

**MINUTES OF THE EIGHTY-FOURTH MEETING OF THE ADVISORY
COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD HELD ON
29 JANUARY 2015 AT 10.00AM AT THE MANCHESTER CONFERENCE
CENTRE, SACKVILLE STREET, MANCHESTER, M1 3BB**

Present

Chair: Professor Sarah O'Brien

Members: Dr Gary Barker
Dr Roy Betts
Mrs Vivianne Buller
Professor John Coia
Mrs Joy Dobbs
Mrs Rosie Glazebrook
Professor Rick Holliman
Ms Jenny Hopwood
Professor Peter McClure
Dr Sally Millership
Mr David Nuttall
Dr Dan Tucker

Departmental representatives: Ms Ruth Parry (DH)
Mr Stephen Wyllie (Defra)

Secretariat: Dr Paul Cook (Scientific Secretary)
Dr Manisha Upadhyay
Mr Adekunle Adeoye
Ms Sarah Butler

Presenters: Ms Laura Inman (FSA)
Mr David Alexander (FSA)

Others: Mr Scott Reaney (APHA)

Members of the public – see Annex 1

1. Chair's Introduction

- 1.1 The Chair welcomed Members and members of the public to the 84th meeting of the Committee which, for the first time in its history, was taking place outside London. She welcomed Dr Manisha Upadhyay who had recently joined the ACMSF Secretariat and would be presenting item 9, Mr David

Alexander (Food Standards Agency; Food Safety Policy) and Dr Laura Inman (Food Standards Agency; Social Science Research Unit) who would present agenda items 8 and 10 respectively.

2. Apologies for absence

- 2.1 Apologies for absence had been received from Mr Andrew Spencer, who had recently joined the ACMSF Secretariat, Prof Bob Adak, and Mrs Jenny Morris.

3. Declaration of interests

- 3.1 The Chair reminded members of the need to declare any conflicts of interest in relation to the agenda items. Prof Coia declared that he did consultancy work for Tesco, Dr Betts declared that Campden BRI's members might produce and sell shell eggs and ready-to-eat sliced meats and Dr Tucker declared he undertook advisory work for the Pig Improvement Company (PIC) and was a partner in a dairy farm.

4. Minutes of the 83rd meeting

- 4.1 The minutes were agreed without amendment and would be posted on the ACMSF website.

5. Matters arising

- 5.1 The Secretariat had produced a table of matters arising from previous meetings. Dr Cook reported that actions from the 83rd meeting had been completed. The action from the 82nd meeting to amend the virus report had been completed and would be considered under agenda item 7, and the action from the 81st meeting regarding the risk assessment of *M. bovis* was still work in progress in the Food Standards Agency.

6. Output from horizon scanning workshop

- 6.1 The Chair reported on the Committee's horizon scanning workshop that was held a day before the meeting (28 January 2015). The workshop opened with a presentation on the FSA Strategic Plan 2015 - 2020 and an overview on the FSA Science and Evidence Strategy. Members had completed a questionnaire before the workshop which had asked the following questions:

- Can you identify any emerging issues that might present a risk to the public?
- Is there any information that needs to be brought to the FSA's attention to help consumers make choices based upon current evidence?

- Are there any risks or opportunities associated with new food technologies not already considered by the ACMSF?
- Are there any risks or opportunities arising for consumers as a result of the changing landscape of food production?
- Is there anything else to bring to the FSA's attention?

6.2 The questions were considered in group sessions. Following discussion there was agreement on a group of common themes which would be taken forward under the following headings.

- Impact of new technologies: advances in whole genome sequencing, in metagenomics of pathogens and samples, interpretations from resulting data from the application of these technologies in a risk assessment context, the way food processing is changing and novel processes focussing on current food processing technologies and other technologies on the horizon. Members agreed that two subgroups could be set up to consider the above topics with a group chaired by Dr Gary Barker considering genomics and Dr Roy Betts reconvening the group that considered raw, rare and low temperature cooked foods to look at issues concerning food processing technologies.

The other headings included:

- Changes in the food system: exotics and imports, new sources of food/ingredients, globalisation of food supplies, internet sales.
- Societal/Social change: consumer information, communication, influencing behaviour; use of new media and improving science communication.
- Climate change: how it impacts on behaviour of pathogens and organisms such as vibrios and other organisms.
- Antimicrobial Resistance (AMR): a huge cross governmental issue. It was highlighted that ACMSF already has an active working group but may need to consider what more can be done as part of the subgroup's ongoing work programme.
- Understanding the impact of ACMSF's work in supporting the FSA, how the advice is used in risk management and how to evaluate impact of the Committee's advice.

6.3 The Chair suggested that as the above headings were broad, she would meet with the group rapporteurs to prioritise the topics and bring them to the June meeting via a paper for discussion on the way forward.

Action: Secretariat and Chair

7. Update on viruses in the food chain

7.1 The Chair reported that following the public consultation a number of very constructive and supportive comments had been received on the draft report. As a result of these comments the report had been amended in some places and the wording clarified in others. The *Ad Hoc* Group's responses to these comments were detailed in paper ACM/1164a. The Chair asked members if they had any further comments, either on the table of responses or the amended report (ACM/1164b). Whilst agreeing with the report's recommendations on Hepatitis E virus, a member suggested that it would also be useful to do more risk factor analysis of virus-positive pigs at slaughter and that it would be interesting to have a comparative study with other parts of Europe. It was pointed out that the original terms of reference had expected that the *Ad Hoc* Group would report back to the main committee by January 2013 and it would be helpful to explain why this had not been realised. The Chair confirmed that the report was as up-to-date as it could be but that an explanation of the revised timeframe would be added. Once these amendments, along with a few minor typos, had been incorporated into the report, members agreed that the report should be submitted to the FSA Chief Scientific Adviser for approval for publication and the consultation responses be published without further delay.

8. Food safety risk of recycled manure solids used as bedding for dairy cattle

8.1 The Chair invited David Alexander to introduce paper ACM/1165 seeking the Committee's views on the food safety implications of the use of green bedding/recycled manure solids for dairy cattle. The FSA asked Members:

- Whether they agree with the assessment that the main microbiological food safety risk is raw drinking milk produced by dairy cattle reared on systems using Recycled Manure Solids (RMS) as bedding.
- To identify any additional data and research requirements that would allow microbiological food safety risks to be more fully quantified. These were in addition to those highlighted in the Gap Analysis outlined in the scoping study taking account of the further research proposal.

8.2 Members were informed that reduced availability and increasing cost of more traditional bedding materials, had over a period of time led to the use of RMS as bedding for dairy cattle on a limited number of farms across the UK. Dairy farmers in the UK are increasingly interested in using suitable recycled waste materials, such as RMS, recycled wood shavings or paper sludge ash as animal bedding due to the high cost of virgin bedding, pressure to recycle waste materials and reported animal health and welfare benefits for some recycled bedding materials.

- 8.3 It was confirmed that the use of RMS bedding within the UK is currently limited. Best estimate is that between 70-80 farms in GB and a further 5-10 in Northern Ireland currently use this material. Members were informed that its use is widespread in the United States and the EU. Currently 800 Dutch dairy farmers (4-5% of all dairy farmers in the Netherlands) are using RMS as bedding. It was reported that Dutch research experience suggested that bedding management was more important than bedding type or initial bacterial load. RMS is produced by squeezing water out of the manure by a variety of press mechanisms to produce a material with around 35% dry matter content. The main food safety risk would appear to be associated with use of RMS on holdings producing raw drinking milk. The agreed conditions of use include a specific requirement that milk from production holdings using RMS must be pasteurised.
- 8.4 Defra and Scottish Government have agreed to allow use of RMS as bedding for dairy cattle in England and Scotland to allow data to be gathered, provided farmers comply with certain conditions and follow best practice management criteria.
- 8.5 The following comments and questions were raised by Members in the ensuing discussions:
- Reference was made to the work that has been done and the current measures to control VTEC in livestock where the key issue is to avoid cross contamination. It was stressed that this practice may facilitate cross contamination in the event of animals excreting high number of VTEC.
 - It was stated paper ACM/1165 had not given attention to the microbiological hazards in raw milk (and cheese made from raw milk) associated with this type of practice and to consider whether pasteurisation can control this hazard.
 - There was concern that consumers of unpasteurised milk and unpasteurised cheese will be exposed to additional risks.
 - There was unease on how this practice relates to the hygiene rules on storage, handling and disposal of farm/animal waste as RMS consists of faecal material that may include VTEC, *Salmonella* and other pathogens.
 - It was pointed out that RMS users would be homogenising the material thereby distributing pathogens widely.
 - It was highlighted that data in relation to pathogen loads on all types of bedding (straw, RMS etc.) had not been included for consideration.

- It would be useful to consider data on the load of spore formers on RMS and other beddings.
- Data were missing on the issue of AMR (it was noted genomics may help in gathering relevant information).
- Understanding the behaviour of pathogens in the product would be vital as there is uncertainty on this at present.
- Some of the conditions for users listed at ACM/1165 annex II (14 prescribed conditions) are impractical to carry out particularly in situations when farmers may have diseased cattle shedding VTEC.
- There was concern on the issue of dust blowing around.
- Members were not convinced that research proposal at ACM/1165 annex 3 would be able to address the questions that it was designed to answer.
- It was noted that the use of RMS is not just a food safety risk but there are possible risks to farm workers, their families and consumers in relation to health and safety and hygiene.
- It was highlighted that some consumers might be surprised that this type of material can be approved for use for food producing livestock and it was noted that should the use of RMS be adopted, Government should be careful to avoid communicating mixed messages in relation to food hygiene practices.
- Consideration should be given to the possible toxicological issues that may need to be addressed.

8.6 In the light of the above particularly as there were significant data gaps and the need to have clear understanding of microbial behaviour, the Committee agreed that they were not in a position to answer the FSA's questions. David Alexander and the Defra representative confirmed that the two departments were working together to ensure that data gaps are addressed.

9. Risk assessment of *Salmonella* from shell eggs

9.1 The Chair invited Dr Upadhyay to present paper ACM/1166. Dr Upadhyay explained that the purpose of the paper was to ask the committee to consider whether they wished to update their assessment of the risks to consumers, including vulnerable groups, from eating lightly cooked or raw shell eggs and their products. The Committee had not reviewed this subject in detail since 2001 and the paper was a starting point for any subsequent risk assessment.

- 9.2 Dr Upadhyay reminded members that the FSA's advice had always been that raw or runny eggs could cause food poisoning, particularly for vulnerable groups. This dated from the situation in England and Wales in the late 1980s when a major epidemic of foodborne infection was attributed to chicken and shell eggs contaminated with *Salmonella* Enteritidis. The paper outlined the work of the Committee from 1991 when a subgroup was set up to consider the extent to which eggs were responsible for the incidence of foodborne disease due to *Salmonella*, and the subsequent work of a second subgroup which culminated in the Committee's second report on the issue which was published in 2001.
- 9.3 Dr Upadhyay said that outbreaks attributed to *Salmonella* Enteritidis were now markedly lower than in the 1990s. Additionally, relating to laying hen flocks, levels of contamination had been well below the EU designated targets for a number of years. With this in mind, she invited the members to consider whether it would be timely for them to assess the current level of risk from eggs.
- 9.4 There was a wide ranging discussion during which the following points were made:-
- The risks may have decreased but not disappeared. Advice may need to be nuanced bearing in mind there are differences between UK produced Lion brand eggs cooked at home, catering eggs which may carry a higher risk, and niche markets such as duck eggs. Consumers would not know whether eggs served in a hotel or restaurant were UK produced eggs, or if it was a pasteurised egg product.
 - In some organisms, including *Salmonella*, new variant strains emerge. Sometimes the dominant strain is not virulent, and the risk may appear to be decreasing. However, since there were a number of factors that had changed since the Committee last considered this, including changes in the organism, changes in the way eggs are purchased (including online) and the way they are handled, it raised the question of whether the Committee's previous advice was still appropriate for the current situation.
 - Now that new technologies were available it may be that looking at just *Salmonella* in eggs is too restrictive and it might be better to think about the wider health risks from shell eggs. Even if the risk from *Salmonella* has decreased, there may be other microbiological risks.
 - In the 1990s it was very clear what the target was, i.e. to reduce the risks from *Salmonella* in eggs. But now it is not so clear what we are trying to

achieve, bearing in mind that zero risk is not possible. Is there a systematic approach?

- Sales of eggs had changed, and interventions had changed. There was also a need to include duck eggs which had not been considered previously.
- There was some indication from social science that people took more notice of advice when they believed the facts underlying the evidence. This supported the need to explain how things had changed, with examples, such as emerging issues with duck eggs.
- It could be helpful to consider what circumstances might lead the committee to change its advice.

9.5 The Chair summed up the discussion by concluding that members supported setting up a subgroup to carry out further work in this area and that John Coia had agreed to chair such a group. She would consider who else might be involved and approach members following the meeting. The questions to be tackled would need some refinement, but would include looking at health risks in the round both from hen and other types of eggs, based on the current situation, and considering the circumstances that might lead the Committee to change its advice.

10. Food and You Survey: Findings from Wave 3

10.1 Following the presentation the Committee received at its June 2014 meeting on the findings from the FSA's Kitchen Life Study members asked to be updated on the most recent wave of the Food and You Survey. The package of work provided evidence on domestic food safety practices including the Food and You Survey. Laura Inman (FSA SSRU) was invited to present the findings of the study. Laura provided background to the work. She reported that Food and You is the FSA's flagship social survey of consumers' reported behaviours, attitudes and knowledge relating to food safety and other associated topics. The survey uses a random-probability sampling methodology to provide a robust representation of the UK population aged 16 and above living in private households. It is a biennial survey and waves have been held in 2010, 2012 and 2014. The survey was carried out by TNS BMRB on behalf of the FSA. Food and You is an interview based survey with approximately 3000 interviews conducted at each wave. The overall UK response rate was 52% at Wave 3, similar to that at previous waves, and in line with other similar surveys. The survey was overseen by the FSA SSRC.

- 10.2 The survey's key objectives and purpose included to provide robust, cross-cutting information about consumers' reported behaviours, attitudes and knowledge relating to food issues, a rigorous evidence base to underpin policy decisions and essential baseline data about consumer behaviours.
- 10.3 Wave 3 UK findings were published as an Official Statistic in October 2014 in 4 bulletins: eating, cooking and shopping; food safety in the home; eating outside the home; and food poisoning and attitudes towards food safety and food.
- 10.4 The findings covered reported domestic food safety practices, eating out, reported experience of food poisoning and learning to cook and learning about food safety.
- 10.5 Regarding domestic food safety practices, it was reported that 80% reported always washing hands before starting to prepare or cook food as well as immediately after handling raw meat, poultry or fish in line with recommended practice. Over half of the respondents who had a fridge (53%) indicated that the fridge temperature should be between 0 and 5°C (the recommended temperature). The proportion of respondents reporting never washing raw meat/chicken appeared to have increased across waves. The proportion reporting never washing fruit and vegetable to be eaten raw was higher at Wave 3 compared to Wave 2. Three quarters of respondents (75%) reported that they would eat leftover food within two days of cooking it, in line with recommended practice.
- 10.6 61% of respondents reported that the use by date was an indicator of whether food is safe to eat and reported always checking the date when cooking or preparing food.
- 10.7 13% of those who reported having food poisoning in the last year had it medically diagnosed. Women were more likely than men to report going to see a doctor. On learning to cook/about food safety, learning from a family member/being self-taught are the predominant main methods of learning.
- 10.8 In conclusion Laura Inman underlined that Food and You Survey has been an important source of information about reported behaviours, attitudes and knowledge relating to food safety and associated topics and informed members that there are ongoing secondary data analysis for Wave 4. She indicated that SSRC was keen to engage with ACMSF on future projects.
- 10.9 Before inviting comments from members the Chair drew attention to the slide in the presentation under the heading food safety information sources. Family and friends came out top on current sources and internet search engines

came out top on future sources she pointed out that this resonates with the Committee's horizon scanning discussion (societal/social change) where members recognised the need for improvement in the communicating of risk and science messages. Joy Dobbs (SSRC deputy Chair and ACMSF Ex-officio) acknowledged that it has been observed that people appear to find internet advice easily accessible.

- 10.10 A member queried if the 3,000 people interviewed were the same people interviewed in the previous Food and You Study (Waves 1 and 2). It was confirmed that the people used for Wave 3 were different from those used in Waves 1 and 2. Concerning the number of people who saw a doctor or went to the hospital highlighted in the slide on reported experience of food poisoning, there was a suggestion for a future survey to consider those who report suspected food poisoning incidents to pharmacies and receive medication there.
- 10.11 On the figures relating to sausages and burgers as it was confirmed that there was no detailed analysis, a member suggested that it would be helpful to split these in the event of a further study. Joy Dobbs noted comment and agreed that this would be taken into account if there was a Wave 4.
- 10.12 A member asked if any thoughts had been given to calibrate the findings of this study against behaviour in order to authenticate people's real approach to food. Although this suggestion was noted, it was explained that the findings from Kitchen Life Study demonstrated that this may not add any significant value to the study.
- 10.13 As it was noted that children take home good food safety advice from school which they share with their parents, a member raised how the views of children could be picked up in future studies. It was suggested that the FSA should consider how to take into account children's views (under 16s) in Food Surveys.
- 10.14 The issue of how people respond to guidance and carry out the principles in the advice was raised as there was a suggestion that observations of how people demonstrate understanding of advice indicate that awareness does not necessarily mean people follow it. There was a suggestion that a series of questions may be included in a future survey to try and address this issue. Also suggested for consideration was using free text for future surveys as it was confirmed that it was not used for Wave 3.
- 10.15 Members welcomed the use of Index of Recommended Practice to measure behaviour as it was agreed that it had the potential to capture the understanding of domestic food safety practices.

- 10.16 In relation to the issue of food poisoning, it was highlighted that it would be useful to the food industry if consideration was given to the food(s) eaten before a food poisoning episode going back 48 hours as this would be useful in identifying the responsible food. It was underlined that people tend to blame the food they ate last and food they ate outside the home in the event of food poisoning.
- 10.17 Although cleanliness and hygiene came out as the most important factor considered when eating out, it was noted cleanliness in the dining area of restaurants may not correspond to the microbiological hygiene standards in the kitchen.
- 10.18 Members were encouraged that the awareness of FHRs/FHIS was high in the 4 UK countries.
- 10.19 In summarising the Chair thanked Laura Inman and Joy Dobbs for the presentation and noted the Committee's support for Food and You Wave 4. Issues the Committee identified for consideration in Wave 4 included: seeking to capture food poisoning incidents reported to pharmacies, attempting to capture the foods eaten hours before a food poisoning incident, attempting to calibrate reported behaviour against actual behaviour using various methods of analysis such as root cause analysis and free texting, picking up the views of children (probably via adult surveys if it is not possible to have a specific survey for under 16s) and there was support for the continuous use of IRP as this would assist the FSA in tracking progress in its aim of improving public awareness and use of messages about good food hygiene practice at home. SSRC indicated that they will consult the Committee if they receive the go ahead for Wave 4 and when they are considering the survey protocols.

11. A microbiological survey of pre-packed ready-to-eat sliced meats at retail in UK small to medium sized enterprises

- 11.1 The Chair invited Dr Paul Cook to present paper ACM/1168 on the results of an FSA survey on ready-to-eat sliced meats which had been published on the FSA website in December 2014. By way of background, Dr Cook informed members that as part of the Foodborne Disease Strategy, *Listeria monocytogenes* was one of the priority organisms, because of the severity of illness it caused, particularly in relation to vulnerable groups. The former Health Protection Agency had previously noted that elderly people were more likely to purchase from smaller convenience stores than the general population. The FSA had undertaken a large survey of *Listeria* in cooked sliced meats in 2007 but as it had been based on market share, this only provided a limited data on smaller outlets, whereas the more recent survey

focussed on this one specific sector. The survey had been carried out between April 2012 and January 2013. Over 1,000 samples had been taken from retail small to medium sized enterprises (SMEs) throughout the UK. Samples were taken for detection and enumeration of *Listeria monocytogenes* and other *Listeria* species and hygiene indicators (*Escherichia coli* and *Enterobacteriaceae*). Salt, pH, water activity, temperature, use-by date and storage instructions were also recorded.

- 11.2 Dr Cook drew attention to the key findings of the survey as summarised in the cover paper. 3.8% of samples had been found to contain *Listeria monocytogenes* and *Listeria* species were detected in 7% of samples. 71.3% of samples had a temperature above the industry guideline of 5°C and 32.7% were being stored above 8°C. Although the 2007 study of larger retailers was not directly comparable, due to differences in methodology and range of products tested, there were indications that there may be greater levels of contamination in samples from SMEs. As a result of the survey the FSA issued a letter to all Environmental Health Officers highlighting the need to remind food business operators of the importance of correct temperature control and staff training. Dr Cook added that the survey findings would inform the FSA's *Listeria* risk management programme as part of the overall Foodborne Disease Strategy which was currently under review.
- 11.3 A member expressed concern about the accumulation of risk factors highlighted by the survey: probable contamination of the product, being sold by SMEs with poor temperature control, which were more likely to be purchased by elderly people who, evidence showed, were more likely to carry out risky behaviours in handling food.
- 11.4 Members stressed the importance of stating clearly the confidence intervals in survey reports, particularly as here, when comparisons were being made between the different sectors studied in the 2 surveys. Dr Cook agreed that it was not possible to make a statistical comparison but as part of the risk management programme the FSA had identified a need for more guidance for SMEs, many of which did not have as much technical support as larger retailers.
- 11.5 A member suggested that poor temperature control may, in fact, not favour *Listeria* because it may be outgrown by other organisms, so the consequences are not always predictable.
- 11.6 Summing up, the Chair said the survey was a useful piece of work but members had stressed the importance of confidence intervals and estimates of uncertainty with regard to prevalence estimates. Members had also raised the need for further clarification on the distributions of counts and

consideration of outliers, with the possibility of being able to focus on higher risk products in terms of the *Listeria* risk management programme; using other indicator organisms to provide further information, and comments about the care needed with infrared temperature measurement which could record the surface of the pack rather than the underlying product; concern about the pack life of products being longer than 10 days which exceeded the *Clostridium botulinum* guidelines; and the combination of product and person likely to be eating the product.

12. Epidemiology of Foodborne Infections Group

- 12.1 The Chair invited Dr Cook to update Members on the outcome of the EFIG meeting held on 9 December 2014. He reported that provisional data between January and September 2014 revealed 849 reports of *Salmonella* from livestock species not subject to *Salmonella* National Control Plans (NCPs). This is small decrease compared with January – September 2013 (859 reports) and January – September 2012 (857 reports). There were six reports of *S. Enteritidis* during January - September 2014. One was from cattle and the rest from non-food animals. There were 105 reports of *S. Typhimurium* during January – September 2014, an increase of 22% compared with the equivalent period in 2013 (86 incidents).
- 12.2 Trends in laboratory reports for *Salmonella*, *Campylobacter*, *Listeria monocytogenes* and *E.coli* O157 in humans were reported covering 2003 to 2014 (for the period January to September). Overall *Salmonella* and Verocytotoxin-producing *E.coli* O157 (VTEC O157) have declined marginally whilst *Campylobacter* and *Listeria monocytogenes* showed small increases in reporting for the first three quarters in 2014 when compared to the same period in 2013.
- 12.3 *Salmonella* reports continued to decline in frequency in 2014, with 6,138 isolates reported in the UK, a 5% reduction when compared to the same period (Q1-3) in 2013 and equivalent to 46% of isolates reported in 2003.
- 12.4 *Campylobacter* reporting increased by 8.7% in the first three quarters of 2014, with the increase reported in all countries; England (8.5%), Scotland (10.6%), Northern Ireland (5%) and Wales (11.7%). There still remains a significant difference in the reporting rates for Northern Ireland against England, Scotland and Wales, with the rate approximately 30% less in Northern Ireland.
- 12.5 *Listeria monocytogenes* increased by 15.7% in the first 3 quarters of 2014 compared to the same period in 2013, but was 23% below 2003 levels. VTEC O157 rates increased by 1% in the first three quarters of 2014 compared to the same period in 2013 with the increase noted in England and Scotland.

- 12.6 In 2014 (January to September) *Campylobacter*, VTEC and *Clostridium perfringens* were the leading causes of foodborne general outbreaks (7 outbreaks each) in the UK in the first 3 quarters of 2014. There were 3 *Salmonella* outbreaks, 2 of which were *Salmonella* Enteritidis (non PT4).
- 12.7 Other issues EFIG considered at their meeting include the results from the first two quarters of the FSA's year-long survey of *Campylobacter* on fresh chickens, application of genomics at PHE for GI pathogens, antimicrobial resistance and food surveillance.
- 12.8 On the retail chicken survey it was reported that the 12 month survey running from February 2014 to February 2015 testing 4,000 samples of whole chickens bought from UK major retailers and smaller independent stores and butchers. The results to date (for Q1 and 2) reveal 70% of chickens tested positive for the presence of *Campylobacter*. Of these 18% of chickens tested positive for *Campylobacter* above the highest level of contamination (>1,000 cfu/g). 6% of the outside of packaging tested positive for the presence of *Campylobacter*.
- 12.9 The data showed variation in contamination between retailers with none of the major retailers meeting the end of production target for reducing *Campylobacter*. Industry has agreed a 10% end of production line target by December 2015 which equates to a 7-8% target for birds on retail sale. The FSA has welcomed the positive moves made by the industry such as integrated interventions, biosecurity and steam technology and the roast in the bag raw chicken initiative. Survey quarter 3 results are expected to be announced in February 2015 and quarter 4 results in May 2015.
- 12.10 Concerning *Campylobacter* outbreaks, a member asked if common characteristics have been identified from these outbreaks. It was confirmed that chicken liver parfait/pate dishes made in different ways have been linked to *Campylobacter* outbreaks. The trend of under cooking the liver leads to the pathogen not being killed. It was highlighted that in recent years *Campylobacter* outbreaks have exceeded those due to *Salmonella* primarily due to outbreaks involving chicken liver pate.
- 12.11 A member queried the *Campylobacter* data for 2014 (data provided was for the first 3 quarters of each year 2003 to 2014). It was explained that this may possibly be a surveillance artefact because of the second generation surveillance system currently employed by PHE. Dr Cook agreed to discuss with PHE and present revised figures at the June 2015 Committee meeting.

- 12.12 As PHE's GI whole genome sequencing activities was mentioned in the update, a member questioned why the focus is on *Salmonella* when outbreak cases indicate that *Salmonella* cases were going down and *Campylobacter* cases were on the rise. Members agreed that it would be useful to know the factors why the focus is on *Salmonella*.

13. Committee sub-groups

Antimicrobial Resistance Working Group

- 13.1 Prof David McDowell updated the Committee on the fifth and sixth meetings of the Antimicrobial Resistance (AMR) Working Group.
- 13.2 The fifth meeting was summarised in paper ACM/1170. At this meeting the subgroup considered the UK Antimicrobial Resistance Strategy, the European Medicines Agency Antimicrobial Expert Group (AMEG) Report, a report on the Comparative Analysis of ESBL-producing *E. coli* isolates from animals and humans from the UK, the Netherlands and Germany, EFSA/ECDC Summary Report on antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food in 2012 and a report on the protection of consumers by microbial risk mitigation through combating segregation of expertise (PROMISE) project.
- 13.3 Implementation of the action plan had been delayed by the House of Commons Science and Technology Committee deliberations on AMR. The group discussed the challenges in tackling issues relating to AMR in the past 20 years.
- 13.4 The group discussed AMEG's report and responded to questions on the impact of antibiotic usage and antimicrobial resistance in veterinary medicine which had been posed by the European Commission (EC).
- 13.5 Members were informed that the group considered the Comparative Analysis of ESBL-producing *E. coli* isolates from animals and humans from the UK, the Netherlands and Germany carried out between 2005 and 2009. The study investigated the genetic relatedness of ESBL/AmpC-producing *E. coli* from animals and humans from the UK, the Netherlands and Germany. Members endorsed the conclusion that stated that approaches to minimize human-to-human transmission are essential for controlling the spread of ESBL-positive *E. coli*.
- 13.6 The group commented on the EFSA/ECDC Summary Report on antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food in

2012 and the noted that the PROMISE project would be added to their work plan for a presentation to be provided when it is completed.

- 13.7 At the sixth meeting the group was updated on current issues relating to MRSA in the food chain. Since the last update they received on the incident of LA-MRSA in turkeys on a farm in East Anglia, MRSA had been identified in a piglet in Northern Ireland. It was noted that from International literature reports of occurrence of LA-MRSA in food animals and farmer workers (workers in the pig industry) were not uncommon in Europe but the finding of MRSA in the food chain the UK was new.
- 13.8 Members were informed that the Defra Antimicrobial Resistance Coordination (DARC) Group is monitoring the issue of MRSA in the food chain. The DARC surveillance group are currently considering future surveillance options in relation to LA-MRSA with potential options being people who are in contact with animals (farmers, farm workers and practising veterinarians) as they were more likely to be sensitive markers on whether LA-MRSA is transferred to people.
- 13.9 The group noted the contrast in approach in MRSA monitoring in the food production world and the hospital world. There was discussion on the role whole genome sequencing might play in revealing the direction of travel of MRSA.
- 13.10 Members deliberated on the need for the present quantitative risk assessment on MRSA in the food chain at the EU level to be updated by the appropriate authority in light of the new reports.
- 13.11 The group commented on the FSA's proposal to commission a formal broad-based systematic/extensive literature review on the contribution food makes to the problem of AMR in humans. The group indicated that review should be a follow on from the 1999 ACMSF report and in particular should incorporate recent findings from countries outside the UK.
- 13.12 Members commented on the House of Commons Science and Technology report: Ensuring access to working antimicrobials first report of session 2014-15 report (published in July 2014). The Government's response to this report was published in September 2014. It was pointed out that some of the remarks in the report were not a true reflection of how antibiotics are used on farms.

14. Dates of future meetings

- 14.1 The Chair drew attention to the schedule of future meetings (ACM/1171). The next meeting would be on 25 June at the FSA HQ in London.

15. Any other business

15.1 There were no items of other business.

16. Public Questions and Answers

16.1 The Chair invited questions and comments from those observing the meeting in relation to the items discussed and the work of ACMSF. As there were no questions the meeting was closed.

Members of the public attending the 29 January meeting

Fiona Brookes	2 Sisters Food Group
Luisa Candido	Dairy UK
Bridgette Clarke	Bakkavor
Linda Gordon	Safefood
Christine Moody	Norpath Scientific
Melanie Patterson	Thermo Fisher Scientific
Benjamin Pye	Booths
Eric Samuels	Pall Life Sciences
Karen Sims	Waitrose
Keith Watkins	Eurofins
Nicola Wilson	Westward Laboratories
Michael Wood	Norpath Scientific