

Summary of Foot-and-Mouth Disease Preparedness and Vaccine

Secretary's Advisory Committee on Animal Health

Foot-and-mouth disease (FMD) occurs in many parts of the world. The United States eradicated the disease in 1929. However, there is always a risk of its re-introduction into the United States, although the risk is very low.

The effect of an FMD outbreak in the United States would be devastating. One study estimates total economic losses for an outbreak in this country between \$37 billion and \$228 billion, depending on its size. A large part of that loss would be due to the immediate disruption of animal agriculture exports, as U.S. beef exports totaled \$6.2 billion in 2013.

APHIS addresses the risk from FMD on two fronts: import restrictions and disease preparedness. Many animals and animal byproducts from areas known to be affected with FMD are subject to import restrictions or are prohibited entry into this country. The goal of preparedness activities (for FMD any foreign animal disease) are to detect, control, and contain the virus in animals as quickly as possible. Quarantine and movement controls would be essential to stop the initial spread of the disease. However, quarantines and movement controls are also likely to significantly disrupt typical business operations involving intrastate and interstate trade.

APHIS looks for science- and risk-based approaches to facilitate continuity of business for non-infected premises and non-contaminated animal products. Controlling the spread of the virus and eradicating it as quickly as possible will allow individual livestock facilities, States, Tribes, regions, and industries to resume normal production as quickly as possible. It will also allow the United States to regain FMD-free status — and thus regain international markets — without the consequences of the response effort causing more disruption and damage than the disease itself.

Widespread depopulation of animals is no longer the only viable option for anything beyond a very small, focal outbreak. Reasons are well documented, and include lack of public acceptance of a large depopulation campaign, depopulation capacities, and disposal capabilities. We now realize that an FMD response would comprise a combination of strategies, including everything from depopulating animals, to limited vaccine use, to widespread vaccine use. Therefore, the response policy in the United States has evolved to consider vaccinate-to-slaughter and vaccinate-to-live strategies in any FMD outbreak.

Because our response policy is evolving from stamping out to one that considers intermediate or long-term vaccination, some experts believe that APHIS' current FMD vaccine capability is inadequate and limits our response capabilities for any response beyond a small outbreak.

The North American FMD Vaccine Bank, which we established with Mexico and Canada in 1982, gives the United States access to some strains of high-potency FMD vaccine. But given the current size of the North American bank holdings, we have capability to conduct only a small vaccination campaign.

While it's generally agreed that more vaccine is needed, the amount needed has been the subject of discussion. Dr. Jim Roth of Iowa State University described a bank of 250 million doses across multiple strains, which would require an investment of \$150 million per year for 5 years. For context, the entirety of VS' budget is \$280 million to \$300 million per year.

To ensure the success of further development of FMD vaccine capabilities, APHIS will need to take several steps. The North American FMD Vaccine Bank would need to be modernized. APHIS would need to establish a clear framework, business plan, roles, accountability, administrative and technical support and appropriate resources to develop a broad vaccine program. Lastly, APHIS would have to address the funding gap by working with various stakeholder groups, looking at different budget authorities as well as the possibility of a public-private partnership.

Committee deliberations

The USDA requests that the Committee:

1. Is your industry willing to purchase FMD vaccine to build the fully functional antigen bank recommended in the Committee's 2014 recommendations?
2. Should the government consider privatizing the procurement of FMD vaccine? During an outbreak, the government would provide regulations on what vaccine may be used.
3. Are there alternative approaches to consider for modernizing FMD vaccine capabilities?