

**MINUTES OF THE EIGHTY-SIXTH MEETING OF THE ADVISORY COMMITTEE
ON THE MICROBIOLOGICAL SAFETY OF FOOD HELD ON 29 JANUARY 2016
AT 10AM IN THE MERCURE HOTEL, NORWICH, NR3 2BA.**

Present

Chair: Professor Sarah O'Brien

Members: Dr Gary Barker
Dr Roy Betts
Prof John Coia
Mrs Rosie Glazebrook
Prof Rick Holliman
Prof Miren Iturriza-Gómara
Mr Alec Kyriakides
Prof Peter McClure
Prof David McDowell
Dr Sally Millership
Mrs Jenny Morris
Mr David Nuttall
Dr Dan Tucker
Mrs Joy Dobbs (*ex officio*)

Departmental
representative: Mr Steve Wyllie (Defra)

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

Presenters: Ms Narriman Looch

1. Chair's introduction

1.1 The Chair welcomed Members of the Committee and observers to the 87th meeting of the ACMSF. She welcomed Ms Narriman Looch from the Food Standards Agency's, Food Safety Policy team who would be introducing agenda item 9.

2. Apologies for absence

2.1 Apologies for absence were received from Dr Bob Adak.

3. Declaration of interests

3.1 The following declarations of interests were made:

Dr Roy Betts: Campden BRI has members who produce shell eggs; and will have worked with members on 6 log cooking processes for burgers; and will have members who produce disinfectants.

Prof John Coia: provides consultancy advice to Tesco.

Dr Gary Barker: has provided peer review for the FSA on burgers research

Prof David McDowell: provided peer review for the FSA on burgers research, and provides advice to Moy Park.

Mr Alec Kyriakides: Sainsburys sell eggs, burgers and products associated with agenda item 11.

4. Minutes of the 86th meeting

4.1 Members approved the minutes of the 86th meeting as an accurate record and agreed that they should be posted on the ACMSF website.

5. Matters arising

5.1 Paper ACM/1202 provided a summary of actions on matters arising from previous meetings. Dr Paul Cook informed members that the minutes of the 85th meeting had been amended and placed on the website. The ACMSF advice on the risk assessment for the use of a *Mycobacterium bovis* vaccine had been conveyed to the APHA. The restructuring of the risk assessment on the possible health risks from *M. bovis* associated with meat, is still work in progress. In answer to a query raised on paragraph 11.3 of the minutes of the last meeting concerning, Dr Cook said he understood the proposed multidisciplinary working group was being set up but he did not have any further details at present.

6. Output from the Microbiome meeting

6.1 The Chair reported on the outcome of the workshop on the human gut microbiome that was held on the previous day (28 January 2016) when the Committee received the following presentations:

- Overview of microbiome research: priorities, challenges and opportunities
- Impact of diet on the microbiome in early life and lifelong wellbeing
- The microbiome in later life, foodborne pathogens and the implications on health
- Understanding the role of food in the transmission of viruses and the impact of the virome
- Leap-frogging technology to understand the relationships between foodborne pathogens and their surrounding microbial communities

6.2 The key points raised following the presentations included:

- Members recognised that some of the information communicated might support risk assessment in the medium term but from a qualitative rather than a quantitative viewpoint.
- Members noted that changes were likely to occur in the diagnosis of human infection and in the testing carried out on foods and these will impact on public health surveillance.
- It was noted that the presentations did not cover what was happening in terms of the microbiome of food animals. The Defra Departmental representative agreed to liaise with APHA for information on any research they may be carrying out on the microbiome in animals.

Action: Defra Departmental representative and secretariat

6.3 Members agreed this was fast moving field which the Committee should keep a close eye on.

7. ACMSF's assessment of risk associated with the consumption of shell eggs

7.1 The Chair of the *Ad Hoc* Group on Eggs, Prof John Coia, presented the Group's report "An update on the microbiological risk from shell eggs and their products." The Group had considered all the circumstances that had changed since the ACMSF's last report on eggs in 2001. Prof Coia summarised the key findings of the report which were that there has been a major reduction in the microbiological risk from *Salmonella* in hen shell eggs, especially with regard to those produced under the Lion Code scheme. The Group also considered that the risk from non-UK eggs had also reduced, but not to the same extent. Accordingly, the group suggested that the risk level for UK hen shell eggs produced under the Lion code, or produced under demonstrably-equivalent comprehensive schemes, could be regarded as 'very low', whilst for other shell eggs the risk level should be considered as 'low'.

7.2 The Group had concluded that the FSA should consider amending its advice so that eggs in the 'very low' risk category could be eaten raw or lightly cooked by consumers including to those in vulnerable groups. Prof Coia said that whilst the majority of the group had considered that the advice could similarly be amended for eggs used in the catering sector, including hospitals and care homes, unanimous agreement had not been reached on this point due to concern about whether there would be any change to the level of risk from pooled eggs in part reflecting the possibility that cross-contamination could occur. However, Prof Coia, reminded Members that the ACMSF is concerned with risk assessment and it will be for others to decide on the risk management strategies that may arise from the Group's conclusions. For eggs in the 'low' risk category, and for non-hen eggs, the Group had agreed that the existing FSA advice should remain.

7.3 Members were invited to comment on the report and to agree that it should go for public consultation once finalised.

7.4 A Member of the *Ad Hoc* Group paid tribute to the co-opted Members of the Group who had provided their expertise and their time with significant contributions to the report. Another Member of the Group commented that it was important from a consumer perspective that the glossary was comprehensive and that it should be made clear how consumers could recognise what was meant by equivalent comprehensive schemes.

7.5 One Member acknowledged that the prevalence of *Salmonella* in eggs had dropped and that there were better controls in place than formerly, and whilst agreeing with the Group's assessment of risk in eggs, queried whether it followed that other ready-to-eat products such as chocolate or berries could be said to be safe to eat even if the food might contain *Salmonella* at a similar very low prevalence. In answering this, Prof Coia said that, based on the prevalence data, if someone were to eat an uncooked egg every day, they would have to continue for tens of years before being exposed to *Salmonella*. The Group had considered that on the basis of proportionality eggs could not be singled out compared to other foods, such as undercooked burgers. He also added that there was a need to continue to monitor the situation with regard to *Salmonella* in eggs on an ongoing basis to ensure that the considerable progress that had been made by industry was maintained. It was agreed that the consequences of advice relating to pathogens in ready-to-eat foods could be discussed further outside of this meeting.

7.6 Members agreed that there would be a challenge in communicating the risk based on the report's recommendations because of the different levels of risk identified for different types of eggs, and the need to explain this to consumers and to the catering industry and other issues such as whether there were implications for "best before" dates.

7.7 The point was made that the public would need to be able to reliably identify what was a Lion or non-Lion egg, and that this would need to be properly validated and enforced. It was also pointed out that the consumer has no way of knowing whether eggs used in catering were Lion eggs or not and this message would need to be communicated to caterers.

7.8 Members discussed the issue of pooling of eggs and agreed that there was nothing wrong with the process *per se*. Although the risk of contamination could be increased because of the way the pooled eggs were handled, the same could be said of any mixture of ambient stable product which would not therefore be regarded as unsafe. A Member of the Group explained that breakdown of the egg yolk membrane was the critical factor in allowing the internal contamination of an individual egg to increase, given the right/temperature.

7.9 The Defra representative commented that the National Control Programme provided ongoing surveillance and protection for the public at farm level.

7.10 The final comment on the report was to express concern over severely immunocompromised patients in hospital, and that it should be made clear that any change in advice did not apply to these patients who would continue to need a special diet.

7.11 In conclusion the Chair confirmed that Members were in agreement that the report should go out for a period of 12 week public consultation. In summing up the discussion she acknowledged that the risk assessment contained in the report was quite clear, but given some of the issues discussed, it was anticipated that most of the comments arising from the consultation would be about risk management and risk communication. At the end of the consultation the Group would reconvene to consider and respond to the comments raised. Members of the *Ad Hoc* Group were congratulated on producing a comprehensive and authoritative report within a short timescale.

Action: secretariat

8. FSA's work in relation to Rare Burgers

8.1 At the October 2015 ACMSF meeting Steve Wearne, FSA Director of Policy, updated the Committee on the FSA's Board's decision on the serving of rare burgers in the wider context of the approach to dealing with risky foods. Dr Paul Cook was invited to brief members on the work the Agency was undertaking following the FSA Board's September 2015 decision. Dr Cook reported that the key purpose of paper ACM/1204 was to keep ACMSF updated on developments in this area and seek the committee's input on key technical issues such as time/temperatures for reduction in Shiga toxin producing *Escherichia coli* (STEC) and modelling the impact of interventions to reduce STEC and other pathogens in the burger production chain.

8.2 Members were informed that within the Agency a formal project team was co-ordinating implementation of the Board's decision. Dr Cook outlined the project's objectives. He reported that the FSA Board will receive a further update on the project at their July 2016 meeting after which the Agency plan to issue further comprehensive guidance to the industry and local authority regulators in autumn 2016. The FSA expect to address the following areas over the next six months:

- Guidance for industry, local authorities and consumers,
- Assessing the impact of interventions (Development of statistical modelling to evaluate the effectiveness of interventions both individually and collectively throughout the food chain)
- Epidemiology of foodborne pathogens (Establishment of measurable triggers for foodborne pathogens to enable the Board to reconsider its position if

necessary, supported by ongoing enhanced surveillance of STEC and other relevant pathogens)

8.3 The committee's views and assistance were sought on two areas: time/temperatures for achieving a 4 log reduction and modelling the impact of interventions along the burger production chain.

8.4 The following comments were made by members in the ensuing discussions.

8.5 Members welcomed the risk assessment, however it was observed that it was difficult to understand as it did not reflect real world practice. It was felt that risk assessments should be done to reflect outside world practice so as to make them relevant and robust in considering or measuring risks for risk management purposes.

8.6 Members highlighted that Food Business Operators and Local Authorities (food law enforcers) value guidance that is simple to apply based on practical risk assessment. The FSA was urged to work on the principle of producing a risk assessment based on what is practical rather than on what is possible scientifically.

8.7 On figures provided in the risk assessment in relation to the approximate time and temperature combinations required to achieve a 6 log reduction, attention was drawn to the figure used for the size/weight of a standard (2.5 cm thick, 113g) and gourmet burger (5 cm thick, 227g). Members felt that this thickness was disproportionate for burgers to achieve the indicated time temperature combinations. The likelihood of burgers being served with the above weight was questioned and the issue of where the figures were derived from was raised. Also, it was noted that information relating to time/temperatures for achieving log reduction appears to have been inadequately presented as the way the results were communicated could be wrongly interpreted.

8.8 Members remarked that the modelling used was difficult to follow and it would take a lot of explanation in conveying message in the document. It was highlighted that the risk assessment had no contribution from uncertainty and variability which are important parameters to consider. It was noted that in terms of trying heat processes in a complex product such as minced meat, uncertainty relating to heat transfer coefficient and z values are among the important factors that should be considered.

8.9 Members stated that in discussing issues around the 4 log reduction process did not mean they support the FSA's proposed approach as outlined in the risk assessment. It was underlined that clarity was needed on the role of source reduction in relation to 4 and 6 log reduction processes.

8.10 Members felt information in the model was unworkable for caterers and enforcement bodies who require clear advice that would enable them to make

decisions on whether a cooked burger has gone through the correct process. It was underlined that the model was based on burgers cooked at set temperatures at carefully controlled times and turned at carefully controlled times which won't happen in a catering environment.

8.11 It was recognised that it would be difficult to communicate the time temperature combinations in the risk assessment to caterers as some of the examples provided to achieve 4 and 6 log reduction (particularly the 70 degrees for 40 minutes) would be deemed to be impracticable.

8.12 Concerning the cumulative approach it was noted that there are systems in some third countries such as the United States (approved by the FDA) where it is used for STEC/log reduction so as to ensure that good quality meat is available in the supply chain and there is no evidence of public health risk because of this approach. It was agreed that attention should be paid to measures in the food chain that can contribute to reducing risk as the more contamination that could be reduced at source the better. Reference was made to comments made by Steve Wearne at October 2015 ACMSF meeting when he said that many of large burger chains that serve rare burgers use treated meat (washed with lactic acid and imported from the United States) to help decontaminate their meat. It was noted if the use of treated meat was widespread it should be welcomed as this would significantly reduce the risk.

8.13 The danger of using science to avoid the obvious was underlined. It was pointed out that a risk assessment could be developed that will deliver a cumulative process that shows 4 to 6 log reduction but the possibility of having the middle of the burger uncooked remains which would in essence expose consumers to an unsafe product. Members agreed that they were yet to be persuaded to move away from the current advice of applying 70 degrees for 2 minutes or equivalent throughout every part of the burger. There was discussion on the benefits of using a meat thermometer to check the core temperature of meat while cooking.

8.14 In summing up the Chair noted that the risk assessment was very hard to understand, impractical and open to misinterpretation. She could not see how it could translate into practical advice. She underlined the point made by a member that the risk assessment ignored important factors such as uncertainty and variability which were not covered in the modelling exercise. She pointed out that although there may a log reduction achieved through source reduction (drawing from the experience in the United States), the Committee was not convinced with the log reduction case as presented in the risk assessment.

8.15 The Chair stated that as the information in risk assessment was based on a desk top modelling exercise, it would be useful to validate this using a microbiological experiment so as to have a clearer picture of the risks that may be associated with this approach.

8.16 In order to take forward this FSA Board's decision concerning the serving of rare burgers, three Committee members (Gary Barker, Roy Betts, David McDowell) agreed to assist the Agency in further work to define the time temperature combinations for achieving a 4 log reduction in STEC and in modelling the impact of interventions along the burger production chain.

Action: secretariat

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

9.1 The Chair invited Narriman Looch to present paper ACM/1205. The subject had been discussed in January 2015 when a number of comments were made which had been passed to the relevant authorities including the Agricultural and Horticultural Development Board (AHDB). Ms Looch reminded Members that when the Committee had discussed the risks of recycled manure solids (RMS) as bedding for dairy cattle a number of significant concerns had been raised, mainly regarding lack of relevant data. Annex 1 of ACM/1205 summarised further research that had been carried out since last year by Quality Milk Management Services Ltd and overseen by AHDB. The paper suggested that the ACMSF might wish to establish a working group to evaluate the research findings and provide recommendations for consideration at the June ACMSF meeting.

9.2 The following comments were made by Members:

- The statement "The study demonstrated that the mandatory conditions and best practice measure put in place at the start of the study were appropriate risk mitigation measures" was difficult to reconcile with many of the subsequent bullet points which pointed out a number of limitations. Some of the best practice recommendations had previously been highlighted as quite impractical, such as excluding manure from cattle being given antibiotic treatment, and excluding animals showing signs of VTEC as they would not show any clinical signs.
- The data gaps which were identified as being really important had not been resolved.
- A limited group of organisms had been included in the research and there was no mention of viruses.
- The bullet that stated "Caution should be applied when drawing conclusions from the data" should be the first bullet point.

9.3 In conclusion the Chair said it was hard to make a decision about setting up a Group before knowing what there was to review. Dan Tucker and Miren Iturriza-Gómara offered to work with Narriman Looch to review what was available before

making a decision on how to proceed and whether anything would be ready by the June meeting.

Action: Dan Tucker and Miren Iturriza-Gómara

10. Epidemiology of Foodborne Infections Group (ACM/1206)

10.1 The Chair invited Dr Cook to update Members on the outcome of the EFIG meeting held on 7 December 2015. He reported that provisional data between January and September 2015 revealed 815 reports of *Salmonella* from livestock species not subject to *Salmonella* National Control Plans, which is 4% lower than during January - September 2014 (849 reports) and 5% lower than in the same period in 2013 (859 reports). The decline since 2014 is largely attributable to a decrease in *Salmonella* reports from cattle. The top serovars in cattle, pigs, sheep and ducks were Dublin, 4,12:i:-, 61:k:1,5,(7) and Indiana respectively. There were 13 reports of *S. Enteritidis* during January – September 2015 compared with six during January – September 2014. Most reports were from non-food animals.

10.2 Reports of *S. Typhimurium* have decreased by 27% compared with the same period in 2014 (77 vs. 105 incidents), whilst reports of *Salmonella* 4,5,12:i:- have remained at a similar level (39 vs. 38 incidents). Phage type U288 was the most commonly reported phage type of non-monophasic *S. Typhimurium* with all reports being from pigs. Reports of *Salmonella* 4,12:i:- have almost doubled compared with January – September 2014 (47 vs. 24 incidents). The most common definitive phage type for these monophasic strains was DT193 which was found in 81% of the *S. 4,12:i:-* incidents and 92% of the *S. 4,5,12:i:-* incidents. More than two thirds of the monophasic *Salmonella* isolates (63/86) were from pigs.

10.3 Trends in laboratory reports for non-typhoidal *Salmonella*, *Campylobacter*, *Listeria monocytogenes* and *E.coli* O157 in the UK for the first three quarters (January–September) 2005-2015 showed overall *Listeria monocytogenes*, *Salmonella* and verocytotoxigenic *Escherichia coli* (VTEC) O157 notifications have declined marginally and *Campylobacter* increased slightly, based on data for the first three quarters in 2015, compared to the same period in 2014.

10.4 *Salmonella* reports continued to decline in 2015, with 6,400 isolates reported in the UK compared to 6,605 reports in the same time frame in 2014, a 3% reduction and equivalent to a 52% decline for the same period in 2003 (13,235 reports). However, there is variation between countries with an increase in reports of *Salmonella* from Scotland and Wales but a reduction in reports from England and Northern Ireland. The predominant cause of the decline remains the reduction in the number of reports of *Salmonella* Enteritidis.

10.5 Reported *Campylobacter* infections increased marginally in the first three quarters of 2015 in England and Wales but decreased slightly in Scotland and

Northern Ireland. *Listeria monocytogenes* decreased slightly in the UK overall in the first 3 quarters of 2015 compared to the same period in 2014. VTEC O157 notifications for the first three quarters of 2015 decreased in England, Scotland, Northern Ireland and United Kingdom generally, but have increased in Wales, compared to the same period in 2014.

10.6 Foodborne outbreak data (provisional data) for the first 9 months of 2015 indicated that there were 8 *Campylobacter*, 7 *Salmonella*, 7 (5 plus 2 suspected) *Clostridium perfringens* and 4 VTEC O157 foodborne outbreaks. Three of the *Campylobacter* outbreaks were associated with chicken liver pate/parfait and 4 with poultry or other meats. EFIG discussed the issues regarding the investigation and capturing of *C perfringens* cases in relation to regional laboratories and the national surveillance system and agreed to revisit this at their June 2016 meeting.

10.7 Other issues EFIG considered at their meeting include: STEC O157 surveillance, response and research, Public Health England's whole genome sequencing (WGS) activities, the results from first quarter results of the year 2 survey investigating the prevalence and levels of *Campylobacter* contamination on fresh whole chilled chickens and their packaging and food surveillance. EFIG also briefly touched on the issue of how to make data they consider more accessible. This will be discussed in full at the group's June 2016 meeting.

10.8 On PHE's assertion regarding what WGS is delivering, a member raised caution about the significance being attributed to WGS as a diagnostic tool. He explained that WGS is good in picking up relatedness in outbreaks but in the human diagnostic world clinicians were adopting multiplex PCR. It was underlined that multiplex PCR was likely to increase the scope of organisms that are detected in human samples. This method may have an impact on the trend data the Committee and the FSA consider. As an example EFIG will also start to look at non O157 STEC data at their next meeting in June 2016.

10.9 Concerning the first quarter results of the year 2 *Campylobacter* and chicken retail survey a member commented on progress being made in reducing levels of this organism which did not seem to be reflected in the human data. It was noted that the human *Campylobacter* data was only for the first three quarters of 2015 and was provisional data.

10.10 There was discussion on whether to include a question in relation to food safety in the "Food and You" survey questionnaire following the introduction of charging for carrier bags. It was confirmed that the regulation concerning the charging for bags allows for free bags to be provided for raw meat. Members noted that the FSA has written to retailers concerning bags for meat products.

11. Changes to plant protection product MRLs: potential impact on food safety

11.1 At the October 2015 meeting Members had been alerted to changes to maximum residue levels (MRLs) for two quaternary ammonium compounds (QACs), chlorate and biocidal actives which are used as disinfectants/sanitiser in the food industry. The Chair invited Adekunle Adeoye to present paper ACM/1207 which gave further information about this issue.

11.2 Mr Adeoye outlined the main issues. The first was that the new maximum residue levels now in place for QACs are set at much lower levels than would be considered necessary for food safety purposes. Both food industry and the FSA are concerned that food businesses, concerned about possible breaches of the new MRLs, could change their existing disinfection procedures to methods that are less effective.

11.3 Secondly, the use of chlorate has now been banned and a default limit of 0.01mg/kg applies to all foods. However, because chlorate occurs as an impurity in chlorine-based disinfectants and is also a by-product of water treatment, there are many potential sources of chlorate in food and there have been numerous exceedances of the default MRL. Revised MRLs for chlorate are under discussion at the EU Standing Committee, but there are concerns on the impact of microbiological safety of food if less effective products start to be used. Chlorate will be discussed at the February meeting of the residues section of the Standing Committee (SCoPAFF) with the earliest possible date for a vote on new MRLs in April.

11.4 The third issue to bring to Members' attention was that the use of biocidal active substances is under review and new MRLs are to be established under the Biocidal Products Regulations. The FSA is concerned these may be set without sufficient regard to the need to maintain microbiological safety. The EU Commission hopes to reach agreement with Competent Authorities in March 2016 on an interim procedure to be followed to establish the MRLs.

11.5 Mr Adeoye highlighted a number of questions posed to the committee in the paper and asked for comments on the suggestion that a working group be set up to include wider expertise from the Committee on Toxicity (COT) and the Expert Committee on Pesticide Residues (PRiF) to enable a full discussion to take place.

11.6 Members commented as follows:

- from talking to the food industry it was clear that there was a great deal of concern about this issue as people are moving away from QACs and alternative products may be more costly. As the paper mentions, due to the large chilled food manufacturing sector, the UK seemed to be disproportionately affected by the changes.

- Changes that were justified with regard to pesticides had had unintended consequences in the food industry where products are used for disinfection.
- Rinsing off any excess substances was not an option in a chilled food environment where there was a need to minimise the presence of water.
- The current situation could provide an opportunity for reinforcing the use of disinfectants in an appropriate, risk-based way.
- Any further work would need a good scoping process as the issues presented an enormous risk assessment task with many hazards and risks that are linked together.

11.7 In summing up, the Chair said there was agreement that this was an important subject and there was support for investigating it further but there was a need to include expertise from other Scientific Advisory Committees. It was acknowledged that it was potentially a huge task there was a need for careful scoping.

11.8 Mr Kyriakides, Prof McClure, Mr Barker, Dr Betts and Mrs Morris agreed to be part of a group to scope out how this work could be taken forward.

Action: secretariat

12. Committee subgroups

Antimicrobial Resistance Working Group

12.1 Prof David McDowell updated the Committee on the tenth meeting of the Antimicrobial Resistance (AMR) Working Group. The subgroup considered the FSA's assessment of the current level of risk and uncertainty associated with the finding of the *mcr-1* gene for colistin resistance in *Salmonella* Typhimurium var Copenhagen and *E. coli* in UK pigs via three questions.

- The public health significance and level of risk associated with the finding of the *mcr-1* colistin resistance gene in UK pigs.

12.2 Whilst supporting the FSA's current risk assessment, the group agreed that the finding of the *mcr-1* colistin resistance gene in UK pigs was an undesirable development and posed an increased risk to those who would need colistin for treatment. The subgroup highlighted the need for wider discussion concerning the use of colistin in the light of the recent findings. It was noted that European Medicines Agency are expected to meet soon to discuss the issue of colistin in the food chain.

- What further work might be needed regarding the risk associated with the food chain.

12.3 The subgroup welcomed what was being done by Public Health England and Animal and Plant Health Agency in going through their archives to screen isolates

and genomes for the *mcr-1* gene. They were also supportive of the FSA including screening of *E. coli* from retail chicken meat for the *mcr-1* gene. This work would begin in January 2016 as an add on to the surveillance of retail meat as part of EU antimicrobial resistance monitoring. The FSA was encouraged to liaise with other Member States (MSs) to see how they are dealing with the issue of colistin resistance as it was highlighted that little colistin is used in the UK compared to other MSs. The subgroup also suggested that consideration could be given to undertaking a survey on the use of colistin in pigs in the UK with the aim of identifying relevant reservoirs of the *mcr-1* gene.

- Potential interventions and their impact on the risk associated with the food chain.

12.4 The group agreed that the current risk assessment also makes reference to well established food hygiene advice in helping to control microbiological risks. Members recognised the importance of good hygiene practices in reducing microbiological risks through the food chain including during meat production and in the handling and cooking of meat in the kitchen. The FSA was encouraged to reinforce current advice for slaughterhouses and kitchen practices etc. Livestock keepers' and their veterinarians' attention is drawn to the European Commission's recently published guidelines on prudent use of antimicrobials (Guidelines for the prudent use of antimicrobials in veterinary medicine (2015/C 299/04). Specifically, pig producers and their veterinarians are encouraged to adhere to the Pig Veterinary Society's prescribing guidelines.

Ad Hoc Group on Campylobacter

12.5 Prof O'Brien informed members that the *Ad Hoc* Group on *Campylobacter* has been set up. At the June 2015 ACMSF meeting following the update members received on the FSA's *Campylobacter* retail survey, members agreed to establish an *Ad Hoc* Group as it is about 10 years since the Committee issued its report on *Campylobacter*. It was also noted that *Campylobacter* in chicken is a key strategic priority for the Agency. Members of the Group will be participating in the FSA *Campylobacter* Workshop scheduled for 8 to 10 March 2016.

13. Dates of future meetings

13.1 Members were asked to note that the next meetings would be held on 30 June, 20 October in 2016, and 26 January, 29 June and 19 October in 2017.

14. Any other business

14.1 Prof O'Brien informed the Committee that three members (Prof Rick Holliman, Mrs Jenny Morris and Dr Sally Millership) who would have served on the Committee for 10 years (on 31 March 2016) have had their terms extended by eight months

(April to November 2016). This is because the process to fill their posts cannot start until the FSA's review of its SACs has been completed (due in March 2016).

14.2 Members were informed that four members of the Committee were involved in a rapid microbiological risk assessment (drafted by the FSA) relating to a chilled pasteurised crab incident. A summary of the meeting will be posted on the website in due course.

15. Public Questions and Answers

15.1 The Chair invited those observing to make any comments or ask questions on the risk assessment work of the committee.

15.2 Prof Tom Humphrey who was a member of the *Ad Hoc* Group on Eggs paid tribute to the Chair and Secretariat of the Group for their patience and work. He pointed out that the last 2 FSA surveys had not found any *Salmonella* in Lion eggs and the earlier ACMSF report on eggs from 2001 had concluded that the greatest risk to public health from eggs was from internal contamination. Most of the current Group had taken the view that pooling of something that was safe was not dangerous and he agreed with the view expressed earlier that eggs should not be singled out as posing more risk than other foods.

15.3 Peter Littleton, from Klenzan, commented that some of the alternatives to biocides are 3-8 times more expensive and there appears to be a trend away from using biocides. He said there was a huge problem because 80% of disinfectants that was used in food processing, including catering, were QAC-based. He reported that work was being done by chemical suppliers to collect data on volumes of disinfectants that could be going into the industry and to find out how much was being used as a general environmental spray and how much on food contact surfaces, to feed in to the FSA. He welcomed the idea of a working group and best practice guide.

15.4 Bridgette Clarke of Bakkavor also welcomed the proposed work on biocides and stressed the urgency as chemicals used in food production were already being changed and this brought with it the need for re-writing cleaning schedules and re-training of staff. She also pointed out that historically chlorine had been used to wash produce.

15.5 Gary McMahon, from Moy Park, reiterated that the problem with the change from chlorine based chemicals was urgent.

15.6 Fiona Brookes, 2 Sisters Group, commented on the validation of cooking burgers and meats: cooking validation was not straightforward and was time consuming as every oven was different and needed separate validation. Validation

of grills is even more complicated and she questioned whether it was possible to accurately validate a 4 or 6 log reduction when cooking of burgers on grills.

15.7 Jo Head, an independent consultant asked what might be done in future to avoid unforeseen circumstances such as the MRL's issue. The Chair acknowledged that this was a challenge and there was a need to keep our ears to the ground as much as possible and to gather intelligence from all kinds of places in order to try not to be taken by surprise, but from time to time it was inevitable that things would emerge that had not been foreseen. A member of the Committee commented that when undertaking horizon scanning perhaps there was a need to look not just at newly emerging risks but also where old things might change. Bridgette Clarke said that there were often multiple risks involved in food factories, that were not just microbiological and it could be helpful when horizon scanning to include input from wider areas such as allergens and fraud. The Chair said she had suggested to the FSA's Chief Scientific Adviser that horizon scanning should be done across the Scientific Advisory Committees rather than working in silos.

15.8 Peter Littleton mentioned that there were examples of large scale microbiological problems where disinfectants have not been involved, including one in Scotland where a chemical was described as biodegradable and this was misunderstood as meaning that it killed bugs. He said there were only about 4 chemicals that had a viable future for food processing environments and some of these do not have a good toxicological profile. Research had suggested that rinsing of food contact areas effectively to comply with the proposed MRLs would need to involve high pressure hot water which was not feasible in a chilled food environment.

15.9 Mark Williams, from the egg industry, thanked the subgroup for the very comprehensive report on eggs. He said that on the question of whether people could know whether an egg was a Lion egg or not, the scheme required traceability to protect against fraud with inter-trading controls and he was very confident that people would be able to identify a Lion egg. He also pointed out that rather than "Lion brand" they referred to "the Lion mark" which is an assurance scheme that offers guarantees about these eggs.

15.10 The Chair thanked Members of the Committee for their contributions and members of the public for their comments and useful background information and drew the meeting to a close.

Those attending as observers

Jesus Alvarez-Pinera	FSA
Fiona Brookes	2 Sisters Food Group
Bridgette Clarke	Bakkavor
Amanda Cryer	British Egg Information Service
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Tom Humphrey	Swansea University
Peter Littleton	Klenzan Ltd
Barbara Lund	IFR
Mairead McCann	<i>safefood</i>
Gary McMahon	Moy Park
Mike Peck	Institute of Food Research
Eric Samuels	Pall Life Sciences
Mark Williams	British Egg Information Council