Minutes

Minutes of 102nd meeting

MINUTES OF THE MEETING OF THE ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD (ACMSF) - HYBRID MEETING HELD ON 9th FEBRUARY 2023 (ONE-HUNDRED AND SECOND MEETING)

Present

Chair: Prof. Bill Keevil

Members:

Dr Gary Barker

Dr Gauri Godbole

Dr Rohini Manuel

Prof. Peter McClure

Mr Alec Kyriakides

Mrs Ann Williams

Miss Heather Lawson

Dr Jane Gibbens

Prof. Francis Butler

Prof. Linda Scobie

Dr Edward Fox

Mr Martin Briggs

Dr Wayne Anderson

Prof. Cath Rees

Dr Dragan Antic

Departmental

representative: Dr Paul Cook (FSA, Risk Assessment Unit)

FSA Science Council:

Prof. Peter Borriello

Secretariat:

Dr Anthony Wilson

Dr Elaine Pegg

Dr Johanna Jackson

Ms Azuka Aghadiuno

Presenters:

Darren Holland (FSA)

Dr Karen Pearson (FSS)

Tina Potter (FSA)

Dr Erica Kintz (FSA)

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 102nd meeting of the ACMSF. He also welcomed Darren Holland (FSA) who presented agenda 8 (IID during COVID-19 ACM/1404); Dr Karen Pearson (Food Standards Scotland) who presented agenda item 11 (Risk assessment of the risk to vulnerable consumers from *Listeria monocytogenes* in ready-to-eat smoked

fish ACM/1407); Tina Potter (FSA) who presented agenda item 13, (A report on recent microbiological incidents and outbreaks update ACM/1406), and Dr Erica Kintz (FSA), who presented agenda item 14, (An update/milestones of IID3).

1.2 As part of the meeting was opened to the public, the Chair mentioned that all of the meeting papers with the exception of the reserved business papers; ACM/1407 Risk assessment of the risk to vulnerable consumers from *Listeria monocytogenes* in ready-to-eat smoked fish; ACM/1405 Update on the activities of Epidemiology of Foodborne Infections Group (EFIG); ACM/1406 A report on recent microbiological incidents and outbreaks update have been posted on the committee's website. These reserved business papers are for members use only.

2. Apologies for absence

2.1 Prof. Dan Tucker

Mrs Emma Hill

Dr Nicol Janecko

Dr Stephen Wyllie

3. Declaration of interests

3.1 The Chair asked members if they wished to declare any potential conflicts of interest associated with the agenda items to be discussed.

3.2 Dr Gary Barker clarified that he was involved in reviewing the results of agenda item 8, IID during COVID-19.

4. Minutes of the 101st meeting

4.2 Typographical errors were discussed and amended accordingly.

4.2 It was requested that an action point regarding *Salmonella* in dogs was added to the minutes. This action would involve increasing public and veterinarian awareness of this issue. **ACTION.**

4.3 It was requested that an action point was added regarding the availability of NHS data to the ACMSF committee members. **ACTION.**

4.4 Subject to the above amendments, members approved the minutes of the 101st meeting as an accurate record and agreed that they should be posted on the ACMSF website. **ACTION.**

5. Matters arising (ACM/1402)

5.1 Dr Anthony Wilson presented ACM/1402 and provided a summary of actions on matters arising from previous meetings. Dr Anthony Wilson reported that:

- Minutes of the 100th meeting had been posted on the website.
- The minutes from the Horizon Scanning Meeting that took place in June 2022 will be posted on the website imminently. **ACTION.**
- Once finalised, the Horizon Scanning Meeting minutes will be shared with the UK Food Safety Network (UKFSN). **ACTION.**
- In response to a discrepancy noted by the committee in the list of pathogens that will be considered in IID3, Dr Erica Kintz provided an updated and final table of the pathogens that will be included.
- There have been significant delays to the IID3 project due to problems with the HRA ethical approval. The secretariat will take this to Prof. Robin May to highlight these problems. **ACTION.**
- It was discussed by the committee that future IID studies should include Hepatitis E and Hepatitis A and that pathogens included should be based on the burden of disease in the UK. The secretariat is to communicate with FSA Foodborne Disease lead (AW) and ask them to reflect on prioritisation of pathogens in the next IID project. **ACTION**.
- In response to a request from the committee for the whole committee to be aware of papers endorsed by sub-groups, a shared folder has been created in the ACMSF Teams site entitled *ACMSF endorsed documents*. Any endorsed documents will be saved here for committee members to access. Committee members will be notified by email when documents are uploaded to this folder.
- In response to requests by the committee for clarification on data included in the EFIG report, an update will be given in the closed session.
- Botulism in cattle, sheep and goats - update on recommendations from the ACMSF Botulism in Cattle, Sheep and Goats reports. An update was given that this action is still outstanding due to the resource requirements of the ongoing avian influenza outbreak. **ACTION.**
- Outstanding action from the 99th meeting. Re: updated advice on increase in *Salmonella* in pigs. This is still a work in progress and a request will be forwarded to Dr Stephen Wyllie to update the committee on this action point. **ACTION.**

6. Committee update

6.1 Update on the AMR working group:

- Prof. Bill Keevil, as chair of the AMR working group, gave an update on the AMR working group's latest work.
- The last working group meeting was held on the 15th November 2022.
- FS307031: *Campylobacter* AMR in Chicken in the UK was presented to the working group by Freida Jorgensen from the UKHSA. This study found that ciprofloxacin, nalidixic acid and tetracycline resistance were common in *C. coli* and *C. jejuni* in chicken. Erythromycin and streptomycin resistance was found to be much lower and resistance to gentamicin was very rare. The final report from this study is published on the FSA website.
- The terminology of AMR was discussed, particularly the issue of if "resistance" or "reduced susceptibility" should be used in relation to phenotypic testing. It was noted by committee members that when using either of these terms, context is important, and that it is very important to have clarity at the start of any report as to what the specific terms used mean in that context. This is, therefore, currently work in progress.
- An item was discussed on the risk of migratory birds spreading resistance genes in the UK. Dr Tamsin Dewe (VMD) brought to the working group that resistance genes found throughout the world may be linked to migratory birds. She informed the working group that a pilot study has recently commenced that will take faecal samples from both migratory and indigenous birds. AmpC, ESBL and carbapenamase resistance will specifically be looked for.
- Mr Adekunle Adeoye had given an update on the recent application to the FSA regarding the use of nisin in food. There has been a recent application for the use of nisin in food processing in response to the EU decision to reduce the use of Quaternary Ammonium Compounds (QAC) in the food industry. The food industry in the UK have expressed concerns regarding this reduction as QAC's are used as a safeguard against *Listeria* spp. and other pathogenic microorganisms. Nisin has gained support in Europe as a reasonable compound to replace QACs.
- However, it was brought to the working groups attention that nisin resistance amongst microorganisms is showing increased prevalence. During the discussion a committee member was keen to highlight that the use of nisin in food is complex and that the chemistry of the food matrix can affect nisin efficacy. It was also bought to the attention of the committee that currently cheese producers, who may use nisin in their product, frequently swap the preservatives that they use in order to avoid the development of

AMR.

- The AMR working group have advised the secretariat that a full risk assessment on nisin is needed before any comment can be given regarding its use to replace QACs. The secretariat is to check if a full RA has been considered by the FSA. **ACTION.**
- The chair asked for committee members who would like to comment on this work going forward. Prof. Keevil, Prof. Rees and Prof. McClure were all identified as appropriate experts.
- The 2021 Veterinary Antimicrobial Resistance and Sales Surveillance (VARSS) report was presented by Dr Tamsin Dewe. In summary, it was reported that the average antimicrobial sales per kg of bodyweight has decreased by 6% in the last year, and by 55% since 2014. However, 212 tons of antimicrobials were sold in the UK in 2021. The most significant use is tetracyclines and penicillin's. High priority critically important antimicrobials (HP-CI) i.e. fluoroquinolones and third generation cephalosporins, only make up 1.1% of the overall sales.
- A committee member commented that although 1.1% seems low, 1.1% of 212 tons is still a significant amount. The issue was raised by another committee member that for some species of animals, the HP-CI antimicrobials are the only licenced antimicrobials in that particular species for specific infections i.e., turkeys
- In response to the bullet point above, a committee member stated that perhaps businesses should be challenged to improve husbandry, in order to stop infections occurring in the first place and thus reduce the need for the use of such important drugs. The committee was reminded that despite the UK having the lowest use of HP-CI antimicrobials in the world that it was important to have longer term surveys of infectious disease. Of note, the UK still has a high level of infection despite the decrease in antimicrobial use.
- It was reported in Dr Dewe's presentation, that overall antimicrobial usage is down for all groups of farming, with the exception of salmon farming which has shown a 168% increase since 2017. A committee member highlighted that the majority of salmon farms in the UK are based in Scotland, of which many are owned by Norwegian companies. He stated that Norway is very dedicated to working to reduce overall antimicrobial usage in agriculture so that this may well be being tackled.
- The VARSS report also showed that there were no reports of colistin resistance but 80% of isolates showed ESBL resistance and 12% showed AmpC resistance.
- *Salmonella* in pigs, chicken, cattle, and sheep showed very low levels of AMR. In fact, 67% of all isolates were fully susceptible.

- This report also instigated a discussion on the causality of AMR. For example, AMR in *Campylobacter* is still significant despite the reduction in the use of antimicrobials over the last 20 years that will select for this. Predictive models had suggested that this resistance should have now started to be reversed but *Campylobacter* has intrinsic resistance to many antimicrobials. It was highlighted that this suggests that causality of AMR is not fully understood and that we don't fully understand the dynamics that are in place.

7. Neurotoxin-producing Clostridia Subgroup report (ACM/1403)

7.1 The Chair invited Dr Gary Barker, (chair of the neurotoxin-producing Clostridia subgroup) to introduce paper ACM/1403, that outlined the recently completed report on Neurotoxin-producing Clostridia.

- Dr Barker reported that in 2021, the ACMSF requested that a new subgroup should update and build on the 1992 report "Vacuum Packaging and Associated Processes with regard to the microbiological safety of chilled foods".
- The subgroup comprised 5 ACMSF Members, 3 Co-opted Members, 2 Observers and 3 members of the secretariat. There were 7 full Teams meetings with many other interactions online. Experts were consulted during the production of the report which included Kathleen Glass, Gauri Godbole, Karin Goodburn, Kristin Marie Schill, Paul Thomas and Arnoud van Vliet.
- The Terms of Reference of the subgroup report as defined in April 2021 were:

o To review the risk posed by botulinum neurotoxin-producing clostridia in foods stored at ≤ 8°C that support growth or toxin production.

o A preliminary assessment of the risk posed by botulinum neurotoxin-producing clostridia in food designed to be stored at ambient temperatures that support growth or toxin production.

o Where appropriate, consider other risk-related evidence relevant to neurotoxin-producing clostridia during the lifetime of the group.

- The scope of the subgroup was updated in 2022 and defined as: Conditions that support growth and/or neurotoxin formation by *C. botulinum* and other clostridia. Where practical this includes the identification of a limiting condition that allows growth and/or neurotoxin formation by *C. botulinum* as well as identification of a limiting condition that provides control. It was also

determined that *Listeria monocytogenes*, *Bacillus cereus* and other pathogens not specified in the scope, or the terms of reference need to be considered separately. Regarding non-clostridia bacteria with homologous botulinum neurotoxin genes were also beyond the current consideration but that it is prudent to maintain a close watch on scientific reports that identify botulinum neurotoxin type gene sequences in non-clostridia.

7.2 Key Findings and recommendations

- The frequency of occurrence of foodborne botulism remains **very low** (very rare but cannot be excluded) with **high** severity (severe illness: causing life threatening or substantial sequelae or long-term illness).
- In comparison with proteolytic *C. botulinum* and non-proteolytic *C. botulinum* , other clostridia such as neurotoxigenic *C. butyricum*, *C. baratii*, and *C. sporogenes* have only very rarely been associated with foodborne botulism. Data suggest that their growth and survival characteristics (including thermal and acid resistance) are comparable to proteolytic *C. botulinum.*
- Since the 1992 ACMSF report, there have been very few reports of incidents in which UK consumers were exposed to botulinum neurotoxin in food, with only 10 reported incidents involving 13 cases. These incidents include chilled foods and foods meant to be stored at ambient temperatures. Eight of the ten most recent outbreaks involved foods produced or acquired abroad.
- Temperature abuse has been highlighted as the cause of the majority of incidents relating to botulism in chilled foods. It is recommended that the FSA highlight the importance of temperature control in consumer food hygiene campaigns, together with adherence to recommended Use By dates, to reinforce these critical consumer food safety controls. **ACTION.**
- Whilst existing controls act to maintain safety with respect to botulism in chilled and ambient manufactured foods it is recommended that FSA guidelines should be slightly modified to include in the control actions “a combination of controlling factors which can be shown consistently to prevent toxin production by non-proteolytic *C. botulinum*”. This is to provide flexibility to support innovation by food business operators that can lead to reduced energy usage, waste reduction and safe shelf-life extensions. **ACTION.**
- It is emphasised that nitrites exert an important anti-*C. botulinum* effect and other preservation factors should be adjusted if nitrite concentration is to be reduced in, or removed from, foods traditionally containing it.
- An appropriate level of preparedness in the detection and investigation of foodborne botulism incidents is essential.

- The evidence in this report did not facilitate revision of the current reference process, heating at 90°C for 10 minutes or an equivalent, but this may provide a lethality that exceeds 6 order of magnitude reduction in population size, and thus could be subject to further investigation.
- centigrade degrees. and z = 10 centigrade degrees to be used to evaluate equivalent thermal processes for operating temperatures below and above the reference temperature respectively.
- It is important to note that detection methodologies that maintain sensitivity and can reduce the burden on the use of experimental animals are available.

7.3 Comments and discussion

- An active discussion ensued after Dr Barker's presentation. It was discussed that detection methodologies for *Cl. botulinum* in human cases are dominated by animal assays, of which a large number of animals are sacrificed every year, worldwide. It is hoped that a reduction in animal use will occur. It was reported by a committee member that molecular methods are being used more for *Cl. botulinum* diagnosis, but that acceptability of new methods may be a barrier to use. A committee member brought up the issue with new testing methods not being commercially viable to produce due to the relatively low numbers of botulism every year.
- There was concern from the committee regarding the potential reduction in nitrites in food. It was reiterated that nitrites in food are a complex issue and that their presence exerts an important anti-*Cl. botulinum* effect, that is difficult to predict. It was discussed that there should not be a change in nitrite levels in food that would cause a conflict between the microbial safety and the chemical safety of food. It was discussed by members that there must be equivalence testing of any new methods that are used and that changes in food production may lead to increases in *Cl. botulinum.*
- A committee member brought to the attention of the subgroup, that whilst this is a very thorough report, there is a contradiction in recommendations in respect to the issue of growth of the organism vs toxin production by the organism.
- The subgroup and the committee discussed at length that there is a lot of understanding of sporulation and toxin production, but that growth and toxin production is an issue that has still not been fully understood.
- There was a consensus of agreement by the committee that challenge testing should be toxin based. It was accepted that growth studies can be informative and should be considered. It was argued that growth can be a surrogate for toxin production and that growth is a good surrogate for contamination of the final product. A counter argument identified that toxin

can be present without growth of the organism. The conclusion of this discussion was that toxin production should always be prioritised over growth, in terms of food safety.

- Prof. Borriello brought to the committee that alternative product methodologies may arise due to different drivers, for example, increases in energy costs encouraging FBOs to move away from the use of heat treatment. He asked that in terms of future proofing the report, what reassurance can be given by this report, if people are investigating other methodologies. **ACTION.**
- A committee member asked if there is sufficient screening of *Cl. botulinum* in the food industry or do FBO's rely solely on preventive measures such as heat. The committee members discussed that surveillance of food for botulism is not practicable and therefore the use of 90 □ C for 10 seconds is used as it is known to give at least a 6-log reduction in spore loading. Other committee members accepted that the 90 □ C for 10 seconds may have been over emphasised in the past and that some foods may require lower temperature to provide the same level of safety. The general feeling was that if an FBO can demonstrate a method that results in a 6-log reduction in spore count, then the FSA should consider this as acceptable
- A committee member brought to the attention of the subgroup that a statement in the report, section 5.1.1, regarding the effect of decreasing pH on botulinum toxin stability was ambiguous. The subgroup will review this. **ACTION.**
- A member of the secretariat asked Dr Barker for clarification regarding the potential changes to food production over time that may lead to an increase in the numbers of cases of botulism. He asked if this was in reference to online selling, the COVID-19 pandemic and changes to imported foods.
- Dr Barker responded that ghost kitchens or dark spaces are increasing, and it brings significant challenges when trying to regulate them or even register them. He reiterated that it is very important to communicate with such businesses but that these establishments are of real concern.
- The committee discussed that if the public were made more aware of the risks of buying from unregulated food producers, then they would be less likely to do so. Again, it was concluded that we need to communicate more effectively with consumers and food business on the risks to public health**.** **ACTION.**
- Prof. Borriello explained that the VMD previously targeted unregulated selling of veterinary medicines from online retailers by establishing an accreditation scheme. Those businesses who were selling online could apply for accreditation and these websites could carry a protected logo.

- The committee discussed that education of the public is vital to raise awareness of the risks of botulism. It was discussed that communication is key and that it would be possible to use same message regarding the prevention of botulism to different groups of the population but in particular, this message needs to be made to home preservers.
- It was discussed that “important members of society” such as MPs need re-education too. For example, on the risks of not complying with use by dates. In addition, there was a concern that “experts” on social media can spread misinformation in relation to food safety. The committee discussed if this report on neurotoxin producing Clostridia can be highlighted and networked to counteract the misinformation.
- A committee member highlighted that school level education is needed from an early age in order to get the correct message to the right people and embed good practice in society. In response to this, a committee member commented that if you only target school pupils, then a large proportion of the population will be missed, and that not only school-level education is needed, but general education of the public is needed regarding food safety.

- It was concluded that communication to the correct audience is vital. The ACMSF will approach the Advisory Committee on Social Science (ACSS) to assess how to provide information packs for schools and how to convey a positive message to the public. **ACTION.**
- Prof. Borriello will approach the Science council for a renewed strategy for communications with the public. **ACTION.**
- A member of the secretariat queried as to why the subgroup had concluded that the risk to the consumer from neurotoxin-producing Clostridia was very low, when according to the ACMSF 2D risk assessment guidelines, based on an incidence of 10 outbreaks (13 cases) in 30 years it should have, perhaps, been negligible.
- The committee responded to this comment that the above figures are based on reported numbers of botulism cases. There is likely to be an under-reporting level of 33-50%. This is mainly due to the rarity of botulism, unfamiliarity by clinicians with symptoms of botulism and differential diagnoses. Taking this into account would therefore move the risk in to the very low category that had been described in the report.
- It was agreed that the report is to undergo a public consultation for comments and that this should happen quickly. **ACTION.**

8. Survey of Infectious Intestinal Disease (IID) during COVID-19 (ACM/1404)

8.1 Prof. Bill Keevil invited Darren Holland (FSA) to present his paper ACM/1404: Survey of Infectious Intestinal Disease during COVID-19.

8.2 Dr Gary Barker declared that he had reviewed the results of this study and therefore there was potential conflict of interests.

- Mr Holland gave the background to the survey. He reported that the FSA tracks IID rates for major pathogens using confirmed laboratory reports as a proxy. In “normal years” these levels are usually relatively stable. During the COVID-19 pandemic it was hypothesised that such an assumption was unlikely still to hold as contacts with GPs and other health care professionals were expected to be reduced. In addition, changes in behaviour during the pandemic period could also change IID rates.
- In order to better understand this impact, the FSA and FSS commissioned Ipsos UK to undertake nationally representative online panel surveys to explore the impact of the COVID-19 pandemic on the prevalence of IID among the general population.
- The survey comprised 6 “Waves” for adults and 5 “Waves” for children that were carried out at different times during the pandemic. The waves were to reflect different stages of lock down restrictions and thus it was hypothesised that the survey results would reflect this.

o Wave 1 (27 August – 17 September 2020): adults 8,545 and children 1,988

o Wave 2 (2 December – 18 December 2020): adults 8,993 and children 2,297

o Wave 3 (15 February – 3 March 2021): adults 8,916 and children 2,445

o Wave 4 (26 August – 20 September 2021): adults 9,000 and children 2,363

o Wave 5 (9 December 2021 – 5 January 2022): adults only 8,933

o Wave 6 (15 February – 10 March 2022): children only 2,459

8.3 Key findings

- The overall estimate for domestic IID among UK adults was statistically significantly higher in Wave 4, and Wave 5 compared to the previous three waves. Restrictions put in place to manage COVID-19 infections changed over time but were being eased nationally when Waves 4 and 5 were carried out.

- For adults, the overall estimate for domestic IID among UK were significantly higher in Wave 6 compared to the previous four waves. Prevalence rates in Wave 2 and Wave 3 were both significantly higher than Wave 1.
- Overall, there was a significant increase from Wave 1 in the proportion of adults with domestic IID seeking medical help for their illness. Adults with domestic IID were more likely to attend their usual GP practice in person in Wave 4 and Wave 5 compared with Wave 3. Similarly, adults were also less likely to consult with a pharmacist in Wave 1, compared with Wave 2, Wave 3 and Wave 5.
- The proportion of adults with domestic IID that reported attending hospital during their illness ranged between 4% and 6% with no statistically significant differences between survey waves. Similarly, among parents of children with domestic IID there were no statistically significant differences in the percentage of children that attended hospital in each wave.
- Overall, similar proportions of those with domestic IID provided a stool or blood sample across all waves, both among adults and among children.
- Findings about behavioural and contextual comparisons are included to give an indication of the overall similarities and differences between those with domestic IID and the comparison group (adults and children that did not report IID symptoms). The FSA is undertaking further analysis to understand the relationship between these behaviours and IID symptoms, and the differences described do not on their own provide evidence of causation. It is also worth noting that many of the behaviours themselves will be correlated. For example, those leaving the house less often will be less likely to use public transport, eat out, and so on.
- The proportion of adults with domestic IID that reported they had left the house in the previous four weeks was significantly higher than for the comparison group in all waves of the adult survey. The proportion of adults with domestic IID where any member of the household had left the home in the previous four weeks was also significantly higher than the comparison group.
- Children with domestic IID were more likely to be reported as having left the house in the previous four weeks than children in the comparison group
- Across all five waves, the proportion of adults with domestic IID that had left the house and had used public transport in the previous four weeks was significantly higher than the comparison group.
- The equivalent proportion of children with domestic IID who had left the house and had used public transport was also significantly higher compared with those children in the comparison group in Waves 1 to 3.

- In each survey wave, the proportion of adults with domestic IID that reported consuming food prepared outside the home across a range of settings was generally higher than for those in the comparison group.
- The proportion of children with domestic IID consuming food prepared outside the home in the previous four weeks was often higher compared with children with no IID symptoms.
- Questions relating to handwashing behaviours will be subject to a degree of self-reporting and recall bias.
- Across all survey waves, the proportion of adults with domestic IID that reported always washing their hands after going to the toilet was significantly lower compared with those in the comparison group. Self-reported handwashing behaviours among adults in the domestic IID group and comparison group were similar in other situations (after a trip outside the home, after blowing their nose or coughing, before cooking/preparing food or eating).
- Handwashing behaviours reported by parents among children in the domestic IID group and comparison group were broadly similar. However, there were some significant differences between survey waves in reported handwashing behaviours in specific situations.

8.4 Comments and Discussion

- The committee was invited to comment on Mr Hollands presentation.
- A committee member commented that the numbers of patients attending GPs in person significantly decreased during the pandemic due to less available appointments and people were shown to be avoiding consultations for fear of coming in to contact with COVID-19.
- A committee member also highlighted that primary care still is not back to pre-pandemic functionality and therefore the effects may still be felt in terms of lack of appointments and face to face interactions. Mr Holland responded that it was hoped that a final “post-pandemic” wave would have been carried out to finish the survey, but this had not been possible due to the long tail off of the pandemic.
- The committee raised a concern about the effect of rigorous statistical analysis on surveys such as this and to be careful that confounding effects are not exaggerated.
- A number of committee members discussed the evidence that Mr Holland had provided in people not handwashing after using the bathroom. The discussion returned to the issue of re-education of simple measures that can combat infectious disease.

- The committee discussed that the handwashing message was diluted in COVID-19 and the public became confused with different messages regarding the virus from different sources. It was discussed that information on why people stop washing hands and why they don't is needed. A member pointed out that the impact of interventions such as a handwashing campaign tends be a short-lived and then behaviour returns to as it was before. In relation to this there was a concern raised that, in a post-covid society, that there is a danger of government led health advice fatigue, and that a food safety campaign may be better placed in the future. **ACTION.**
- A committee member was interested as to how the levels of reported IID compared to the levels of disease before the pandemic and queried if this was all down to under-reporting or was it down to change in behaviour?
- Dr Cook responded that the Royal College of GP weekly surveillance data from 2019-2022 showed a significant drop in presentations with IID in 2020 and 2021 that presentations were tracking back up to the pre-pandemic levels in 2022.
- In a subsequent discussion it was recognised by the committee that COVID-19 directly affected the food industry in both positive and negative ways. For example, COVID-19 restrictions drastically reduced norovirus in the population and interestingly the levels in oysters had reduced too. Negative side effects were recognised too in that many food industries were challenged with staffing levels and therefore food safety was likely impacted.
- A committee member questioned the level of foodborne disease in adults in the UK from this survey, if extrapolated over 12 months is inaccurate. Mr Holland responded that the limitations of such a survey must be recognised, and the idea was to understand the trends of reporting
- A committee member asked Mr Holland to explain why the numbers of stool and blood samples did not change throughout the survey waves even though the numbers of patients attending medical facilities significantly changed. It was suggested by another committee member that this could be due to the use of postal kits or people that had serious disease, would present regardless of restrictions.
- Prof. Borriello asked if the FSA track the pharmacy sales of antidiarrheals. This was because a study in the USA showed, during an outbreak of *Salmonella,* the sales of antidiarrheals proved to be a sensitive way of tracking disease levels. It was suggested that this was an action for the FSA MRA team to investigate. **ACTION.**
- Finally, it was asked why this study was undertaken and could Mr Holland provide an explanation as to what evidence it will give to Policy teams. Mr Holland and committee members responded that a study such as this gives

an idea of how much IID is foodborne and the behaviours surrounding transmission, which is important in understanding prevention.

9 AOB

9.1. Information was circulated prior to the meeting on the updated membership process for the ACMSF. Aisling Jao (FSA) was present to represent the Scientific Advisory Committee Hub and to answer questions on the changes in process. No questions were forthcoming at this time.

10. Question and Answer Session

- Dr Karin Goodburn, Chilled Food Association (CFA), made the following comments regarding agenda item 7 (Neurotoxin-producing Clostridia Subgroup report).

10.1 Z-values

- Dr Goodburn welcomed the repeated firm recommendation that the z value of 7^0C for up to 9^0C must be put into the guidance ASAP and asked for this to be communicated immediately to FBOs. She reported that at least one consulting lab are referring to the lethal rate data in the guidance and was concerned that this practice is potentially compromising safety while charging FBOs for incorrectly based thermal process assessments. She also reported that this issue was first raised with FSA in 2012 but not acted on and questioned why had a food safety matter been ignored for so long? Dr Goodburn asked as to how the FSA can provide reassurance that this will be dealt with through an efficient process?

10.2 Toxin testing

- Dr Goodburn, again commented that she welcomes the change in emphasis to toxin testing as it is the toxin which causes disease/fatalities. Again, she requested that this is stated clearly by FSA ASAP in order to protect consumers. She provided evidence that this has been stated by industry since 2018 but not acted on by FSA (https://www.chilledfood.org/new-publication-guidelines-for-setting-shelf-life-of-chilled-foods-in-relation-to-non-proteolytic-clostridium-botulinum).

10.3 6 log reduction

- Dr Goodburn welcomed the apparent recognition that a 6 log process is not based on current the evidence of spore prevalence/loadings and that

alternative approaches using e.g. multiple hurdles, with data to demonstrate safety, are acceptable. She reported that SUStainable Shelf-Life Extension (SUSSLE) has been used successfully for a decade already, the science having been part funded by Government, presented to FSA more than a decade ago, and a number of ACMSF members having been involved directly in the projects, with peer reviewed papers published.

10.4 Regulation & Guidance for Industry

- Dr Goodburn asked that notwithstanding the immediate action needed in relation in the above bullet points, when will FSA get work underway on the new guidance and will it involve industry.
- Dr Goodburn noted reference to applicable 'regulations' in relation to the topic of the FSA Guidance which is of course unique to the UK. General food safety requirements of law apply, i.e. that FBOs must place safe food on the market and they are responsible for food safety.
- In regard to the latest report, Dr Goodburn asked if the FSA will be issuing a factsheet on how to produce safe herbs/spices/garlic in oil to consumers and FBOs, and promote it online, via EHOs etc?

10.5 General comments

- Dr Goodburn asked for clarification as to what processes are in place at FSA to ensure that there is a scientific basis for any guidance it issues, e.g. none for 13 days in relation to fresh VP/MAP meat, and that it carries out impact assessments not only on food safety but also sustainability and food security. She requested information as to what the next steps are and how quickly this will happen.

10.6 Response by the ACMSF committee and secretariat

- In response to Dr Goodburn’s extensive comments the committee and secretariat replied with the following responses:
- Z-vales: The committee replied to Dr Goodburn’s concerns by reiterating that the ACMSF subgroup report has not said that a z value is not safe. They also reiterated that they understand there is a wide safety value margin? within the 90 □ C for 10 minutes but recognise that it is safe.
- Toxin testing: In response to asking the FSA to collaborate with industry to develop guidance, Dr Cook commented that previous collaboration is likely to continue going forward.
- The committee responded that there is a general support for toxin testing.

- Regulation & Guidance: In response to the production of fact sheets on storing food in oil, Dr Paul Cook commented that this issue has arisen before and that this will be relayed to FSA risk managers for consideration. However, it was also reiterated to Dr Goodburn that in terms of the findings of this report, there was no evidence in the UK of such products causing incidents or outbreaks but conceded that there is a theoretical issue of such produce causing botulism.
- Impact assessments: In response to the FSA conducting an impact assessment to eliminate best before dates. Dr Cook reported that risk managers will likely be considering best before dates as part of a "whole package". Dr Wilson added that there is already a risk analysis process in place within the FSA. He also reminded the group that whilst sustainability does feature as part of the FSAs strategy, the authority of the FSA is based on food safety, however, the FSA will work with other agencies whose priorities lay more with sustainability.
- The FSA reiterated that the report will be published after 3 months consultation process and final approval by the committee.

Annex 1

List of observers

Name	Organisation
Gail Betts	Campden BRI
Dr Karin Goodburn	Chilled Foods Association
Mr Bobby Kainth	FSA
Gary McMahon	Moy Park
Pamela Mullan	Moy Park
Iulia Gherman	FSA

Nan Jones	British Meat Industry
Daniel Lloyd	FSA
Benjamin Nketiah	FSA
Alexander Tucker	Cambridge University
Ali Aitchison	
Michael Peck	Quadram Institute
Will Allen	IMTA
Mark Jitlal	FSA
Svetlana Chobanova	FSS
Zebby Meredith	FSA
Jacob Hargreaves	FSS
Wioleta Trzaska	FSA
Marianne James	FSS
Aisling Jao	FSA