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Standards
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CAMPYLOBACTER
EXPERT OPINION ELICITATION

PARTICIPANTS' INFORMATION
PACK



Introduction

Thank you for agreeing to participate in this expert opinion elicitation exercise. This will involve completing 2 online questionnaires which will be used to inform the FSA's work on reducing foodborne illness from *Campylobacter* infections. We will circulate the final report from the expert elicitation exercise to you. This pack has been prepared to ensure that panel participants understand the background to the work that we have been asked to produce and to provide relevant information associated with this task.

The overall aim is to agree a consensus ranking on the most likely causes of the relatively static numbers of diagnosed campylobacteriosis cases in the UK despite reduced *Campylobacter* counts in poultry at retail and to identify evidence gaps and research ideas in order to meet these evidence gaps. The work will be used to inform a review of the FSA's *Campylobacter* work to date.

Expert Panel

You have been selected as an expert with experience in one of the following areas:

- Veterinary sciences
- Academia specialising in *Campylobacter* research
- Industry- poultry production and/or processing
- Industry- retail

About 40 experts from the UK and the EU have agreed to participate. Details of the experts that are participating will be included in the final report.

Background to the exercise

Since 2005, *Campylobacter* infections have been the most commonly reported zoonosis in EU member states. Source attribution studies have identified chickens and chicken meat as the most frequent cause of *Campylobacter* infections. To address this, the FSA began working with the poultry industry in 2010 to reduce the levels of *Campylobacter* spp. contamination in raw chickens (broilers). A target was set to reduce the prevalence of the most contaminated broilers, those with more than 1000 bacterial colony forming units (CFU) per g of chicken to below 10% at the end of the slaughter process, which equates to 7% at retail, by 2015.

We have provided you with evidence related to the UK situation for poultry production, *Campylobacter* levels in chicken at retail, and human campylobacteriosis cases in Annex 1. Please note this has been produced using mostly publicly available data. This Annex also contains a summary of the FSA's work-to-date on reducing *Campylobacter* levels. A list of FSA-funded research projects on *Campylobacter* is also provided in Annex 2 with links to final reports provided, when publicly available.

Annex 1 demonstrates that between 2014 and 2017, the proportion of chickens available at retail with greater than 1000 cfu/g dropped from 19% to 5%; levels of highly contaminated carcasses have remained stable since then. However, cases of campylobacteriosis recorded in national surveillance in the UK have remained steady at around 100 cases per 100,000 population between 2014 and 2019. The reasons for this are likely complex and multifactorial and the FSA has several theories to explain this situation. However, we are seeking the opinions of experts in academia and industry to better inform our work.

This expert elicitation event is part of a much larger piece of research being carried out by the FSA in 2024/25 regarding *Campylobacter* reduction interventions. This research will comprise of an appraisal of the effectiveness of *Campylobacter* reduction interventions, applied across conventional broiler chicken production from farm to fork, and the potential for reducing human campylobacteriosis in the UK. The outcomes will inform the FSA's continued work in protecting public health by reducing foodborne illness.

Questions for expert elicitation event

Experts will be invited to complete a questionnaire; anonymous submissions will be allowed but we ask that experts provide their name to allow us to seek clarification, if necessary. All responses will be analysed and a final report produced highlighting the experts' opinions and suggestions. Results will be reported anonymously.

We would like to consider the following questions:

- Why do you think that the reported *Campylobacter* cases in humans have not gone down when we've successfully reduced levels in chicken at retail?

To go along with the generated hypotheses, we'd also like you to answer the following questions (please note, these are optional):

- What evidence is available that supports your hypothesis?
- What research projects would be necessary to explore the hypothesis?

The initial questionnaire that will be circulated will be a hypothesis generation exercise with all ideas welcome. To limit the size of the survey, we are restricting the number of hypotheses that can be provided to 10; you can provide fewer hypotheses and leave the rest of the fields blank. A second questionnaire will be circulated 2 weeks later asking you to rank the most common themes from round 1 in order of likelihood or importance against different criteria and also rank the most appropriate research projects. We will circulate a final copy of the report to you for your interest ahead of publication of the document on the food.gov.uk website.

Annex 1: UK data

If you'd like more information in this topic, please see this recent review of the situation in the UK: [A restatement of the natural science evidence base regarding the source, spread and control of *Campylobacter* species causing human disease - PMC \(nih.gov\)](#)

UK market data

The below graphs provide information on poultry production in the UK, the amount of poultry imported and exported, and sales of fresh vs frozen poultry. Growth of the UK population is provided for reference on each graph.

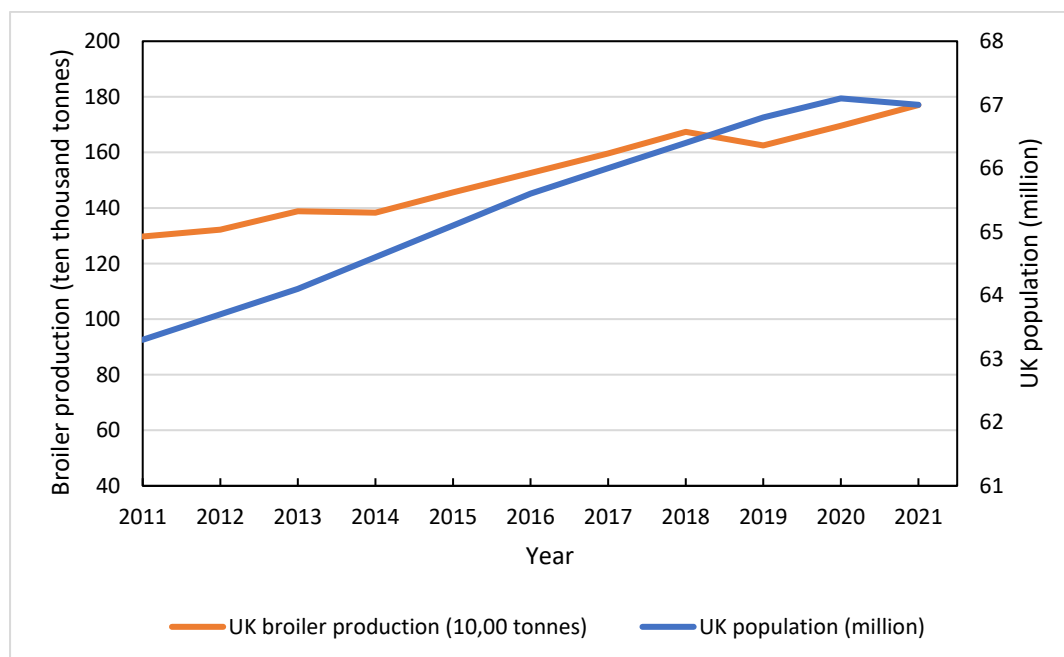


Figure 1: Volume of UK broiler production over time (ten thousand tonnes) and the population of the UK over time. Production of broilers have shown an upward trend since with some minor dips in 2013 and 2019. The UK population has risen since 2011 except for 2021 which showed a small decrease; note that the axis for population starts at 61 million. Sources: [Latest poultry and poultry meat statistics](#); [Analysis of population estimates tool](#)

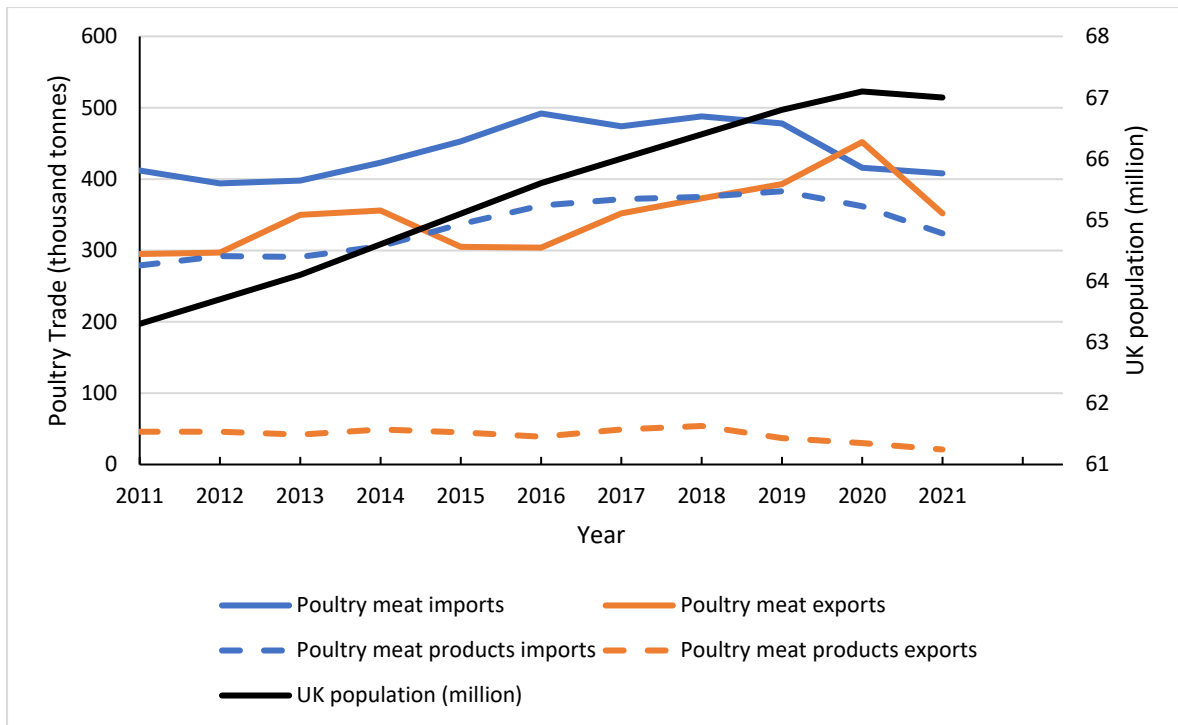


Figure 2: Graph to show UK trade in poultry meat and poultry meat products over time with UK population. Imported poultry meat, imported poultry meat products and exports of poultry meat have shown an upward trend since the start of records in 1997. Exports of UK poultry meat products, however, have remained static. Sources: [Agriculture in the United Kingdom 2022](#) (pages 183-184); [UK manufacturers' sales by product](#); [Analysis of population estimates tool](#).

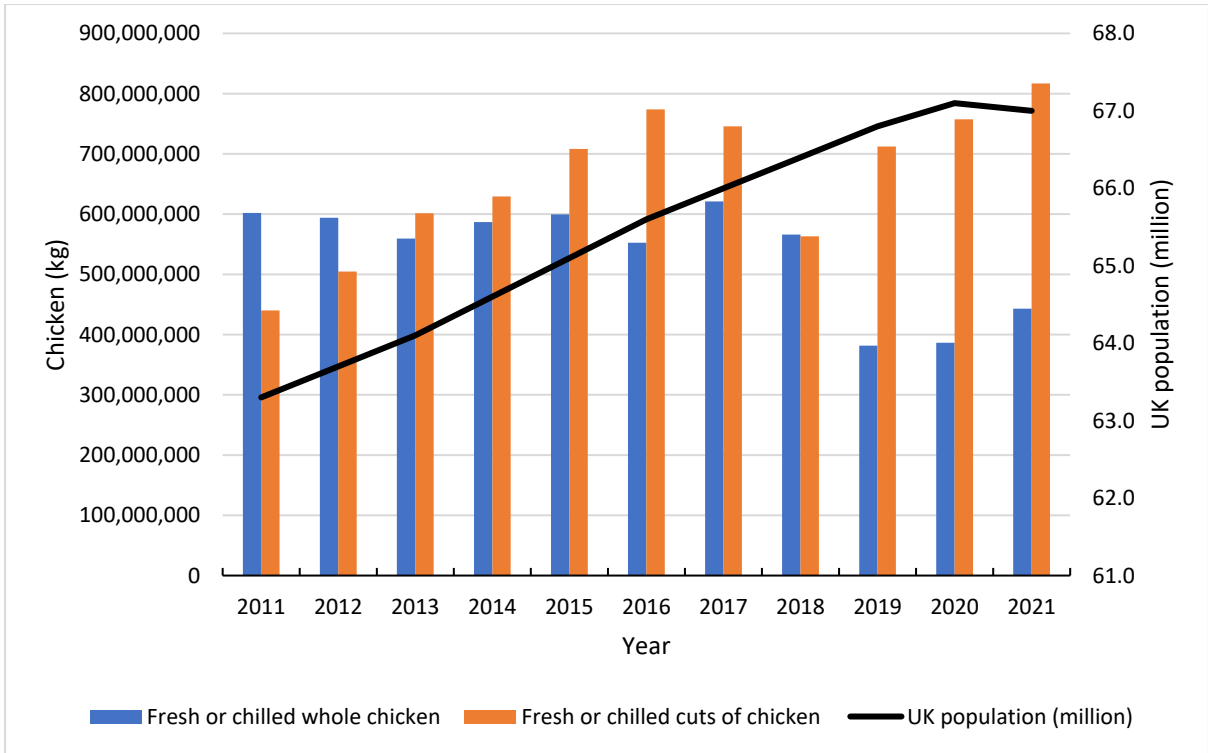


Figure 3: UK sales of fresh or chilled whole chicken and cuts of chicken (kg) over time. The UK population is also plotted (millions). Sources: [Latest poultry and poultry meat statistics](#); [Analysis of population estimates tool](#)

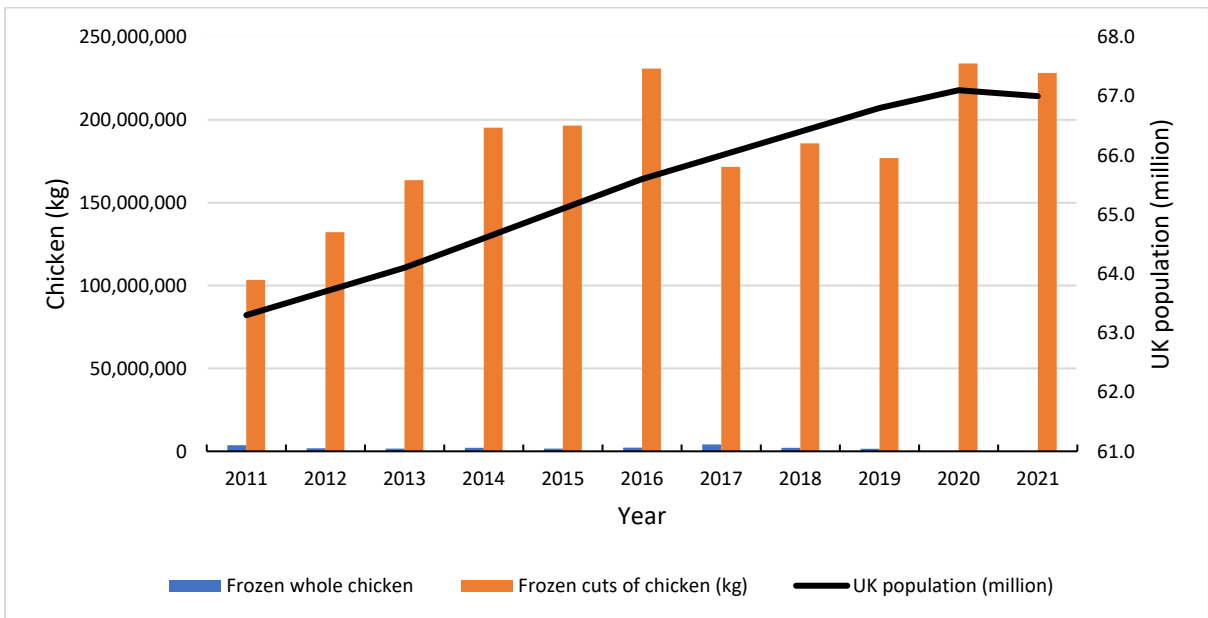


Figure 4: UK sales of frozen whole chicken and cuts of chicken (kg) over time. The UK population is also plotted (millions). Sources: [Latest poultry and poultry meat statistics](#); [Analysis of population estimates tool](#)

Campylobacter in UK chicken- results of retail surveys

From 2014-2017, surveys were performed by the FSA to investigate *Campylobacter* contamination levels on whole chickens available at retail; the data presented was sampled from large retailers. From 2018 onwards, the data has been provided by industry from retailer's own sampling programmes.

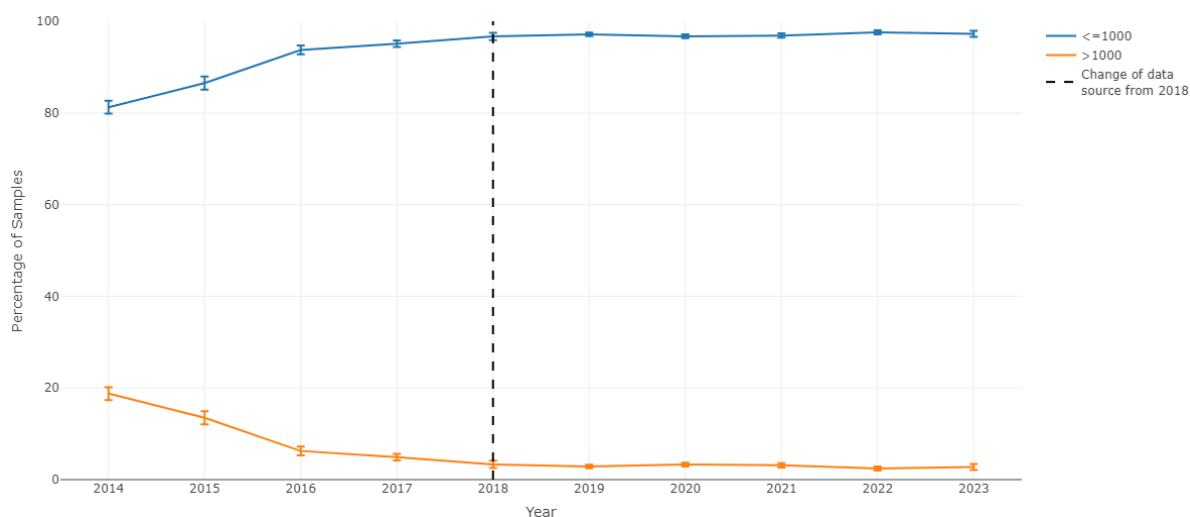


Figure 5: Levels of *Campylobacter* contamination on chicken at retail. Sources: FSA retail surveys (see Annex 2); industry data.

Table 1: Data for *Campylobacter* contamination on chicken at retail. Sources: FSA retail surveys (see Annex 2); industry data.

Year	Total Number of Samples	Percentage of samples ≤1000 cfu/g (95% CI)	Percentage of samples >1000 cfu/g (95% CI)
2014	2980	81.2 (79.8-82.6)	18.8 (17.4 - 20.2)
2015	2203	86.5 (85.1 - 87.9)	13.5 (12.1 - 14.9)
2016	2445	93.7 (92.8 - 94.7)	6.3 (5.3 - 7.2)
2017	3306	95.1 (94.4 - 95.8)	4.9 (4.2 - 5.6)
2018	1901	96.7 (95.9 - 97.5)	3.3 (2.5 - 4.1)
2019	7307	97.2 (96.8 - 97.5)	2.8 (2.5 - 3.2)
2020	6928	96.7 (96.3 - 97.1)	3.3 (2.9 - 3.7)
2021	5600	96.9 (96.4 - 97.3)	3.1 (2.7 - 3.6)
2022	4789	97.6 (97.1 - 98)	2.4 (2 - 2.9)
2023	2280	97.2 (96.6 - 97.9)	2.8 (2.1 - 3.4)

Human campylobacteriosis cases- UK data

The below graphs provide information on *Campylobacter* cases in the UK, using publicly available data from UKHSA. More recent information on UK rates is available in the next section.

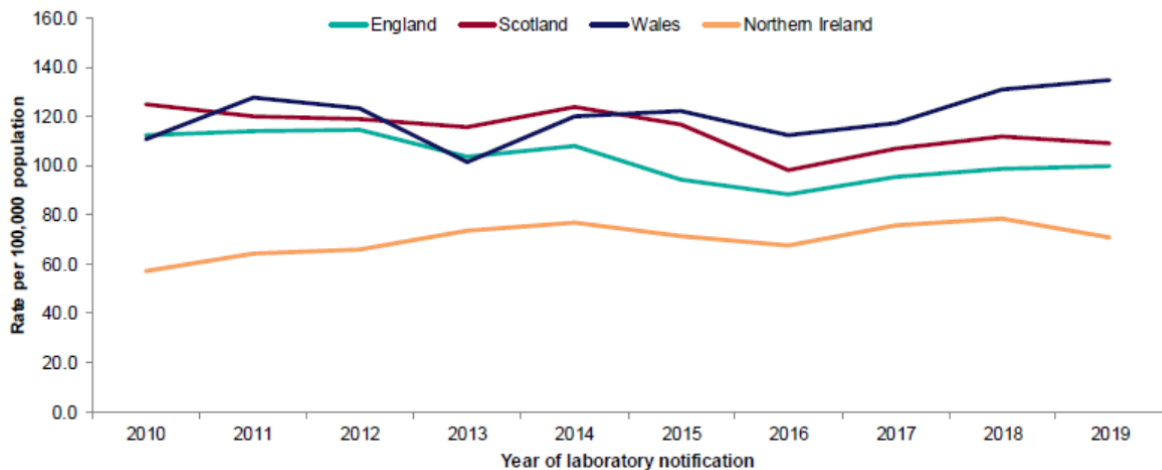


Figure 6: Rate of reported *Campylobacter* infections in the UK by country per 100,000 population, 2010-2019. Source: [ACMSF ACM/1340](#)

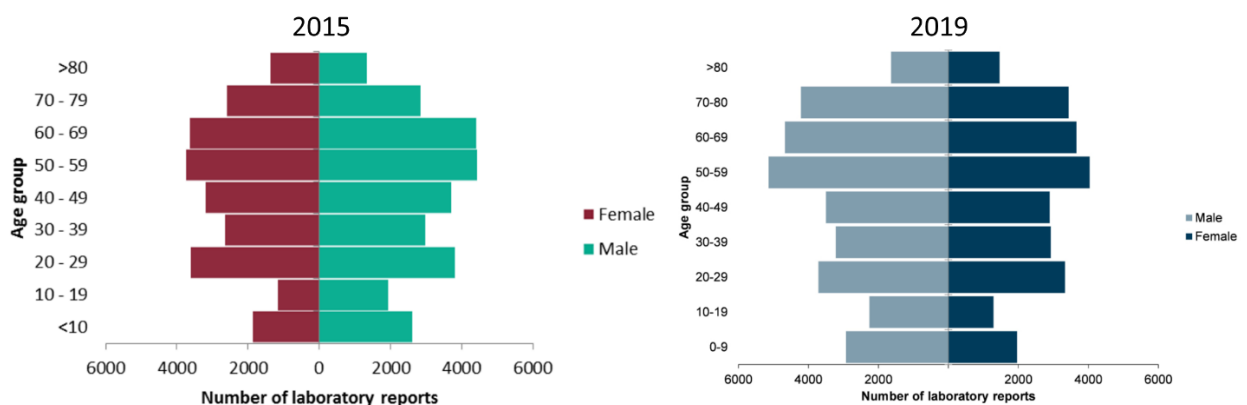


Figure 7: Age and sex distribution of laboratory reports of *Campylobacter* in England, 2015 and 2019. Source 2015 data: [Campylobacter data 2006 to 2015](#). Source 2019 data: [Campylobacter data 2010 to 2019](#).

Human *Campylobacter* cases- comparison to other countries

The graphs compare UK *Campylobacter* infection rates (confirmed cases per 100,000 population) to countries within and outside the EU. They have been chosen to demonstrate different scenarios, such as performing better or worse than the UK overall or showing clear trends in *Campylobacter* case rates over the time period. Please note that different countries have different surveillance systems, different detection methodologies, and varying underreporting rates, therefore rates will likely not be directly comparable to each other.

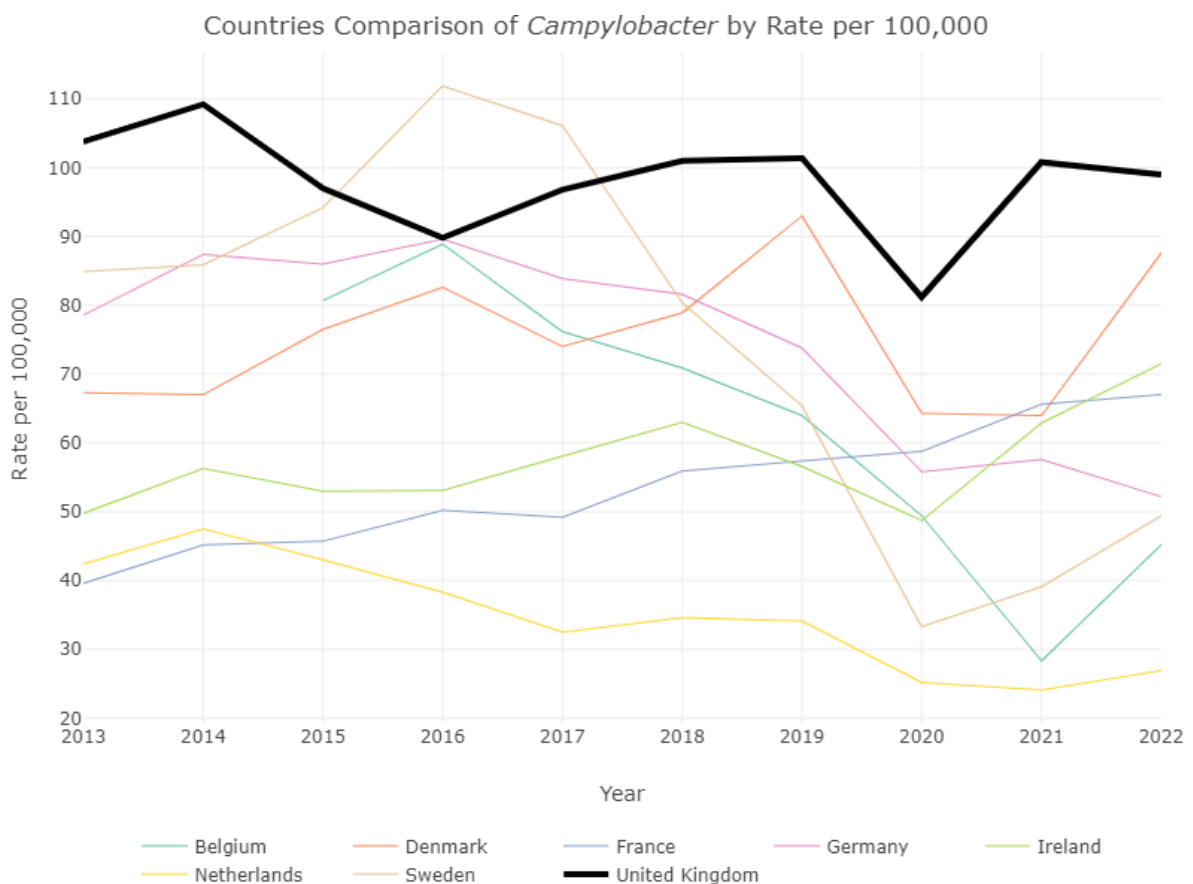


Fig 8: Comparison of trends in human campylobacteriosis cases between the UK and selected EU countries from 2013 – 2022. Source: FSA Analytics Unit.

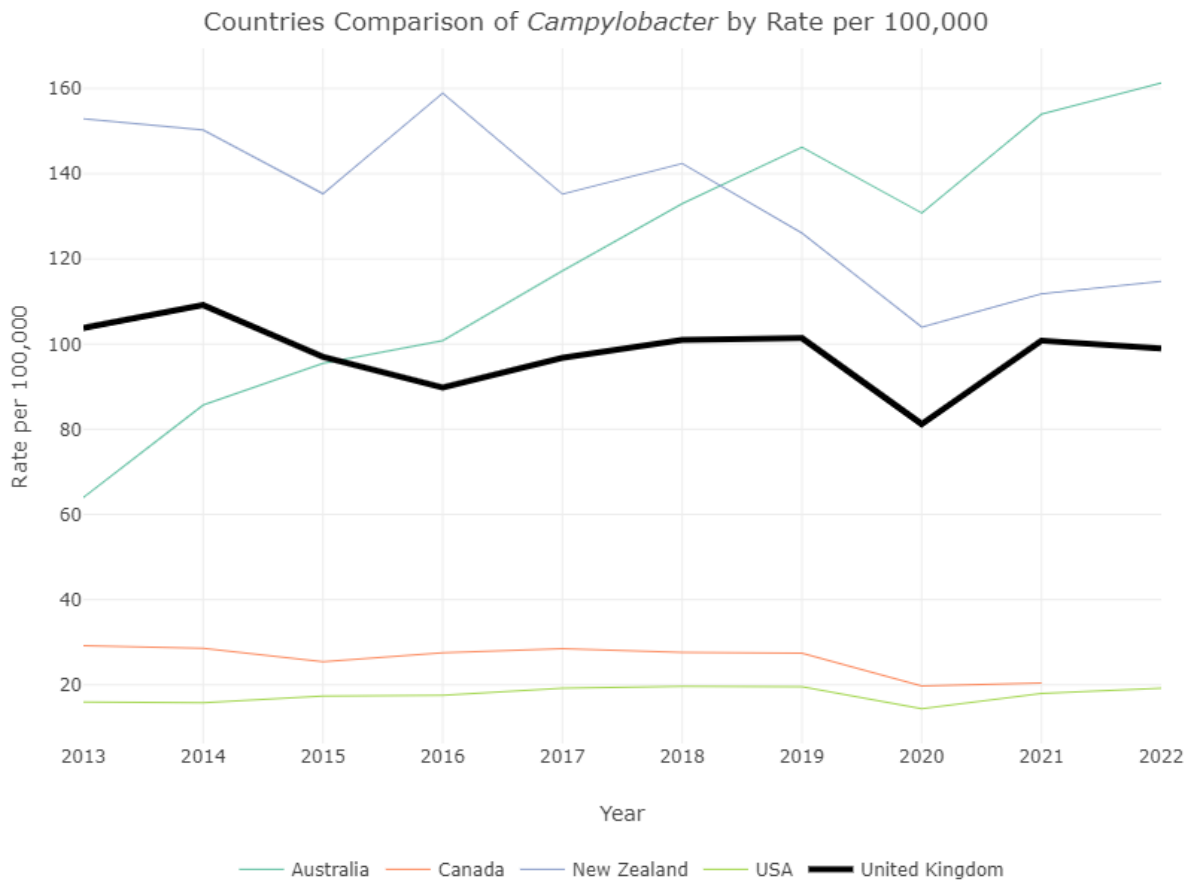


Fig 9: Comparison of trends in human campylobacteriosis cases between the UK and foreign countries from 2013 – 2022. Source: FSA Analytics Unit.

UK *Campylobacter* cases during COVID-19 pandemic

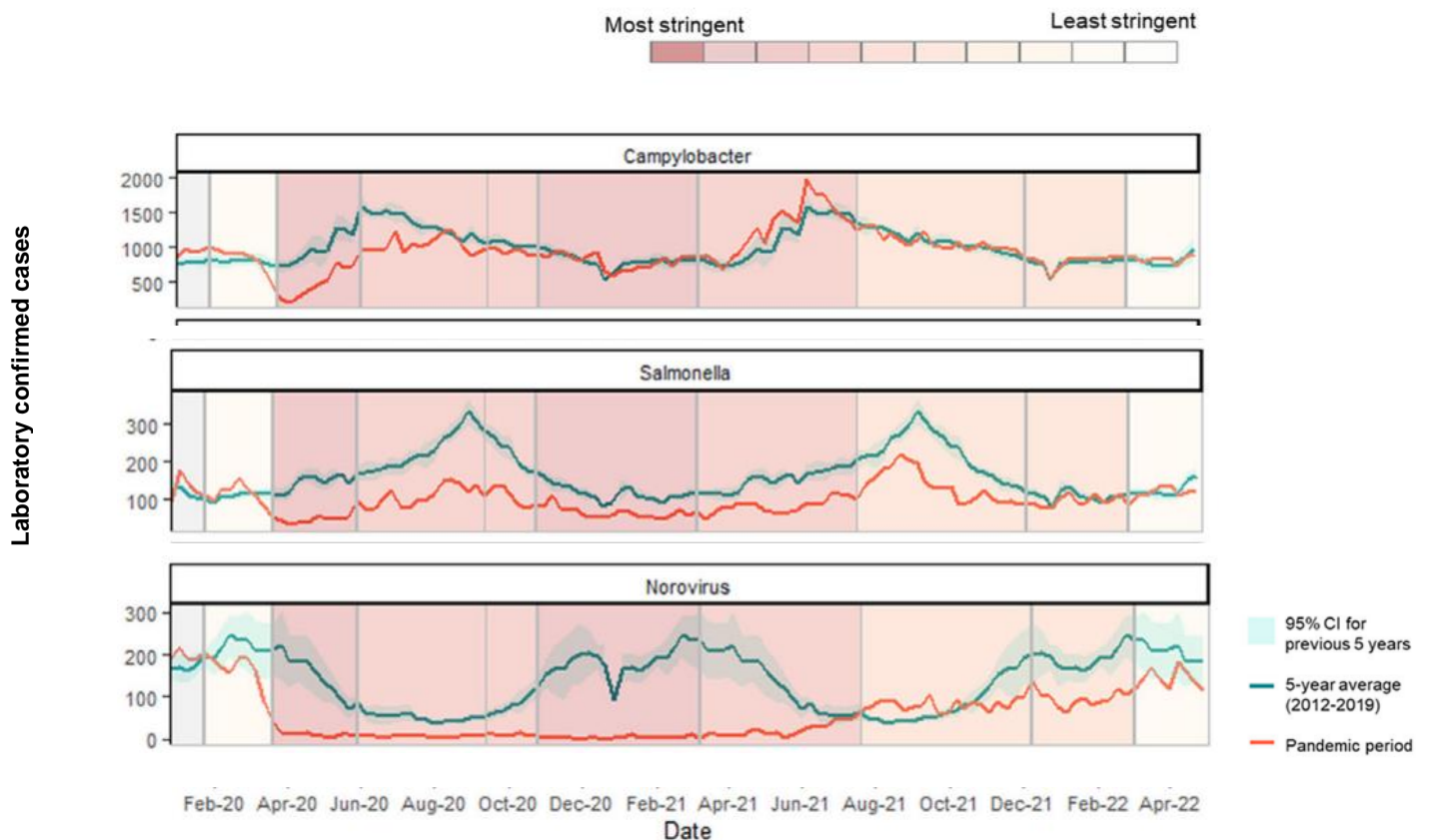


Figure 10: Taken from Love *et al.*, (2023) “Understanding the impact of the COVID-19 pandemic response on GI infection surveillance trends in England, January 2020–April 2022.” Data is split into 10 pandemic phases (from stringent lock down to no restrictions), showing laboratory confirmed *Campylobacter*, *Samonella* and Norovirus cases reported to UKHSA by specimen date during the pandemic period (red line) and 5-year historic average (green line) and associated 95% confidence interval (blue shading). Following initial decreases, cases of laboratory-confirmed GI pathogens began to increase during the first lockdown but remained significantly lower than historic values. During the second and third UK lockdowns (November 2020–March 2021), laboratory-confirmed cases did not decrease to the same extent as the first lockdown, although activity remained lower than historically observed. Cases returned to just under expected limits with the easing of restriction measures in March 2021. *Campylobacter* diagnoses returned to normal in November 2020 and diagnoses then remained comparable to historic figures for the remainder of the pandemic period (6% decrease: 104,668 versus 111,452).

UK strategy to combat *Campylobacter* - highlights

- FSA *Campylobacter* reduction programmes

Year Set Reference	Stage of process	Initial level	Start year	Target level	Target year
2010 Ref	Slaughterhouse	27% >1,000 CFU/g	2008	10% >1,000 CFU/g	2015
2015 Ref	Retail	19% >1,000 CFU/g	2014	7% >1,000 CFU/g	?

- [Campylobacter Process Hygiene Criteria](#) at slaughterhouse level. Weekly testing of 5 samples (each sample made of 3 neck skins). Over a 10-week period, no more than 15/50 samples (or 30%) should exceed 1,000 CFU/g. [Recent results](#) suggest that low-throughput slaughterhouses, on average, have 21% of samples exceeding 1,000 CFU/g and high-throughput slaughterhouses, on average, have 18% of samples exceeding 1,000 CFU/g. This threshold in the legislation will get more stringent in 2025, with a maximum of 10/50 (or 20%) of samples reaching 1,000 CFU/g.
- The FSA carried out retail surveys of *Campylobacter* in chicken from 2014 until 2017 to monitor the levels of contamination. From 2017 onwards, individual retailers carried out their own testing and reported it on their corporate websites. They also gave anonymised full results to the FSA ([Campylobacter reduction programme: update \(nationalarchives.gov.uk\)](#)).
- A number of consumer information campaigns have taken place:
 - FSS partnership (2022/23) with assisted living premises to communicate risk to over 65s – in-person presentations and sharing information leaflets/recipe cards. [Campylobacter campaign partner toolkit | Food Standards Scotland](#)
 - FSS pink chicken campaign – aimed at young males, BBQ season. [Nothing spoils summer like Pink Chicken | Food Standards Scotland](#)
 - FSA information on *Campylobacter*. Published 2018. [Campylobacter | Food Standards Agency](#)
 - FSS information on *Campylobacter*. [Food Poisoning - Campylobacter | Food Standards Scotland | Food Standards Scotland](#)
 - FSA 2014 campaign to stop consumers washing chicken. [UK Food Standards Agency Kicks Off Anti-Campylobacter Campaign | Food Safety \(food-safety.com\)](#)

- Catering guidance issued:
 - FSS overall catering guidance. First published 2006, updated 2021. [CookSafe Manual Complete September 2021.pdf \(foodstandards.gov.scot\)](#)
 - FSA overall catering guidance. Updated 2024. [Safer food, better business for caterers | Food Standards Agency](#)
 - FSA - cooking safely. [SAFE METHOD: COOKING SAFELY \(food.gov.uk\)](#)
 - FSA recipe for chicken liver pâté. [A recipe for Chicken Liver Pâté \(food.gov.uk\)](#)
 - FSS food handlers guidance 2019. [Food Handlers: Fitness to work - Best Practice Advice for Food Businesses | Food Standards Scotland](#)
 - FSS Campylobacter factsheet for caterers 2015. [Campylobacter factsheet | Food Standards Scotland](#)
 - FSS Campylobacter information and guidance for businesses 2017. [Factsheet - Campylobacter - Website - for businesses and professionals - June 2017.pdf \(foodstandards.gov.scot\)](#)