

The RELU Debates 2006

Were any lessons learned from Foot and Mouth?

The draconian approach to stamping out Foot and Mouth Disease caused huge disruption to the countryside and its economy. Have any lessons been learned, and would we act differently in the face of another outbreak?

February 20th marks the fifth anniversary of the official notification of the outbreak of Foot and Mouth Disease in the UK. The FMD crisis cost an estimated £8 billion, wreaked havoc on farming and the countryside, and caused the postponement of a General Election. Within seven months the epidemic was stamped out, but not before more than 2,000 premises had been infected and more than 10,000 farms suffered the culling of animals. Almost 6.5 million were slaughtered, making this the largest butchering of its kind in history.

The government's "Lessons to be learned" inquiry (22 July 2002) says "The way ahead for agriculture, including animal disease control, must be seen in the context of an overall strategy for the rural economy in which agriculture is but one of a number of interests. In the heat of the 2001 epidemic, policy was driven mostly by the urgent needs of the agricultural sector. In longer term planning for future contingencies, a wider range of interests must be considered."

In response to this declaration of intent the RELU plans to fund a number of interdisciplinary research projects to take a wider, more comprehensive look at problems of animal diseases including not only Foot and Mouth Disease but also BSE and bovine TB as well as other looming issues such as avian influenza. The research will reframe any "technical problems" as "societal problems" because scientific analysis and knowledge can no longer be separated from the wider social values, ethical concerns and public understanding. Rural communities, especially farmers, are struggling to adapt to change, where social, economic, environmental and ethical concerns have to be balanced, and technological developments absorbed in an increasingly globalised market. RELU's research will throw light on how the restraints on, and options for disease prevention and management are being affected.

The second RELU debate heard presentations by Professor Neil Ward, Director, Centre for Rural Economy, Newcastle University; Professor Jeff Waage, Director, Centre for Environmental Policy, Imperial College, London; and Dr. Fred Landeg, Director and Chief Veterinary Officer, Defra.

Professor Ward describes the FMD crisis as "revelatory". It not only caused havoc for those farmers, vets and officials involved, but also laid bare a host of issues connected with farming that had previously not been evident. For example, it disclosed complacency over the ways that animal disease issues had come to be approached and managed within the farming industry. Higher stocking densities and the surprising fact that many more animals were being moved about more frequently and across

longer distances than was realised compounded sloppiness in precautionary disease control measures.

The farming industry may now be more aware of the need for bio-security but, Ward asks, is there sufficient incentive for farmers to ensure it? Movements of farm animals are now regulated through a standstill rule whereby an animal transported between premises cannot be moved again for a set period, but there are reports that this rule is widely misunderstood and broken.

Early in the FMD outbreak, the then President of the Farmers Union, Ben Gill, said “It is imperative that every local council which has rural footpaths and rights of way within its boundaries closes them immediately. There must be a blanket ban across the country. I implore everyone again: please, please stay away from the country.” This plea was backed up by an Internet message from the Prime Minister. As a result, 40% of rural businesses were adversely affected. Over a third in the South West said they had lost more than a quarter of their revenue and 20% in Devon said they had lost more than half. The Government estimated that the loss to the English tourist industry from March to October 2001 exceeded £3 billion.

A subsequent veterinary risk assessment of the dangers of the public spreading FMD by using the footpaths found the risk to be minimal, Ward says. Closing the countryside was a costly mistake and the economic role of farming in rural communities is now seen to be far less than had been assumed. Why, then, did the Government allocate £ 1.34 billion to farmers for their loss of livestock, but although severe damage was done to the non-farming rural economy, the new money to a recovery fund for businesses in the wider rural economy ran to just tens of millions?

Deputy Chief Veterinary Officer Fred Landeg weighed in with some hard evidence. It was generally agreed, he said, that the FMD virus entered the UK in late January 2001 on a farm in Heddon on the Wall through pigs being fed with unprocessed waste food imported from the Far East. The virus was spread by the wind, and by 12 February had infected sheep 5 km away. FMD is not easy to spot in sheep so these animals were transported and traded right across England and Wales before the disease was suspected. By the time it was diagnosed on 19 Feb, 57 farms in 16 counties had been infected. At the final count, over 10, 000 premises were affected and 6.7 million sheep, cattle, pigs, goats and others had been slaughtered.

The strain on the veterinary workers was immense. This was not simply a case of slaughter and disposal. 80,000 tracings of where the infected animals had been moved from had to be carried out, 250,000 movement licenses issued, cleansing, disinfecting and restocking supervised and finally animals had to be blood tested to prove they were healthy.

Today we have a new animal health and welfare strategy. Import checks have produced a substantial increase in seizures. Swill feeding was banned in May 2001, meteorological data on how wind could spread the virus is also now much more sophisticated, and we have a standstill rule in which from day 1 of a new outbreak once cattle or sheep have been moved to other premises, they must be kept there for 6 days, or 20 days for pigs. State of the art mathematical modelling predicts that with

the new movement scenarios we should not see anything like the past scale of outbreak, Landeg says.

In 2001 we did have a contingency plan of sorts, but only for an unspecified outbreak. Now the Civil Contingency Secretariat can call on cross-government action via the Cabinet Office Briefing Room to provide an effective command and control facility designed to deal with FMD. This will be able to ramp up resources, speed diagnosis, and decide on vaccination. Footpaths within 3km of infected premises will be closed but the countryside itself will be kept open.

While not claiming to be an expert on animal disease or its control, Professor Waage is a scientist working on biological invasions, and chairs a subgroup of the Scientific Advisory Council that scrutinises the Department for Environment, Food and Rural Affairs' animal disease policy. His group checks that policy is made using the best scientific evidence available. In 2004-5 his subgroup reviewed FMD and is now looking at the scientific evidence base for Defra's rapidly evolving plans for Avian Influenza.

“One easy lesson learned from the FMD outbreak”, Waage says, “is that scientific scrutiny of Government disease control policy should not be associated strictly with the immediate aftermath of disasters. Rather it should be a continuous activity.” This is the function of his group, which was set up after FMD. Defra itself is obliged to review and update its contingency plans for animal diseases on a yearly basis, incorporating the latest scientific advances.

Putting into historical context the public's revulsion at the sight of huge funeral pyres of animals and the distress caused to individual farmers by the “single minded” approach to stamping out the epidemic, Waage reminds us that culling has been the accepted practice for controlling animal diseases like FMD in Europe for over 500 years. The key scientific problem today is to determine how extensive culling should be. Scientists have to predict how far and how quickly the disease might spread. Not easy when animals can be affected long before they show any symptoms.

The culling strategy of 2001, and particularly “contiguous culling” which extended culling to premises next to infected ones, was supported based by relatively simple mathematical models. This strategy, described by some as “Carnage by computer” was criticised as insensitive “overkill” with little reference to the complexity of local situations. Not only farmers but also vets were particularly upset and this has led to a continuing tension between them and epidemiologists. “With better models and better data, collected quickly in real time, it is likely that we could have controlled this outbreak with substantially less loss of life,” Waage says. “So the lesson we have learned, I believe, is that we do need predictive tools, but they must be as good as possible. We need to be able to engage more efficiently with local information. Maths is important but we also need broader ownership and participation on the ground.”

The next FMD outbreak (and there is almost certain to be one) will have a very different context from the last one, and vaccination will have to be considered before culling. Vaccination has some serious political and economic downsides, however, because countries which vaccinate face trade restrictions, and recovery of trading rights from control-by-vaccination takes longer, all other factors being equal, than

recovery from control-by-culling. So “Vaccinate, cull or both?” will be the first question that will arise in a future outbreak, and the question to which the government will be held to account. Whatever the decision, there will be a demand that it was made on the best scientific grounds, and here is where some predictive science now can be of value for that future eventuality..

Science is certainly critical, but to the extent that the last FMD outbreak fell down, it was as much or more on its ability to predict and prevent severe economic and social consequences, and impacts on the rural economy, Waage says. Our 15th century solution of closing borders, killing legions of animals and finally trying to resume trade is too reactive and far too expensive. “We need to be focusing today not just on building barriers or stamping out breaches to our security, but on making agricultural systems and rural areas resilient to disease invasion.”

“In our Science Advisory Council scrutiny of FMD,” Waage says, “we have reaffirmed what the Rural Economy and Land Use Programme asserts, namely that these problems are profoundly inter-disciplinary, and need an interdisciplinary approach to research, which includes not just natural science but economics and social science. To be quite clear – this interdisciplinarity isn’t just about involving stakeholders in your technological process. It is about building social science research into the process.”

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