Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS): Abattoir surveillance

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Abstract

The Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS) is comprised of a human component, an on-farm component in swine, as well as abattoir, retail, and clinical components in pork, chicken and beef.

The abattoir component of CIPARS began in 2002 and involves ongoing, active sampling of cecal contents at 55 federally registered abattoirs in 8 Canadian provinces (18 swine, 28 chicken, 9 cattle). Abattoirs were randomly selected with weighting by annual slaughter volume. The total number of Canadian federally registered abattoirs is 42 swine, 59 poultry, and 32 cattle. Abattoirs voluntarily participate and consistently demonstrate >98% sample submission compliance. Adequate samples are taken to generate 150 isolates of \textit{Salmonella} (swine and chicken) and 100 isolates of \textit{Campylobacter} (beef). Testing for \textit{Campylobacter} in beef is a recent addition to the program. Additional beef plants are being recruited in order to generate 100 isolates. The number of samples taken per abattoir is proportional to annual slaughter volume. The Public Health Agency of Canada performs all laboratory testing. Samples are cultured for \textit{Salmonella} (swine and chicken), \textit{Campylobacter} (cattle), and \textit{E. coli} (swine, chicken and cattle). \textit{E. coli} and \textit{Salmonella} isolates are tested for antimicrobial susceptibility using the Sensititre™ Automated Antimicrobial Susceptibility System (Trek™ Diagnostic Systems Ltd) and the National Antimicrobial Resistance Monitoring System (NARMS) Sensititre™ susceptibility panel. This plate evaluates susceptibility to 15 antimicrobials of human and veterinary importance. This optimizes harmonization with the US NARMS. \textit{Campylobacter} isolates are tested for susceptibility to eight antimicrobials using E-test® (AB Biodisk) methodology.