Executive Summary of the Report of the Inquiry

Introduction

By our terms of reference, we have been required:

To establish and review the history of the emergence and identification of BSE and variant CJD in the United Kingdom, and of the action taken in response to it up to 20 March 1996; to reach conclusions on the adequacy of that response, taking into account the state of knowledge at the time; and to report on these matters to the Minister of Agriculture, Fisheries and Food, the Secretary of State for Health and the Secretaries of State for Scotland, Wales and Northern Ireland.

In this Executive Summary, we give an overview of our key findings and conclusions. We refer to things that went right as well as to some of the errors, inadequacies and shortcomings that we have identified in the response to BSE. We do not attempt here to explain or even list all of these. In particular we do not explain the criticisms of individuals that appear in our Report. These need as a matter of fairness to be read in their proper context, as we explain at paragraph 30 of this volume.

1. Key conclusions

- BSE has caused a harrowing fatal disease for humans. As we sign this Report the number of people dead and thought to be dying stands at over 80, most of them young. They and their families have suffered terribly. Families all over the UK have been left wondering whether the same fate awaits them.

- A vital industry has been dealt a body blow, inflicting misery on tens of thousands for whom livestock farming is their way of life. They have seen over 170,000 of their animals dying or having to be destroyed, and the precautionary slaughter and destruction within the United Kingdom of very many more.

- BSE developed into an epidemic as a consequence of an intensive farming practice – the recycling of animal protein in ruminant feed. This practice, unchallenged over decades, proved a recipe for disaster.

- In the years up to March 1996 most of those responsible for responding to the challenge posed by BSE emerge with credit. However, there were a number of shortcomings in the way things were done.

- At the heart of the BSE story lie questions of how to handle hazard – a known hazard to cattle and an unknown hazard to humans. The Government took
measures to address both hazards. They were sensible measures, but they were not always timely nor adequately implemented and enforced.

- The rigour with which policy measures were implemented for the protection of human health was affected by the belief of many prior to early 1996 that BSE was not a potential threat to human life.

- The Government was anxious to act in the best interests of human and animal health. To this end it sought and followed the advice of independent scientific experts – sometimes when decisions could have been reached more swiftly and satisfactorily within government.

- In dealing with BSE, it was not MAFF’s policy to lean in favour of the agricultural producers to the detriment of the consumer.

- At times officials showed a lack of rigour in considering how policy should be turned into practice, to the detriment of the efficacy of the measures taken.

- At times bureaucratic processes resulted in unacceptable delay in giving effect to policy.

- The Government introduced measures to guard against the risk that BSE might be a matter of life and death not merely for cattle but also for humans, but the possibility of a risk to humans was not communicated to the public or to those whose job it was to implement and enforce the precautionary measures.

- The Government did not lie to the public about BSE. It believed that the risks posed by BSE to humans were remote. The Government was preoccupied with preventing an alarmist over-reaction to BSE because it believed that the risk was remote. It is now clear that this campaign of reassurance was a mistake. When on 20 March 1996 the Government announced that BSE had probably been transmitted to humans, the public felt that they had been betrayed. Confidence in government pronouncements about risk was a further casualty of BSE.

- Cases of a new variant of CJD (vCJD) were identified by the CJD Surveillance Unit and the conclusion that they were probably linked to BSE was reached as early as was reasonably possible. The link between BSE and vCJD is now clearly established, though the manner of infection is not clear.

### 2. The identification of the emergence of BSE

- Individual cattle were probably first infected by BSE in the 1970s. If some lived long enough to develop signs of disease, these were not reported to or subject to investigation by the Central Veterinary Laboratory (CVL) of the State Veterinary Service (SVS).

- The Pathology Department of the CVL first investigated the death of a cow that had succumbed to BSE in September 1985, but the nature of the disease that had caused its death was masked by other factors and was not recognised at the time. This is not a matter for criticism.

- The Pathology Department considered two further cases of BSE at the end of 1986 and identified these as being likely to be a Transmissible
Spongiform Encephalopathy (TSE) in cattle. This identification was commendable.

- This part of the story demonstrates both the benefits and the limitations of the passive surveillance system operated by the SVS.

3. The cause of BSE

- Gathering of data about the extent of the spread of BSE was impeded in the first half of 1987 by an embargo within the SVS on making information about the new disease public. This should not have occurred.

- By the end of 1987 Mr John Wilesmith, the Head of the CVL Epidemiology Department, had concluded that the cause of the reported cases of BSE was the consumption of meat and bone meal (MBM), which was made from animal carcasses and incorporated in cattle feed. This conclusion was correct. It had been reached with commendable speed.

- The following provisional conclusions of Mr Wilesmith, which were generally accepted at the time as a basis for action, were reasonable but fallacious:

  - the cases identified between 1986 and 1988 were index (ie, first generation) cases of BSE;

  - the source of infection in the MBM was tissues derived from sheep infected with conventional scrapie;

  - the MBM had become infectious because rendering methods which had previously inactivated the conventional scrapie agent had been changed.

- The cases of BSE identified between 1986 and 1988 were not index cases, nor were they the result of the transmission of scrapie. They were the consequences of recycling of cattle infected with BSE itself. The BSE agent was spread in MBM.

- BSE probably originated from a novel source early in the 1970s, possibly a cow or other animal that developed disease as a consequence of a gene mutation. The origin of the disease will probably never be known with certainty.

- The theory that BSE resulted from changes in rendering methods has no validity. Rendering methods have never been capable of completely inactivating TSEs.

- The theory that BSE is caused by the application to cattle of organophosphorus pesticides is not viable, although there is a possibility that these can increase the susceptibility of cattle to BSE.

- The theory that BSE is caused by an autoimmune reaction is not viable.
4. Assessment of risk posed by BSE to humans

- One of the most significant features of BSE and other TSEs is the fact that they are diseases with very long incubation periods. Thus the question whether BSE was transmissible to humans was unlikely to be answered with any certainty for many years, and scientific experiments were bound to take a long time. The Government had to deal with BSE against this background of uncertainty as to the transmissibility of the disease.

- MAFF officials appreciated from the outset the possibility that BSE might have implications for human health.

- By the end of 1987 MAFF officials had become concerned as to whether it was acceptable for cattle showing signs of BSE to be slaughtered for human consumption. However, the Department of Health (DH) was not asked to collaborate with MAFF in considering the implications that BSE had for human health. It should have been.

- Only in March 1988, by which time MAFF officials had advised their Minister that animals showing signs of BSE should be destroyed and compensation paid, did MAFF advise the Chief Medical Officer (CMO) Sir Donald Acheson of the emergence of BSE and ask him for his view of the possible human health implications.

- On Sir Donald’s advice, an expert working party, chaired by Sir Richard Southwood, was set up to advise on the implications of BSE. After their first meeting in June 1988, the Southwood Working Party advised that cattle showing signs of BSE should be slaughtered and destroyed. This advice was of crucial importance in safeguarding human health. The Working Party had concerns about some occupational health risks in relation to BSE and some risks posed by medicinal products. They notified the responsible authorities of these concerns. On 9 February 1989 they submitted a Report to the Government in the knowledge that it would be published. The report concluded that the risk of transmission of BSE to humans appeared remote and that ‘it was most unlikely that BSE would have any implications for human health’.

- This assessment of risk was made on the following basis:
  - BSE was probably derived from scrapie and could be expected to behave like scrapie. Scrapie had not been transmitted to humans in over 200 years and so BSE was not likely to transmit either.
  - So far as occupational and medicinal risks were concerned, the authorities which had been notified about these could be relied upon to take appropriate measures to address them.

- The Report did not, as it should have done, make clear the basis for its assessment of risk. It did comment that if the assessment was incorrect the implications would be extremely serious. This warning was lost from sight. The Southwood Report was, in years to come, repeatedly cited as constituting a scientific appraisal that the risks posed by BSE to humans were remote and that no precautionary measures were needed other than those recommended by the Working Party.
Precautionary measures were nonetheless put in place that went beyond those recommended by the Working Party. The wisdom of those measures was demonstrated as the years went by and facts were learned about BSE which threw doubt on the theory both that it was derived from scrapie and that it would behave like scrapie.

In May 1990 a domestic cat was diagnosed as suffering from a ‘scrapie-like’ spongiform encephalopathy. This generated widespread public and media concern that BSE had been transmitted to the cat and might also be transmissible to humans. Subsequently, more domestic cats were similarly diagnosed. These events shifted the perception of some scientists of the likelihood that BSE might be transmissible to humans. By 1994 the Spongiform Encephalopathy Advisory Committee (SEAC) evaluated the risk of transmissibility to humans as remote only because precautionary measures had been put in place.

5. Communication of the risk posed by BSE to humans

The increasing knowledge about BSE over the years, which threw doubt on the theory that it would behave like scrapie, was not concealed from the public. However, the public was not informed of any change in the perceived likelihood that BSE might be transmissible to humans.

The public was repeatedly reassured that it was safe to eat beef. Some statements failed to explain that the views expressed were subject to proper observance of the precautionary measures which had been introduced to protect human health against the possibility that BSE might be transmissible. These statements conveyed the message not merely that beef was safe but that BSE was not transmissible.

The impression thus given to the public that BSE was not transmissible to humans was a significant factor leading to the public feeling of betrayal when it was announced on 20 March 1996 that BSE was likely to have been transmitted to people.

6. Measures to eradicate the disease in cattle

Once Mr Wilesmith had identified MBM as the probable vector of BSE, the Government introduced the appropriate measure to prevent further infection and to stop the spread of the BSE agent – a ban on incorporating ruminant protein in ruminant feed. This had a dramatic effect in reducing to a fraction what had been an escalating rate of infection. It did not, however, bring infection to an end.

The manner in which the Government introduced the ruminant feed ban was influenced by misconceptions as to:

– the scale of the infection;

– the amount of infective material needed to transmit the disease.
• Ignorant of the fact that the rate of infection had escalated to thousands of cases a week, the Government gave the animal feed trade a ‘period of grace’ of some five weeks to clear existing stocks of feed before the ban took effect. Some members of the feed trade, being given an inch, felt free to take a yard and continued to clear stocks after the ban came into force. Farmers in their turn used up the stocks that they had purchased. This led to thousands of animals being infected after the ruminant feed ban came into force on 18 July 1988.

• More serious was a failure to give rigorous consideration to the amount of infective material that was proving capable of transmitting the disease. The false assumption was made that any cross-contamination of cattle feed in feedmills from pig or poultry feed containing ruminant protein would be on too small a scale to matter.

• In fact, as subsequent experiments were to demonstrate, a cow can become infected with BSE as a result of eating an amount of infectious tissue as small as a peppercorn. Cross-contamination in feedmills resulted in the continued infection of thousands of cattle. Because it takes, on average, five years after initial infection for the clinical signs of BSE to become apparent, this was not appreciated until 1994.

• From September 1990 contamination of cattle feed with pig and poultry feed should not have resulted in infection. This was because, following the experimental transmission of BSE to a pig, MAFF on the advice of SEAC introduced a measure in September 1990 aimed at protecting pigs and poultry from BSE. This was a ban on the inclusion in pig and poultry feed of MBM derived from the parts of the cow that might be expected to carry high infectivity if an animal were incubating or suffering from the disease – ‘Specified Bovine Offal’ or SBO.

• However, there was a failure to give proper thought to the terms of this measure when it was introduced. The animal SBO ban was unenforceable and widely disregarded. Infectious bovine offal continued to find its way into pig and poultry feed and then, by cross-contamination, into cattle feed.

• Only in 1994 did the fact of the continuing infection and the reasons for it become appreciated. Regulations were revised and a rigorous enforcement campaign launched to coincide with the takeover in 1995 by a new national Meat Hygiene Service (MHS) of the enforcement duties in slaughterhouses, previously carried out by local authorities. The success of these measures is now becoming apparent. They were replaced after 20 March 1996 by the radical step of banning the incorporation of all animal protein in animal feed.

7. Measures to address the risks posed by BSE to humans

Slaughter and compensation

• Compulsory slaughter and destruction of all animals showing signs of BSE was a crucial measure to protect human health and, incidentally, animal
health. It prevented the use, for any purposes, of sick animals, which could otherwise have been sent to the slaughterhouse for human consumption.

- A compulsory slaughter and compensation scheme was introduced in August 1988, following the commendable interim advice of the Southwood Working Party. Had there been prompt and adequate collaboration between MAFF and DH, this measure could and should have been introduced months earlier.
- Levels of compensation to farmers were adjusted on two occasions, but at no time did they lead to any significant failure to comply with the duty to notify the SVS of animals showing signs of BSE.

**Food risks**

- The Southwood Working Party considered that all reasonably practicable precautions should be taken to reduce the risks that would exist should BSE prove to be transmissible to humans. However, they did not make this plain in their Report and did not recommend that the possible risks from eating animals incubating BSE but not yet showing signs of the disease (‘subclinical cases’) called for any precautions, other than a recommendation that manufacturers should not include ruminant offal and thymus in baby food. This was a shortcoming in their Report.
- Because of a failure to subject the *Southwood Report* to an adequate review, MAFF and DH failed to identify this shortcoming. Concern about the food risks posed by subclinical cases was, however, expressed by some scientists, by the media and by the public. With the agreement of DH, MAFF reacted by announcing in June 1989 that those categories of offal of cattle most likely to be infectious (SBO) were to be banned from use in human food. The introduction of this vital precautionary measure was commendable. However, this ban was presented to the public in terms that underplayed its importance as a public health measure.
- Careful consideration was given by MAFF and DH in 1989 to the terms of the human SBO ban, with one important exception. During the consultation process, concerns were raised about the practicality of ensuring the removal of all of the spinal cord during abattoir processes, and about the practice of mechanical recovery of scraps left attached to the vertebral column for use in human food (‘mechanically recovered meat’ or MRM). However, MAFF officials discounted these concerns without subjecting them to rigorous consideration – in particular no advice was sought as to the minimum quantity of spinal cord that might transmit the disease in food.
- MAFF gave detailed consideration to spinal cord and MRM in 1990. A lengthy paper was submitted to SEAC, the Government’s new expert advisory committee on TSEs. Unhappily, as a result of a breakdown of communications, MAFF officials understood that the members of SEAC were not concerned about the inclusion in human food of an occasional scrap of spinal cord, so that no action was called for. In fact the advice of some, at least, of the members of SEAC was premised on the false assumption that spinal cord could readily be removed from the carcass in its entirety, and would be so removed.
This was one of a number of occasions that has given rise to lessons for the future about the proper use of expert committees by the Government.

Not until 1995 was action taken in relation to MRM. Following the takeover by the Meat Hygiene Service of the enforcement of Regulations in slaughterhouses, occasional instances were discovered of failure to remove all spinal cord from the carcass. Strenuous and successful steps were taken to improve standards of compliance with the Regulations in slaughterhouses. Eventually, in December 1995, on SEAC’s advice the extraction of MRM from the spinal column of cattle was banned.

Up to 1995, MRM was a potential pathway to the infection of humans with BSE, not merely because of the risk of inclusion of the occasional portion of spinal cord, but because the material recovered by the MRM process included dorsal root ganglia. These were peripheral nervous tissues which were not thought to be infectious at the time, but which have since been demonstrated to be infectious in the late stages of incubation.

8. Medicines

Despite the highly regulated licensing regime for medicines, systematic records of the action taken in response to BSE in respect of individual medical products are lacking.

Past experience of the transmission of animal disease through vaccines, and of transmission of CJD through medication and through the contamination of surgical instruments, showed that minute particles of infected tissue from an apparently healthy donor could transmit a TSE.

MAFF officials recognised in 1987 that there was a risk that BSE might be transmitted through veterinary products and began to take steps to address this risk which were commendable. They failed, however, to share their concerns with those in DH who were responsible for handling human medicinal products. This was inadequate interdepartmental liaison.

On learning of BSE in March 1988 the CMO, Sir Donald Acheson, sought to ensure that the potential risks that the disease posed in relation to human medicinal products were addressed. However, Medicines Division (MD) did not bring the matter before their advisory committees until November 1988. Of this period, two months’ delay was attributable to a failure to accord the matter appropriate priority.

MD did not appreciate the extent of the concern felt by the Southwood Working Party about medicines administered by injection and about the existing stocks of these. This was compounded by the wording of the Southwood Report, which described the risk posed by medicines as remote without making it plain that this risk assessment was predicated on the assumption that remedial measures were being taken to address the risk.

Having regard to the legislative constraints, it was reasonable to issue guidelines in relation to both human and veterinary medicinal products rather than resort to direct regulatory action.
Production of the relevant human and veterinary medicines involved similar raw materials and processes. The approach in respect of each needed to be consistent. Yet DH and MAFF did not discuss joint guidelines until January 1989. Once again this reflected inadequate interdepartmental liaison.

The decision to continue to use existing vaccine stocks until these could be replaced was reasonable. Vaccines cannot be produced overnight. An embargo on existing stocks would have led to interruptions, potentially lengthy, in vaccination programmes. The overwhelming professional opinion at the time was that there was bound to be death and disablement in the event of breaks in the vaccination programmes, on a scale which far outweighed the potential risks from BSE. Some comfort can be derived from the 1993 results of tests carried out on bovine serum by the Neuropathogenesis Unit (NPU), which failed to lead to infection in mice.

The task of identifying medicinal products to which the guidelines applied was made more difficult and protracted by:

– the inadequate database of licensed products;

– the need to make case-by-case enquiries in relation to thousands of products;

– inadequate staffing;

– unclear management responsibilities; and

– the administrative dislocation involved in reorganisation at the time of the relevant DH and MAFF divisions as Executive Agencies.

Staff from the two new Agencies – the Medicines Control Agency (MCA) and the Veterinary Medicines Directorate (VMD) – worked diligently to overcome these difficulties.

The establishment of the BSE Working Group with a high-powered membership to advise all of the section 4 committees on human medicinal products thought to pose a potential risk was a sound decision.

The small number of products that included high-risk tissues as an ingredient was identified and dealt with reasonably promptly.

The role of the BSE Working Group, like that of the Committee on Safety of Medicines (CSM) and Veterinary Products Committee (VPC), was purely advisory. The task of identifying individual products for consideration by the Group and following up recommendations made by the Group was for officials.

Decisions taken in relation to individual medicinal products were reasonable, but the speed with which decisions were taken and followed up suffered from lack of clear and purposeful leadership in the MCA.

More effective handling arrangements were adopted within DH’s Procurement Division (serving the National Health Service) to review medical devices.
• Existing stocks of a small number of human vaccines prepared using bovine
tissues may have been used up to 1992 and of animal vaccines for even
longer.

• The decision to continue using existing stocks of vaccines was not
considered to be one that needed to be taken or approved by Ministers. Had
it been, we consider that Ministers would have accepted the overwhelming
professional advice, but would have been concerned to see that the process
of phasing out these stocks was more vigorously pursued.

• Officials in the MCA and VMD do not appear to have been systematically
accountable to anyone for the manner in which the phasing out exercise was
handled. Nor, given the low-profile handling, was there any parliamentary
or public scrutiny of their actions.

9. Cosmetics

• Cosmetics, like topically applied medicines, might be applied to the skin,
eye or mucous membranes but were covered by a less stringent regulatory
regime under the aegis of the Department of Trade and Industry (DTI). The
category presenting the highest risk comprised ‘exotica’ or ‘premium
products’, such as anti-ageing creams, which might contain lightly processed
brain extracts, placental material, spleen and thymus.

• MAFF and DH failed to alert DTI to the need to consider the risk through
cosmetics from BSE despite this having been identified by the Tyrrell Report
in June 1989. This contributed to several months’ delay in the start of action
to secure their safety.

• Guidance was provided to the industry in February 1990 on the initiative of
DTI, but was made available only to members of the cosmetics and toiletries
trade association. This was the most significant single action to address the
risk from cosmetics.

• Thereafter no further initiative was taken by DTI. A muddled situation
developed about lead responsibility for action. Responsibility for taking
action should have been clearly understood to rest with DTI with
professional advice from DH.

• Following a request from SEAC in July 1991 for the cosmetics guidance to
be updated, DH omitted to advise DTI about this and subsequently made its
own unsuccessful approach to the trade association in April 1992 seeking
detailed information. DTI was brought back into the picture only in
September 1992 at a meeting between DH, MAFF and the trade association.

• The confusion about lead responsibility both between Departments and
within DH continued thereafter, and responsibility for updated UK guidance
was effectively left with the trade association. The topic became embroiled
in protracted negotiations at European level on EU guidelines, and the trade
association UK guidance did not emerge until 1994.

• The hallmarks of the handling of BSE in relation to cosmetics were lack of
purposeful leadership and an absence of a sense of urgency. Manufacturers
were left to use up stocks, and checks were not made to ensure they
reformulated their products. This has left unanswered questions both about what material was being used, and about how long production continued and on what scale.

10. Occupational risk

- The possibility of contracting illness from contact with diseased animals or their tissues was a well-recognised occupational hazard. Workers in a wide range of occupations were potentially in contact with the tissues of BSE-infected cattle or with those of human victims. All of these occupations needed to be identified and to receive appropriate guidance about the precautions to reduce risk in respect of BSE and other TSEs.

- The delays in issuing advice to many of those concerned were unacceptable. Ultimately the main occupations at risk were identified and advice given. But a detailed chronology shows that it took over three years to complete the task of issuing simple warnings and basic advice to the most obvious high-risk trades.

- Work began in 1991 on guidance to those handling risk tissues in laboratories, hospitals and mortuaries. This took until September 1994 to be completed and issued. During that process a so-called ‘fast track’ professional letter took 14 months to prepare.

- In a different field, it took two-and-a-half years for advice to be issued to schools about risks from dissecting bovine eyeballs, though SEAC had asked in June 1990 for this to be done.

- The slow and erratic responses have indicated weaknesses in the standard system for handling a wide-ranging disease threat. The slow tempo of action, in part attributable to time spent on polishing and refining advice, stemmed from three factors:

  - a failure in communication: the perception that the *Southwood Report* had indicated that the risk to humans from BSE was remote even without any further action, and a belief in the Health and Safety Executive (HSE) that action was being taken simply as a response to political and media pressures;

  - the absence of a comprehensive review of pathways of transmission, which might have helped pinpoint where the issue of urgent advice could not wait;

  - the decision to use the slow-paced existing consultative and drafting arrangements. This ought not to have been at the expense of prompt and straightforward interim warnings.

- The mistakes made in handling the occupational threats from BSE and the questions raised by them need to be carefully considered by the HSE.
11. Other pathways of infection

- There was a need to establish all the pathways by which bovine products or by-products might come into contact with humans or other animals. This need was recognised by MAFF officials at an early stage and also by the Government’s expert advisers on BSE. However, the exercise was never carried out prior to March 1996. As a result, no coordinated or comprehensive consideration was given to the various routes by which BSE might infect human beings or other animals.

12. Pollution and waste control

- MAFF was directly responsible for disposing of cattle carcasses from the compulsory slaughter scheme. Major problems included the large volume of carcasses and initial serious underestimation of the numbers that would arise. MAFF handled this difficult and unpopular disposal task energetically and competently.

- The disposal of SBO material was not MAFF’s direct responsibility and was less straightforward to manage. Initially this material did not constitute waste as such because it was a marketable product for rendering into tallow and MBM. It did not become controlled waste, to be disposed of only at a licensed destination, until after the animal SBO ban and SEAC advice that the protein product of SBO should not be used as an agricultural fertiliser.

- Other forms of waste included effluent passing down drains to sewers and rivers. None of the usual precautions or conditions attached by water authorities to discharges would have inactivated the BSE agent.

- Blood, slaughterhouse and rendering plant waste, including that from plants that rendered SBO, and sewage sludge from works handling their effluents, might lawfully be spread as agricultural fertiliser.

- Some of the failures to identify and address these matters promptly can be attributed to the defective state of environmental regulatory action at the time, and the transitional turmoil of measures to rectify this.

- General waste disposal systems as a potential transmission pathway for BSE received scant attention from those handling BSE prior to 1996. The matter was not referred to or addressed by the Southwood Working Party, the Tyrrell Committee or SEAC. All of them advocated a systematic review of the destination of all bovine materials. Had this been carried out, it might have identified waste disposal issues.

13. The identification of vCJD

- The Southwood Working Party noted that if BSE were to be transmitted to humans it would be likely to resemble CJD and suggested that surveillance be put in place to identify atypical cases or changing patterns of the disease.
The task of detecting any variation in the characteristics of cases of CJD which might indicate infection with BSE was entrusted to the CJD Surveillance Unit (CJDSU), a research team of dedicated medical scientists headed by Dr Robert Will, a neurologist with extensive experience of CJD.

No role in this was given to the Public Health Laboratory Service (PHLS), an established service for the surveillance of new and existing disease, among other things.

The decision to establish a new team specifically for this purpose was vindicated by the prompt detection of the emergence of vCJD by the CJDSU.

The conclusion reached by SEAC on 16 March 1996 that the most likely explanation for the cases of a new variant of CJD in young people was exposure to BSE has since been compellingly supported by scientific evidence.

It should have been apparent to both MAFF and DH by early February 1996 at the latest that there was a serious possibility that the scientists would conclude that it was likely that BSE had been transmitted to humans. The two Departments should have worked together, in consultation with SEAC, to explore the possible policy options that would be available should this occur.

There was no interdepartmental discussion or consideration of policy options within either Department until the middle of March 1996. The views of SEAC were awaited, both as to whether the cases of vCJD were linked with BSE, and as to what action should be taken if they were. This was an inadequate response.

Under intense pressure from the Government, on 20 March 1996 SEAC advised among other things that the appropriate course was that carcasses from cattle over 30 months old should be deboned in licensed plants supervised by the Meat Hygiene Service and the trimmings classified as SBO.

The Government immediately announced that it was accepting this advice. In doing so it was wrong-footed, for this course proved neither practicable nor acceptable to the public. A policy of banning consumption of cattle over 30 months had to be introduced instead.

14. Victims and their families

The unusual problems of the diagnosis, treatment and care of the early cases of vCJD meant that for some of the victims and their families the tragic horror of the disease was made the more difficult to bear by lack of the appropriate treatment, assistance and support.

Victims of vCJD and their families have special needs which should be addressed.
15. Research

- The Southwood Working Party made wise recommendations in relation to research, not least that an expert committee be set up to advise on this.

- That committee, the Tyrrell Committee, rapidly recommended research priorities which formed the basis of much of the research that followed.

- After some initial delay, BSE research was adequately funded by the Government.

- Attempts to agree that a director, or ‘supremo’, should oversee and coordinate research were initiated by Sir Donald Acheson but foundered in the face of concerns on the part of the Research Councils and MAFF for their independence.

- Coordination of research effort is desirable in order to achieve:
  - identification of gaps in research;
  - determination of research priorities;
  - identification of the best sources of expert assistance;
  - a well-constructed plan for funding from the outset;
  - competition for research projects;
  - peer review of projects; and
  - efficient arrangements for provision of clinical material to researchers.

- A research supremo might have identified the following areas where research could profitably have been started earlier or pursued with more vigour:
  - experiments to transmit scrapie to cattle to test the scrapie origin assumption;
  - tests for BSE in sheep;
  - identification of the minimum infective dose which could transmit BSE orally to cattle;
  - assessment of the sensitivity of mice to BSE for use in experiments;
  - ante- and post-mortem tests for BSE;
  - a test for ruminant protein in compound feed;
  - epidemiology.
16. Some general lessons

- The lessons to be learned from the BSE story are set out in Chapter 14 of this volume.