Decreasing antimicrobial use through selective dry cow therapy: unintended consequences, economics, and impact on antimicrobial resistance levels in Canadian dairy

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Infections with antimicrobial-resistant (AMR) pathogens are major threats to human and animal health worldwide. As antimicrobial use (AMU) has been named a major driver in the continued development of bacterial resistance, selective dry cow therapy (DCT) can offer a way to decrease AMU on Canadian dairy farms. This research aims to provide the necessary evidence for the creation of practice-oriented standard operating protocols (SOPs) detailing herd-level recommendations for the implementation of selective DCT on Canadian dairy farms. Research objectives include to: 1) determine whether selective DCT reduces prevalence of AMR in cattle and farm personnel, 2) describe drivers behind AMU on dairy farms and possible barriers to implementation of selective DCT, 3) identify unintended consequences of selective DCT, and 4) the economic comparison of selective and blanket DCT with the new legislation changes to antimicrobial acquisition for farmers and the trade changes outlined in the US-Mexico-Canada Agreement. This will involve 150 sentinel dairy farms across 5 regions (NS, ON, QC, AB, BC) beginning in the spring of 2019.

Implications: Motivate producers to adopt selective DCT when appropriate based on developed SOPs, while limiting consequences to animal health and welfare. As well as mitigate the risk of resistance to medically important antimicrobials in Canadian dairy.