MINUTES OF THE NINETY-THIRD MEETING OF THE ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD HELD ON 18 OCTOBER 2018 AT 1.00PM IN CLIVE HOUSE, 70 PETTY FRANCE, WESTMINSTER, LONDON SW1H 9EX.

Present

Chair: Prof David McDowell (Acting Chair of ACMSF)

Members:
Dr Bob Adak
Dr Gary Barker
Dr Roy Betts
Dr Gauri Godbole
Prof Miren Iturriza-Gómara
Mr Alec Kyriakides
Miss Heather Lawson
Dr Gwen Lowe
Dr Rohini Manuel
Prof Peter McClure
Mr David Nuttall
Mrs Ann Williams

Departmental representative: Dr Steve Wyllie (Defra)

Secretariat:
Dr Paul Cook
Dr Manisha Upadhyay
Mr Adekunle Adeoye
Ms Sarah Butler

Presenter: Dr Jesus Alvarez-Pinera

Members of the public: see Annex 1.

1. Chair's introduction

1.1 The Chair welcomed members of the committee and members of the public to the 93rd meeting of the ACMSF. He also welcomed Dr Jesus Alvarez-Pinera from the FSA's Strategic Surveillance Team, Science, Evidence and Research Division who would be presenting agenda item 8: FSA Surveillance Strategy.

2. Apologies for absence

2.1 Apologies for absence were received from Mrs Joy Dobbs, Mrs Emma Hill and Dr Dan Tucker. A message from Joy Dobbs was read out explaining that now that the new Social Science Committee (ACSS) was in place she would be stepping down from her role on ACMSF and a new arrangement would be put in place. She said how much she had enjoyed her time on the committee, especially contributing

to the report on *Campylobacter*, and she wished the committee well for the future. The Chair expressed his appreciation of Joy's work on ACMSF.

3. Declaration of interests

3.1 Members were reminded to declare any potential conflict of interests before each item on the agenda as appropriate.

4. Minutes of the 92nd meeting

4.1 The second sentence of paragraph 8.13 was amended to "**some** NHS labs use it" (referring to molecular diagnostics).

4.2 Stephen Wyllie suggested an amendment to paragraphs 7.22 and 7.23 which he would send to the Secretariat. Once these amendments had been made the minutes would be regarded as correct and posted on the Committee's website.
Action: Secretariat

5. Matters arising

5.1 Paper ACM/1280 provided a summary of actions on matters arising from previous meetings. Dr Cook reported that:

- Members request for Public Health England (PHE) to consider adding raw pet food in the scope of its enhanced surveillance of listeriosis cases is being considered by PHE's surveillance and gastrointestinal bacterial reference unit

- The Ad Hoc Group on 2-dimensional risk assessment had been setup. The first meeting was scheduled for 12 November 2019

- The Committee would receive a presentation on the FSA's surveillance strategy under agenda item 8 (ACM/1283)

- Secretariat confirmed that the Advisory Committee on Novel Food Processes have not considered the use of bee pollen in food as it is not a novel food (not appropriate for horizon scanning list)

- The condensed list of horizon scanning topics would be discussed under agenda item 10 (ACM/1285)

- Update on current evidence on vacuum and modified atmosphere packed chilled foods and ongoing work taking place on this subject would be provided under agenda item 7 (ACM/1282 refers)

- Members would be updated on the letter circulated to industry on "Changes to pesticides residues maximum residue levels: potential impact on food safety" under agenda item 11

- Members comments on the draft report from the *Ad Hoc* Group on *Campylobacter* are being considered

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

6.1 Dr Manisha Upadhyay introduced paper ACM/1281. Members had also been provided with 3 annexes which were restricted to their use only. The cover paper reminded members of the background to the committee's last consideration of STEC in June 2015 when they had commented on draft EC Guidance on STEC in ready-to-eat foods and responded to 3 specific questions arising from that guidance. Following this, the FSA has produced a draft working policy guidance document for use in dealing with foods contaminated with STEC. Dr Upadhyay outlined the content of Annex A which considered markers of pathogenicity and virulence in STEC, occurrence of STEC in food, and outbreaks, with a view to identifying any changes that had taken place since 2015.

6.2 Having highlighting some of the main points in Annex A, Dr Upadhyay asked members to comment on the information in Annex A, to decide if they wanted to change the responses to the 3 questions (a-c) from their 2015 discussion, and to review the general approach used by the Agency in dealing with foods contaminated with STEC and indicate whether this still remains appropriate or whether any improvements could be made.

6.3 The following comments were made:

- The paper was very well written and clear.

- A member pointed out that the large amount of literature on the subject challenged current thinking about how to assess risk from pathogens. It is impossible to take the information as it stands and do enough risk assessments to satisfy all the decisions that have to be made. It was very clear from the paper that counting additional virulence factors was not going to solve the problem. The existing way of looking at the combination of a particular pathogen and a particular vehicle to work out the potential impact and frequency for the population is difficult to do with this level of information. The gene content from whole genome sequencing does not tell the whole story and artificial intelligence techniques might help understand risks at this level.
- A member drew attention to two additional papers he was aware of that were relevant: Lupolova *et al*[1] and Annemarie Pielaat *et al*[2].

[1] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5056084/
[2] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4613885/

- With the move to PCR testing it was becoming necessary to move from a very simple set of actions to a more risk-based approach particularly because of the time lag between getting the initial results and the more detailed genetic results from the Reference Lab, which may take 4 weeks. This is similar for human samples.

- PCR testing for STEC genes in food can be done as a routine test using commercially available kits. There are only 11 UKAS accredited labs able to do STEC testing, 3 of which are PHE. If the ISO specified method is followed then results are available from broth fairly quickly, but the isolation step takes much longer.

- It is not routine in the food industry to do all the tests in one go. The enrichment assay is routine, but the tools are available to investigate further if something is found. Because of the time delay it is normal industry practice to act on the presence of a confirmed isolated STEC rather than looking at the virulence factors.

- Public health guidance on STEC management in humans has been published by PHE which has direct parallels i.e. there are a lot of uncertainties and additive factors.

6.4 Members discussed question a) and the statement made by the Committee previously, and concluded that for the following reasons they were not in a position to change the statement yet:

- there are so many uncertainties about *stx*-1
- STECs cause serious illness,
- the infective dose is very low,
- there was a need to take a precautionary approach with ready-to-eat foods
- the recent FAO/WHO report (2018) stated all STEC strains should be regarded as potentially pathogenic. Host susceptibility and bacterial genetic background are important in determining pathogenicity of STEC strains.

6.5 Members agreed that the statement in the FAO/WHO report may not be true for ever but that there was not enough information at present to suggest a change in their opinion.

6.6 Regarding the second sentence “It was recognised that not all STEC strains are pathogenic . . .” a member commented that there is clearly evidence that some serotypes don’t cause illness, even with certain *stx* genes, if they lack the adhesion genes, so it is difficult to conclude whether they are all pathogenic or not. However, the overall view of the Committee was that given all STEC strains have the potential to be diarrheagenic the second sentence in the answer to question a.) should be removed.

6.7 Regarding Question b.), the following comments were made:

- the thinking has moved on in the last 3 years and serogroups are much less important in risk assessments. The list given in the question was not exhaustive.
- the list was not just growing but disaggregating and so increasing in complexity and will continue to grow over time. There were also other serogroups that had become important in human infections recently eg O55.
- the text: “strains most likely to cause severe illness” could be changed to “the presence of pathogenic STEC strains”.
- The phrase “strains most likely to cause severe illness” seemed to be linked in the paper to shiga-toxin producing strains possessing various attachment factors. There was a concern about the term “severe illness”. If they don’t have certain attachment factors, they may still cause illness. The Committee’s role was to consider illness, not just severe illness.
- There was agreement that highlighting certain serogroups was irrelevant. Members agreed that there was not a significant risk from STEC in a non-RTE food as long as the food was handled and cooked appropriately. The current controls seem to be reducing the burden of STEC in foods that will be processed (e.g. cooked) and it would be onerous to go beyond that. The severity of disease from both *Listeria monocytogenes* and STEC was high in susceptible groups. It was important to avoid making a decision that had consequences for other pathogens.
- Although the list of serogroups had been compiled from those associated with large outbreaks, it was time-limited and there would be others. Members agreed it would be preferable to refer to “pathogenic strains, including those with known adhesion factors and known aggregative factors.” It was agreed that the statement “Serogroups are not of much significance here” should be added to the answer to question b.) It was acknowledged that strains within the same serogroup can have different virulence properties as virulence genes reside on mobile genetic elements.

6.8 Regarding question c.) in clarifying the question, a member explained that the first stage in the reference method is to put the food into an enrichment broth for 24 hours and then test the broth for the presence of *stx*. However, if there was a positive result it was still not possible to say where the *stx* was coming from; it could be from an *E. coli* but may not be. Members agreed that the answer to question c.) did not need to change.

7. FSA’s guidance on vacuum and modified atmosphere packed chilled foods

7.1 Following the update and discussion the Committee had at the May 2018 meeting on the FSA’s guidance on vacuum and modified atmosphere packed chilled foods with respect to *Clostridium botulinum,* the secretariat was asked to seek what information had been published on this subject over the past 10 years. Dr Paul Cook

was invited to introduce paper ACM/1282 that provided an overview of what has been done in this area in the last 10 years. He reported that the aim of the paper was to assist the members in deciding whether it was timely to revisit the scientific evidence base concerning *Clostridium botulinum* and vacuum and modified atmosphere packaged foods as this underpins the FSA's guidance.

7.2 Regarding the peer reviewed literature Dr Cook highlighted that the literature searches were undertaken covering the 10-year period 01/01/2008-11/10/2018 using the database PubMed coupled with some additional checking using Google Scholar. He underlined that the literature in this area is not large and not all of it concerns food although the search terms (MeSH – Medical Subject Heading) were kept broad to ensure good coverage of the topic and to avoid missing pertinent literature. The key areas of work relevant to *Clostridium botulinum* and food were covered under the headings of taxonomy and genomics, detection methods, growth and survival studies, heat and high-pressure processing, studies on specific foods, other *Clostridium* species and risk assessment.

7.3 Other areas covered in paper ACM/1282 were guidelines and research reports and recent studies concerning raw meat. Under guidelines and research reports the publications highlighted include: guidance on considerations in relation to non-proteolytic and proteolytic *C. botulinum* and cheese published by the Specialist Cheesemakers Association, Leatherhead Food Research white paper on controlling *Clostridium botulinum*: using challenge testing to create safe chilled foods (published in 2017), guidance on the important factors to consider when determining the shelf-life of chilled foods with respect to non-proteolytic *C.botulinum (produced by* Quadram Institute Bioscience, Leatherhead Food Research, British Retail Consortium, Chilled Food Association, Meat Science Australia) published in 2018, Campden BRI second edition of their code of practice for the manufacture of vacuum and modified atmosphere packaged chilled foods published in 2009, Food Safety Authority of Ireland's guidance (published in 2017) and the SUSSLE Process/Shelf Life (an outcome from the recently completed LINK project SUSSLE - Enhancing sustainability of chilled prepared foods).

7.4 Recent studies involved work undertaken by Campden BRI and QIB Extra (a subsidiary of Quadram Institute BioScience) for the meat industry to look at the potential for growth and toxin production by *Clostridium botulinum* on raw meats (beef, lamb and pork). The literature review found little evidence of published work in this area over the past 10 years.

7.5 Members were invited to:

a) comment on this summary of published information and current studies relevant to the issue of *Clostridium botulinum* and vacuum and modified atmosphere packaged foods and;

b) consider whether it would be timely for the committee to revisit the scientific evidence base in this area by establishing an ad hoc work group.

7.6 Before the Committee members discussed the above paper, the following members declared their interest on this subject: Gary Barker was involved in the work cited in paragraph 18 of ACM/1282 as an employee of IFR now QIB when the study (an extensive literature review to assess non-proteolytic *Clostridium botulinum* spore populations in groups of food which are typically used as components of chilled minimally processed foods in the UK) was carried out, Peter McClure stated that he was involved in the SUSSLE project when he was an employee of Unilever, Roy Betts declared that his employer Campden BRI provide industry with advice on this subject and Alec Kyriakides added that his employer Sainsburys fund work on this topic with Campden BRI and other related groups. Gary Barker pointed out that paragraph 18 should include a sentence to clarify that the study included experiments with real food material.

7.7 While welcoming the paper a member pointed out that what was missing in it was information on epidemiology and outbreaks (data on cases) that may have been recorded in recent years although he underlined that he was unaware of any outbreaks of non-proteolytic *Clostridium botulinum* associated with properly chilled food even in countries where no official controls are in place. He explained that this was relevant in the context of deciding whether to revisit the current risk assessment as it is possible that the controls may not be commensurate with the risk. It was added that if there has been no outbreaks or cases associated with this pathogen this may suggest that the controls are mitigating against the possibility of cases.

7.8 In relation to the above comment a member stated that if outbreaks of non-proteolytic *Clostridium botulinum* associated with properly chilled food are investigated consideration should also be given to exposure on food not properly chilled that would support growth of the organism and try and estimate the exposure data because there have been changes in the volume of chilled foods in recent years. His suggestion was to focus on those foods susceptible to non-proteolytic *Clostridium botulinum.*

7.9 Highlighting the severity of botulism poisoning and the rarity of cases a member flagged that there might be merit in testing the 2-dimensional risk assessment on any available data.

7.10 A member questioned how the debate on getting rid of plastic in food packaging will affect food safety as plastic is mostly used in packaging for chilled foods. She questioned if there was a suitable replacement for plastic packaging in relation to chilled foods.

7.11 The Chair noted that the review was instructive and had filled some information gaps. He suggested several areas for the FSA to put on its watch list. These include:

- Dahlsten *et al*. (2015) study that highlighted a lack of data on genetic, stress-related mechanisms of non-proteolytic *C. botulinum* and a need to understand the effects of successive processing treatments on subsequent behaviour when subjected to further processing (paragraph 19 ACM/1282).

- Studies on the effect sodium nitrite and sodium nitrate on growth and toxin production by non-proteolytic *Clostridium botulinum*. He highlighted that the FSA might want to observe developments in this area.

- Ongoing risk assessment work: whenever data becomes available the FSA advised to consider sharing these with interested parties.

7.12 On the specific questions to the Committee, members welcomed the summary of published information and current studies relevant to the issue of *Clostridium botulinum* and vacuum and modified atmosphere packaged foods. Members agreed to review the evidence from the ongoing studies once they are available (studies expected to be completed early in 2019). It was added that the findings from these studies will determine whether to establish an *ad hoc* group to review the current FSA guidance. The secretariat would provide an update on ongoing studies at a future meeting.

8. FSA Surveillance Strategy

8.1 Dr Jesus Alvarez-Pinera gave a presentation on the FSA's strategic surveillance, giving an overview of current and future work focussing on EU exit.

8.2 He explained that the aim was not to replace regular surveillance activities, but to build additional capability to identify risk in a predictive way by making better use of open data. Work is being undertaken on several work packages which are completed in 7-10 weeks, starting with defining the business question by talking to business experts, the food crime unit, the imports/exports team and risk assessors, collating the data, then working with data scientists and business stakeholders to work on a prototype and finally finding a technical solution.

8.3 Dr Alvarez-Pinera gave a summary of two areas of work the team had undertaken: predicting the risk of *Vibrio* infection in the UK; and developing a better

understanding of olive oil adulteration. An HMRC trade visualisation tool had been developed and an example was given which showed trade with Third Countries, the volume and price of commodities traded over time, and the UK port of entry. It was found that data collected for one task is often transferable to others and over time a "toolbox" of transferable models and common datasets would be created.

8.4 Dr Alvarez-Pinera outlined a completed piece of work on EU exit where information was lacking on how food travels across borders from EU countries. A "hackathon" stage identified the need to focus on risk by looking at the hazards for particular commodities, secondly the need to identify where the food was coming from, and thirdly the route of entry into the UK. After EU exit this information would be needed by the FSA imports team so that a predictive model can aid the allocation of resources to carry out official control samples at ports.

8.5 After giving further detail of how the predictive models worked, Dr Alvarez-Pinera summarised the future and current work of the surveillance team. This included understanding how the financial strength of food business operators related to regulatory compliance, and how to use data to identify shortages and surplus in the supply chain (for example, pork mass balance).

8.6 Following the presentation, Members raised the following points.

- In answer to a question on whether we would still have access to RASFF and GRAIL after EU exit Dr Alvarez-Pinera replied that we would still be able to access data from the RASFF public-facing portal but some of the information would not be available, and similarly with GRAIL/TRACES. Work was on-going to replace these databases but it was unclear as yet how this would work.

- A member pointed out that the surveillance strategy was based on shared data which could be regarded as "trusted data" but there was a large amount of information that the owners did not want to disclose. The member asked if there were any plans to move away from shared data into a blockchain system. Dr Alvarez-Pinera replied that some pilot work on blockchain had been carried out, which would be an advantage if it can be rolled out quickly enough. Open data was being used because it was easy to access but the team was finding that by combining open datasets can provide something that is sensitive. There may also be the need to move to buying data.

- A member pointed out that modelling for aflatoxin alerts, was very different to modelling for the presence of aflatoxin. Dr Alvarez-Pinera agreed that this was an important distinction because some of the alerts cannot be explained. He said that his team was working with colleagues to improve the model to predict aflatoxin presence, not just the alerts. Another member added that when building systems they can either be very precise but will miss things that need to be spotted, or if the system records everything there will be a lot of false positives,

so it is important to have the expertise available to make the decisions about getting the right balance from the start. Dr Alvarez-Pinera agreed this was an important observation; a model could be created that would not predict the risks or it could predict such a huge number that it would be difficult to know what to do with the information. There was a need to work with risk assessment colleagues to help filter and prioritise the risks, whether microbiological or chemical. He confirmed that his team were in contact with Defra, ONS and other government departments.

8.7 The Chair said that the tools described were part of an evolving system which would become more accurate over time and would be useful in horizon scanning. He thanked Dr Alvarez-Pinera for a very interesting presentation.

9. Epidemiology of Foodborne Infections Group

9.1 The Chair invited Dr Paul Cook to present ACM/1284 which summarised the main items from the EFIG meeting which was held on 27 July 2018. The update covered the trends in animal and human data for 2017 and January to March 2018 *Salmonella* in livestock data. It was reported that between January and December 2017, there were 1,116 reports of *Salmonella* from livestock, which is 4% higher than during the same period of 2016 (1,072 reports). This increase was mainly due to increases in the number of reports from ducks (275 vs. 237 incidents), cattle (336 vs. 320 incidents) and non-statutory species (223 vs. 203 incidents). During January – March 2018 the number of reports of *Salmonella* in livestock decreased by 28% in comparison to January – March 2017 and by 11% compared with January – March 2016. An overview of some of the serotypes of the above *Salmonellas* was also provided.

9.2 Concerning the *Salmonella* National Control Programme, summary UK results in 2017 revealed a big difference between layers and broilers in the prevalence of *Salmonella*. Laying chickens: Prevalence of regulated serovars was 0.14% which is lower than the EU target of 2% for adult laying hen flocks. Broilers: prevalence of regulated serovars was 0.01%, which is lower than the EU target of 1% for broiler flocks and prevalence of all serovars was 1.45%. Breeding chicken: prevalence of regulated serovars was 0%, well below the EU target of 1% for adult breeding flocks.

9.3 Breeding turkeys had nil regulated serovars, whereas the EU target is 1%. The prevalence for the non-regulated serovars was 1.99%, which represents only 5 flocks owing to the low number of breeding turkey flocks in the UK. Fattening turkeys: prevalence of regulated serovars was 0.27%, well below the EU target (1%) for fattening turkey flocks. The prevalence for all serovars in fattening turkeys was 12.6%. The regulated serovars (*Salmonella* Enteritidis, *Salmonella* Typhimurium and its monophasic forms) are controlled because of their public health significance. Results revealed higher levels of non-regulated *Salmonella* in turkeys compared to

chicken, but these are predominantly strains of *S*.Derby not thought to be associated with human illness.

9.4 Human infection data key pathogens for 2017: trend in laboratory reports revealed: 10,089 reports of non-typhoidal *Salmonella* in 2017, a small increase from the 9619 reported in 2016. An increase in the reporting rate was seen in England and Wales, and a decrease in Scotland and Northern Ireland. The overall number of reported infections increased in the UK by 470.

9.5 Reports of *S.* Enteritidis decreased in the UK, due to decreases across all countries other than England where there was a small increase in cases reported. An increase in the reporting rate of *S.* Typhimurium was seen in 2017 compared to 2016 with an increase of 201 cases. *S.* Enteritidis was the most commonly reported serovar across all constituent countries. The serovars with the highest proportion of cases reporting travel prior to infection were *S.* Kentucky (59% of cases reported foreign travel) and *S.* Stanley (55% of cases reported foreign travel).

9.6 The reporting rate for *Campylobacter* has increased in the UK from 89.8 per 100,000 population in 2016 to 96.8 per 100,000 in 2017. The rate of reported *Campylobacter* infections in England has increased from 2016 to 2017 after a steady decline in the reporting of cases from 2012. The reporting rate has also increased across all other countries. Members noted the narrowing gap in the reporting rate of cases in Northern Ireland compared to the other UK countries.

9.7 There was a decrease in the number of reported *Listeria monocytogenes* infections in 2017 by 42 cases compared to 2016 to the lowest number of cases reported in the last ten years.

9.8 Reports of STEC O157 in the UK decreased from a rate of 1.5 cases per 100,000 population in 2016 to 1.2 cases per 100,000 population in 2017. Decreases were reported by all UK countries, with the largest decrease in reporting rate in Northern Ireland. Numbers of the ten most commonly reported STEC serotypes among clinical infections across the UK in 2017 were highlighted.

9.9 Members noted that in 2017, 40 foodborne outbreaks were reported in the UK compared to 48 reported in 2016. There were 1,425 cases, 840 of which were laboratory confirmed, and 167 reported hospitalisations, an increase in reported hospitalisations by 50 cases compared to 2016. There were three reported deaths from two *Salmonella* outbreaks, compared to 0 deaths reported in 2016.

9.10 Other items EFIG considered include: how PHE employ whole genome sequencing (WGS) for *Salmonella* outbreak investigations, updates on food surveillance activities in England, Wales and Scotland and an update on issues relating to antimicrobial resistance in the food chain.

9.11 A member referring to the reporting rate for *Campylobacter* in humans that had increased in 2017 questioned how this related to the continuous reduction in the prevalence of *Campylobacter* in chicken sold in retail outlets (2017 recorded the lowest prevalence in chicken) as poultry is mainly linked with most cases. He asked if this observation was discussed at the July EFIG meeting. It was noted that the FSA in conjunction and other public health agencies were looking at the trends to see what factors could be attributed to these increases in cases. In the analysis of data, the suggestion of having a means of detecting noise in the system before a conclusion is reached in relation to real change was flagged.

9.12 Whole genome sequencing is recognised as a powerful tool in outbreak investigations although in reporting of outbreak data to EFSA it was noted that only certain EU countries were currently using it.

9.13 The Chair thanked Dr Cook for his update.

10. Outcomes from 25 January 2018 Horizon Scanning Workshop

10.1 The Chair referred to paper ACM/1285 (a follow-up to the Committee's deliberations at the May 2018 plenary meeting) that had been circulated to the Committee to consider. The paper asked members to agree to the ranking of topics identified as current and emerging microbiological issues of concern at the January 2018 horizon scanning workshop. Members were asked to prioritise the shortlisted topics and indicate what topics to include in the ACMSF work plan.

10.2 Following clarification provided on how the numerical scoring that accompanied the ranking was made, the secretariat was asked to use the highest numerical ranking in terms of urgency to decide topics to go on the workplan. **Action: Secretariat**

11. Committee updates

<u>Changes to pesticides maximum residue levels: potential impact on food safety</u>

11.1 The Chair updated members on the letter he had written to industry (on 23 July 2018) seeking evidence on the concerns raised at ACMSF meetings on the implications of changes to the maximum residue levels for quaternary ammonium compounds, chlorate and biocidal actives**.** He reported that 13 responses were received from industry. The Chair's proposal was for a small group to analyse the responses and this was agreed. This small group would include ACMSF members, representative from the FSA, appropriate expertise from the Expert Committee on Pesticide Residues in Food, representation from Health and Safety Executive and ACMSF Secretariat.

11.2 The outcome of this group's work will be reported back to the Committee at a future meeting. **Action: Committee to receive feedback from the ad hoc group's assessment of the responses from industry.**

Ad Hoc Group on *Campylobacter* – Draft Report

11.3 The Chair reminded members that they considered the above group's report earlier in the year. He stated that the next step was for amendments to be made on the report and then it would be issued for public consultation.

Working Group on Antimicrobial Resistance

11.4 It was reported that Working Group on AMR will resume its activities following the publication of the fixed-term task and finish group's report on AMR (AMR in the food chain; research questions and potential approaches). The Group's next meeting is scheduled for 29 November 2018.

Ad Hoc Group on risk assessment

11.5 Members noted that the above group the Committee agreed to setup at the May plenary meeting will have their first meeting on 12 November 2018. The group will be chaired by Dr Gary Barker.

12. Dates of future meetings

12.1 The Chair drew members' attention to the dates for meetings in 2019 which would be held on 24 January, 27 June and 17 October.

13. Any other business

13.1 The Chair drew members' attention to the information papers sent to them which included the Committee's work plan (ACM/1287), Update from other Committees (ACM/1288), items of interest from the literature (ACM/1289) and *E.coli* O157 super-shedding in cattle and mitigation of human risk (ACM/1290). Members were reminded that ACM/1290 is for members use only and should not be shared with non ACMSF members.

13.2 The Chair informed the Committee that Sarah Butler a member of the secretariat team will be retiring from the Civil Service before the next meeting. On behalf of the Committee the Chair thanked Sarah for the excellent service/support she has been providing to the Committee for all her time on the secretariat.

14. Public Questions and Answers

14.1 Bridgette Clarke, Bakkavor, asked whether the draft guidance document on STEC had been finalised. Dr Upadhyay replied that the UK policy document had been published, but she understood it was still in draft form. Ms Clarke also asked if it would be possible for representatives from trade associations or industry to be part of the proposed meetings on biocides. The Chair commented that as this was a joint activity with another committee, it had not yet been decided, but the plan was to review the responses to the letter that had been sent to industry and if necessary to

ask further specific questions, and at this stage it would be decided if it would be appropriate to include them as part of the discussions.

14.2 Finally, Ms Clarke asked if serotype is irrelevant in STEC do you think the ISO method will change, because the initial stage of that is to look for the serotype?

14.3 Dr Roy Betts confirmed that within the ISO method there is a step which looks at serotype but it was also possible to just look for the *E. coli* with aggregative factors. He commented that the ISO method is a technical specification rather than a Standard, and as such will be reviewed every 3 years. It was likely there will be some changes to it when it is reviewed.

14.4 Kaarin Goodburn, Chilled Food Association, asked how quickly things were going to move on biocides as decisions on chlorate were imminent at EU level. There were also changes to chlorate levels within the revised Drinking Water Directive. She commented that it was unlikely that the UK could influence things in Europe now and that the industry was managing the issue, albeit by incurring extra cost.

14.5 The Chair replied that now responses had been received it should be possible to take things forward fairly quickly. He shared the concern about how long it had taken to get things moving and he hoped that collaborative work between FSA committees could be improved to speed things up in the future.

14.6 Secondly Ms Goodburn commented on the Vacuum packing item. She advised that she was leading the project on the meat sector and Professor Mike Peck was doing the practical work, but an ACMSF working group did not need to wait for the final report before starting. CFA members have informed her that other parts of the world are using different shelf lives because they do not use the FSA guidance. She commented that vacuum packing of meat was very well established and there had never been a case of botulism associated with it. She added that the number of papers did not reflect the amount of knowledge or data that was available. There was, for example a huge amount of data on challenge tests and samples in the paper that Gary Barker had been involved with. She stressed the need for the expert group to begin work quickly because the FSA guidance was being imposed on the UK only.

14.7 Mike Peck, QIB Extra, commented on the vac-pack issue. He thanked the group for setting up an *ad hoc* group and repeated the need for it to be done as a matter of urgency. He said that the results of his work, described in paragraph 26 of the paper, should be available in February next year but there were many other things that could be done before that. He highlighted a couple of issues with the 2017 FSA guidance. Firstly, in the Wachnicka paper cited in para 13, typical *z*-values for botulinum were identified as about 7^{o}C whereas the ACMSF is using 9.2^{o}C. This has an impact on alternative equivalent heat treatments of 90^{o} for 10 minutes and it needed to be considered whether the FSA needed to change its

guidance. Secondly, regarding challenge testing, the FSA document stated that challenge testing "should ensure the prevention of toxin and growth" but the meaning of this wasn't clear. He was aware of a recent document from UK industry which emphasised the importance of toxin formation, but does the FSA guidance indicate a viable count should be done as well? If there was evidence for this, it should be made public as there was a cost to industry.

14.8 The Chair responded that if there was evidence of the need for a change he would expect it to be included in any consideration by the committee. He commented that the existence of information did not necessarily mean there should be a change. He thanked Kaarin Goodburn and Mike Peck for their comments and would be happy to follow up on these if there was evidence that was not being addressed.

14.9 Peter Littleton, Christeyns Food Hygiene, welcomed the collaborative approach that was being taken on the issue of biocides and asked if HSE would be involved. The Chair replied that the committee was aware of the strongly stated concerns about the issue. When the information sent in by industry had been scrutinized it would be possible to identify the specific aspects that were of most significance across the whole industry and this would then determine who would be invited to take part.

14.10 The Chair thanked members of the committee and observers for their contributions and brought the meeting to a close.

Annex 1

Observers to ACMSF meeting, 18 October 2018

Alison Aitchison	Morrisons
Fiona Brookes	Fiona Brookes (Microbiology) Ltd
Bridgette Clarke	Bakkavor Ltd
Kaarin Goodburn	Chilled Food Association
Marianne James	Food Standards Scotland
Karen Job	Marks & Spencer
Peter Littleton	Christeyns Food Hygiene UK
Gary McMahon	Moy Park
Barry Mirhabib	Brakes
Mike Peck	QIB Extra Ltd
Rick Pendrous	Technology Writers
Karen Sims	Waitrose
Michael Wood	Norpath Scientific
Hera Yanikian	Food & Drink Federation