



# 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?



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

PANEL 3: DAVID M PATRICK

SPEAKING FOR THE POINT (HUMAN HEALTH)

David M. Patrick

POINT: HUMAN SECTOR



## Antimicrobial stewardship

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

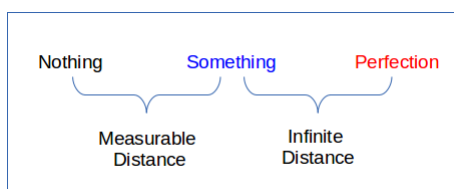
- Pan-Canadian Framework for Action

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



## A Heterogeneous Federation



We learn from variation.

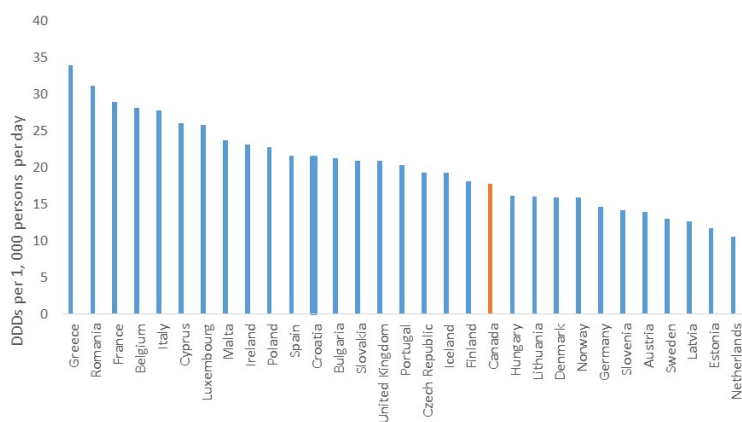


“Multi-faceted communication interventions that target both the general public and clinicians can reduce antibiotic prescribing in high-income countries.”

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



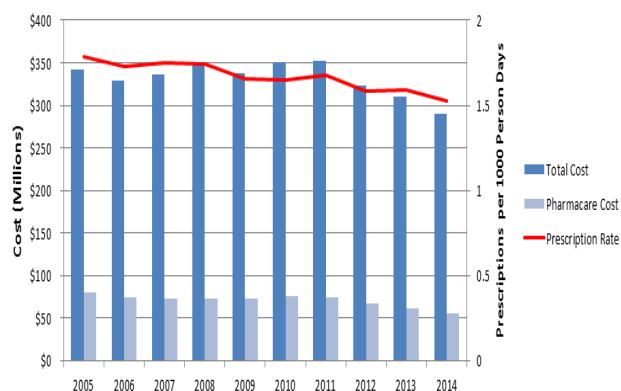
## Canada in the World: Community Prescribing





## Community Prescribing – British Columbia

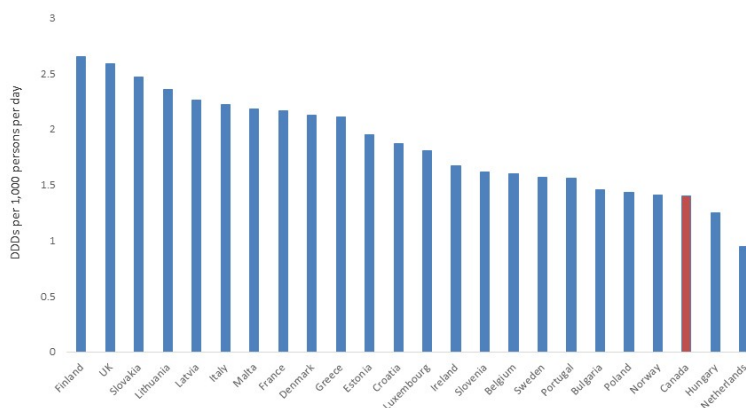
Prescribing Down 15%  
Antibiotic Drug Costs by \$53 M  
BC PharmaCare Costs by \$25 M



BC PharmaNet



## Canada in the World: Hospital Prescribing

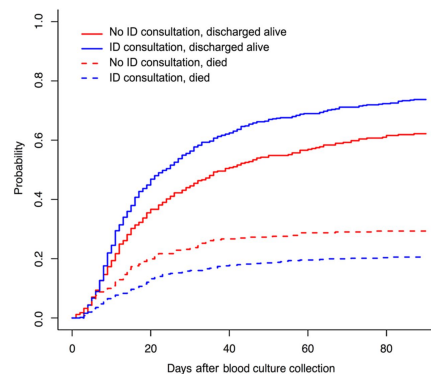




We see largely stable  
and even declining  
resistance levels in  
community pathogens.



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.



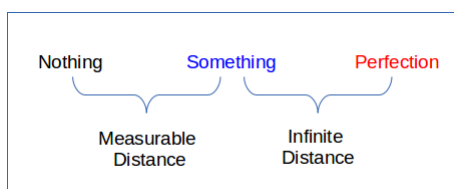
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## DO WE HAVE EFFECTIVE STEWARDSHIP IN THE HUMAN AND VETERINARY SECTORS IN CANADA?

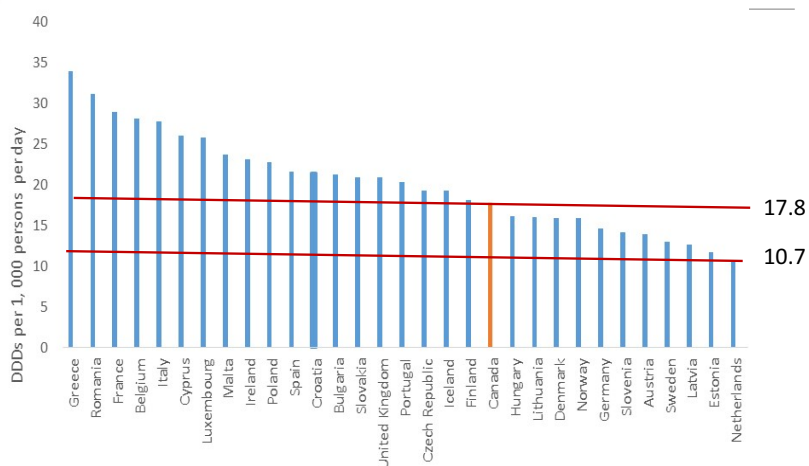
PANEL 3: ALLISON J MCGEER  
COUNTERPOINT (HUMAN HEALTH)



## Yes - We've Made Progress



## Canada in the World: Community Prescribing



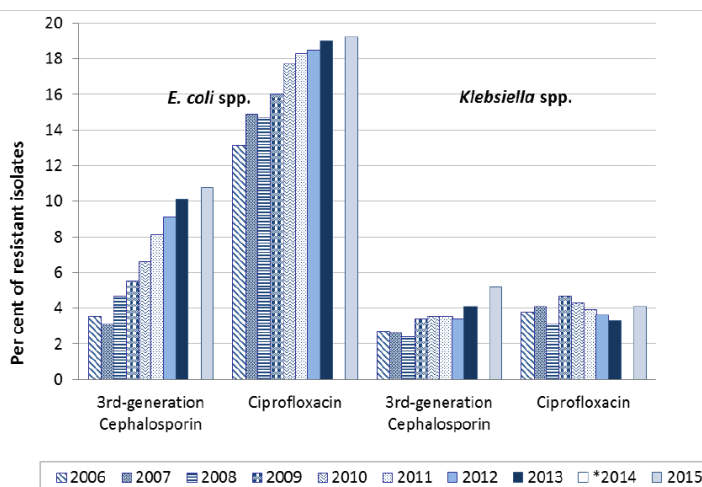




We see largely stable and even declining resistance levels in community pathogens.



## Antibiotic resistance Ontario, 2006-2015





## CPE incidence, CNISP hospitals

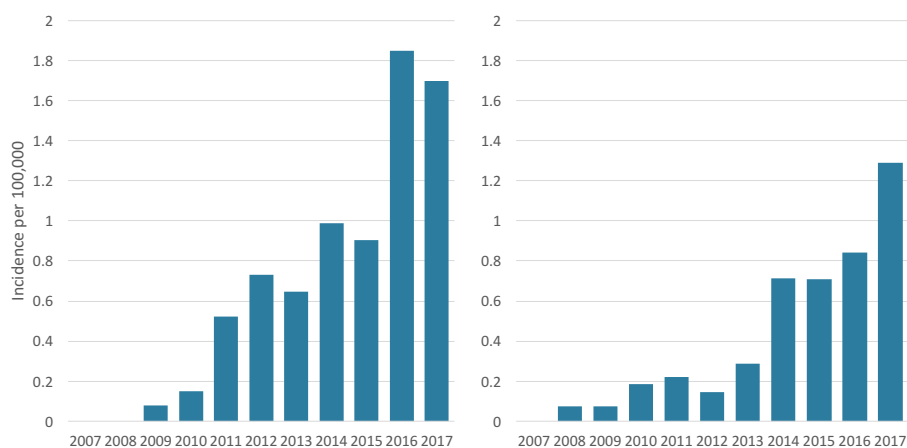


PRESENTER NAME

CAHS FORUM ON INDIGENOUS HEALTH SEPTEMBER 16, 2016



## Incidence of CPE infection by CPE Toronto and Peel Region





## Antimicrobial stewardship in Humans

### What we have done:

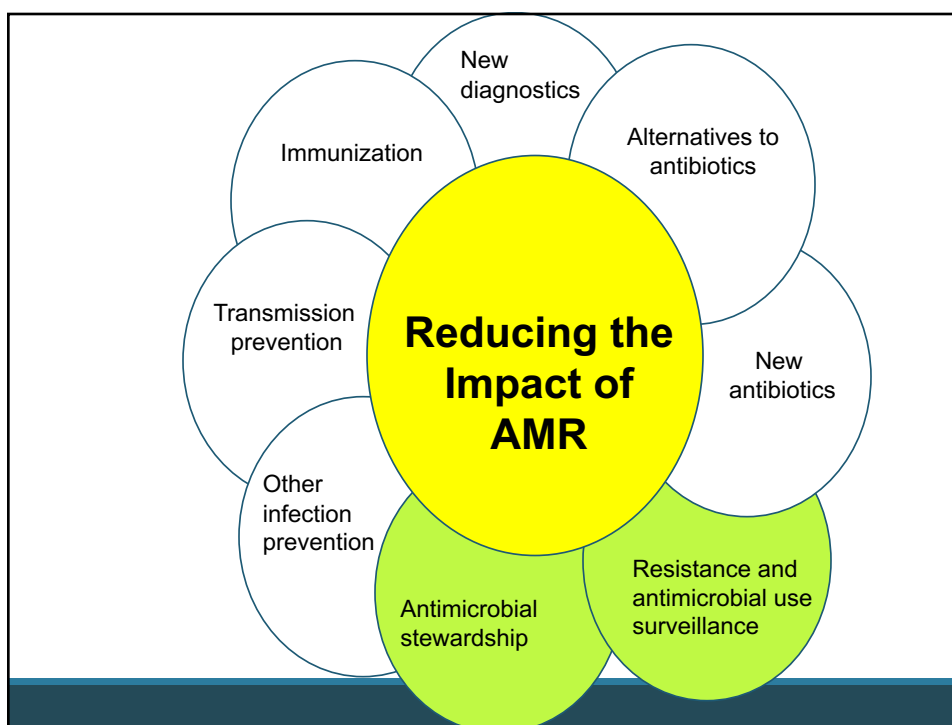
- Identified (many of the) current surveillance systems related to AMR and coordinated data
- Developed a Framework for Action (Aug 2017)

### What we need to do:

- Identify the structure of and build the national surveillance systems that we need
- Create and implement an action plan

PRESENTER NAME

CAHS FORUM ON INDIGENOUS HEALTH SEPTEMBER 16, 2016





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

PANEL 3: SCOTT MCEWEN

POINT = YES: VETERINARY SECTOR

Scott McEwen, University of Guelph



## 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

Panel 3: Scott McEwen, University of Guelph

POINT = YES: VETERINARY SECTOR



## Have Made Real Progress

### 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

Canada

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

Panel 3: Scott McEwen, University of Guelph

POINT = YES: VETERINARY SECTOR



## 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)

Panel 3: Scott McEwen, University of Guelph

POINT = YES: VETERINARY SECTOR



## 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

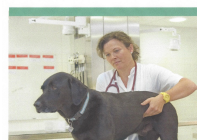
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**Antimicrobial Use Guidelines for Treatment of Respiratory Tract Disease in Dogs and Cats: Antimicrobial Guidelines Working Group of the International Society for Companion Animal Infectious Diseases**  
M.R. Lappin<sup>1</sup>, J. Bingham<sup>2</sup>, T. Bingham<sup>3</sup>, T.C.B. Shanley<sup>4</sup>, L. Quasthoff<sup>5</sup>, T.C. Lloyd<sup>6</sup>, M.G. Pappas<sup>7</sup>, S.C. Gordon<sup>8</sup>, J.L. Garber<sup>9</sup>, A. Carrique<sup>10</sup>, J. Pappas<sup>11</sup>, J. Garber<sup>12</sup>  
Antimicrobial Use Guidelines Working Group of the International Society for Companion Animal Infectious Diseases

**Abstract**  
Respiratory tract disease can be associated with primary or secondary bacterial infections in dogs and cats, and is a common reason for use and potential misuse, overuse, and resistance of antimicrobials. There is a lack of comprehensive treatment guidelines such as those that are available for human medicine.

### Antibiotic Use Guidelines for Companion Animal Practice



### VETERINARY OVERSIGHT OF ANTIMICROBIAL USE – A PAN-CANADIAN FRAMEWORK OF PROFESSIONAL STANDARDS FOR VETERINARIANS



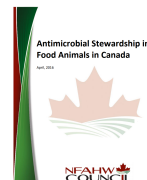
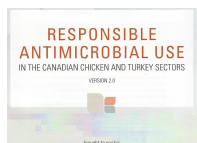
Panel 3: Scott McEwen, University of Guelph

POINT = YES: VETERINARY SECTOR



## 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



Panel 3: Scott McEwen, University of Guelph

POINT = YES: VETERINARY SECTOR



## 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

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POINT = YES: VETERINARY SECTOR



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

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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

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I

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Introduction



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## pan-Canadian Framework for Action

1.5 YEARS BEHIND SCHEDULE





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## pan-Canadian Framework for Action

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

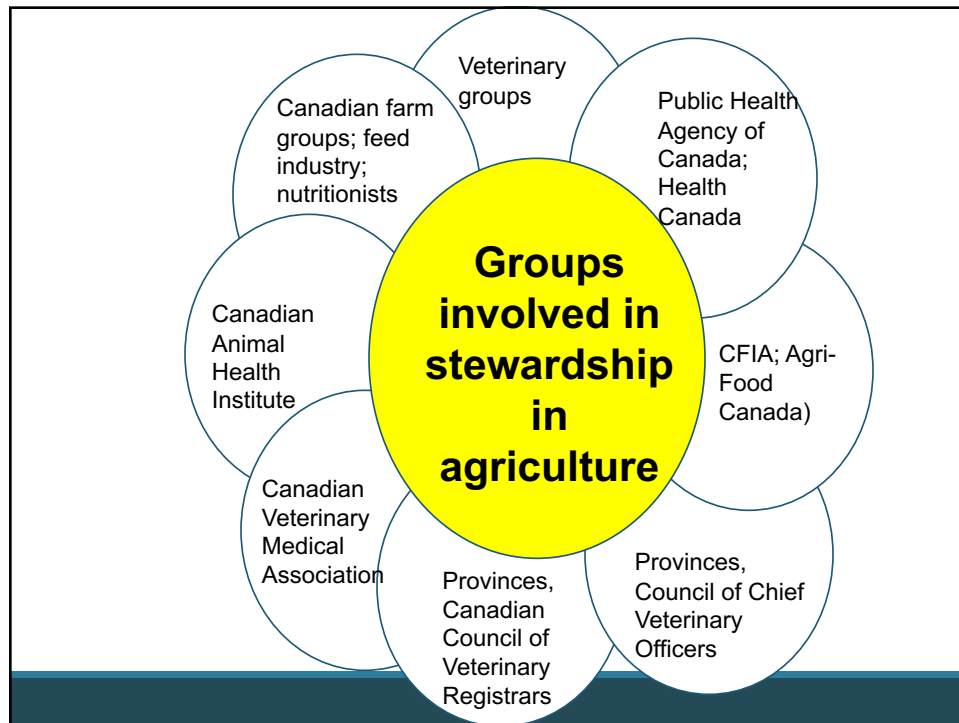


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At the moment we don't have  
effective stewardship in the  
animal health sector

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NO MAP; NO PLAN; NO TIMING; NO CHECKLIST;  
NO EFFECTIVE LEADERSHIP OR COORDINATION  
STRUCTURE



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A major factor preventing timely development of pan-Canadian stewardship is a lack of an agreed leadership or coordination structure



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## 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 ?



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## What are the metrics of success?

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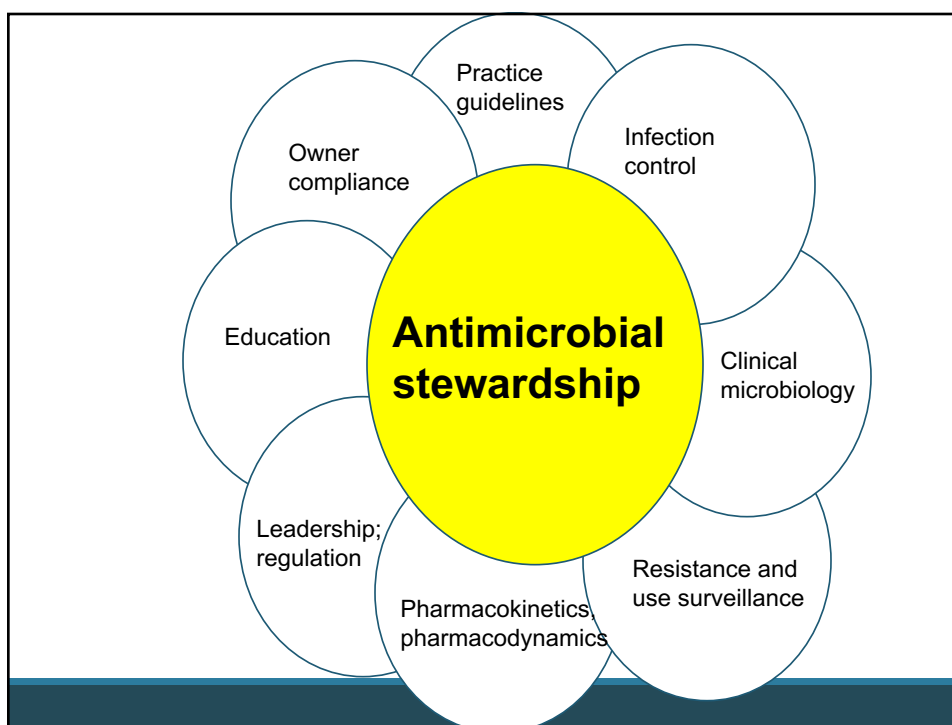
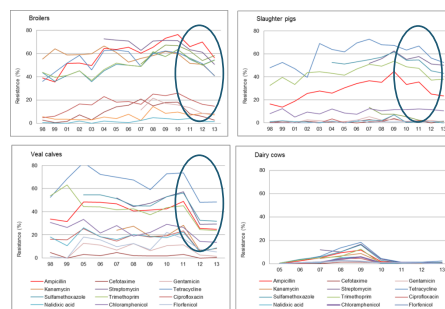
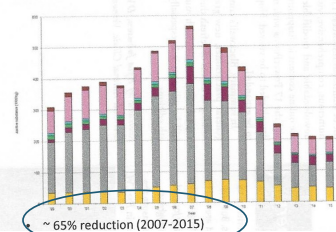
IF YOU CAN'T MEASURE IT, YOU CAN'T MANAGE IT

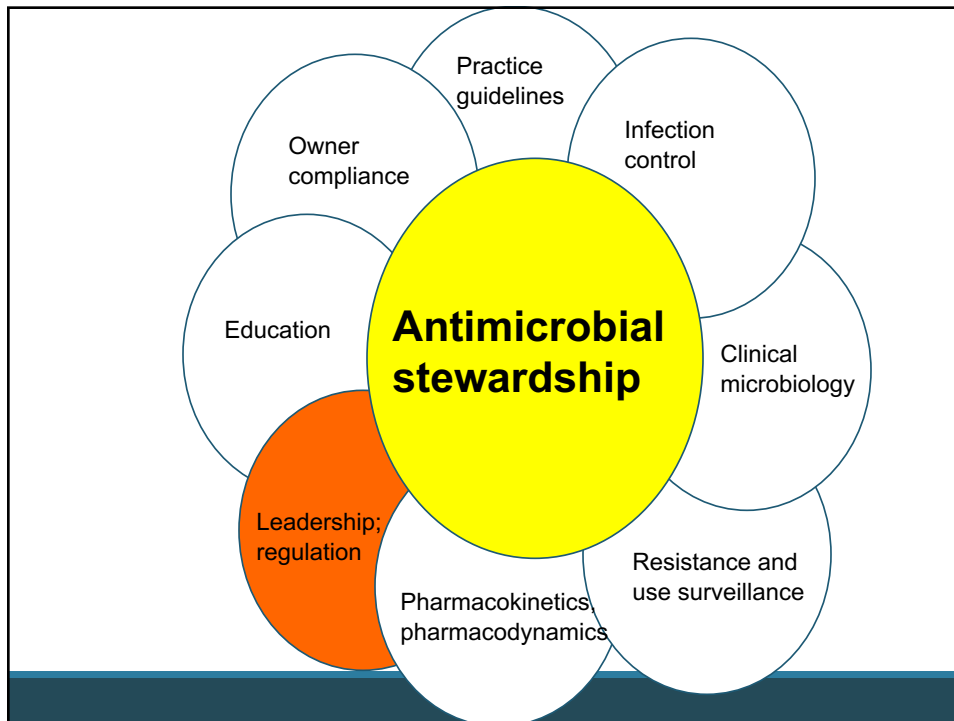


## Considerable reduction and improvement in antimicrobial use and resistance is possible

- ❖ 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





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## Good Stewardship Practice

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## Good Stewardship Practice

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NEEDS EFFECTIVE LEADERSHIP AND  
COORDINATION STRUCTURE



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



Spring 2015

Reports of the Auditor General of Canada

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REPORT 1  
Antimicrobial Resistance