

Effects of foreign animal disease outbreaks on United Kingdom animal health policy: Implications for United States emergency response

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Introduction

Recent large scale outbreaks of foreign and emerging animal diseases have highlighted the need for well-planned and well-communicated animal health policies. While many of the shortcomings of current policies become apparent during a disease outbreak, the changes made after a large scale outbreak may be more enlightening. The purpose of this project was to examine the impact of numerous disease outbreaks on animal health policy, organization, and communication in the United Kingdom (UK).

Three recent disease outbreaks in the UK, classical swine fever (CSF) in 2000, foot and mouth disease (FMD) in 2001, and recurring highly pathogenic H5N1 avian influenza (HPAI), have each posed serious challenges to their regulatory structure and policies.

Classical Swine Fever

The classical swine fever outbreak of 2000 was the first major disease outbreak experienced in the UK since the FMD outbreak of 1967-68. Although the outbreak comprised only 16 cases, it consumed over 80% of the State Veterinary Service's (now the Animal Health Agency) resources.¹ Although this should have been a clear signal that changes were needed in order to address any large-scale outbreak of a highly-contagious disease, budget constraints and other pressing concerns such as bovine spongiform encephalopathy (BSE) prevented significant changes.

Foot and Mouth Disease

The 2001 outbreak of FMD highlighted every flaw in the UK's outbreak response strategy and quickly overwhelmed even the most well-thought out plans. By the time the disease was identified at an abattoir on February 19, 2001, the disease was already incubating in more than 50 locations scattered across the UK. The epidemic lasted for 221 days, resulting in the death and destruction of over 6 million animals. Total costs to both the public and private sector exceeded £8 million.²

Highly Pathogenic Avian Influenza

The emergence of H5N1 HPAI as a disease of international regulatory concern has challenged many countries, including the UK. Highly pathogenic avian influenza was first seen in the UK in 2005 when a parrot died in quarantine. The virus has been identified in wild waterfowl numerous times since then. The disease was identified in domestic poultry in 2007, leading to the depopulation of several thousand birds. Since most diseases of economic concern are carried by and circulated within domestic livestock, most foreign animal disease contingency plans focus on the agricultural sector. The role of wild waterfowl and seabirds in the spread of avian influenza viruses requires emergency response plans to include a new set of stakeholders – wildlife experts, ornithologists, and poultry keepers. Disease control policies for avian influenza must work not only in the agricultural sector, but also with small-scale backyard breeders and those who keep birds for their personal enjoyment.

Understanding how animal health policy, organization, and communication changed in the UK following these experiences can offer important insights into the successful control of large-scale outbreaks of animal disease.

Methods

For this project, individuals within the Department of Environment, Food and Rural Affairs (DEFRA), Veterinary Laboratory Agency (VLA), and Animal Health Agency (AHA) were identified based on their current roles in animal disease detection, prevention, and emergency response. Individuals were interviewed for varying lengths of time using an open-ended questionnaire during the months of June and July of 2007. Interview questions focused on current efforts to prevent and respond to foreign animal diseases, as well as how those methods have changed due to recent disease events. From these interviews, numerous themes emerged and were further explored through additional interviews and literature review.

In addition, visits were made to numerous farms in Cumbria, England in order to visit with farmers and other individuals directly affected by the FMD outbreak of 2001. Visits with farmers were informal and unstructured. The majority of farms visited were small dairy operations or dairy and sheep operations.



Results

Recent disease outbreaks in the UK have had massive and long lasting effects on how diseases are controlled in many countries. However, within the UK, these changes have extended into every facet of animal health. Interviews and discussions identified six themes or key areas of change: animal identification and tracing, national biosecurity, farm-level biosecurity, disease surveillance, and intra-agency and public communications.

Animal Identification and Tracing

The government's lack of understanding regarding modern agricultural practices and animal movements became immediately apparent during the 2001 outbreak of FMD. The rapid and widespread movement of animals through markets, unregistered and illegal sale of animals outside of markets, and the illegal movement of animals into Northern Ireland greatly complicated disease control. Prior to the outbreak, efforts were already underway to establish individual cattle identification and a computerized system for tracing cattle movements. The system is now completely in place for cattle and will soon be expanded to include sheep. In 2003 the Animal Health Act was amended to require that prior to any movement, susceptible animals must be inspected by the owner for signs of FMD.



Example of cattle passport and primary ear tag used in identification and tracing
Source: Department for Environment, Food, and Rural Affairs- Animal Health and Welfare. Available online at <http://www.defra.gov.uk/animal/hid-move/cattle/memberstates.htm#4>

Disease Surveillance

In 2003, DEFRA published a new strategy for enhancing veterinary surveillance in the UK. The strategy aimed to identify an improved network of surveillance partners and to develop a new system for the prioritization of disease-specific surveillance. The strategy also called for the development of the Rapid Analysis and Detection of Animal-related Risk (RADAR) system. Launched in March of 2005, RADAR is designed to collect, collate, and analyze veterinary surveillance data from numerous sources. Currently the system focuses on cattle and poultry data, but plans have been made to expand the animal species represented and types of data collected.

National Biosecurity

In order to address biosecurity on a national level, several changes were made to reduce the risk of disease-containing products coming into the country. Educational efforts for tourists and visitors were increased. Amnesty bins were made available at major ports of entry to allow for the disposal of illegal items prior to inspection. Data were collected on the amount, type, and origin of illegally imported products, as well as the confiscation rate. Collected continually, this information is used to help target anti-smuggling activity on the highest risk traffic.



Farm-level Biosecurity

Recent outbreaks have clearly demonstrated the critical need for individual animal owners to reduce the likelihood of disease entry and minimize the spread of a disease within their herds or flocks. Farmers' inability and/or unwillingness to implement effective biosecurity measures at the onset of the outbreak contributed to the spread and duration of the 2001 FMD epidemic. In contrast, poultry owners' willingness to house their birds during periods of heightened risk drastically reduces the likelihood of an outbreak of HPAI. Mandatory efforts to improve biosecurity include requirements for the biosecurity of livestock markets and fairs as well as a 6-day standstill on animal movements following the purchase or introduction of a new animal onto a premises. Voluntary efforts have focused on animal health planning – encouraging farmers to measure, manage, and monitor production parameters which may be indicative of disease.

Communications

Blockages in communication at any level during an outbreak may lead to unrealistic expectations, distrust, and confusion. All of these were present during the 2001 FMD outbreak. Within DEFRA, outdated communication systems have been replaced by rapid and flexible web-based information sources. The Veterinary Instructions, Procedures and Emergency Routines (VIPER) system was created to allow for the rapid communication of procedures, forms, and policy changes which occur during an outbreak. The system is designed to be intuitive and comprehensive enough for use by field staff recruited during an outbreak. DEFRA's approach to public communication has also been recently overhauled to reach new goals of timeliness, transparency, consistency, and clarity. Public acceptance and support of disease control measures during past outbreaks have often been poor when the decision process was opaque or poorly understood, even when the best available science was used.

Implications for US Emergency Response

Despite the many positive changes made in the UK, the negative consequences of recent disease outbreaks may still be seen in the form of distrust by farmers and the public in the government's ability to manage disease outbreaks. The government's failure to monitor and maintain strict biosecurity at a research facility resulted in another outbreak of FMD in 2007, further eroding public confidence in DEFRA. This distrust may have led to reduced producer compliance during the outbreak. A single producer's unwillingness to inspect his livestock and notify the appropriate authorities had a massive demoralizing effect on the outbreak response and cost the livestock sector millions of dollars.

As the Department of Homeland Security continues to prepare for threats to food and agricultural security, understanding of the broader context of emergency preparedness and response is needed. While significant efforts have been made to develop scientifically-sound and economically-feasible emergency response plans, these may be inadequate to successfully resolve a large-scale outbreak of a foreign animal disease.

Improved communication is needed both in the UK and the US to inform farmers of what is being done to protect the country from foreign disease and what they, as livestock owners, can do to help minimize the impact of disease. Communication must be tailored not only to the livestock industry, but also to the specific stakeholders represented within that segment of industry. This shared accountability can lead to effective emergency response in even the worst of scenarios. In addition, the evaluation of disease control policy should take into account the effects of disease control measures on public trust and partnership. The successful control of foreign animal disease outbreaks relies not only on well-rehearsed emergency response plans, but on the effectiveness of that plan at the level of an individual farmer.

Literature Cited

- Anderson I. 2002. Foot and Mouth Disease 2001: Lessons to be Learned Inquiry. Available online at http://archive.cabinetoffice.gov.uk/fmd/fmd_report/report/index.htm
- National Audit Center. 2002. The 2001 Outbreak of Foot and Mouth Disease. Report by the Comptroller and Auditor General. Available online at http://www.nao.org.uk/publications/nao_reports/01-02/0102939.pdf

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For further information

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