

## ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD

### EPIDEMIOLOGY OF FOODBORNE INFECTIONS GROUP (EFIG)

The group met on 5 May 2011 and the following is a summary of the main areas that were discussed.

#### Review of animal data for 2010

1. EFIG discussed the availability and practicalities of providing denominators for the animal data. The number of samples submitted is influenced by various factors including introduction of new diagnostic tests or vaccines, increased awareness of a particular condition either locally or nationally, and the interests of individual private veterinary surgeons or Veterinary Investigation Officers. The actual disease confirmation (number of diagnoses) depends on fulfilling specific diagnostic criteria and these can change over time with introduction of new tests or improved knowledge. For National Control Plan (NCP) data the denominator used is the number of monitored premises whereas for clinical diagnoses of *Salmonella* and other zoonoses in non-avian species - the number of diagnostic submissions could be used. For clinical diagnoses of other diseases, various types of denominator data are available such as counts using the number of submissions which test positive for the condition of interest, all submissions or submissions in syndrome. All of these have potential drawbacks. Animal Health and Veterinary Laboratories Agency (AHVLA) will continue to explore the options but in the meantime EFIG can make requests for specific analysis if there are specific questions they wish to explore.
2. EFIG reviewed the animal data for 2010 and included below is a summary of the data relating to *Salmonella*. Data relating to non-statutory zoonoses was considered but is not presented here. *Salmonella* data reported as having been collected under the National Control Programmes (NCPs) for *Salmonella* in flocks of laying hens, breeding chickens, broilers and turkeys are excluded as these are reported elsewhere. The data presented here is provisional and relates to numbers of 'incidents' rather than 'flocks' or 'herds'.
  - During January – December 2010 there were a total of 1,686 reports of *Salmonella* in livestock, which represents a 3% reduction compared with 2009 (1,736 reports) and is one incident less than *in 2008*.
  - Non-NCP related reports from chickens were 25% lower overall in 2010 compared with the preceding year (43 reports in total compared with 57 during 2009). There were seven reports of *Salmonella* from chicken breeding flocks, four of which arose during the final quarter of the year. Five were broiler breeder parent flocks and the other two were layer breeder parent flocks. This compares with 12 reports from broiler breeder flocks and three from layer breeder flocks during January – December 2009. There were two reports of *S. Enteritidis* (both PT4) both incidents were from chicken layer flocks.

- In addition, there were five reports of *S. Typhimurium*; three from layers (DT85, DT99 and DT132), one from a layer breeder (DT104) and one from a pet flock (DT8). During 2010, there were also single reports of *S. Virchow* RDNC from a layer flock and *S. Pullorum* from a pet chicken.
- There were 20 reports from turkeys outside of testing under the new NCP. One report of *S. Derby* was associated with clinical disease but all the other reports were from voluntary surveillance on farms. There were no reports of either *S. Enteritidis* or *S. Typhimurium* in turkeys.
- Reports from ducks reduced by 72% compared with 2009; possibly due to a decrease in monitoring on commercial holdings. There were 18 reports of *S. Typhimurium* from ducks during 2010 compared with eight during 2009; two thirds of which occurred during the final quarter of the year.
- Reports from cattle were 21% higher than during 2009. *S. Dublin* remained the most common serovar. There were also 32 reports of *Salmonella* 4,5,12:i:- in cattle compared with 15 reports in 2009.
- Reports from sheep were 38% higher during 2010 compared with 2009. This was partly due to an 20% increase in reports of *S. 61:K:1,5,(7)* as well as an increase in *S. Dublin*.
- Reports from pigs were 2% lower compared with 2009, which was reflected in a 25% decrease of porcine *S. Typhimurium* incidents. The number of reports from pigs of both *Salmonella* 4,5,12:i:- and *Salmonella* 4,12:i:- increased; there were 29 reports of *S. 4,5,12:i:-* compared with eleven during 2009, and 13 reports of *S. 4,12:i:-* compared with one in 2009.

### Human Data for 2010

3. EFIG was provided with an update of the 2010 data from humans.

UK incidence rates for selected bacterial pathogens between 2003 and 2010. Incidence rates are per 100,000 population apart from *L. monocytogenes* which is per 1,000,000 population.\*

| Pathogen                          | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009  | 2010  |
|-----------------------------------|------|------|------|------|------|------|-------|-------|
| <i>Salmonella</i> (non-typhoidal) | 27.4 | 25.3 | 22.0 | 22.6 | 21.2 | 18.0 | 16.3  | 15.1  |
| <i>S. Enteritidis</i>             | 17.7 | 15.6 | 12.3 | 12.7 | 11.1 | 7.6  | 6.8   | 4.4   |
| <i>Campylobacter</i>              | 86.3 | 82.7 | 86.4 | 86.8 | 95.0 | 90.6 | 105.3 | 113.6 |
| <i>E. coli</i> O157               | 1.47 | 1.55 | 1.94 | 2.12 | 1.84 | 2.02 | 2.12  | 1.73  |
| <i>Listeria monocytogenes</i>     | 4.13 | 3.88 | 3.57 | 3.42 | 4.18 | 3.39 | 3.80  | 2.82  |

\*Data collated by HPA

Incidence rates for *Campylobacter* and *L. monocytogenes* in England and Wales between January and March, 2010 and 2011 (rates per population as described above).

| Pathogen                      | 2010 | 2011* |
|-------------------------------|------|-------|
| <i>Campylobacter</i>          | 80.9 | 87.9  |
| <i>Listeria monocytogenes</i> | 1.97 | 2.48  |

\*Provisional HPA data

#### 4. Key points from data for 2010:

- There was a decrease in the incidence of listeriosis in England and Northern Ireland in 2010 compared to recent years. Provisional data for the first 3 months of 2011 in England and Wales show that the rate is higher than that for the same period in 2010.
- *Campylobacter* has continued to increase in 2010 throughout the UK. The incidence in England and Wales for the first 3 months of 2011 is higher than that for the same period in 2010.
- An increase in *Campylobacter* outbreaks had been observed in England and Wales in 2010. Approximately 80% of these were linked to liver pate or parfait.
- There were a number of confirmed or suspected norovirus outbreaks linked to oysters in England and Wales.
- There was an outbreak of *Salmonella* Bareilly linked to bean sprouts with 231 cases in England and Wales and 21 cases in Scotland.

### Other items of interest to the Committee

#### Food Surveillance

5. EFIG was updated on the UK food surveillance system (UKFSS) a national database that centrally holds a record of all food samples submitted for food analysis by official control laboratories on behalf of local authorities and port health authorities. UKFSS is currently being rolled out across England and Wales, and is fully operational in Northern Ireland and Scotland. It was agreed that collaboration between the various departments/agencies is vital to the usefulness of this database.
6. EFIG also received an update on the Local Government Regulation (LGR) and Health Protection Agency (HPA) programme of national microbiological studies. Recent or current studies included a reactive response study on *Salmonella* contamination in bean sprouts & sprouted seeds and a study on lightly cooked foods such as sous vide foods cooked by water bath, uncooked egg dishes, rare

duck meat (pink duck), chicken parfait and pate made with flash fried liver. The findings from these studies are awaited. For further details concerning these studies see <http://www.lacors.gov.uk/lacors/ContentDetails.aspx?id=3512>

## ***Campylobacter***

7. The previous meeting EFIG had discussed the recent increase in reports of *Campylobacter* infections in humans and there was further discussion on this issue including presentations on *Campylobacter* Surveillance in Wales and trends in laboratory reports in the UK. EFIG also received updates on the FSA work on tackling *Campylobacter* in Chicken, a *Campylobacter* Expert Opinion Workshop held in April and preliminary findings from a UK 3 year national prevalence survey for *Campylobacter* in broilers undertaken by the AHVLA.
8. Members were informed that laboratory confirmed *Campylobacter* cases have continued to increase in 2010, across most regions and age groups, but at lower levels than in 2009. Data had been analysed up to week 30 in 2010 by the FSA and a range of possible explanatory factors were examined including trends in population, travel abroad, eating out and retail poultry sales. It was highlighted that possibly the *Campylobacter* surveillance being carried out in Wales could be useful in identifying other possible factors driving this increase. FSA will continue to develop this analysis.
9. EFIG were presented with an analysis of faecal test results from Welsh laboratories 1998-2008 focussing on the faecal positivity rates for *Campylobacter* and *Salmonella* alongside denominator data. The conclusions revealed that stool sampling rates especially for older people and hospital samples had increased. Whereas a decline in *Salmonella* positivity rates appeared to be genuine there were indications that the recent rise seen in *Campylobacter* reports may reflect increased stool sampling. Data covering the period 2009-2010 would be examined and other members were asked to consider whether it is possible for them to provide similar information for other parts of the UK for a future meeting.
10. The group was provided with a progress report on the FSA's *Campylobacter* risk management programme. The Agency is continuing to work in partnership with the British Poultry Council, the National Farmers Union, the British Retail Consortium (BPC) and Defra to deliver a joint action plan for *Campylobacter*. It was highlighted that significant achievements had been made in working with industry in developing an industry target. The joint working group on *Campylobacter* had agreed and published a voluntary target to reduce *Campylobacter* in UK produced chicken by 2015. The aim of the target is to reduce the levels of the most highly contaminated whole chickens at the end of the slaughter process (post chill). Members were informed that the Agency in collaboration with the Biotechnology and Biological Sciences Research Council (BBSRC), Defra, and other research funders are in the process of commissioning new *Campylobacter* research following the joint strategy published in July 2010. In addition a workshop was expected to be held in early 2012 to bring together the research organisations contracted through the new programme of *Campylobacter* research funded by the FSA, Defra and BBSRC.

## **Modernisation of meat Inspection**

11. Members were informed about the EFSA mandate regarding modernisation of meat inspection in the EU. This is a large programme of work and includes evaluation of meat inspection in a public health context, identifying and ranking the main public health hazards that should be addressed, consideration of biological and chemical risks and defining harmonised epidemiological criteria for specific hazards already covered by current meat inspections (such as trichinellosis, tuberculosis) and for any possible additional hazards. EFSA has adopted a species by species approach to the work and the first species being considered are pigs with the opinion likely to be published in September 2011.

## **Action**

12. ACMSF Members are invited to comment on the recent trends in animal and human data and other subjects discussed by EFIG.

**Secretariat**  
**June 2011**