

Preparedness and Control Challenges for an FMD Outbreak in the U.S.

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United States has had Nine Outbreaks of FMD Between 1870 and 1929

- All outbreaks were controlled by stop movement and stamping out
- Herds were very small and there was very little animal movement
- Stamping out may no longer be feasible

Factors Requiring a Change in the Planned Response to FMD

Very large herd sizes located in close proximity

Premises with:

- >5,000 dairy cows
- >70,000 dairy calves
- >50,000 feedlot cattle
- >20,000 sows



Factors Requiring a Change in the Planned Response to FMD

- Extensive movement of animals
 - ~1,000,000 swine and ~400,000 cattle in transit daily
- Inadequate biosecurity
- Very high cost of stamping out
- Public resistance to stamping out
- Environmental concerns with carcass disposal

Secure Food Supply Plans

HPAI

- Secure Egg Supply
- Secure Turkey Supply
- Secure Broiler Supply



FMD

- Secure Milk Supply
- Secure Beef Supply



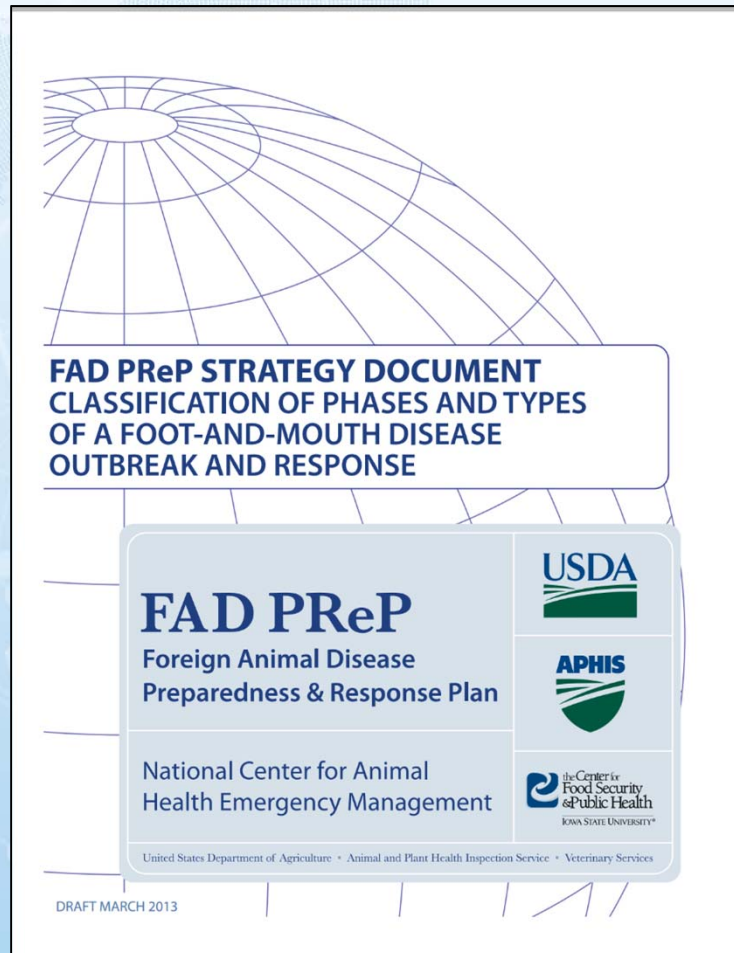
FMD, CSF & ASF

- Secure Pork Supply



<http://www.cfsph.iastate.edu/Secure-Food-Supply/index.php>

Phases and Types of FMD Response



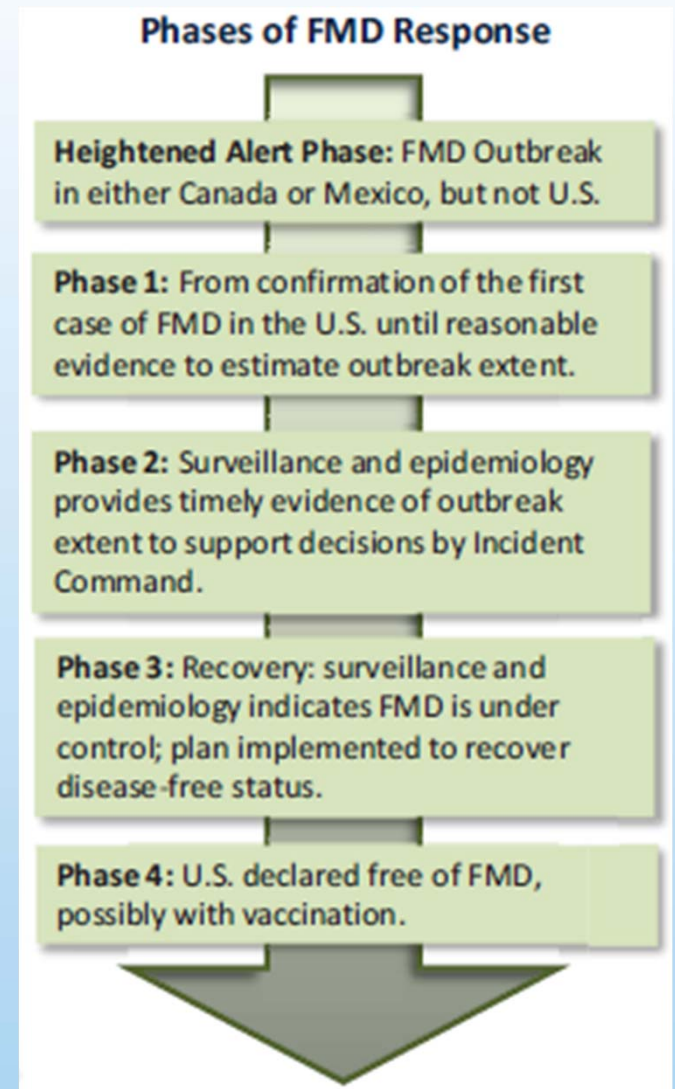
Strategies for the response to, and management of, an FMD outbreak will change as the outbreak progresses and will depend upon the magnitude, location and other characteristics of the outbreak.

www.cfsph.iastate.edu/pdf/phases-and-types-of-an-fmd-outbreak

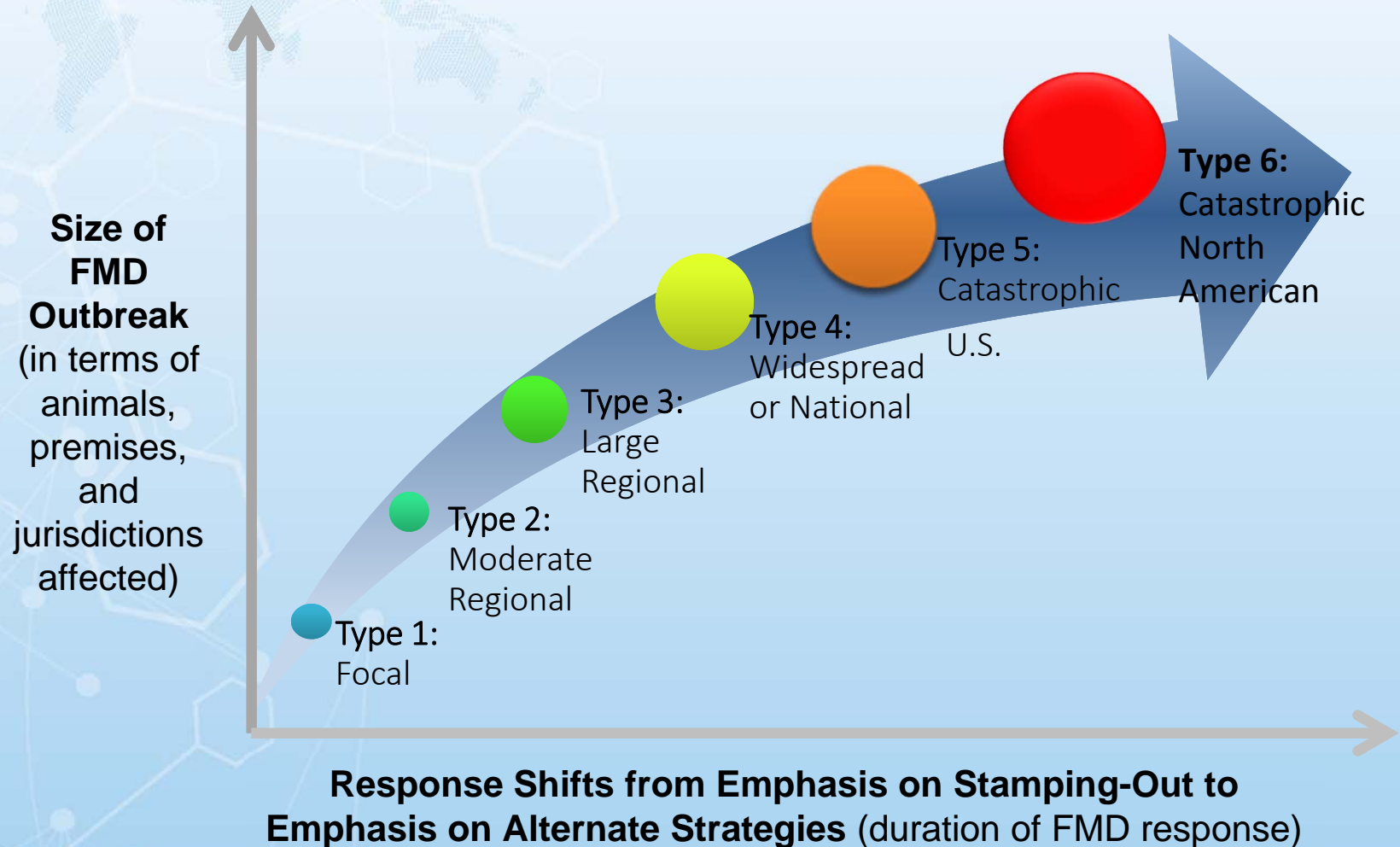
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Potential Phases of an FMD Response

FMD response and management strategies change as the outbreak progresses "Phases"



Potential Types of an FMD Outbreak During Phase 2



USDA FMD Vaccination Policy in the U.S. - September 2014

Table 2: Current Capability of the United States to Effectively Implement Vaccination Strategy or Strategies⁴

Type of Outbreak	Vaccinate-to-Kill	Vaccinate-to-Slaughter and Vaccinate-to-Live
<i>Type 1: Focal FMD Outbreak</i>	+	+/- (depends on regulatory infrastructure)
<i>Type 2: Moderate Regional FMD Outbreak</i>	+/- (depends on animal density)	+/- (depends on regulatory infrastructure and animal density)
<i>Type 3: Large Regional FMD Outbreak</i>	--	--
<i>Type 4: Widespread or National FMD Outbreak</i>	--	--
<i>Type 5: Catastrophic U.S. FMD Outbreak</i>	--	--
<i>Type 6: Catastrophic North American FMD Outbreak</i>	--	--

⁴ Includes, but is not limited to, vaccine quantities, time to delivery, and regulatory infrastructure (regulatory issues such as procurement, licensing, permitting, distribution, use, and traceability).

FMD Vaccine Surge Capacity for Emergency Use in the United States

January 9, 2014

- Rapid and sustained availability of vaccine for 23 strains of FMDV
- A white paper prepared by CFSPH at ISU for:
 - National Pork Board (NPB)
 - National Cattlemen's Beef Association (NCBA)
 - National Milk Producers Federation (NMPF)

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FMD Vaccine Surge Capacity for Emergency Use in the United States

A White Paper Prepared by the Center for Food Security and Public Health at Iowa State
University for:

National Pork Board

National Cattlemen's Beef Association

National Milk Producers Federation

January 9, 2014

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Approaches to Assure Surge Capacity for FMD Vaccines

Immediate availability:

- Finished vaccine held in vendor-managed rotating inventory ready to ship within 24 hours
- For those topotypes sold regularly

Approaches to Assure Surge Capacity for FMD Vaccines

Short-term availability:

- Vaccine antigen concentrate (VAC) held in vendor-managed inventory ready to be formulated and shipped
 - For those topotypes sold regularly
- Frozen VAC bank for other strains

Approaches to Assure Surge Capacity for FMD Vaccines

Long-term availability:

- Vaccine production initiated at the beginning of the outbreak. It may take up to 14 weeks to produce vaccine
- Requires investment in excess manufacturing capacity

Approaches to Assure Surge Capacity for FMD Vaccines

Eventual availability:

- New technology FMD vaccines that could be safely manufactured in the U.S. and which are based on a platform that allows various capsid serotypes/topotypes to be inserted into the vaccine.

Animal Ag Coalition has Requested **Annual** funding in the next 5 year farm bill

- **\$150 million** to establish an adequate FMD vaccine stockpile
- **\$30 million** to enhance the National Animal Health Laboratory Network's (NAHLN) ability to respond to a foreign animal disease emergency
- An additional **\$70 million** be made available to states to increase response capability through block grants administered by APHIS

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