

ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD**INFORMATION PAPER****EPIDEMIOLOGY OF FOODBORNE INFECTIONS GROUP (EFIG)**

1. The most recent meeting of this group was held on 1 March 2007.

Review of animal data for June – December 2006

2. Over the year there has been a decrease of around 10% in reports of *Salmonella* in animals, against a decrease in submissions of about 2%. Trends in different animals have varied, with large decreases in reports from chickens and turkeys (48% and 29% respectively) and an increase in pigs (32%).
3. Reports of *Salmonella* Typhimurium (STm) increased by 24%, with increases in cattle (45%), pigs and turkeys. The increase has predominantly occurred in England and Wales, and data are being analysed at county level at present to see if there is geographical variation.
4. The trend in cattle continues the upward trend in STm seen in 2005 although the total number of *Salmonella* reports in cattle has fallen, with a shift in the *Salmonella* Dublin / STm ratio. The predominant STm types are the DT104 complex. Possible reasons for the increase include changes in BSE controls resulting in older cattle entering the food chain, FMD replacement cattle and the decline in *Salmonella* Dublin.
5. In pigs, the predominant STm serotype is U288. Increased surveillance may have played a part in the observed trend although most of the cases tend to be clinical. Whilst STm reports have increased in turkeys, they have decreased in chickens, as have reports of *Salmonella* Enteritidis (SE).
6. The broiler survey for the setting of Zoonoses Regulation targets was completed in October and results are being analysed. Surveys of slaughter pigs and turkeys have started. Many of the turkey samples were taken before Christmas and therefore the avian influenza outbreak has not had a major impact on this survey.

Review of human data for 2006

7. The main features are a slight upward trend in reports of *Salmonella*, particularly in England, and a continuing increase in reports of VTEC O157 for the fourth year in succession. *Campylobacter* reports are currently lower than for 2005 but continuing lags in reporting mean that it is likely that these will rise by a further 3-5% and that we can anticipate a higher number of reports in

2006 compared with 2005. *Listeria* figures have again fallen slightly but are still noticeably higher than they were at the beginning of the century. Although the number of cases in Northern Ireland is small, as in GB, they are tending to take the form of bacteraemia rather than meningitis.

8. Within the *Salmonella* figures, there has been little change in reports of STm in any of the four countries. There has been a very small increase in SE in the UK with increases in England and Northern Ireland and decreases in Scotland and Wales. The increase in SE has featured a number of serotypes, including PT14b N_xCp_i, PT8 and PT13a. In Northern Ireland there has also been an increase in non-PT4 SE, particularly PT14b. 50% of these cases were travel-associated.
9. The number of outbreaks has decreased with 92 being reported in 2005 and 55 in 2006. The number of *Salmonella* outbreaks has fallen from 37 to 24. All but two of these were SE, 75% being due to non-PT4 SE.

VT-producing *E.coli*

10. Members discussed several aspects of VTEC O157, including the cases of sorbitol-fermenting (SF) VTEC O157 found in Scotland and Yorkshire last year, the VTEC 2006 meeting and enhanced surveillance in farm animals. In relation to SF VTEC, it was agreed that bloody diarrhoea in children should be thoroughly investigated so as not to miss the sorbitol fermenters. At present, the disease associated with these has been more severe than that associated with non sorbitol fermenters. However, this may be an artefact of detection in that testing to identify SFs is unlikely to be carried out in milder cases. VLA is seeking funding for development of tests for SFs in animals and FSA has published a research requirement for their detection in food.
11. SFs were the subject of a number of papers at VTEC 2006. The other items of interest from the conference, apart from a lot of developments on molecular biology, were a paper on the outcomes of early volume expansion to prevent HUS in children with VTEC O157 and information on a candidate vaccine for humans that has been shown to be safe and immunogenic and which is now moving into phase 2 trials. Defra, HPA, VLA, FSA and others have met to discuss outputs from the conference in relation to research and surveillance programmes and a note of this meeting was tabled.
12. Enhanced surveillance of *E. coli* in farm animals has shown a 5-6% carriage of VT+ve strains in cattle and pigs and none in sheep. None of the VT+ve strains was VTEC O157.

Campylobacter

13. There was a presentation on the *Campylobacter* case control study, involving around 1700 cases and over 3000 controls. Most of the risk factors were already well-established with the greatest population attributable fraction relating to chicken consumption, followed by the taking of proton-pump inhibitors. The isolates are still undergoing phylogenomic studies.

Salmonella

14. A report of the EU layer flock *Salmonella* survey was presented, the final report of which is now on the EFSA website. This was followed by an update on proposals for investigation of the increase in non-PT4 SE (particularly PT8). Information on recent patterns of non-UK egg sourcing was also presented. This showed, among other things, a decrease in sourcing from Spain and increased sourcing from Germany.

Antimicrobial resistance – extended spectrum β -lactamase producing *E. coli* (ESBL)

15. Since the finding of an ESBL in cattle from a Welsh farm some 18 months ago, a number of other herds carrying these strains have been found. Whilst most strains have been of CTX-M types not generally found in people in the UK, a CTX-M15 was found in cattle at a research facility. The Departmental Antimicrobial Resistance Committee has suggested that consideration should be given to the potential role of the food chain in transmission of ESBLs. Since the Standing Advisory Committee on Antimicrobial Resistance is about to be disbanded, it has been suggested that ACMSF should be invited to consider this issue. At the same time, CVO has written to the Commission to raise the issue at a European level.

Other items

16. Giles Paiba gave a presentation on RADAR, a veterinary surveillance system that aims to bring surveillance data together with other information such as animal population data. At present, reports are generated in response to specific questions. No analysis is provided, although the data providers do add information on the way the data has been collected so that users are aware of its limitations. Since these reports are placed in the public domain, the question was raised as to whether they should be commented on by a group such as EFIG. It was decided that, at the very least, the group should see RADAR outputs for information and possible discussion.

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