Risk of campylobacteriosis from low-throughput poultry slaughterhouses: Lay summary

Results available: Results available
Maes o ddiddordeb ymchwil: Foodborne pathogens
Research topics: Foodborne disease , Meat hygiene
Awduron: Iulia Gherman, Victoria Cohen, Daniel Lloyd, Wioleta Trzaska, Niall Grieve, Johanna Jackson, Elaine Pegg, Anthony Wilson
Cynhaliwyd gan: Food Standards Agency
DOI: https://doi.org/10.46756/sci.fsa.xkw971
Statws y prosiect: Wedi'i gwblhau

Campylobacter is the most common cause of bacterial foodborne illness 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.

Campylobacter naturally lives in the guts of poultry. Undercooked chicken meat is the main source of exposure to *Campylobacter*. Thorough cooking kills *Campylobacter*. Cross-contamination of other food or work surfaces during preparation or storage of chicken can also cause illness.

Campylobacter levels are routinely monitored in chicken carcases that are processed in high-throughput slaughterhouses, but this testing is not currently carried out in some low-throughput slaughterhouses. Each high-throughput slaughterhouse processes more than 7.5 million birds per year and each low-throughput slaughterhouse processes less than 7.5 million birds per year. Of the 1 billion birds that are slaughtered annually in the UK, around 5% come from low-throughout slaughterhouses. This report estimates the difference in risk of campylobacteriosis for products from low-throughput and high-throughput poultry slaughterhouses in the UK. This was necessary work to assist the FSA in establishing an appropriate level of sampling for low-throughput slaughterhouses.

We considered the whole pathway of the chicken from farm to fork using the scientific literature, data from our own survey of *Campylobacter* in slaughterhouses (FS9990010), and business data and information on UK levels of infection. *Campylobacter* levels over a 3-month period

(September to December 2021) from chicken processed by low and high-throughput slaughterhouses were the main data used for our comparison. We could find no data on differences in the supply of birds to low- versus high-throughput abattoirs, and no data on differences in the use of the meat after leaving the slaughterhouses.

Based on analysis of the limited survey data available, we could not detect a significant difference between the proportion of highly contaminated samples from low- and high-throughput slaughterhouses. We also could not detect a significant difference in *Campylobacter* levels in slaughterhouses that perform religious slaughter versus those that do not.

Based on the number of chickens per year that are processed by low and high-throughput slaughterhouses, we estimated the number of *Campylobacter* cases in the UK annually that are likely linked to low- and high-throughput slaughterhouses respectively. Based on the evidence available, we 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 is high, with a medium uncertainty, as a direct consequence of the relative volume of chicken produced by each type of plant. The severity of campylobacteriosis 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 of 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 four weeks instead, that would still allow us to identify some slaughterhouses failing to comply with the 15/50 exceedance rate. However, identifying issues will take longer and may not detect some failing slaughterhouses.

Sampling requirements are not consistently applied in low-throughput slaughterhouses, and we did not have access to data on the steps taken when slaughterhouses recorded high levels of *Campylobacter*. Therefore, it was not possible to state the effect of changes in sampling requirements on per-portion risk. 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 difference in the frequency of occurrence of campylobacteriosis in the UK population.