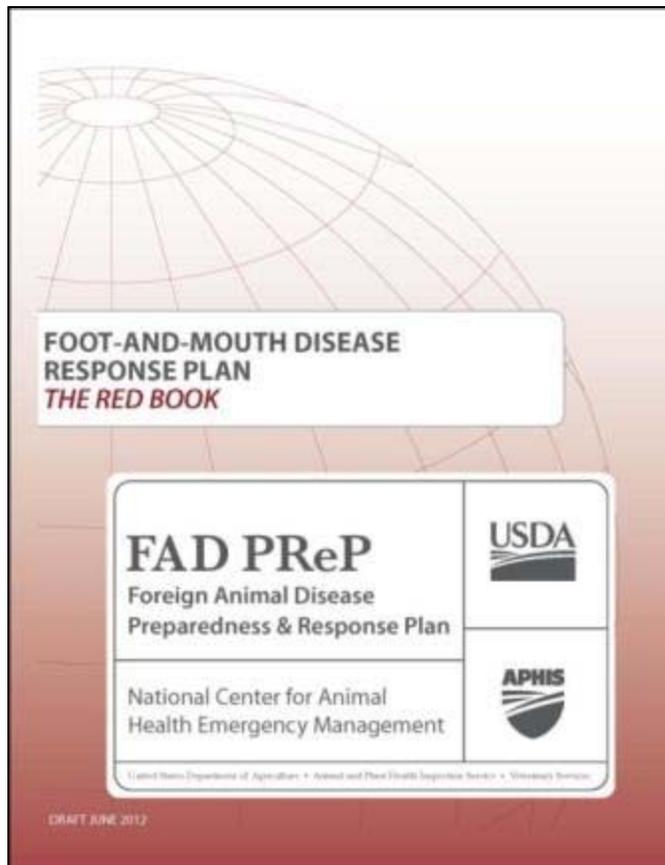




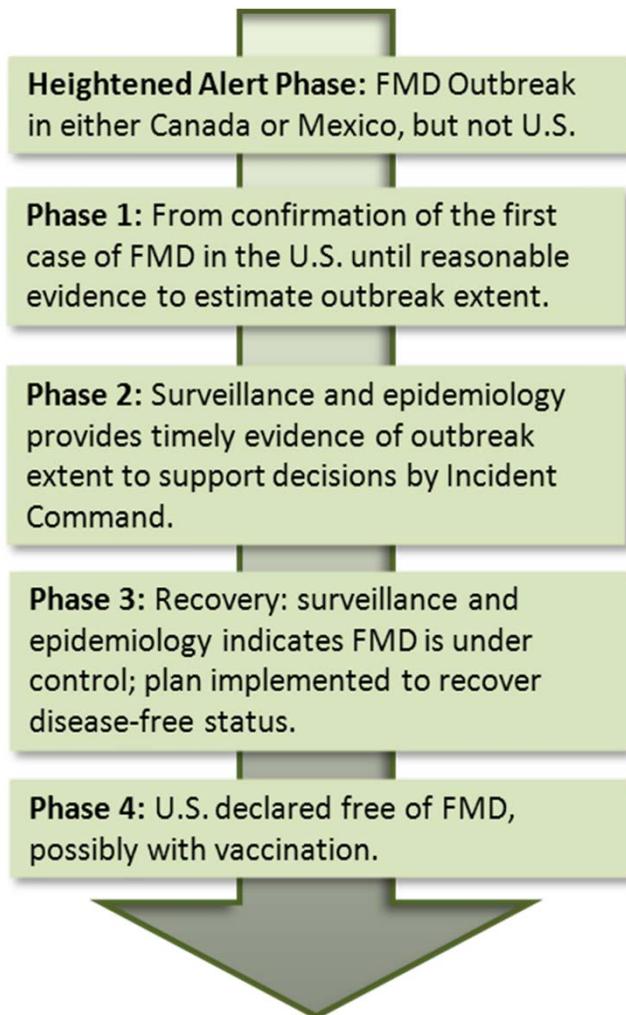
United States Department of Agriculture

USDA APHIS Veterinary Services FMD Preparedness and Response Vaccine Strategies and Continuity of Business



Jon Zack, DVM
National Preparedness and Incident Coordination
Surveillance, Preparedness, and Response Services
USDA APHIS Veterinary Services

Outline - Introduction



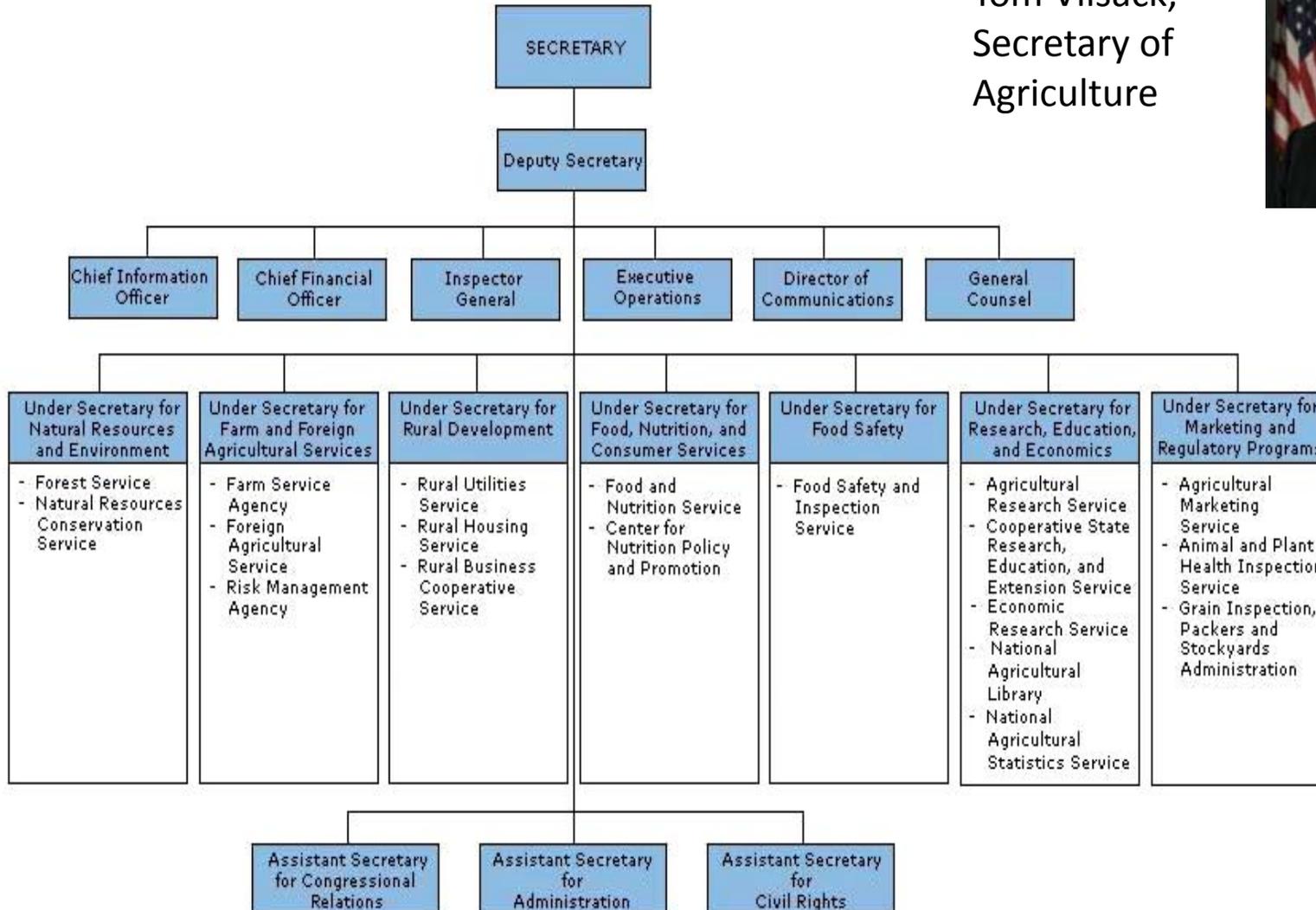
What if an FMD outbreak in the United States?

- USDA Authorities & Roles
- FMD Common Operating Picture
- Goals of FMD Response
- FMD Response Critical Activities
- FAD PReP Public Private Academic Partnerships



United States Department of Agriculture

Tom Vilsack,
Secretary of
Agriculture



← APHIS



Key USDA Authorities

- USDA receives its permanent and general regulatory authority for FMD response from the Animal Health Protection Act (AHPA), 7 U.S.C. 8301 et seq.
 - Secretary can carry out operations and measures to detect, control, or eradicate any pest or disease of livestock
 - Secretary may prohibit or restrict the importation, entry, or interstate movement of any animal, article, or means of conveyance to prevent the introduction into or dissemination within the United States of any pest or disease of livestock
 - Secretary can order destruction or removal from the United States any animal, article or means of conveyance if necessary to prevent the introduction into or dissemination within the United States of any pest or disease of livestock
 - Secretary can declare an extraordinary emergency because of the presence in the United States of a pest or disease of livestock



AHPA Provisions

- Prohibit or restrict imports, exports, and/or interstate commerce;
- Take remedial measures (destruction or removal, movement restrictions);
- Disinfect articles, conveyances, and individuals involved in the importation or exportation of animals;
- Declare an extraordinary emergency;
- Compensate owners of animals, articles, facilities, or conveyances destroyed in the process of FAD eradication;
- Inspect, without warrant, persons or conveyances moving regulated animals or articles;
- Obtain warrants to enter, inspect, and seize (if necessary) premises in the United States;
- Establish an accreditation program and standards of conduct for veterinarians;
- Cooperate with domestic and international government and non-government actors;
- Pay overtime for employees performing import/export services;
- Levy civil and criminal penalties against violators of the AHPA;
- Conduct investigations and administer subpoenas to uphold the AHPA;
- Transfer funds from other USDA agencies and corporations for the control, eradication, and prevention of an FAD.

USDA APHIS Emergency Funding

- In an FMD outbreak, an agricultural emergency or extraordinary agricultural emergency will be declared.
 - Funds can be transferred from other USDA appropriations or funds available under the authorization of the Secretary of Agriculture (7 U.S.C. 8306)
 - Contingency fund requests
 - Commodity Credit Corporation requests
 - Supplemental appropriation requests

Federal Department Roles and Responsibilities

- USDA will request support as necessary from other Federal agencies under its own authorities to control a livestock or poultry disease; federal to federal support requests.
- The Secretary of Homeland Security and DHS will lead the coordination of Federal-to-Federal support if:
 - The President declares an emergency or major disaster.
 - The Secretary of Agriculture requests DHS lead coordination.

USDA FAD Response Resources

- **Logistics:** National Veterinary Stockpile (NVS)
- **Laboratory Capacity:** National Animal Health Laboratory Network (NAHLN), National Veterinary Services Laboratories (NVSL)
- **Incident Management Teams:** APHIS and USDA Teams
- **Information and Task Management:** Emergency Management Response System (EMRS)
- **Response Personnel:** National Animal Health Emergency Response Corps (NAHERC)

North American FMD Vaccine Bank (NAFMDVB)

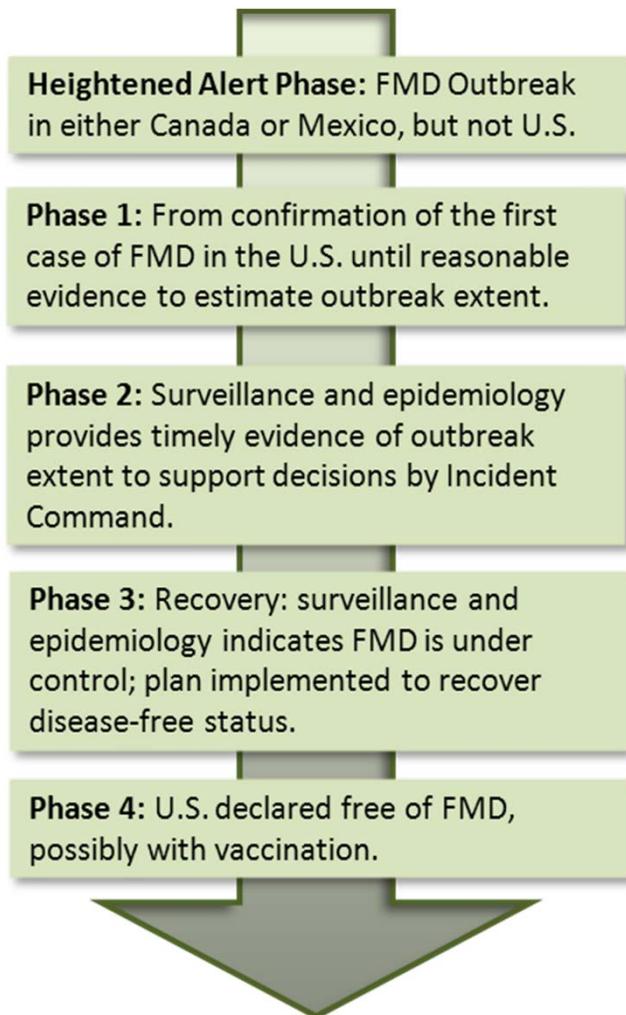
- Consortium with Canada and Mexico established in 1982
- Acquires, stores, and quality controls vaccine antigen concentrate (VAC) and master seeds
- Contracts for finishing VAC, procures conventional vaccines
- Monitors activity of virus strains globally
- Activated upon finding FMD in North America

FMD Key Messages

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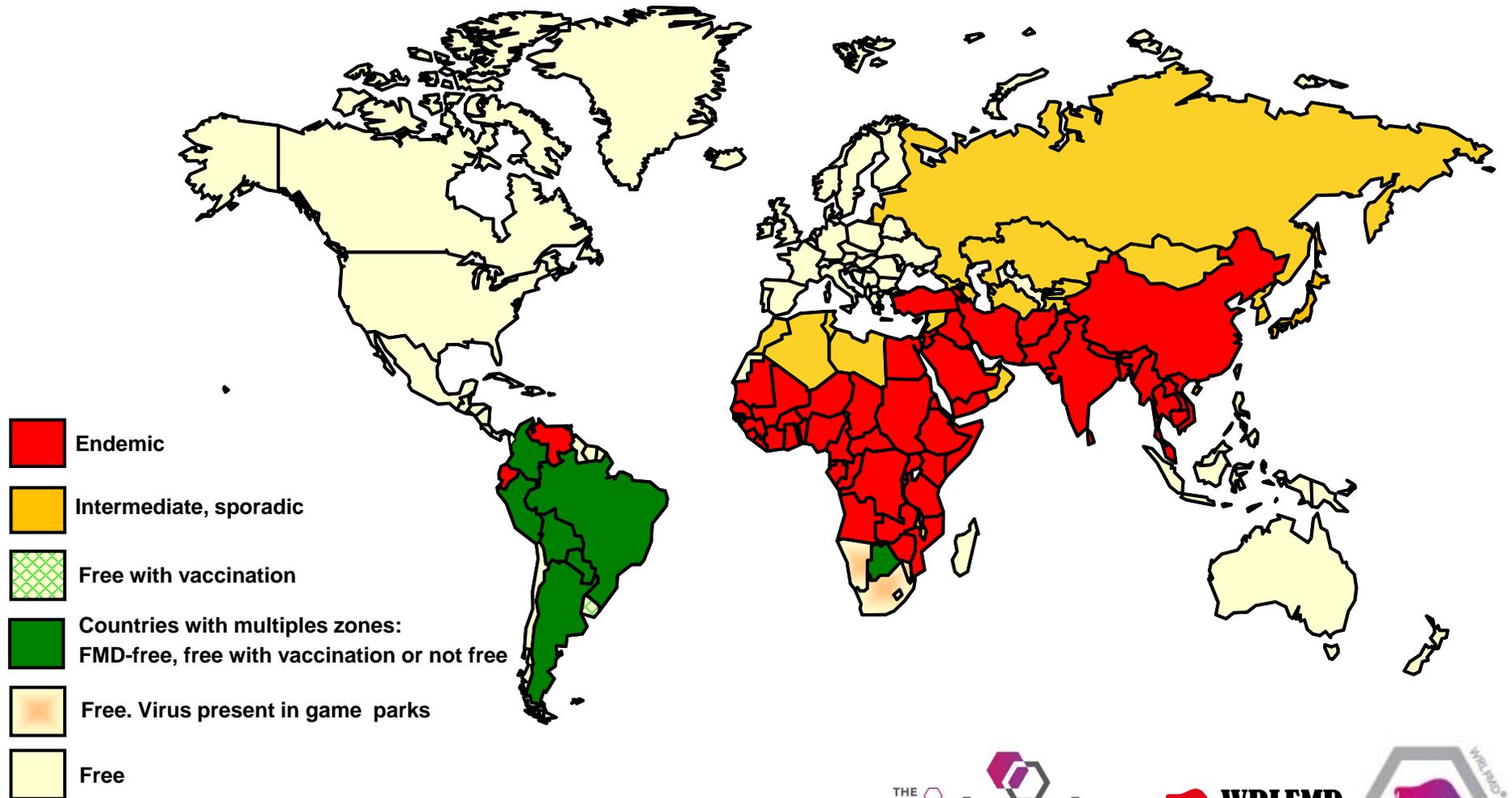
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Common Operating Picture - FMD



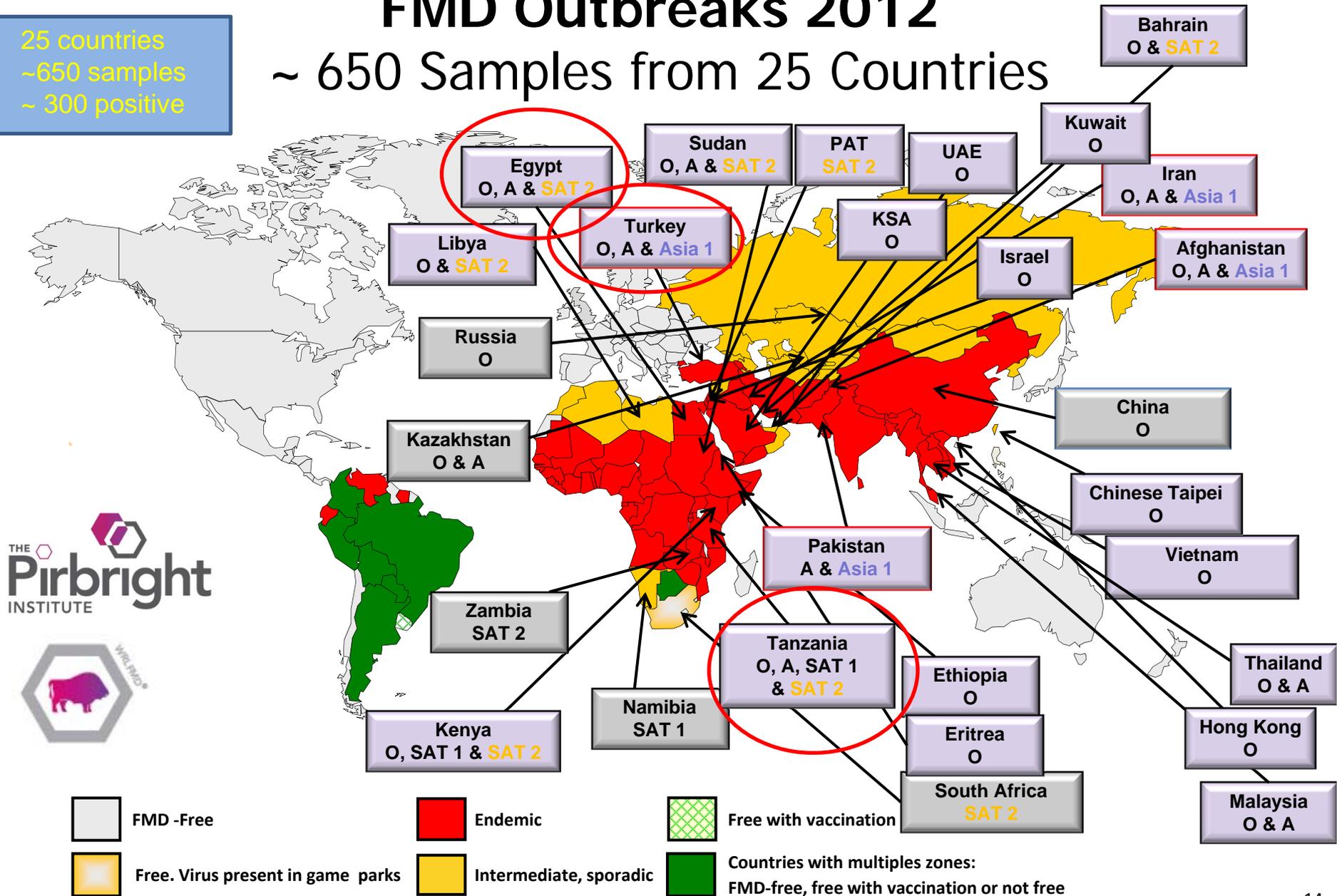
Conjectured Status of FMD



FMD Outbreaks 2012

~ 650 Samples from 25 Countries

25 countries
~650 samples
~ 300 positive

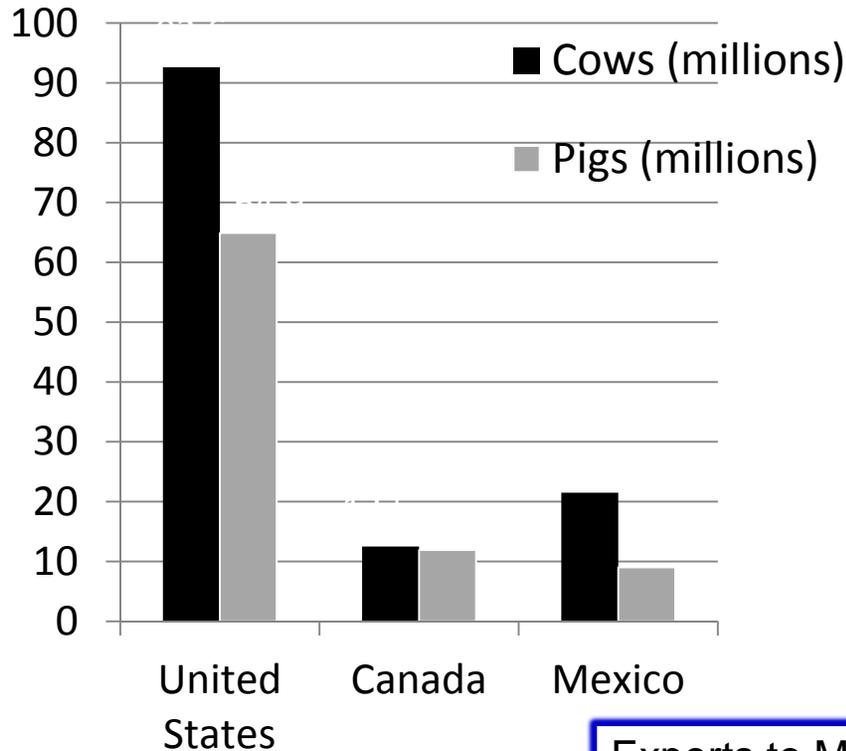


United States Common Operating Picture (Before an FMD outbreak)

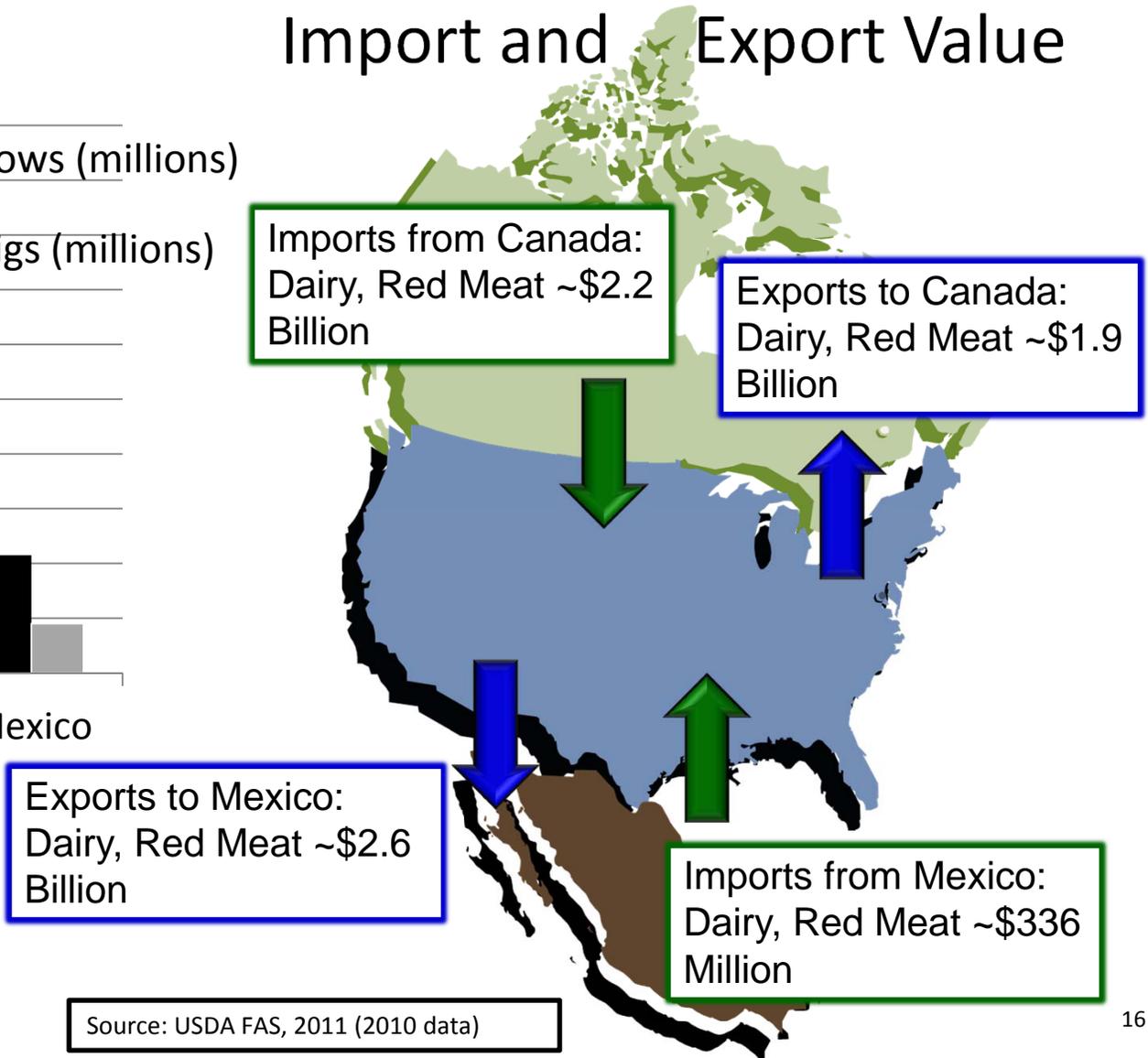
- United States animal agriculture systems: compatible with a highly contagious disease?
 - Size of U.S. herd(s)
 - Density of premises and animals in many locations
 - Speed of commerce
 - Just-in-time movements
 - Diversity of premises
 - Integration of animal agriculture operation.
- Next slides show animal density...

Common Operating Picture – North America

Inventory



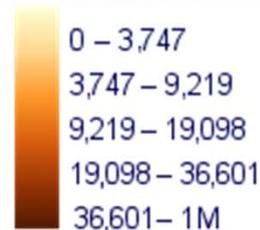
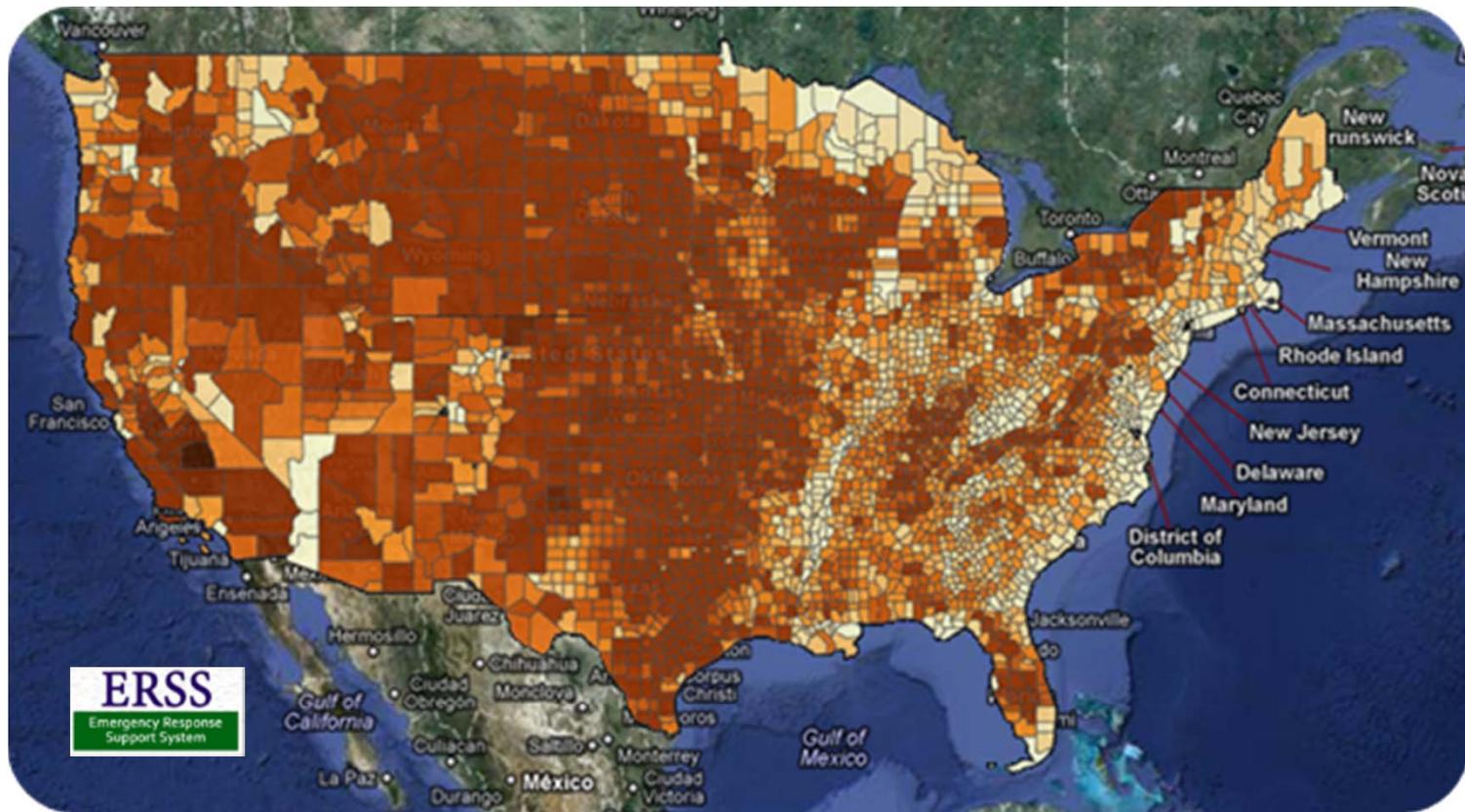
Import and Export Value



*FMD Response Ready Reference Guide: Common Operating Picture

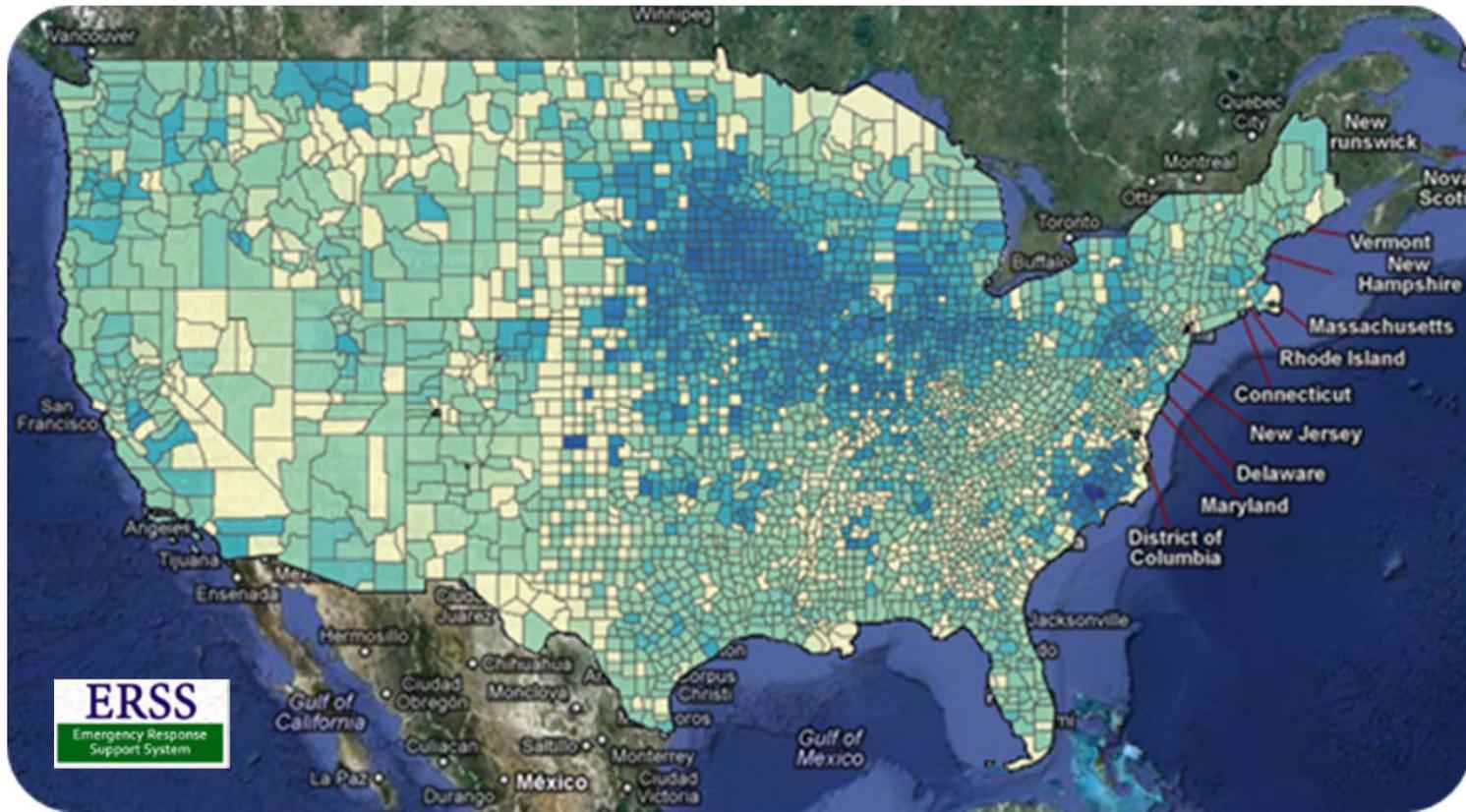
Source: USDA FAS, 2011 (2010 data)

Common Operating Picture: Bovine



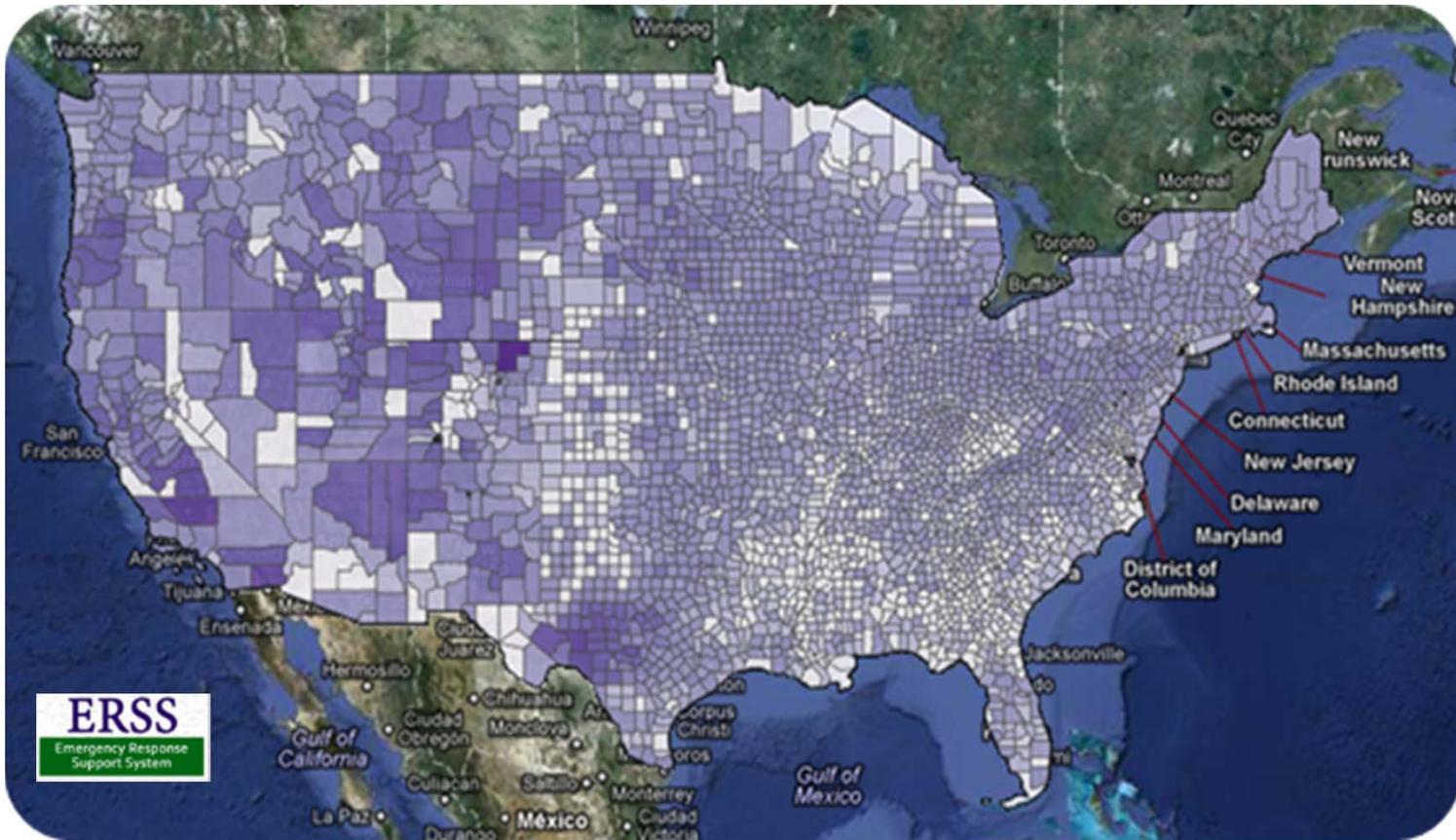
*FMD Response Ready Reference Guide—Quarantine, Movement Control, and Continuity of Business (NASS, 2007)

Common Operating Picture: Swine



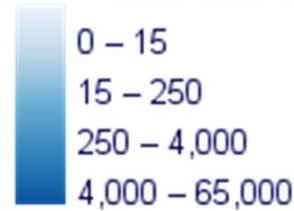
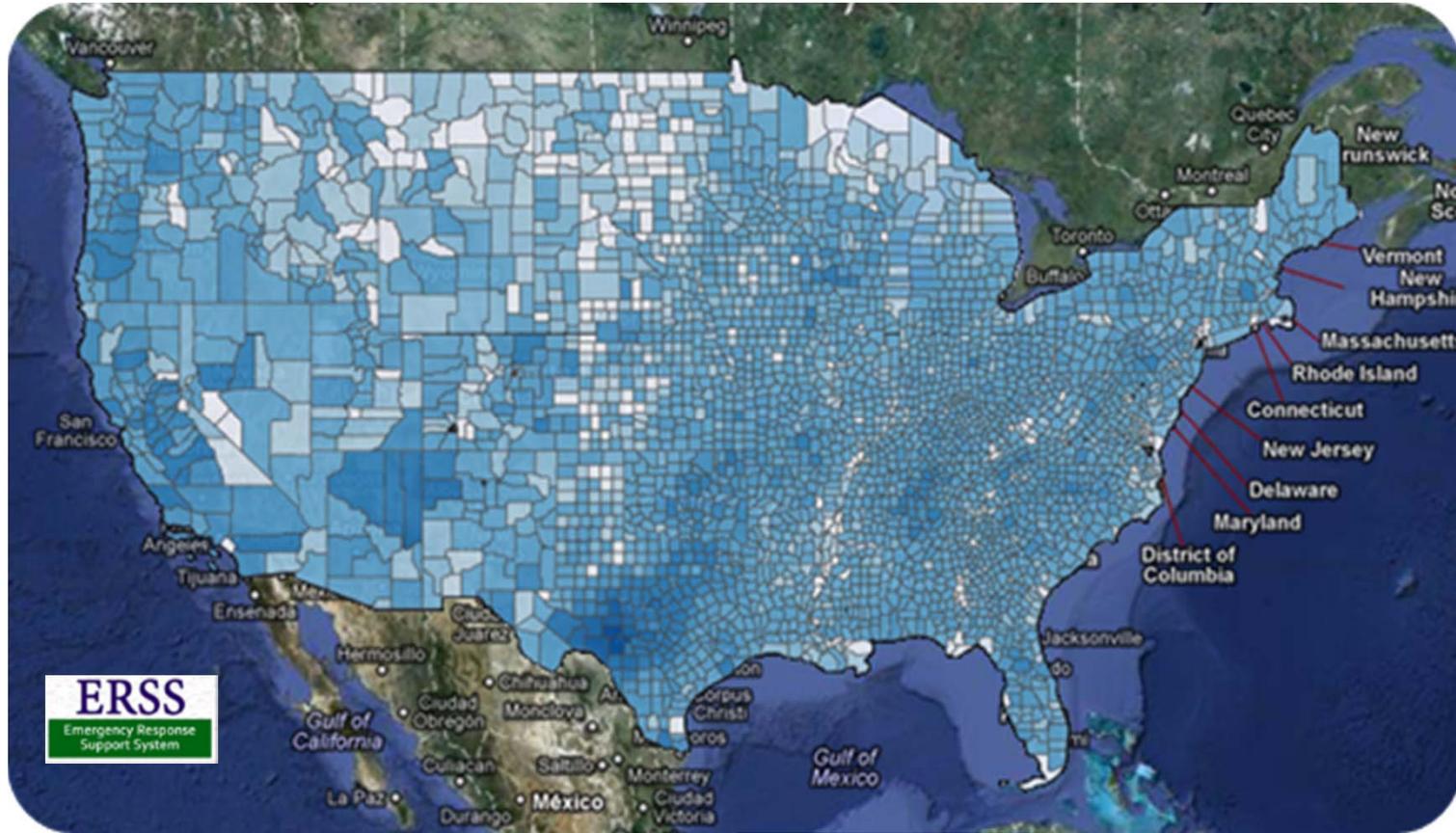
*FMD Response Ready Reference Guide—Quarantine, Movement Control, and Continuity of Business (NASS, 2007)

Common Operating Picture: Sheep



*FMD Response Ready Reference Guide—Quarantine, Movement Control, and Continuity of Business (NASS, 2007)

Common Operating Picture: Goats

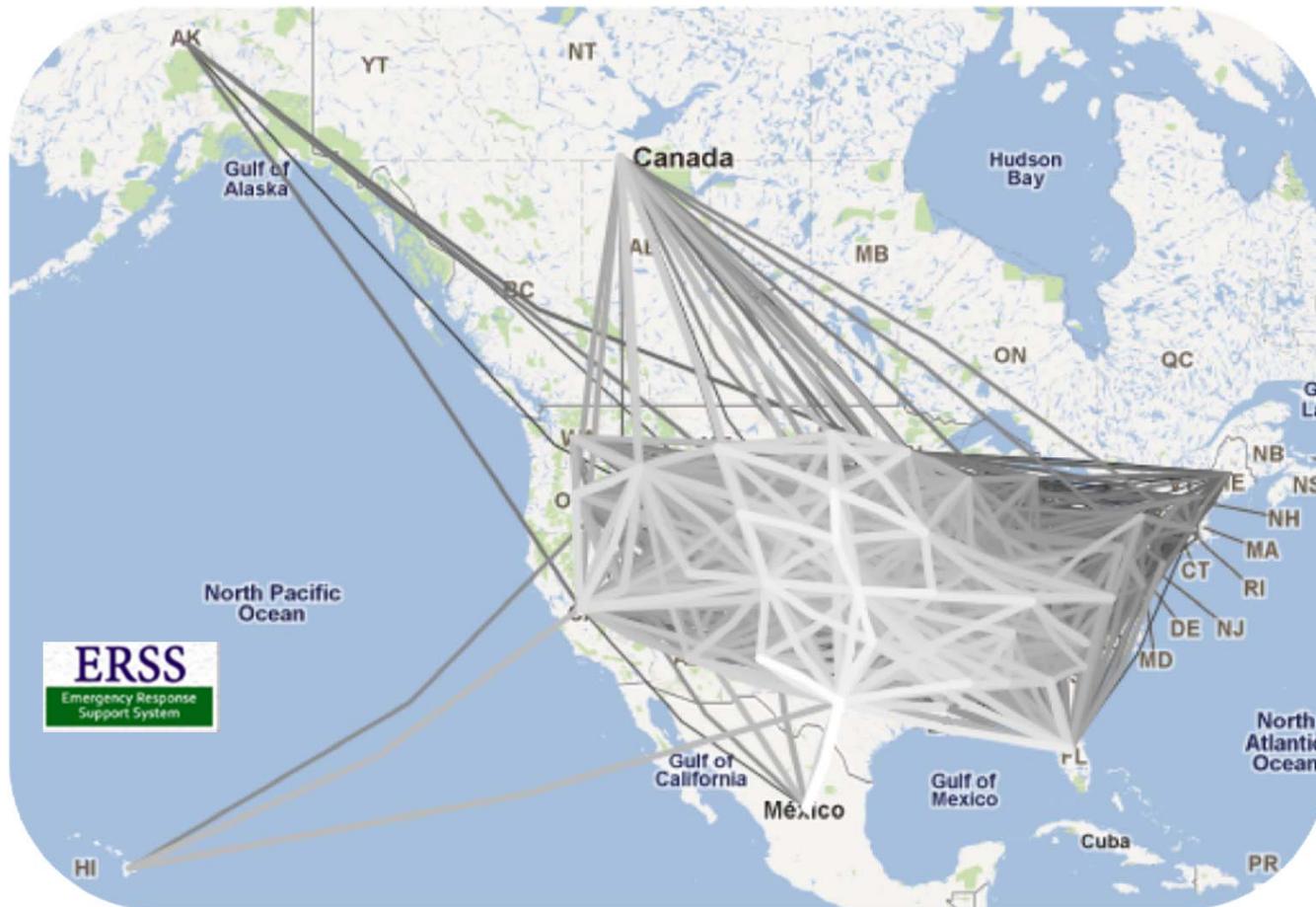


*FMD Response Ready Reference Guide—Quarantine, Movement Control, and Continuity of Business (NASS, 2007)

Common Operating Picture, cont.

- Estimates of movement*
 - 1 million swine on the road, per day
 - 40 million swine shipped to new state each year
 - 1 million cattle from Mexico (to United States)
- Size
 - Feedlots of >50,000 head
 - Dairy calf ranches of >70,000 head
 - Swine farms >20,000 sows

Common Operating Picture: Movement Example (Bovine)



Consequences of an FMD Outbreak

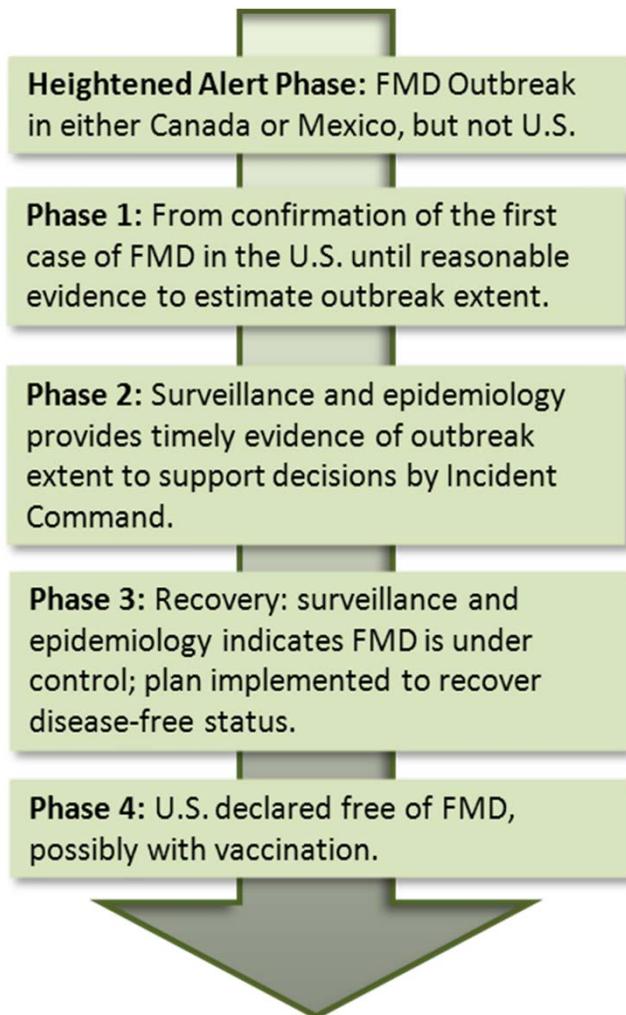
- Disruptions to commerce—intrastate, interstate and international
- Export markets lost for indeterminate amount of time
- Collateral markets impacted (grains, forage)
- Stakeholder impacts: economic loss and community impacts
- Market anxiety: commodity price fluctuations
- Strained Local, State, & Federal resources
- Recovery time depends on extent of outbreak
- *FMD: highly contagious animal disease with immediate economic consequences*

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Outline - Introduction



What if an FMD outbreak in the United States?

- USDA Authorities & Roles
- FMD Common Operating Picture
- **Goals of FMD Response**
- FMD Response Critical Activities
- FAD PReP Public Private Academic Partnerships

FMD Response Goals

1. Detect, control, and contain FMD in animals as quickly as possible.
2. Eradicate FMD using strategies that are designed to stabilize animal agriculture, the food supply, and the economy, and to protect public health and the environment.
3. Provide science-and risk-based approaches and systems to facilitate continuity of business for non-infected animals and non-contaminated animal products.

Achieving these three goals will allow individual livestock facilities, States, Tribes, Regions, and industries to resume normal production as quickly as possible. They will also allow the United States to regain FMD-free status without the response effort causing more disruption and damage than the disease outbreak itself.

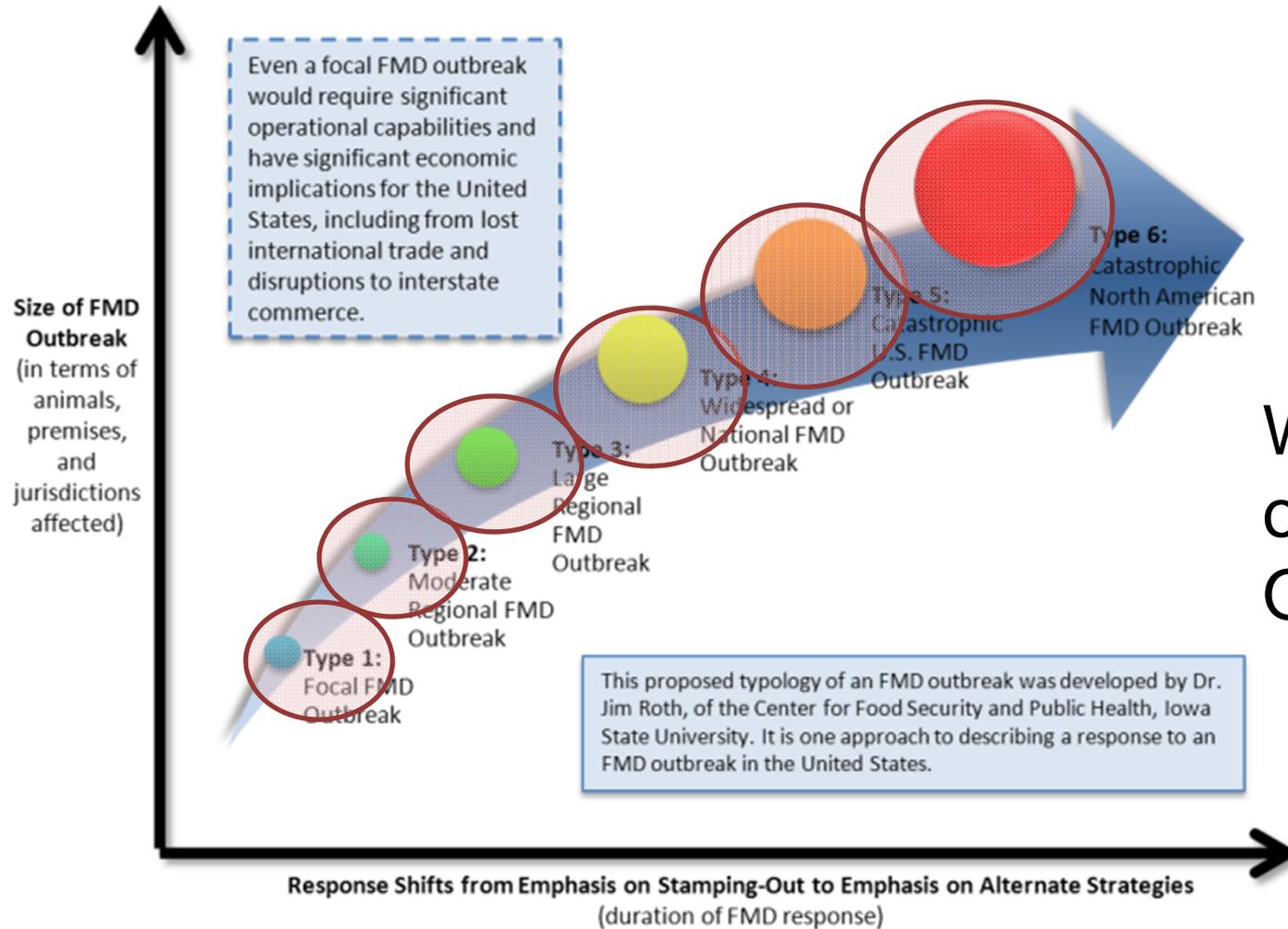
FMD Response Strategies

- There are five possible strategies for the control and eradication of FMD in domestic livestock:
 - Stamping-out
 - Stamping-out modified with emergency vaccination to kill
 - Stamping-out modified with emergency vaccination to slaughter
 - Stamping-out modified with emergency vaccination live
 - Vaccination to live without stamping-out.
- These strategies are not mutually exclusive.

FMD Response Strategies

- Likely to change over the course of the outbreak
- Selection and implementation depends on factors such as the
 - Spread and distribution of outbreak
 - Population density of susceptible animals
 - Desired FMD-status after an outbreak
 - Resources available (including personnel), for vaccination, surveillance, diagnostics, and disposal
 - Public acceptance of strategy

Types of an FMD Outbreak



What Type of FMD Outbreak?

FMD Vaccination

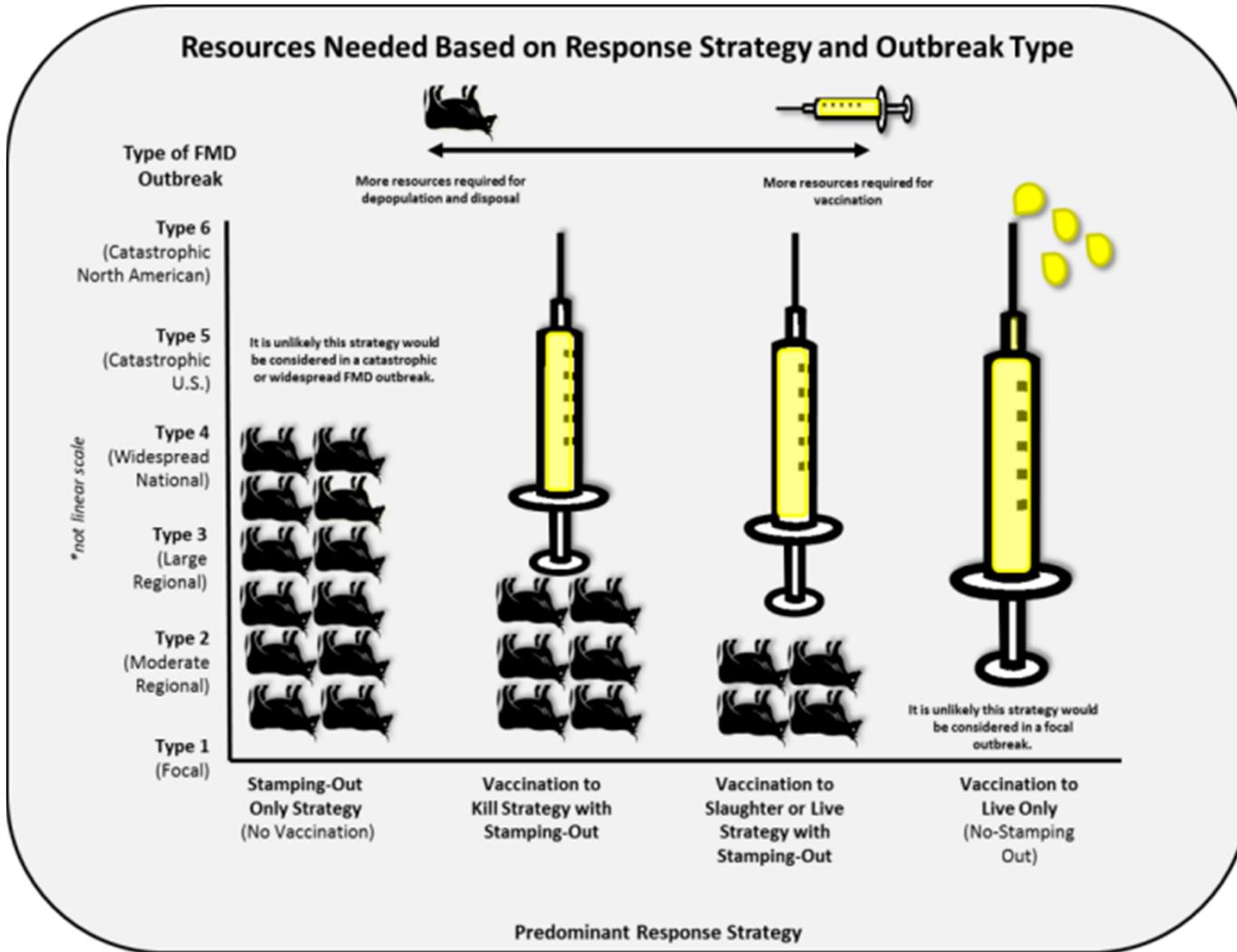
- The use of emergency vaccination strategies may be considered in an FMD outbreak...an FMD response may use one strategy or a variety of strategies in order to detect, control, contain, and ultimately eradicate FMD in domestic animals.
- The USDA FMD Response Plan: If it becomes apparent at any point in the response that stamping-out will not achieve control, containment, and ultimately eradication of FMD, alternative strategies will immediately be considered.

Why Prepare for Emergency Vaccination?

- Depopulation speed and disposal capacity
- Cost
- Economic losses to producers
- Interruption in food supply chain
- Baseline vulnerability—the United States has nearly 93 million cows, and 65 million swine.



Resources Required for Vaccination



*FMD Response Ready Reference Guide: Understanding Response Strategies.

Resources Required for Vaccination

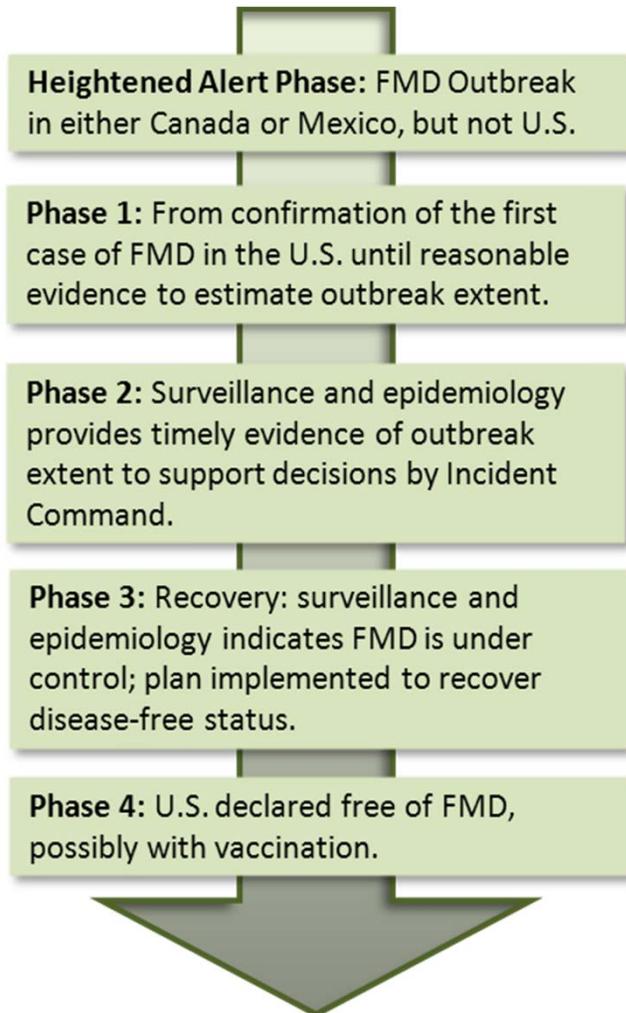
- In addition to vaccine, effectively implementing vaccination will require
 - Regulatory infrastructure (procurement, licensing, permitting, distribution, use, and other)
 - Animal identification (per requirements)
 - Communication (strategy and messaging)
 - Information management (including EMRS)
 - Logistics capabilities
 - Other critical activities (surveillance, biosecurity, etc)

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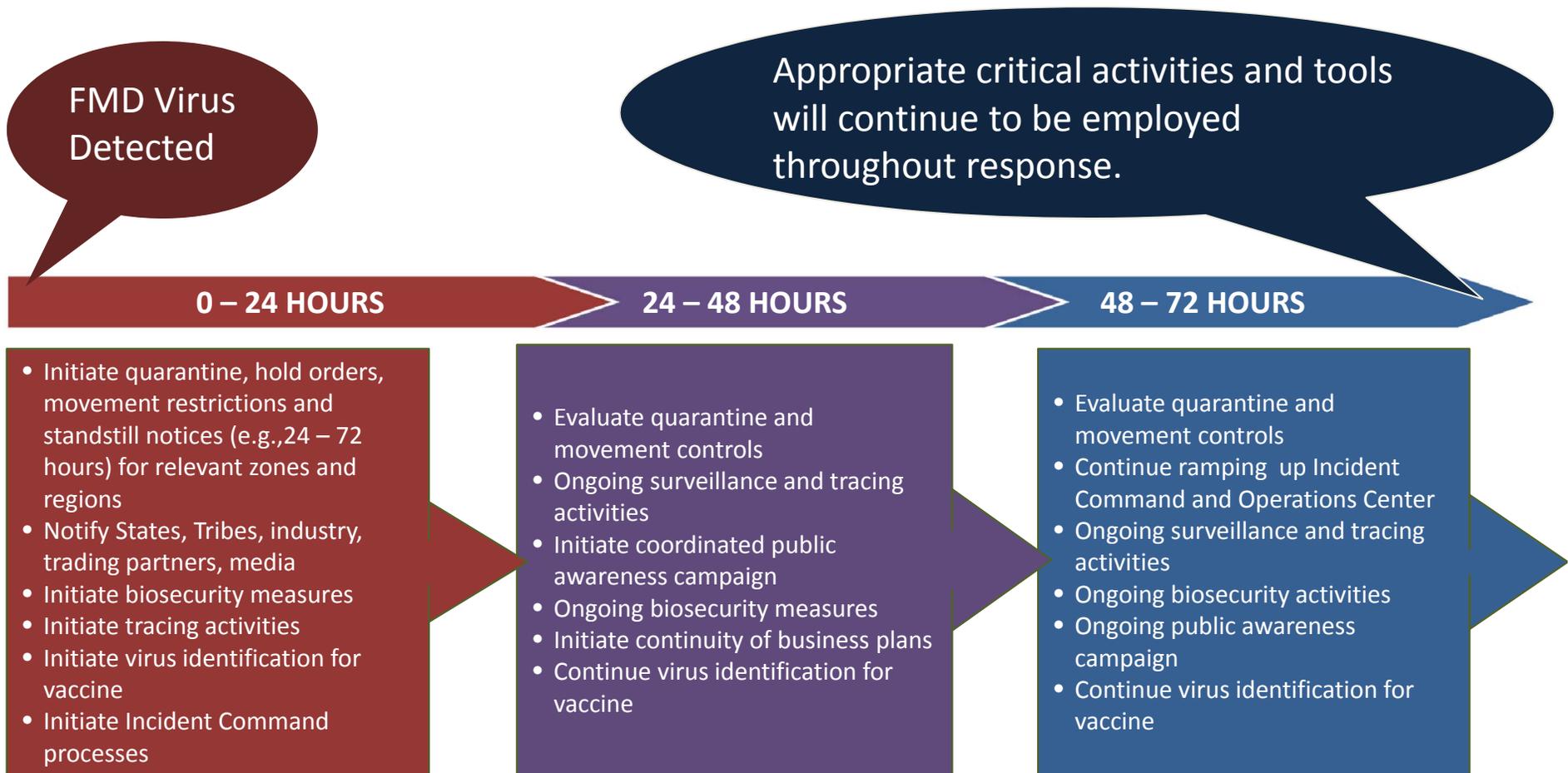


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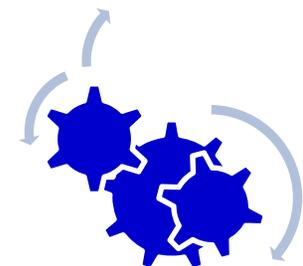


Critical Activities and Tools: First 72 Hours



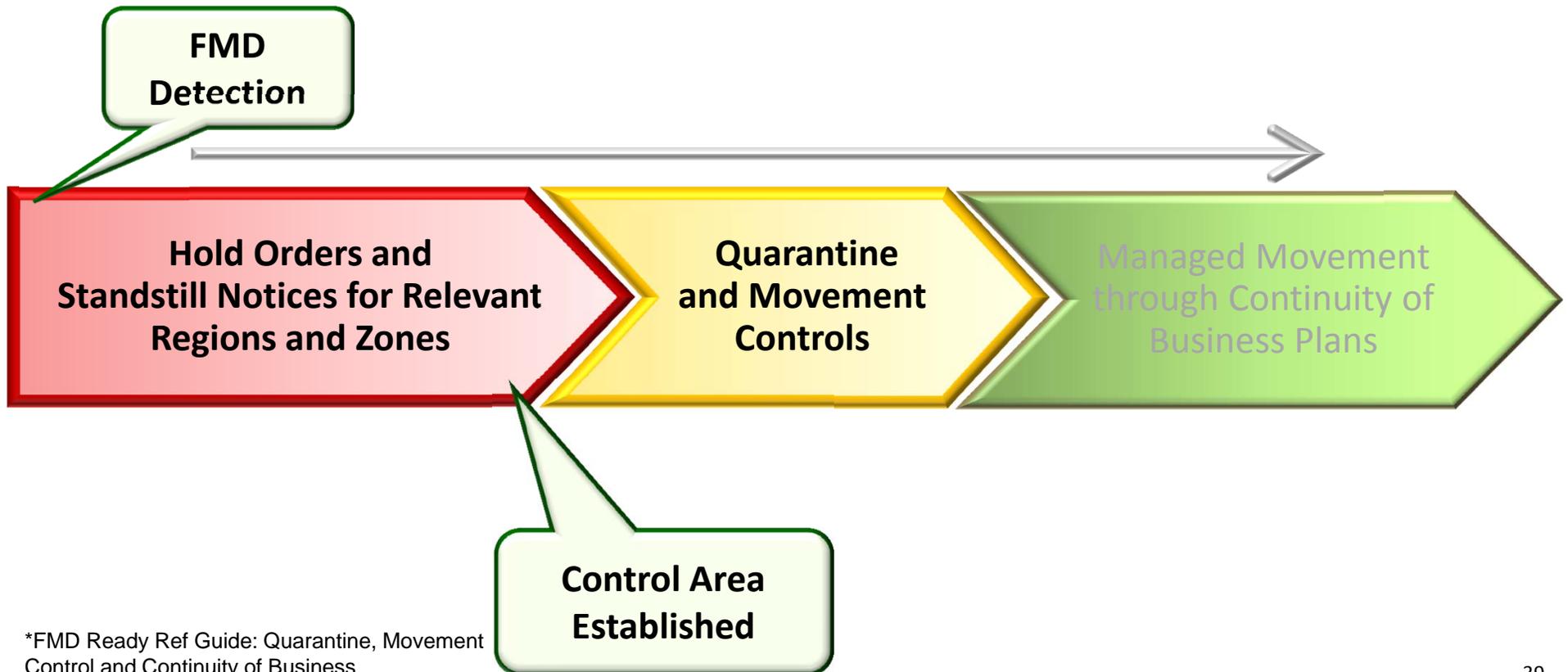
FMD Response–Critical Activities

- Case definition
- Rapid laboratory & field diagnosis and reporting
- Epidemiological investigation and tracing
- Increased surveillance and diagnostic capacity
- Swift imposition of effective quarantine and movement controls
- Continuity of business measures for non-infected premises and non-contaminated animal products
- Biosecurity measures
- Cleaning and disinfection measures
- Effective and appropriate disposal procedures
- Mass depopulation (as the response strategy indicates)
- Emergency vaccination (as the response strategy indicates)
- Information management, reporting, common operating picture
- Communications & public awareness campaign



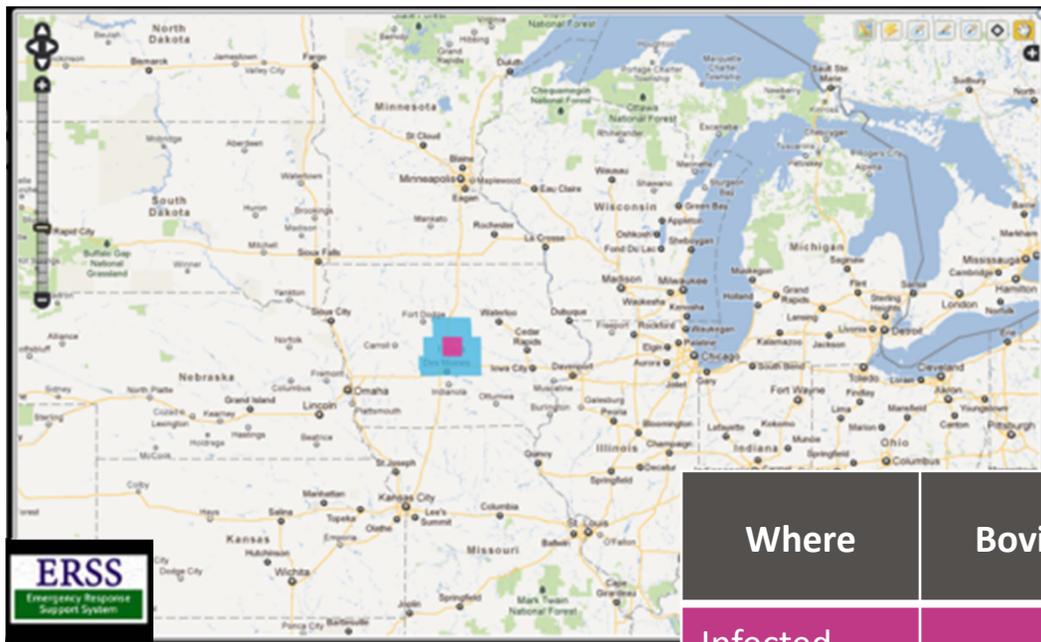
Quarantines, Movement Controls, and Continuity of Business

Must manage both Infected Premises and unaffected premises in a Regulatory Control Area: *How can this be accomplished? Preparedness, Response, or Recovery?*



*FMD Ready Ref Guide: Quarantine, Movement Control and Continuity of Business

Incident Common Operating Picture #1 (Iowa One Infected County)

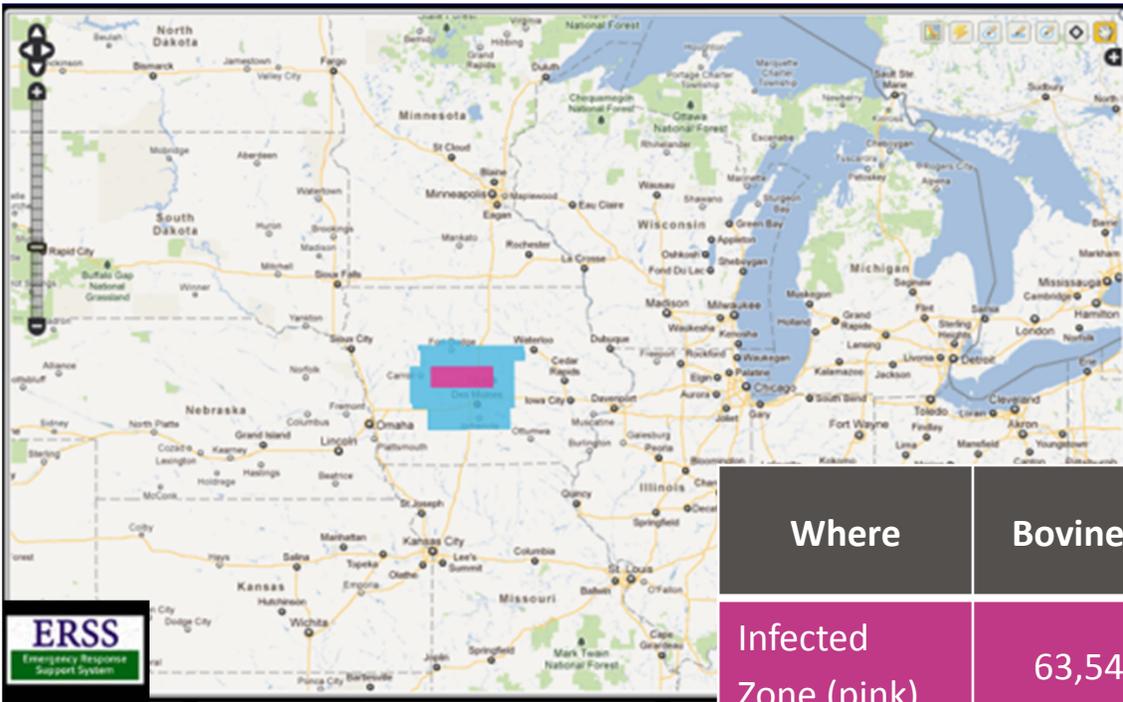


Total livestock affected:
2,110,282

Where	Bovine	Swine	Sheep/ Goats	Operations
Infected Zone (pink)	14,933	66,515	3,893	404
Buffer Zone (blue)	143,866	1,860,968	20,107	2,525
Total	158,799	1,927,483	24,000	2,929

*FMD Response Ready Reference Guide: Common Operating Picture; FMD Response Plan: The Red Book.

Incident Common Operating Picture #1 (Iowa Three Infected Counties)

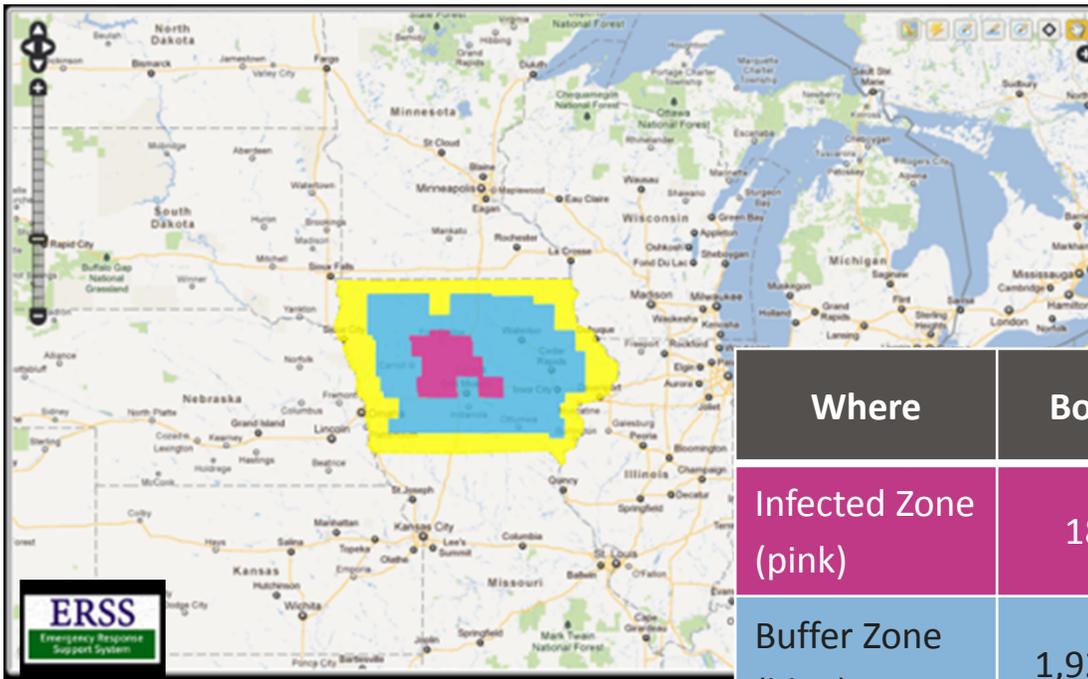


Total livestock affected:
4,342,744

Where	Bovine	Swine	Sheep/ Goats	Operations
Infected Zone (pink)	63,548	240,484	8,067	1,025
Buffer Zone (blue)	463,637	3,534,164	32,844	6,245
Total	527,185	3,774,648	40,911	7,270

*FMD Response Ready Reference Guide: Common Operating Picture; FMD Response Plan: The Red Book.

Incident Common Operating Picture #1 (Iowa Nine Infected Counties + Vax Zone)



*Total livestock affected
23,453,329*

Where	Bovine	Swine	Sheep/ Goats	Operations
Infected Zone (pink)	181,106	1,567,560	18,690	3,108
Buffer Zone (blue)	1,927,955	11,423,618	133,979	23,723
Vaccination Zone (yellow)	1,873,283	6,225,637	101,501	19,698
Total	3,982,344	19,216,815	254,170	46,529

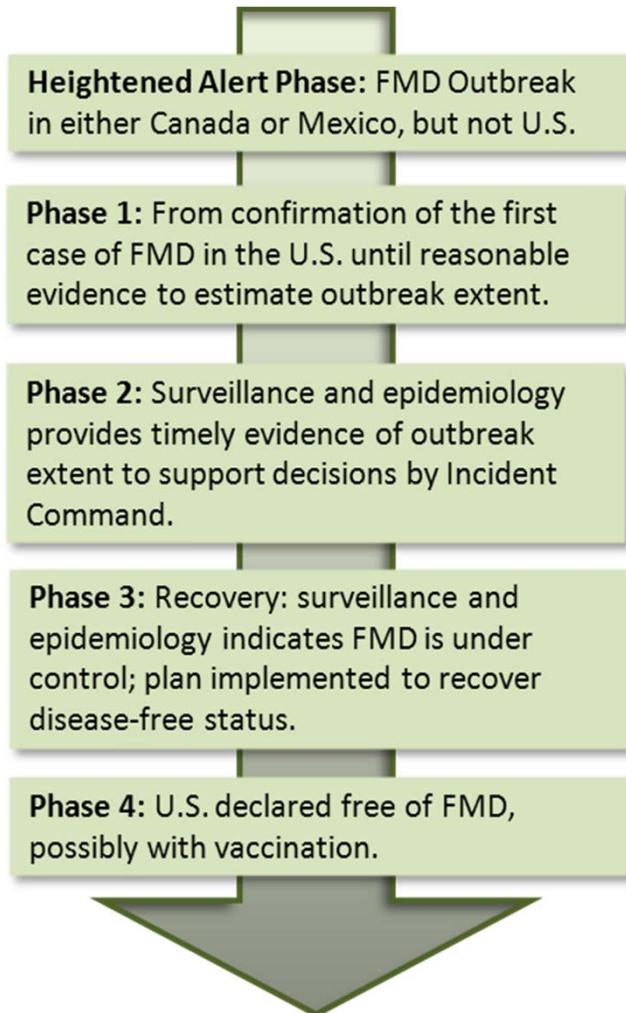
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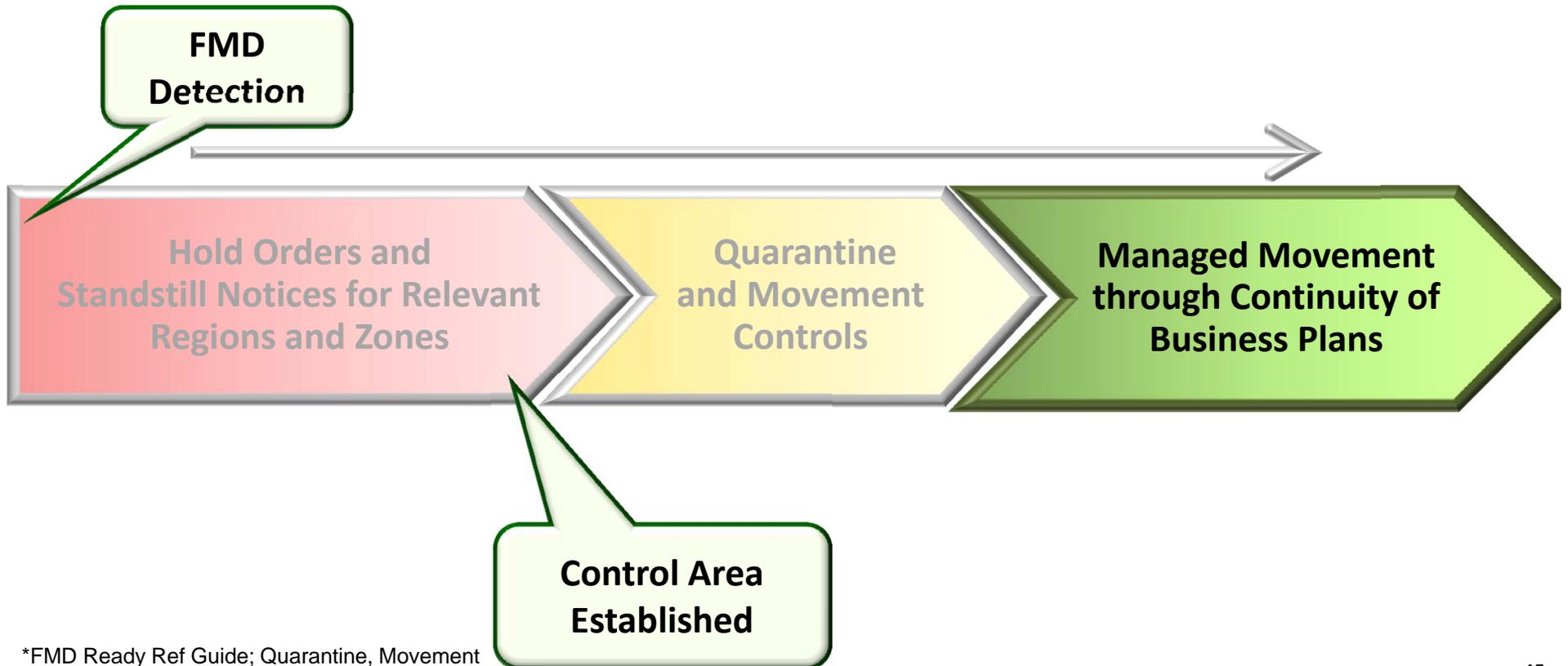


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*FMD Ready Ref Guide; Quarantine, Movement Control and Continuity of Business

Implement Secure Food Supply Plans (Public-Private-Academic Partnership)



- Manage movement in a regulatory Control Area.
- Manage movement out of the Control Area.
- Work with quarantine and movement control to limit disease spread while minimizing disruptions to intrastate and interstate commerce.

Secure Food Supply Plans

- **Manage consequences of quarantines and movement controls *prior to the outbreak***
 - **Risk assessments:** Proactive risk assessments can help determine the transmission risk of product movement, particularly from an infected but undetected premises, herd, or flock.
 - **Surveillance requirements:** For example, sampling frequency, population to be sampled, and duration of sampling.
 - **Biosecurity guidance:** Appropriate precautions, personal protective equipment, and specific steps for various fomites and equipment before, during, and after movement of animals or commodities.
 - **Cleaning and disinfection procedures:** Cleaning requirements for various fomites and equipment, including information on appropriate disinfectants.
 - **Epidemiological and premises information:** Information on movement to and from premises, as well as number of animals, species, their age, and the geographic location of the premises.
 - **Permitting guidance:** Transparent, explicit guidance for IC on movement requirements for various commodities, including options if applicable.
 - **Information management:** Effective, scalable, and flexible information systems that facilitate situational awareness and data sharing among all partners in a COB plan.

Secure Food Supply Plans

- Current public-private-academic collaborations and Secure Food Supply projects include:

- Secure Egg Supply Plan



- Secure Milk Supply Plan

- National
- Regional



- Secure Turkey Supply



- Secure Pork Supply

- Secure Broiler Supply



Secure Food Supply Partners

- Industry Associations and Groups
- State Animal Health Officials
- Center for Food Security and Public Health (CFSPH), Iowa State University
- Center for Animal Health and Food Safety (CAHFS), University of Minnesota
- University of California, Davis, Department of Veterinary Medicine and Epidemiology
- National Center for Foreign Animal and Zoonotic Disease Defense, Texas A&M University (FAZD)

More Information

- APHIS Website—Animal Health Emergency Management
 - <http://www.aphis.usda.gov/fadprep>
- APHIS Intranet
 - <http://inside.aphis.usda.gov/vs/em>
- Secure Pork Supply Plan
 - www.securepork.org
- Secure Milk Supply Plan and Regional Partners
 - www.securemilksupply.org