ACM/MIN/86

MINUTES OF THE EIGHTY-SIXTH MEETING OF THE ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD HELD ON 1 OCTOBER 2015 AT 1PM IN AVIATION HOUSE, 125 KINGSWAY, LONDON WC2B 6NH

Present

Chair: Professor Sarah O'Brien

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

Departmental representative: Mrs Ruth Parry

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

Presenters: Dr Joanne Edge
Dr Claire Jenkins (Public Health England)

1. Chair's introduction

1.1 The Chair welcomed Members of the Committee and observers to the 86th meeting of the ACMSF. She welcomed Dr Claire Jenkins from Public Health England (PHE) who would be giving a presentation at agenda item 6. She also introduced Susan Pryde who was leading the Review of Food Standards Agency (FSA) Scientific Advisory Committees (SACs) and invited her to say a few words.

1.2 Susan Pryde outlined how she would be carrying out the Review. As all five SACs were being reviewed together she would only be able to interview the Chairs and one other member from each Committee. However, all committee members would have the opportunity to contribute to the Review by replying via a dedicated mailbox to the lines of enquiry that had been circulated. An open call for evidence had also been posted on the FSA website to encourage stakeholders to feed in their

views and to invite participation in a workshop being held on 29 October. She expected the Review to be completed within 6 months with the first draft of her report available by the end of the year. It would then take about 2 months to go through the clearance process. She aimed to finalise the report by the end of February 2016 with recommendations for the FSA to take forward.

2. Apologies for absence

2.1 Apologies for absence were received from Prof Bob Adak, Prof John Coia, Mr Alec Kyriakides, Dr Dan Tucker and Mr Steve Wyllie (Defra representative).

3. Declarations of interest

3.1 There were no declarations made.

4. Minutes of the 85th meeting (ACM/MIN/85)

4.1 Members suggested the following amendments:-
Paragraph 3.1 - Tesco, not Tescos.
Paragraph 10.15 – first sentence, there was an "i" missing from the word Definitive, and in the penultimate sentence ending "efforts being made to control *Salmonella*" there was a superfluous "the" to be deleted. Apart from these corrections, the minutes were approved as an accurate record to be posted on the ACMSF website.

5. Matters arising

5.1 Paper ACM/1190 provided a summary of matters arising from previous meetings. Dr Paul Cook informed members that following discussion of APHA's Risk assessment for the use of Mycobacterium bovis GCG vaccine in cattle at the January 2015 meeting of ACMSF the Committee's suggestions would be formally conveyed to APHA now that the minutes of the January meeting had been approved. He also informed members that their comments on the EFSA document on uncertainty had been collated and provided to EFSA. The response would be circulated to members for their information.

6. Shiga toxin producing *E. coli* (STEC) in Food

6.1 Dr Jo Edge (FSA) and Dr Claire Jenkins (PHE) were invited to introduce the risk assessment relating to Shiga toxin-producing *Escherichia coli* (STEC) in food. The FSA sought views from the Committee on the risk from STEC in food to support decision making regarding the safety of these foods, including those that are ready-to-eat, raw or where the effectiveness of measures such as heat treatment in destroying STEC or washing of produce to remove STEC is unclear.

6.2 The areas the FSA's paper and presentation covered include: hazard identification and characterisation, current understanding of pathogenic STEC

characteristics: serogroups and virulence determinants, exposure assessment and proposed approach taking into account strain severity.

6.3 It was reported that the European Commission was in the process of drafting a guidance document which would assist competent authorities of Member States when they are confronted with food with positive STEC results. The draft EC guidance would advise that when the laboratory results have confirmed the presence of the hazard (i.e. presence in an isolated *E. coli* strain of an *stx* gene), the contaminated food may be classified, for the ease of convenience, according to two risk profiles: **food profile 1** and **food profile 2**.

6.4 **Food profile 1** would include contaminated RTE or non-RTE food frequently or usually consumed without a sufficient treatment able to eliminate or reduce to an acceptable level the risk of infection by STEC. Food profile 1 should be considered as the riskiest food as regards the possibility of human infection.

6.5 **Food profile 2** would include only contaminated food very likely to be consumed with the appropriate treatment able to eliminate or reduce to an acceptable level the risk of infection by STEC (e.g. food intended to be thoroughly cooked before consumption) and for which clear information is provided to the consumers, including information on the label, and possible other information generally available to consumers concerning the avoidance of specific adverse health effects from a particular food or category of foods.

6.6 It was underlined that the FSA's current view regarding the confirmed presence of STEC in RTE food (i.e. *stx* in an isolated *E.coli* strain) is an unacceptable risk to public health and that Food Business Operators should take appropriate action to remove contaminated food from the market.

6.7 Linden Jack (FSA) provided additional comments to the presentation given by Jo Edge and Claire Jenkins. She remarked that the risk assessment and ACMSF's view on the strength of available evidence indicating whether these are sufficient was key in supporting decision making on STEC in foods. She said members' comments would be valuable in considering the impact on public health as the FSA was keen to make sure any risk management intervention made is proportionate given that the feedback from stakeholders on the draft guidance was that the approach outlined would have significant impact on Food Business Operators. Members were asked when considering the risk assessment to acknowledge areas of uncertainty and gaps and assess the strength of the evidence relating to the risks associated with STEC in food via three questions.

6.8 The following comments were made by Members in the ensuing discussions:

- Members acknowledged that the questions put to them were complex and it was difficult to provide definitive advice. It was pointed out that ACMSF was in the same position as the EU expert group who had struggled to address the issues raised in the questions put to the Committee.

- Although the presentation highlighted that molecular testing would be used for investigations, the absence of any element of quantification and a sampling

plan was raised. It was acknowledged that whilst there was currently no specific sampling plan for STEC in foods in the interim the sampling rules adopted for sprouted seeds would be employed to test for the presence for this organism (testing/analysing 25g of food for the presence of the pathogen).

- As the issue of quantitative risk assessment was raised, one member commented that the risk assessment was not a straightforward one as multiple hazards had to be aggregated in order to achieve a single risk assessment.

- The multipliers for foodborne disease used in the risk assessment were queried as it was confirmed that there were lots of cases of non O157 infections that were clinically milder than for infections with STEC O157 and there were also cases of asymptomatic infections. It was mentioned that the multipliers used were taken from the EU trends and sources report that looked at outbreaks that occurred in 2013.

Question 1: *Whether it is appropriate to consider the presence of stx in an isolated E. coli strain ("presence of STEC") in RTE food (and foods that will not receive sufficient treatment to eliminate STEC) to present an unacceptable risk to health?*

6.9 Members considered that the presence of *stx* in an isolated *E. coli* strain ("presence of STEC") in RTE food (and foods that will not receive sufficient treatment to eliminate STEC) presents an unacceptable risk to health.

6.10 It was felt that this was a complex subject area which should be considered with caution particularly as there is uncertainty regarding the importance of some of the genes present in STEC. Whilst recognising that not all STEC strains are pathogenic it was agreed that the magnitude of risk in relation to the presence of STEC in food is unclear. It was noted that there was presently little if any prevalence data concerning non-O157 STEC in food.

Question 2: *If there is sufficient evidence to determine whether for food in profile 2, the presence of stx in an isolated E. coli strain of serogroup O157, O26, O103, O145, O111, O104 with [1] eae or [2] aaiC and aggR presents an unacceptable risk to health particularly taking into account control measures by consumers and FBOs such as caterers?*

6.11 Members indicated that there was insufficient evidence to determine whether those foods in profile 2 present an unacceptable risk to public health. Members were not convinced that control measures work all of the time. It was underlined that these organisms should not be present in the food chain.

Question 3: *Confirmation of an isolated E. coli strain in food samples that are positive for stx can involve the practical issues outlined in paragraph 20. If analytical results are only available for the genetic results without confirming their presence in an isolated E. coli strain, would the Committee consider it possible to assess the potential risk to public health*?

6.12 Members noted that if analytical results are only available for the genetic results without confirming their presence in an isolated *E. coli* strain it would currently not be possible to assess the potential risk to public health.

6.13 In conclusion members recognised that knowledge gaps, uncertainties in the available evidence and complexity of the organisms involved make it difficult to assess the risks associated with STEC in foods. Members considered the presence of STEC in a RTE food to be a risk to public health. Members were also concerned about the presence of STEC strains most likely to cause severe illness being present in non-RTE foods. Members agreed that the risks could be managed by application of food safety and hygiene controls by consumers and businesses but noted there is evidence that controls can break down and lead to outbreaks of severe illness. In addition, it was agreed that the paucity of available information showed that there was no merit in setting up a small group to further consider this issue.

6.14 The SSRC Deputy Chair (ACMSF ex-officio) noted that the FSA's comments on this subject have shown the need for careful consideration when gathering intelligence in the area of consumer handling and consumption habits because of changes in some subsectors of the population.

7. Assessment of the risk of avian influenza virus via the food chain (ACM/1192)

7.1 Dr Manisha Upadhyay, ACMSF Secretariat, introduced this paper. She reminded Members of previous risk assessments by the Committee in 2003, and reviewed in 2006 and 2007, when the conclusion was that the risk to human health from exposure to avian influenza (AI) viruses through the food chain was low. Since then there had been a number of recent outbreaks of AI on poultry farms in the UK and the Agency felt it was timely and appropriate to do a sense check with the Committee to ensure that its advice remains appropriate.

7.2 The Secretariat had prepared an up-to-date risk assessment for the Committee taking into account more recent data, including global outbreaks. This highlighted that transmission of AI viruses from birds to humans tends to occur in people who were in close contact with birds, rather than through food. The paper also highlighted the uncertainties in assessing the risk of acquiring avian influenza via the food chain. Dr Upadhyay explained that EFSA had produced a risk level classification which was not available when the previous risk assessment had been carried out. Using this classification the paper suggested that the overall health risk related to AI viruses via the food chain was very low.

7.3 It was acknowledged that whilst there was some evidence that the avian influenza viruses have the potential to cause infection via the GI route, other factors (saliva, gastric acidity) were considered to present barriers to infection.

7.4 Members welcomed the risk assessment and felt that all relevant areas had been covered. The following comments were made.

7.5 It was noted that the risk level classification was based on the frequency of occurrence rather than severity. Further pieces of research that could be added were suggested. One was a study of AI virus particles in frozen duck meat coming from China to South Korea, and another was a study by David Swayne on levels of the virus in eggs which had been deliberately infected.

7.6 One member queried that since rules governing residues for some disinfectants (including quaternary ammonium compounds) may be about to change, this may need to be taken into account in the future when seeking to contain AI virus risks. It was also mentioned that a report was available about the process of containment following an AI incident in Holton in Suffolk and this may provide information that would be useful in risk assessment in similar situations.

7.7 It was pointed out that when using the term high pathogenicity it should be clear whether this was referring to high pathogenicity in avian species or in humans.

7.8 Members agreed that the overall health risk related to AI viruses via the food chain was very low. It was suggested that the FSA should make it clearer that the change in risk from low (for a previous ACMSF assessment carried out several years ago) to very low (for this current assessment) did not imply that the risk had lowered, but that a different risk level classification system had been used in the current assessment (EFSA's risk level classification). According to EFSA's risk level classification, "very low" risk is assigned to a risk that is very rare but cannot be excluded. It was acknowledged that this point had already been made in the assessment but could benefit from being made more explicitly.

8. Histamine

8.1 Dr Upadhyay introduced this paper. She reported that poisoning by the biogenic amine histamine is a well-recognised phenomenon that arises from the consumption of food, particularly certain types of scombroid fish, which can have high levels of histamine present as a result of bacterial spoilage. Dr Upadhyay also stated that histamine can be present as a consequence of microbial fermentation in the production of foods such as certain cheeses or sausages. She highlighted that incidents of illness involving histamine or suspected histamine in cheese were first reported to the FSA in 2003. It was noted that the risk based control of biogenic amine formation in fermented foods was comprehensively reviewed by EFSA in 2011.

8.2 Dr Upadhyay explained that histamine levels in cheeses vary considerably and the paper shows the histamine levels associated with a large variety of different cheeses and highlights the extent of variability in histamine and total biogenic amine content.

8.3 She noted that between 2001 and 2007, there were two reported incidents to the FSA linked to histamine in cheese; between 2008 and 2015, there were twenty such reported incidents (provisional data provided for members use only). Dr Upadhyay pointed out that the FSA is not aware of any incidents involving cheese prior to 2003 including before the FSA was formed.

8.4 Members were informed that the Committee on Toxicology of Food, Consumer Products and the Environment meeting discussed histamine in cheese at their June 2015 meeting. Given that there is a microbiological basis for the production of biogenic amines in cheese, the FSA brought this issue to the ACMSF's attention for members to note the reports of histamine poisoning associated with cheese reported to the Agency for comments.

8.5 Members noted that this issue was an example of where the hazard is microbiological but the effect toxicological. Two areas where members commented were on the incidents reported to the FSA involving histamine in cheese and on the two recommendations from the EFSA BIOHAZ panel Opinion from 2011.

8.6 On the incidents data it was explained that the information provided was a combination of outbreaks/cases and also incidents where high levels of histamine have been found in cheeses. As information provided to members was a provisional/snapshot of cases it was stated that the issue of histamine in cheese will come back to members when more definitive data are available.

8.7 Members endorsed the EFSA BIOHAZ panel's recommendation "that concluded accumulation of biogenic amines in fermented foods is a complex process affected by multiple factors and their interactions, the combinations of which are numerous, variable and product-specific. Therefore, risk mitigation options, which are based on controlling those factors/interactions, cannot therefore be considered and ranked individually but considered in the context of general principles."

8.8 A member drew attention to the recommendation that stated that "microorganisms intended to be used as starter cultures in any fermented food should be confirmed as not being biogenic amine producers and able to outgrow autochthonous microbiota under conditions of production and storage" questioning if cheese manufacturers were able to screen their microorganisms for non-biogenic amine producers. It was mentioned that large cheese manufacturers tend to screen starter cultures prior to selection.

8.9 As there was no particular action for the Committee on this issue, members noted the paper.

9. Committee sub-groups

Antimicrobial Resistance (AMR) Working Group

9.1 Prof David McDowell updated the Committee on the ninth meeting of the AMR Working Group held on 29 September 2015. The issues the group considered include:

9.2 **Revised FSA's draft risk assessment on MRSA in the food chain**. The group had considered an earlier draft at its June 2015 meeting where a number of gaps were identified. Following discussion members had additional comments on the revised document which the FSA will consider and incorporate into the risk assessment before it is finalised.

9.3 **Intermingled *Klebsiella pneumoniae* Populations Between Retail Meats and Human Urinary Tract Infections**. The group considered the finding of this study so as to better understand potential contributions of foodborne *K. pneumoniae* to human clinical infections. This study compared *K. pneumoniae* isolates from retail meat products and human clinical specimens to assess their similarity based on antibiotic resistance, genetic relatedness, and virulence.

9.4 **Veterinary Medicines Research and Development and Surveillance Programme** and other relevant issues relating to AMR in the food chain. Members received a presentation on the above from the Veterinary Medicines Directorate.

9.5 **UK One Health Report (Joint report on human and animal antibiotic use, sales and resistance, 2013**). Members discussed this report (published by PHE) that brings together the most recently available UK data on antibiotic resistance in key bacteria that are common to animals and humans and details the amount of antibiotics sold for animal health and welfare and antibiotics prescribed to humans.

9.6 The group were also updated on the **activities of the Defra AMR Coordination Group**.

Surveillance Working Group

9.7 Professor David McDowell (in the absence of Prof John Coia) updated the Committee on the activities of the Working Group. It was reported that the group considered:

9.8 The sampling protocol for years 2,3,4 of the FSA's *Campylobacter* retail survey. The group had reviewed the Agency's amended sampling protocol for years 2, 3, 4 of the chicken retail survey via a teleconference held on 9 July 2015. The group had discussed the protocol and the suggested amendments it had made to determine whether their questions had been satisfactorily addressed by the FSA so the protocol can be finalised.

9.9 The final report of year 1 of the FSA's *Campylobacter* retail survey**:** The group reviewed a draft of the final report and agreed the report was generally of good quality and that the investigators have developed and delivered an appropriately robust project that has been well-executed and reported. The final report was published on 10 September 2015. A link to the report had been circulated to the Committee.

***Ad Hoc* group on Eggs**

9.10 Professor David McDowell (in the absence of Prof John Coia) updated the Committee on the activities of the *Ad Hoc* group. It was highlighted that the group had a meeting scheduled for 12 October 2015 where it was envisaged that all members and the Secretariat will have prepared a first draft of the Committee's report for discussion. It is anticipated that the group's report will be ready for endorsement by the Committee at the January 2016 plenary meeting. Prof McDowell acknowledged the amount of work carried out by the group and secretariat in the production of the draft report.

10. Dates of future meetings

10.1 Members were asked to note the dates of meetings in 2016: 28 January, 30 June and 20 October.

11. Any other business

FSA Board paper – Framework for risky foods and its application to burgers ACM/1196

11.1 Mr Steve Wearne (FSA Director of Policy) was invited to update the Committee on outcome of the September 2015 FSA Board meeting in relation to the framework for risky foods and its application to rare burgers and on the proposed next steps on how the FSA Board would like to engage with the Committee on this subject and other areas.

11.2 Steve Wearne reported that the FSA Board at the above meeting agreed a range of controls businesses should make sure are in place if they were serving rare burgers. The new approach agreed by the Board which was in the process of being implemented includes the following requirements:

- businesses wanting to serve burgers rare pre-notify their local authority
- the Board is given reassurances on the controls that suppliers of mince intended for consumption rare or lightly cooked in burgers have in place
- effective consumer advisory statements will be required on menus where rare burgers are served; the Board agreed the FSA should take a lead ensuring these statements are consistent
- an FSA communications plan is implemented to explain the risks and controls to the public. Infection rates continue to be kept under close review and any changes brought to the attention of the Board.

11.3 The areas (the first two relate specifically to rare burgers) the FSA Board would like to engage with the ACMSF include:

- Support and advice from ACMSF in modelling the individual and cumulative impact in terms of risk reduction of interventions in sourcing, primary processing, and further processing in food service, to inform further guidance to businesses and enforcement community.

- A proposed multidisciplinary working group drawn from GACS, SSRC, ACMSF and COT to review the framework for risky foods which the Board has adopted, supporting its use and further development around:
    - the coherence of the model;
    - evidence needs at each of the decision points and how to address them;
    - the design of triggers for a range of hazards for reference of issues back to the Board.

- Bringing risk assessment and risk management people and practices back closer together (reference the Codex model).

- Supporting self-tasking by Scientific Advisory Committees, not only in the generic future-facing issues that arise from horizon scanning such as use of genomics, but also around issues of direct and immediate policy relevance such as *Campylobacter* reduction (and possibly controls on minimally processed foods). An improved working relationship between risk assessors and risk managers would help in agreeing relevant questions for the committee to address on these agreed areas.

11.4 Members welcomed the update and suggestions on the way forward in particular the Committee endorsed the decision to look at the interface between risk assessment and risk management as it was underlined that it is artificial to separate the two completely.

11.5 The following comments were provided on the new approach agreed by the Board on rare burgers:

- How the framework relates to children is not clear (what is the definition of children according to the framework). What was the reasoning for choosing children and excluding other vulnerable groups?

- Is rare mince eaten as steak tartare and burgers made from meat other than beef within the scope of the framework?

- Some of the findings of the thermal inactivation modelling study were queried in relation to the inactivation of STEC O157 and reductions of bacterial load although a Member mentioned that they had peer reviewed the research study.

- Because the subject of serving rare burgers is moving fast, the issue of monitoring the effectiveness of modelling interventions and identifying the best combination of treatments was raised.

- There were questions on how the food safety management plan in the framework relates to the 13 big burger chains, particularly in the area of "pathway management."

- It was underlined that the consequences of being infected by STEC could be devastating to the individual and could also damage any business linked to serving contaminated products.

11.6 Members attention was drawn to the following information papers:

11.7 **ACM/1195:** Progress report on ACMSF recommendations (feedback on the list of issues looked at by the Committee and progress made by the FSA on the advice).

11.8 **ACM/1197:** Changes to plant protection product MRLs: potential impact on food safety. ACMSF was informed about the changes to maximum residue levels

(MRLs) for two quaternary ammonium compounds (QACs) which are used as disinfectants/sanitisers in the food industry. A member commented that the food industry has raised concerns that this may have implications for food hygiene and safety. Members agreed that it was timely to give this issue some thought now and revisit it at a future meeting. The Chair suggested that the Committee may have to set up a subgroup to carefully examine the areas of concern when this subject is formally brought to ACMSF.

11.9 **ACM/1201:** Collaboration with FSA's Social Science Research Committee (paper presented at the 28 September SSRC meeting). ACMSF welcomed the collaboration with the Social Science Research Committee. Two ACMSF members (Rosie Glazebrook and David Nuttall) volunteered to join the SSRC's Food and You working group to help inform future waves of the survey.

12. Public Questions and Answers

12.1 The Chair invited observers to make any comments or ask any questions on the risk assessment work of the Committee.

12.2 Peter Littleton, Technical Director of Klenzan, a manufacturer of detergents used in catering and food processing environments, also a member of the Chilled Food Association's Biocides Working Group commented that there was great anxiety in the industry about the possible changes to plant protection product MRLs. He said there was a real risk to the microbiological integrity of food in catering and prepared food market where there were Listeria risks. There has been a drop in the sales of some QACs over the last year or so, with customers switching to other products because of a misunderstanding that QACs were banned. He highlighted various problems: some alternative disinfectants were unsuitable for food processing environments; there were restrictions because of Biocide Products Regulations; the cost of producing new biocides. He encouraged the Committee to engage with the Chilled Food Association and to raise the issue with EFSA because of the risk to the microbiological safety of food.

Alison Aitchison	Morrisons
Aneta Bobowska	Marks & Spencer
Fiona Brooks	2 Sisters
Luisa Candido	Dairy UK
Bridgette Clarke	Bakkavor
Catherine Cockcroft	Exova
Georgina Crayford	National Pig Association
Amanda Cryer	British Egg Information Service
Conall Donnelly	NI Meat Exporters Association
Richard Elson	PHE
Vanessa Fursden	Marks & Spencer
Jane Horne	Food Standards Scotland
Terry Jones	Provision Trade Federation/Specialist Cheesemakers Association
Samantha Kirk	Tesco
Intisar Khan	Dairy Crest
Peter Littleton	Klenzan Ltd
Gavin Morris	NI Meat Exporters Association
Helen Payne	Sainsburys
Rick Pendrous	Food Manufacture magazine
Karen Sims	Waitrose
Paul Thomas	Provision Trade Federation/Specialist Cheesemakers Association
Rose Wilkinson	Marks & Spencer
Nicola Wilson	Samworth Brothers
Michael Wood	Norpath Scientific