

Return to an Address of the  
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Foot and Mouth Disease 2001:  
Lessons to be Learned Inquiry Report

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Presented to the Prime Minister and the Secretary of State for Environment,  
Food and Rural Affairs, and the devolved administrations in Scotland and Wales

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# CONTENTS

<b>1 FOREWORD BY IAIN ANDERSON</b>	5	<b>8 THE IMMEDIATE RESPONSE</b>	54	<b>12 DISPOSAL</b>	108	<b>18 APPENDICES</b>	167
<b>2 INTRODUCTION AND SUMMARY</b>	8	<b>8.1</b> The Abattoir	54	<b>12.1</b> Introduction	108	<b>18.1</b> Glossary of terms	167
<b>3 LESSONS TO BE LEARNED</b>	11	<b>8.2</b> The ban on animal movements	58	<b>12.2</b> Pressure builds	110	<b>18.2</b> Key facts	169
<b>4 RECOMMENDATIONS</b>	12	<b>8.3</b> The Longtown connection	61	<b>12.3</b> Public health and environmental impact	111	<b>18.3</b> Disease control statistics	172
<b>5 BACKGROUND TO THE 2001 EPIDEMIC</b>	20	<b>8.4</b> Access: Footpath closure and its effects	62	<b>12.4</b> Mass burial and landfill	112	<b>18.4</b> Comparison with 1967-68	174
<b>5.1</b> Introduction	20	<b>9 THE DISEASE IN THE ASCENDENT</b>	66	<b>12.5</b> Role of the Environment Agency	115	<b>18.5</b> Scotland	177
<b>5.2</b> History	20	<b>9.1</b> The national perspective	66	<b>12.6</b> Cleansing and disinfection	115	<b>18.6</b> Wales	182
<b>5.3</b> The Northumberland Report	22	<b>9.2</b> The view from the ground	69	<b>12.7</b> The Livestock Welfare (Disposal) Scheme	115	<b>18.7</b> The Inquiry Secretariat	187
<b>5.4</b> Changes 1967-2001	25	<b>9.3</b> Management information systems	71	<b>13 VACCINATION</b>	120	<b>ANNEXES on CD-ROM</b>	
<b>5.5</b> Sheep in the 2001 epidemic	30	<b>9.4</b> The tasks on the ground	73	<b>13.1</b> Vaccination	120	<b>A</b> Submissions	
<b>5.6</b> The run up to the 2001 epidemic	31	<b>9.5</b> Slaughter policy and practice	76	<b>13.2</b> International Animal Health Code	120	<b>B</b> Meeting notes	
<b>5.7</b> The eve of confirmation	31	<b>9.7</b> Under control?	79	<b>13.3</b> EU Policy	123	<b>C</b> Regional visits	
<b>6 BEING PREPARED</b>	32	<b>9.8</b> The impact and timing of the involvement of the military	81	<b>13.4</b> Contingency planning for vaccination	124	<b>D</b> Government publications	
<b>6.1</b> Contingency planning	32	<b>9.9</b> Scotland	83	<b>13.5</b> Proposed vaccination of cattle in Cumbria	125	<b>E</b> Media transcripts	
<b>6.2</b> The Drummond Working Group Report	34	<b>9.10</b> Wales	83	<b>13.6</b> Lack of support for vaccination	126		
<b>6.3</b> Weaknesses in the plan	35	<b>9.11</b> Wider rural impact and its costs	84	<b>13.7</b> Vaccination re-visited	127		
<b>6.4</b> Risk analysis	38	<b>9.12</b> The Regional Operations Director system strengthened	86	<b>13.8</b> To vaccinate or not to vaccinate	128		
<b>6.5</b> Being better prepared	39	<b>10 PRE-EMPTIVE SLAUGHTER</b>	88	<b>14 THE ECONOMIC IMPACT OF FMD</b>	130		
<b>7 SILENT SPREAD</b>	40	<b>10.1</b> Background	88	<b>14.1</b> The Government's estimate of the impact of FMD on the economy as a whole	130		
<b>7.1</b> FMD and its virus	40	<b>10.2</b> The genesis of the FMD Science Group	90	<b>14.2</b> Human and other costs	134		
<b>7.2</b> Global spread of the PanAsia O strain	42	<b>10.3</b> The emergence of the contiguous cull	92	<b>14.3</b> The benefits of FMD control strategies	137		
<b>7.3</b> Entry of FMD into the UK	45	<b>10.4</b> Slaughter on suspicion	95	<b>14.4</b> Cost benefit analysis of FMD control strategies	139		
<b>7.4</b> The legal import regime	45	<b>10.5</b> The justification of the contiguous cull	96	<b>15 COMMUNICATIONS</b>	140		
<b>7.5</b> Illegal imports	47	<b>10.6</b> Implementing the culling policies	97	<b>15.1</b> Introduction	140		
<b>7.6</b> The spread of the disease prior to detection	49	<b>11 JOINING UP GOVERNMENT</b>	100	<b>15.2</b> The principles of good communications	140		
<b>7.7</b> Nature of the 2001 epidemic	51	<b>11.1</b> Opening of COBR	100	<b>15.3</b> The national response	142		
<b>7.8</b> Alternative theories	51	<b>11.2</b> Timing of COBR	102	<b>15.4</b> Communications with stakeholders	143		
		<b>11.3</b> Management of information	103	<b>15.5</b> The role of new technology	144		
		<b>11.4</b> Reinforcing the crisis response	104	<b>15.6</b> Direct communications	144		
		<b>11.5</b> Creation of Joint Co-ordination Centre	104	<b>15.7</b> The regional and local media	145		
		<b>11.6</b> Handling of strategic and operational issues	106	<b>15.8</b> The international media	147		
				<b>16 END OF THE OUTBREAK</b>	148		
				<b>16.1</b> Biosecurity	148		
				<b>16.2</b> Autumn movements	152		
				<b>16.3</b> Exit strategy	154		
				<b>16.4</b> UK declared FMD-free	155		
				<b>17 LOOKING AHEAD</b>	156		
				<b>17.1</b> Keeping disease at bay	156		
				<b>17.2</b> Reducing vulnerability	161		
				<b>17.3</b> Minimising the impact	163		
						<b>USE OF ABBREVIATIONS</b>	
						Throughout this report we have tried not to use too many abbreviations and acronyms. Those we have used are as follows:	
						<b>COBR</b> Cabinet Office Briefing Room	
						<b>DEFRA</b> Department of the Environment, Food and Rural Affairs	
						<b>FMD</b> Foot and Mouth Disease	
						<b>MAFF</b> Ministry of Agriculture, Fisheries and Food	
						<b>NFU</b> National Farmers' Union	
						<b>OIE</b> Office International des Epizooties	





# 1 FOREWORD BY IAIN ANDERSON

In August 2001 I was asked by the Prime Minister and the Secretary of State for Environment, Food and Rural Affairs to conduct an Inquiry into the Government's handling of the outbreak of Foot and Mouth Disease (FMD) in Great Britain during 2001 in order to draw out lessons and make recommendations. I was asked to start when the epidemic was judged to be over and then to report within six months.

I appointed a small secretariat (Appendix 18.7) to organise the programme of work and assemble the facts. This team was led by Alun Evans, a senior civil servant with experience across government at the highest levels.

The Inquiry gathered its facts in a variety of ways. We asked for written submissions and received 576. We travelled around the country, visiting many of the worst hit regions. In the course of these visits we held public meetings, met over 200 representatives of national and local organisations in round-table discussions and talked, in their homes or places of work, to many people who had been directly affected. Finally, we invited over 100 people to be interviewed. Everyone has been willing to help. This is my chance to place on record my thanks and appreciation to all who contributed. I have special reasons to thank my secretariat team who laboured so willingly, often in trying circumstances. I would also like to thank those officials in The Netherlands, France and at the European Commission in Brussels who gave up their time to meet us and answer our questions.

This Inquiry set out to address the major features that characterised the handling of the epidemic. Throughout the course of our work we were informed

of many events specific to one location or even to one individual's experience. I particularly want to thank the many hundreds of people who took the time to share with us their first-hand accounts of what happened, thereby contributing to our knowledge. Because a particular story is not referred to in the report does not mean it has not influenced our thinking. Indeed, our understanding of what happened has been built up layer by layer from all the information we have collected.

My job was not to write a comprehensive history of the epidemic. Nor was it to conduct research into the mass of veterinary and epidemiological data that now exists. That said, and precisely because I do not want the rich vein of material we have assembled to be lost, I decided to publish (on CD-ROM and the Internet) the submissions along with notes of interviews.

The only small exceptions to this are where members of the public have written to us on condition that we do not publish their statement or where we had purely informal exchanges, for example, in farmhouse kitchens. It is, I believe, very important that all the relevant scientific data collected by DEFRA during the epidemic is published quickly. This will allow further detailed research to be carried out.



It is worth repeating here that I was asked to conduct a completely independent inquiry into the Government's handling of the epidemic. Those who peruse the summary and then the detail of the Inquiry's findings will discover that a number of constructive criticisms are made. Here, though, I should like to air some personal observations which should be seen in the light of the overall analysis contained in the report itself.

## History repeats itself

We seem destined to repeat the mistakes of history. In the Northumberland Report of 1968, and back through the decades, similar conclusions to ours were drawn about the need for preparation, the rapid deployment of resources and the central importance of speed, above all speed-to-slaughter of infected animals. The epidemic of 2001 presented unprecedented challenges which no-one in any country had anticipated. But better preparation to support speedier deployment of critical skills and faster action on the ground to slaughter infected animals and their close contacts would have limited the scale of the damage.

Immediately prior to this outbreak, contingency plans were in place. But maintaining and updating these plans was not a priority at national level. If the best preparatory work found in some locations had been replicated nationally, the outcome for the country as a whole would have been better.

Although Ministers and their veterinary experts and officials recognised from the outset that they were facing a serious situation, no-one in command understood in sufficient detail what was happening on the ground during these early days. We examine in the report both the reasons for this lack of detailed intelligence and its consequences, as well as making recommendations.

In government, departmental responsibilities are paramount. On day one MAFF recognised its responsibility, as did all other departments. MAFF was in charge. This meant that the wider resources of government were not mobilised early on. Ministers who were dependent on complex veterinary and official advice were expected to answer to Parliament with confidence and clarity. At the same time they were expected, via the media, to give reassurance to the public that what needed to be done was indeed being done.

## Confidence gives way to panic

The truth started to emerge in early to mid-March. Some relationships among those involved became tense. A sense of panic appeared, communications became erratic and orderly processes started to break down. Decision making became haphazard and messy, not least in the way in which the culling policy was to be extended. The loss of public confidence and the media's need for a story started to drive the agenda.

For those of us outside the machinery of central government, it may be hard to appreciate the difficulties faced by Ministers and officials at such times. They are constantly in the front line. Yet they are tightly constrained, their every word closely monitored and analysed. This is an important aspect of 'lessons to be learned'. The normal processes of government need to be adjusted to handle an emerging national crisis effectively. Government has already recognised this challenge and has put in place a procedural and structural response system for dealing with it.

## Management of the crisis

The process by which all the resources of government are put at the disposal of the centre of government is co-ordinated in the Cabinet Office Briefing Room (COBR). This specifies a set of procedures and structures designed to bring an orderly flow of decisions, resources and actions to bear on the management of a crisis. COBR has flexible design principles and may be led, as was the case for some time in this epidemic, by the Prime Minister, or by any Minister appointed by the Prime Minister. When it takes a decision, the government as a whole, with all its departments, stands committed to deliver on it.

The role of COBR is examined in more detail later in the report. It made a massive contribution to the way the epidemic was eventually brought to an end. It was convened 31 days after the first case was notified, by which time 479 cases had been confirmed.

## Breakdown of trust

Whatever central government does and however well, it cannot defeat a major outbreak of animal disease on its own. It needs to co-ordinate the support and services of many others, including those most directly affected. This was the case throughout the epidemic of 2001 and will be so in any future outbreak. Wholehearted support for a common purpose depends on mutual trust and confidence. One finding of this Inquiry has been the extent of the breakdown of trust between many of those affected directly or indirectly and their Government. Many people have chosen to speak about this based on the experience of their own eyes and ears.

It is well beyond the remit of this Inquiry to speculate on the wider implications of this lack of trust and confidence. I simply say that success in the fight against any future major outbreak of animal disease will depend on the co-operation of farmers and many others in the countryside. It will also depend on farming and tourist interests recognising that they have a joint stake in the success of their rural communities. Similarly, central government must regain the confidence of, and work more in partnership with, local government.

## The way ahead

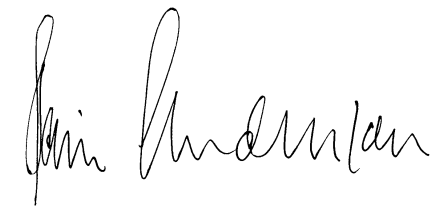
During the course of the Inquiry we have been faced with criticism of the Government's policies and actions throughout the epidemic. I recognise the frustration and anger felt by so many. I understand the desire to see someone blamed. I also understand that, farmers in particular were subjected to stress and sometimes to insensitive behaviour on the part of officials. But, equally, I am satisfied that the officials I have met in Whitehall and in the regions were trying to cope in sometimes desperate, almost impossible, circumstances.

The nation will not be best served by seeking to blame individuals. Rather we should seek to apply the lessons to be learned in a manner that will contribute to changes in collective attitudes and approaches. In that way we can, in future, approach the shared task of being better prepared and better able to respond with speed and certainty.

Trust and confidence cannot be built by the independent actions of one side alone. DEFRA should take the lead, but others must follow. From the insights obtained throughout the Inquiry I have formed the opinion that a first step is for DEFRA simply to admit that government made mistakes during its handling of the crisis and that all involved are determined to learn from these mistakes.

Within MAFF, and now DEFRA, I detected a culture predisposed to decision taking by committee with an associated fear of personal risk taking. Such a climate does not encourage creative initiative. It inhibits adaptive behaviour, and organisational learning which, over time, lowers the quality of decisions taken. It seems to me that a reappraisal of prevailing attitudes and behaviours within the Department would be beneficial.

This report describes our understanding of what happened and why. It sets out the major lessons to be learned, together with a set of recommendations for action. I hope that not only the Government but everyone with an interest in the future of farming and the wider rural economy will look to learn these lessons, apply the recommendations and thereby collectively ensure that the experience of 2001 is never repeated.



Iain Anderson  
July 2002

# 2 INTRODUCTION AND SUMMARY

## Introduction

The Foot and Mouth Disease (FMD) epidemic of 2001 was one of the largest in history. Our Inquiry sets out the lessons to be learned from it and makes recommendations for action.

This is the report of one of three independent inquiries announced by the Government in August 2001. The Policy Commission on the Future of Farming and Food published its report in January 2002. The Royal Society published its report into infectious disease in livestock in July 2002. We have not sought to duplicate their work. Nor have we gone into detail on the financial aspects of the outbreak, which have been covered by the National Audit Office in its report published in June 2002.

It is worth making two points at the outset. First, given the wide spread of the disease throughout the country prior to detection, the impact of this outbreak was bound to be very severe. Even had everything been done perfectly by all those concerned to tackle the disease, the country would have had a major epidemic with massive consequences. Second, many farmers, local people and government officials made heroic efforts to fight the disease and limit its effects. Through their efforts it was finally overcome and eradicated after 221 days, one day less than the epidemic of 1967-68.

This report covers England, Scotland and Wales but not Northern Ireland. The following is a summary of our findings.

## Summary

The last major epidemic of FMD in the UK was in 1967-68. Following that outbreak, the 1968 Northumberland Report made a number of recommendations for action, some of which were still relevant in 2001.

An outbreak of FMD was unexpected. Neither MAFF nor the farming industry was prepared for an outbreak on a large scale. The Ministry could not cope with the unprecedented chain of events which allowed the disease to go undetected for some weeks. However, in those areas where the number of cases remained low, disease control was more effective. Ultimately, the disease was contained and was prevented from becoming endemic.

A contingency plan was in place, and agreed by the European Union, but it had gaps and had not been shared widely or vigorously rehearsed outside the State Veterinary Service. The scale of the outbreak, and the way in which it spread, could not have been anticipated. The State Veterinary Service had, over the previous two years, expressed internal concerns about their readiness for an outbreak of FMD. These concerns were not relayed to Ministers. Warning signs, from the experience of classical swine fever in The Netherlands in 1997 and in Britain in 2000, were not acted upon. The country was not well prepared for what was about to unfold.

The first responses to the early cases were not fast enough or effectively co-ordinated. The paramount importance of speed, and especially the rapid slaughter of infected animals, was not given overriding priority early on.

Knowledge within government of some changes in farming and farm practices was limited. In particular, the nature and extent of sheep movements which contributed to the wide dispersal of the disease before its identification had not been fully recognised. Information systems were incomplete and had to be developed during the outbreak.

Initially the outbreak was treated as an agricultural issue. MAFF took the lead within government in managing the outbreak. Almost immediately they came under severe resource pressures. The impact of the disease, especially on tourism and the rural economy, was not recognised early on. Although supported by many at the time, with the benefit of hindsight, the widespread closure of footpaths, with no straightforward mechanism for reopening them, was a mistake.

The scarcity of resources was not only confined to vets. There were important gaps in managerial and logistical skills. The quality of communication was mixed. Mechanisms for joining up government were not brought into play from the start. As a result this put enormous pressure on MAFF. The State Veterinary Service tended to work in isolation. This may have contributed to the fact that initially the depth of the crisis was underestimated. People worked long and hard, under very difficult circumstances, to try to contain the disease and limit the consequences. Eventually the armed forces were deployed in support and made an impressive contribution, providing leadership, management and logistical skills.

In Scotland, with a different management structure and closer relationships between central government, local government and the farming industry, the outbreak was better managed. Contingency planning had been more systematic and the disease did not spread so far. Key problems were identified early and dealt with quickly. In Wales, the lack of devolved powers for animal disease control was a source of tension and resulted in blurred lines of communication, responsibility and accountability between the National Assembly for Wales and MAFF, now DEFRA.

Opening COBR towards the end of March and the personal intervention of the Prime Minister, were both pivotal in managing the crisis. They brought to bear the full weight of Government on tackling the disease. A few days later and 35 days into the crisis, a scientific advisory group gathered for the first time under the chairmanship of the Chief Scientific Adviser to the Government.

A network of Disease Control Centres was set up in those areas where the infection was at its worst. These Centres, each run by a senior Regional Operations Director, made major contributions to controlling the disease.

Because disease control policy had not been debated widely before the outbreak, arguments took place as the disease was raging. Changes, in particular to culling policy, were introduced at short notice. Often they were poorly communicated. Large parts of the farming and wider rural community became mistrustful of government. The public and the media – which had initially been broadly supportive of the Government's approach – turned against it. In particular, the policies of culling apparently healthy animals, within 3km of infected premises, or on contiguous premises, became very unpopular, despite their contribution to disease control. Management of carcass disposal was a major concern, particularly in the early days, but improved significantly after the armed forces became involved. However, the operation of the scheme for disposal on welfare grounds was poorly managed and costly.

The issue of vaccination assumed a high profile, not least in the media. However, by the time it was agreed that vaccination should be used to help control the disease in Cumbria, the disease had passed its peak. In the event it was not used, largely as a result of opposition by the farmers' unions and parts of the food industry.

As the disease declined, an exit strategy was developed. This included targeting resources to the areas of residual disease, coupled with a robust use of biosecurity and a programme of blood testing. The introduction of the autumn licensing scheme for animal movements caused considerable difficulties and hardship for farmers.

The overall costs of the outbreak were enormous, totalling over £8 billion. Millions of animals were slaughtered. Different sectors of the economy were affected in very different ways. Farmers were compensated for animals that were culled for disease control purposes and for welfare reasons. Rural and tourist businesses however received very little recompense. Farmers whose stock was not culled, but who were subject to strict movement controls, received no compensation at all. Systems for valuation had not been developed in advance of the outbreak.

Looking ahead, the processes of horizon scanning, contingency planning, rehearsal and learning from mistakes should become part of government routine. The creation of DEFRA which replaced MAFF after the General Election in June 2001, and brought together agricultural and rural issues, offers the opportunity for such developments to take place.

Good communications are vital to any organisation's business. For a Government in time of crisis they are critical. This requires accurate, up-to-date, well targeted and local communications systems, using the best technology available.

Our report contains a series of recommendations which, if acted upon, will help ensure that: the chances of exotic animal disease entering the country are reduced; the farming industry itself is less vulnerable to outbreaks of infectious animal diseases; and that, if such a disease does occur, the impact is minimised.

Our recommendations form an ambitious agenda. But, taken in conjunction with the programme set out by the Policy Commission on Farming and Food and underpinned by the recommendations of the Royal Society's scientific report, we believe that they offer the opportunity to transform and protect the rural and agricultural economies and communities of Britain.

## 3 LESSONS TO BE LEARNED

The FMD outbreak of 2001 had a profound impact on all those communities and individuals involved. Collective learning from such a massive experience can have great value if it is carefully analysed and then well used.

Perhaps the biggest lesson of all is that no amount of effort can eliminate the risk of damage from FMD. To reduce the risk of economic damage as far as possible, requires a range of co-ordinated actions by Government, the farming industry and others in the rural economy working together.

Drawing on the experiences of the 2001 outbreak we have identified a number of themes which need continuing attention. These are the major lessons to be learned:

- **Have a legislative framework** that gives Government the powers needed to respond effectively to the emerging needs of a crisis.
  - **Base policy decisions on best available science** and ensure that the processes for providing scientific advice are widely understood and trusted.
- These lessons should be incorporated into a national strategy designed to:
- **Keep out infectious agents** of exotic disease.
  - **Reduce livestock vulnerability** by reforms in industry practice.
  - **Minimise the impact** of any outbreak.
- **Maintain vigilance** through international, national and local surveillance and reconnaissance.
  - **Be prepared** with comprehensive contingency plans, building mutual trust and confidence through training and practice.
  - **React with speed and certainty** to an emergency or escalating crisis by applying well-rehearsed crisis management procedures.
  - **Explain policies, plans and practices** by communicating with all interested parties comprehensively, clearly and consistently in a transparent and open way.
  - **Respect local knowledge** and delegate decisions wherever possible, without losing sight of the national strategy.
  - **Apply risk assessment and cost benefit analysis** within an appropriate economic model.
  - **Use data and information management systems** that conform to recognised good practice in support of intelligence gathering and decision making.



# 4 RECOMMENDATIONS

Building on the lessons to be learned, our first and central recommendation is as follows:

**We recommend that the Government, led by DEFRA, should develop a national strategy for animal health and disease control positioned within the framework set out in the report of the Policy Commission on the Future of Farming and Food. This strategy should be developed in consultation and partnership with the farming industry and with representatives of the wider rural economy. The European Commission, the devolved administrations in Scotland and Wales, local authorities and other agencies of government should be involved in this process.**

Throughout the report, we draw out a further 80 recommendations as they emerge from our analysis in support of this over-arching recommendation. This section pulls together those recommendations grouped thematically. Each recommendation is numbered and has a page reference. They fall into three broad areas:

## Developing and maintaining a national strategy for disease avoidance and control.

- Strategy
- Legislation
- Vaccination
- Farming practices
- Veterinary matters
- Biosecurity
- Training
- Import controls

## Developing and maintaining appropriate contingency plans and ensuring effective preparedness.

- Contingency planning
- Scientific advice
- Information
- Public health

- Slaughter and disposal
- Animal welfare
- Human resources

## Managing an outbreak of disease.

- Crisis management
- Speed of response
- Diagnosis
- Role of the military
- Communications
- Management controls

## Developing and maintaining a national strategy for disease avoidance and control.

### Strategy

The following recommendations offer specific proposals in support of our central recommendation on strategy:

**Accepted best practice in risk analysis should be used by DEFRA and others in developing livestock health and disease control strategies.**  
(9, p.38)

**Cost-benefit analyses of FMD control strategies should be updated and maintained. These should be undertaken at both the UK and EU level.**  
(52, p.139)

**Where the control of exotic animal diseases has wider economic or other implications, the Government should ensure that those consequences for the country as a whole are fully considered.**  
(32, p.86)

**The interests of all sectors likely to bear the brunt of any costs should be properly represented and taken into account when designing policy options to control animal disease outbreaks.**  
(51, p.139)

**Disease control policies should be developed in consultation with those local authorities responsible for implementing them.**  
(63, p.153)

**Lessons learned should routinely be reviewed in the light of changing circumstances. Policies, plans and preparations should be adapted accordingly.**  
(2, p.25)

**The Government should make explicit the extent to which the wider effects of disease control strategies have been identified, measured and taken into account in policy decisions.**  
(50, p.137)

**The Government should publish a biennial report to the nation on the level of preparedness to tackle animal disease emergencies. The first report should be published in 2003 and include measures of achievement against goals.**  
(11, p.39)

**The resources and research programmes of the Pirbright Laboratory should be fully integrated into the national strategy for animal disease control and budget provisions made accordingly.**  
(65, p.159)

**In developing the surveillance strategy, there should be the widest possible involvement of those with a role to play in surveillance.**  
(67, p.160)

### Legislation

The animal health legislative framework should be robust, unambiguous and fit for purpose. This was not the case during the 2001 epidemic.

**The powers available in the Animal Health Act 1981 should be re-examined, possibly in the context of a wider review of animal health legislation, to remove any ambiguity over the legal basis for future disease control strategies.**  
(77, p.163)

**Provision should be made for the possible application of pre-emptive culling policies, if justified by well-informed veterinary and scientific advice, and judged to be appropriate to the circumstances.**  
(38, p.99)

### Vaccination

The country's options for disease control should be decided in advance of any future outbreak of infectious animal disease.

Our Inquiry has not explored in detail the scientific issues concerning FMD vaccination, which were a central part of the remit of the scientific inquiry conducted by the Royal Society. We have, however, formed a view that the option of vaccination should be a part of any future strategy for the control of FMD. There are hurdles to be overcome: the science is not yet clear enough; many farmers and farming organisations have expressed their opposition; there are concerns about consumer reaction; there are complex EU and international issues. All these must be tackled urgently. The UK Government should take the lead in the international debate. We are not arguing for routine preventative vaccination to be adopted but, in the event of an outbreak, emergency protective vaccination must be an option available for use whenever judged by the veterinary experts to be appropriate. All necessary work to prepare for such a possibility should be put in hand. This means that:

**The Government should ensure that the option of vaccination forms part of any future strategy for the control of FMD.**  
(48, p.129)

**The Government should establish a consensus on vaccination options for disease control in advance of an outbreak.**  
(47, p.129)

**The State Veterinary Service should maintain the capability to vaccinate in the event of a future epidemic if the conditions are right.**  
(49, p.129)

### Farming practices

The livestock farming industry and government should examine the opportunities to reduce the risk of disease by influencing farming practices. Throughout our report we have identified a number of specific proposals for government that will contribute to this:

**The Government should retain the 20-day movement restrictions pending a detailed risk assessment and wide ranging cost-benefit analysis.**  
(78, p.164)

**The Government should develop a comprehensive livestock tracing system using electronic tags to cover cattle, sheep and pigs, taking account of developments at EU level. The Government should seek to lead the debate in Europe on this issue.**

(79, p.164)

**The UK prohibition of swill feeding of catering waste containing meat products should continue. The UK should continue to support a ban at EU level.**

(15, p.49)

**The Government should build an up-to-date database of livestock, farming and marketing practices. This should include research to examine the evolution of regional livestock stocking densities and implications for disease risk and control.**

(5, p.30)

However, the Government can only do so much to prevent a recurrence of disease. The farming industry itself has a crucial role to play. We endorse the recommendations of the Policy Commission on the Future of Farming and Food on assurance schemes and recommend further that:

**The livestock industry should work with Government to undertake a thorough review of the assurance and licensing options to identify those arrangements most likely to reward good practice and take-up of training, and how such a new system might be implemented.**

(76, p.162)

**Farm assurance schemes should take account of animal health and welfare, biosecurity, food safety and environmental issues.**

(75, p.162)

We also urge the livestock industry, and its representative organisations, to do everything in their power to promote good practice, to tackle shortcomings and poor standards of farming, and to work within the framework of recommendations we have set out to reduce the risk posed by infectious animal diseases.

### Veterinary matters

The State Veterinary Service provides the backbone for a national livestock health and disease control strategy. Maintaining a strong State Veterinary Service, at the centre of a surveillance and disease control strategy, and involving many veterinary and other agencies, should be a high priority.

Notwithstanding some of the proposals made to us, we do not support the devolution of State Veterinary Service responsibilities to Scotland. There are advantages in retaining an integrated organisation for Great Britain, not least in terms of national disease control strategies. However, we recommend the following:

**As many functions of the State Veterinary Service as possible should be relocated from London to regional centres, particularly to Scotland and Wales.**

(70, p.161)

**There should be a reappraisal of Local Veterinary Inspectors' roles and conditions.**

(3, p.28)

**The Government should develop opportunities for increased use of veterinary 'paramedics'.**

(69, p.160)

### Biosecurity

Biosecurity measures must be a part of generally recognised good practice for everyone involved in producing and handling livestock. In the event of a serious disease outbreak good biosecurity becomes critical and should be enforceable.

**Farmers, vets and others involved in the livestock industry should have access to training in biosecurity measures. Such training should form an integral part of courses at agricultural colleges.**

(60, p.148)

**The livestock industry and government jointly should develop codes of good practice on biosecurity. They should explore ways to communicate effectively with all practitioners and how incentives might be used to raise standards.**

(61, p.150)

### Training

During our Inquiry, gaps in people's knowledge and understanding of the factors involved in preventing and managing infectious diseases of livestock were brought to our attention. Filling these gaps is a long-term challenge for the industry, the veterinary profession as well as training centres, colleges and universities.

**The Government should support a national action group charged with the responsibility of producing a plan to tackle the gaps in practitioners' knowledge of preventing and managing infectious diseases of livestock. To be effective this will need a timetable, milestones for achievement and incentives.**

(71, p.161)

**Colleges, universities and training organisations should provide courses to equip those working in the food and livestock industries, and those owning susceptible animals, with the skills and knowledge to enable them to recognise the signs of animal disease early and take appropriate action to prevent its spread.**

(72, p.161)

**Training for Local Veterinary Inspectors in exotic diseases should be intensified, and consolidated into ongoing training strategies.**

(74, p.162)

**DEFRA should commission a handbook for farmers on identifying and responding to animal disease, drawing on the experience of 2001.**

(73, p.162)

**Training for those responsible for managing disease control should include the relevant legal frameworks and the structure and responsibilities of local government.**

(43, p.112)

**DEFRA and the Department for Education and Skills jointly should explore with the veterinary professional bodies and higher education institutions the scope for increasing the capacity of undergraduate and postgraduate veterinary provision. Equivalent work should be done in Scotland and Wales.**

(68, p.160)

### Imports

The national strategy for livestock disease control must ensure that proper steps are taken to minimise the risk of incursion from illegal imports of meat and meat products. We recommend that:

**DEFRA should be given responsibility for co-ordinating all the activities of Government to step up efforts to keep illegal meat imports out of the country. This should include better regulations and improved surveillance on illegal imports of meat and meat products.**

(14, p.48)

**The Government should ensure that best practice from import regimes elsewhere be incorporated with domestic practices where appropriate.**

(12, p.47)

**The European Commission should lead a targeted risk based approach designed to keep FMD out of EU Member States. The UK should work alongside other EU Member States to highlight areas of greatest risk.**

(13, p.47)

**The UK should urge the OIE to consider the implications, for the detection and control of FMD, of the removal of swine vesicular disease from the List A of notifiable diseases.**

(64, p.156)

**Developing and maintaining appropriate contingency plans and ensuring effective preparedness.**

### Contingency planning

**DEFRA should develop further its interim plan, published in March 2002, in full consultation with all interested parties. Its relevance should be maintained through agreed programmes of rehearsal, practice, review and reporting.**

**This work should be given priority for funding.**

(81, p.165)



The following recommendations offer specific proposals in support:

**As part of its contingency planning, DEFRA, the Scottish Executive and the National Assembly for Wales, working with the Civil Contingencies Secretariat, should examine the practicality of establishing a national volunteer reserve trained and informed to respond immediately to an outbreak of infectious animal disease.**

(30, p.82)

**Contingency plans should set out procedures to be followed in the event that an emergency expands beyond worst-case expectations.**

(6, p.36)

**Government departments should ensure that their own internal departmental arrangements properly resource contingency planning work. This should be monitored by the National Audit Office.**

(10, p.39)

**The contingency plans of DEFRA, the Scottish Executive and the National Assembly for Wales should specify the measures needed during an epidemic to monitor progress and report to key stakeholders.**

(22, p.73)

**The State Veterinary Service, together with the Pirbright Laboratory, should increase their horizon scanning and threat assessment capabilities for major infectious animal diseases.**

(66, p.160)

**The Government should build into contingency plans the capacity and processes to scale up communications systems and resources rapidly at the onset of any future outbreak of animal disease.**

(53, p.142)

**Where regional boundaries of Government Offices do not match those of local authorities or other agencies of government, special provision should be made in contingency planning for management and communications during a crisis.**

(4, p.28)

**The Restricted Infected Area ('Blue Box' Biosecurity arrangements) procedures should be built into contingency plans.**

(62, p.151)

**The National Assembly for Wales and DEFRA should develop a comprehensive agreement for co-ordinating the management of outbreaks of infectious animal diseases in Wales. This should cover all aspects of a disease outbreak, delegating responsibility locally, where appropriate, and providing clear lines of communication and accountability.**

(31, p.84)

### Scientific advice

The involvement of independent sources of scientific advice early in the 2001 epidemic was due to the personal intervention of the Chairman of the Food Standards Agency. The formal engagement of a scientific advisory group was not until 35 days after the start of the epidemic. In order to ensure the fullest access to best scientific and veterinary advice, we recommend that:

**DEFRA's Chief Scientist should maintain a properly constituted standing committee ready to advise in an emergency on scientific aspects of disease control. The role of this group should include advising on horizon scanning and emerging risks. Particular attention should be given to the recommendations on the use of scientific advisory committees in The BSE Inquiry report of 2000.**

(34, p.91)

### Public health

FMD itself poses no risk to public health, but activities involved in managing an epidemic may create issues of public health concern. This was the case during the outbreak of 2001. We recommend that:

**All agencies with responsibility for public health should be actively involved in designing disease control strategies and in contingency planning and communications.**

(44, p.112)

### Information

Without access to timely, high quality information decision-makers are handicapped. The FMD crisis revealed shortcomings in the information gathering and processing infrastructure. We recommend that:

**DEFRA should lay out milestones for investment and achievement for improved management information systems.**

(20, p.73)

**Data capture and management information systems should be kept up to date and reflect best practice.**

(21, p.73)

**Standard definitions of all important parameters of information should be agreed in advance.**

(23, p.73)

**DEFRA's Geographical Information System and the Integrated Administration and Control System (IACS) should be designed so that they can be used more effectively for disease control purposes.**

(19, p.72)

**Use should be made of alternative sources of information and intelligence during crises.**

(18, p.71)

### Slaughter and disposal

Mass pyres and huge burial sites, used to dispose of the remains of millions of slaughtered animals, remain vivid images of the 2001 epidemic. We recommend that:

**Burning animals on mass pyres should not be used again as a strategy for disposal.**

(42, p.108)

**DEFRA should revise its guidance and instructions for slaughter.**

(28, p.78)

**Local communities should be consulted on mass disposal according to best practice guidelines, and the question of compensation for communities accommodating emergency disposal sites be researched. We recognise that this is a complex legal area nationally and at EU level.**

(45, p.114)

### Animal welfare

One lesson from the experience of 2001 was that animal welfare cases rise rapidly during the course of an expanding epidemic. This may be the case in any major outbreak. We recommend therefore that:

**The Government should consider the welfare implications of disease control policies, as part of contingency planning for FMD and other diseases, and should seek to identify strategies that minimise the need for slaughter and disposal on welfare grounds.**

(46, p.119)

**The joint DEFRA Industry Working Group for Animal Disease Insurance should ensure that its scope and membership is set widely enough to address valuation and compensation issues highlighted by the 2001 outbreak. Clear deadlines should be set for reporting progress.**

(80, p.165)

### Human resources

One of the biggest challenges in crisis management is to ensure that the right people with the right resources are in the right places at the right time. A strategy for personnel management during a crisis should be worked out in advance and kept up-to-date in collaboration with stakeholders. We recommend that:

**DEFRA should develop its human resources plans for use in emergency. In particular they should focus on how staff numbers and expertise can be rapidly increased at a time of crisis. This should be developed in England in consultation with the Cabinet Office, the Regional Co-ordination Unit and the network of Government Offices. Similar arrangements should be developed in Scotland and Wales.**

(8, p.36)

**Contingency plans at regional level should include mechanisms for making effective use of local voluntary resources.**

(24, p.74)

**Contingency plans should provide for early appointment of Regional Operations Directors or their equivalent to take on operational management of a crisis. There should be a cadre of senior managers – not all of whom need come from central government – who can fulfil the role of the Regional Operations Director in an emergency and who should be trained in advance.**

(33, p.87)

## Managing an outbreak of disease

### Crisis management

With the benefit of hindsight, there were insufficiently sensitive triggers in place to set off crisis warnings early enough.

**There should be a mechanism, put in place at the centre of government, to assess potential domestic civil threats and emergencies and provide advice to the Prime Minister on when to trigger the wider response of Government.**

(39, p.102)

The practice of crisis management was supported by the creation of the Joint Co-ordination Centre in Page Street. This influential group of senior officials, vets and military officers was joined by a representative of the National Farmers' Union and shared in the decision making and subsequent communication processes. This added value and we support this approach for the future. We recommend that:

**A representative of the wider rural economy should be invited to participate in the Joint Co-ordination Centre.**

(40, p.106)

At the height of the crisis the overall direction of policy and operations benefited from the direct involvement of the Prime Minister as well as senior ministers and officials. This meant that there was no senior group within government offering informed, but detached, advice that could challenge prevailing thinking. We recommend therefore that:

**The concept of a 'senatorial group' should be developed to provide independent advice to the Prime Minister and Cabinet during national crises.**

(41, p.107)

**Steps should always be taken to explain the rationale of policies on the ground, particularly where implementation is likely to be controversial. Wherever possible, local circumstances should be taken into account without undermining the overall strategy.**

(37, p.98)

### Speed of initial response

In an emergency, such as an outbreak of FMD, it is important to react with speed and certainty, taking decisions and mobilising the required resources as soon as possible. A few hours gained or lost at the early stages can make a big difference. Preparation for rapid response is an important element of contingency planning. We recommend therefore that:

**Provision should be made in contingency plans for rapid prioritisation of a department's work in the face of a crisis, and for speedy reassignment of resources.**

(7, p.36)

**In all suspected cases of FMD, the response should reflect the experience of the emergency services, where speed and urgency of action govern decision making.**

(16, p.61)

**The State Veterinary Service should consider forming a national network of 'flying squad' teams capable of responding to an alert. The continuing occurrence of false alarms can then be used constructively to maintain readiness and to practice routines.**

(17, p.61)

### Diagnosis

All the evidence we have received supports the need for more reliable and speedy diagnosis of disease. Modern diagnostic technology should be harnessed to contribute to the goal of acting with speed and certainty. We recommend that:

**The State Veterinary Service should be routinely equipped with the most up-to-date diagnostic tools for use in clinical practice, to contribute to speed and certainty of action at critical times.**

(36, p.95)

### Role of the military

The contribution of the armed forces during the FMD crisis received much praise. The military can bring professional expertise and advice in managing an emergency. In particular, they have valuable logistical and operational management skills. However, since no two crises will be the same and, since the armed forces have their own priorities, it would not be possible or wise to make specific recommendations for the future based on their assumed availability. We do, however, recommend that:

**As part of the mechanisms to trigger the wider Government response, the military should be consulted at the earliest appropriate opportunity to provide advice and consider the nature of possible support.**

(29, p.82)

### Communications

To have any chance of communicating successfully to all stakeholders it is essential to plan in advance.

**A government-wide crisis communication strategy should be developed by the Civil Contingencies Secretariat with specific plans being prepared at departmental level; for example by DEFRA and the devolved administrations in Scotland and Wales in the context of animal disease control.**

(54, p.142)

The Scottish Executive and the National Assembly for Wales handle communications separately. The following are recommendations to DEFRA. In Scotland and Wales we urge that systems should be reviewed as necessary to ensure equivalent standards are met.

We recommend that:

**DEFRA should develop its regional communication strategy and ensure that it has effective systems for disseminating clear and concise information quickly to all its regional offices. This should be developed in the context of cross-government crisis management planning, in consultation with the Regional Co-ordination Unit and Government Offices.**

(55, p.143)

**DEFRA should resource its website to ensure it is a state-of-the-art operation. In any future outbreak, the website should be used extensively and a central priority should be to ensure that it contains timely and up-to-date information at national and local level.**

(56, p.144)

**DEFRA should commission research into the effectiveness of its direct communications during the Foot and Mouth Disease outbreak of 2001 so that all the lessons may be learned, acted upon and the results published.**

(57, p.144)

**The State Veterinary Service should revise all its disease control forms A-E and information about exotic animal diseases in liaison with the Plain English Campaign.**

(58, p.145)

**Communications strategies during a crisis should take special account of the needs of the international media.**

(59, p.147)

### Management controls

At the height of a crisis, the pressure to get things done may mean that proper management controls are overlooked. The National Audit Office examined this issue in its report of the FMD outbreak of 2001. We have a number of recommendations to add, from the perspective, of our own Inquiry, namely:

**Dedicated control systems should be ready for use in a sustained emergency, and regularly tested as part of the contingency planning process.**

(25, p.74)

**The processes for procuring and delivering the necessary goods and services from external sources during a crisis should be reviewed. Systems should be tested to ensure they can cope with unexpected increased demands.**

(26, p.74)

**Priority should be given to recruiting accounting and procurement professionals to operate in emergency control centres during a crisis.**

(27, p.74)

**From day one of an outbreak, provision should be made to keep a record of all decisions made and any actions to be taken.**

(35, p.93)



## 5.1 Introduction

Around mid-morning on Monday 19 February 2001, Donald Vidgeon, a drover of long experience, alerted Craig Kirby, the resident vet at Cheale's Abattoir in Brentwood, Essex to a problem with a batch of sows held over from Friday's shift. Mr Kirby examined the animals and saw how serious the problem was. Clinical signs alone can not distinguish swine vesicular disease from FMD. Both are notifiable diseases. He assumed, even hoped it was swine vesicular disease. First he stopped the production line. Then he telephoned the local office of the State Veterinary Service. About an hour later, after inspection by two government vets, one of whom had experience of FMD in Greece, there was no doubt. This was either swine vesicular disease or FMD. Only laboratory work could tell which.

This encounter, within sight of London's eastern skyline, signalled the start of the FMD epidemic that spread across Britain. By the end of September over 2000 premises had been declared infected, millions of animals destroyed and many rural lives and livelihoods affected in a manner unknown for a generation.

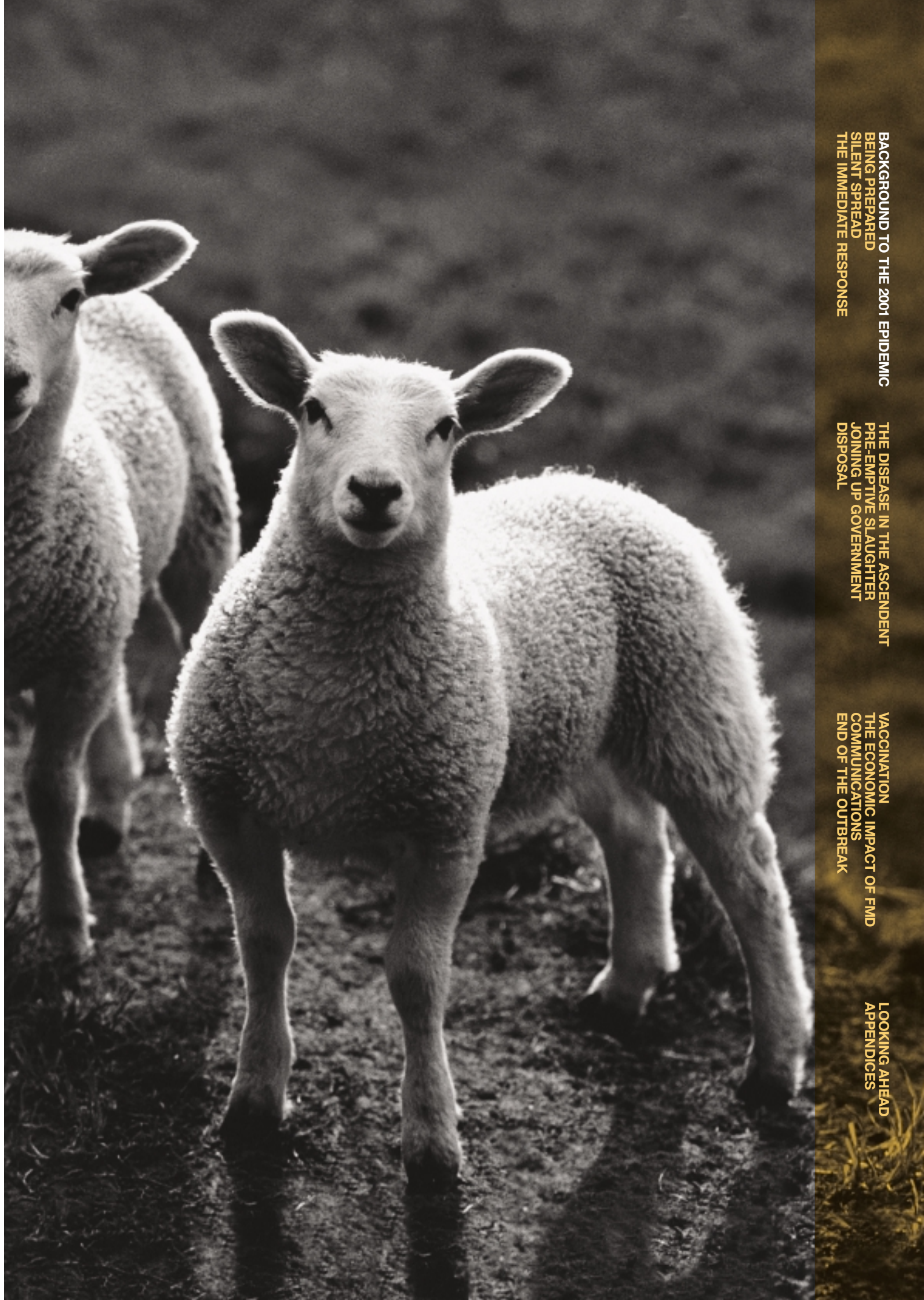
On that Monday morning none of the vets involved guessed that the virus was already incubating in more than 50 locations from Devon in the south to Dumfries and Galloway in the north. A rare set of circumstances had already determined that this would be one of the worst epidemics of FMD the modern world has ever seen. Numbers alone cannot capture the sense of what unfolded. The great epidemic of 2001 left an indelible mark on communities, businesses and people from all walks of life.

## 5.2 History

FMD was not a new phenomenon. Nor were the techniques for controlling it. On the face of it, an outbreak in 2001 should have been controllable using conventional strategies. These include the slaughter of infected animals and 'dangerous contact' animals (so-called 'stamping out'). Such methods had been used effectively in the isolated FMD outbreak on the Isle of Wight in 1981, and they worked in 2001 in those parts of the country where the number of cases was small and resources were not overwhelmed.

The outbreak in 2001, however, was far from conventional. The way in which the disease had spread before its discovery and had disproportionately affected sheep were both unprecedented. The failure to tackle the disease quickly by traditional methods led to alternative culling approaches being adopted. These are discussed in section 10.

Different livestock diseases have different economic impacts which change over time and vary from country to country. In Britain, throughout the early part of the 19th century, no attempt was made to eradicate FMD. Compared with other animal diseases, such as cattle plague, its symptoms





“The question I think you need to be asking is why was it possible to have orders to slaughter and bury in 24 hours in 1747 [Order in Council, 22 March 1747] when it wasn’t possible to achieve that in 2001.”

*Public Meeting,  
regional visit to the North East*

were relatively mild and mortality rates low. Yet, by the end of the 19th century, perceptions of the importance of FMD had changed. It became a notifiable disease, despite farmers opposition.

Legislation originally passed in the 1880s allowed for slaughter, with compensation, of FMD-infected animals and their contacts. However, this was rarely invoked until the major epidemics of the early 1920s when all diseased and contact animals were slaughtered except for valuable pedigree herds. Since then, stamping out has been the preferred approach for controlling FMD in Britain.

The desire for a better understanding of FMD in order to improve control policy led to the creation of the Pirbright research facility in 1924. The Pirbright Laboratory, now part of the Institute for Animal Health, is the UK’s centre of excellence in FMD research and is the World Reference Laboratory for FMD. We refer to it throughout this report as the Pirbright Laboratory.

On the continent, immunisation techniques were developed in the inter-war years but not used in Great Britain. A Government report after the major FMD outbreak in 1952-4 contained extensive discussion of vaccination. It concluded that stamping out remained the right policy for Great Britain in general, adding that “in the case of a severe epidemic” vaccination might be a valuable or even indispensable weapon.

By contrast, in other parts of Europe, vaccination was used both as a control mechanism to throw a ring around specific outbreaks and, routinely, along land frontiers.

Between 1922 and 1967 there were only two FMD-free years in the whole of Great Britain. Four epidemics were so severe that they prompted official Government reports in 1922, 1924, 1954 and 1968, the last conducted by Lord Northumberland and known as ‘the Northumberland Report’.

There is a high degree of continuity in the central themes of these reports. Recurring issues include: the importance of contingency planning; the role and supply of vets; speed of response; the impact of animal movements; the use of swill as a source of infection; restrictions after markets; tagging of animals to aid identification; and liaison between central and local government.

All these issues featured in the 2001 outbreak. That is why we say that it is perhaps easier to identify lessons than to learn and act upon them.

### 5.3 The Northumberland Report

One of the constant refrains surrounding the 2001 outbreak is that the lessons of the Northumberland Report were not learned. The CD-ROM annexes contain a full list of the Northumberland Report’s recommendations and a summary from DEFRA of the extent of implementation of each of them. Frequently, the recommendations relating to disposal of carcasses and the role of the military have triggered critical comment.

#### 5.2.1 History repeats itself

*“[The initial outbreaks] were followed by an unprecedented number of outbreaks which were reported at such a rate as to overwhelm the existing staff of the Ministry, and to necessitate the immediate recruitment of an emergency staff whose time was fully occupied in dealing with the cases as they arose.”*

*Foot and Mouth Report, 1922*

*“During the whole of this time the movements of animals in the district had been proceeding unhindered – in fact with unusual expedition. Rumour – as has so often been the case – preceded action by responsible authorities; ... there was a rush to move animals out of the district before the standstill restrictions normally imposed by the Ministry could become effective. Crewe market was carried on as usual and the animals exposed there were dispersed.”*

*Foot and Mouth Report, 1924*

*“A single outbreak that was not reported early enough was responsible for half the outbreaks during the epidemic.”*

*Foot and Mouth Report, 1954*

*“There is difficulty in recruiting veterinarians to the Veterinary Field Service of the Ministry of Agriculture and it is essential that the Ministry should attract a reasonable number of good veterinary graduates who will later be available for promotion to the important posts which carry responsibility for controlling animal diseases like foot-and-mouth disease. Satisfactory disease control depends on a strong State Veterinary Service.”*

*“We have studied carefully the control procedures laid down by the Ministry of Agriculture and which have been put into operation in the past when outbreaks of the disease have occurred. We consider that these procedures in general have been satisfactory but were not adequate during this unprecedented epidemic. Our main recommendations and suggestions therefore relate to the need for more detailed pre-outbreak planning for the mobilisation of manpower and equipment to deal with an outbreak wherever it may occur.”*

*Northumberland Report, 1968*



On disposal, the Northumberland Report concluded that: *“burial of carcasses is preferable to burning”*. Off-farm and mass disposal were not discussed as they did not arise. In 2001, 48% of the 600,000 tonnes of carcasses generated by the outbreak, including welfare cases, were disposed of by on-farm burial and burning. A further 14% went to mass burial and 16% to commercial landfill. Scope for burial was constrained by an increased awareness of the potential contamination of groundwater. This was aggravated by very high groundwater levels during the wet winter and spring of 2001. Disposal issues are discussed further in section 12.

On the role of the military, the Northumberland Report stated: *“it appears that assistance from the Armed Services is normally available to Government Departments when all other suitable labour resources have been exhausted. ... There was no delay in or difficulty in obtaining Service assistance when the 1967/68 epidemic became widespread. ... speed and efficiency in slaughter of infected and in-contact animals, disposal of carcass and disinfection of premises are the most vital elements in controlling an outbreak and these will not be achieved without disciplined workers under experienced and trained supervisors. .... After the epidemic ... agreement was reached that, in FMD outbreaks, any of the Ministry’s [of Agriculture] regional controllers could approach Army Commands for assistance as soon as they considered that all suitable civilian labour resources had been committed. We recommend that the approach should not be delayed; liaison should be established forthwith ... and be maintained”*.

The role of the military is discussed further in section 9. However, the links established with the armed forces after 1968 were not maintained. This was, in part at least, a result of the reduced size and changing nature and role of the armed forces since the mid sixties.

#### 5.3.1 Military personnel 1967-2001

<b>1967</b>	Military servicemen and women:	445,050
	Civilian support:	353,850
	<b>Total:</b>	<b>798,900</b>
<b>2001</b>	Military servicemen and women:	211,200
	Civilian support:	111,700
	<b>Total:</b>	<b>322,900</b>

The criticism that the Northumberland Report was not implemented is, inevitably, simplistic and generally not well-founded. Many of the Northumberland Inquiry’s specific recommendations were, by 2001, simply overtaken by developments. For example, *“Exempting animals carried by rail through Infected Areas from restrictions provided they are not untrucked”* has limited relevance today. Equally, constitutional developments, most notably the UK’s membership of the European Union have profoundly changed the legislative and trading framework.

Nevertheless, some of Northumberland’s recommendations have stood the test of time and would have helped in the fight against the 2001 outbreak. The Northumberland Report attached great importance to *“the early*

*recognition of the disease and immediate action in stamping it out”* and to *“measures designed to limit the spread by controlling movements”*. It also emphasised that *“control procedures should be based on veterinary considerations only and should give rise to as little disturbance of normal commercial and public activities as such considerations would allow”*. And its main recommendations and suggestions related: *“to the need for more detailed pre-outbreak planning for the mobilisation of manpower and equipment to deal with an outbreak wherever it may occur.”*

Despite the similarities, comparing 1967 with 2001 is not always fruitful. Ministry and veterinary structures have changed considerably over the past thirty years, as has the social, economic and political landscape. Contingency plans had not kept pace with changes in society.

**2. We recommend that lessons learned routinely be reviewed in the light of changing circumstances. Policies, plans and preparations should be adapted accordingly.**

## 5.4 Changes 1967-2001

Since the last significant FMD epidemic occurred in 1967, we have chosen that as a useful reference year for comparison with the present day. The most fundamental differences between 1967 and 2001 are the UK’s membership of the EU, coupled with structural change in livestock farming and a reduction in its relative economic importance and profitability (5.4.2). In parallel with these changes there has been a growth of rural leisure and tourism.

Agriculture has become increasingly regionalised over the period with livestock concentrated in the North and West and arable farming in the East. Land tenure arrangements have led to far greater fragmentation of farm holdings, with farmers often keeping livestock on land widely scattered from the farmstead itself.

Similarly, the State Veterinary Service has changed since 1967 (5.4.3).

### 5.4.1 Local and Temporary Veterinary Inspectors

Local Veterinary Inspectors are mainly private practice veterinarians who are appointed by Ministers as agents to carry out certain areas of work on behalf of the Department. Local Veterinary Inspectors are appointed to specific panels, eg. TB, brucellosis, anthrax, export of horses etc. They can only carry out work for the panel to which they are appointed and for which they are trained. In 2001 there were approximately 7,000 Local Veterinary Inspectors.

Temporary Veterinary Inspectors are registered veterinary surgeons who are appointed on a temporary basis to the State Veterinary Service. There were 117 Temporary Veterinary Inspectors routinely employed by the State Veterinary Service prior to the outbreak.

### The impact of change on veterinary surveillance and response

The number of vets employed by the State and its agencies in 2001 was roughly two thirds that in 1967. The most sizeable reduction in the State Veterinary Service was in the number of vets in middle management roles. Reliable data are difficult to obtain. DEFRA's own figures show that front line veterinary officer numbers fell from around 270 in 1967 to 220 in 2001. Moreover, problems of veterinary recruitment in the South East, mean that the State Veterinary Service headquarters is currently operating with 10 of its 27 posts vacant.

The changes to the State Veterinary Service stemmed in part from a reduction in the volume of work required as farming and animal health practices evolved, although recent events, including BSE and the pet passport scheme for rabies, have driven the workload back up without a matching increase in resources.

#### 5.4.2 Changes in the farming economy 1967-2001

	Immediately prior to 1967/68 outbreak	Immediately prior to 2001 outbreak
Policy Context	Pre Common Agricultural Policy; UK market still open to significant imports of food.	Period of Common Agricultural Policy reform and re-opening of EU markets to significant imports of food.
Economic performance (livestock and dairy) England Output per £100 input	£114–117 depending on sector.	£75-94 depending on sector.
Average size of dairy herd England & Wales (Proportion over 100 )	30 (12%)	76 (55%)
Average size of flock of breeding ewes England & Wales (Proportion over 500)	131 (25%)	267 (56%)
Annual UK slaughter of prime cattle	2.5-3.0 million	2.2 million
Annual UK slaughter of sheep	12-12.5 million	18 million
Annual UK slaughter of pigs	12.1-13.4 million	12.6 million
Proportion of meat retailed by independent butchers (GB)	83%	12.5%
UK self-sufficiency in beef	72%	100% plus
UK self-sufficiency in sheepmeat	36%	95%
UK self-sufficiency in bacon and ham	42%	50%
UK self-sufficiency in pork	96%	100% plus
Number of auction markets in England and Wales	380	180
Number of abattoirs in Great Britain	2,200	360
Approximate number of farm holdings in England	260,000	146,000

The changes also reflect a shift away from direct government delivery of services to greater use of agencies and privately contracted work. A 1995 review of the State Veterinary Service recognised the need for a balance to be struck between these elements. Although much of the State Veterinary Service work could, in theory, be removed from central Government control, there was a need to retain the capacity to respond to an animal health emergency.

We conclude, from the data above and from the views submitted to us by vets with many years experience, that insufficient attention was given to the relationship between the core State Veterinary Service and other parts of the veterinary surveillance and response network, including the private practice veterinary sector. The economics of farming mean that vets are

#### 5.4.3 The State Veterinary Service 1967-2001

Year	State Veterinary Service	Agencies	SVS numbers	Notes
1967	Included Central Veterinary Laboratory, a laboratory in Scotland, Cattle Breeding Station, and Veterinary Inspection Service.	n/a	not known – approx 600	Animal Health Divisional Offices 26 in England 5 in Wales 19 in Scotland
1971	Agricultural Development & Advisory Service created, incorporating State Veterinary Service.	–	–	–
1979 –1980		–	597	Review of MAFF structures.
1986	Agricultural Development & Advisory Service became a charging organisation, State Veterinary Service reintegrated into the Ministry.	–	just over 500	–
1987		–	–	Animal Health Divisional Offices reduced to 44.
1990	Veterinary Inspection Service reviewed – reduced to 5 Veterinary Investigation Centres England/Wales, 8 in Scotland.	Central Veterinary Laboratory and Veterinary Medicine Directorate became agencies.	430	–
1993-1995	Moratorium on recruitment to State Veterinary Service.	–	–	–
1995	Review of MAFF Animal Health and Veterinary Group implemented.	Veterinary Inspection Service merged with the Central Veterinary Laboratory to become the Veterinary Laboratories Agency. Meat Hygiene Service created – 12 vets transferred.	just over 300	Animal Health Divisional Offices 15 in England 3 in Wales 5 in Scotland
2001		Veterinary Laboratories Agency employed 99 vets Meat Hygiene Service employed 40 permanent vets and 5 casuals, with 462 contract vets also on the books.	286 (220 in the field service)	Approx 100 Temporary Veterinary Inspectors employed in normal times. Some 7,000 Local Veterinary Inspectors also formed part of the veterinary network.



less likely to be called out to animals today than they were in 1967. At the present time there is less extensive routine surveillance and fewer large animal veterinary practices from which to draw vets in a crisis.

The Local Veterinary Inspector arrangements, which the British Veterinary Association reported to us as dating back to 1937, had not been reviewed and updated to meet changed circumstances. The Department had planned discussions with the Association on Local Veterinary Inspector appointment and training in February 2001. The first meeting had to be cancelled because of FMD. Discussions have now recommenced. The question of veterinary capacity and surveillance is addressed in section 17.

**3. We recommend that there be a reappraisal of Local Veterinary Inspectors' roles and conditions.**

**Regional and central government**

The structure of UK regional and local government in 2001 is very different from that of 1967. In Scotland and Wales, devolved administrations now take many executive decisions. The Scottish Executive has sole policy responsibility for all, and the Welsh Assembly for many animal health matters within the context of the UK's EU obligations. In both Scotland and Wales, ministers are locally accountable for aspects of rural policy. In England the county structure and the two- and three-tier systems of local government are, in many parts of the country, far removed from the structure of the mid 1960s.

Central Government too has evolved. In 2001 the network of Government Offices for the Regions in England had an important role in co-ordinating the operation of Government policy in the regions. However, only some Departments were under their umbrella. MAFF only became part of the Government offices on 1 April 2001 and DEFRA remains part of that structure. In many parts of Great Britain, the regional boundaries of some of the many Government agencies responsible for responding to FMD did not match. This made management and communication more difficult.

**4. We recommend that where regional boundaries of Government Offices do not match those of local authorities or other agencies of government, special provision be made in contingency planning for management and communications during a crisis.**

**Public opinion**

Animal welfare issues have assumed a far greater importance in the public mind since 1967. Public confidence in farming, science and government was damaged by the BSE crisis. Contingency planning had not kept pace with these developments. There had been no recent public debate on slaughter and vaccination so key components of the disease control strategy lacked the backing of public consensus.

**5.4.4 The European Union and disease control**

In contrast to 1967, Community legislation now covers many areas of disease control and trade in animals and products of animal origin in Member States. These include: animal identification; health rules applicable to intra-community trade of most species of animals and their products; health rules applicable to imports from third countries of animals and their products; procedures for control of the list A diseases specified by the International Animal Health Organisation, the OIE (17.1.1); veterinary checks on animals and animal products which are traded; and notification of outbreaks of relevant diseases.

Directive 85/511/EEC, which came into force on 18 November 1985, provides for compulsory notification of suspicion of FMD in Member States. As soon as notification is made to the Commission, the holding is to be placed under official surveillance.

In addition, where disease is confirmed, all animals of susceptible species are to be slaughtered under official supervision. Carcasses of slaughtered animals must be destroyed in such a way as to prevent the spread of FMD virus. Meat, milk and milk products from the infected premises must be traced and destroyed, as must all substances likely to carry the virus. All farm buildings and equipment must be cleansed and disinfected.

At the same time that infection is confirmed, a Protection Zone of at least 3km radius and a Surveillance Zone of at least 10km radius from the infected premises is to be established.

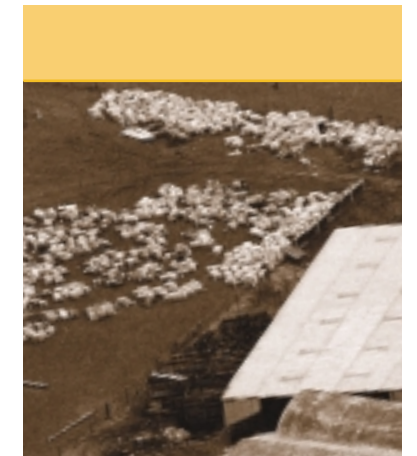
Fifteen days after completing preliminary cleansing and disinfection of the infected holding, the rules in the Protection Zone are relaxed and the rules in the Surveillance Zone are applied instead. The Surveillance Zone restrictions may not be lifted for at least 30 days after cleansing and disinfection of the infected holding.

The Directive requires an inquiry to be carried out to establish the length of time the virus may have existed, the possible origin of the disease and its likely means of spread.

Disinfectants have to be approved by the competent authority and animals moved from their holding have to be identified.

Routine vaccination against FMD is prohibited but limited emergency vaccination is permitted under certain conditions.

The Commission is reviewing the existing Directive to take account of the 2001 FMD outbreak. Detailed proposals are expected later this year. The Commission is also working up new proposals on identification and traceability of sheep, including electronic tagging, as well as reviewing the import controls in place to protect the Community.



### 5.5 Sheep in the 2001 epidemic

A significant difference between the 1967 and 2001 outbreaks was the fact that, in 2001, sheep played a critical role. The 1967 outbreak was largely restricted to cattle and pigs. There were over 2,300 cases, confined mainly to cattle farming areas, in particular the North West Midlands and North Wales. The disease lasted 222 days and 434,000 cattle, pigs and sheep were slaughtered. The total number of animals slaughtered for disease control purposes in 2001 was more than ten times this, yet the 2001 outbreak comprised 2,026 cases. The reasons for this increased slaughter rate are discussed in section 10. A comparison of the 1967 and 2001 outbreaks is in the Appendix at 18.4.

In other outbreaks around the world, the predominant pattern has been for pigs, not sheep, to play a key role in spreading infection to cattle. There were almost 60% more sheep in England in 2001 than in 1967, concentrated in the northern parts of the country. The symptoms of FMD are not highly visible in sheep which is why the disease became widely disseminated before detection.

**5. We recommend that the Government build an up-to-date database of livestock, farming and marketing practices. This should include research to examine the evolution of regional livestock stocking densities and implications for disease risk and control.**

The wide dissemination of FMD in 2001 was exacerbated by the nationwide pattern of sheep movements throughout February 2001. This was due to the nature of sheep farming and, in part, to the agricultural changes referred to in section 5.4 above. Seasonal movement of sheep for fattening, in response to grass growth and climatic differences around the country, is long-standing practice. The distances involved have been great ever since the advent of transport by railway in the 19th century. The movement of sheep purchased by a dealer from Devon at the livestock market in Longtown, Cumbria, was a feature of the 2001 outbreak, but this was not a new phenomenon. Dealers have played a significant role in livestock markets for decades. There has been no collection of data on the extent of dealing activity over the years, so the significance of this part of the market is not well understood. Changes in the supply chain arising from the growth of supermarkets and the reduction in abattoirs may have increased the role of dealers in putting together batches of animals to meet demands.

Other developments that may have contributed to the scale of sheep movements in February 2001 include the Common Agricultural Policy annual premium which encourages farmers to ensure they have their full quota of sheep for the inspection period in February/March. MAFF was certainly aware of sheep movements but was taken by surprise by the volume of animals moving during February 2001. MAFF's initial estimate to Number 10 in the early days of the outbreak of one million movements was soon revised upwards to two million.

### 5.6 The run up to the 2001 epidemic

Before 2001, the continuing threat of BSE and the possibility of its appearance in sheep had been a major focus of activity for MAFF. It was unable to divert its scarce veterinary resources from this and other high profile investigations such as TB in cattle. For three months in the autumn of 2000, 80% of the State Veterinary Service resources had been absorbed dealing with the East Anglia outbreak of classical swine fever which comprised only 16 cases.

In 1997 in The Netherlands there had been a major epidemic of classical swine fever culminating in the slaughter of 9 million pigs. We have found no evidence of MAFF actively learning lessons from the Dutch experience, but we know that State Veterinary Service vets in the regions had acknowledged that they were poorly prepared for an exotic disease outbreak. Their concerns triggered an internal report into State Veterinary Service preparedness, the Drummond Report<sup>1</sup>, written in 1999 (6.2).

### 5.7 The eve of confirmation

On the morning of 19 February 2001, when vets were called to look at some distressed pigs awaiting slaughter in Cheale's Abattoir in Essex, MAFF and the State Veterinary Service nationally had a number of top level priorities. Most prominent was the alarming possibility that BSE might infect sheep. There was also concern that classical swine fever might return and that scrapie in sheep could become extensive. The pet passport scheme and the control of rabies were high profile, as were problems with TB in cattle. There was concern too at the general level of resourcing of the service. Given these preoccupations among senior managers in the State Veterinary Service, the possible return of FMD, one of the most infectious animal diseases, was low on their list of priorities.

<sup>1</sup> Report of a Study of Notifiable Disease Preparedness Within the State Veterinary Service (Jan 1999)



## 6.1 Contingency planning

Contingency planning is the process by which organisations plan for uncertain events. Effective contingency planning covers all aspects of preparation for such eventualities, including: recruitment and training of staff; deployment of systems for administration and information management; installation of structures for management and decision making; sourcing of goods and services; and procedures for communicating internally and externally. A cornerstone of good contingency preparation is open communication among key partners to address strategies for response, including escalation, according to circumstances. Some organisations, notably the emergency services, have well-honed systems to respond to emergencies, and they rehearse and update them regularly.

The Government's Memorandum to our Inquiry stated that "comprehensive contingency plans were in place". We did not find this to be so. Papers laying out FMD contingency plans had been prepared and accepted by the European Commission and approved by the Standing Veterinary Committee. But we found the contingency plan limited in scope, out of date in some respects and not integrated into a national programme of rehearsal and testing. Some local government representatives and other stakeholders claimed they were not aware of these plans. One stakeholder referred to them as the "best kept national secret".

The contingency plans within MAFF consisted of three main parts: the plans submitted to the EU in accordance with Article 5 of Directive 90/423; the instructions issued to the State Veterinary Service for dealing with an FMD outbreak and contained in Chapter 3 of the State Veterinary Service's Veterinary Instructions, Procedures, and Emergency Routines (referred to in this report as the Veterinary Instructions); and the local Divisional plans drawn up by each Animal Health Divisional Office.

In March 1991, the European Commission published 'Recommendations or Guidelines for Contingency Plans against Foot and Mouth Disease DGVI/1324/9'. One of these recommendations was that each Member State should ensure that it had, immediately available, sufficient trained staff to deal with, at any one time, up to 10 cases and to maintain surveillance of premises in the 3km protection zone required around each. This was based on the scale of outbreaks previously experienced in Europe. A calculation made for the whole of the European Union during the preparation of Directive 90/423/EC estimated, in a worst-case scenario, 13 primary outbreaks, each with about 150 cases, throughout the Community over 10 years.





The contingency plan for Great Britain was approved by the Commission in 1993. This plan included the detailed veterinary instructions and guidance set out in Chapter 3 of the Veterinary Instructions. It described the legislative framework, financial provisions, national and local disease control centres, personnel resources, availability of diagnostic laboratories, epidemiologists and training exercises. Prior to the 2001 outbreak, the plan had last been updated in July 2000. It was not, at the time of the outbreak, available on the DEFRA website. It was placed there in August 2001.

The State Veterinary Service's Veterinary Instructions provide, in over 100 chapters, guidance and procedures for dealing with diseases and all the other tasks that the Veterinary Field Service performs. Chapter 3 which deals with FMD, is based on the EU agreed slaughter policy and disposal arrangements. This chapter provided the basis for managing the outbreak. Over 200 Emergency Instructions were issued during the outbreak. These reflected changes as policy developed and experience was gained in the field.

Each of the 23 Animal Health Divisional Offices is required to have contingency plans for FMD and other diseases. These plans were last checked and updated during 2000. They focused on ensuring that all the local information that might be needed in the event of an outbreak was readily available and that Animal Health Divisional Office staff knew how to implement the Veterinary Instructions.

## 6.2 The Drummond Working Group Report

In July 1998 the State Veterinary Service had been considering the state of its contingency planning. It set up a working group to study how well prepared it was for dealing with outbreaks of notifiable disease and to make recommendations for any necessary improvements. Richard Drummond, Head of the Veterinary Service in Harrogate, the lead region with responsibility for notifiable disease, chaired the working group.

His report, published in the CD-ROM annexes, was submitted in February 1999. It concluded that there was considerable variability throughout the State Veterinary Service in its readiness to deal with outbreaks of exotic, notifiable diseases. In particular, it was concerned about resources and identified five broad areas requiring action: training; contingency planning; infected premises work; use of information technology in outbreak control; and staffing and direction.

On contingency planning, it recommended that objectives and targets relevant to planning be included as work objectives within annual staff reporting. It urged that a template contingency plan be available on the MAFF Intranet, and that there should be increased awareness amongst the veterinary profession to the threat of notifiable disease. It also urged consideration to be given to the risks posed by the gathering of animals at markets, shows and large livestock units, and called for discussion of the ways in which contacts with local authorities could be established and best maintained.

In response to its own internal report, the State Veterinary Service agreed to target available resources to five priority areas. These were: making a generic emergency plan for FMD available for each Divisional Veterinary Manager to use if desired; formulating regional and Divisional training plans; preparing national guidance on overcoming the problems of supply of services and materials for dealing with outbreaks; ensuring up-to-date instructions were available for staff on-line; and discussing with the veterinary profession how to improve relations with Local Veterinary Inspectors.

In June 1999, the Chief Veterinary Officer emphasised the importance of emergency planning to deal with outbreaks of notifiable diseases. He acknowledged that resources had been concentrated on BSE, rather than on implementing the recommendations of the Drummond Report.

In July 2000 the Chief Veterinary Officer remained aware of the lack of progress on contingency planning. On 18 July 2000, the Assistant Chief Veterinary Officer in Wales wrote to the Chief Veterinary Officer expressing his concerns about lack of progress on implementing the Drummond Report recommendations, in particular those concerning the slaughter and disposal of carcasses and the training of staff.

The Chief Veterinary Officer was not only aware of the lack of contingency planning but had also visited the Pirbright Laboratory on 12 July 2000, where he was shown the deteriorating FMD situation in the Middle and Far East.

The Chief Veterinary Officer on 18 July 2000 wrote to colleagues within the State Veterinary Service expressing his concerns (in the CD-ROM annexes). However, his concerns were not exposed to Ministers or to the Department's Permanent Secretary. No action outside the State Veterinary Service was taken to tackle the significant shortcomings. We believe this contributed to a false sense of security within MAFF on 20 February 2001, when FMD was confirmed.

## 6.3 Weaknesses in the plan

It has been suggested to us that the level of preparation by MAFF was adequate for the generally accepted level of risk and that the extraordinary nature of this epidemic could not have been anticipated or prepared for. There is some truth in this argument. As noted above, the plan was based on EU guidelines suggesting that Member States should have the resources to deal with up to 10 simultaneously infected premises.

In developing its contingency plans, the State Veterinary Service used two scenarios – moderate and severe – each comprising 10 simultaneous outbreaks. The severe case scenario envisaged there being more premises at risk in the 3km protection zone around each outbreak. This would lead to a need for more tracings, including livestock movements through a market, than in the moderate case scenario. The severe case scenario

“Any contingency planning must be put in place which will identify the animals that are at risk of getting the disease and slaughter those animals only and not generate huge masses of carcasses which just puts intolerable pressure on any disposal system, whether it is rendering, incineration or whatever, because these animals shouldn't be in that processing system anyway.”

*Public Meeting,  
regional visit to the South West*



“May I pay tribute to the lay staff at MAFF Gloucester who played a large part in getting the right people to the right place at the right time. The veterinary team of three who planned action played their part magnificently, often working long hours. As a Temporary Veterinary Inspector I felt that I was most of the time being sensibly deployed. There seem to have been adequate staff for the jobs in hand. We were perhaps fortunate to have an influx of students at peak times and they worked hard and well.”

*Temporary Veterinary Inspector employed in Gloucester*

“The whole organisation was sound asleep, they were asleep on their feet.”

*Public Meeting, regional visit to the North West*

demonstrated that the UK would need 235 veterinary officers. The Commission judged the UK’s readiness for disease outbreak as the best in the Community.

MAFF estimated that, in a more extensive outbreak, the number of staff needed might rise to 300. In such circumstances, it was expected that resources would be drawn from elsewhere within the service, the private sector and certain foreign countries with which agreements had been reached. “...*The State Veterinary Service did not often have to deal with crises on the scale of this FMD outbreak, and it had to come down to what was a reasonable insurance premium to pay in terms of maintaining high staff numbers...*” (Senior MAFF Official).

In the event, when FMD broke out, at least 57 premises were infected before the initial diagnosis was made. All State Veterinary Service resources were fully utilised almost immediately. During the course of the outbreak, over 2,500 Temporary Veterinary Inspectors were appointed, with nearly 70 from abroad. A further 700 foreign government vets and other secondees assisted on a temporary basis. There had been no assessment of the effects that a large-scale outbreak might have, or of how plans might be escalated. Better scenario planning would have left the State Veterinary Service more able to cope with the severity of the outbreak that it eventually faced. Planning should be comprehensive enough to deal explicitly with the challenges of scale-up. “...*The classical swine fever outbreak had stretched State Veterinary Service resources to their absolute limit so that when FMD struck it had, from the outset, rung alarm bells within the State Veterinary Service...*” (Senior MAFF Official).

**6. We recommend that contingency plans set out procedures to be followed in the event that an emergency expands beyond worst-case expectations.**

**7. We recommend that provision be made in contingency plans for rapid prioritisation of a department’s work in the face of a crisis, and for speedy reassignment of resources.**

**8. We recommend that DEFRA develop its human resources plans for use in emergency. In particular they should focus on how staff numbers and expertise can be rapidly increased at a time of crisis. This should be developed in England, in consultation with the Cabinet Office, the Regional Co-ordination Unit and the network of Government Offices. Similar arrangements should be developed in Scotland and Wales.**

Contingency planning is not just producing a written document. Rather, it is about putting in place the systems, processes and culture to respond effectively to crises. Above all, it is about a shared sense of ownership and purpose across the relevant stakeholder community. We believe that the plans at national level would not have stood up to critical stakeholder scrutiny in advance of the outbreak. Deficiencies in critical resources could have been identified with prior communication and consultation.

### 6.3.1 Preparedness in Dumfries and Galloway

Dumfries and Galloway has a highly developed emergency planning approach – the Major Emergency Scheme – that has grown from its experience of the Lockerbie air disaster. This Scheme is based on a multi-agency partnership, co-ordinated by the Dumfries and Galloway Council.

Following activation of the Scheme on 28 February, the emergency planning group met daily throughout the outbreak and co-ordinated a wide range of support activities. These included: the establishment of the Emergency Room – known locally as ‘the bunker’; local work to prevent spread of disease; setting up a logistics and transport operations centre; providing fully equipped accommodation centres for vets and military personnel; and establishing catering and welfare services.

As one submission commented, “*Contingency plans for the management of FMD are only as good as the working relationships between the organisations that are involved in the disease control campaign.*”

Co-ordination between the centre and local operations ensured that the policies determined by the Scottish Executive Environment and Rural Affairs Department, based in Edinburgh, were implemented effectively. The Scottish Executive Environment and Rural Affairs Department seconded staff to work with the Council and the Council was represented at relevant Scottish Executive committees. By contrast, MAFF did not fully exploit local authorities’ expertise for management of emergencies in England.

The Council’s Chief Executive and Emergency Planning Officer worked closely with the Regional Operations Director, the Divisional Veterinary Manager and Army Commander who jointly managed culling operations, once they were established in Dumfries. They met and updated each other at regular meetings, often two or three times a day.

Early and close involvement of the farming community contributed to the management effort. Unlike some areas in England, where the NFU felt marginalised, the NFU Scotland President was allocated space in the Scottish Executive Environment and Rural Affairs Department’s Edinburgh offices.

The arrangements worked well. FMD was eradicated from the region within three months.



“There were bright spots – the Divisional Veterinary Manager in Stafford ... is one of the few people who had sat down and thought. He had planned. He was ready. It paid off...the local outbreak was soon under control... I say congratulations Divisional Veterinary Manager Stafford whoever you are... We need more of you.”

*Temporary Veterinary Inspector*

Time and again as we visited different parts of the country, at public meetings and in meetings with officials, we were given evidence of the limitations of the contingency plans that existed and of the wider community's lack of knowledge of these plans.

Coupled with this lack of consultation and awareness, the Inquiry also found that there had been little emphasis on training and simulation exercises. “...In recent years there had been insufficient resources devoted to training, the rehearsing of contingency plans, and particularly I.T. systems because of competing priorities such as BSE...” (Senior MAFF Official).

We found that some parts of the country were more prepared than others. In a number of regions rehearsals had taken place and internal lessons learned by the State Veterinary Service.

Staffordshire, for example, had been able to put its procedures and preparations to the test during the classical swine fever outbreak. Those involved believe that good communication at all levels and appropriate use of local knowledge were central to their ability to cope with the disease.

In Scotland, Dumfries and Galloway was also better prepared than most. The Scottish Executive in its submission acknowledged the impact that the experience of the Lockerbie air disaster in 1989 made on its contingency planning in that region. The local authority played a central role in managing the outbreak north of the border (6.3.1).

The best example of contingency planning that we identified was in The Netherlands. Prompted by the experience of a large outbreak of classical swine fever in 1997, the Dutch contingency plans had been thoroughly reviewed, tested, agreed with all key stakeholders and approved by Parliament before FMD appeared in Britain in February 2001.

## 6.4 Risk analysis

Contingency planning should not be seen in isolation. It is a dynamic process, not a static document. It must be linked into a wider process of risk analysis and disease prevention.

Risks should be managed so that the country can better respond to threats at an early stage. This can help to ensure that future animal disease emergencies are less likely to become crises, and that crises do not become disasters.

**9. We recommend that accepted best practice in risk analysis be used by DEFRA and others in developing livestock health and disease control strategies.**

## 6.5 Being better prepared

The contingency plans available in MAFF on 19 February 2001 to fight FMD met EU requirements but lacked scope. The plans that did exist were not widely exposed or rehearsed and, as a result, there was a limited shared sense of ownership by stakeholders. In addition, plans had failed to keep up with changing farming practices. Contingency planning was low down on the Department's list of priorities. It was not seen as part of a wider process of disease prevention and risk management.

**10. We recommend that Government departments ensure that their own internal departmental arrangements properly resource contingency planning work. This should be monitored by the National Audit Office.**

The eventual scale of the FMD outbreak could not have been foreseen. Nevertheless, better preparation, including better contingency plans, which were understood and well rehearsed would have done much to limit the scale of the crisis.

**11. We recommend that the Government publish a biennial report to the nation on the level of preparedness to tackle animal disease emergencies. The first report should be published in 2003 and include measures of achievement against goals.**

“Contingency planning, this should have been present already in view of the 1967 outbreak, the lesson should have been learnt then.”

*Public Meeting, regional visit to Wales*



## 7.1 FMD and its virus

FMD is a highly infectious animal disease, caused by a virus. Its symptoms include lameness and lesions (blisters) on hooves and in or around the mouth. Signs of FMD are easily recognised in cattle and pigs. However, infected sheep often do not display symptoms and the disease can go unnoticed.

FMD does not usually cause death in livestock, except for young animals. However, contrary to the views of some it is not simply an equivalent of the common cold. Infected animals may suffer acute stress and pain. On recovery, their long-term health and condition may be affected, with serious economic impacts.

FMD spreads most effectively when susceptible animals are closely confined. Virus is present in the excretions, mostly faeces, and secretions such as milk, saliva and breath of infected animals. Animals become infected through inhalation or contact of the virus with mucosal membranes, especially in the mouth and nostrils.

Cattle and sheep are very susceptible to airborne virus, the former more so than the latter. Pigs are relatively resistant to airborne virus but very susceptible to contact infection, such as by eating infected feed. Infected pigs excrete large amounts of airborne virus – hundreds of times more than cattle – but cattle excrete the most virus in total, because they produce large amounts of infectious faeces and milk.

Airborne FMD virus can be carried great distances on wind plumes depending on weather conditions. For example, the 1981 FMD outbreak on the Isle of Wight was caused by a virus plume from Brittany, France. However, animals infected with the PanAsia strain of UK 2001 produced less airborne virus than other strains, so the potential for distant windborne spread was reduced.

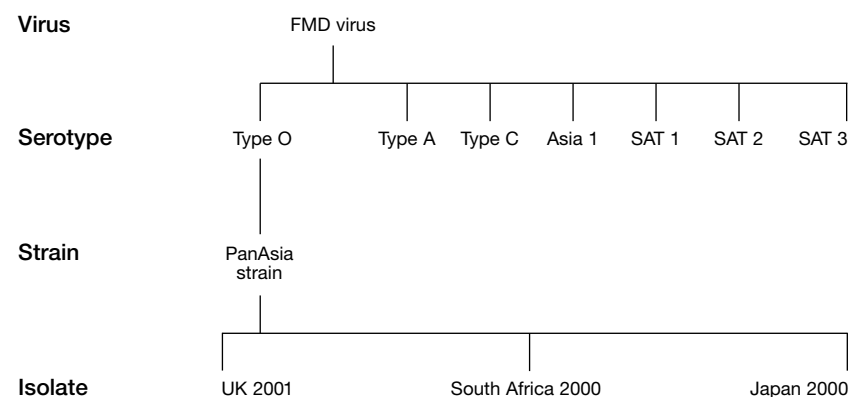
Other susceptible species include goats, camels, llamas, deer and hedgehogs. Some, who attended the Inquiry public meetings, reported seeing wild deer display classical FMD symptoms and were concerned that they were spreading the disease. Although infected deer may transmit the disease, their living habits suggest that they are unlikely to have direct contact with livestock. Four hundred samples from deer were tested and all gave negative results. We believe that deer were unlikely to have spread FMD in this epidemic.

There are seven different forms, or serotypes, of FMD virus: types O, A, C, Asia 1, SAT 1, SAT 2 and SAT 3. Each serotype produces a distinct response in an animal's immune system, triggering a different set of antibodies. This means that, if an animal has immunity to a type A FMD virus, it may still be susceptible to FMD caused by a type O virus.





## 7.1.1 Relationship of FMD virus strains



FMD viruses evolve, so that for each serotype, there are several different strains. Within those strains there are different sub-strains called 'isolates', which derive from individual outbreaks (7.1.1). The 2001 UK epidemic was caused by the PanAsia strain of FMD type O virus.

## 7.2 Global spread of the PanAsia O strain

The PanAsia strain has spread widely since its first appearance in India in 1990 (7.2.1). During the 1990s, it moved across the Middle East towards Europe reaching Greece in 1996. It also spread across Asia, causing several outbreaks in 1999 and 2000 in the Far East.

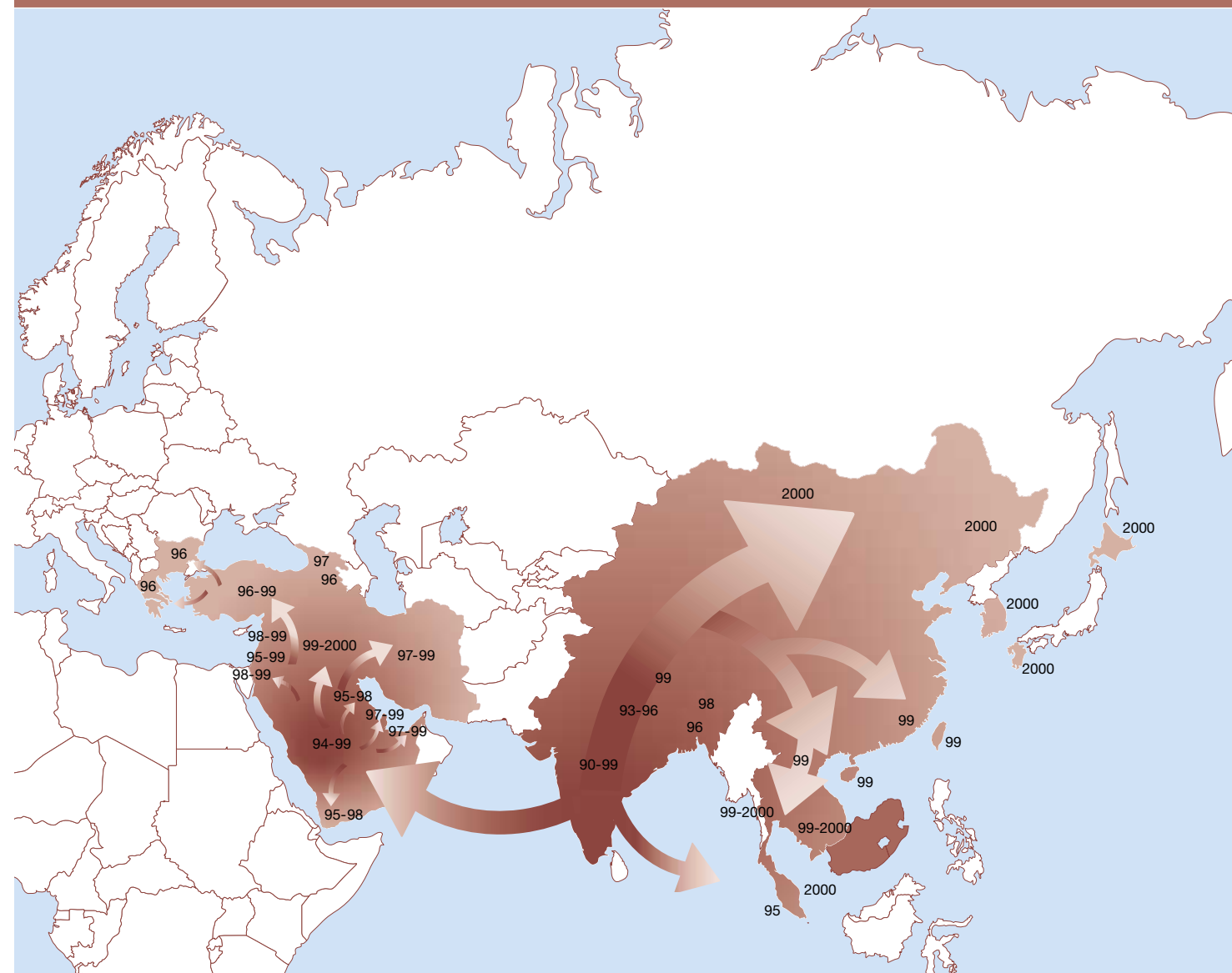
The PanAsia strain has never been identified in South America (7.2.2). Other FMD type O viruses have caused outbreaks there, but none was related to the PanAsia strain. Suggestions that FMD in the UK may have come from South America are therefore not valid.

In 2000, the PanAsia O strain took a major continental leap to South Africa. The incident was attributed to feeding pigs with untreated, infected meat from waste food. With hindsight, this should have been a warning that FMD remained a serious risk to any country, not just neighbours of those infected, especially through feeding swill to pigs.

The movements of the PanAsia strain and other variants of the virus before the UK outbreak were already well known to FMD experts. Predictions had been made that an epidemic of FMD was likely to hit Europe in the next few years. The European Commission for the Control of Foot and Mouth Disease convened an Expert Elicitation Workshop on the Risk of Introduction of FMD to Europe in September 2000<sup>1</sup>. The experts predicted that, within the next five years, one introduction of FMD was likely in each of the 'Islands' (UK and Scandinavian countries) and Western Europe groupings of countries.

<sup>1</sup> Estimating the risk of importation of foot-and-mouth disease into Europe. Gallagher et al. *Veterinary Record* (2002) 150, 769-772.

## 7.2.1 Likely spread of the PanAsia O strain of FMD virus 1990-May 2000



## First recorded occurrences

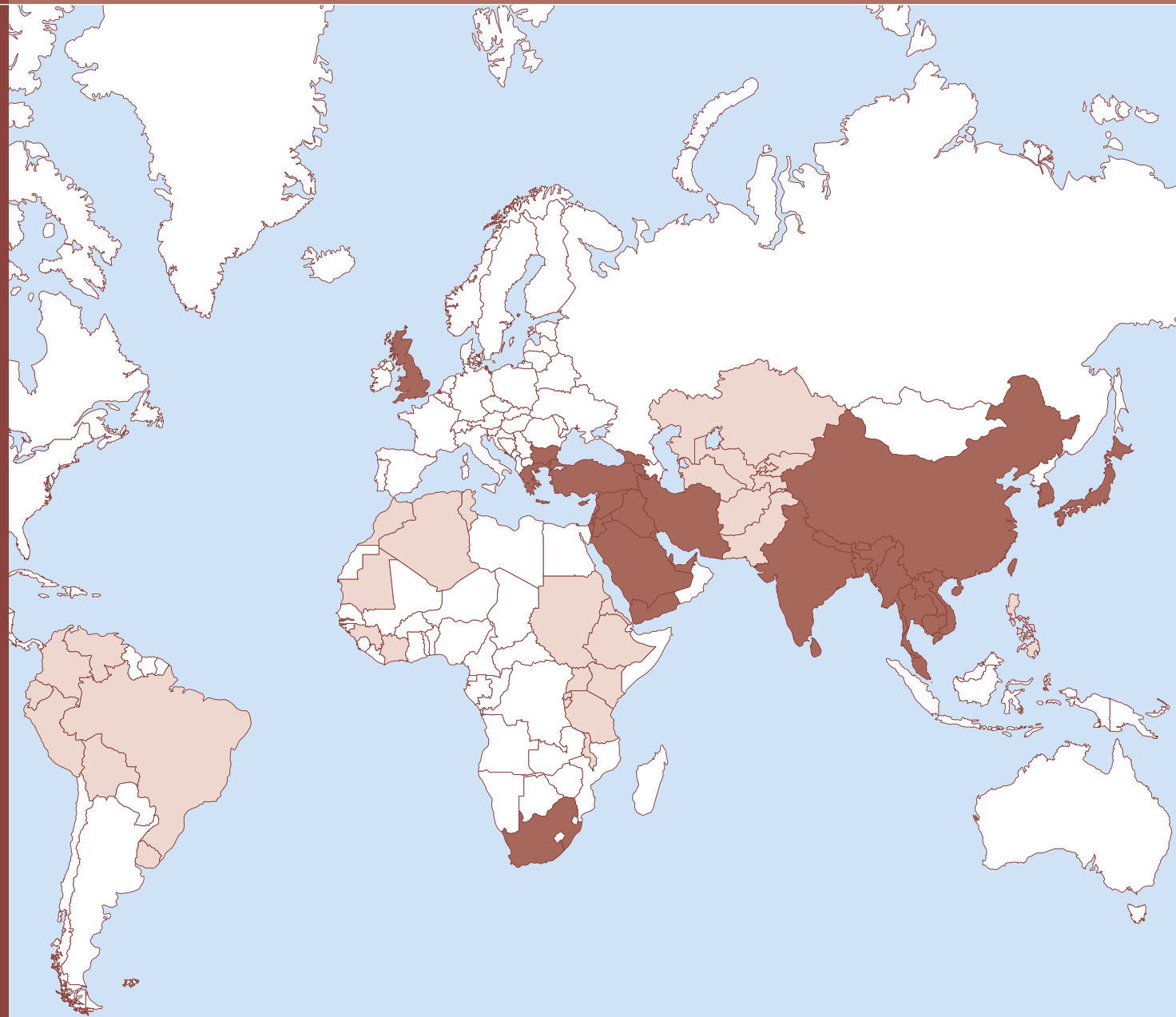
• India	1990	• Jordan	1998
• Nepal	1993	• Syria	1998
• Saudi Arabia	1994	• People's Republic of China	1999
• Malaysia	1995	• Taiwan	1999
• Yemen	1995	• Qatar	1999
• Lebanon	1995	• Thailand	1999
• Israel	1995	• Iraq	1999
• Kuwait	1996	• Vietnam	1999
• Turkey	1996	• Cambodia	1999
• Bulgaria	1996	• Laos	2000
• Greece	1996	• Malaysia	2000
• Armenia	1996	• Japan	2000
• Georgia	1997	• South Korea	2000
• Bahrain	1997	• Russia	2000
• United Arab Emirates	1997	• Mongolia	2000
• Iran	1997		
• Bhutan	1998		

Source: N.J. Knowles & A.R. Samuel, July 1999-May 2000 Institute for Animal Health Pirbright Laboratory



## 7.2.2 Worldwide occurrence of FMD virus type O and the PanAsia O strain when first UK case confirmed

- PanAsia O strain
- FMD type O present



Source: Institute for Animal Health Pirbright Laboratory

Furthermore, the British Chief Veterinary Officer, Jim Scudamore, wrote to his deputies on 18 July 2000, saying, "Having been at Pirbright for a day last week and seen the various maps of the deteriorating FMD situation in the Middle and Far East, there appears to be an increasing risk of incursions from exotic viruses."

### 7.3 Entry of FMD into the UK

The exact source of the FMD virus implicated in the UK outbreak will never be known. Genetic analysis of the UK isolate showed that it bore the greatest similarity to the virus that caused the outbreak in South Africa in 2000. This information suggested that the two outbreaks were connected, either directly or by means of a common source. All the viruses which are most similar to these are from the Far East – the isolate from Japan 2000 being the most closely related. The UK and South African outbreaks both started through swill feeding of waste food. Although the possibility that FMD entered via imports from South Africa cannot be excluded, it is most likely that the source of FMD was a virus imported into the EU from the Far East<sup>1</sup>.

### 7.4 The legal import regime

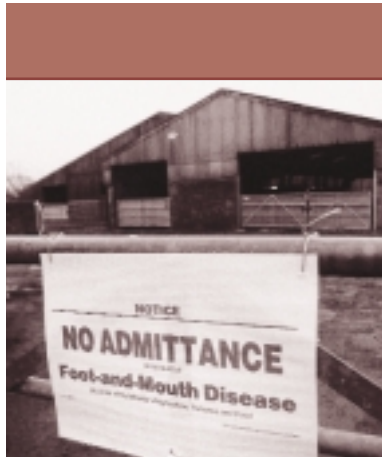
It is possible, but very unlikely, that the contaminated meat was legally imported. Legal imports have to be certified as originating in FMD-free countries or regions (7.4.1). Only de-boned matured beef is permitted to be imported from countries or regions that use routine FMD vaccinations. At certain temperatures, the FMD virus can live for at least five months in bone marrow and lymph nodes. Meat that has been de-boned and either heated to the centre to a temperature of at least 70°C or matured for nine months is considered to present negligible risks.

All meat consignments must be presented on arrival to a Border Inspection Post where they are subject to documentary and identity checks. At least 20% of consignments also undergo physical checks.

Legal imports have not taken place from any country where the PanAsia O strain of FMD occurs, apart from South Africa. On the basis of information available on imports, it is highly improbable that the disease could have been imported legally from South Africa.

Infected meat or meat products brought into the country as 'personal imports' are a possible source, but it is unlikely that these would enter the animal food chain. They are more likely to be consumed or discarded as domestic waste, rather than as catering waste that could be fed to livestock.

<sup>1</sup> Origin of the UK Foot and Mouth Disease Epidemic in 2001, J M Scudamore, June 2002 in the CD-ROM annexes.



#### 7.4.1 Current import controls

##### EU legislation

Under the terms of the single European market in the veterinary sector, there are controls on the movements of animals and animal products into and within the European Community. The UK, along with all Member States, is subject to a system of veterinary inspection and certification.

##### Intra-community trade conditions

Animals and animal products imported into the UK from other Member States are not routinely inspected at the port or airport of arrival, but they are required to be checked at their premises of origin. Routine border checks on goods traded between EU Member States are not permitted. Random spot checks at the premises of destination are, however, permitted and determined by risk. The competent Authority in the exporting Member State is legally required to notify the receiving Member State of all consignments of live animals and some consignments of products (for example, raw material for processing) despatched. All imported live animals must have appropriate health certificates.

##### Personal imports from EU countries

Individuals are allowed to import meat, meat products, milk and milk products, other than raw, unpasteurised milk. Any individual attempting to import more than 10kg may be required to provide evidence that the commodities are solely for personal use. From time to time, further restrictions are introduced because of an outbreak of a specific disease in a certain country or countries.

##### Imports from countries outside the EU

As a rule, live animals or animal products imported into the Community may only originate from a country approved by the Community. The approval process takes into account such factors as the level of animal health in the country, with particular attention being paid to exotic animal diseases. Meat and meat products must originate from premises approved by the Community.

Commercial imports of livestock and animal products are only permitted into the EU through approved Border Inspection Posts. In Great Britain the State Veterinary Service and Port Health Authorities at seaports, and local authorities at airports are responsible for conducting veterinary and documentary checks on live animals and animal products imported from countries outside the EU through Border Inspection Posts.

#### 7.4.1 Current import controls *continued*

##### Personal imports

Personal imports of meat and meat products from countries outside the European Community are prohibited, except for an allowance of 1kg of fully-cooked meat products that have been prepared in hermetically sealed containers.

The European Commission has recently come forward with a draft Regulation tightening rules on personal imports.

Waste food from ships or airlines could have been responsible for the outbreak. This material, which presents a high risk if fed to animals, was thought to be responsible for the outbreak of FMD PanAsia O strain in South Africa. EU and UK law prohibits the feeding of this waste food to animals. Food from ports and airports is collected under licence from DEFRA and destroyed by incineration or supervised landfill.

**12. We recommend that the Government ensure that best practice from import regimes elsewhere be incorporated with domestic practices where appropriate.**

**13. We recommend that the European Commission lead a targeted risk based approach designed to keep FMD out of EU Member States. The UK should work alongside other EU Member States to highlight areas of greatest risk.**

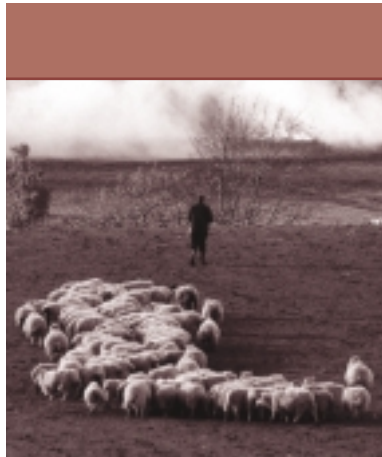
#### 7.5 Illegal imports

Illegal shipments on a commercial scale are usually intended for wholesale outlets or for sale to restaurants or canteens. They are most likely to be illegally described or presented as non-food imports. This increases the chance of the virus getting into catering waste. If not properly cooked before feeding to livestock as swill, this material could reach pigs in sufficient quantities to cause disease.

The products that present the highest risk are those from regions where FMD is endemic. Meat, especially pork, still on the bone or with lymph glands attached, presents a serious risk as does de-boned frozen meat, especially pork. However, the likelihood of a significant quantity of frozen or chilled meat avoiding detection by Customs is low as it would tend to be transported using refrigerated containers and therefore easier to target.

Between 1 November 2000 and 9 April 2001, 1,321 Customs Declarations were selected as a control sample to test overall compliance with Customs requirements. All consignments selected were physically examined. None was found to have failed to declare meat imports.





### 7.5.1 Import controls more strict in New Zealand than in the UK?

Many people have drawn comparisons between the import control regimes in the UK and several other countries. Perhaps the most common example brought to our attention was that of New Zealand.

New Zealand has a number of positive measures in place on personal imports, including a single biosecurity agency with a large presence at ports, supported by effective publicity, a system of signed declarations, amnesty bins for personal imports that break the rules, and on-the-spot fines.

Some of these measures may be suitable for the UK. However, it is important to take account of the practical circumstances that prevail in particular countries. New Zealand has 3.5m air passengers per year compared to 71m passengers arriving from outside the UK annually, of which 28m are from outside the EU. And New Zealand is a net exporter – 60% of its trade relies on agricultural exports. Maintaining low production costs is therefore economically critical given the distances to their markets.

Examining the policies adopted by other countries is a useful element in developing best practice at home. However, what is right for one country may not automatically be right for another. Even so, this caveat must not be put forward to justify any failure to adopt particular measures where they are both practical and effective.

It is difficult to assess the quantity of illegal meat that may be entering the country. However, the 2001 outbreak underlines the importance of continued vigilance by all authorities with border responsibilities in order to keep out the agents that can cause exotic infectious diseases.

DEFRA is leading interdepartmental consideration of the problem of illegally imported animal products (17.1). They may learn also from the control measures of other countries, such as New Zealand (7.5.1).

**14. We recommend that DEFRA be given responsibility for co-ordinating all the activities of Government to step up efforts to keep illegal meat imports out of the country. This should include better regulations and improved surveillance on illegal imports of meat and meat products.**

### 7.6 The spread of the disease prior to detection

Once the FMD virus had infected animals in the UK, the disease spread for weeks without detection. The probable timing of infection and transmission was judged by the age of the lesions on the animals inspected. Information about farms and movements of animals was used to trace the spread of the disease (7.6.1) (see CD-ROM annexes and Gibbens et al. paper<sup>1</sup>).

All the available evidence suggests that, sometime between mid-January and early February 2001, but most likely around 7 February 2001, pigs on Burnside Farm, Heddon-on-the-Wall became infected with FMD. Catering waste, containing illegally imported meat infected with the virus, is believed to have been fed to pigs as swill. By law, the swill should have been heat treated before use.

A ban on swill feeding was introduced on 24 May 2001. At that time, only 1.4% of the pig population in Great Britain were fed swill. Most domestic and catering waste was disposed of in licensed landfill. The additional volume generated by the ban was not considered to be significant.

**15. We recommend that the UK prohibition of swill feeding of catering waste containing meat products continue. The UK should continue to support a ban at EU level.**

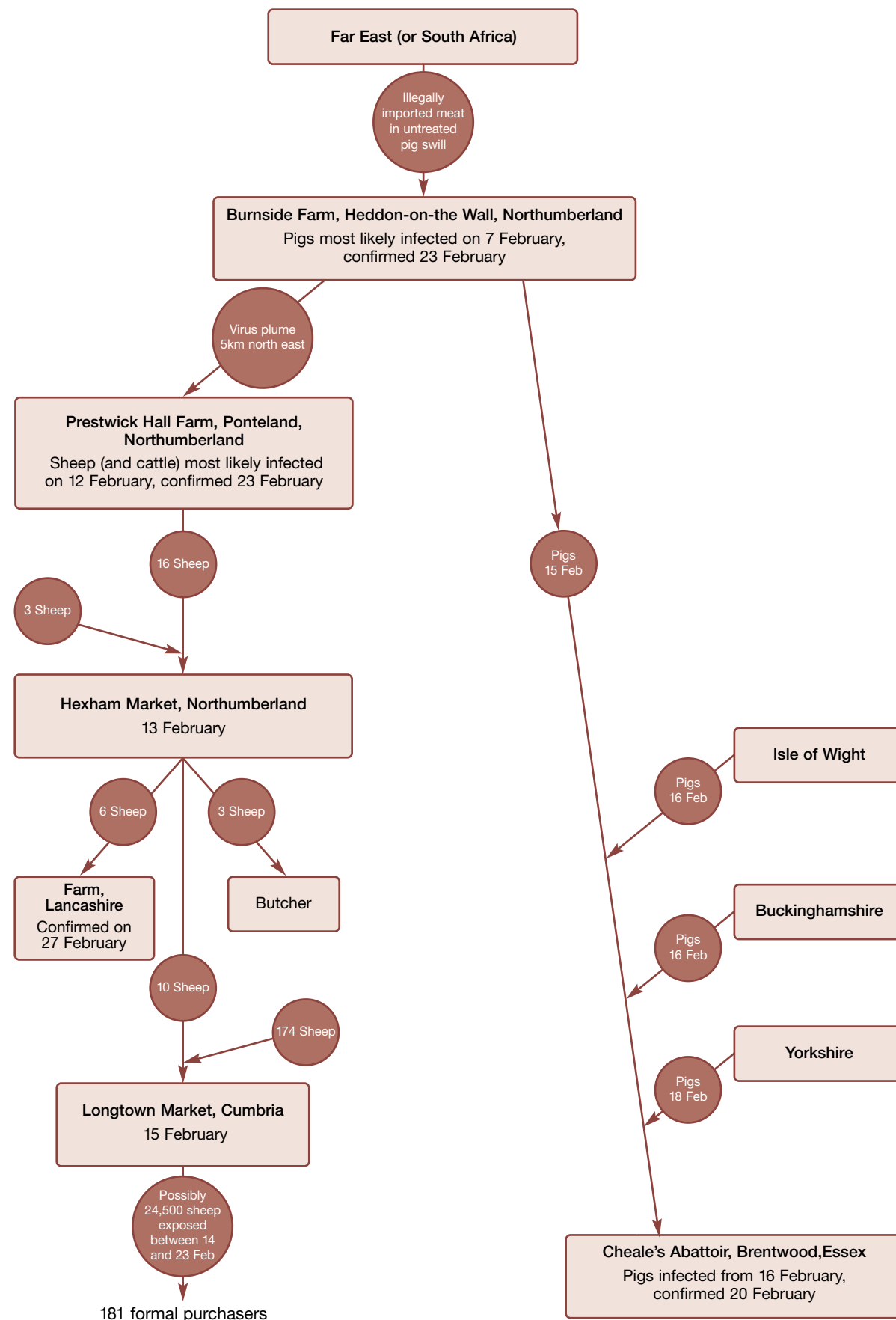
The disease could have been present at Burnside Farm for weeks, but it went unreported, despite the requirement of farmers to report suspected cases of notifiable diseases.

Sheep and cattle on the nearby Prestwick Hall Farm, Ponteland, were the next victims of the disease. The farm is five kilometres north east of Burnside Farm and lies under the potential virus plume generated by the infected pigs. Weather conditions had been suitable for airborne spread throughout the likely period of infection. The most likely date of infection was 12 February 2001, although inspection of the animals suggested it might have occurred earlier.

FMD in sheep is difficult to diagnose. Farmers and vets can miss the signs. Infected sheep often display mild symptoms, if any, and suffer from other conditions that may be confused with FMD. Because cattle are more susceptible and show obvious signs of infection, they can act as sentinels for the disease, an 'early warning system'. The sheep on Prestwick Hall Farm were only diagnosed after the vet had been called out to inspect the cattle.

<sup>1</sup> Descriptive Epidemiology of the 2001 foot-and-mouth disease epidemic in Great Britain: the first five months. Gibbens et al. *Veterinary Record* (2001) 149, 720-743.

## 7.6.1 Probable initial spread of FMD



Source: Gibbens et al.

Sixteen of these sheep went to market. On 13 February, together with three other sheep, they were sold at Hexham Market in Northumberland. Of the 19 sheep, three went to a butcher, six to a farm in Lancashire (which subsequently became an infected premises) and 10 to a dealer. The dealer took them to Longtown Market in Hexham on 15 February along with 174 other sheep. Potentially at least 24,500 sheep had passed through the market and been exposed to the disease between that date and 23 February when the movement standstill was introduced.

So, before anyone realised its existence, FMD had been seeded in many areas around the country. At least 57 farms in 16 counties were infected by the time the first case was confirmed.

Meanwhile, as FMD was spreading via sheep, infection had continued to rage on Burnside Farm. Infected pigs were sent to Cheale's Abattoir in Essex on 15 February and slaughtered on 16 February. Pigs that arrived at the abattoir on 16-18 February from the Isle of Wight, Buckinghamshire and Yorkshire, subsequently succumbed to the disease carried from Burnside Farm. Those animals were the first to be identified as suffering from FMD on 19 February.

## 7.7 Nature of the 2001 epidemic

Several conditions contributed to the introduction and widespread dissemination of FMD:

- The inclusion of infected meat in swill.
- The feeding of untreated swill to pigs.
- A delay in diagnosis of infected pigs.
- The infection of sheep by a virus plume.
- The undetected disease in sheep for weeks.
- Large number of sheep movements.

The nature of the 2001 epidemic was significantly different from the outbreak of 1967. In the latter, the disease affected mostly cattle, so diagnosis had been more straightforward. Most of the infection had been by airborne spread, though also through milk and animal movements. However, in 2001 the PanAsia strain was excreted in significantly lower amounts. So, airborne spread was not a major mechanism of transmission.

## 7.8 Alternative theories

During the outbreak, a large number of alternative explanations of the origin and mechanism of spread of the disease were put forward (7.8.1). Journalists who met the Inquiry told us that they investigated more than thirty such theories. Some of these ideas gained widespread popular support.

We have investigated a selection of these theories. In no case has the suspicion stood up to scrutiny.

“Had these sheep [from Longtown Market] been followed up and destroyed, and any other sheep they were in contact with had been destroyed immediately, those cluster bombs would not have been left there to manifest and go off and spread live virus all over the place.”

*Public Meeting,  
regional visit to Scotland*





### 7.8.1 Alternative theories for the origin of the disease

#### Railway sleepers

One claim was that the Government knew that FMD was present in the UK long before February 2001 because MAFF had asked railway sleeper suppliers about their levels of stock shortly before the outbreak. DEFRA says that the enquiries were part of a routine exercise to update the lists of contractors identified in local contingency plans.

The enquiries in question were indeed standard practice. Lists of contractors from across the country, and details of the dates and locations of similar exercises, confirm this (see CD-ROM annexes).

#### Porton Down

In April 2001, a newspaper article claimed that live FMD virus had gone missing from the Government research facility at Porton Down and was used to start the outbreak deliberately.

None of the laboratories at Porton Down have either held live FMD virus before May 2001 or experienced any theft of microbiological material (see CD-ROM annexes). They could not have been the source of the outbreak.

#### Sheep exported to France

Positive test samples from sheep, exported from Wales on 31 January 2001 and arriving in France on 8 February, suggested that FMD had been in Wales in January 2001. When FMD broke out in the UK, the French authorities as a precaution culled all sheep imported from the UK from 1 February and took blood samples. In an initial virus neutralisation test carried out on this particular group of animals, seven out of thirty-one samples appeared positive.

We visited France and met the officials involved in these tests. They were absolutely clear that the first tests they carried out were false positives. When further tests were performed using protocols applied by other laboratories around the world, all samples gave negative results (see CD-ROM annexes).

#### Canada

In October 2001, a Sunday newspaper printed claims that the Canadian authorities knew that FMD was present in the UK in December 2000 and that travellers entering the country before Christmas 2000 had to wade through disinfectant baths.

A letter from the Canadian Chief Veterinary Officer states that these and other claims made in the article were “absolutely not true and without foundation” (see CD-ROM annexes).

### 7.8.1 Alternative theories for the origin of the disease continued

#### Experimental farm

It is claimed that lambs infected with FMD were sold inadvertently from a Government experimental farm on the military range at Otterburn in Northumberland. The farm attempted to buy large number of lambs in a failed attempt to put the lid back on the disease.

The premises in question is the Redesdale experimental farm, run by ADAS Consulting Ltd. It has had no FMD-related activities. No FMD virus or vaccine has ever been kept there. And no livestock infected with, or vaccinated against, FMD has ever knowingly been kept on the farm. Inspection of the farm's livestock movement records since December 1999 revealed that no unusual movements of livestock either on or off the farm took place during the relevant period (see CD-ROM annexes).



# 8 THE IMMEDIATE RESPONSE

## 8.1 The Abattoir

It was around 1030 on the morning of Monday 19 February, when Craig Kirby, the resident vet at Cheale's Abattoir, made his critical phone call to the local State Veterinary Service office in Chelmsford. Things at first moved quickly. Two state vets were despatched immediately to Cheale's, arriving shortly before noon. They both confirmed Kirby's initial suspicions. This was a classic case of either swine vesicular disease or FMD. Both are exotic viral diseases which may show indistinguishable clinical signs and symptoms. There was no doubt in any of the three vets' minds that this was definitely one of the two. Whichever it was, speed was of the essence.

A form A was issued declaring the abattoir an infected area. This meant that all movements in and out of the abattoir were stopped and tracing of all contacts was started.

An enormous amount of work was then needed at the abattoir to do a full clinical survey of all the animals. Advice on cleansing and disinfecting had to be given to all the people working there. Lorry loads of animals arriving in the afternoon had to be turned back.

In accordance with their standing instructions, the vets took blood and tissue samples at around midday to send to the Pirbright Laboratory for immediate analysis. The vet from the State Veterinary Service phoned MAFF Head Office to explain her initial views. One of the Animal Health Officers from the MAFF local office drove the samples to Pirbright, around 70 miles away across London. The Animal Health Officer left Brentwood at around 1700 and arrived at the Pirbright Laboratory at 1900.

An email was sent from MAFF Head Office to the Pirbright Laboratory saying that the samples were on their way. In the event that email was never read, so the samples waited overnight at the Pirbright Laboratory before being collected the next morning. So, 12 hours of testing time had already been lost.

The first ELISA test to detect FMD (8.1.1) was started at 0900 on Tuesday 20 February. It was completed by 1330 and confirmed as a positive. MAFF was informed at 1350.

Back at the abattoir routine activity had ground to a halt. Work on slaughtering the pigs had been stopped as soon as the alarm was first raised on Monday. The process of culling infected animals under the supervision of the State Veterinary Service could not start without formal authority from Page Street.

By Tuesday morning, things had deteriorated. Many of the pigs were beginning to suffer extreme distress. Kirby himself authorised killing several of them on welfare grounds. Nothing further could be permitted until Pirbright scientists had completed their tests. After the first of these proved



BACKGROUND TO THE 2001 EPIDEMIC  
BEING PREPARED  
SILENT SPREAD  
THE IMMEDIATE RESPONSE

THE DISEASE IN THE ASCENDENT  
PRE-EMPTIVE SLAUGHTER  
JOINING UP GOVERNMENT  
DISPOSAL

VACCINATION  
THE ECONOMIC IMPACT OF FMD  
COMMUNICATIONS  
END OF THE OUTBREAK

LOOKING AHEAD  
APPENDICES



### 8.1.1 Confirmation and diagnosis

FMD is confirmed primarily on clinical grounds. A vet needs to be convinced by the visible signs of the disease. Other than to confirm the first case of a new outbreak, laboratory diagnosis is only used for equivocal cases.

During the epidemic, there was significant confusion about whether laboratory confirmation was needed. Early on, MAFF Headquarters' staff at Page Street were not convinced by the telephone reports and instructed field vets to take samples. Lack of veterinary experience of FMD and the difficulty of diagnosing sheep which did not show obvious disease signs, led to a huge volume of testing.

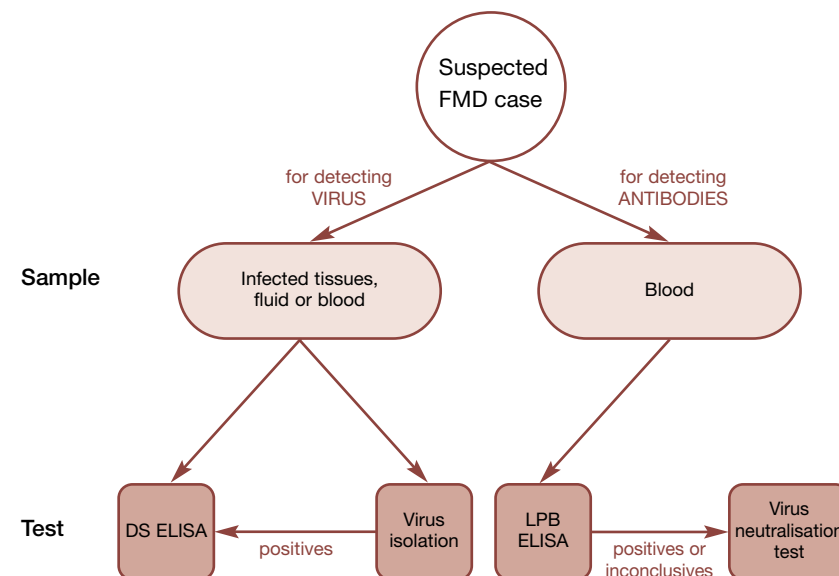
Serious delays arose from waiting. Transport of the samples to the Pirbright Laboratory could take up to one day. Infected animals were to be slaughtered immediately after confirmation, but laboratory results could take four days.

Samples from animals suspected of FMD were tested for the presence of the FMD virus or specific antibodies which animals produce as part of their immune response to infection. Generally these antibodies can be detected from around five days after animals show signs of FMD.

The ELISA tests take about four hours, but the OIE 'gold standard' tests take longer. Virus isolation takes up to four days to confirm a negative, although positive results can be confirmed sooner. Virus neutralisation tests take at least two days.

Tissues likely to be infected, such as epithelium from lesions, are tested for virus by the direct sandwich (DS) ELISA and by the virus isolation test. The DS ELISA is also used to check that virus isolation positives are indeed FMD virus.

The liquid phase blocking (LPB) ELISA is used to screen blood samples for the presence of antibodies that recognise FMD virus. Positive or inconclusive samples are put through the virus neutralisation test.



positive MAFF requested that a second be performed. That was completed later on Tuesday afternoon and it removed any remaining doubts. This was certainly FMD.

Even then the slaughter of all the affected pigs was not authorised. First, Dr Alex Donaldson, Head of the Pirbright Laboratory, needed to observe the clinical signs at first hand and collect samples. He arrived at the abattoir at about 1830 and confirmed classical symptoms of FMD in the pigs. He left at around 2000. The slaughter of the pigs began and was completed around 0100 on the following, Wednesday, morning.

By that time a farm next door to Cheale's Abattoir, had also been affected. This too was declared an infected premises, and slaughtering began there.

There are important lessons to be learned from the experience of those critical hours, from noon on 19 February until around 2000 on 20 February. That is why we have recorded in some detail what happened over that period of 30 hours. It is a time when speed can make such a precious difference. Standing Veterinary Instructions declare that, until laboratory tests are complete, a suspected case of swine vesicular disease should be treated as a case of FMD.

### 8.1.2 Slaughter of suspect pigs

The pigs at Cheale's abattoir were still alive several hours after FMD was first reported. Dr Donaldson of the Pirbright Laboratory has advised us that, in future, pigs with lesions should be slaughtered without delays and the carcasses kept for inspection, if necessary. The priority of slaughter should reflect those highest to lowest virus producers:

- pigs with generalised unruptured lesions;
- those with early developing lesions;
- those with ruptured lesions;
- the apparently healthy pigs.

With hindsight many things could have been done more quickly. Even without it, though, there are lessons that can be learned. During these precious 30 hours, the source of the infection could have been identified more quickly. Urgent phone calls could have been made to alert the Pirbright Laboratory to the samples on the way for analysis. The knowledge of Cheale's staff about the quality of the pigs received could have been sought. The expertise of their key staff would have offered at least a short list of possible sources. The Chief Veterinary Officer has told us that the records at the abattoir were hand-written and not easy to use. It took 48 hours to work through them all. Nevertheless, efficient record keeping, coupled with interviewing of the staff at Cheale's might well have indicated the index case more quickly.

By the evening of Tuesday 20 February, when the animals on the farm next to the abattoir showed clinical signs of FMD, there were at least three outbreaks of FMD in the country: one at the abattoir; one at the farm next door; and one or more other cases at a place or places then unknown, which had been the source of the virus reaching the abattoir.

At 0545 on the BBC's 'Farming Today' the next morning, Mr Ian Campbell of the National Pig Association said, *"The probability is that the infection... has actually occurred on contact in the abattoir and therefore it hasn't interfered with the vehicles that brought the pigs into that abattoir and infected these other pigs, but that is only a guess."* He also said, *"It's very serious and it requires every single pig producer in the UK to get straight out there and look at their stock and assess whether they have a problem... They should look very hard at their stock. They should identify anything which is out of the ordinary and showing lameness and immediately notify their vet for a double check to be made."*

The confirmation of FMD on 20 February led swiftly to a ban on exports on 21 February of live cattle, sheep, pigs and goats, and also of meat, meat products, milk and milk products and certain other products such as hides from these animals. But, apart from the strict controls around the places of infection, no animal movement restrictions were introduced across the country.

## 8.2 The ban on animal movements

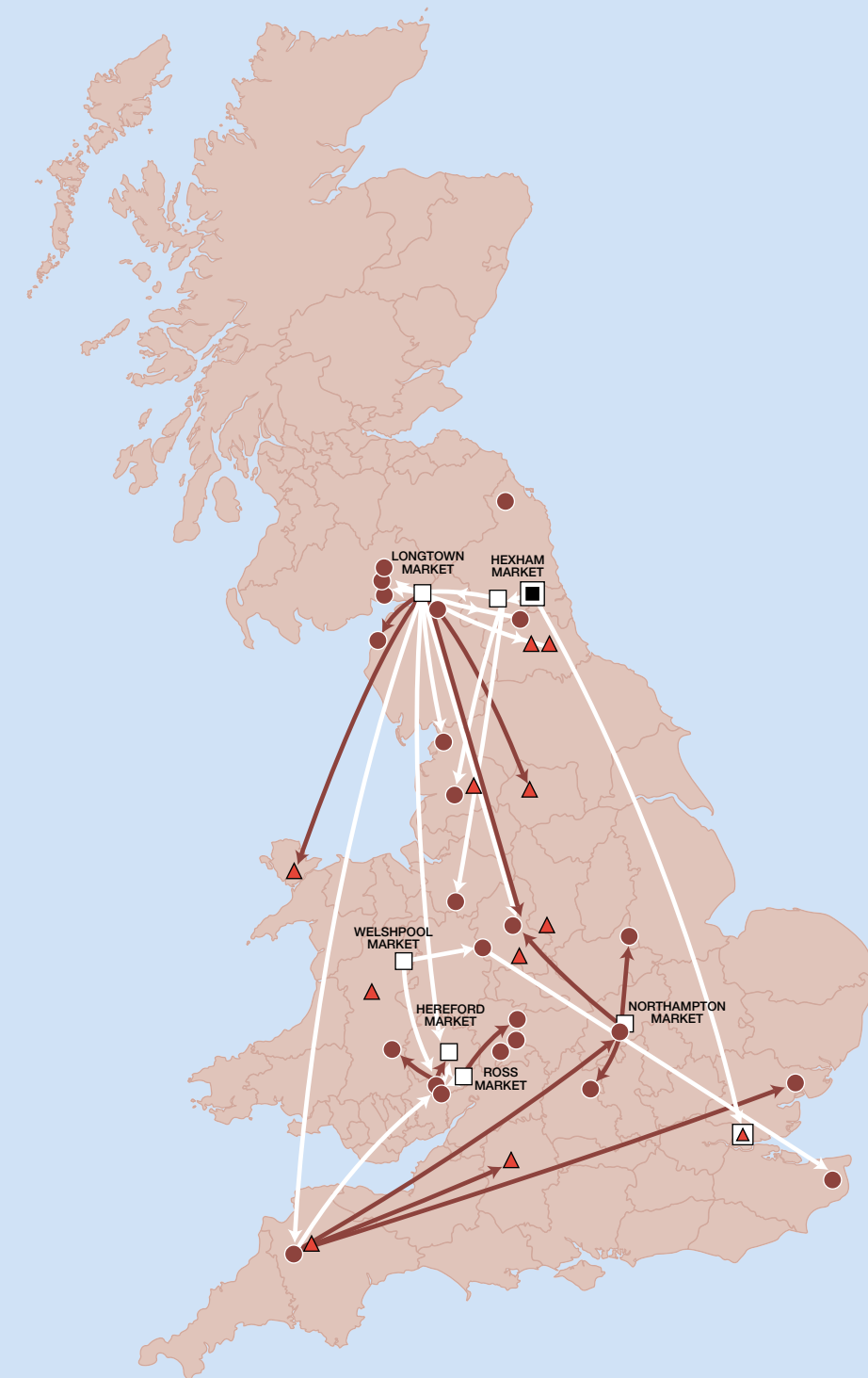
Three days later, at 1700 on Friday 23 February, national movement restrictions were introduced. That morning an order was agreed by the Minister of Agriculture, after discussion with the Prime Minister, to come into force late in the afternoon. Animals in transit were allowed to complete their journeys. We were told by a number of people that the level of animal movements that evening was unprecedented.

The decision not to impose immediate movement restrictions was criticised time and again during our Inquiry. Are these criticisms justified? Once again hindsight can distort judgement. Even today the State Veterinary Service believes it would not have had the justification or the support to introduce widespread restrictions. Given the prevailing conditions we have sympathy for this view. Movement restrictions would probably have been seen as a disproportionate response. They would certainly have been very controversial. But it is an inescapable fact that the following could have been deduced by the evening of 20 February. Somewhere around the country, a pig farm was pumping out FMD virus and putting other farms and livestock at risk. Considering what is known about the infectious nature of this disease, we conclude that earlier movement restrictions would have been justified, and should have been ready to be put in place more quickly than they were.

Between 20 and 23 February the number of animal movements was substantial. The map of the animal movements (8.2.1) that did take place during those critical days shows just how great was the traffic.

### 8.2.1 Map of animal movements before 23 February 2001

- ▲ Infected abattoir
- ◻ Implicated market
- ◻ First case discovered
- ➔ Movements on or before 20 February 2001
- Infected farm or livestock dealer
- Movements on 21 to 23 February 2001
- ◼ Index case



Source: Descriptive Epidemiology of the 2001 foot-and-mouth disease epidemic in Great Britain: the first five months. Gibbens et al. *Veterinary Record* (2001) 149, 720-743



Professor Woolhouse of Edinburgh University observed in evidence to the House of Commons Environment, Food and Rural Affairs Select Committee that:

*“If we had imposed a national movement ban on 20 February, three days earlier, our estimation is that the epidemic would have been between one third and one half that it actually was.”*

Hours mattered. DEFRA epidemiologists have estimated that in the seven hours between the order having been signed and it coming into effect, 19 additional farms would have been infected – about three each hour.

In contrast, prompted by the knowledge of the outbreak in Essex, The Netherlands introduced restrictions on the transport of susceptible animals on 21 February. Precautionary action in Britain, similar to that carried out in The Netherlands would, without doubt, have reduced the size of the epidemic.

### 8.2.2 Tough decisions early on: the Dutch experience

A devastating outbreak of classical swine fever in 1997 had led The Netherlands to review thoroughly its contingency planning arrangements for dealing with major infectious animal diseases. The importance of speed of response had been one of the key lessons learnt from the Dutch experience and was a feature of their reaction to FMD in 2001.

After the first case of FMD had been confirmed in Essex on the evening of Tuesday 20 February 2001, The Netherlands imposed a transport ban the following day on all susceptible animals imported from the UK since 24 January 2001.

On the same day, a decision was taken to ban the collection of sheep within The Netherlands except for direct movements between farms or to slaughterhouses. Sheep movements to markets, collection centres, auctions and exhibitions were prohibited. This was extended to all susceptible animals on 22 February.

On 26 February, the transport of all sheep and goats in The Netherlands was banned, even to slaughterhouses. This was extended to all susceptible animals, following confirmation of the virus in France on 13 March.

Despite the swift imposition of these precautionary measures, The Netherlands recorded its first confirmed case of FMD on 21 March 2001. The source of the outbreak is thought to have been calves imported from Ireland that had come into contact with infected British sheep at a welfare staging point in Mayenne, France. This deduction was made only after confirmation of the first cases of FMD in The Netherlands, as the system for tracking animal movements between EU Member States did not record stops at staging points in third countries. The European Commission is reviewing the use of such staging points with a view to proposing further controls.

There is an overriding lesson to emerge from comparing the UK and Dutch experiences. It recurs throughout the story of the FMD crisis. The key to effective disease control is speed, speed and more speed.

**16. We recommend that in all suspected cases of FMD, the response reflect the experience of the emergency services, where speed and urgency of action govern decision making.**

Samples should be moved to the competent laboratory by the fastest means available. A senior member of the State Veterinary Service with appropriate clinical experience should be taken to the suspect site to determine and control the response, based on a risk assessment. Decisions should be communicated quickly at all times.

There are many unconfirmed cases every year and these should not generate a disproportionate response. Action taken should be in proportion to the level of risk. There should be a mechanism whereby, if experienced vets have no doubts about the presence of exotic disease, as happened with three vets on the morning of 19 February, a fast track procedure can be developed.

**17. We recommend that the State Veterinary Service consider forming a national network of ‘flying squad’ teams capable of responding to an alert. The continuing occurrence of false alarms can then be used constructively to maintain readiness and to practise routines.**

## 8.3 The Longtown connection

On Saturday 24 February, four days after the first case was confirmed in Essex, the first case occurred in Devon. The disease was identified on a sheep farm belonging to a sheep trader. He had bought sheep from Longtown market in Cumbria earlier that month. This batch had then been distributed to a number of different locations, especially in the South West of the country, many of which were eventually to succumb to the disease.

From this weekend onward the extent of the disease spread from Longtown became clear.

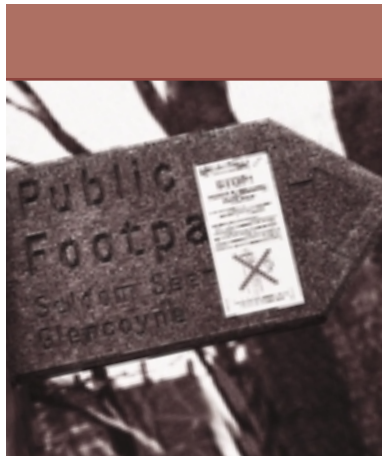
Some 25,000 sheep had passed through the market between 14 and 23 February, all of which could potentially have been exposed to FMD. They had then been dispersed widely spreading the disease silently before detection.

From 25 February, the MAFF epidemiological team began the work of tracing the sheep from Longtown. This was a slow task. With the head start that the disease already had, coupled with the enormity of the job in hand, MAFF was not well equipped to do it quickly. To complicate matters, there was the possibility that some dealing had taken place outside the market and there would be no record of those movements.

MAFF officials worked hard to trace all the contacts, but the process was slow. As late as 8 March they were still writing to farmers who had potentially bought sheep at Longtown. By then, the disease was widespread throughout the country.

## 8.4 Access: Footpath closure and its effects

In the early days of the epidemic there were understandable concerns that everything possible should be done to prevent the disease spreading. By the end of the first week and over that first weekend as the extent of the disease spread was becoming clearer, many people were urging more draconian measures, especially with regard to footpath closures.



### 8.4.1 Footpaths

There are over 150,000 miles of Rights of Way in Great Britain. Local authorities are responsible for their management.

The powers to close footpaths in the context of an FMD outbreak stem from a Foot and Mouth Disease Order (1983) which reflected the views of the Northumberland Report. Under that order areas can be declared either 'infected' (areas of about 10km radius around infected premises) or 'controlled'. Controlled Areas were conceived originally as areas where temporary restrictions would apply pending the tracing of in-contact animals.

In Infected Areas the Order gives local authorities powers to close footpaths. A wide range of outdoor activities such as hunting, shooting and certain equestrian events are also prohibited. In Controlled Areas outdoor activities would normally be allowed with only deer hunting and stalking being prohibited.

In an unprecedented step the whole of Great Britain was declared a Controlled Area on 23 February 2001, and the associated restrictions lasted around nine months.

An amendment to the 1983 Order was made on 27 February with the intention of extending local authorities' powers to restrict access outside Infected Areas and to enable 'blanket closure'. Having been hurriedly introduced, the amendment did not provide the powers intended, so a second amendment was introduced on 2 March. Under this order, local authorities could close all paths within their boundaries without the need to place closure notices on individual footpaths. In areas where there were no cases of FMD, exercise of the powers was officially subject to clearance by the Minister. In practice local MAFF officials gave this clearance.

The power to impose new blanket closures was repealed on 16 March but existing closures were unaffected.

Some consideration was given to ministerial revocation of closure. In the context of impending local elections and expected opposition from farmers and some local councillors ministerial powers were not used.

In July 2001 the Minister revoked remaining blanket closures by declaration.

### 8.4.2 Closure of footpaths: different interpretations of the same thing

**Official advice from MAFF** was qualified. The first formal guidance to local authorities, in a circular dated 6 March, stated: "[Power to restrict access outside Infected Areas] should only be used where there is evidence ... that to allow such unrestricted access would pose a potential risk of spreading the disease."

**The Prime Minister** in his Internet broadcast on 27 February had said: "...though we are not at direct risk from this disease, we can play a part, unknowingly, in spreading it. FMD is a highly infectious virus which can be picked up by us on our boots, clothes and cars and carried many miles. By staying away from farmland, by keeping off any footpaths through or next to farms or open land with livestock, we can help the efforts to eradicate this disease. We are giving local authorities today the power to enforce the temporary closure of footpaths and rights of way, but we hope people will voluntarily stay away in any case."

In the House of Commons on 28 February, **Nick Brown, Minister for Agriculture**, said "I deliberately left the issue to the discretion of local authorities, on the understanding that they would know best the local circumstances. It is for them to make an assessment of risk. ... Incidentally, if they want advice from me, I suggest that they act on a precautionary basis." (Official Report col. 921) Later in the same debate, he said "I urge local authorities to prosecute people who insist on arguing about those measures [to close paths]." (Official Report col. 931)

**NFU President Ben Gill** on 27 February 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. This could be crucial in helping us to stamp out this highly virulent disease. With new outbreaks being confirmed all the time, we are sure every responsible member of the public will support us. Remember the disease could be anywhere – not just in the restricted zones. I implore everyone once again: please, please stay away from the countryside."

The NFU was calling for widespread closure. Other organisations supported the call for caution or took their own steps to close footpaths. On 22 February the Ramblers Association advised against taking rural walks. On 23 February the Royal Society for the Protection of Birds closed its nature reserves for a week. The National Trust announced the closure of all its parks containing livestock, and the British Mountaineering Council called on mountaineers and climbers to respect restrictions and stay out of the countryside.



No one knew where the disease might crop up next. By 26 February there were FMD cases in Essex, Northumbria, Devon, Wiltshire and Wales (Anglesey); by 27 February there were also cases in Northamptonshire, Durham and Lancashire.

The Government came under pressure from many quarters to extend the closure of footpaths and restrict access to the countryside beyond the official Infected Areas. MPs from all parties argued for temporary closure of rights of way in a debate on 26 February. The Welsh Assembly was concerned that the public were ignoring pleas to stay away from Snowdonia in particular. Officials in the Department of the Environment, Transport and the Regions were aware on 26 February that widespread closure would have implications for the whole rural economy, given that tourism is a larger rural business than agriculture. But they were sensitive to the wider mood of support for closures.

The Countryside Agency reported to us that, when they issued a press release on 2 March saying that costs to the rural economy could run to £2 billion, they experienced opposition from MAFF.

The audit trail for how the decision on footpath closures was finalised is unfortunately unclear (see recommendation 35 on page 93). What is apparent, is that following a series of meetings with the NFU and other stakeholders, and dialogue between MAFF and Number 10, Ministers sought powers to close rights of way beyond Infected Areas.

It is easy to understand the pressure Ministers were under to allow closure beyond just the Infected Areas. Many stakeholders were urging the Government to take action. They did so but not as far as we have been able to determine on the basis of explicit veterinary and scientific advice.

Many submissions stated that, with hindsight, this blanket closure of footpaths was mistaken. The National Trust described it as “the most costly decision of the entire outbreak”, even though the Trust itself had initially supported closure.

Many tourist and leisure organisations realised quickly that the impact would be significant. As the realisation grew that the outbreak was unlikely to be short lived, many people began to recognise its potential impact.

The frequent changes in guidance, the lack of clarity in communication, the loss of confidence in the Government’s scientific understanding and control of the outbreak, all hindered those seeking to get consensus on reopening. Farmers under tight biosecurity restrictions found it difficult to accept that walkers would not pose a risk. The public began to wonder why a disease that reportedly did not have much of an impact on animals and for which a vaccination was said to exist should be causing so much disruption. Only with the establishment of the Rural Task Force in mid March did a strategy begin to emerge for reopening footpaths based on a process of veterinary risk assessment. There was greater appreciation of the need to get the balance right between rural access and disease control. But, in terms of the wider economic impact on tourism and the rural economy, the damage had been done.

The decision on footpath closure contributed to the costs on the economy as a whole. Once this was recognised, the decision proved very difficult to undo since the reopening process had not been thought through at the time of closure. The role of local authorities was critical.

If future disease control measures necessitate the closure of footpaths local authorities, the National Parks and major landowners such as the National Trust should be consulted fully. The possibility of keeping livestock away from key heritage sites should at least be considered. This was suggested to us in the context of keeping open sites such as Hadrian’s Wall to encourage continued tourism.

# 9 THE DISEASE IN THE ASCENDENT

## 9.1 The national perspective

By 27 February, one week after the disease had been confirmed, a control strategy at a national level was in place. The initial policy response, of slaughtering all susceptible animals on infected premises and tracing and slaughtering dangerous contacts, had been put in hand, managed by the State Veterinary Service. These measures were supplemented by the nationwide ban on animal movements. On Tuesday 27 February, footpaths in all infected areas were closed and the Government empowered local authorities to close any footpath within their boundaries if they chose to do so.

This policy was in line with the pre-existing contingency plans, based as they were on the presumption of a relatively small, contained outbreak, the associated tracings of which could be completed reasonably quickly. What the policy did not, indeed could not, take into account was that the disease had remained undetected for three weeks during which it had spread throughout the country.

The advice that the State Veterinary Service gave to Ministers was that the policy would work. It was only a matter of time. This message was passed to Number 10 and the media.

On 21 February, Nick Brown, the Minister for Agriculture and Jim Scudamore, the Chief Veterinary Officer held the first of a series of daily press briefings on the state of the disease and the progress of the response, a development that was welcomed by the media. These briefings continued until 25 March.

The media's response to the disease in the first two weeks was broadly sympathetic. The view was that MAFF recognised the nature of the infection and the way it was spreading, as well as how to control and then eliminate it.

Other government departments were not greatly involved at this stage, largely because MAFF was not asking for help. However, on the first day of the outbreak, officials from the office of Baroness Hayman, a Minister at MAFF, contacted that of John Spellar, a Defence Minister, to raise the possibility that some form of military assistance might be needed if the disease could not be confined to one area.

The Cabinet Office carried out its traditional role of co-ordinating discussion across government. Over the following three weeks, official meetings were held to inform other departments of the impact of the disease and the measures being taking to control it. With the benefit of hindsight, there was much more that could have been done at this stage if information on the



BACKGROUND TO THE 2001 EPIDEMIC  
BEING PREPARED  
SILENT SPREAD  
THE IMMEDIATE RESPONSE

THE DISEASE IN THE ASCENDENT  
PRE-EMPTIVE SLAUGHTER  
JOINING UP GOVERNMENT  
DISPOSAL

VACCINATION  
THE ECONOMIC IMPACT OF FMD  
COMMUNICATIONS  
END OF THE OUTBREAK

LOOKING AHEAD  
APPENDICES



actual state of the disease in the country had been available. For example, the Cabinet Office Briefing Room, known as COBR, which was to prove so effective in marshalling the full resources of Government to bear on the disease, might have been opened at this stage rather than 31 days into the crisis.

The outbreak was first discussed in Cabinet on 1 March. The minutes of that meeting indicate that the Minister of Agriculture gave a factual account of the disease control measures in place, which it was hoped would contain the spread of the disease. There was no discussion of the outbreak at the following week's Cabinet, due to the imminent budget. The next opportunity was the Cabinet of 14 March. By this stage, the impact on the tourist industry was becoming more apparent and was raised for the first time. On-site disposal was also discussed. The Minister reported that the priority remained to control and eliminate the disease. As yet he had not asked for any assistance from the Ministry of Defence other than to borrow veterinary officers.

At a national level, the shortage of qualified vets was the one real area of concern outside MAFF. The Chief Veterinary Officer wrote to his counterparts in Australia, New Zealand, Canada, USA and the Republic of Ireland on 23 February to request help. He followed this up on 25 February with letters to his opposite numbers in EU Member States.

Access to financial resources did not limit MAFF's response. The Treasury, in evidence to our Inquiry, told us that they had recognised at an early stage that disease control would cost more than MAFF's budget would allow. Aside from the need to ensure financial propriety and value for money, the Treasury placed no constraint on the resources available to tackle the outbreak.

MAFF experienced difficulty in converting offers of help from other government departments into practical reality. Promises of extra staff were sometimes not translated into action by those making them. And, where extra staff were made available, for example, additional press officers, the organisation was not in place to use them effectively. The Prime Minister helped address these difficulties by stating clearly that, whatever resources were needed to tackle the disease, should be made available. This was important, as it is extremely difficult to mobilise cross-government resources without such a clear statement of will from the highest level.

## 9.2 The view from the ground

However, at ground level, things were deteriorating.

On the weekend of 24-25 February the disease reached Devon. A vet there told us that he had been taking a walk on the beach with his family when he received confirmation of the first outbreak in the county. When he realised its location – at a farm belonging to a sheep trader – he said his heart sank. He decided to continue with the walk but told his family that they would not be seeing much of him for many weeks to come. Similarly, from a different perspective, the Head of Personnel within the State Veterinary Service told us that she recognised, during the same weekend of 24-25 February, that there was likely to be an “exponential” increase in the demand for vets and support staff.

Demands for manpower were indeed to grow exponentially. A single infected premises requires, as a minimum, a vet supported by a two-person team. After working at the infected farm, the team is classed as ‘dirty’ and has to be stood down for a period of time. The original infected premises generates a further set of farms to be traced and checked, each requiring yet another veterinary team. Meanwhile, in the early weeks of the outbreak, two or three other infected premises might be added each day. This typical scenario could increase the demand for field operatives very quickly indeed (9.2.1).

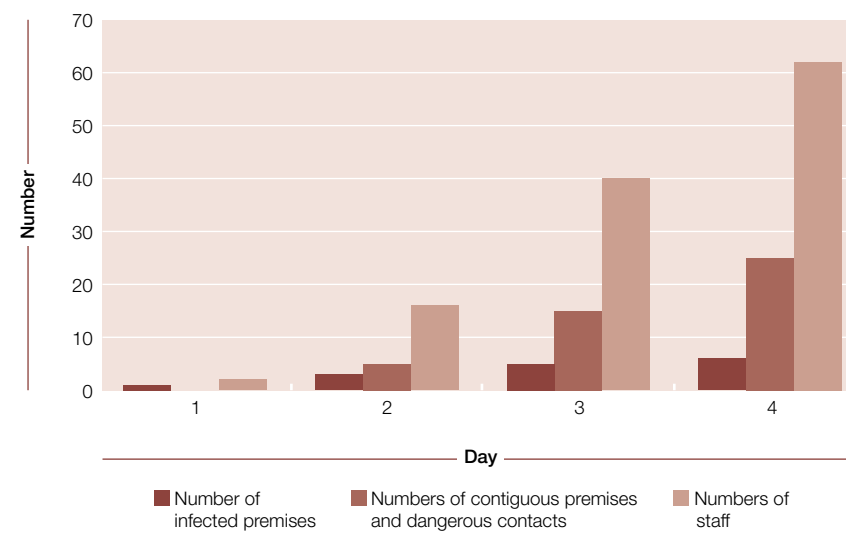
On Monday 26 February, once the first implications of the Longtown spread were becoming known and the first cases had been confirmed in the North East, leave for all State Veterinary Service vets was cancelled. The Prime Minister echoed the Chief Veterinary Officer's appeal for vets to volunteer.

Discussions took place about how to reduce vets' workloads to enable them to concentrate on core veterinary tasks and about how to allocate non-veterinary tasks to other staff. Some MAFF regional personnel were directed to support the immediate response. However, there were still too many non-veterinary tasks that, at this stage, had to be carried out by the most precious resource of all – the vets themselves.

By the beginning of March, there was a fast growing need for non-veterinary staff with a wide range of skills to which MAFF senior management was not sufficiently alert. The State Veterinary Service, particularly during the early stages, had tended to assert that it was “coping with the outbreak”, and this was not challenged from the centre. As a result, no systematic effort was made early on to acquire additional, non-veterinary resources.

Part of the reason for this was cultural. The State Veterinary Service valued its independence and reflected this in its approach. There had been tension for many years within MAFF between administrators and vets, in general terms, no group would willingly choose to admit that it was not coping. Indeed, the State Veterinary Service may have felt that its successful handling of the classical swine fever outbreak of 2000 demonstrated that it could cope.

### 9.2.1 Build up of field staff



### Other activities expanding rapidly:

- Slaughtermen
- Vets/Animal Health Officers for surveillance
- Foot patrols
- Cleansing and disinfecting
- Disposals
- Licensing
- Mapping
- Epidemiology and tracings
- Finance and contracting

Yet the warning signs of the fragility of the State Veterinary Service resources were there in 2000 and not picked up soon enough in 2001.

The Service was exhausted by the classical swine fever experience. Around 80% of its vets had been drawn on to tackle an outbreak that had consisted of just 16 cases. During the FMD outbreak that total was reached nationally on 27 February. By the end of the second week of the crisis, there were five times as many cases. The system was rapidly becoming overwhelmed. Clear messages about the severity of the worsening crisis were not getting through to senior management or Ministers.

At the same time, communications from senior management downwards also appeared to have difficulty reaching their target recipients. The message that FMD was an overriding priority did not filter through effectively to the rest of the Department. A human resources manager at DEFRA told us that the Department had a 'silo mentality' and individual groups and managers not directly involved with the outbreak remained focused on their own targets. There was no incentive for them to release staff to help in the fight against FMD.

It is a shortcoming that there was no inbuilt process for providing an alternative means of reconnaissance for MAFF's senior management.

Later in the crisis, the NFU played an important role in the Joint Co-ordination Centre by providing an additional source of information about what was happening on the ground.

### 18. We recommend that use be made of alternative sources of information and intelligence during crises.

Local police forces offered support, although there were differing views on what their role should be. For example, the police forces of Devon and Cornwall provided farm gate security at infected premises, viewing their role as one of reassuring and communicating with the local community. Avon and Somerset police, on the other hand, decided that a local security firm would handle this job better.

## 9.3 Management information systems

The situation was not helped by the difficulty in obtaining robust and reliable management data. It is impossible to tackle a crisis effectively without information about the developing situation and the performance of the emergency response measures. The management information systems available to MAFF at the start of the outbreak were not adequate.

The root of the problems can be traced back several years. The need for better use of information technology in disease control had been identified in the 1999 Drummond Report. Following the implementation of a major network solution in the early 1990s, staff had become increasingly comfortable with new technology. There was enthusiasm within the State Veterinary Service for applying new technology to disease control and planning.

However, in 1998, MAFF was set a budget that was seen as very tight. This came on top of a series of difficult spending settlements over a number of years. As a result, by the beginning of 2001, MAFF's computer systems had suffered protracted under-investment.

The earlier experience of dealing with classical swine fever had highlighted the importance of management information systems. However, development work had to compete for a limited pool of resources and made slow progress. When FMD broke out, MAFF's ability to record and analyse data about the spread and management of the disease was still based largely on a patchwork of unconnected systems operated by individual regions, some of which used only paper records.

To its credit, MAFF then moved quickly. On 23 February, talks were held between MAFF's Information Technology Directorate and senior vets on developing a database for recording information about FMD cases, including visits and restrictions. This system later became known as the Disease Control System. The principle behind it was the replacement of existing systems with a single, national database.

Building a new computer system, particularly one as large and complex as the Disease Control System, during a national crisis was exceptionally difficult. Months of work was compressed into two weeks. We commend the work of those involved in achieving this.



### Geographical information systems

Accurate and up to date geographical information, including data on the limits of infected areas, the location and boundaries of infected premises and the spread and control of the disease, was vital to the effective management of the outbreak. MAFF set up a dedicated team at the Page Street Departmental Emergency Control Centre early on to handle the provision of this information.

MAFF's Geographical Information System was fed from two sources. The Disease Control System, which provided information on the addresses of infected premises and the Integrated Administration and Control System, or IACS, a business system used for payment of Common Agricultural Policy subsidies. IACS generated grid references for every field belonging to a particular farm, but it was not designed specifically for disease control purposes.

The main output of the Geographical Information System was a set of detailed maps made available centrally and to all the regions.

The Geographical Information System, and many of the decisions that were based on the data generated, particularly in relation to the 3km and contiguous culls, were the subject of often fierce criticism on the ground. As one farmer in Yorkshire told the Inquiry, *"what seems to be extraordinary is that there doesn't seem to be any link-up with all the work that the farmers have put in over the years doing their IACS registrations and all the field numbers and grid references"*.

Information was frequently out of date, on occasion by several years. It was sometimes difficult to pinpoint the location of livestock accommodation within an individual holding, or to identify the operator of the land.

There were particular difficulties with holdings covering more than one site. MAFF's recent attempts to rationalise the holding number system, gave rise to problems in identifying land ownership.

Many of the problems experienced by the Geographical Information System arose from the fact that one of the main elements had been designed for purposes other than that of controlling a major outbreak of a highly infectious animal disease. Many elements central to disease management, were not critical for payment of agricultural subsidies. Getting ahead of a disease as virulent as FMD permits little opportunity for challenging the data. It must be right first time.

If databases constructed for other purposes are to be used to support disease control they must be fit for that purpose in terms of design, accuracy and currency of data. However, it is preferable to design a system for the specific purpose of disease control.

**19. We recommend that DEFRA's Geographical Information System and the Integrated Administration and Control System (IACS) be designed so that they can be used more effectively for disease control purposes.**

### Central data entry

The Government's Memorandum to this Inquiry (paragraph 2.8.14) stated that the Disease Control System "...was rolled out on 6 March 2001 and...was available both locally and to the Departmental Emergency Control Centre in Page Street". This was an overstatement.

On 6 March, the ability of regional Disease Control Centres to enter data on the system locally was limited. Information on how the outbreak was being handled on the ground had to be sent to Page Street from the regions by fax, phone or email and entered centrally.

However, by this stage, the regions were becoming increasingly beleaguered. Information gathering slipped down the list of priorities for the teams on the ground. As a result, the information fed into Page Street was patchy. To make matters worse, because of the relatively small number of staff at the centre, backlogs in data entry built up.

Central data entry was not going to be up to the task. Although MAFF again moved quickly to enable information to be entered locally, it was not until the end of April that the last local systems in the regions could be turned off. Even then, it took some effort to persuade certain Disease Control Centres to abandon the local systems in favour of one national system.

For at least three critical weeks in March, despite the effort that went into their development, systems for collecting key management information on the handling of the disease were ineffective. They remained only partially effective until the end of April 2001.

**20. We recommend that DEFRA lay out milestones for investment and achievement for improved management information systems.**

**21. We recommend that data capture and management information systems be kept up to date and reflect best practice.**

**22. We recommend that the contingency plans of DEFRA, the Scottish Executive and the National Assembly for Wales specify the measures needed during an epidemic to monitor progress and report to key stakeholders.**

**23. We recommend that standard definitions of all important parameters of information be agreed in advance.**

## 9.4 The tasks on the ground

On the ground, heroic efforts were made to tackle the infection and contain its spread.

In every area with significant presence of the virus a Disease Control Centre was established. The logistical effort involved was enormous, let alone the operational challenges facing the staff once the centres were set up. It is a tribute to everyone that so much was achieved in the face of the odds against them.

“If you have a guy in a uniform who looks like he can go into the jungle and take people out; that’s a really positive communication tool.”

Senior Government Official  
[of Brigadier Birtwhistle]

The outbreak was traumatic for everyone it touched. Many people sustained extreme working patterns, often 12 or more hours a day, seven days a week for long periods. They absorbed a great deal of emotion from farmers and others who were in considerable distress. Many staff, often at quite junior levels, endured abuse and intimidation.

Some suffered breakdowns. Some are still suffering.

Training on how to cope with stress was patchy. As the outbreak progressed, counselling and welfare provision was made increasingly available. However, it was not until April that some managers began to understand the need for staff to take a break from their duties.

Disease Control Centre staff were trained mainly on the job. At the start of the outbreak, there was a lack of clarity over roles. This was largely resolved by mid-April. However, it proved difficult in practice to disseminate lessons learned or best practice developed, because human resource management was focused principally on staff recruitment. Some good practice was developed, such as regular telephone conferences for Regional Operations Directors.

Regional Centres received many offers of help from the local community. However, there was no mechanism in place to manage this response, so many of them were unable to take up these offers. This gave rise to frustration and some resentment among local people.

**24. We recommend that contingency plans at regional level include mechanisms for making effective use of local voluntary resources.**

Efforts were focused, particularly in the early stages, on obtaining the large numbers of veterinary and administrative staff, and the goods and services necessary to mount an effective response to the disease.

Financial control systems were not up to the task. MAFF frequently had to pay over the odds in exchange for speed of delivery. The Department strayed from strict observance of its normal guidelines when awarding contracts.

The National Audit Office report contains a more detailed account of this aspect of the outbreak.

**25. We recommend that dedicated control systems be ready for use in a sustained emergency, and regularly tested as part of the contingency planning process.**

**26. We recommend that the processes for procuring and delivering the necessary goods and services from external sources during a crisis be reviewed. Systems should be tested to ensure they can cope with unexpected increased demands.**

**27. We recommend that priority be given to recruiting accounting and procurement professionals to operate in emergency control centres during a crisis.**

### 9.4.1 Setting up a Disease Control Centre

Setting up a Disease Control Centre was a complex operation. Considerable human, financial and material resources needed to be brought together very quickly.

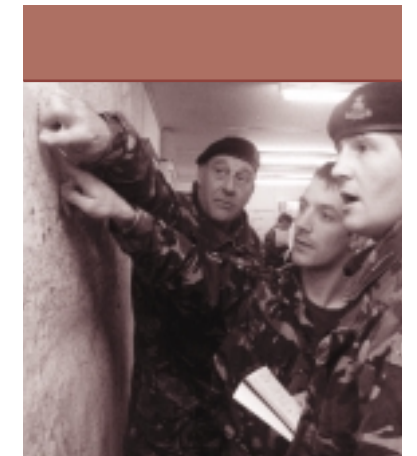
For example, during the outbreak, the veterinary staff available to the Carlisle Centre increased from six to 200. Administrative staff rose from 31 to 250. At the peak there were 400 technical staff, compared to five before the outbreak. An entirely new force of 200 military personnel was brought in.

By the time the effort was at its peak, in April 2001, the Carlisle Disease Control Centre had acquired the following assets:

- 156 Portacabins & toilet blocks
- 217 Articulated wagons
- 60 Eight-wheeler skip wagons
- 60 Eight-wheeler rigid wagons
- 8 Six-wheeler wagons
- 7 Four-wheeler wagons
- 102 Telescopic handlers
- 22 Low loaders
- 300 Hire cars
- 6 Drinks machines
- 8 Microwaves
- 5 Main servers
- 689 Computers
- 114 Printers
- 720 Desks
- 838 Chairs
- 254 Cabinets
- 316 Pedestals
- 114 Fans
- 67 Drawers
- 31 Air conditioning units
- 16 Refrigerators
- 15 Book cases
- 2 Boilers for coffee etc
- 62 Fax machines
- 52 Server hubs
- 42 Photocopiers

It was not just a question of getting hold of people and equipment, but also building the infrastructure. It needed telephone lines. It needed services such as electricity, water, gas and waste handling. Financial and personnel systems had to be put in place, including support mechanisms for staff many of whom were working under intense pressure. It needed effective channels of communication with the media and the local community. New staff needed basic training. The managers had to bring the whole thing together to make it work. Many staff were strangers to each other.

Setting up a Disease Control Centre represented a major achievement. Many people told us of their admiration and respect for the effort made by local staff. Nevertheless, the magnitude of the task reinforces several themes of our findings, including: the importance of thorough contingency planning involving everyone with an interest; the need for Government to mobilise its wider resources in a joined-up manner; the imperative for first-class communications with people in the local community affected by a crisis.





## 9.5 Slaughter policy and practice

Unprecedented numbers of animals were slaughtered during the outbreak, not only as a direct result of the disease control culling strategies but also because of the welfare problems caused by movement restrictions. The Livestock Welfare (Disposal) Scheme is discussed separately in section 12.7.

The basis of the control strategy was stamping out. This involved culling infected animals 'as soon as possible' coupled with the tracing and slaughtering of dangerous contacts, that is, animals thought to have been exposed to the disease. Other animals within a surveillance zone around the infected premises were then monitored closely. The Veterinary Instructions refer to 'slaughter with all practical speed' and 'immediate slaughter' following confirmation. There was perhaps an unstated assumption that confirmation itself would be speedy. In the early weeks, nothing was explicitly said to emphasise the importance of quick report-to-slaughter times. We discuss in section 10 the consequences of this.

Many of the circumstances during the 2001 epidemic were distressing for all concerned, including the farmers and their families whose animals were being destroyed, the vets supervising the destruction, the slaughtermen operating in conditions far removed from the automation of the abattoir. We heard harrowing accounts from many individuals during our regional visits. In some instances, many of which were reported in the media, slaughter was poorly carried out. The RSCPA expressed particular concern that piece rate payments to slaughtermen encouraged them to cut corners. The RSCPA received 130 complaints and investigated 83. While the aim must be to eliminate any cause for complaint, we believe these relatively low numbers show that in the majority of cases an unpleasant task was conducted effectively, often in very difficult conditions. Many farmers praised the manner in which the slaughtermen did their job. One submission said 'there were Government inadequacies in every area bar slaughter'.

But there were problems of delay. In the first few weeks of the outbreak, the ideal, only later made explicit, of slaughtering within 24 hours of report was very far from being met. In the first four weeks, one quarter to one third of infected premises were culled within 48 hours of owner report and only one in 10 was culled within 24 hours. Sometimes reports came in after dark: animals that were farmed extensively had to be gathered up; stockades had to be built; health and safety assessments had to be undertaken. Stock had to be valued and valuations were often disputed even though Veterinary Instructions limited the permissible delay to at most 12 hours.

The evidence presented to us did not confirm that valuation contributed significantly to delay. FMD status reports to the Joint Co-ordination Centre and COBR do not mention valuers as a problem whereas they do mention, for example, shortage of vets and slaughter equipment.

Nonetheless, it was suggested during March 2001 that valuation was causing delay. As a result, a system of standard values was introduced. Legislation did not allow compulsory standard values. The standard values were pitched generously to encourage farmers to take up the new system. In the event, only 4% of farmers made use of the standards. We heard evidence that the most significant effect of the standard valuation system was to inflate the value of culled animals, increasing the amount of compensation that had to be paid.

The standard valuation system was introduced to address a problem that may not have existed to any significant degree. It generated a new problem in its own right.

The valuation process and the financial implications for compensation are discussed in greater detail in the National Audit Office report. We return to compensation and insurance in section 17.

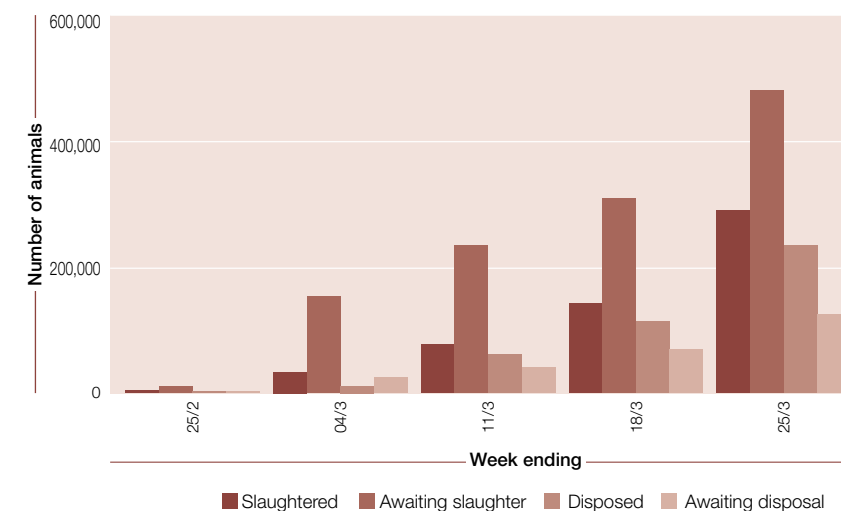
Before the introduction of slaughter on suspicion in late March there were delays of up to 96 hours while test results were awaited in around 12% of cases where diagnosis was uncertain.

Data supplied by DEFRA indicate that mean report-to-slaughter times were in the order of three days in the first weeks of the outbreak. The growing shortage of 'clean' veterinary resources limited the ability to maintain surveillance and tracing activity. In Cumbria, in an attempt to manage the scarcity of vets, a 'triage system' was introduced. This meant that, if a reported case with classic symptoms was within 3km of an existing case, then a less than fully-quarantined vet would be allowed to attend. On 10 March the Chief Veterinary Officer reduced the stand-down time for dirty vets from five to three days, stating that this was an 'informed' decision not simply a response to shortage of vets.

"I worked at one time or another with six slaughter teams. All were at least adequate and several of them were absolutely first class. .... Slaughter seemed to have processed very smoothly, and many owners commented on the smoothness and humanity of the operation."

*Temporary Veterinary Inspector  
employed in Gloucester,  
19 March – 19 April 2001*

### 9.5.1 Slaughter and disposal of animals



Other parts of the Veterinary Instructions, relating to the presence of veterinary officers at slaughter, were compromised in some areas by scarce resources. The Royal College of Veterinary Surgeons submission to the Inquiry says that it was instrumental in reversing an attempt to reduce supervision of slaughter to as little as one Temporary Veterinary Inspector per 10 farms. A submission from a Temporary Veterinary Inspector made clear that the Royal College of Veterinary Surgeons accepted that some compromise of best practice was necessary given the other pressures of the outbreak. We also accept that there had to be some compromise given the unprecedented nature of events. But we believe that better contingency planning and speed of response could have limited the scale of the culling required and the associated need to compromise on good practice.

As the realisation grew that delays were occurring and contributing to spread, the pressure for further slaughter intensified. Slaughter on suspicion removed both the need to tie up a vet in surveillance of uncertain cases and the wait for test results. In mid May some 90% of slaughter on suspicion cases in sheep had been tested. Of these, between 5-10% tested positive. Slaughtering of stock on contiguous premises only occurred if the slaughter on suspicion case tested positive. The slaughter on suspicion policy put vets under pressure. We heard from many who were concerned at the number of animals culled on suspicion that subsequently tested negative.

Although relatively few submissions to the Inquiry raised the practicalities of the slaughter processes, some made proposals to enhance the efficiency and effectiveness of any future slaughter scenario. These include: conducting an audit of slaughter capacity, including those licensed to kill large animals, with a view to maintaining up-to-date records to draw on in an emergency; developing further a strategy for killing in the field where this proves necessary; considering an 'ID' or 'green card' system for licensed slaughterers; and banning the use of shotguns.

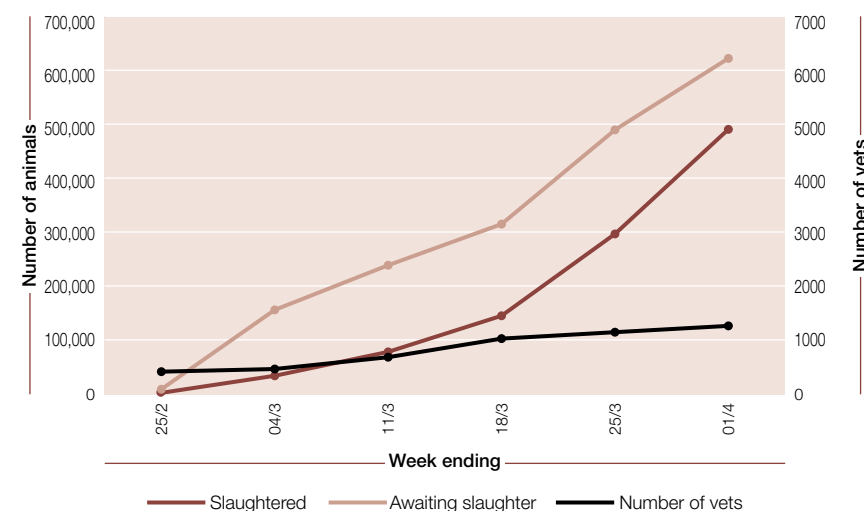
The RSPCA and the Humane Slaughter Association were present at some culls. A suggestion that slaughter should be open to independent observation by such organisations also warrants consideration provided that, in practice, this would not create additional potential for delay.

**28. We recommend that DEFRA revise its guidance and instructions for slaughter.**

## 9.7 Under control?

By Sunday 11 March, three weeks after the disease had broken out, 164 cases had been confirmed. A number of disease clusters had begun to emerge across the country (9.7.2). Disposal problems were mounting, particularly in Cumbria, where over 40,000 carcasses lay rotting on the ground. The rate of increase of animals awaiting slaughter was vastly outstripping the growing number of vets being deployed (9.7.1). The logistical machinery for dealing with the epidemic was inadequate for the task.

9.7.1 The growing demands of slaughter, 20 February to 1 April



The process of tracing movements from Longtown market had been slow. MAFF had issued a news release the previous Thursday, 8 March, asking farmers for help in tracing sheep movements from Longtown as it believed that there was a substantial number of sales which took place 'out of the ring' by private transaction and which may not have been recorded. In an internal minute to officials on Friday 9 March, the Chief Veterinary Officer said it was difficult to ascertain the extent of the FMD outbreak and pointed to the following two weeks as being crucial in determining whether it would continue to escalate or level off.

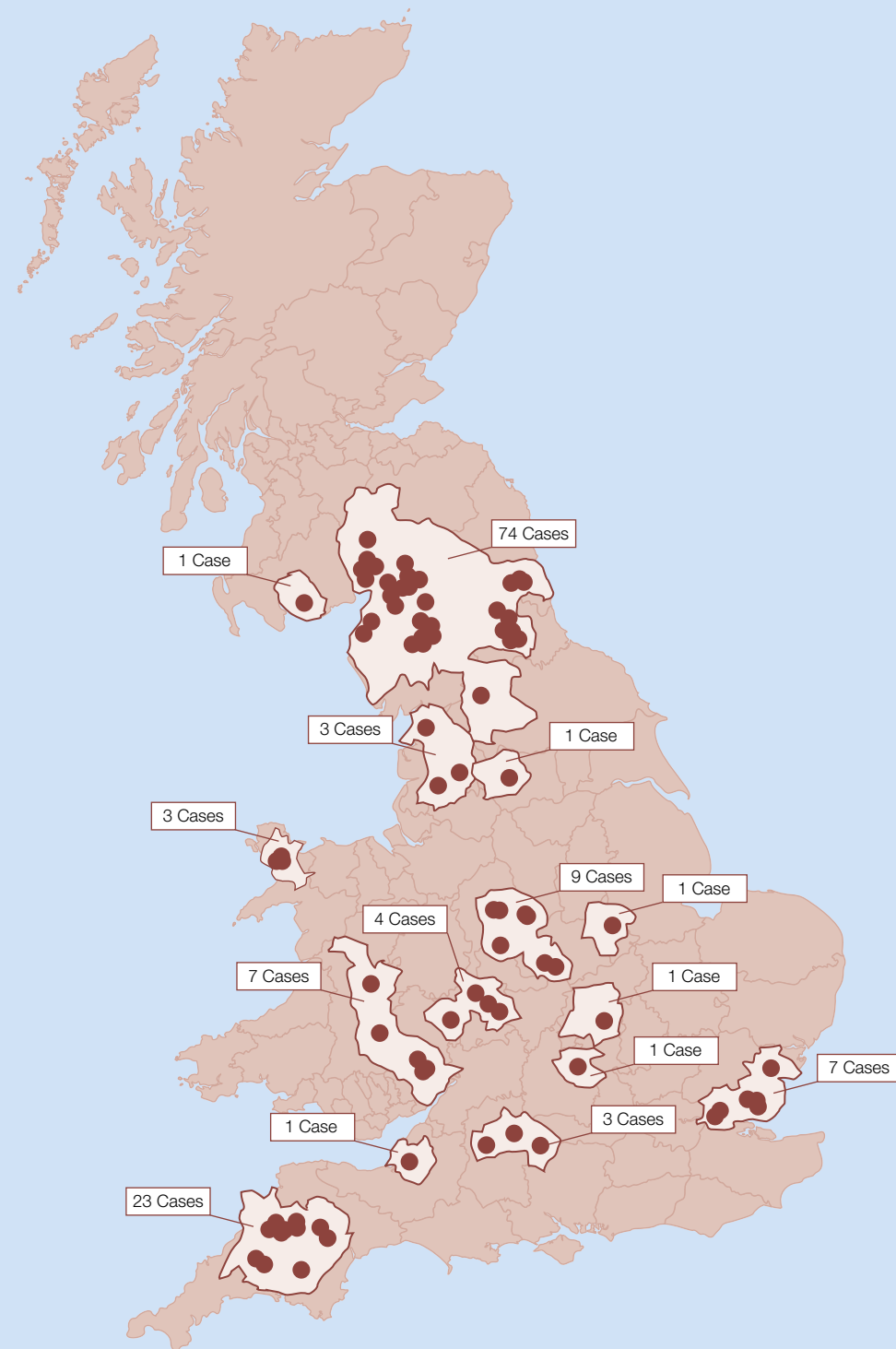
On Sunday 11 March, the Minister of Agriculture, Nick Brown, during an interview on the BBC's Breakfast with Frost programme, made a number of comments to the effect that the disease was under control. Indeed he stressed that he was "*absolutely certain*" that the disease was under control. A transcript of the interview is published in the CD-ROM annexes. The remarks were widely reported in the media on Monday 12 March and subsequently.

It is understandable that the Minister should have sought to reassure the public about control measures already in place. However, his comments did not reflect the situation on the ground. The disease was, at this stage, out of control by any reasonable measure (9.7.2). Thirty-four cases of FMD had



## 9.7.2 Map of the disease as at 0800 11 March 2001

○ Confirmed Cases



been confirmed in the two days leading up to the interview. A further 24 would be confirmed on 11 March. On 12 March, the day after the interview MAFF scientists, reporting internally the findings from their predictive computer models running in the previous week, made a tentative assessment that there might be 1,000-2,000 cases in total.

The Minister's comments contributed to the loss of trust on the part of rural communities. Many people, including some of those directly involved in managing the outbreak, still find it difficult to reconcile their experiences during this period with the notion of the disease being under control. The following extract comes from the transcript of one of the Inquiry's public meetings: "...night after night on television news we had Jim Scudamore or Mr Brown, sometimes the Prime Minister, Professor King, it is under control, it is completely under control, it is definitely under control and we felt absolutely insulted and patronised by these lies that we were told. And furthermore it did a great deal of lasting damage because it meant that we are all now so completely cynical about anything the Government says. It has destroyed trust, trust takes years and years to build up and it can be destroyed overnight, and that is one thing that happened."

The Minister's comments also sent a message to Government as a whole that the outbreak was being comprehensively managed by MAFF. It was another 11 days before COBR was opened (section 11).

### 9.8 The impact and timing of the involvement of the military

Of the many questions that were posed up and down the country at our public and round-table meetings, few were asked more often than: "Why, given the state of the disease, and the failure of the existing administrative structures to cope, were the armed forces not brought in sooner?" It is a compelling question to which there is no obvious answer.

We received many views. The delays may have been due to a desire to avoid sending negative political messages about the gravity of the crisis. They may have been caused by MAFF's reluctance to ask for help. Or they may have occurred simply because central government did not appreciate the sheer size of the task.

Whatever the reason, the arrival of the military heralded a positive step change in the management of the disease.

In fact, the Ministry of Defence had been alerted on 20 February to the possibility that the armed forces might be called upon to help. In response to a request from MAFF, the Ministry of Defence deployed a limited number of military vets on 14 March. By this time, however, the perception among the public and in the media was that the disease was running wild. Large numbers of decomposing carcasses were awaiting disposal, giving rise to both a general risk to public health and great distress for those directly affected. Calls for full-scale military deployment were growing.

Over the weekend of 17-18 March, two officers with expertise in logistics were despatched to MAFF headquarters to scope out the contribution the armed forces might make. Although the need to inform local military

commanders to ensure that training manoeuvres did not aggravate the spread of the disease was set out clearly in the existing contingency plans, references to the role the armed forces might play in disease control were limited to the following: "If any emergency should arise where assistance from HM Forces is required, Head Office should be consulted immediately" – Veterinary Instructions chapter 3, paragraph 9.

The civilian authorities may have held the view that what the armed forces could best provide was large scale manpower to assist with slaughter, burial pits and disposal. In fact, that was not the case. There were ready sources of access to those. Brigadier Birtwhistle who eventually led the efforts to tackle the disease in Cumbria told the Inquiry, *"that is what the Yellow Pages is for"*. What was really lacking was logistical expertise and, more generally, the leadership and management skills needed to handle a crisis. As one farmer told the Inquiry, *"...one of the first things the army did when they moved in here was to find knowledgeable local people, they used local contractors, local hauliers and they used their knowledge to run their operation as efficiently as possible."*

The two officers' work over that weekend resulted in the deployment of military personnel in Devon on 19 March and Cumbria on 21 March, to be followed by further deployments in other regions. Critically, a Headquarters element of 101st Logistical Brigade was despatched to MAFF HQ on 23 March to assist with logistic co-ordination and planning. The Commander of the Brigade was subsequently appointed Deputy Director of Operations in the Joint Co-ordination Centre on 26 March.

The armed forces in the regions worked alongside the Regional Operations Directors and the existing Divisional Veterinary Managers. This approach was, in the worst affected areas, finally to bring the disease under control. This could and should have been done earlier.

However, we have been told by several senior officers that there may be circumstances under which the military is unable to provide support on the same scale as during this FMD outbreak. Military duties may mean that the availability of the armed forces to assist with the management of domestic crises is restricted.

**29. We recommend that as part of the mechanisms to trigger the wider Government response, the military be consulted at the earliest appropriate opportunity to provide advice and consider the nature of possible support.**

**30. We recommend that as part of its contingency planning, DEFRA, the Scottish Executive and the National Assembly for Wales, working with the Civil Contingencies Secretariat, examine the practicality of establishing a national volunteer reserve trained and informed to respond immediately to an outbreak of infectious animal disease.**

## 9.9 Scotland

In Scotland, action was more rapid. The first outbreak was confirmed in Lockerbie on 1 March. Immediately, an operation swung into action to manage the emergency. This was, in our view, an example of the disease outbreak being handled as effectively as possible given the circumstances. Without doubt, the experience of the Lockerbie air disaster some 12 years earlier facilitated cross-agency working. This was not, however, the critical factor. Other areas of Britain without such experiences were effective – Staffordshire and Lancashire being good examples. The components of the effective response shown in Scotland were as follows: proper planning and rehearsals; access to all the senior people in the relevant agencies; short chains of command up to and down from the centre; decision making devolved as far as possible to local level; good management information systems; effective computer systems and links; effective communications internally, and externally both with the media and with key stakeholders.

In section 10, we set out the role that the Scottish Executive played in the development of the 3km sheep cull north of the border. Some people have argued that, given the devolution on policy on animal health matters to Scotland, there should also be devolution of the role of the State Veterinary Service. On the face of it, it is an unusual arrangement whereby policy on animal health is devolved to Edinburgh, whereas field operations work is still governed from London. However, infectious diseases do not recognise internal boundaries and borders. We believe therefore that the existing arrangements and a national State Veterinary Service should be maintained and do not recommend any further devolution of the Service in Scotland. Sensible local delegated responsibilities are already in place and worked well during the 2001 epidemic.

## 9.10 Wales

The National Assembly for Wales has published its own assessment of the outbreak and lessons to be learned (in the CD-ROM annexes). The National Audit Office's summary has also been reproduced, in the appendices to the Inquiry Report. In contrast to Scotland, the National Assembly for Wales lacked full legal powers to take decisions alone on disease control. It was able to make legislation separately on imports and exports but had no role to play in the declaratory orders designating infected areas in Wales. It had no power to make decisions on animal movement restrictions. In accordance with the Animal Health Act 1981 and the Transfer of Functions Order 1999 (SI999/672), the National Assembly for Wales legislated jointly with the Department, nationally, to enable a consistent and uniform approach to be undertaken by the enforcement bodies.



“When agriculture suffers disease or other shocks the knock on effect to the rest of the rural economy is sharp and severe.”

Country Land and Business Association

This was a significant source of tension. The then Minister of Rural Affairs, Carwyn Jones, told us that he was seen as politically responsible for the management of the crisis in Wales even though, constitutionally, he was not. He had held daily press conferences for the first month and regularly thereafter. The National Assembly for Wales had also set up telephone helplines about the outbreak. The fact that information was being imparted in this way reinforced assumptions that the National Assembly for Wales was taking decisions and had legal powers to act alone.

The National Assembly for Wales has identified several occasions, particularly with regards to changes to the licensed movement regime, when it failed to find out about significant policy decisions or developments until the last moment, leaving little time to prepare staff on the ground or brief Assembly Ministers. Despite the presence of Assembly staff in London acting as a link with departments in London and COBR, the pace of developments meant that communications were sometimes confused. The Minister told us that he needed the same legal powers as his Scottish counterpart, although this was not a call for a separate State Veterinary Service.

Political responsibility without power is uncomfortable. We understand why the National Assembly for Wales believes that it should be given constitutional powers, and the appropriate resources for animal health issues related to disease control in Wales. We are not convinced, however, that further fragmenting disease control policy is the best way forward. As we have said in relation to Scotland, exotic animal diseases, such as FMD, do not respect borders and so there is a strong argument in favour of retaining a uniform policy of disease control in England and Wales, which can be directed from the centre but adapted to local circumstances. The relationship between the National Assembly for Wales and DEFRA needs to be revisited, however, in the context of contingency planning for future outbreaks to ensure that there are clear lines of responsibility, accountability and communication.

**31. We recommend that the National Assembly for Wales and DEFRA develop a comprehensive agreement for co-ordinating the management of outbreaks of infectious animal diseases in Wales. This should cover all aspects of a disease outbreak, delegating responsibility locally, where appropriate, and providing clear lines of communication and accountability.**

### 9.11 Wider rural impact and its costs

Alongside developments in disease control there was a growing recognition of the wider impact that the disease and the control measures were having. In particular, the closure of footpaths was having a considerable impact on tourism and the wider rural economy. *“About two weeks in to the outbreak, the closure of footpaths outside the Infected Areas had provoked regional colleagues to contact the Department of Environment, Transport and the Regions expressing worries about the potential impact of this policy. At this stage, there had still been the expectation that the outbreak would be over by the early summer so discussion with concerned parties such as the National Trust had focused on how to encourage visitors to return once the outbreak was over.”* Senior Official, Department of Environment, Transport and the Regions.

Farming and tourism are interdependent and interlinked with the wider rural economy. Rural tourism and other businesses are often dependent on access to a landscape heavily influenced by farming. Many rural areas have a narrow economic base, dominated by farming and tourism; and many rural businesses are vulnerable, for example where they depend on passing trade.

In addition to the direct impact on hotels, holiday lettings and visitor attractions, other examples of rural activity were affected by FMD control measures. Village services such as pubs, shops and post offices; voluntary organisations dependent on countryside recreation, leisure activities and outdoor sporting events all suffered.

Section 14 discusses estimates of the overall economic costs of the outbreak.

Some of the hardest hit regions have below average incomes. Devon and Cumbria were hit particularly hard, both because of the extent of the outbreak and the relative importance of tourism compared to livestock in these regions. Tourism contributes 6% to the GDP of both Cumbria and Devon compared to agriculture, arable and livestock, which contributes 4%.

In early April 2001, the Department of Environment, Transport and the Regions asked the Government Offices in England to commission surveys to assess the economic impact in their regions. Some impact assessment work was also done by the Department for Culture, Media and Sport, based on tourism surveys. Over 40% of businesses in Cumbria, Devon and Cornwall surveyed in April/May 2001 reported that they had been adversely affected, compared to just over 30% in the South West and North West as a whole. The GDP loss to the whole of the South West in March and April was estimated at just over 3%, while lost turnover was around £760m.

### The Rural Task Force

As the disease spread, an appreciation grew of the wider implications for the rural economy. In response, the Government established the Rural Task Force which met first on 14 March. The Rural Task Force included representatives of a range of Government departments and agencies, and of stakeholders from farming, tourism, local government, small business, conservation and community interests. Its remit was to consider the consequences of FMD for the rural economy, both immediately and in the longer term, and to report to the Prime Minister on appropriate measures.

The final report of the Rural Task Force ‘Tackling the Impact of Foot and Mouth Disease on the Rural Economy’ was published on 18 October.

Throughout our Inquiry many people have commented that the Rural Task Force played a significant role in increasing wider awareness of the impact of FMD beyond just the farming community. In particular the Rural Task Force played an important role in introducing a risk based approach to the re-opening of footpaths and tourist attractions closed as a result of the disease.

Both the Department of Environment, Transport and the Regions and stakeholders welcomed the Rural Task Force forum and felt that it had made a valuable contribution. However, it was not seen as the whole answer. *“There should have been some mechanism to enable a wider consideration of the policy issues. Discussion of policy issues elsewhere had usually been firmly focused on fighting a war against FMD, without full consideration of the potential impact on the rural economy.”*  
Senior Official, Department of Environment, Transport and the Regions.

**32. We recommend that, where the control of exotic animal diseases has wider economic or other implications, the Government ensure that those consequences for the country as a whole are fully considered.**

### 9.12 The Regional Operations Director system strengthened

As the disease progressed, it became increasingly clear that the policy of placing overall responsibility for regional management of the disease in the hands of the local Divisional Veterinary Manager was not working. This was not due to any inherent lack of capability on the part of the individuals concerned. Rather, the failure to cope with an outbreak of this scale meant that it was important to avoid wasting vital veterinary resources on work that could be done by other, non-specialist, staff or contractors. Remedying this situation became pressing.

The desirability of identifying an individual to manage regional stakeholders and external relationships was recognised by MAFF senior management early on. Given the need to release veterinary resources, this role developed to encompass the management of all non-veterinary work in the regions, including administration and media relations.

The first Regional Operations Directors, both MAFF senior civil servants, were appointed to head the Disease Control Centres in Cumbria and Devon on 19 March. Further appointments were made to a number of other Disease Control Centres over the following days. The introduction of the Regional Operations Directors made a big contribution to the fight against the disease.

Relationships within the Disease Control Centre were often tense. There were multiple lines of control, with administrative, veterinary and military elements. Finding a way through and managing these tensions successfully, depended very heavily on the personal abilities of senior management, particularly the Regional Operations Directors.

Regional Operations Directors often held their posts for relatively short periods. For example, the first director at the Carlisle Disease Control Centre remained in post for just six weeks. We commend this practice, on the basis that the demands of the job were such that individuals needed to be rested in order to remain effective.

Preparations should be made, through the contingency planning process, to appoint Regional Operations Directors very much earlier, ideally as soon as an outbreak is identified. The Permanent Secretary of DEFRA told the Inquiry that, in future, Regional Operations Directors would be employed immediately.

**33. We recommend that contingency plans provide for early appointment of Regional Operations Directors or their equivalent to take on operational management of a crisis. There should be a cadre of senior managers – not all of whom need come from central government – who can fulfil the role of the Regional Operations Director in an emergency and who should be trained in advance.**

In addition, although Regional Operations Directors made a positive contribution in every case, their effectiveness depended on the individual calibre of those appointed. As the Permanent Secretary of DEFRA, put it, *“outstanding individuals could achieve outstanding results”*. We believe that proper training and sharing of expertise would allow individual calibre, and hence effectiveness, to flourish. This should include training in communication with the media and local communities. The role of the Regional Operations Director is focused very tightly on local delivery. He or she represents the sharp end of the Government response in the regions.