“WHAT WAS IN THAT FOOD?!”

A scoping review of risk factors for infection with antimicrobial-resistant *Campylobacter*

Christine M. Neustaedter[a], Richard J. Reid-Smith[b], Melissa C. MacKinnon[b], Carolee A. Carson[b], Colleen P. Murphy[b], Brennan Chapman[b], Simon J. G. Otto[a]

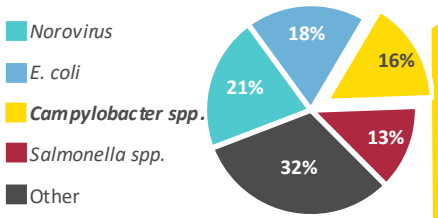
WHAT IS “ANTIMICROBIAL RESISTANCE” ?

The ability of a microorganism to stop an antimicrobial from working against it, rendering standard treatments ineffective (aka AMR)[1]

WHAT IS “*CAMPYLOBACTER*”?

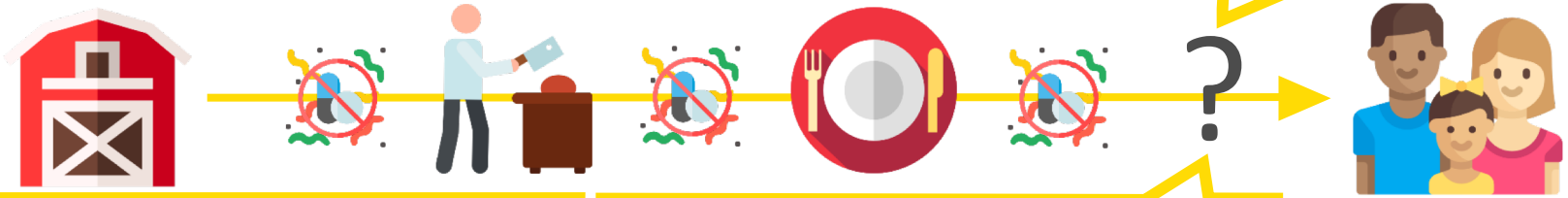
One of the global leading causes of acute diarrheic illness, a bacteria commonly found in poultry, and has developed resistance to important antimicrobials

GLOBAL NUMBER OF FOODBORNE ILLNESSES[2]



BACKGROUND

- CIPARS has included *Campylobacter* in its Integrated Assessment Model of Antimicrobial Resistance (iAM.AMR) which models antimicrobial resistance in multiple bacteria, animal species, & antimicrobials
- A literature review of human risk factors for an AMR *Campylobacter* infection did not appear in preliminary search results
- **RESEARCH QUESTION: What are the factors associated with an AMR *Campylobacter* infection in humans?**



METHODS

- Protocol followed Joanna Briggs Institute & PRISMA guidelines
- Databases searched:
  - ProQuest® AGRICOLA, CAB Abstracts® and Global Health®, Ovid EMBASE®, Scopus®, Ovid MEDLINE® + 3 Grey literature sources
- Criteria for inclusion = Humans with a *Campylobacter* infection resistant to: macrolides, tetracyclines, and/or quinolones, in English
- Primary screening (title & abstract) and secondary screening (full text) will be completed by two reviewers

RESULTS & IMPLICATIONS

- 8,739 articles from the five academic databases
- The iAM.AMR currently ends at the “fork” on the farm-to-fork pathway, the factors harvested from the review will allow for the extension for the pathway to the human end point
- Help fill existing and identify new knowledge gaps

Next steps:

Bridge the agri-food side of the iAM.AMR with the human side and model AMR *Campylobacter* in chicken through to humans

SUMMARY

- AMR *Campylobacter* can result in a more severe infection and greater risk of adverse health events
- Results will help take the CIPARS Integrated Assessment Model to the human terminus
- Fill existing knowledge gaps, identify new ones & inform stewardship policy

UNIVERSITY OF ALBERTA
SCHOOL OF PUBLIC HEALTH

Antimicrobial Resistance One Health Consortium

Alberta Government

Public Health Agency of Canada

Agence de la santé publique du Canada

[a]Affiliation: University of Alberta School of Public Health [b]Affiliation: Public Health Agency of Canada

[1]World Health Organization. Antimicrobial resistance. 2019 (cited 2019 October 16). Available from: https://www.who.int/antimicrobial-resistance/en/
[2]World Health Organization. WHO Estimates of the Global Burden of Foodborne Diseases. 2015 (cited 2019 October 16): 71. Available from: https://www.who.int/foodsafety/publications/foodborne_disease/fergreport/en/