

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

1. The group met on 12 May 2010 and the following is a summary of the main areas that were discussed. We would particularly like to draw the Committee's attention to the discussion about the role and future of EFIG.

Review of animal data for January – December 2009

2. *Salmonella* in poultry trends over the last few years have been different to previously as there are fewer surveillance isolates as the majority are collected under the National Control Plans (NCPs). The NCP data for 2008 was published in the *Salmonella* in Livestock in GB 2008 report and the data for 2009 are currently being validated.
3. There has been a fall of 64% in *Salmonella* reports from chickens, previously most reports were received from monitoring of broiler flocks which are now tested under NCPs. *Salmonella* reports from cattle rose by 20% with increases in *S. Dublin* and *S. Mbandaka* of note. In contrast reports from sheep and pigs fell. There were eleven reports of the monophasic *Salmonella* 4,5,12:i:- in pigs in 2009 (6.7% of total pig incidents), compared with eight reports (4.5% of total pig incidents) in 2008. Most incidents of *Salmonella* 4,5,12:i:- in pigs are of phage type DT193.
4. There were only 19 reports of *S. Enteritidis* in 2009. In contrast there were 250 reports of *S. Typhimurium*, mostly in pigs, but also in cattle. The number of reports of *S. Typhimurium* has fallen over the last decade, with pigs and cattle carrying predominantly different phage types. In cattle, DT104 and DT104b are the most common phage types of *S. Typhimurium* whereas in pigs it is DT193 and U288. There has been no real change in the other *Salmonella* serovars reported. In cattle *S. Dublin* was the most common and is associated with clinical disease. There were also reports of *Salmonella* 4,5,12:i:- in cattle. The most common *Salmonella* in sheep was *S. diarizonae* which is also associated with clinical disease. In pigs the most common serovar was *S. Typhimurium* followed by *Salmonella* 4,5,12:i:- and *S. Derby*. *S. Senftenberg* was the most common serovar in chickens and *S. Kedougou* in turkeys.
5. The group discussed the recent trends in monophasic *Salmonella* 4,5,12:i:- in animals. These strains have characteristics in common with *Salmonella* Typhimurium but are termed monophasic as they lack the H (flagella) antigen. Since 2008 the number of reports has risen substantially, mainly from pigs and cattle. Many isolates show resistance to ASSuT but lack resistance to chloramphenicol. EFSA has set up a working group to look at the emergence of *Salmonella* Typhimurium like strains and interpretation of the serological findings. It has recently been noted that the monophasic *Salmonella* strains do cause clinical disease in adult cattle which is characteristic of DT104. In cattle it appears that small numbers of animals on farms are affected,

whereas in pigs it tends to be larger groups. This serovar is being reported from other parts of Europe and has also been reported from the USA, Thailand and Korea.

Review of human data for January - December 2009

6. Laboratory reports of *Salmonella* infections continue to decline which is a trend seen over the last few years. Reports for non-typhoidal Salmonellas were down by 9.6% across the UK and particularly in Scotland where numbers fell by 19.1%. For *Salmonella* Enteritidis the UK figure for 2009 was 10.1% lower than in 2008 – and the fall was reflected in all four countries. *S. Enteritidis* PT4 now represents around 15% of all *S. Enteritidis* reports and was only the second most common PT in 2009 after *S. Enteritidis* PT14B carrying the Nx_{Cp_L} resistance marker.
7. Reports of *S. Typhimurium* DT104 infections have continued to decrease. However reports of *S. Typhimurium* DT193 increased in 2009 with clusters in North West England. There was also an increase in *S. Typhimurium* DT191A in 2009 associated with an ongoing outbreak linked to contaminated mice being fed to reptiles.
8. There was a significant increase in *Campylobacter* reports in 2009 with UK figures 16.3% up on 2008. All four countries showed an increase but the largest was seen in Scotland (31.5%).
9. There was a slight increase in *Listeria monocytogenes* reports for the UK in 2009 (230 from 208 in 2008). The largest increase was in England (up 16.8%).
10. Laboratory reports of *E. coli* O157 increased in 2009 in part due to the Godstone farm outbreak and increased ascertainment in the autumn. The group felt that people were now becoming more aware of VTEC and that this could have an impact on the number of isolates being referred and hence the number of cases confirmed.
11. The number of outbreaks of foodborne outbreaks (all agents) appeared to have increased dramatically in England in 2009. However, this is thought to be due to outbreak ascertainment as the HPA has implemented a new system with a more vigorous follow-up. There has also been enhanced surveillance of VTEC infections. It was noted that there had been a cluster of *Campylobacter* outbreaks linked to chicken liver pâté in England and Wales in 2009 and that historically *Campylobacter* outbreaks have been difficult to identify.

FSA strategic plan and tackling *Campylobacter*

12. The group was informed about the FSA's strategic plan in relation to the priority target of tackling *Campylobacter* in chicken and on the outcome of the FSA's international conference on *Campylobacter*. An outline of the *Campylobacter* risk management programme 2010-2015 was provided and it was highlighted that in 2010 the FSA would be working towards developing a

realistic and evidence based target for the reduction of *Campylobacter* in chicken with the aim of setting a target by the end of 2010.

13. The group were provided with an overview of the outcome of the FSA's international meeting on *Campylobacter* control in chicken. This brought together around 90 people with expertise in *Campylobacter* from UK poultry industry, retailers, regulators, government, and consumer organisations. The aims of the meeting were to identify and agree effective interventions to control *Campylobacter* in the poultry chain that could be implemented in partnership with the UK poultry industry and UK retailers. The report of the meeting is now available on the FSA website at:
<http://www.food.gov.uk/news/newsarchive/2010/jul/campylobacterconf>
14. The Group had considered possible reasons for the increase in human *Campylobacter* from 2004 to 2009 at EFSA's November 2009 meeting. This presentation highlighted a 19% increase in *Campylobacter* cases in England and Wales in the first half of 2009 and 31% increase in Scotland in 2009. Although some factors were suggested for the increase, EFSA acknowledged that there may be other reasons and a small subgroup involving initially HPA, HPS and Public Health Agency, Northern Ireland was set up to explore this further and would report back to EFSA.

Other sources of information

15. The 2008 Community Summary Report (CSR) on the Trends and Sources of Zoonoses and Zoonotic Agents in the European Union and food-borne outbreaks was published in January 2010 with reports for Member States, see <http://www.efsa.europa.eu/en/scdocs/scdoc/1496.htm>
16. The CSR on antimicrobial resistance in zoonotic and indicator bacteria from animals and food in the European Union in 2004-2007 was published in April 2010 see <http://www.efsa.europa.eu/en/scdocs/scdoc/1309.htm>. The CSR on antimicrobial resistance in zoonotic and indicator bacteria from animals and food in the European Union in 2008 was under review by the Task Force members (and has since been published in July 2010 see <http://www.efsa.europa.eu/en/scdocs/scdoc/1658.htm>
17. The appropriateness (or not) of merging quantitative zone size diameters for analysis arising from use of different disc diffusion methods was also highlighted. It was therefore proposed that a new EFSA Working Group will be set up to look at aspects relating to the content and analysis of the Community Summary Report on AMR. ECDC will be also consulted on the issue. A UK expert on AMR in animals has been proposed for the group.

Other recent EFSA publications include:

Report on the technical specifications for monitoring Community trends in zoonotic agents in foodstuffs and animal populations.

Scientific Opinion on a quantitative estimation of the public health impact of setting a new target for the reduction of *Salmonella* in laying hens.

Quantitative Microbiological Risk Assessment on *Salmonella* in Slaughter and Breeder pigs.

Scientific reports on development of harmonised monitoring schemes for *Trichinella*, *Echinococcus*, *Sarcocystis* and *Cysticercus*.

18. Work is ongoing on a Human Impact model for the Analysis of the costs and benefits of setting a target for the reduction of *Salmonella* in slaughter pigs and breeding pigs (scheduled for publication June and December respectively).
19. It was suggested that EFSA's EU Trends and Sources data and the UK zoonoses report should be placed on future EFIG agendas for discussion.

Role and future of EFIG

20. The group held a discussion to clarify the role and future of EFIG. Background on the group's formation and its relationship to other committees is provided in Annex 1.
21. EFIG was established in 1995 following the merging of the functions of the ACMSF with those of the Steering Group on Microbiological Safety of Food. EFIG is an inter- departmental group bringing together the FSA, Defra, HPA, devolved organisations and the VLA with a number of external members, 3 of whom are members of ACMSF. EFIG meets twice a year and a summary of the main discussion points concerning animal, food and human data are reported to ACMSF. These reports are available in the public domain as ACMSF papers and referred to in ACMSF annual reports.
22. It was recognised that that EFIG was a unique group bringing together human, food and veterinary epidemiological and microbiological information which can be investigated and discussed at UK and country level. The remits of other groups are different although these groups should be made more aware of the role of EFIG. It was agreed that the right people were represented on the group and the frequency of meetings (twice a year - May and November) was about right. The group reaffirmed their commitment to reporting the main outcomes from their meetings to ACMSF but felt that ACMSF should also be asked to comment on the input that they receive from EFIG.

Action

23. Members are asked to comment on whether they find the reports from EFIG helpful and informative and whether there is anything else they would wish EFIG to provide for the committee.

Secretariat
September 2010

ANNEX1

EPIDEMIOLOGY OF FOODBORNE INFECTIONS GROUP (EFIG)

Background

The UK Government set up the Epidemiology of Foodborne Infections Group (EFIG) in 1995 following the merging of the functions of the Advisory Committee on the Microbiological Safety of Food (ACMSF) with those of the Steering Group on the Microbiological Safety of Food (SGMSF). Another group, the Microbiological Food Surveillance Group (MFSG) was established at the same time as EFIG to perform a similar function in relation to the Government's microbiological food surveillance programme. In February 2001, the FSA decided to discontinue the MSFG as the Agency's future food surveillance work was to be more closely aligned with the *Salmonella* and foodborne disease targets that were established soon after the Agency was formed. EFIG continued its work as this was not primarily focused on identifying specific surveillance projects which was a key function of the MSFG. More recently EFIG has discussed food surveillance activities and antimicrobial resistance work both of which were not covered by EFIG when it was first formed. One advantage of including these areas is that it provides EFIG with a good, although probably incomplete, picture of activities in relation to the food chain as a whole without reliance on animal and human data on pathogens. Whilst there is some overlap with the functions of other committees (see below) this does not appear to be leading to duplication of effort.

EFIG's terms of reference

EFIG met for the first time in October 1996. EFIG's terms of reference are ***to collate and assess available information on animal and human infection and to identify through the evaluation of that information the need for action to ensure the microbiological safety of food and to advise accordingly.***

Membership, secretariat and reporting

EFIG is largely an inter-Departmental group bringing together the FSA, Defra, HPA, HPS, NPHSW, and the VLA with a number of external scientific members. The Group is chaired by the FSA and the secretariat provided jointly by HPA and VLA with the FSA co-ordinating distribution of meeting papers and hosting meetings of the group and secretariat. The Group meets twice a year and provides written reports to ACMSF which become publically available and are referred to in ACMSF annual reports.

Relationship to other relevant committees/groups

There are a number of committees or groups which deal to a varying extent with areas considered by or related to the work of EFIG.

The Advisory Committee on the Microbiological Safety of Food (ACMSF) was set up in 1990, and provides expert advice to Government on questions relating to microbiological issues and food. The Committee provides advice in response to requests from the Food Standards Agency and also on matters that Committee members themselves identify as important. It consists of independent experts drawn from a wide range of interests. The Committee's terms of reference are ***to assess the risk to humans of microorganisms which are used, or occur, in or on food,***

and to advise the Food Standards Agency on any matters relating to the microbiological safety of food.

The ACMSF currently has two Working Groups which are relevant to some of the work considered by EFIG.

- **ACMSF Surveillance Working Group.** This standing Surveillance working group of the ACMSF met for the first time in 2001 and was established to facilitate the process by which the Committee advises the Government on its programmes of microbiological food surveillance particularly in relation to the design, methodology, sampling and statistical aspects of surveillance projects.
- **ACMSF Newly-emerging Pathogens Working Group.** This group was set up in to assemble information on the current situation on this topic in order to decide whether there is a potential problem in relation to the microbiological safety of food; and to recommend to the ACMSF whether the Committee needs to undertake further action

The UK Zoonoses, Animal Diseases and Infections (UKZADI) group. This group advises as appropriate the Chief Medical Officers and Chief Veterinary Officers, DH in England, FSA and devolved administrations on important trends and observations which impact on animal and public health, including where necessary preventative and remedial action. It provides a strategic overview and means of ensuring overall co-ordination of public health action at the UK, national and local level with regard to existing and emerging zoonotic infections, and trends in antimicrobial resistance and animal-related chemical risks to the food chain.

The joint Human Animal Infections and Risk Surveillance (HAIRS) group was established in 2004. HAIRS is a multiagency and cross disciplinary horizon scanning group with members from HPA, Defra, FSA, DH and devolved administrations. The group acts as a forum to identify and discuss infections with potential for interspecies transfer, particularly zoonotic infections. The group provides input to UKZADI.

The Defra Antimicrobial Resistance Co-ordination (DARC) group was established in 1999 to take forward, within Defra, recommendations made by the House of Lords Select Committee on antimicrobial resistance. The DARC Group Terms of Reference are 'To co-ordinate, advise and review Defra activities on antimicrobial usage in animals and antimicrobial resistance (AMR) in micro-organisms from feedingstuffs, animals and food' The Group's remit includes reviewing the Defra action plan and strategy on surveillance of antimicrobial resistance in animals, reviewing surveillance studies on antimicrobial usage and microbial resistance and advising Defra on research ideas as they arise.

The Microbiological Safety of Food Funders Group (MSFFG) was established in 1998 and is a cross-representational body involving bodies who fund microbiological research in the area of food safety. The MSFFG includes officials from the FSA, DEFRA, DH, DARDNI, BBSRC. Membership was extended in 2005 to include representatives from the Meat and Livestock Commission, Food Safety Promotion Board, MRC, Environment Agency and the Health Protection Agency.

The MSFFG considers the whole of the food chain and its terms of reference are ***'To assist the co-ordination of publicly funded research and development on the microbiological safety of the food chain with a view to informing the R&D effort, identifying gaps and overlaps, and providing reports as appropriate.'*** The MSFFG does not have a role in managing or directing research projects or programmes, nor does it hold a budget. These aspects of research are the responsibility of the funding organisations. The MSFFG does not have a role in the co-ordination of microbiological food surveillance. However, the MSFFG will cover research in support of surveillance.