

BIOSECURITY



INDIVIDUAL BIOSECURITY



PREMISES BIOSECURITY



MOVEMENT BIOSECURITY

Biosecurity measures are actions taken to prevent or contain the spread of infectious disease from one premises to another. An outbreak of a foreign animal disease (FAD) in the United States could seriously damage our domestic livestock and poultry industries. It could also have significant economic consequences from restrictions placed on the United States by our trading partners. Movement of people, animals, equipment, or objects can spread disease.

TWO LEVELS OF BIOSECURITY

DAILY: TO MAINTAIN OVERALL HERD/FLOCK HEALTH

ENHANCED: ACTIVATED DURING A FAD OUTBREAK TO PREVENT DISEASE SPREAD



INDIVIDUAL BIOSECURITY

People can unknowingly carry and spread disease that attaches to clothing, shoes, and equipment unless proper safety precautions are followed.

- FAD responders move to and from locations that are suspected to be infected or are at risk of being infected. You must consider YOUR actions as high risk.
- Individuals should follow all on-farm and incident biosecurity protocols. Using appropriate individual biosecurity measures mitigates introducing the disease to an uninfected farm.
- Examples include: PPE, footbaths, hand washes/sanitizers, etc.

BIOEXCLUSION AT A NON-INFECTED PREMISES



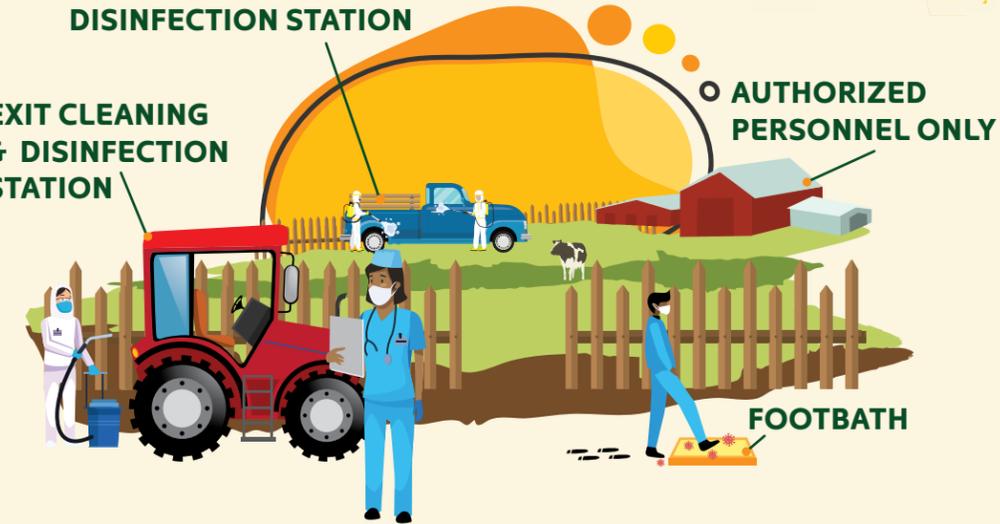
PREMISES BIOSECURITY

It's very easy for diseases to enter a farm without strong defenses in place, like the walls and gates that would protect a castle.

- Set physical perimeter boundaries and buffers.
- Log visitors and vehicles coming through access points.
- Use cleaning and disinfecting stations at each access point.
- Have an approved enhanced biosecurity plan, such as a Secure Food Supply (SFS) Plan, and be prepared to implement all components of the plan.

ENTRY CLEANING & DISINFECTION STATION

EXIT CLEANING & DISINFECTION STATION



MOVEMENT BIOSECURITY

Viruses can survive on clothing, shoes, and equipment, and disease can spread rapidly from one premises to another through movement of people, vehicles, equipment, animals, and products.

- Ensure every employee, driver, veterinarian, and FAD responder moving to and from site locations follows biosecurity practices.
- Require movement permits as well as the cleaning and disinfecting of all animal products, vehicles, and equipment prior to transferring in or out of the premises. Live animal movements under permit with biosecurity considered along with other requirements on a case-by-case basis.

CLEANING & DISINFECTION

When a Foreign Animal Disease (FAD) is present, dangerous pathogens such as viruses can spread while hiding on the premises, equipment, personnel's clothing and belongings, or vehicles. Cleaning and disinfecting all surfaces is an important process to stop the spread of the FAD. Cleaning is the process of removing organic material and visible contamination, such as mud and manure, from a surface to allow effective disinfection. Disinfection is the process of killing and disabling pathogens from a surface using a disinfection method. Virus elimination may also be achieved through other methods such as the fallow period.

PREMISES CLEANING AND DISINFECTION (C&D)

The affected production system, the conditions on the premises, and the disease agent must be evaluated to determine the C&D method. A combination of C&D methods may be chosen based on site-specific elements.

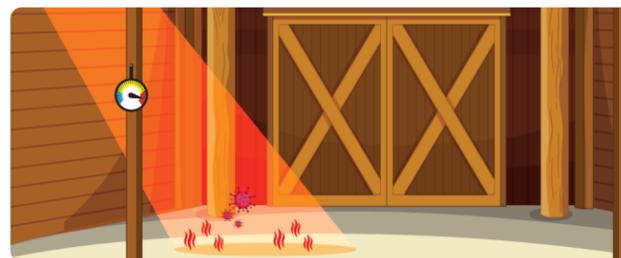
Cleaning methods:

- **Dry cleaning** involves removing visible contamination with a brush or scraper.
- **Wet cleaning** is utilizing a surfactant and water to remove visible contamination that is difficult to remove by dry cleaning.



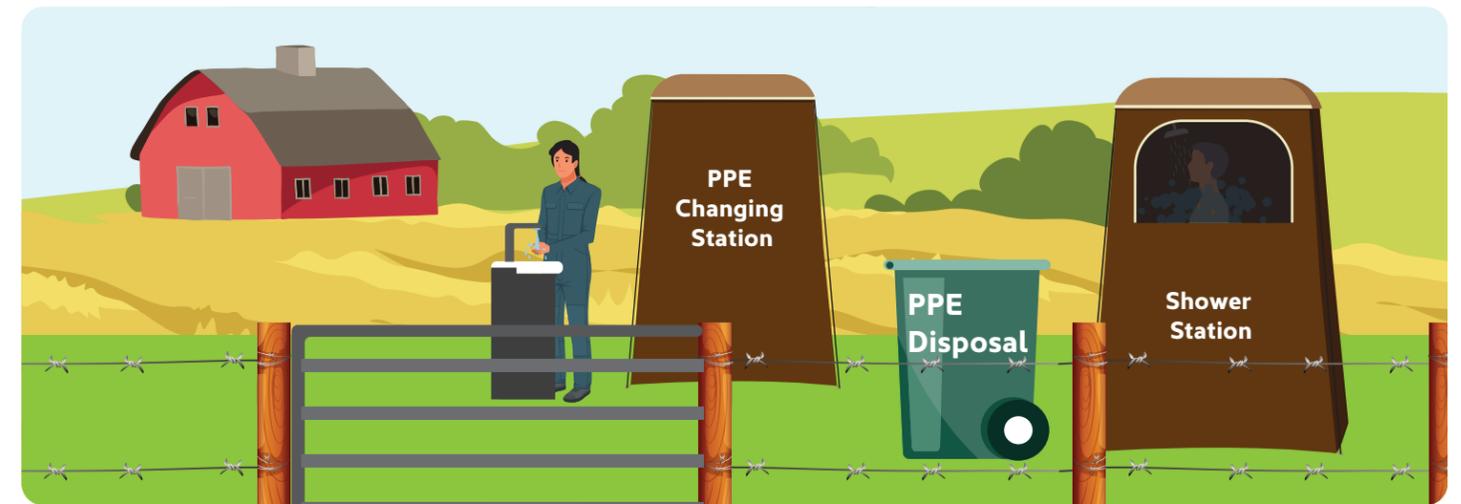
Disinfection methods:

- **Chemical disinfectants** such as alcohol, biocidal solution, or acid are used to inactivate microorganisms. Consider the disease agent and select an effective disinfecting product.
- **Physical disinfectants** such as radiation or heat are used to destroy microorganisms. Two types of heat are utilized – moist heat, which includes steam or boiling water, and dry heat, which includes direct flame or hot air.



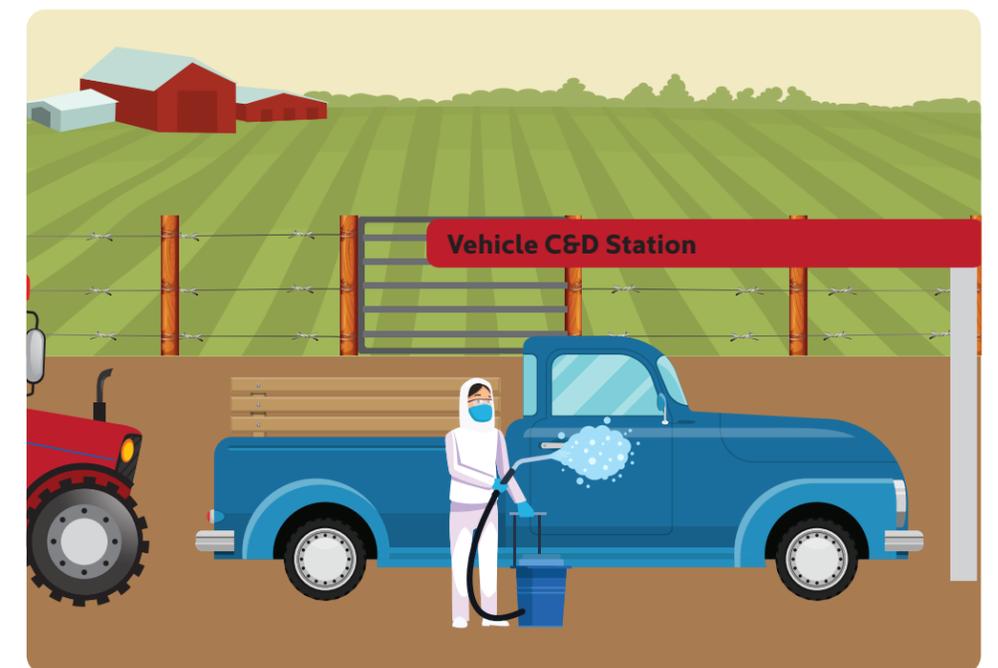
PERSONNEL SAFETY DURING C&D

During C&D all personnel must wear appropriate Personal Protective Equipment (PPE) because many disinfectants are hazardous to humans. Proper use of PPE is needed when mixing, handling, and applying disinfectants. PPE must be disposed or washed prior to leaving the premises to lessen risk of disease spread.



EQUIPMENT AND VEHICLE C&D

Equipment used on-site can transfer pathogens to other locations and to susceptible animals. All equipment must undergo C&D or be properly disposed after use. Any vehicle used on an infected premises, or to haul infected animals, can transport pathogens from one site to another. These contaminated vehicles must go through a C&D wash station to remove the disease risk.



COMMUNICATION AND PUBLIC INFORMATION

Effective communication between responders and stakeholders is an essential tool to properly inform and educate the public. Timely communication can help build effective collaborations between the public and the Incident Management Team (IMT). Equally important is the internal communication amongst responders within the IMT. Clear, consistent, and accessible communication is critical to ensure an effective response and mitigate duplication of efforts and wasted resources.

INTERNAL COMMUNICATION

The IMT must be continuously informed of the incident status by conducting daily briefings and by having a communication system that includes methods such as phone, email, or text message.



COLLABORATION WITH EXTERNAL AGENCIES

Collaborative efforts with other government agencies, non-government organizations (NGOs), and education organizations can optimize public awareness by overseeing messaging channels.



COMMUNICATION WITH THE PUBLIC AND STAKEHOLDERS

Accurate information must be gathered, verified, coordinated, and disseminated as quickly as possible during an incident. Methods of disseminating information may include outreach events, town hall meetings, the news media, and social media platforms. Targeted audiences such as organized groups dedicated to the species in question can be a great resource for disseminating information.



COMMUNICATION

MESSAGE DEVELOPMENT

Information is gathered to develop messaging that is communicated with different stakeholders such as affected industry representatives, the government, and the general public. Clear messaging is used to inform and raise awareness about the incident while clarifying and correcting any rumors and misinformation. All information being publicly shared must be approved by the Public Information Officer (PIO).



COMMUNICATION THROUGH SOCIAL MEDIA AND WEBSITES

Verified disease outbreak information published through the official social media channels can be a powerful tool to directly reach audiences that other methods of communication may not be able to achieve.

Keeping the audience engaged through social media year-round will maximize communication impact during an incident. Maintaining a website presence as a main source of up-to-date information must be considered. If multiple web sources are used to reach a broader audience, all information must be consistent across all platforms.



CONTINUITY OF BUSINESS

Continuity of Business (COB) is the management of non-infected premises and non-contaminated animal products in the event of a Foreign Animal Disease (FAD) outbreak. COB provides producers and associated industries a path to avoid interruptions in animal and animal product movements from premises with no FAD detection. Several states, such as California, support COB during an outbreak by implementing enhanced biosecurity measures through the Secure Food Supply (SFS) Program.

THE SECURE FOOD SUPPLY PROGRAM

The SFS Program is designed to allow business operations that are unaffected by the disease (i.e., negative for the disease) but are located within a Control Area to maintain some business operations and therefore economic viability. The SFS Program contains the following key elements:

Enhanced Biosecurity Plan:

A premises-specific enhanced biosecurity plan details the actions to be enacted and the requirements the premises must follow during an FAD outbreak.



Surveillance Sampling:

Frequent sampling is required for active disease surveillance to prove the negative disease status of the premises. The Incident Management Team (IMT) will determine the sampling requirements and frequency during an FAD outbreak.



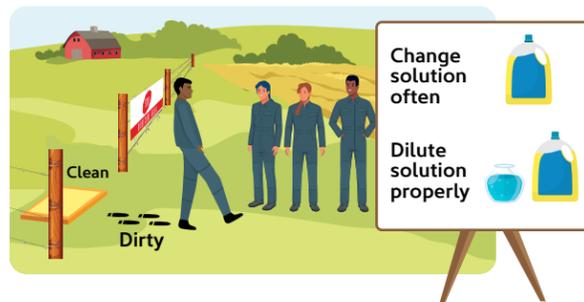
Flock or Herd Health Monitoring:

Regular reporting of animal mortality, water and food consumption, and production parameters is required as part of active disease surveillance. The IMT will determine frequency of reporting and the parameters to report.



On-farm Personnel Training and Documentation:

Premises personnel will be trained on enhanced biosecurity practices, how to activate enhanced biosecurity plan elements, and sampling procedures.



PERMITTING MOVEMENT

Once the components of the SFS Program have been met, the premises may qualify for a product movement permit authorizing movement of animals, animal products, or necessary supplies between premises when the movement is into, out of, or within a designated Control Area.



COMPONENTS OF COB

- ✓ Conduct risk assessment of movements
- ✓ Implement SFS Program
- ✓ Manage movement with permits

BENEFITS OF COB

Establishing and using all components of COB is essential to a successful FAD response. The following benefits can be achieved by implementing enhanced biosecurity measures and COB requirements during a prolonged disease outbreak.

- Prevent disease transmission
- Protect agricultural industries
- Reduce economic loss
- Support industry
- Protect animal health and welfare
- Support public health
- Ensure food security and safety

“When a disease can destroy an industry and our ability to meet the demand for food, we all share four common goals: **prevent disease, slow/stop spread of the disease, eliminate the disease, and maintain business continuity.** These goals are 100% interdependent, but the first three are pointless if businesses do not survive.”

Dr. Annette Jones,
California State Veterinarian



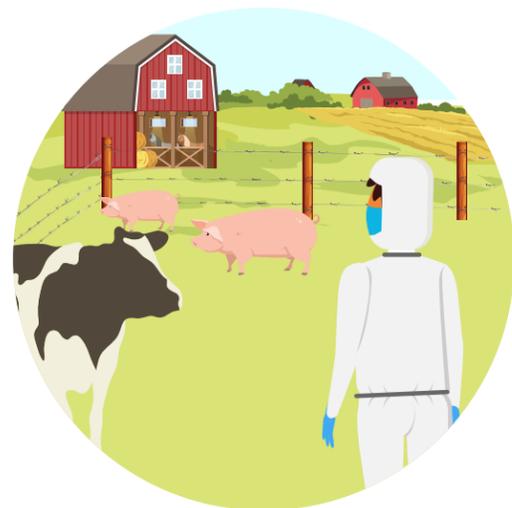
DEPOPULATION

Depopulation is a method by which large numbers of animals are destroyed quickly and efficiently with as much consideration given to the welfare of animals as practicable, given extenuating circumstances. Depopulation is used as a strategy for disease control when foreign and domestic animal disease threats cannot be contained by other techniques. The depopulation of animals must be authorized by federal and/or state animal health authorities and will be performed by the depopulation team assigned to the Incident Management Team (IMT) Operations Section.



1. SITE EVALUATION

The Incident Management Team (IMT) must evaluate the site to plan out the depopulation and to determine risks, species, and appropriate depopulation and disposal methods. Condition of facilities, availability of equipment and operators, and exposure to bystanders and uninfected animals are all important considerations during site evaluation.



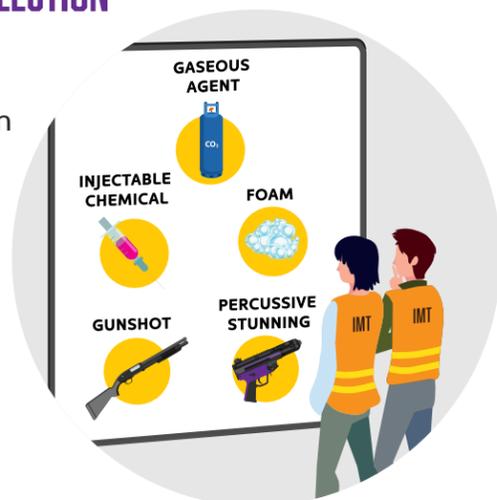
- ✓ Animal species
- ✓ Proximity to the public
- ✓ Accessibility of facilities
- ✓ Biosecurity practices
- ✓ Equipment for restraint



2. DEPOPULATION METHOD SELECTION

The selection of an appropriate humane depopulation method for a given situation involves consideration of several criteria.

- ✓ Personnel Skills
- ✓ Species
- ✓ Temperament
- ✓ Resources



3. GENERAL CONSIDERATIONS



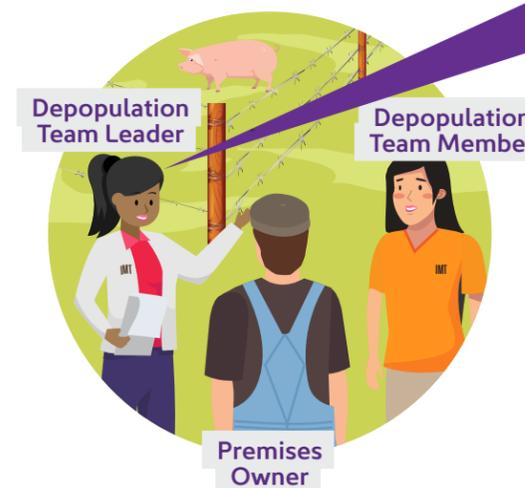
Depopulation steps should be clearly planned and communicated with the team. Veterinarians with species-specific expertise and experience should be consulted during the planning process. Having skilled, trained, and experienced members is essential to performing depopulation methods safely and efficiently.

Depopulation and disposal must be planned together to ensure the selected depopulation method can be supported by the disposal method.



4. RISK COMMUNICATION

The risk of disease spread during the depopulation process and hazards involved should be communicated effectively among the depopulation team members and to the premises owner and personnel.



- ✓ Depopulation methods
- ✓ Biosecurity measures
- ✓ Personnel and public safety during implementation of specific methods
- ✓ Any zoonotic concerns



5. DOCUMENTATION PROCEDURE

Details about infected premises and the depopulation process such as animal census, applicable methods, use of controlled substances, biosecurity measures, owner agreement, and indemnity records must be documented in the Emergency Management Response System (EMRS).

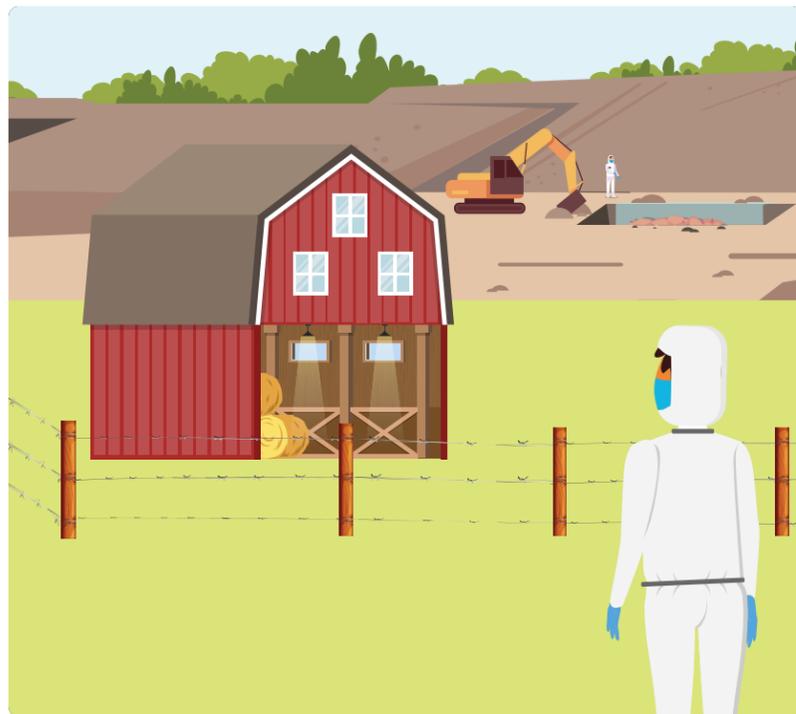


DISPOSAL

Disposal during a Foreign Animal Disease (FAD) response includes measures to prevent the introduction of or mitigate the spread of the pathogen through the elimination of infected or potentially infected animal carcasses and associated materials. After depopulation methods are used to stop the spread of a deadly disease, an effective and safe disposal method must be implemented to protect public and animal health. An incident-specific disposal plan is prepared by the disposal team leader with considerations for the following items.

SITE ASSESSMENT

The site-specific disposal plan will outline the number and types of personnel, vehicles, and other resources and equipment needed to conduct disposal operations. A permit may be required from the local authorities and environmental agencies.



DISPOSAL METHODS

Carcass disposal decisions are made by qualified waste disposal experts who are familiar with livestock industry concerns as well as state/local environmental concerns. State and local environmental regulators as well as state animal health officials will need to be consulted and must approve large-scale animal disposal plans. The major disposal methods most likely to be considered during an animal health emergency are:



1. **Rendering:** A commercial cooking and drying process that kills the pathogens in carcasses and contaminated materials and converts by-products into usable commodities.



2. **Solid Waste Landfills:** Carcasses are layered between compacted soil and solid waste materials at permitted landfills.



3. **Composting:** Decomposition through placement of carcasses between layers of carbon-rich organic materials under controlled conditions.



4. **Thermal Disposal:** High-temperature combustion such as incineration is used to destroy animal carcasses and associated animal materials.



5. **On-site Burial:** Burial of carcasses by placing them in a trench or large earthen hole or pit.



6. **On-site Shallow Burial with Carbon:** A hybrid method between deep burial and composting.

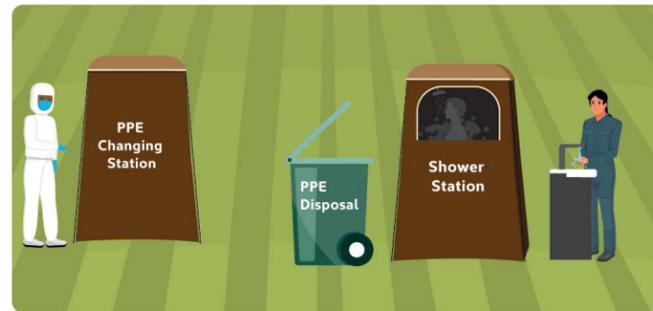
DISPOSAL

DISPOSAL BIOSECURITY

Observance of strict biosecurity and cleaning and disinfection measures is essential to the prevention of possible spread of disease between premises. Personnel biosecurity measures as well as vehicular and equipment biosecurity are critical to help contain disease and prevent further spread. The Clean/Dirty Line is an essential component that is implemented by establishing an imagined or physical line separating the clean side (non-infected) from the dirty side (potential sources of infection).

1. Personnel biosecurity:

Upon arrival at the entrance to a premises, Disposal Team Members may need to change to Personal Protective Equipment (PPE) clothing and follow standard operating procedures. Upon departure from the premises, strict adherence to biosecurity protocols should be maintained.



2. On-site biosecurity:

Strict biosecurity strategies such as the Clean/Dirty Line must be followed to avoid disease spread.



3. Vehicle biosecurity:

Careful planning and implementation of transportation biosecurity measures are critical to prevent the spread of infection from trucks and other equipment used. Strict biosecurity measures must also be followed at the receiving facility such as a landfill, a renderer, or a temporary storage facility.



OTHER WASTE MATERIALS DISPOSAL

In addition to animal carcasses, significant amounts of associated materials will require disposal. All waste materials slated for disposal and/or transport during an FAD response must be correctly labeled prior to disposal to assure that appropriate disposal and transportation methods are selected. Other common waste material types likely to be encountered during a response include:

- ✓ Animal by-products, milk, wool, etc.
- ✓ Bedding of all types, manure, and hatchery waste
- ✓ Feeds, hay, grains, and silage
- ✓ Equipment, supplies, and materials
- ✓ Debris, including buildings and structures



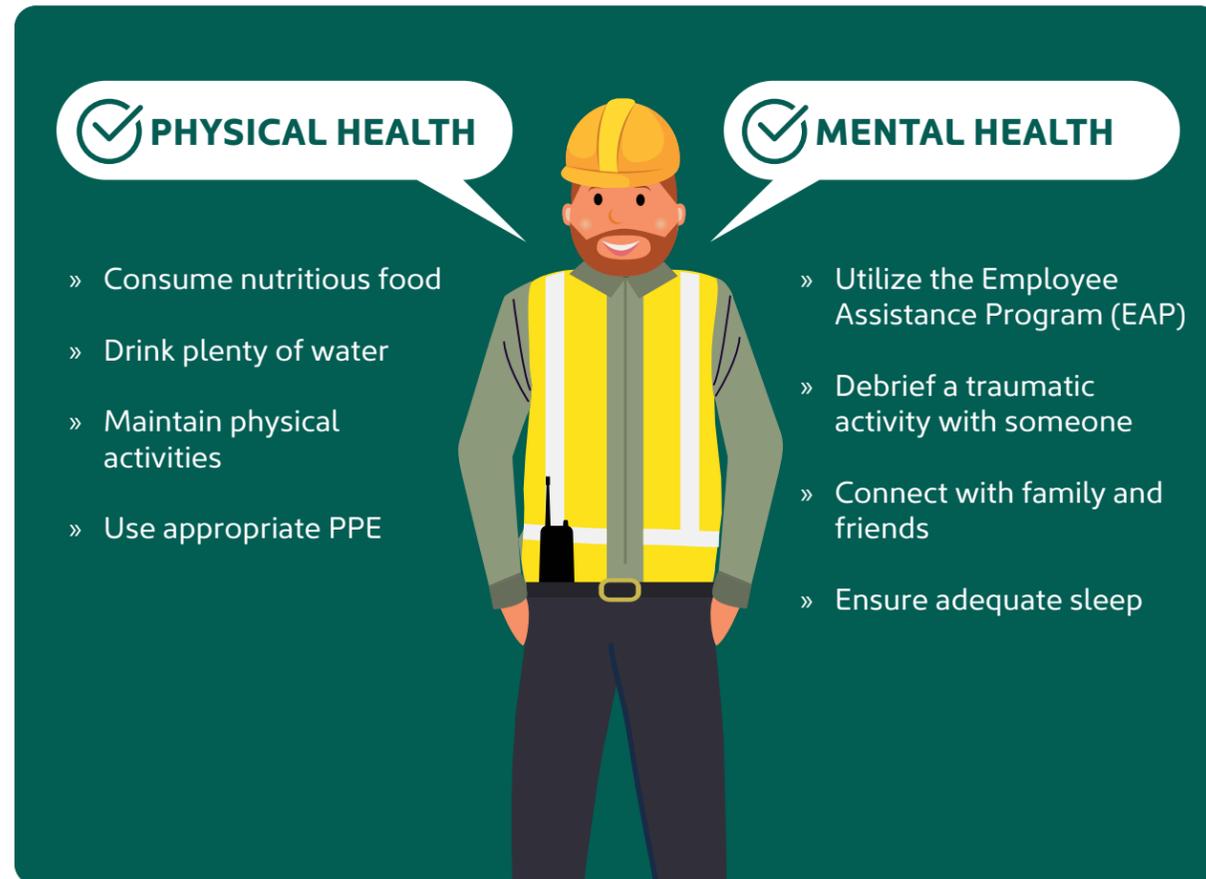
HEALTH, SAFETY, AND SECURITY OF RESPONDERS

All responders play a part in protecting the health and safety of personnel assigned to emergency response activities. The Incident Commander assigns a Safety Officer who assumes the responsibility of ensuring the health and safety of responders. The Safety Officer has the authority to immediately stop an operation to correct safety or health hazards.

PRE-DEPLOYMENT PREPARATION

Because emergency situations arise quickly, personnel with emergency response duties should maintain a certain level of readiness.

- ✓ **Physical Health:** Responders must be in good physical condition to perform their assigned duties and obtain required medical clearance and respirator fit testing.
- ✓ **Mental Health:** Responders must be able to recognize the signs of mental health distress and know where to seek support and assistance.



PHYSICAL HEALTH

- » Consume nutritious food
- » Drink plenty of water
- » Maintain physical activities
- » Use appropriate PPE

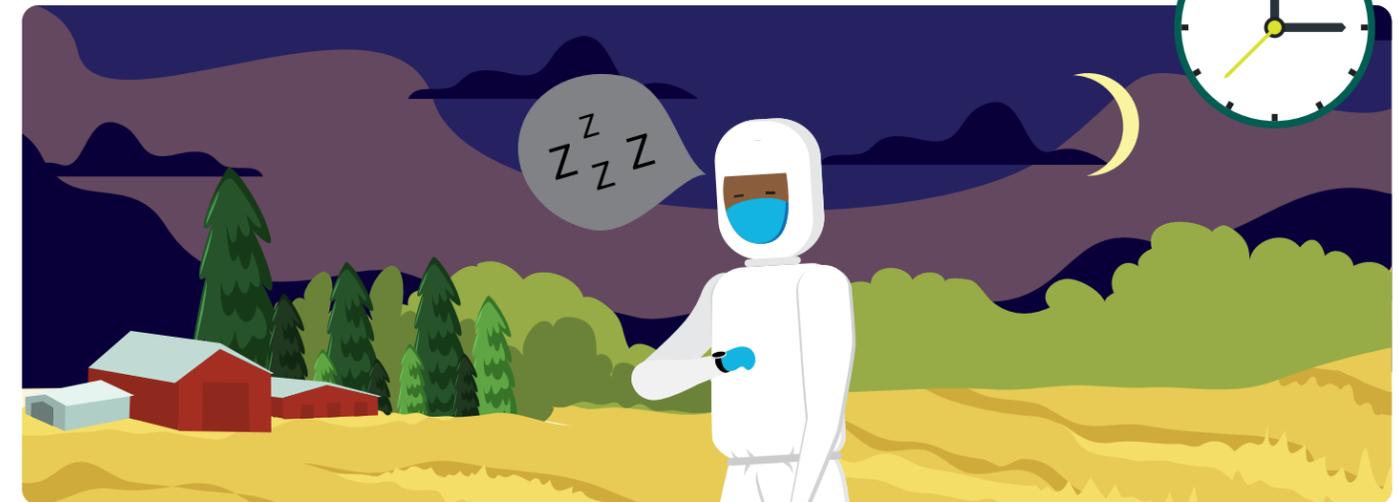
MENTAL HEALTH

- » Utilize the Employee Assistance Program (EAP)
- » Debrief a traumatic activity with someone
- » Connect with family and friends
- » Ensure adequate sleep

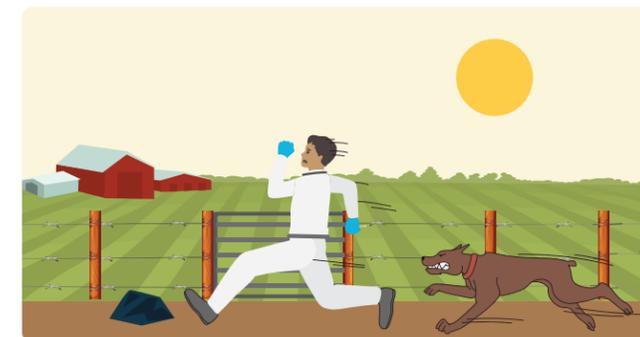
PERSONNEL HEALTH AND SAFETY DURING DEPLOYMENT

During a deployment, incident team leads, section chiefs, and the Safety Officer are the best resources for health and safety information. Health and safety information is documented in incident and site-specific plans, standard operation procedures, and the Incident Action Plan (IAP). There are many situations that may impact responders' health and safety, including:

1. Extended and Unusual Work Periods



2. Physical and Environmental Hazards



3. Stress and Mental Health Awareness



HEALTH, SAFETY, AND SECURITY OF RESPONDERS

SITE SECURITY AND SAFETY

Maintaining security of the incident site is important for protecting the health and safety of both responders and the public. The Safety Officer works with the Incident Commander, Security Officers, and field personnel to determine responder security and safety requirements.

1. Establishing and Controlling Work Zones



2. Accounting for Personnel



3. Utilizing the Buddy System



4. Providing Information to Mitigate the Risk of Hazardous Exposure



COMMUNICATION OF HEALTH AND SAFETY INFORMATION

Health and safety issues are presented during the regular incident response briefings. Responders must attend briefings to ensure they have the latest information about the response.

✓ Mobilization Briefing

Responders will receive a mobilization briefing prior to deployment, which may include an assessment of weather, climate changes, terrain, local culture sensitivities, potential threats, and specific information regarding equipment and personal protective equipment to bring to the deployment.

✓ Communicating During the Response and Emergency Events

Operations briefings and field tailgate meetings cover health and safety topics for each operational period. Additional briefings may be held at other times as necessary to ensure that personnel are aware of the safety plan and that the plan is being followed.



INCIDENT MANAGEMENT TEAM

The Incident Management Team (IMT) for a Foreign Animal Disease (FAD) response is typically a team of state animal health officials and/or USDA Veterinary Services personnel organized using the principles of the Incident Command System (ICS). The ICS is a scalable mechanism to efficiently manage resources and effectively control the disease. The IMT may also include other entities such as assisting and cooperating agencies.

INCIDENT COMMAND POST

The Incident Command Post (ICP) is a physical location (e.g. in a building or tent) where the responders work and/or gather to manage the disease response and is also the center for management of on-scene and tactical operations.



INCIDENT COMMANDER

The Incident Commander (IC) is responsible for overall incident management.

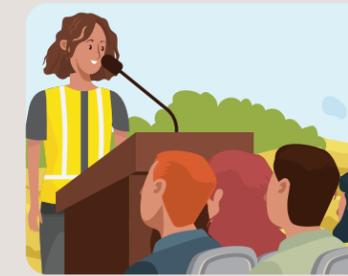
THE COMMAND STAFF

Assigned to carry out staff functions needed to support the Incident Commander. These functions include interagency liaison, incident safety, and public information.



SAFETY OFFICER

Performs safety inspections, identifies hazardous situations, develops emergency and safety protocols, monitors incident operations, and advises the Incident Commander (IC) on all matters relating to operational safety, including the health and safety of incident personnel.



PUBLIC INFORMATION OFFICER

Develops all the public messaging and messaging strategies, and keeps the public and press informed to prevent the spread of misinformation and to meet incident-related information needs.



LIAISON OFFICER

Serves as a point of contact for communicating with agency representatives from cooperating agencies and stakeholder groups.

The Incident Action Plan (IAP) is a written plan that sets forth the incident objectives and reflects the tactics necessary to manage an incident during an operational period.

THE GENERAL STAFF

Responsible for the functional aspects of the Incident Command structure.



PLANNING SECTION CHIEF

Develops and directs the preparation of the **Incident Action Plan (IAP)**, collects and evaluates information, maintains resource status, performs strategic planning, and documents incident records.



LOGISTICS SECTION CHIEF

Develops and directs the provision of all facilities, transportation, communications, supplies, equipment maintenance, food, and medical services for incident personnel.



OPERATION SECTION CHIEF

Manages all field personnel; develops and directs tactics to carry out the objectives outlined in the IAP.



FINANCE SECTION CHIEF

Provides accounting, contracting, procurement, time recording, and cost analyses, monitors costs, and processes indemnity claims associated with incident operations.

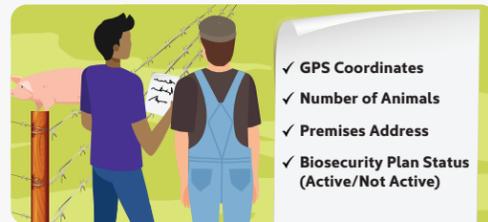
INFORMATION & INTELLIGENCE MANAGEMENT SYSTEMS

An effective and efficient response requires accurate and up-to-date information by implementing systematic data management techniques. Through this critical activity, data is collected and analyzed and information is produced and disseminated to strategic decision-makers for effective outbreak management.

STAGE 1. DATA COLLECTION

Data sources during an outbreak may include the following:

Premises data and attributes



Lab reports and diagnostic status



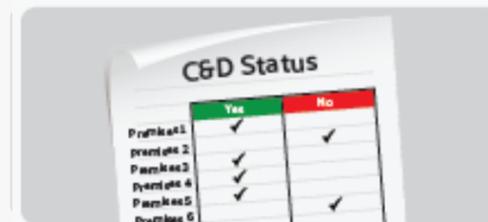
Premises status



Indemnity data



Cleaning & Disinfecting data



Disposal data

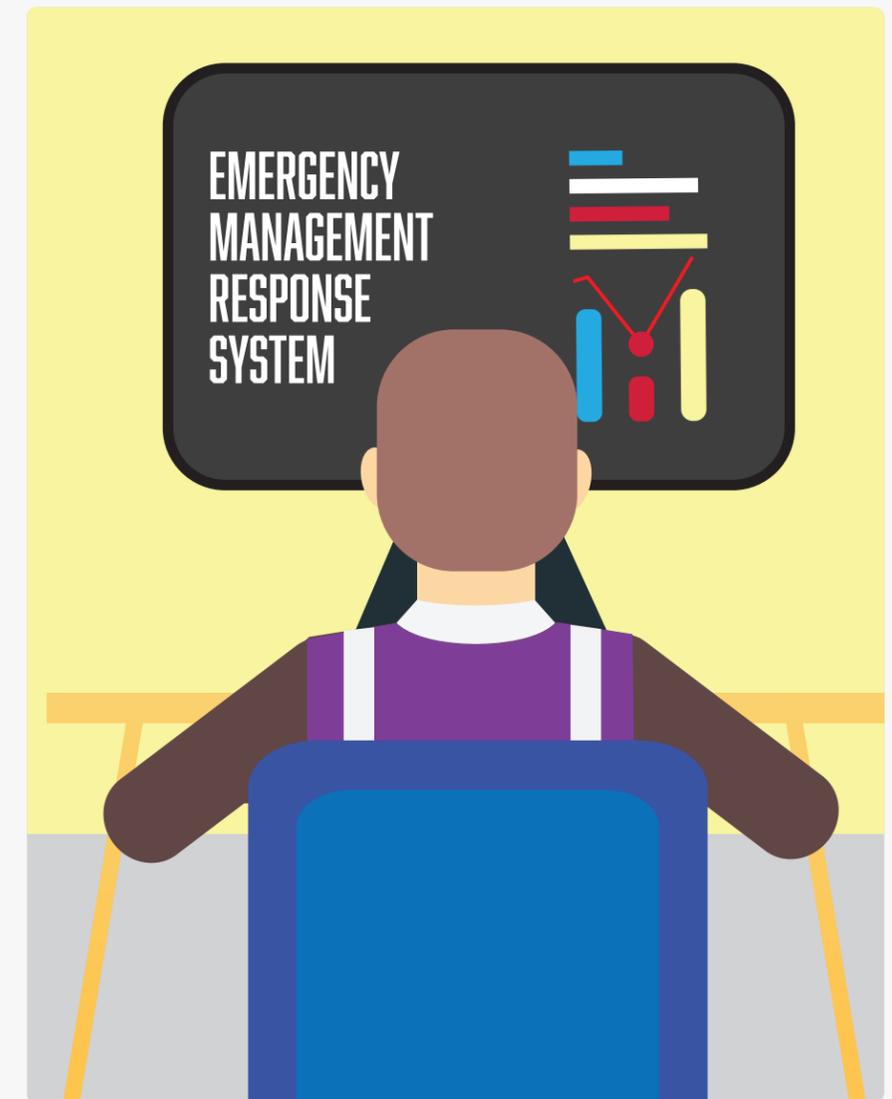


STAGE 2. DATA PROCESSING

Data and documents gathered from various sources must undergo standardized data analysis and data quality control processes to guarantee the accuracy of information.

High quality data is achieved through:

- Collected data by the field responders must be validated and promptly recorded.
- Data communicated by other sources such as the diagnostic laboratory should be processed in the Emergency Management Response System (EMRS).
- Data entered into EMRS must be reviewed for accuracy and consistency.
- Data analyses and epidemiological methods should be performed on the collected data.
- Scientific findings should be characterized and incorporated into practical tactics and policies.
- The quality and completeness of the data can impact the ability to make strategic decisions.



STAGE 3. PRODUCING REPORTS

The information produced by the rigorous data validating and quality control methods (stage 2) will be summarized into many different reporting formats and will be used to inform the incident decision-makers during strategic meetings. EMRS information that is used to produce reports, including:

Tally sheets:

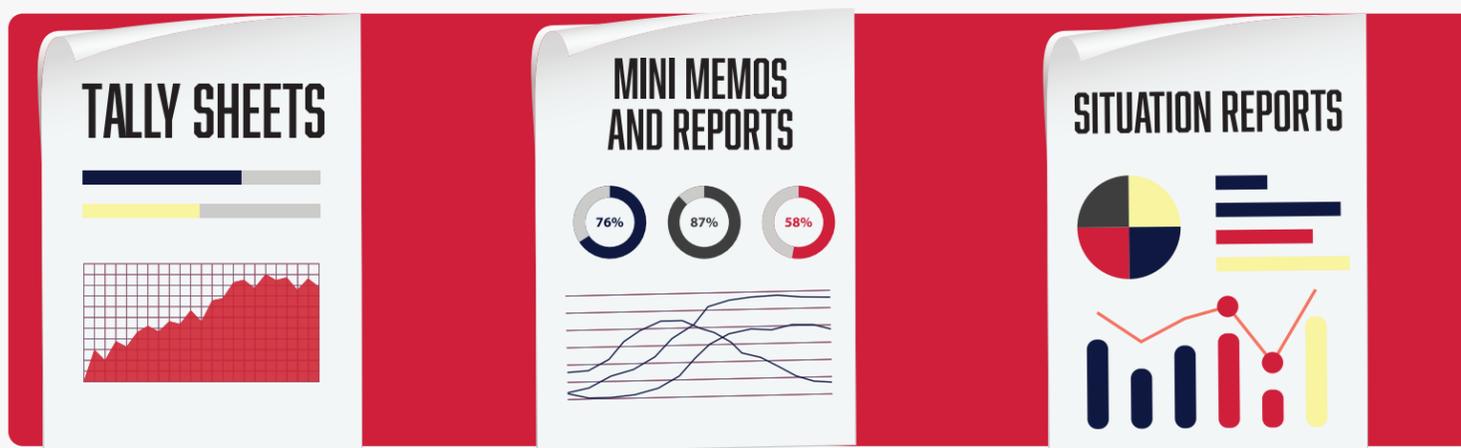
Created in EMRS and contain various data points related to premises name, address, number of animals, diagnostic, indemnity, depopulation, and Cleaning & Disinfecting (C&D) statuses on individual premises under investigation and are updated immediately as new data comes in.

Incident memos and reports:

Used by Incident Management Team (IMT) to communicate new findings of positive premises in the area to upper-level management to understand how quickly a disease is spreading and help determine the need for additional resources and authorities.

Situation reports:

Created based on tally sheets and other EMRS data, and periodically produced during the course of a response to inform several levels of management and strategic decision-makers. They contain important information on various activities, such as the number of infected, surveyed, and sampled premises, and other relevant statistics.



The Disease Reporting Officer (DRO) is responsible for establishing and maintaining the disease status of each premises involved and/or impacted by the Foreign Animal Disease outbreak.

STAGE 4. DECISION MAKING

Various reports from the previous stage encompass critical intelligence and statistics used by the IMT Command and General Staff and the agency administrators to make strategic decisions related to managing the outbreak response.

Strategic Decisions:

- Indemnity method and criteria
- Depopulation methods
- Quarantine area evaluation
- Vaccination methods and planning
- Zones and control areas evaluation
- Industry protection plan
- Continuity of business policy
- Freedom of disease strategic planning
- Resource allocation
- Other disease controlling techniques



LIFE CYCLE OF FOREIGN ANIMAL DISEASE RESPONSE

Response to Foreign Animal Disease (FAD) incidents requires knowledge of the response process flow, as well as the integration and impact of individual tasks and their interdependency with other parts of the response. Understanding the life cycle of an FAD response improves foresight and planning for different phases of response and recovery as well as continuity of response efforts.

Stage 1: First 48 hours

DETECTION

A suspected case of FAD is reported by a private veterinarian, laboratory, or animal owner or is identified during routine surveillance. Upon receiving the report, the local animal health district office dispatches a trained Foreign Animal Disease Diagnostician (FADD) to conduct an epidemiological investigation. Duplicate samples are collected by the FADD and submitted to a certified lab. If an FAD is suspected, a quarantine is issued and biosecurity measures are communicated with the owner.

A preliminary laboratory report is provided to the State Animal Health Officials (SAHO) by a National Animal Health Laboratory Network (NAHLN) laboratory. The official laboratory report from the National Veterinary Services Laboratories (NVSL) confirms the status of the samples.



Stage 2: 24 to 96 hours

INITIAL RESPONSE

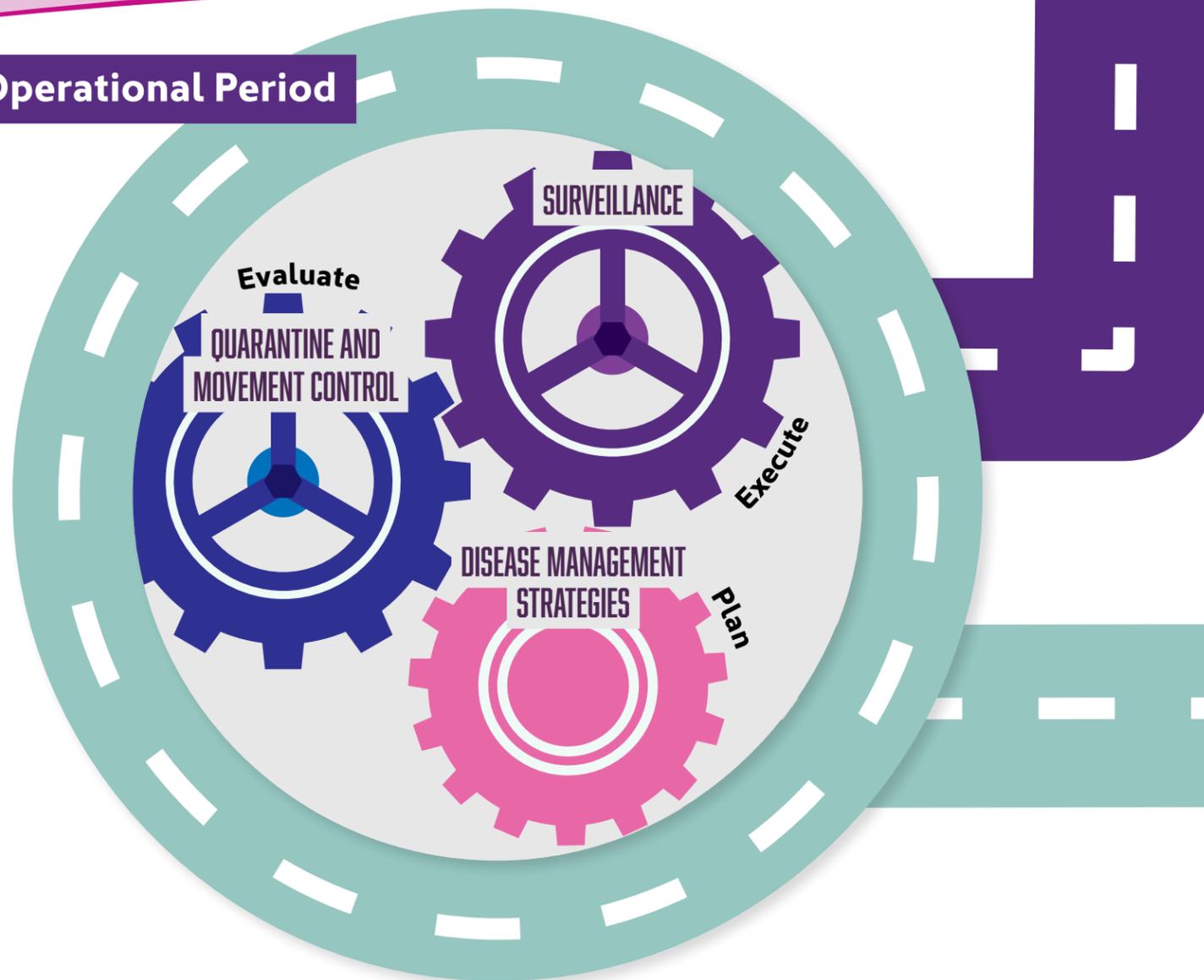
Upon receipt of positive report, the Incident Management Team (IMT) is activated. The approach to incident management is scalable and adaptable and will depend on the size, disease agent, and complexity of the incident. Coordination is established with cooperating and assisting agencies to prioritize the incident demands for critical competing resources. Multiple critical activities may be conducted by the IMT to control and contain the disease.

- Quarantine and Movement Controls
- Surveillance
- Epidemiological Investigation
- Documentation
- Depopulation and Disposal
- Cleaning and Disinfection

- Vaccination
- Laboratory Diagnostics
- Biosecurity Measures
- Communication with Stakeholders
- Public Awareness Campaigns

LIFE CYCLE OF FOREIGN ANIMAL DISEASE RESPONSE

Operational Period



Stage 3: Continuous

SUSTAINED RESPONSE THROUGH DISEASE ERADICATION

Depending on the scale of the incident, such as the number of infected animals and the geographical characteristics of the infected zone evaluated during stage two, the response efforts can be extended as necessary to support disease containment and eradication. Each new positive detection results in restarting the stage two initial response cycle and can lead to expansion of the IMT, additional surveillance, and expansion of the control area(s). This increase in workload results in increased resource needs and eradication costs.

The IMT continuously plans, executes, and evaluates disease management activities during this stage until disease detections diminish.

Stage 4: Final

RECOVERY AND DISEASE FREEDOM

When a high level of confidence in the disease eradication is confirmed, the IMT will perform specific activities to fulfill World Organisation for Animal Health (WOAH) requirements to regain the freedom from disease status.

- ✓ Conduct advanced epidemiological planning, resulting in recommendations for intermediate and long-term disease control measures
- ✓ Evaluate quarantine and movement control restrictions; release when and where appropriate
- ✓ Evaluate intermediate and long-term disease control measures; modify and adapt to support progression toward disease freedom
- ✓ Document surveillance activities and submit the request to the WOA for recognition of the freedom from disease status



QUARANTINE AND MOVEMENT CONTROL

Quarantine and movement control (QMC) are critical activities that help protect animal health during a Foreign Animal Disease (FAD) outbreak by reducing the risk of disease transmission to non-infected livestock and poultry populations. QMC can be powerful tools in controlling and containing an FAD outbreak by restricting the movement of animals, animal products, and fomites (contaminated objects) to and from infected premises.

1. QUARANTINE

The State Animal Health Official typically holds the primary quarantine authority for FAD outbreaks within a state, while USDA authorities are used for interstate and international trade matters. The quarantine authority will impose stringent parameters on entering or leaving a premises, area, or region where disease is known to exist or is suspected. The quarantine is represented as a legal document to hold the owner accountable to prevent moving the disease agent from their property. It consists of the following stages:

- ✓ Issuing the individual premises or area quarantine
- ✓ Enforcing the conditions of the quarantine
- ✓ Releasing the quarantine



2. MOVEMENT CONTROL AND PERMITTING

“Movement control” refers to placing restrictions on the movement of animals, animal products, and fomites on any premises placed under quarantine. Permitting is a mechanism that allows essential movements to and from quarantined premises to be continued by enforcing enhanced biosecurity measures.

- ✓ Both state and federal governments have different permitting authorities, and both can be used during the outbreak.
- ✓ Permits may be required for any animals, animal products, animal equipment, feed, and other commodities to move into, out of, and within a Control Area. They must be documented appropriately in the Emergency Management Response System (EMRS) or a state permitting system.
- ✓ A movement permit must be requested in advance, and the request can be denied if the movement cannot be made safely. Producers under quarantine who wish to obtain a permit to maintain Continuity of Business will need to have an enhanced biosecurity plan that is activated and validated by the Incident Management Team (IMT).
- ✓ The permit may have additional requirements for the movement, such as special biosecurity procedures, sampling, date restrictions, pre-planned routes, and other measures to reduce the risk of moving a disease agent.
- ✓ The IMT, with concurrence from the State Veterinarian, will release quarantines and movement controls when a high level of confidence in the disease eradication is confirmed, indicating the premises or geographic area is free from the disease agent.



Appeals

Premises owner may submit a legal appeal within the specified timeline on the quarantine notice.

Violations

Premises' failure to comply with QMC requirements may result in revocation of movement permits, quarantine extension, and/or fines.

SURVEILLANCE

Surveillance is critical to early disease detection. It is the systematic collection of animal health information that is used by the Incident Management Team (IMT) to determine where disease is and where it isn't. The Disease Surveillance Branch of the Operations Section within the IMT is responsible for sampling and collecting information that is critical to defining what actions are necessary to control and eradicate disease.



SURVEILLANCE PLANS AND ZONE DEFINITION

Epidemiologists develop a plan of action based on the type of premises, location of infection, and other risk factors so that control measures can be put in place.

Surveillance activities are executed in all the zones. There are many types of zones and premises designations. The designations often determine required surveillance and other activities. Below are a few of the most commonly used terms.



SURVEILLANCE

TWO PRIMARY TYPES OF SURVEILLANCE STREAMS DURING A RESPONSE



Active Surveillance

Data on animal health and/or presence of disease in the environment is actively collected. Examples of active surveillance include:

- ✓ Producers perform regular reporting of animal mortality, water and food consumption, and production parameters to IMT.
- ✓ IMT staff visit premises to collect epidemiological data and diagnostic samples from animals.



Passive Surveillance

Data on animal health status is relayed to the IMT. Examples of passive surveillance include:

- ✓ Networks of laboratories and practitioners submit pertinent regulatory test results.
- ✓ Owners of sick animals self-report to a sick animal telephone hotline or email box.

Active surveillance requires more regulatory effort and resources, while passive surveillance requires less direct regulatory involvement. Both forms provide essential information for early disease detection and response. Data collected through active surveillance is more predictable and can provide more accurate information about the disease of interest than data collected through passive surveillance.

SURVEILLANCE METHODS



Visual inspection

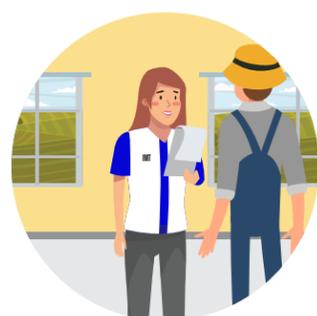


Data examples include:

- ✓ Animal demographics
- ✓ Biosecurity measures
- ✓ Clinical signs
- ✓ Premises pens/house construction types
- ✓ Production type



Survey census/epidemiological questionnaire



Data examples include:

- ✓ Animal census information
- ✓ Animal contact tracing
- ✓ Biosecurity evaluation
- ✓ Premises information
- ✓ Premises layout
- ✓ Sources of feed
- ✓ Susceptible animals present in neighboring premises
- ✓ Vaccination history



Diagnostic sampling, testing, and reporting



Data examples include:

- ✓ Disease causing agent
- ✓ Disease status
- ✓ Sampling methods
- ✓ Sample size



Disease reporting hotline



Data examples include:

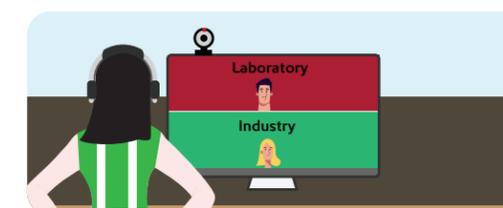
- ✓ Diagnostic appointment
- ✓ Number of symptomatic animals
- ✓ Premises location
- ✓ Symptoms



DIAGNOSTIC SURVEILLANCE SAMPLING

The sampling scheme is determined by an epidemiologist on the IMT and defines how often and where testing will take place and which animals will be tested. Sampling continues until there is no evidence of infection in an area/zone or until freedom from disease has been declared. A coordinated effort between the field IMT staff, couriers, IMT laboratory coordinator, the veterinary diagnostic laboratory, and the Disease Reporting Officer is essential to ensure timely testing and reporting.

Lab Coordination



Sampling Scheme



Sampling Procedure



Sampling Biosecurity



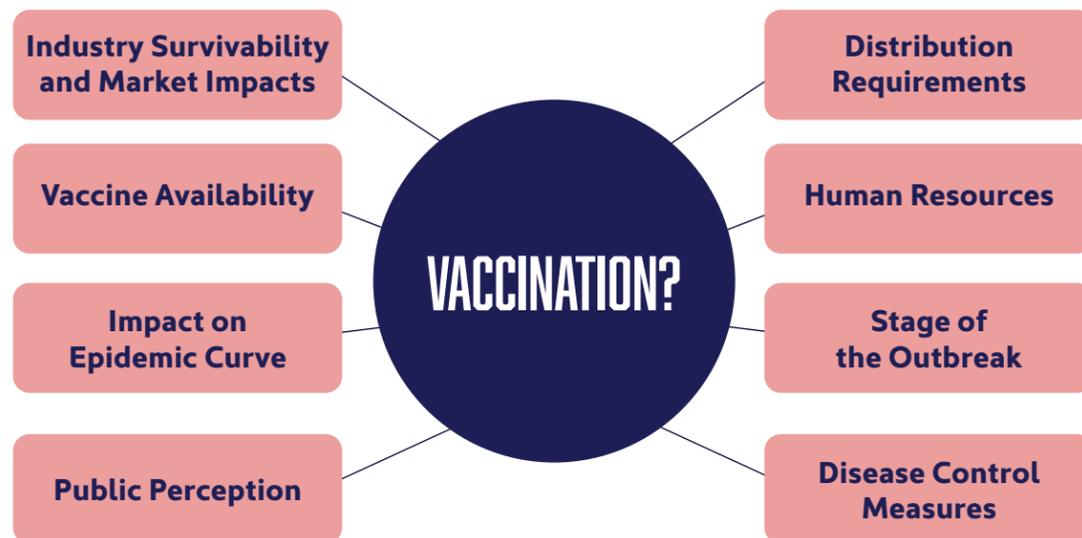
It is critically important that surveillance planning is integrated with current diagnostic sample collection, sample testing, surge capacity, and reporting capabilities.

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.

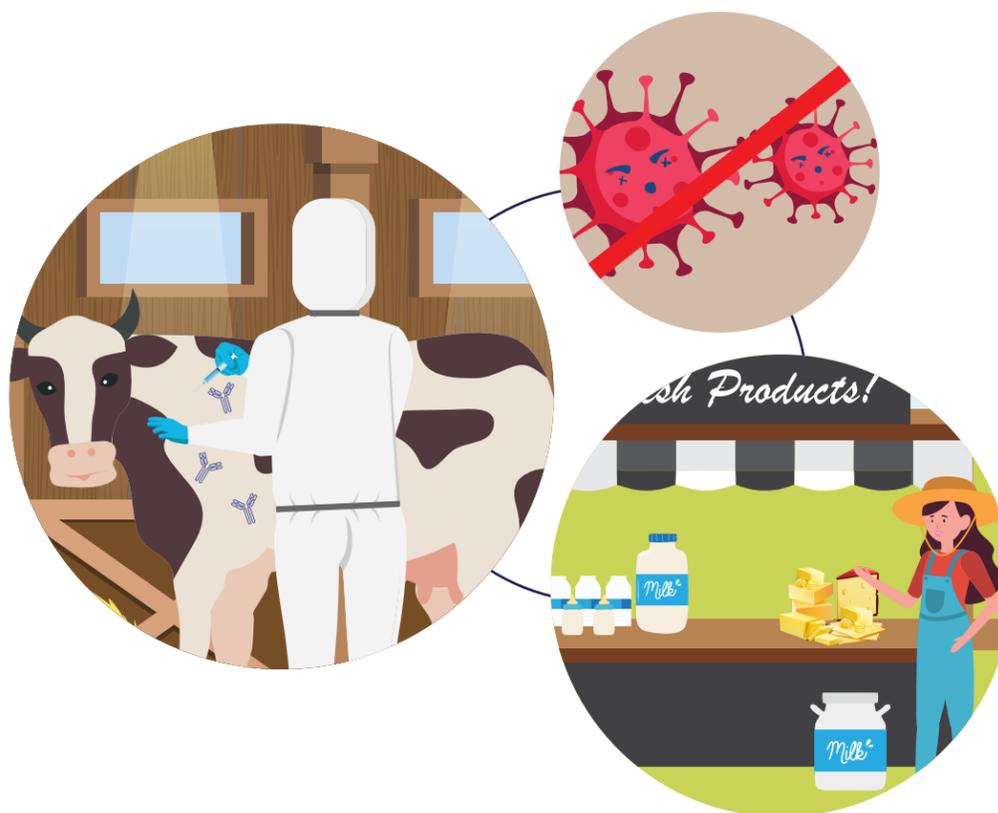
VACCINATION STRATEGIC PLANNING

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.



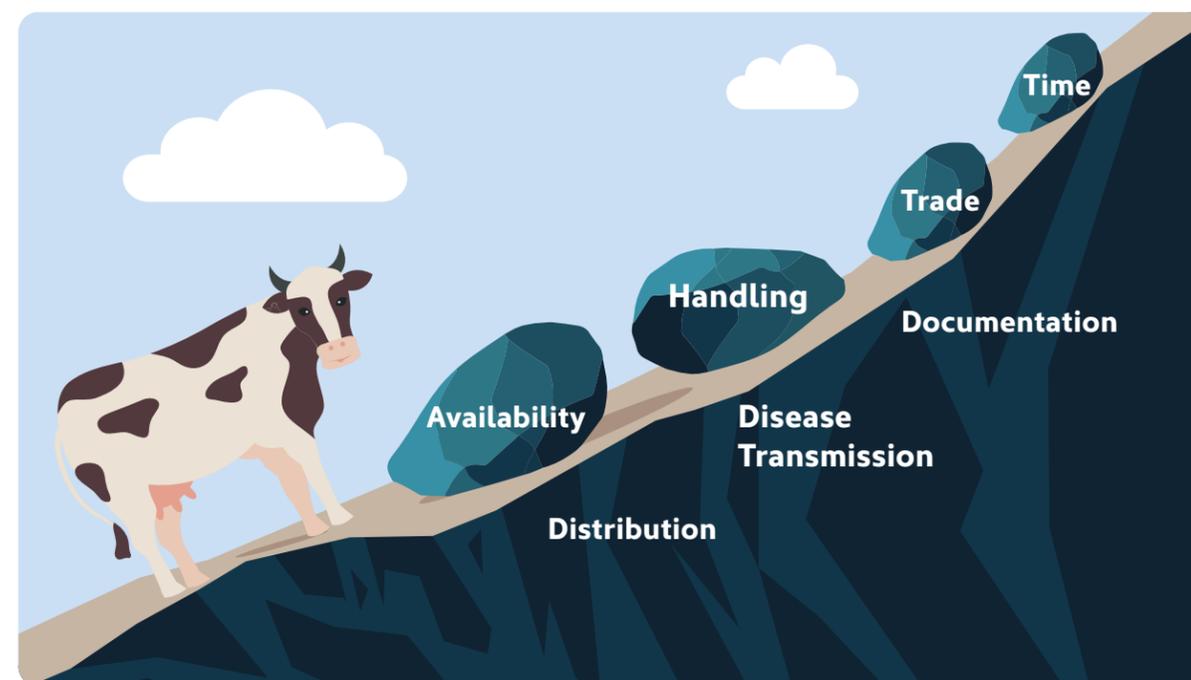
BENEFITS OF VACCINATION

- ✓ 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.



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.



VACCINATION

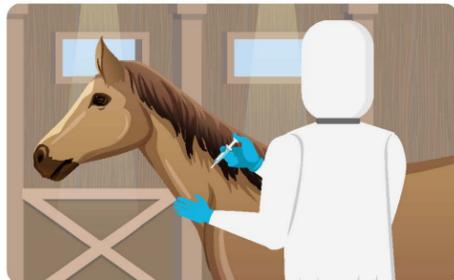
VACCINATION CHARACTERISTICS

Vaccine types

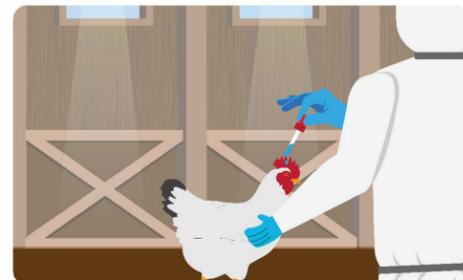
- ✓ Two main types of conventional vaccines: modified live (MLV) and killed inactivated vaccines.
- ✓ New technologies providing additional vaccine types such as Gene-deleted vaccines, Plant-derived vaccines, and Differentiating Infected from Vaccinated Animals (DIVA) vaccines are continuously being 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

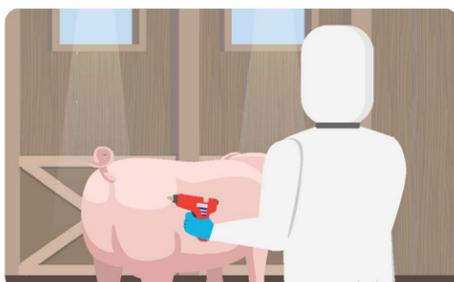
Parenteral Injection



Ocular



Needle-Free (Transdermal) Injection



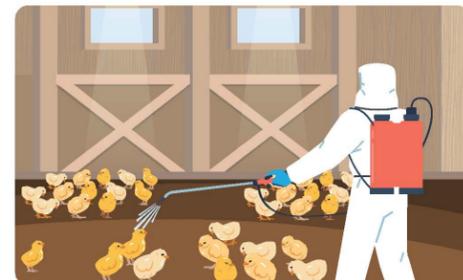
Oral



Intranasal

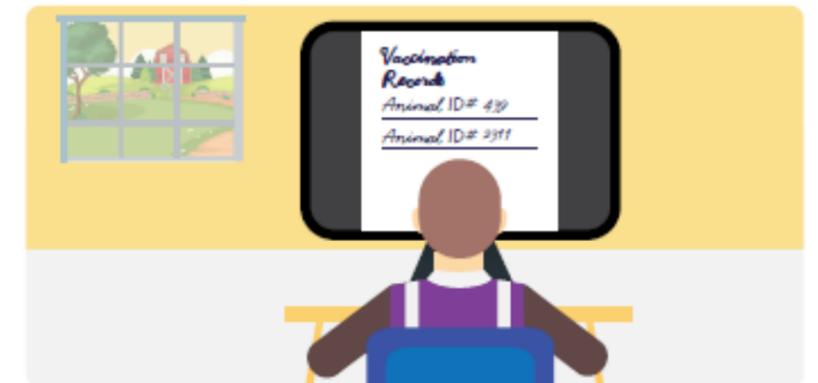


Spray/Topical



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.

