SEAC
Spongiform Encephalopathy Advisory Committee

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BSE EPIDEMIOLOGY IN THE UK AND OTHER MEMBER STATES

Issue

1. In the near future, it will become increasingly apparent whether the BSE controls put in place in the UK have been fully effective in stopping the spread of the BSE agent, and whether there may be other routes of transmission that could affect the declining rate of infection. A major active TSE testing programme, based on European Union legal requirements, has been in place in the UK since July 2001. The information gained from the testing programme is an important supplement to that resulting from passive surveillance.

Advice sought from the Committee

None. This paper is for information only.

The declining UK epidemic

2. The key statistics are:-

   - As at 6 January 2003, a total of 181,887 cases of BSE have been confirmed in the UK. Only 33 of these cases have been confirmed in animals born after August 1996 when the feed ban is considered to have been fully effective (despite over 6 years now having elapsed).

   - The BSE in cattle epidemic is declining at a rate of about 40% annually. The epidemic peaked in 1992, when 37,056 cases were confirmed in the UK. For 2002, 1,008 cases (identified through both active and passive surveillance) have now been confirmed (with 107 results still pending).

3. The age structure of UK BSE cases continues to shift towards older animals. Over 60% of cases now occur in animals which are 7 years old or more. As the average incubation period of BSE is 4-5 years, this indicates that UK control measures are having a major effect.

Forecasts

4. VLA forecasts for the decline of the BSE in cattle epidemic in Great Britain cover cases identified through passive surveillance only:-

Year	Central estimate of confirmed cases	Lower 95% confidence interval	Upper 95% confidence interval	Actual number of cases
1999	2,083	1,774	2,392	2,254
2000	1,188	956	1,420	1,311
2001	512	360	664	781
2002	183	92	274	430
2003	61	9	113	…
2004	19	0	48	…

5. Experience shows that the actual number of cases typically follows the upper 95% confidence interval of the VLA projections. However, the number of confirmed cases in 2001 and 2002 is higher than this. The FMD outbreak disrupted the slaughter of older cattle under the OTMS. This has increased the mean age of the cattle population and resulted in more cases than previously anticipated. Nevertheless, the epidemic continues steadily to decline. The number of BSE cases born after mid-1996 remains low, despite the fact that animals born in 1996 and 1997 are now approaching the peak age of clinical onset for BSE.

6. The UK is currently assessed under international rules as having a high BSE risk status. Factors other than confirmed cases are also taken into account in determining risk categories (such as imports of contaminated feed or infected animals, and the possibility of cross-contamination of cattle feed with feeds that contain mammalian MBM). However, once the BSE in cattle epidemic has declined to less than 100 confirmed BSE cases per million within the adult cattle population, it may be possible for the UK to be classified in a lower risk category. In terms of risk management, this may allow consideration of a more restricted range of SRM controls.

Ascertainment of clinical cases and the surveillance programme

7. Additional BSE cases have been detected since 2001, following the introduction of a major active surveillance programme, which is based on European Union (EU) legal requirements. A total of 1,067 cases (out

of 498,801 animals tested[1]) have been confirmed in the UK through active surveillance. In 2001, 318 cases were confirmed through active surveillance from 78,852 animals tested. And in 2002, 578 cases were confirmed (as at 6 January 2003) from a total of 385,705 animals tested.

8. UK policy is aimed at encouraging reporting of clinical suspects (passive surveillance) and thereby minimising the level of under-ascertainment. Adequate compensation for confirmed cases and unconfirmed suspects is provided and herd slaughter is not carried out. Indicators of effective passive surveillance include farms experiencing their first cases of the disease, having reported them as clinical suspects. Secondly, although the number of reports has fallen, the number of reported animals which are not taken as suspects has remained fairly constant. This suggests that owners are still reporting a wider range of conditions than BSE. Finally, the proportion of slaughtered suspects in which BSE is confirmed was well below 60% in 2002, having fallen from around 80% in the 1990s.

9. Surveillance programmes give some indirect indication of the degree of ascertainment by identifying cases not reported as suspects. For cases identified throughout the EU from January to November 2002, some 33% were reported as suspects. The table below shows that this percentage is highest in the UK but low in a number of other MS, even where there are significant numbers of cases.

Member State	Total BSE cases	Percentage reported as suspects
UK	929	44
Ireland	289	31
Portugal	73	26
France	205	19
Spain	115	12
Belgium	30	10
Germany	88	8
Netherlands	15	7
Denmark	2	0
Italy	30	0
Luxembourg	1	0

[1] Most of the 498,801 animals were tested in the period between July 2001 and December 2002. However this figure also includes all animals which were tested prior to July 2001.

Although the reporting of suspects is better in the UK than in other MS, over 50% of our cases were identified by active surveillance. The largest number of these were slaughtered as on farm casualties.

10. Although the continuing surveillance programme will identify cases, the decline in the number of clinical cases is likely to mean a loss of familiarity with the disease among both farmers and their veterinary surgeons. It will be necessary to address this in renewed publicity and education programmes.

Current EU position

11. The following table provides information on the total number of BSE cases (clinical signs and active surveillance) in cattle **over the last 18 months**. This covers the period following the significant extension of BSE testing programmes across the EU from 1 July 2001:-

	Adult cattle (millions)	Cases born before Aug. 1996	Cases born after Aug. 1996	Unknown date of birth	Total cases
UK	5.0	1,808	31	0	1,849
Belgium	1.5	42	21	4	67
Denmark	0.9	1	5	0	6
France	11.2	387	35	0	422
Germany	6.5	118	31	0	149
Greece	0.3	0	1	0	1
Ireland	3.4	458	8	1	467
Italy	3.4	42	26	0	68
Luxemb'g	0.1	0	1	0	1
Neth'lands	1.8	19	16	0	35
Portugal	0.8	127	24	0	151
Spain	3.4	100	56	0	156

12. Based on EU testing statistics for the period January to October 2002, the BSE incidence per million adult cattle in major European countries is as follows (excluding pending results):-

	BSE clinical suspects	Casualty animals and fallen stock	Healthy animals, BSE eradication	Total
UK	83.2	100.4	2.2	185.8
Portugal	23.8	25	42.5	91.3
Ireland	25	46.4	8.9	80.3
France	3.5	9.2	5.6	18.3
Belgium	2	9.3	8.7	20.0
Germany	1.1	7.0	5.9	14.0
Spain	4.1	19.1	10.6	33.8
Italy	0	3.8	5	8.8
Holland	0.6	4.7	3.5	8.8

13. Following the introduction of major active surveillance programmes in 2001, the number of confirmed BSE cases in cattle showed an increase in most EU member states, although this has now started to level out. It continues to increase, however, in Ireland (242 cases reported between January and December 2001, 288 in 2002) and Spain (82 cases between January and December 2001, 121 in 2002).

BSE reported in non-Member States States

14. With the exception of Switzerland, the total number of BSE cases born in countries outside of the EU is still very small:-

Year of report	Pre-2000	2000	2001	2002	Total
Czech Rp.	0	0	2	2	4
Japan	0	0	3	2	5
Liechtenst.	2	0	0	0	2
Poland	0	0	0	4	4
Slovakia	0	0	5	5	10
Slovenia	0	0	1	1	2
Switzerl'd	333	33	42	18	426

EU control measures

Feed controls

15. An EU-wide ban on feeding proteins derived from mammalian tissues to ruminants was introduced in 1994: the evidence does not suggest that

this was rigidly observed in most EU countries. From 1 January 2001, Community legislation banned the use of a wide range of processed animal proteins (including meat and bone meal) in feed for all farmed animals.

Culling

16. Where BSE is confirmed in a bovine animal, Member States are required to:-

- Kill the positive animal.
- Identify and kill all bovine animals belonging to the cohort[2] of the animal in which the disease was confirmed.
- Where the disease was confirmed in a female animal, to identify and kill all its progeny born within two years prior to, and after, clinical onset of the disease.
- Optionally to identify and kill all other bovine animals on the holding of the animal where the disease was confirmed (depending upon the local epidemiological situation);

17. The UK is exempt from some of these requirements on the strength of the effective feed controls and the OTM scheme, which have operated in the UK since 1996. Under EU legislation, the UK is required only to identify and destroy the BSE positive animal and, where confirmed in a female animal, all its progeny born within two years prior to, and after, clinical onset of the disease. Presently, however, transitional measures mean that the UK is continuing with its comprehensive offspring cull (i.e. slaughtering all offspring born after 1st August 1996). Where the positive animal has been born after 1 August 1996, the UK authorities are also required to ensure that all cohort animals are excluded from the food chain and are tested for BSE at the time of slaughter or death. This is primarily for epidemiological monitoring purposes.

Conclusion

18. Models of the epidemic indicate that BSE in cattle will continue to decline in the UK. The major active surveillance programme will provide further important information, helping to verify the progress of the

[2] A cohort means all bovine animals which were either born in the same herd as, and within 12 months preceding or following the birth of, the affected animal or reared together with the affected animal at any time during the first year of their life and which may have consumed the same feed as that which the affected animal consumed during the first year of its life.

disease. BSE cases in cattle born after August 1996 will be carefully examined and expert veterinary advice sought on the possible causes of such cases for evidence of control failure of new routes of transmission of the disease.

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