The Importance of Building Business Continuity into Contingency Plans: The Example of FMD Continuity of Business Planning in the United States

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41st General Session of the European Commission for the Control of Foot and Mouth Disease (EuFMD)
FAO Headquarters, Rome, Italy
April 23rd, 2015
Historical VS Successes
Created New Challenges

USDA Bureau of Animal Industry Successful Eradication Programs (1884-1943)

- Contagious Bovine Pleuropneumonia (1892)
- Fowl Plague (1929)
- Foot and Mouth Disease (1929)
- Glanders (1934)
- Bovine TB (1940)
- Dourine Fever (1942)
- Texas Fever (1943)
We must plan and be prepared to respond in new ways

“U.S. livestock industries have changed dramatically since 1929”
U.S. Foreign Animal Disease Response Planning is Moving in a New Direction

U.S. Secure Food Supply (SFS) Plans are underway!

All aboard!
Why Secure Food Supply (SFS) Plans?

Size, structure, efficiency, extensive movement inherent in North American livestock industries will present *unprecedented challenges* in an FAD outbreak.
Goal of SFS Plans: Ensuring Business Continuity for U.S. Agriculture

• Minimize unintended negative effects of disease and disease response, while achieving response goals
  – Control or eradicate disease without “destroying” the industry
Secure Milk Supply
- Foot and Mouth Disease (FMD)
- Movement of milk
Secure Pork Supply
- FMD, Classical Swine Fever, African Swine Fever, and Swine Vesicular Disease
- Movement of animals
Secure Beef Supply
- FMD
- Movement of animals
Secure Egg Supply
- High Path Avian Influenza (HPAI)
- Eggs and egg products
Secure Turkey Supply
- HPAI
- Movement of birds
Secure Broiler Supply
- HPAI
- Movement of birds, hatching chicks and eggs
Common Components of Secure Food Supply Plans

- **Voluntary** pre-outbreak preparedness components
- **Biosecurity**, surveillance, epidemiology questionnaires, movement permits
- **Proactive risk assessments** (completed and in-process)
- Plans must be based on **current capabilities** and will evolve with science, risk assessments and new capabilities
- **Guidelines only**: Final decisions made by responsible officials during outbreak
- Outreach and training pre- and post-outbreak
U.S. FMD response is based on USDA VS guidance

• Rapid control and eradication still the goal, but...
  – Animal/product movements from concentrated dairy, beef and swine sectors present a huge challenge
  – Mass depopulation unlikely - inadequate resources/political will
  – May take months/years to gain freedom from the disease

• Recent policy enhancements
  – **Continuity of business planning**
  – **Early consideration of vaccination**
Modern U.S. FMD response plans must be scalable to different size outbreaks.

FMD response and management strategies depend upon outbreak:

- “The Type”, eg magnitude, location, other characteristics
- “Phase”, eg the stage

![Six Types of FMD Outbreaks Diagram](image.png)

Even a focal FMD outbreak would require significant operational capabilities and have significant economic implications for the United States, including from lost international trade and disruptions to interstate commerce.

Type 1: Focal FMD Outbreak
Type 2: Moderate Regional FMD Outbreak
Type 3: Large Regional FMD Outbreak
Type 4: Widespread or National FMD Outbreak
Type 5: Catastrophic U.S. FMD Outbreak
Type 6: Catastrophic North American FMD Outbreak

This proposed typology of an FMD outbreak was developed by Dr. Jim Roth of the Center for Food Security and Public Health, Iowa State University. It is one approach to describing a response to an FMD outbreak in the United States.

Response SHIFTS from Emphasis on Stamping-Out to Emphasis on Alternate Strategies (duration of FMD response)
There are many tools for the control of FMD

- **Biosecurity**
- Quarantine and **Managed Movement**
- Trace back/Trace forward
  - 2 incubation periods
- Stamping Out
  - Slaughter of all clinically affected and in-contact susceptible animals (within 24 hours or as soon as possible)
- Surveillance
- Rapid Diagnostics
- Vaccination
  - Vaccinate to kill/slaughter/live
The U.S. National Secure Milk Supply Plan
What is the Secure Milk Supply Plan?

- U.S. Dairy Industry **Continuity of Business Planning** for FMD

- **Initial Goal**
  - To **maintain** milk movement in a Foot-and-Mouth Disease (FMD) outbreak and to provide a continuous supply of wholesome milk and milk products for consumers

- **Public-Private Partnership**
  - Industry, State, Federal, Academia

- **Voluntary**
The dairy industry (producer and processor) business flow is complex.
National and Regional SMS Partners

National Partners:

Industry
• Working groups, topic experts

Academia
• Iowa State University
• University of California, Davis
• University of Minnesota

USDA-APHIS-VS
• National Preparedness and Incident Coordination (NPIC)

Regional Partners:

• California
• Colorado
• New England States Animal Agricultural Security Alliance (NESAASA)
  – CT, MA, ME, NH, RI, VT
• Mid-Atlantic States
  – VA, MD, TN, NC, SC, DE, WV, NJ, PA
• Michigan
• Pacific Northwest
  – WA, OR
• Wisconsin
The SMS must accommodate the diversity of the US dairy industry.

<table>
<thead>
<tr>
<th>State</th>
<th>Total Milk (million lbs)</th>
<th>Milk Cows (1,000)</th>
<th># Farms</th>
<th>% US Milk Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>41,256</td>
<td>1,780</td>
<td>1,515</td>
<td>20.5</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>27,572</td>
<td>1,271</td>
<td>10,860</td>
<td>13.7</td>
</tr>
<tr>
<td>New York</td>
<td>13,469</td>
<td>610</td>
<td>5,030</td>
<td>6.69</td>
</tr>
<tr>
<td>Idaho</td>
<td>13,431</td>
<td>573</td>
<td>550</td>
<td>6.67</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>10,565</td>
<td>533</td>
<td>7,200</td>
<td>5.25</td>
</tr>
</tbody>
</table>

Top 5 U.S. dairy states, 2013
Diversity of Milk Production Among SMS Regional Partners, 2012

Legend
- Total number of milk cows
- Total number of farms
- % total U.S. milk production

Sources:
- Hoard's Dairyman, Table 3. Dairy farm numbers by state and region, 2012; March 13, 2013, p. 151 (Data from USDA NASS)
• Biosecurity performance standards
  – Dairy premises, milk haulers, processing plants
• Pre-event risk assessments
  – Identify needed mitigation steps to control FMD virus spread
• Decision support and training tools
  – Guidance documents
  – Herd monitoring/surveillance tools
  – Handling of milk from FMD infected farms
  – Surge capacity for FMD vaccination
Line of Separation (LOS)  
(Milk tanker does not cross in this example)

- Farm dedicated hose
- Licensed weigher/sampler on farm
- Hauler does not cross LOS
  - Wears gloves
California’s SMS pre-certification levels for producers

### Draft Concept of California Secure Milk Supply (SMS)

<table>
<thead>
<tr>
<th>Certification Level</th>
<th>Bronze</th>
<th>Silver</th>
<th>Gold - Certified</th>
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</thead>
<tbody>
<tr>
<td>Workshop Attendance</td>
<td>Recommended</td>
<td>Recommended</td>
<td>Recommended</td>
</tr>
<tr>
<td>SMS Farm Plan Completed and Current</td>
<td>Yes</td>
<td>Plan reviewed and approved by CDFA</td>
<td>Plan reviewed and approved by CDFA</td>
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<tr>
<td>SMS Supplies</td>
<td>No supplies</td>
<td>All required supplies</td>
<td>All required supplies</td>
</tr>
<tr>
<td>Documented Employee Training</td>
<td>No training</td>
<td>Completed</td>
<td>Completed</td>
</tr>
<tr>
<td>Demonstration Exercise of Plan Component</td>
<td>No demonstration</td>
<td>Some plan components successfully demonstrated</td>
<td>All plan components successfully demonstrated</td>
</tr>
<tr>
<td>- Herd Monitoring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Cleaning and Disinfection/PPE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Bulk tank sample collection and milk transfer</td>
<td></td>
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</tbody>
</table>

**Gold**

Gold certified producer-hauler-processor routes would have no interruption in milk movement if biosecurity and herd monitoring in place.

**Silver**

**Bronze**
Dairies, Haulers and Milk Processors will all need to be GOLD certified for a milk movement permit to be issued in an outbreak.

Dairy Farm

Milk Hauler

Milk Processor

Milk Movement Permit

Verified and activated
Messaging will be critical to maintaining U.S. consumer confidence

- FMD is NOT a public health concern
  - NOT hand-foot-mouth disease that affects children
  - NOT the same as BSE or “mad cow disease”

- Industry has invested heavily on crisis communications preparedness [www.FootAndMouthDiseaseInfo.org](http://www.FootAndMouthDiseaseInfo.org)

- Industry representatives suggest using term “HOOF and Mouth Disease” in messaging
U.S. FMD vaccination contingency planning....One size does not fit all
At present vaccine availability is highly unlikely to meet desired demands.

Contingency planning should take limited vaccine resources into consideration.

Prioritization for limited resources should be discussed in advance with all stakeholders.

http://www.cfsph.iastate.edu/Secure-Food-Supply/index.php
SMS Current Focus: Management Issues in a Large FMD Outbreak

• On-farm calf rearing and management of replacement heifers

• Enabling other necessary activities (cropping, manure handling, feed, etc.)

• Milk handling from FMD infected or vaccinated dairies

• Dairy export loss mitigation opportunities for industry
Conclusions

• COB planning is presently a necessary component of FMD emergency response planning.
• COB planning is not something that VS can do on its own and it must engage and involve all stakeholders.
• While planning guidance is necessary, COB plans must still be tailored to local, regional and state needs.
• To be successful, COB planning and preparedness must occur and be well socialized in advance of an event.
• There is inherent value to COB planning that goes well beyond a “plan” or product.
FMD Info
Dairy Industry Manual
Phases and Types
Inactivation of FMDV in dairy products
Vaccination info
FMD Response Plan
OIE resources
✓ Secure Food Supply Plans
✓ USDA Foot-and-Mouth Disease Response Plan "The Red Book"
✓ Phases & Types of an FMD Outbreak
✓ NAHEEMS Guidelines: Continuity of Business
✓ NAHEEMS guidelines: Vaccination for contagious diseases; Appendix A: Vaccination for Foot-and-Mouth Disease
✓ FMD Vaccine Surge Capacity for Emergency Use in the United States
✓ Inactivation of Foot-and-Mouth Disease Virus in Milk Products
✓ Foot and Mouth Disease in Pigs - Progression of Lesions
Acknowledgements

• USDA, APHIS, VS
• U.S. Livestock Industry
• State government partners
• Academic partners
  – Iowa State University
  – University of Minnesota
Thank you!