

Surveillance Study of Antimicrobial Resistance in UK Retail Chicken and Pork

Area of research interest: [Antimicrobial resistance](#)

Study duration: 2017-09-01

Planned completion: 1 March 2018

Project code: FS101196

Conducted by: Hallmark (Lot 1) and Public Health England (Lot 2)

It will be representative of UK market share with sampling commencing in September 2017 for two months. Samples will be tested at contracted laboratories and report of the survey will be available in Spring 2018.

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Background

The Agency has identified antimicrobial resistance (AMR) in *Campylobacter* on chickens and AMR in *Salmonella* (spp.) on pork as a surveillance priority following the AMR systematic review. This study will fill evidence gaps and provide a baseline for future comparative surveillance.

Data on AMR in retail chicken and pork is required to inform AMR risk assessment in the food chain, to monitor trends in emerging AMR issues, to track progress with interventions aimed at tackling AMR and to contribute to the wider international effort on AMR surveillance.

This surveillance study will be representative of all 4 UK countries using market share data and will inform the Agency on the level of prevalence of AMR in retail fresh and frozen chicken and AMR in fresh minced pork. The work will be carried out in two phases by 2 contractors; the first will undertake the design of the survey and the retail sampling whilst the second will perform the microbiological testing of both bacteria and AMR analysis.

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Research Approach

Retail sampling for the AMR study is anticipated over a two month period beginning in September 2017. Sampling will cover a range of large, medium and small retail outlets at various regions throughout the UK in line with the sampling plan and UK market share data. Retailers/brand owners will be notified of their samples being taken. The survey will aim to collect 340 samples of fresh and frozen chicken (whole and portioned) and 340 samples of fresh pork mince (frozen mince will not be sampled due to low availability). This number of samples is considered sufficient to provide a reasonable level of statistical power when assessing changes in the prevalence of AMR in the selected matrices.

Pork samples will be tested for *Salmonella* spp. and chicken samples for *Campylobacter* spp (detection and enumeration). Testing for commensals (*Klebsiella*, *Enterococcus*, *E. coli* and Cefotaxime-resistant *E. coli*) for both meats will also be carried out. The relevance of commensal organisms is important as a potential source of AMR in the food chain. Susceptibility testing (Minimum Inhibitory Concentration) for antimicrobial resistance will be performed on positive

isolates. This includes the screening of the European Centre for Disease Prevention and Control (ECDC) panel of antimicrobials, polymerase chain reaction (PCR) and/or whole genome sequencing to determine the presence of specific antibiotic resistance genes /resistance mechanisms.

Where results are found exceeding legislative food safety limit (e.g. Salmonella spp. in meats), those of significant concern to public health (e.g. colistin and carbapenem resistance in E. coli and Klebsiella; carbapenem resistance in Salmonella) or of unusual pattern will be reported to our organisation who will investigate further on a case by case basis and alert the food business owner so that appropriate action can be taken to protect public health.

This survey feeds into the bigger picture where we are working and collaborating across all government departments affected by AMR. At this stage, we are interested in understanding the overall pattern of AMR in food, not within individual businesses but across the UK food.

The final report of the AMR survey is available below. The report does not contain datasets nor data by individual brands as we do not see the need for any action by consumers nor to promote any particular message to them other than re-iterating the need to observe good hygiene when handling and preparing raw meats. This approach will be kept under review for future surveys on a case by case basis.

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Research Report

England, Northern Ireland and Wales

PDF

[View Study protocol: Surveillance Study of Antimicrobial Resistance \(AMR\) in Campylobacter in Chicken and Salmonella in Pork Sampled as PDF\(Open in a new window\)](#) (446.19 KB)

England, Northern Ireland and Wales

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[View Research Report: AMR in chicken and pork as PDF\(Open in a new window\)](#) (1.29 MB)