

# Risk of campylobacteriosis from low-throughput poultry slaughterhouses:

## Executive summary

*Campylobacter* is the most common cause of bacterial gastroenteritis in the UK. Every year there are an estimated 300,000 foodborne cases in the UK, of which more than half are related to poultry meat.

Poultry is the main reservoir for *Campylobacter* and undercooked poultry presents a risk to the consumer of becoming infected with *Campylobacter*, while thorough cooking kills *Campylobacter*. Infection may also result as a consequence of cross-contamination during preparation or storage of chicken.

Slaughterhouses are classified as either low-throughput (<7.5 million birds per year) or high-throughput (>7.5 million birds per year). *Campylobacter* levels are routinely monitored in chicken carcasses that are processed in high-throughput slaughterhouses. Established [process hygiene criteria \(PHC\)](#) state the samples submitted by slaughterhouses currently should not exceed 1,000 CFU/g *Campylobacter* in more than 30% of samples submitted. The microbiological criteria regulation is the same for high-throughput and low-throughput slaughterhouses, however, testing is not currently carried out in all low-throughput slaughterhouses due to the financial burden of routine testing. This work was commissioned to assist the FSA to make a risk-based decision on whether a tailored-made sampling regime for small-throughput slaughterhouses would be appropriate.

We considered the whole pathway of the chicken from farm to fork using scientific literature, data from our survey of *Campylobacter* in slaughterhouses, in addition to business data and information regarding UK levels of infection from *Campylobacter*.

Overall, there was no significant difference between the proportion of highly contaminated samples (>1,000 CFU/g) gathered from low and high-throughput slaughterhouses. Using the number of chickens per year that are processed by low and high-throughput slaughterhouses, we estimated that high-throughput slaughterhouses contribute a significantly larger number of *Campylobacter* cases due to their volume. Currently, most chicken on sale in the UK is produced in high-throughput plants. All else being equal, small improvements to large plants will have a bigger impact on the overall risk to the UK consumer population than large changes to a far smaller plants.

A number of uncertainties and evidence gaps were identified during this risk assessment. We had no information as to the method in which the poultry were reared prior to arriving at the slaughterhouse and are aware that evidence suggests that this can directly affect *Campylobacter* levels at slaughter. Data on low-throughput abattoirs were only available for a limited period of three months and at the end of slaughter. There was no information available as to the onward processing of meat handled by slaughterhouses, and we therefore assumed that low and high-throughput slaughterhouses contribute equally to retail and hospitality etc. In addition, we

assumed that only UK slaughtered chicken is consumed in the UK.

In conclusion, with currently available data it is not possible to identify any difference between the current per portion risk of *Campylobacteriosis* to consumers for low and high-throughput slaughterhouses. We also conclude that the frequency of occurrence of *campylobacteriosis* in the total UK population from chicken produced in low-throughput slaughterhouses is medium and for high-throughput slaughterhouses, this is high. The uncertainty associated with this frequency is medium. The risk assessment concludes that the severity of *Campylobacter* infection is low, with low uncertainty. This assumes that the proportion of the total domestic consumption of chicken meat originating from low-throughput slaughterhouses does not change.

The current sampling regime requires samples to be taken once a week. If more than 15 out of 50 samples have high levels of *Campylobacter*, this is considered a failure and mitigations need to be put in place. We predicted that if samples are taken once every two weeks or once every 4 weeks instead, that would still allow us to identify some slaughterhouses failing to comply with the 15/50 exceedance rate (71% and 57%, respectively). However, identifying issues will take longer and may not detect some failing slaughterhouses, and may affect behaviours in the plant, for example, less frequent sampling may affect standards during processing.

There is a lack of consistency in the application of sampling requirements in low-throughput slaughterhouses and a lack of information on the corrective actions taken in the event of an exceedance. Therefore, it is not possible to differentiate the effect on per-portion risk of changes to current sampling requirements. However, due to the small proportion of total poultry meat consumed in the UK that is produced at low-throughput slaughterhouses, changes to the official sampling requirements at low-throughput slaughterhouses are unlikely to result in a large change in the total number of cases of *campylobacteriosis* in the UK population.