

# CIPARS

Canadian Integrated Program for Antimicrobial Resistance Surveillance

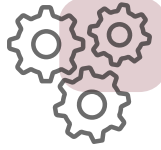
## 2002

Surveillance components



Program team & stakeholder scope

Data management & analysis



Reporting & knowledge translation



Some notable achievements



### CIPARS FACTS

1 of each

- Active surveillance component (abattoir, 3 commodities)
  - Passive surveillance component (clinical/sick animal isolates)
  - Passive summary surveillance data from 1993–2001 (human)
  - Enhanced passive surveillance component (human; 2003)
  - Summary of 1993–2001 surveillance of antimicrobial use (human)
- Many pilot studies for several aspects of AMU and AMR collection for several animal species

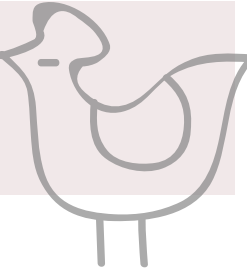


- Although surveillance infrastructure exists for diseased animals and humans, there was no existing sample collection system for abattoir, retail, and farm to build upon. Therefore, active surveillance was essential for successful data collection in Canada

A small team of veterinary epidemiologists and epidemiologists with select stakeholders and contributors



- Separate lab data management systems (animal/human)
- SAS-based central data repository; separate data tables
- Component-specific analysis



First annual CIPARS report published in 2002; summative in nature

✓ In 2002, CIPARS was the first Canadian integrated antimicrobial use (AMU) and resistance (AMR) surveillance system with multiple food-animal and human components

✓ Sampling and lab reporting were integrated and standardized between animal and human surveillance components and contributed to the success of the program

✓ A good working relationship with the food-animal industry helped establish successful abattoir surveillance (and later farm surveillance) for CIPARS

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## 2002 - 2022

Enhanced surveillance components



Enhanced program team & stakeholder scope

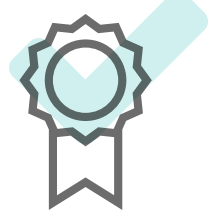
Improved data management & analysis



Reporting & knowledge translation



Some notable achievements



### CIPARS FACTS

3 of each

- Active surveillance components (abattoir, retail, farm)
- Surveillance data sources collected under regulation<sup>1</sup>

1 of each

- Passive surveillance component (clinical/sick animal isolates)
- Enhanced passive surveillance component (human)

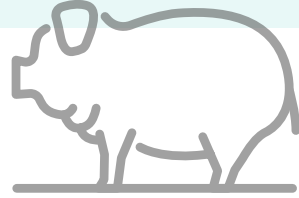
- ✓ Animal health and farm biosecurity data for food animals from sentinel farms
- ✓ AMR/AMU risk assessment projects and additional AMR/AMU research projects
- ✓ Collaborative expansion of human, retail, and farm sampling with FoodNet Canada
- ✓ Overall, enhanced sampling in multiple retail foods and food-animal species to improve the understanding of AMR/AMU along the farm-to-fork continuum



- Recruitment of additional multi-disciplinary food and food-animal species experts to the CIPARS team
- Increased engagement with stakeholders and contributors

SAS-based central data repository; combine and house multiple, complex data streams  
Integrated analysis of complex datasets allowing for a One-Health approach

Advancements in quantitative AMU metrics and improved integrated data analysis and reporting of findings through novel information products: annual surveillance reports, integrated findings reports, food-animal specific industry reports, infographics, interactive data visualisation pilot



! CIPARS is celebrating 20 years of excellent quality AMR and AMU surveillance data!

! We are making a difference in the fight on AMR! Our stakeholders report that CIPARS data is used to help inform industry-led initiatives and track antimicrobial stewardship activities in their sectors

! Extensive consultation, development, and implementation of AMU metrics

! Transition towards interactive data visualisation for select datasets is underway

<sup>1</sup>Plants/crops AMU-Health Canada's Pest Management Regulatory Agency (PMRA); Antimicrobial sales for use in animals-PHAC and HC's Veterinary Drug Directorate's Veterinary Antimicrobial Sales Reporting (VASR) system; Aquaculture AMU: Fisheries and Oceans Canada (DFO)

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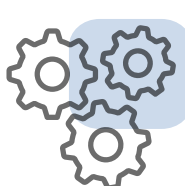
## 2022 & Beyond

Expansion of surveillance components



Expansion of program team & stakeholder scope

Advancements in data management & analysis

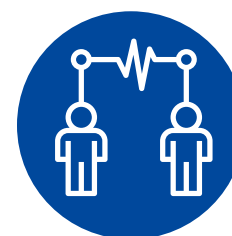
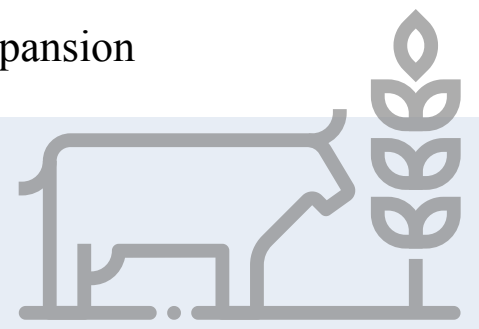


Optimization of reporting & knowledge translation



### CIPARS GOALS: Innovation, optimization & expansion

Expansion of sampling and surveillance components (e.g. stabilization: core retail and laboratory surveillance; expansion: beef feedlot and dairy surveillance components)



Continued engagement with stakeholders and contributors, as well as recruitment of more content experts to the CIPARS team

- ✓ Enhancement of laboratory data management and molecular analysis [including Whole Genome Sequence (WGS) data and centralized surveillance data storage (e.g. secure, cloud-based)]
- ✓ Innovation of data analysis approaches such as Artificial Intelligence/Machine Learning (AI/ML) to compliment existing activities

Innovation and optimization of communication of findings (e.g. fully deploy interactive data visualisation platform)



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