CAMPYLOBACTER REDUCTION PROGRAMME: UPDATE

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SUMMARY

1. Campylobacter reduction continues to be an important food safety focus for the FSA as it remains the leading bacterial cause of foodborne disease in the UK.

2. This paper aims to:
   - Update the Board on the activities the FSA has undertaken to reduce levels of Campylobacter;
   - report on numbers of human cases of Campylobacter and a commentary on the fluctuation in figure; and
   - provide an overview of new science and evidence, including the 2019 ACMSF report on Campylobacter epidemiology.

3. The Board is asked to:
   - Review the suite of interventions trialled and implemented as part of the Campylobacter Reduction Programme;
   - Consider the findings from the latest research on Campylobacter; and
   - Agree the on-going activities being undertaken to reduce Campylobacter.

INTRODUCTION

4. Campylobacter can grow to high levels in the gut of infected chickens and can contaminate the skin and meat of birds during slaughter and processing. Evidence suggests that chicken contaminated with high levels of Campylobacter (exceeding 1000 colony forming units per gram (cfu/g)) presents the greatest risk to consumers. Therefore, the FSA’s strategies for protecting public health are aimed at reducing the levels below this threshold.

5. The Board was last updated on Campylobacter at its meeting in March 2016\(^1\). Following the successes of the Campylobacter Risk Reduction Strategy, work moved into Business as Usual with an understanding that on-going activities would continue. In addition, further action/investigation would be triggered if the reported levels of human cases increased beyond a defined threshold point.

6. At the meeting of the FSA Business Committee on 20 June 2018\(^2\), a paper on Performance Measure Development was discussed, and it was agreed:

\(^1\) [https://www.food.gov.uk/sites/default/files/media/document/fsa160306.pdf](https://www.food.gov.uk/sites/default/files/media/document/fsa160306.pdf)

\(^2\) [https://www.food.gov.uk/sites/default/files/media/document/Performance%20Measure%20Development%20-%20FSA%202016-06-17.pdf](https://www.food.gov.uk/sites/default/files/media/document/Performance%20Measure%20Development%20-%20FSA%202016-06-17.pdf)
‘Appropriate action and/or intervention will be considered as well as any analysis of results used as appropriate to inform the FSA’s strategic direction. Campylobacter: Baseline 71,300 lab reports per year in UK’

7. As reported earlier in the year there was an increase in the reported number of confirmed laboratory cases of foodborne diseases from all four pathogens (including Campylobacter) that are being monitored between 2017 and 2018. However, the number of human cases of Campylobacter remains below the threshold point (see para 13 below).

BACKGROUND AND CONTEXT

8. This paper updates the Board on the on-going Campylobacter programme of activity, including analysis of new data.

9. The programme of work is aligned to Regulating our Future (RoF) principles to ensure that regulatory activity is risk-based, targeted and proportionate.

CAMPYLOBACTER RISK REDUCTION STRATEGY 2014 - 2017

10. The UK Campylobacter reduction strategy, a partnership between FSA, FSS and the poultry industry, agreed a voluntary target to reduce the most highly contaminated birds (those with over 1000 cfu/g neck skin) from an estimated 27% in 2008 to below 10% post chill in the slaughterhouse by the end of 2015 and subsequently to <7% at retail. The reduction programme included a suite of interventions targeting producers, processors, retailers, and consumers.

11. A number of interventions and good practices have been put into place along the supply chain to reduce the levels of contamination of Campylobacter in chicken carcases, see Annex A for further details.

12. The partnership strategy was considered a success with a modelled reduction of 100k fewer cases of campylobacteriosis in 2016 compared to the baseline based on a reduction in laboratory confirmed cases.

SCIENCE AND EVIDENCE

Epidemiology of Campylobacter Infection

13. Following a decline in laboratory confirmed cases of Campylobacter in the UK between 2012 and 2016, numbers increased by 8% in 2017. Provisional


4 The joint industry target of no more than 10% of chickens that leave UK processing plants should be contaminated with campylobacter, at a level exceeding 1000 cfu/g, is equivalent to 7% of chickens at retail sale, as it is well established that there is a natural decline in Campylobacter levels from the end of the slaughter line on its passage through the chill chain.
laboratory reports for the first 5 months for England and Wales of 2018 suggested a further increase of 22% from 2017. If such an increase had continued for the rest of the year this would have brought numbers back to 2012 levels. After May 2018, the trend to some extent reversed, with numbers in August and September being lower than all years since at least 2009 (monthly data for 2009 and earlier years was not provided). This change in direction underlines the short-term variations that can occur in laboratory results and the need to consider trends over a sustained period.

14. Provisional figures for the first five months of 2019 show a decrease compared to the same period in 2018\(^5\). See Figure 1.

15. Figure 2 gives a breakdown by month comparing 2018 to years 2014 to 2017 (data only up to September 2018 was available at time of analysis).

**Figure 1**

![Campylobacter - UK confirmed laboratory reports](image)


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\(^5\) These figures should be regarded as provisional as the Public Health England (PHE) (who provide the data for England) periodically re-validate the annual *Campylobacter* data. This is currently underway for the years 2014 – 2018. A validated dataset will be available in the coming months. Despite this exercise PHE are confident the total annual reports are below the designated FSA threshold for action.
Figure 2

Source: Public Health England

16. The FSA Analytics Unit has produced a high level analysis of possible reasons for the increase in confirmed laboratory reports of Campylobacter, seen in 2017 and early 2018. The analysis was unable to identify a specific cause for the increase in laboratory reports. Despite the fact that contamination originating from chicken remains the main source of Campylobacter in humans, there is no evidence that changes in contamination levels in chicken explain the increase in human cases.

ACMSF Campylobacter Report

17. In 2016, an ACMSF Ad Hoc group on Campylobacter was established to assess the actions that have taken place since the publication of the Second Campylobacter Report 2005 and to make proposals to advise the FSA in evolving its strategy for reducing the incidence and risk of foodborne Campylobacter infection in humans.

18. The draft report went out for 10 weeks public consultation earlier this year and comments were received from Moy Park, the British Poultry Council and the British Retail Consortium which have been taken account of in a revised draft. The draft was presented to the main ACMSF on 27 June and some additional comments were made which have been addressed.

19. The report made a number of recommendations including in the areas of surveillance, research, biosecurity and work focussing on consumers and
caterers. Conclusions and recommendations can be found at Chapter 10 of the report\(^6\). The report has recently been published.

20. Officials will carefully consider the recommendations from the report with resources prioritised and directed to the highest impact activities in terms of reducing foodborne illness.

**Attribution Study**

21. Campylobacter is ubiquitous in the environment and illness can result from a number of different sources. As part of the Campylobacter Risk Management programme the FSA commissioned a number of projects exploring contamination and potential solutions. It also monitored the prevalence of Campylobacter in poultry in slaughterhouses and on chicken meat at retail sale in the UK. Whilst these provide valuable information on the impact of interventions in the chicken production chain, it is the impact on human infections attributable to chicken meat that are key to evaluating the overall impact of the Risk Management programme. To assess the contribution of poultry sources of campylobacter to human cases the FSA has funded research project FS101013 Enhanced molecular-based (MLST/whole genome) surveillance and source attribution of Campylobacter infections in the UK.

22. This project is due to report later in 2019; however, interim data suggest that between 50 and 75% (depending on attribution method) of human cases have an origin in chicken. There is no suggestion that this proportion of cases has dropped over time.

**SURVEILLANCE**

**Retail Survey**

23. The FSA began testing Campylobacter in UK-produced, fresh, whole retail chicken in February 2014. In the first year of testing 18.4% of samples were found to contain Campylobacter on neck skin at levels above 1000 cfu/g (the figure of 18.4% for “high-level” Campylobacter prevalence is a market-weighted average of the top 9 UK retailers). The FSA retail survey continued until October 2017 and in the final 3 months of testing, high-level Campylobacter prevalence among the top 9 retailers had fallen to 5.9%, having declined steadily in the intervening years.

24. As agreed with the Board in 2016, since late 2017, the FSA has been using industry data to monitor that progress has been maintained. Each of the top 9 retailers has sampled and tested chicken to a common protocol agreed with the FSA. The data is supplied on a quarterly basis and for each quarter high-level prevalence has been maintained within the range 3.1% to 4.6%. In addition, the top 9 retailers publish their own results on their websites for their customers.

This arrangement was time limited until the end of this year. The Executive will shortly begin discussions with retailers as to how they might continue to provide assurances to the FSA, as a regulator, on their sampling results and ongoing activities to reduce Campylobacter contamination and how they make such information transparent to their customers.

25. Between October and December 2018, the FSA carried out a small-scale data gathering project to add to the data produced by the testing undertaken by retailers. The methodology used was different to that used by the retailers (chiefly a smaller sampling size and different laboratories were used, so direct comparisons with retailer data are not appropriate). The results from the exercise showed that the samples (451 total) were below the FSA’s indicative target that was set during the Campylobacter campaign for retailers of 7% at the highest level of contamination (>1000 cfu/g) and did not indicate a cause for concern. The FSA will consider the requirement for further surveillance in light of the availability of data from other sources – including the retailers’ own publications.

26. For sampling by the FSA our focus has continued to be on smaller retailers, independent traders, and market stalls as these are more likely to be supplied by small to medium processors. It is thought that the smaller retailers, independents, and butchers make up approximately 20% of the market share, and data suggests contamination levels to be higher in this category at an average of 15%. This figure has largely remained static.

27. One way to address the higher levels in smaller retailers is to consider the supply to those businesses. The reductions in Campylobacter at major retailers have been made in collaboration with the larger slaughterhouses that supply them and the various intervention(s) they have deployed. The slaughterhouses that supply smaller retailers tend to be small to medium processors, which may not be in the same financial position to implement more sophisticated interventions. In the past the FSA has raised awareness of low-cost interventions in smaller slaughterhouses.

28. In addition to this work, during discussions in Europe on tackling Campylobacter the UK agreed to new sampling requirements. In January 2018, a new EU Process Hygiene Criterion (PHC) came into force to reduce Campylobacter contamination of broiler carcases. This is the first time a legislative target has been set for Campylobacter and has been initially set to allow 40% of carcases to exceed 1000 cfu/g, with a commitment to reduce this to 20% by 2025.

29. Whilst this target is significantly higher than the voluntary target agreed with the UK industry, the introduction of a legal criterion has required the smaller slaughterhouses to begin testing for Campylobacter and consider their controls for reducing contamination. It is therefore anticipated that this will have a positive impact on the overall risk to consumers.

30. All approved poultry slaughterhouses processing broilers are required to undertake a regime of microbiological testing of their chickens. They are required to take neck skin samples on a regular basis and have these tested for
Campylobacter levels and must be reported as above, equal or below 1000 cfu/g. Establishments can implement a reduced sampling frequency following a series of satisfactory results.

31. The Executive has carried out a recent survey of both low and high throughput broiler plants to determine how the new legislation is being implemented by industry and determine areas where additional guidance is needed to help establishments better comply with the new rules.

32. It has been established that all plants in England, Wales and NI with a high throughput (>1m or above) carry out campylobacter sampling and OVs are monitoring compliance with the PHC which is being met by most of these establishments. For the lower throughput establishments (throughput of less than 0.5m) the results are still coming in but overall are less encouraging with apparently a much lower level of sampling taking place. We will, therefore, be urgently engaging with these establishments to determine the obstacles to effective testing (possibly financial and access to testing) and move them towards full compliance. During the Campylobacter campaign the FSA field operations ran an awareness campaign that pointed to cost effective interventions and we will consider this in parallel.

**Campylobacter Proficiency Testing (PT) Scheme**

33. In 2017, it was agreed that the Top 9 retailers publish results of their own Campylobacter testing on their consumer websites, performed according to protocols set by the FSA. To ensure better consistency in analytical techniques, a PT scheme was introduced in March 2019 to assess the capability of individual food laboratories in performing Campylobacter spp. detection and enumeration test methodologies. The scheme aims to serve as external quality assurance for laboratories testing on their behalf. Where non-conformances are identified, participants are able to request expert advice as well as repeat distributions for training purposes, free of charge. Interest in the FSA funded scheme has been greater than anticipated (21 laboratories in total), with some processor laboratories also taking part.

34. This scheme may identify wider training needs for participants. If it does, the FSA may consider running workshops in the future or other ways to address such issues.

**Consumer behaviours and attitudes**

35. Food and You is a biennial survey exploring the public’s attitudes, reported knowledge and behaviour relating to food safety and other food-related issues. In the first survey in 2010, only 26% of respondents said that they never washed raw meat and poultry. However, in the 2019 survey, 50% of respondents said they never washed chicken, and 49% said they never washed raw meat and poultry other than chicken.

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7 Throughput period: January – August 2019
8 Throughput period: January – August 2019
36. Over the last few years officials have used various avenues to promote the 4Cs (chilling, cooking, cleaning and avoiding cross-contamination) messaging. These activities encourage consumers to practise good food hygiene in the home, such as not washing raw poultry and cooking poultry thoroughly. As well as regular content on social media and responding to routine media enquiries, recent specific campaigns have included:

- Safe Summer Food – Summer 2018 focussed on barbecues and picnics;
- Season’s Eatings – Christmas 2018 focussed on preparing turkey safely; and
- Production of ‘FSA Explains’ video⁹ on Campylobacter (short clips which explain key food safety messages to consumers who visit the FSA website). This video is the best performing of the series. It has been viewed over 5,500 times since it was first published in July 2018.

37. For Christmas 2019 the FSA will be promoting 4Cs advice to consumers. In addition to this, consideration will be given to targeting chefs to increase awareness of the risks associated with serving undercooked pâté and sharing the FSA’s approved method.

KEY CONCLUSIONS/NEXT STEPS

38. The number of human cases of Campylobacter remains below the agreed threshold point. However, the Executive will continue to monitor changes in the numbers. The Executive will also use the findings from the on-going research studies to better understand the relative contributions of foodborne and non-foodborne transmission. This will help identify appropriate interventions which can reduce the overall burden of Campylobacter infection.

39. Using the latest evidence, the Executive will continue to drive for further reductions in Campylobacter in UK-produced chicken by promoting sustained action by the major retailers and supporting farmers and smaller producers, processors and retailers in controlling the risks.

40. The Executive will consider the outcome and recommendations from the ACMSF Campylobacter report.

41. Officials will continue to use various avenues to promote the 4Cs (chilling, cooking, cleaning and avoiding cross contamination) messaging.

42. The Board is asked to:

- **Review** the suite of interventions trialled and implemented as part of the Campylobacter Reduction Programme;
- **Consider** the findings from the latest research on Campylobacter; and
- **Agree** the on-going activities being undertaken to reduce Campylobacter.

⁹ [https://youtu.be/GYlp1_7XIw](https://youtu.be/GYlp1_7XIw)
Annex A

Campylobacter reduction strategy – Interventions

Farm level/biosecurity

Better cleaning and disinfection of crates and vehicles used by catch teams to prevent cross-contamination between flocks and between farms. Introduction of boot dips and double barriers at the shed entrance for limiting initial contamination of shed. Limiting feed 6-12 hours prior to catching flocks to reduce faecal matter in crates. Identifying Campylobacter positive flocks at farm level and limiting the practice of “thinning” which can lead to previously Campylobacter negative flocks becoming colonised due to stress and breaches to biosecurity.

Slaughterhouse level

Multiple interventions and improvements in existing practices have been put into place by slaughterhouses - it is difficult to attribute a single intervention for achieving successful reductions. Practices such as secondary scalding/use of multiple scald tanks and end-of-line interventions such as steam treatment with ultrasound have been found to be effective.

Retail level

Risk communication to consumers (e.g. through advice on package labelling, “Do not wash raw chicken” stickers) and improvements to packaging, including adoption of leak proof packaging and new packaging formats limiting consumers exposure to the raw bird, such as roast in bag.