

*SEAC Annual Report 2007*



**ANNUAL REPORT 2007**

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## **Foreword**

The continued decline in the incidence of Bovine Spongiform Encephalopathy (BSE) in the United Kingdom (UK) and elsewhere in Europe is very welcome. As a result, the European Union (EU) has been able to relax some of the control measures introduced to protect human and animal health, and is considering further relaxations. Whilst there are clear economic benefits to relaxing controls, the associated risks may be less well understood. During 2007, SEAC provided advice on the risks that may be associated with changes to specific controls, and advice on how these risks can be assessed. As the effectiveness of one control may be related to that of others, it is important that regulators consider the impact of specific changes, and combinations of changes, on the effectiveness of the control regime as a whole. Furthermore, it is vital that surveillance of animals and humans is in place that is capable of detecting any major adverse consequences of changes to the control regime should these arise. The recent identification of different, albeit apparently rare, forms of BSE, which were discussed by SEAC during the year, emphasises the need for continued vigilance.

It is highly likely that sheep were exposed to BSE during the BSE epidemic in cattle. However, despite extensive Transmissible Spongiform Encephalopathy (TSE) surveillance in sheep there is no evidence that BSE is present in the UK sheep flock now. The relatively recent identification of atypical scrapie and paucity of experimental data about its transmissibility either between sheep or to humans have raised concerns about the possible animal and public health implications of this disease. Although atypical scrapie has been identified in a number of EU Member States, no clusters of cases have been found. It is, therefore, considered that this disease may have a low rate of transmission between sheep. It is possible, therefore, that atypical scrapie, like classical scrapie, may have existed for some considerable time without any apparent association with human TSEs. Nevertheless, the human health implications need to be clarified. SEAC will continue to monitor closely the results from research underway to assess the human and animal health implications of atypical scrapie.

Encouragingly there was only one new diagnosed case of variant Creutzfeldt-Jakob Disease (vCJD) in 2007. However, uncertainty remains about the number of individuals that may be infected with vCJD but who are not showing clinical signs of the disease (subclinical infections). It is critical to ascertain better the prevalence of subclinical infections. This is because the assumed presence of these infections is the reason costly interventions have been introduced (depletion of white blood cells from blood donations, deferral of blood recipients from donating blood and single-use instruments for certain types of surgery and dentistry) to minimise the potential risk of human-to-human transmission of vCJD. During 2007, SEAC reviewed the analysis of the first tranche of results from the National Anonymous Tonsil Archive (NATA). None of the tonsils tested to date (more than 45 000) has been found to be positive for abnormal prion protein.

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Thus, NATA provides no evidence to suggest that a large epidemic of subclinical infections exists. However, there is still uncertainty about how early during the preclinical phase abnormal prion protein accumulates in tonsil tissue and therefore, how reliably tonsil testing is able to detect subclinical infections. It is also the case that, a large proportion of tonsils removed comes from young people with little or no likelihood of dietary exposure to BSE. For these reasons, SEAC continues to stress the need for a post mortem tissue archive to complement the data from NATA. Together NATA and a post mortem tissue archive would allow the wide range of estimated prevalence of subclinical vCJD infections to be narrowed, facilitating better risk assessments of potential human to human transmission of the disease, and analyses to justify costly current and future interventions.

New risk assessments considered by SEAC during 2007 suggest that, under certain circumstances, dentistry, like blood transfusion and surgery, may provide a route for vCJD infection to be passed between people. Following advice from SEAC, the Department of Health issued guidance to dentists in 2007 about making certain types of dental instruments single use as a precautionary measure to prevent possible vCJD transmission via certain dental procedures. SEAC strongly encourages the work already underway to improve the decontamination of dental and surgical instruments and to develop blood tests that will allow the risks of vCJD transmission to be reduced.

I was pleased to welcome Professors John Collinge and Azra Ghani and Drs Richard Knight and Roland Salmon onto the committee in 2007. I was also pleased to accept my reappointment for a second term as Chair.

The committee is very appreciative of the researchers that have shared important unpublished data to allow SEAC and its Subgroups early consideration of important findings. I would like to thank Kate Richards, who moved to a new post during the year, Dr Tom Barlow who stood in as Acting SEAC Secretary, and welcome Dr Peter Grimley as Kate's successor as SEAC Secretary. I would also like to thank the members of SEAC and its Subgroups for their commitment and the expertise they bring to SEAC and the Secretariat for the support it provides the committee.



**Professor Chris Higgins**

**Chair of SEAC**

## **About the Committee**

SEAC is an independent expert advisory committee that provides scientific advice to the UK Government on TSEs such as BSE, classical and atypical scrapie and vCJD. The committee's deliberations may be initiated by requests for advice from Government Departments, the Devolved Administrations, SEAC members, other advisory committees or enquiries from members of the public. The Chairman of SEAC may convene Subgroups to examine specific issues in greater detail. Subgroups have terms of reference and are required to report to the main committee. There are two standing Subgroups, the SEAC Epidemiology and Sheep Subgroups.

The majority of SEAC's business is conducted at public meetings. Agendas, summaries, discussion papers and minutes of meetings are published on the SEAC website (see below). There are occasions when the committee considers certain information, such as pre-publication material or confidential medical data, in reserved business sessions. In the case of pre-publication material, once it has been published elsewhere, full details of the discussion and the relevant papers are placed on the SEAC website. Short summaries of all discussions are placed on the website within a week following a meeting. All material published on the website is also available on request from the SEAC secretariat.

### **SEAC website ([www.seac.gov.uk](http://www.seac.gov.uk))**

The website carries:

- information about the committee's history, terms of reference and current membership
- agendas, discussion papers, summaries and minutes of meetings
- SEAC statements
- information about the membership and work of SEAC Subgroups
- a register of committee members' interests
- the SEAC code of practice and publication scheme
- annual reports from 1997 onwards
- reports of independent reviews of SEAC

## **Main issues considered by SEAC and SEAC Subgroups**

SEAC met four times in 2007, and the SEAC Epidemiology and Sheep Subgroups once each. The main issues considered are listed below. Readers can consult the papers, minutes and statements on the SEAC website for the full record of the committee's consideration of these issues and the conclusions and recommendations made.

### **SEAC 96**

- An update on the epidemiology of BSE.
- A case of atypical scrapie in a sheep flock maintained for research purposes that was previously considered free of TSEs.
- An epidemiological analysis of the implications should BSE be found in one or more UK sheep, to aid in contingency planning.
- An update on the progress of the National Anonymous Tonsil Archive (NATA) and work towards establishing a post mortem tissue archive and an anonymous survey of blood donations to obtain better estimates of the prevalence of subclinical vCJD in the UK population.

### **SEAC 97**

- Investigations of an atypical scrapie case in a research sheep flock previously considered free of TSEs, including an independent audit of the procedures used to manage the flock.
- Hypothetical scenarios that could arise from research underway on atypical scrapie, and how these scenarios could change understanding of the human health risks from atypical scrapie.
- A multi-centre European Union funded project, FATEPriDE, examining the possible influence of environmental trace elements on the occurrence of TSEs.
- Recently identified different forms of BSE (H- and L-type BSE).
- An update on NATA and other approaches to obtain better estimates of the prevalence of subclinical vCJD in the UK population.
- Preliminary findings from research to estimate the potential risk of vCJD transmission via dental procedures.

**SEAC 98**

- The time window in which possible infections from UK sourced plasma derivatives may have occurred, and the likely removal of vCJD infectivity during the manufacture of such derivatives.
- A report from the SEAC Epidemiology Subgroup.
- The Office of Science and Innovation consultation on a revision to the Code of Practice for Scientific Advisory Committees.
- Unusual findings from strain typing experiments of isolates from two sheep originally diagnosed with classical scrapie in 1996 and 2000.

**SEAC 99**

- A report from the SEAC Sheep Subgroup.
- The potential human health risks of allowing animals from known classical scrapie-affected flocks to be slaughtered for human consumption provided a negative result is obtained on TSE testing.
- The possible consequences of various options for relaxing the total feed ban including, the introduction of tolerance levels for certain types of processed animal protein (PAP) in feed, the inclusion of fish meal in young ruminant diets and the feeding of non-ruminant PAP to non-ruminants of a different species.
- An update on the incidence of vCJD and sporadic CJD.
- The testing methodology and first tranche of results from NATA.
- A risk assessment of the potential for secondary transmission of vCJD via dentistry.

**SEAC statements**

SEAC published the following statements in 2007:

- New forms of bovine spongiform encephalopathy in cattle.
- The Food Standards Agency atypical scrapie contingency plan.
- vCJD and dentistry.

### **SEAC Epidemiology Subgroup**

The SEAC Epidemiology Subgroup met on the 5<sup>th</sup> July 2007 to review the testing methodology and preliminary results from NATA. The Subgroup agreed that the methodology was appropriate, although uncertainties remain about the ability of tonsil testing to detect subclinical vCJD. The results were consistent with previous understanding of the prevalence of subclinical vCJD. The Subgroup noted that work is ongoing to establish additional surveys using post mortem samples from coroners' autopsies and, provided appropriate tests become available, donated blood samples. The Subgroup agreed that these additional surveys are important as they could provide assurance about results from NATA and only together do these and NATA provide data for all age groups of the population.

### **SEAC Sheep Subgroup**

The SEAC Sheep Subgroup met on the 4<sup>th</sup> October 2007 to consider the following issues:

- the origins of atypical scrapie in a sheep flock established and managed to minimise the risk of infection by TSEs and the implications for research using animals from the flock.
- the interpretation of findings from experiments to characterise the strain of infection in two historic sheep TSE cases and the implications for current understanding of the possible presence of BSE in sheep.
- the implications of early data from a study of bottle feeding milk from classical scrapie infected ewes to TSE-free lambs.
- the implications for the scientific basis of the National Scrapie Plan of cases of classical scrapie in sheep with a genotype previously considered resistant to classical scrapie.

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