Lunch

PLEASE RETURN BY 1:30

Panel 3
David Patrick
Scott McEwen
Allison McGeer
John Prescott

Do we have effective stewardship in the human and veterinary sectors in Canada?
DO WE HAVE EFFECTIVE STEWARDSHIP IN THE HUMAN AND VETERINARY SECTORS IN CANADA?

PANEL 3: DAVID M PATRICK
SPEAKING FOR THE POINT (HUMAN HEALTH)

Antimicrobial stewardship

“Coordinated interventions to promote, improve, monitor and evaluate judicious antimicrobial use to preserve their future effectiveness.”

- Pan-Canadian Framework for Action

Must be conceptualized ecosystem-wide

- Human Use (Facility and Community)
- Companion Animal Use
- Agricultural Use
- Environmental Contamination (Antibiotics, AROs, R genes)
Yes - We’ve Made Progress

Le mieux est l’ennemi du bien. (The perfect is the enemy of the good.)
~ Voltaire

Nothing  Something  Perfection

Measure Distance  Infinite Distance

A Heterogeneous Federation

We learn from variation.
“Multi-faceted communication interventions that target both the general public and clinicians can reduce antibiotic prescribing in high-income countries.”

EL Cross et al. J Antimicrob Chemother 72 (4), 975-987. 2017 Apr 01

Canada in the World: Community Prescribing
Community Prescribing – British Columbia
Prescribing Down 15%
Antibiotic Drug Costs by $53 M
BC PharmaCare Costs by $25 M

Canada in the World:
Hospital Prescribing
We see largely stable and even declining resistance levels in community pathogens.

Use or Resistance Reduction is only a means to an end. It’s about better outcomes.

From: Impact of Infectious Disease Consultation on Quality of Care, Mortality, and Length of Stay in Staphylococcus aureus Bacteremia: Results From a Large Multicenter Cohort Study. Clin Infect Dis. 2015;60(10):1451-1461. doi:10.1093/cid/civ120
We now need to scale up what is already working.

DO WE HAVE EFFECTIVE STEWARDSHIP IN THE HUMAN AND VETERINARY SECTORS IN CANADA?

PANEL 3: ALLISON J. MCGEER
COUNTERPOINT (HUMAN HEALTH)
Yes - We’ve Made Progress

Canada in the World: Community Prescribing

Le mieux est l'ennemi du bien.
(The perfect is the enemy of the good.)

~ Voltaire

Nothing   Something   Perfection

Measurable Distance   Infinite Distance

17.8
10.7

DEEs per 1,000 persons per day
We see largely stable and even declining resistance levels in community pathogens.

CPE incidence, CNISP hospitals

![Graph showing CPE incidence by CNISP hospitals over years 2011 to 2017.]

Incidence of CPE infection by CPE Toronto and Peel Region

![Bar chart showing incidence per 100,000 for years 2007 to 2017.]

PRESENTER NAME
CAHS FORUM ON INDIGENOUS HEALTH SEPTEMBER 16, 2016
Antimicrobial stewardship in Humans

What we have done:
• Identified (many of the) current surveillance systems related to AMR and coordinated data
• Developed a Framework for Action (Aug 2017)

What we need to do:
• Identify the structure of and build the national surveillance systems that we need
• Create and implement an action plan

Reducing the Impact of AMR

- New diagnostics
- Alternatives to antibiotics
- New antibiotics
- Transmissions prevention
- Other infections prevention
- Antimicrobial stewardship
- Resistance and antimicrobial use surveillance
DO WE HAVE EFFECTIVE STEWARDSHIP IN THE HUMAN AND VETERINARY SECTORS IN CANADA?

PANEL 3: SCOTT MCEWEN

POINT = YES: VETERINARY SECTOR

Absolutely – Things are Unfolding as They Should

Started from zero 20 years ago – needed a complete overhaul

Human safety of veterinary antimicrobials – until 1990s, focus on residues in food from animals, NOT AMR (not big problem in animals)

AMR stewardship in animal health is highly complex; numerous players

Context: The ‘real world’ in the veterinary sector is dominated by business considerations:
- Veterinary services mainly fee-for-service; many costs of AM stewardship paid by animal owners
- Farming also a business; must be efficient and responsive to market forces
Have Made Real Progress

Panel 3: Scott McEwen, University of Guelph

POINT = YES: VETERINARY SECTOR

Uses of Antimicrobials in Food Animals in Canada: Impact on Resistance and Human Health

- 2002 Report to Health Canada
- 38 recommendations
- 34 implemented (2 no longer relevant)
- Full spectrum of issues:
  - Stewardship
  - Surveillance
  - Infection control
  - Research & Innovation

Federal Regulatory Changes

- Removal of growth promotion claims for medically important antimicrobials (MIAs)
- Prescription status for all MIAs
- Close “Own use importation” and “API” loopholes
- Mandatory reporting of antimicrobial sales volumes by species
- Alternatives to antimicrobials – support for innovation, enabling regulation
- Brings us into line with major trading partners (US, Asia, Aust /NZ, Europe)
Veterinary Organizations

- Canadian Veterinary Medical Association is heavily engaged with the issue; a top priority
- Canadian Council of Veterinary Registrars has proposed provincial and territorial harmonization of regulations around veterinary oversight of antimicrobials
- CVMA is funded to work on updating prudent use and stewardship guidelines in major animal sectors
- Specialty veterinary groups are engaged with AMR issues
- Council of Chief Veterinary Officers, Provincial organizations

Private Sector / Industry

- Heavy engagement of the major farm groups with the issue have led to important changes (e.g. Canadian poultry industry ban on Category I drugs for prophylaxis)
- Infection control
  - Improved animal health, better husbandry, on-farm food safety assurance
  - Huge efforts at pathogen control in food industry
- Market forces are driving changes in antibiotic use practices in food animals
- Canadian Animal Health Institute is promoting change
In the Global Context – We Punch Above our Weight

Exceeded only by northern European countries (where there are differences to rest of the world in AM governance, perceived need for action, acceptance of “top-down” interventions)

Canadians Improving Stewardship through Global Efforts:
• World Health Organization (WHO)
• World Organization for Animal Health (OIE)
• Codex Alimentarius

Education & Expertise:
• Considerable veterinary sector AMR / stewardship expertise nationally
  • CIPARS scientists
  • Universities (numerous (100?) Canadian MSc, PhD, DVSc theses)
  • Industry

Do we have effective stewardship in the human and veterinary sectors in Canada?

COUNTERPOINT: VETERINARY SECTOR

John Prescott
Uses of Antimicrobials in Food Animals in Canada: Impact on Resistance and Human Health

Report of the Advisory Committee on Animal Uses of Antimicrobials and Impact on Resistance and Human Health

Prepared for:
Veterinary Drugs Directorate, Health Canada

June, 2002

pan-Canadian Framework for Action

1.5 YEARS BEHIND SCHEDULE
pan-Canadian **Framework** for Action

**PAN-CANADIAN ACTION PLAN HAS STILL TO BE WRITTEN**

At the moment we don’t have effective stewardship in the animal health sector

**NO MAP; NO PLAN; NO TIMING; NO CHECKLIST; NO EFFECTIVE LEADERSHIP OR COORDINATION STRUCTURE**
A major factor preventing timely development of pan-Canadian stewardship is a lack of an agreed leadership or coordination structure.
A major factor preventing timely development of pan-Canadian stewardship is a lack of an agreed leadership or coordination structure with resource allocation, reporting structure, measurement, evidence and ability to intervene.

Among the many questions about a pan-Canadian stewardship plan:

- Who has overall responsibility for developing, monitoring, evaluating and communicating the action plan?
- What are the roles of PHAC, Health Canada, Agriculture and AgriFood Canada, Canadian Food inspection Agency?
- How will they interact with provincial Ministries of Agriculture, veterinary regulatory authorities?
- How will veterinary regulations relating to antimicrobial use be harmonized across the provinces and territories?
- What is the road map and what are the timelines?
What are the metrics of success?

IF YOU CAN’T MEASURE IT, YOU CAN’T MANAGE IT
Considerable reduction and improvement in antimicrobial use and resistance is possible

- Holland has achieved 65% reduction in antimicrobial use in animals in last 7 years
- Reduction of antimicrobial resistance in animal commensal *E. coli* has followed reduced use in Holland

![Sales data of antimicrobials in the Netherlands](image)

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**Antimicrobial stewardship**

- Owner compliance
- Education
- Leadership; regulation
- Pharmacokinetics, pharmacodynamics
- Resistance and use surveillance
- Clinical microbiology
- Infection control
- Practice guidelines
Antimicrobial stewardship

Practice guidelines
Infection control
Clinical microbiology
Resistance and use surveillance
Pharmacokinetics, pharmacodynamics
Education
Owner compliance

Good Stewardship Practice
Good Stewardship Practice

NEEDS EFFECTIVE LEADERSHIP AND COORDINATION STRUCTURE

“In our opinion, the development of a pan-Canadian strategy will take many years”