Response and Recovery Challenges Faced in Past FMD Outbreaks: Take Home Lessons for the US

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Those that fail to learn from history, are doomed to repeat it.

-Winston Churchill
Paul Frosch (center) with Behring and Wernicke at the Koch Institute

Friedrich Loeffler
US FMD History

9 outbreaks
United States 1914

22 states; 3,500 herds; 172,720 animals
4.5 Million USD
REPORT SUSPECTED CASES OF FOOT-AND-MOUTH DISEASE

To the nearest Veterinarian or Livestock Official

FOOT SYMPTOMS:
Blisters between toes
Lameness
Slopping of heel
Pain: animal lies down

It’s intensely infectious and easily carried on:
Hand, shoes, clothing
and many other ways

MOUTH SYMPTOMS:
Blister on lips and tongue
Ropy mucus
Sneezing of mouth
Pain when eating

OTHER SYMPTOMS:
Rapid loss of flesh
Reddened with few
Inflamed abder
Ulcers on tonsils
Loss of appetite
Chills and fever
DEATH MAY FOLLOW

YOUR DUTY:
Confine sick animals
Stop all visiting
Tie dogs; pen fowls, etc.
Report case at once!

This pestilence of cattle, swine, sheep, etc., causes enormous losses, and must be suppressed at once!

Send for Farmers’ Bulletin on “Foot-and-Mouth Disease”

United States
Department of Agriculture
United States 1924
Conjectured Global FMD Status

- **Endemic**
- **Intermediate, sporadic**
- **Free with vaccination**
- **Countries with multiples zones:**
  - FMD-free, free with vaccination or not free
  - Free. Virus present in game parks
- **Free**
>4M hogs; 6,147 farms
38% of Taiwan's hogs
United Kingdom 2001

Foot and Mouth
Disinfectant site

RAMP

[Photo of a person in a green jacket with a fire in the background]
The human costs that can’t be measured
10,000 farms depopulated
Uruguay 2001
Emergency FMD vaccination using commercial vaccine successfully controlled the outbreak
UK 2007
Japan April 2010

- Delayed detection
- Biosecurity
- Disposal challenges
- Delayed use of vaccination

292 IPs; 211,608 animals, 125,668 vaccinated (48,796 cases)

Photos curiosity of Dr. Kazu Murai
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“Spilled FMD milk leads to stench, supply gap”

February 10, 2011

South Korea 2011
Bulgaria and Turkey 2011

- Positive wild boar (4th Jan 2011)
- FMD outbreak (first wave Jan 2011)
- FMD outbreak (second wave March - April 2011)
Bulgaria and Turkey 2011

Eurasian boar

Feral Swine and Wild Pigs

UC Davis Veterinary Medicine
The field effectiveness of routine and emergency vaccination with an inactivated vaccine against foot and mouth disease

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Common Threads

• Early recognition, reporting and detection are always key

• Effective biosecurity is key to minimizing the extent and controlling spread
  – The better routine biosecurity is, the less FMD will spread prior to detection

• When necessary, early implementation of vaccination is critical to success
We must plan now, and be prepared to respond in new ways.

“US livestock industries have changed dramatically since 1929.”
Invest in Preparedness
We’ve come a long way baby!
The greatest tragedy is one that nobody learns from.....
Thank you!