENGES OF VACCINATION

- ✓ Vaccination may suppress symptom expression in infected animals, masking the disease and thereby prolonging the length of disease identification and response time.
- ✓ Vaccine availability can be limited in some disease outbreaks.
- ✓ Vaccine distribution strategies are reliant on third-party logistics, private veterinarians, and Incident Management Team (IMT) workflow.
- ✓ Vaccinated animals must be documented and tracked effectively.
- ✓ Vaccines require proper handling, storage, and maintenance of the cold chain, which is the system used to ensure vaccines stay at proper temperatures from the manufacturer's warehouse to the point of administration.
- ✓ There may be risk of disease transmission during vaccination.
- ✓ Use of vaccination can have significant negative trade impacts.

## BENEFITS OF VACCINATION

- ✓ Vaccination can be an effective alternative or supplemental method to contain a disease outbreak.
- ✓ Vaccination may protect the animal against disease and reduce disease spread.
- ✓ Vaccination may reduce the need for mass euthanasia and large-scale disposal, thus minimizing the environmental impact.
- ✓ Vaccination may reduce the economic impact on the livestock industry and support the Continuity of Business.
- ✓ Vaccination may support the nation's food security during a devastating disease outbreak.



# VACCINATION

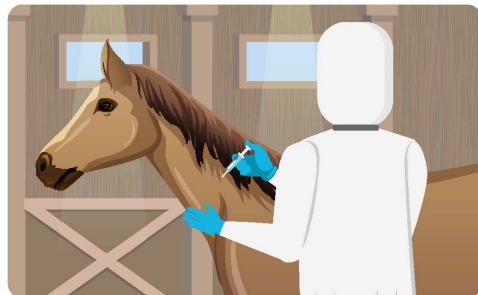
## VACCINATION CHARACTERISTICS

### Vaccine types

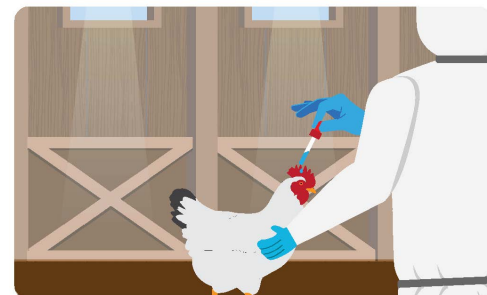
- ✓ Two main types of conventional vaccines: modified live (MLV) and killed inactivated vaccines.
- ✓ New technologies providing additional vaccine types such as Gene-deleted vaccines, Plant-derived vaccines, and Differentiating Infected from Vaccinated Animals (DIVA) vaccines are continuously being developed.
- ✓ All types are subject to mandatory withdrawal times to ensure that meat, milk, or other products from the vaccinated animal are free from residues of vaccine components (such as preservatives or adjuvants) or the vaccine organism itself.

### Vaccine administration methods

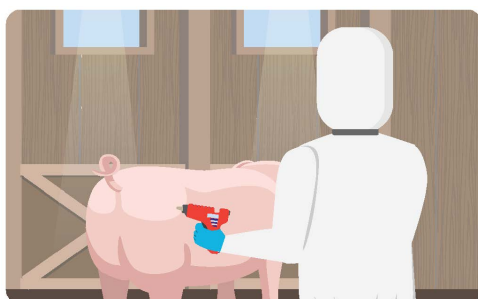
#### Parenteral Injection



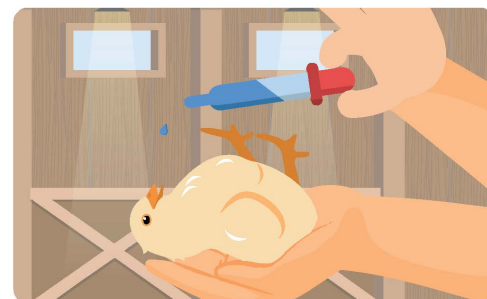
#### Ocular



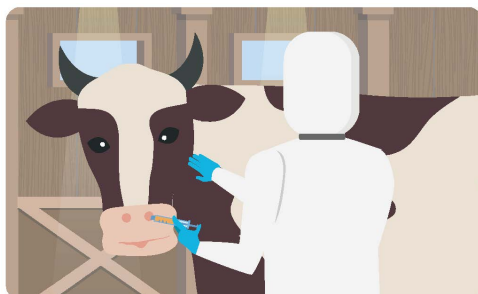
#### Needle-Free (Transdermal) Injection



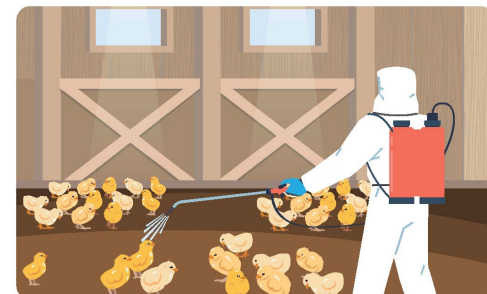
#### Oral



#### Intranasal

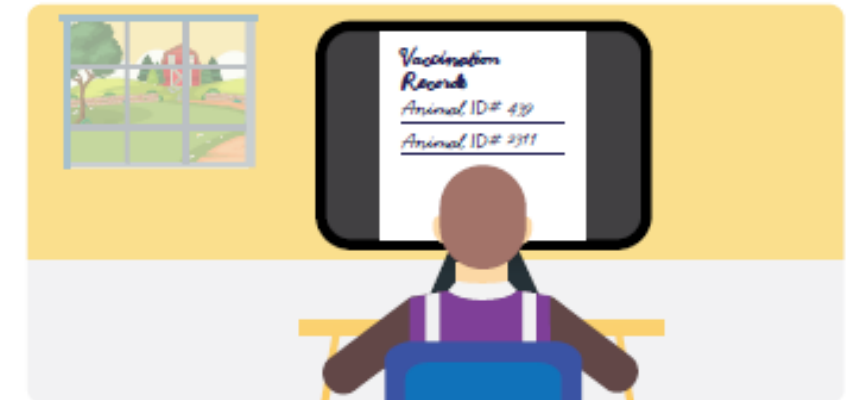


#### Spray/Topical



## VACCINATION DOCUMENTATION

- ✓ Vaccination records should include the following information at minimum: Animal ID number, Date(s) administered, Route of administration, Vaccine used, Serial and Lot numbers, Premises and owner information
- ✓ Tracking of vaccinated animals and their outcomes
- ✓ Types of animal identification
  - An individual animal ID: e.g. Radio frequency ID (RFID) or microchip
  - A group/herd ID by location: e.g. House 5
  - Permanent ID: e.g. Tattoos, Brands
  - Temporary visual ID: e.g. Collars, Stall cards, or Tags
- ✓ Communication of animal vaccination records from field to the Incident Management Team (IMT)



## VACCINATION SAFETY

- ✓ Prevent disease transmission during vaccination by emphasizing Personal Protective Equipment (PPE) and biosecurity.
- ✓ Proper vaccination administration and protocols should be followed for the species of animal and type of vaccine.
- ✓ Ensure personal safety while administering vaccines as some can cause infection or inflammatory reaction in humans if accidentally injected or sprayed onto people.
- ✓ Safe and humane animal handling and appropriate animal restraint while administering vaccines can protect personnel from physical injuries.

