

Section two

Summary and recommendations

The story of the outbreak

Late in the evening of Thursday 2 August a vet was called to visit some ailing cattle at Woolford Farm in Surrey. She was worried. The animals had symptoms suggesting that this could be a case of Foot and Mouth Disease (FMD). Because it was getting dark she could not examine the cattle then, so she returned early the next day. Samples from the cattle were sent to the nearby laboratories of the Institute for Animal Health (IAH) in Pirbright for analysis.

Later that afternoon, Friday 3 August, at around 17.50, IAH informed Defra that the tests confirmed the presence of FMD. The public announcement later that day sent shock waves across the country and above all into all rural communities, many of which were still scarred by the experience of the disease in 2001.

The contingency plans of government, Defra, the Animal Health agency and the devolved administrations of Scotland and Wales – developed over the past six years in response to the outbreak in 2001 – came into action. An immediate national livestock movement ban was brought into force and a three kilometre Protection Zone (PZ) and ten kilometre Surveillance Zone (SZ) were set up around the infected premises. Within hours, the normal patterns of susceptible livestock movement and trade had been shut down in an impressive display of co-ordination and co-operation, especially as there had been no warning nor any sense of increasing risk.

At national strategic level, the response was overseen and steered by the Cabinet Office Briefing Room (COBR), the government's central crisis management committee. COBR met first at 21.00 on Friday 3 August and regularly thereafter (and in the early days was often chaired by the Prime Minister). It brought together all the main departments and agencies involved in responding to the disease, including representatives from the Scottish Executive and the Welsh Assembly. The Prime Minister

and the Secretary of State for Environment Food and Rural Affairs both gave a strong lead in placing themselves at the forefront of the response.

Operationally the management of the disease was headed by the Chief Veterinary Officer (CVO) in Defra who led the response from the National Disease Control Centre (NDCC) at Defra's London headquarters – in accordance with the arrangements set out in the contingency plan. She too gave a strong lead both in the way in which she managed the outbreak from the start and from her clear communications with the press and media.

Locally, the field response was led by the Local Disease Control Centre (LDCC) headed by a series of Regional Operations Directors (RODs), who had been trained in advance of the outbreak as part of wider contingency planning. The LDCC began operating at the Reigate Animal Health Divisional Office (AHDO) from 18.00 on Friday 3 August. Staff arrived over that weekend and communications and IT equipment were installed. Within a few days it became clear that the Reigate office was too small for the operation and by the following weekend the LDCC had moved to another Defra site in nearby Guildford.

On Saturday 4 August culling of infected animals took place at Woolford Farm (infected premises number one, or IP1).

Meanwhile work was already in hand to identify the strain of the virus. The commitment of people everywhere to make things happen was striking. A few kilometres from the first site of infection the scientists at the Pirbright laboratory of IAH found themselves in the front line, working around the clock to characterize the virus and find its source. Once their test results that Saturday identified it as FMD virus strain O₁BFS 1860 it became clear that Pirbright itself – the only known UK location where this strain is held – was the likely source. The Government immediately commissioned two independent reviews: the Health and Safety Executive (HSE) was asked to lead an investigation into potential breaches of biosecurity at the Pirbright site; while Professor Brian Spratt was asked to review arrangements for biosecurity in UK facilities handling FMD virus and to evaluate if a breakdown in these controls could have led to the outbreak. Merial Animal Health Limited – a vaccine production company based on the site – voluntarily suspended production on 4 August.

On Monday 6 August, a second nearby farm was diagnosed as having the disease. Cattle were subsequently culled there. This was IP2.

In accordance with EU requirements, a total ban on the export of UK animal and meat products from susceptible species was imposed. The disease did not appear to have spread due, in part, to the immediate livestock movements ban, though the low density of livestock in the region no doubt contributed. Tracing and surveillance activities took place throughout the outbreak. However, the inaccurate and out-of-date data available to Animal Health and the many small diffuse holdings of land, coupled with a high ratio of livestock keepers who only kept one or two animals, complicated this vital process.

On Tuesday 7 August, HSE published an initial report to set out the lines of its inquiry and concluded that there was no reason for IAH to cease operations, provided it followed rigorous biosecurity protocols.

By 8 August, Genus – the vaccination contractor – was ready to vaccinate, according to the arrangements laid out in the contingency plan. The pre-planned vaccination decision tree was followed and on 9 August the Secretary of State for Defra announced the decision not to vaccinate. This process was repeated in what was to become the second phase of the outbreak.

By 23 August, all animal movements to and from the SZ had been traced. On that date the EU Standing Committee for the Food Chain and Animal Health (SCoFAH) met to study the evidence from Defra vets on tracing and hear their argument that the disease had been contained. The Committee agreed to relax the ban on the trade of animals from outside the SZ, subject to additional safeguards. The SZ would be lifted 30 days after cleansing and disinfection at the last infected farm, subject to clinical inspection and serological testing with negative results. This happened on 8 September – the first date allowable under the EU FMD Directive.

HSE and Professor Spratt reported on 7 September. They concluded that the virus had most likely leaked out from drainage pipework at the Pirbright facility, contaminating the surrounding soil and then was carried from the Pirbright site by vehicles to the proximity of Woolford Farm.

On 8 September the CVO declared that the disease was over and that the remaining restrictions on animal movements would be lifted. This news was received with great relief by the livestock industry.

On the evening of 11 September a farmer six kilometres outside the previous SZ reported a suspected case of FMD. This was confirmed by IAH the next day, as IP3, and the animals were culled. A new three kilometre PZ and a ten kilometre SZ were put in place and a national movement ban was re-introduced. Nucleotide sequencing analysis of the virus samples showed that it was highly likely there was a 'missing' infected premises between this latest case and the previous known centres of infection. On 15 September, a fourth case was discovered and, on 17 September, a fifth was identified at Klondyke farm during routine surveillance work. Later research showed that the infection had spread from IP2 to IP5 and progressed from there through the rest of the properties in the second cluster. It has not yet however been established how the virus managed to travel 16 kilometres from IP2 to IP5.

Livestock located on infected premises or those considered to be dangerous contacts were culled throughout the second phase of the outbreak. Three further infected premises were identified (IPs 6-8); the final case being identified on 30 September 2007 – coincidentally six years to the day after the final case in the 2001 outbreak.

During the early phase of the disease, the devolved administrations in Scotland and Wales were supportive of the policies and processes of disease control.

During the later phase of the disease that support waned. Scottish and Welsh sheep farmers in particular began to suffer significant economic hardship as a result of the ban on movements – especially at the time when sheep are taken down from the hills to market. There were major animal welfare concerns. Policy was perceived to be driven by English interests. Some specific relaxations, sought by the devolved administrations to ease their problems (such as changes to drivers' hours to help manage collections of animals), took an apparently disproportionate time to agree with London-based government departments.

Restrictions on animal movements were lifted progressively throughout October and the Secretary of State announced a package of welfare and farmers' support arrangements for England on 8 October. The Welsh Assembly Government and the Scottish Executive subsequently announced similar aid packages.

The country was split into different FMD risk zones (high, medium and low) in order to speed up relaxation of restrictions, starting in low risk areas. The complexity of managing the disease and the pressure on farmers only increased with the emergence of Bluetongue (as well as a small outbreak of Avian Influenza). These diseases had to be managed simultaneously alongside FMD.

Finally, again working closely with the EU veterinary authorities, an exit strategy was designed to ensure that the disease had been fully eradicated. The EU insisted on large scale serology testing to provide greater certainty that the disease was over. Widespread animal blood testing took place in and around the SZ during October and the beginning of November. On 31 December the last EU export restrictions were lifted. The OIE reinstated the country's FMD-free status on 22 February. The outbreak was formally over.

At the Pirbright site on 19 November there was a further unwelcome turn of events. FMD virus was again released into the site drainage system as a result of a faulty valve at the Merial vaccine manufacturing plant. This leak was contained as a result of the improvements to the drains which the Secretary of State had insisted on as a condition of re-licensing the Merial plant. This was reassuring but the accident exposed continuing communication lapses between Merial and IAH.

FMD in 2007 will be remembered for its two distinct phases. The first was restricted to just two cases. Formal control measures were confidently introduced on 3 August and just as confidently removed on 8 September with an unqualified announcement. On 12 September another case was confirmed. Great Britain-wide controls were re-introduced and EU export controls were imposed again. The second was restricted to six cases. Its associated control measures were cautiously wound down during October and finally removed altogether on 31 December.

In Phase 1 the mood of the farming community was supportive, co-operative and confident. By Phase 2 the mood was impatient and ready to challenge and question. Defra's authority had been weakened.

This Review was set up in mid-September by the Prime Minister and the Secretary of State for Environment, Food and Rural Affairs to review the Government's handling of the outbreak (see Appendix M).

That is what has been done. In the chapters that follow, the Report analyses the response against each of the major lessons identified in *Foot and Mouth Disease 2001: Lessons to be Learned Inquiry* (the 2002 Report) and assesses how well government and its agencies responded.

Summary and recommendations

Overview of recommendations

Introduction

The overall response in handling the outbreak was good. Many of the lessons identified in the 2002 Report had been acted upon and performance, taken as a whole, was much improved. This report however, makes a number of recommendations.

Lesson 1: Maintain vigilance

Compared to 2001 the nation is now far more vigilant and aware of the threat posed by FMD but the risk is real and likely to increase. Better controls are in place to reduce the risk of an exotic animal disease entering the country.

It is regrettable that the virus escaped from a government-licensed facility. This is discussed in more detail in Section 4.

- **We recommend that Defra work with the new UK Border Agency to ensure that vigilance is maintained, and where possible, strengthened.** (p.23)
- **We recommend that Defra consider the case for a standing zone around Pirbright with higher levels of surveillance and greater awareness-raising of the potential risk.** (p.25)

Continued vigilance to prevent the entry of FMD and other exotic diseases into the country must remain high.

Lesson 2: Be prepared

Contingency planning in Defra and government has undergone a step-change in quality since 2001. Many improvements have been made in levels of preparedness and Defra was much better prepared in 2007 than six years ago. Emergency preparedness is taken seriously by Animal Health and is fully understood to be a core function. Nevertheless there is still work to be done.

- **We recommend that Defra place greater emphasis on testing the full emergency response chain, involving critical contractors and operational partners.** (p.30)
- **We recommend that there be a fundamental overhaul of the arrangements for selecting, training, deploying and rewarding the Regional Operations Directors (RODs) and Divisional Operations Managers (DOMs).** (p.30)
- **We recommend that Animal Health review the skills, experience and general level of preparedness of their staff in key skills such as data handling** so that the organisation is well prepared and can scale up its response to a future outbreak. (p.30)
- **We recommend that Defra review the scalability of its existing contingency plans and emergency staffing models.** (p.35)
- **We recommend that Defra, drawing on the experience in 2007, should do more to prepare generic licences for use in a future disease outbreak, ensuring that all documents are in plain English.** (p.32)
- **We recommend that Defra continues to develop and test its policies and arrangements for emergency vaccination, as a central element of its FMD control strategy, ensuring that the full implications of vaccination are thought through and widely understood.** (p.32)
- **We recommend that Defra look to increase the level of decision making it is possible to delegate to those on the ground, at the LDCC, during an outbreak.** (p.35)

Lesson 3: React with speed and certainty

Ministers, officials and stakeholders at all levels were seized by the critical importance of speed. There was a certainty and clarity in the Defra response that was absent six years ago. The preparations for vaccination are a good example. In only five days teams, equipment and supplies were in place, ready to vaccinate, should the Secretary of State have decided to do so.

However, as the disease continued, some aspects of the policy response were uncertain and, at times, confused. The shortcomings in the data and information systems did not help.

- **We recommend that the arrangements for responding to notifiable disease reports be rehearsed regularly.** (p.40)

Lesson 4: Explain policies, plans and practices

Communications were much better handled in 2007. Nevertheless the overall consistency of Defra's communication with stakeholders and the wider farming community could be improved. The challenge in 2007 was much less than in 2001. Communication technologies are changing rapidly, bringing new opportunities and new challenges.

- **We recommend that Defra continue to develop a 'menu of communication opportunities' for use in any crisis.** In particular, the Defra website (which was much improved compared to 2001) should be strengthened. Web pages should be written and structured in a clearly understandable and navigable way. It should be 'farmer-friendly'. (p.46)
- **We recommend that engagement with the local media be improved.** Defra and its agencies should initiate contact with local radio and service their needs during a crisis. (p.49)

Lesson 5: Respect local knowledge

The Government was more sensitive to the local and regional dimension of the disease in 2007. However, even with only one Local Disease Control Centre (LDCC), some local stakeholders did not feel fully integrated into the response, although relationships did improve over time. The Core Group of industry experts set up one week after disease broke out involved industry more in decision making. Specific concerns were felt in Scotland and Wales, especially during Phase 2 of the disease. The animal health concordats were out of date as were some of the working arrangements with the devolved administrations.

- **We recommend that Animal Health and its local managers pay greater attention to building relationships with key stakeholders,** such as local authorities, trading standards officers, the police and Regional Resilience Teams. (p.53)
- **We recommend that devolution issues concerning animal health be urgently addressed, and that the concordats be reviewed** – in consultation with all the relevant organisations – and that the contingency plans maintained by Defra, the Scottish Executive and the Welsh Assembly be updated accordingly. (p.54)
- **We recommend Defra reinforce and formalise the role of the Core Group in decision making as part of its move towards greater responsibility sharing.** (p.55)

Lesson 6: Risk assessment and cost benefit analysis

In 2007 Defra and Animal Health showed a far greater appreciation of risk and its importance in effective disease management. Defra recognises that its growing function as an emergency response department places risk at centre stage. Decisions are now far more routinely based on risk assessment – although the quality of some of these was hampered by poor data and evidence.

The decision to lift the restrictions after Phase 1 was based on a risk assessment that took into account all available epidemiological and veterinary knowledge and was in line with EU Directives. It is still important to record that this decision was wrong: it extended the timescale needed to stamp out the disease, and it added extra costs. Defra, in co-operation with EU colleagues, needs to ensure that all the learning points taken from this experience are built into future EU FMD control policies and contingency plans, and are widely shared.

- **We recommend that Defra adopt a more rigorous cost benefit analysis model for disease control measures** to inform future policy making. (p.60)
- **We recommend that Defra agree with the EU specific exemptions from trade restrictions on highly processed products of animal origin.** (p.61)
- **We recommend that Defra – in co-operation with the EU and the devolved administrations – build on the experience of 2007 and further develop a regionalised and risk-based approach to disease management.** (p.62)
- **We recommend that Defra’s Audit and Risk Committee should review processes within Defra for identifying and elevating risks to board level. The Committee should publish its findings.** (p.58)

Lesson 7: Data and information management systems

The 2002 Report could not have been clearer in its criticism of Defra's information systems, and made several recommendations to tackle the shortcomings. It was disappointing to discover how little progress had been made over the last six years. During the outbreak, at those points where data were assembled and used to guide policy decisions and support operational practice, the systems in use were little different from those in operation six years ago. This lost time, caused mistakes and added to frustration. The reasons for this failing were explained to us and are described later in the report. The Business Reform Programme now being rolled out in Animal Health is planned to deliver a fully enhanced capability by 2011. In the meantime Defra remains in a vulnerable position in the event of a disease outbreak.

- **We recommend that the Business Reform Programme and the associated Livestock Partnership Programme be prioritised and appropriately funded by Defra and Animal Health.** (p.73)
- **We recommend the full potential of GIS technology with all its benefits be incorporated into future data systems.** (p.72)
- **We recommend that the information systems interface with Genus be subject to a simulated load test, end-to-end.** (p.74)
- **We recommend that Defra develop a contingency plan to secure its existing IT systems while the Business Reform Programme and Livestock Partnership Programme are being developed.** (p.74)

Lesson 8: Have a sound legislative framework

Government took seriously the recommendations in the 2002 Report and acted quickly to tackle the shortcomings in legislation. Government has made good progress since then in setting a robust legal framework for managing animal disease founded as it must be on the basis of EU law. In addition, the Civil Contingencies Act provides the legal powers for the wider framework for government management of emergencies. The legislative changes made since 2001 were critical in responding effectively to the 2007 outbreak but could be tested further in a larger outbreak.

Lesson 9: Base policy decisions on best available science

Government positioned science at the centre of its control strategies – a major lesson learned from 2001. Scientific advice and capabilities supported policy decisions and operations throughout the outbreak with good examples in risk modeling, vaccination decisions, epidemiology, nucleotide sequencing, rapid testing and diagnosis. Many of these techniques were pioneered by the Institute for Animal Health (IAH) at Pirbright. Although vaccination was not used in 2007, Defra had developed a methodology for its use. Most of the submissions we received, but not all, supported the Government's decision not to vaccinate.

- **We recommend that Defra increase the level of technical and scientific expertise available to contribute to the development of disease control policies on a day-to-day basis, not just during a disease outbreak.** (p.84)
- **We recommend that there be greater transparency in publishing scientific advice and risk assessments** to strengthen confidence in disease management overall. (p.83)
- **We recommend that Defra continue to drive the vaccination debate, ensuring that all of the issues are communicated clearly and properly explained.** (p.90)

Pirbright

We have identified one further lesson from the experience of FMD in 2007 and that is in relation to the role and management of Pirbright. The research conducted at IAH is world class and needs to be positioned at the centre of the national strategy for animal health.

The IAH is critical to the nation's capacity to prepare for, and respond to, the evolving animal disease and zoonotic risk. However, the facilities of IAH fall well short of internationally recognised standards. And the governance and funding arrangements are muddled and ineffective. There have been many warning signs that all was not well at Pirbright. There are lessons for all here and it would be irresponsible to allow time to pass without attending to each. That is why the current Pirbright Site Redevelopment Programme is so important. It is also why we recommend the establishment of a National Institute of Infectious Diseases to build on and extend the research done at IAH.