

Vaccination is more appropriate for certain types of FMD outbreaks



Phases and Types of FMD Outbreaks



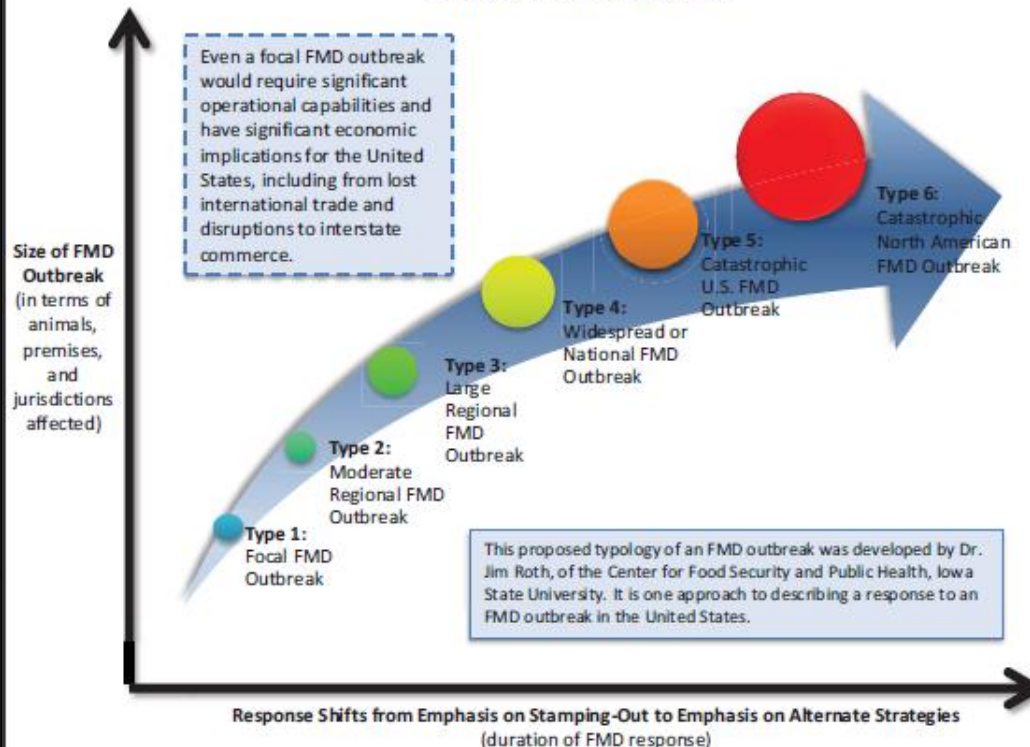
Overview of Phases and Types of FMD Outbreaks

An FMD outbreak in the United States will be a complex event. Having pre-defined phases and potential types of an FMD outbreak may be useful to facilitate the development of adaptable emergency response plans and processes. This information is intended to be guidance, acknowledging that any FMD outbreak will be unique and responders will need to tailor the response accordingly. The phase and the type of the FMD outbreak will change over the course of the outbreak.

Phase: A temporal stage in FMD outbreak response.

Type: A categorical measure of magnitude of an FMD outbreak.

Six Types of FMD Outbreaks



Phases of FMD Response

Heightened Alert Phase: FMD Outbreak in either Canada or Mexico, but not U.S.

Phase 1: From confirmation of the first case of FMD in the U.S. until reasonable evidence to estimate outbreak extent.

Phase 2: Surveillance and epidemiology provides timely evidence of outbreak extent to support decisions by Incident Command.

Phase 3: Recovery: surveillance and epidemiology indicates FMD is under control; plan implemented to recover disease-free status.

Phase 4: U.S. declared free of FMD, possibly with vaccination.

The logistical and societal impacts of mass euthanasia/disposal should not be underestimated

Slaughter/Disposal Numbers = 6-10 million livestock
("officially" 6,456,000: 10% of UK total)



Daily average of animals slaughtered = 9,000 - 80,000
Peak daily disposal occurred on April 5th = 100,000 carcasses

FMD and FMD Vaccination Basics

- There are seven FMD serotypes (>65 strains)
 - FMDV strains vary in their species preferences, clinical signs and transmission characteristics
 - No cross-protection between vaccine serotypes and limited cross-protection between strains
 - Vaccination is a preventative measure
 - Routine use in endemic countries
 - Emergency responsive use in free countries
 - Like other approved vaccines used to protect animal health, it has no negative impact on the quality or safety of animal products
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FMD and FMD Vaccination Basics

- Vaccination reduces animals susceptibility to infection and if infected, the amount of viral shedding and clinical signs
 - Vaccination does not always prevent infection
 - A booster vaccine is recommended for maximal protection
 - Short lived immunity (protection) ~ 6 months
 - Does not prevent development of a carrier state in cattle
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FMD Vaccination is used widely around the world to manage and control disease

OIE recognized FMD free countries or zones where vaccination is practiced;

- Free country
 - Uruguay
- Free zone in a country where vaccination is practiced
 - Argentina
 - Bolivia
 - Brazil
 - Colombia
 - Peru
 - Turkey

As reported on OIE FMD country status
Website January 7, 2014

Global Impacts of FMD

Knight-Jones, et al. PVM July 2013

- “Estimates that annual impact of FMD in terms of visible production losses and vaccination in endemic regions alone amount to between **US\$6.5 and 21 billion**”
 - “Additionally, outbreaks in FMD free countries and zones cause losses of >US\$1.5 billion a year”
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Each year, **2.35 billion** doses of FMD vaccine are administered globally

Region	Vaccinations	
	Doses (millions)	%
China	1600	68.1
India	150	6.4
Rest of Asia	50	2.1
Africa	15	0.6
Europe and Turkey	15	0.6
Middle East	20	0.9
South America	500	21.3
Total	2350	100.0