

U.K. Foot and Mouth Disease outbreak offers lessons for United States

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Summary

Lost hours translate quickly into lost dollars for livestock producers during an outbreak of Foot and Mouth Disease (FMD). This makes it crucial for the United States to carefully study the United Kingdom's (U.K.) rapid and effective response to its 2007 FMD outbreak and make the appropriate adjustments.

Background

The August-September 2007 FMD outbreak in the U.K. offered an opportunity for animal health and homeland security experts to learn from successful British tactics. The U.K. last had an outbreak of FMD in 2001; however, the difference in government response to, and in the breadth of, the 2001 and 2007 outbreaks is significant. In 2001, FMD spread nationally before the British government acted. In 2007, the U.K. rapidly contained the spread of the disease to a small area of southern England, showing the country now has the organizational structure to respond rapidly and effectively to threats.

Successful strategies employed

Early detection and rapid response were key factors to successfully containing the 2007 outbreak of FMD. British authorities quickly shut down all movement of animals, and improved diagnostic tools – including the use of real-time polymerase chain reaction (RT-PCR) techniques – allowed for faster, more accurate diagnoses, minimizing the loss of uninfected animals suspected of having the disease.

The Pirbright Laboratory, a government research facility for farm animal disease, was quickly identified as the likely source of the disease. FMD research conducted inside modern, high-level, bio-containment facilities such as Pirbright is safe, however, this laboratory was overdue for a facilities upgrade. Other countries with world-class FMD research facilities include Switzerland, Australia and Canada.

Throughout the 2007 FMD outbreak, the British government's Department for Environment, Food and Rural Affairs (DEFRA) provided nearly hour-by-hour updates on its Web site that effectively communicated with the public and stakeholders, resulting in an informed and educated network of farmers, livestock producers, trading partners

and world health organizations. Authorities provided risk communications at all levels and through various media formats.

The British government also implemented a robust system of indemnification for farmers and livestock producers. As a result, affected farmers and producers cooperated with the detection and eradication process, knowing the government would swiftly reimburse the full market value of any animal culled to prevent the spread of the disease.

Unanswered questions identified

During the 2007 outbreak, the U.K. identified several areas that lacked a clear response plan. For example, authorities need to decide when it is appropriate to declare FMD eradicated and allow free movement of livestock. Some believe the U.K. declared eradication too soon after the 2007 outbreak was discovered – the British government announced eradication in late August but discovered new cases in mid-September, 30 miles from the original outbreak.

Also, while vaccination was not implemented in the 2007 outbreak, British authorities still need to determine policy on FMD vaccination. Some questions identified during the 2007 outbreak include:

- Which vaccines should be used?
- When should vaccines be applied?
- What is the fate of vaccinated animals after an outbreak is controlled?

The 2007 outbreak also raised questions on how to control the movement of deer, feral swine and other cloven-hoofed wild animals susceptible to FMD. While wildlife was not implicated as a factor in the recent U.K. outbreak, it is nonetheless clear that controlling the movement of wildlife is far more difficult than controlling the movement of livestock, and U.K. FMD authorities need to decide how to control infected wildlife as a part of their FMD response.

Lessons learned

The U.S. Department of Homeland Security chose the Foreign Animal Zoonotic Disease (FAZD) Center to study the U.K. outbreak and return with a lessons learned report. Principal investigators will use the FAZD National Assessment Model to evaluate scenarios and options employed in the U.K., and apply them to similar scenarios as they might play out in the United States. The center, in

collaboration with major universities, national laboratories and government agencies, is creating the next generation of vaccines, anti-virals, rapid detection/diagnostic tools and computer models to combat FMD. The U.K. paid a high price to develop a rapid and effective process for identifying, containing, controlling and eradicating FMD. The United States must learn from the British experience.

Dr. Garry Adams is a member of the Beef Checkoff's Animal Health Network, a group of animal health experts dedicated to communicating sound, scientific information on beef and beef production to the public.

In addition to his role as Associate Dean of Homeland Security at Texas A&M University, Dr. Adams is also science team leader for biological systems with the National Center for Foreign Animal and Zoonotic Disease Defense (FAZD). Established by the Department of Homeland Security in 2004, the FAZD Center creates products to defend the economy against potentially catastrophic animal diseases, including FMD. Adams has first-hand experience with FMD in the U.K. In 2001, he traveled with other U.S. scientists and veterinarians to the U.K. to assist with the massive outbreak, which resulted in the slaughter of 4 million animals and an estimated economic cost of \$11.7 billion.

Key Points

- The risk of an FMD outbreak ranks high among potentially threatening animal diseases. The recent outbreak in the U.K. offers an opportunity for animal health and homeland security experts to learn from successful British tactics.
- Early detection and rapid response were key factors in successfully containing the disease, and improved diagnostic tools minimized loss of uninfected animals suspected of having the disease.
- During the outbreak, the British effectively communicated with the public and stakeholders, resulting in an informed and educated network of farmers, producers, trading partners and world health organizations.
- Several unanswered questions were identified in the wake of the 2007 U.K. FMD outbreak. Officials need to decide when it is appropriate to declare FMD eradicated and allow free movement of livestock; when to vaccinate against the disease and which vaccines to use; and how to control infected wildlife.