Antimicrobial stewardship in Canadian agriculture and veterinary medicine

Perspectives from the Ad-Hoc Committee

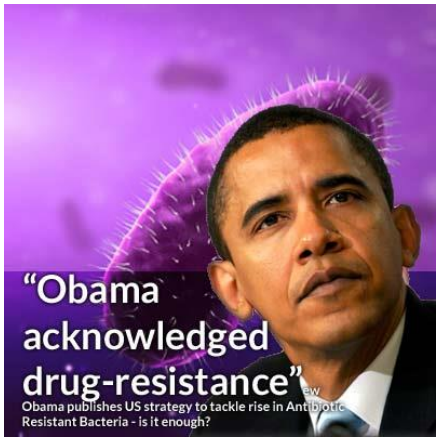
World Health Organization

Antimicrobial resistance is a global crisis and needs global approach to mitigation

“Nobody is exempt from the problem, nor from playing a role in the solution.”

G7 Science Ministers agree to collaborate on antimicrobial resistance, June 2013

Antibiotic resistance will dominate the global political agenda for many years



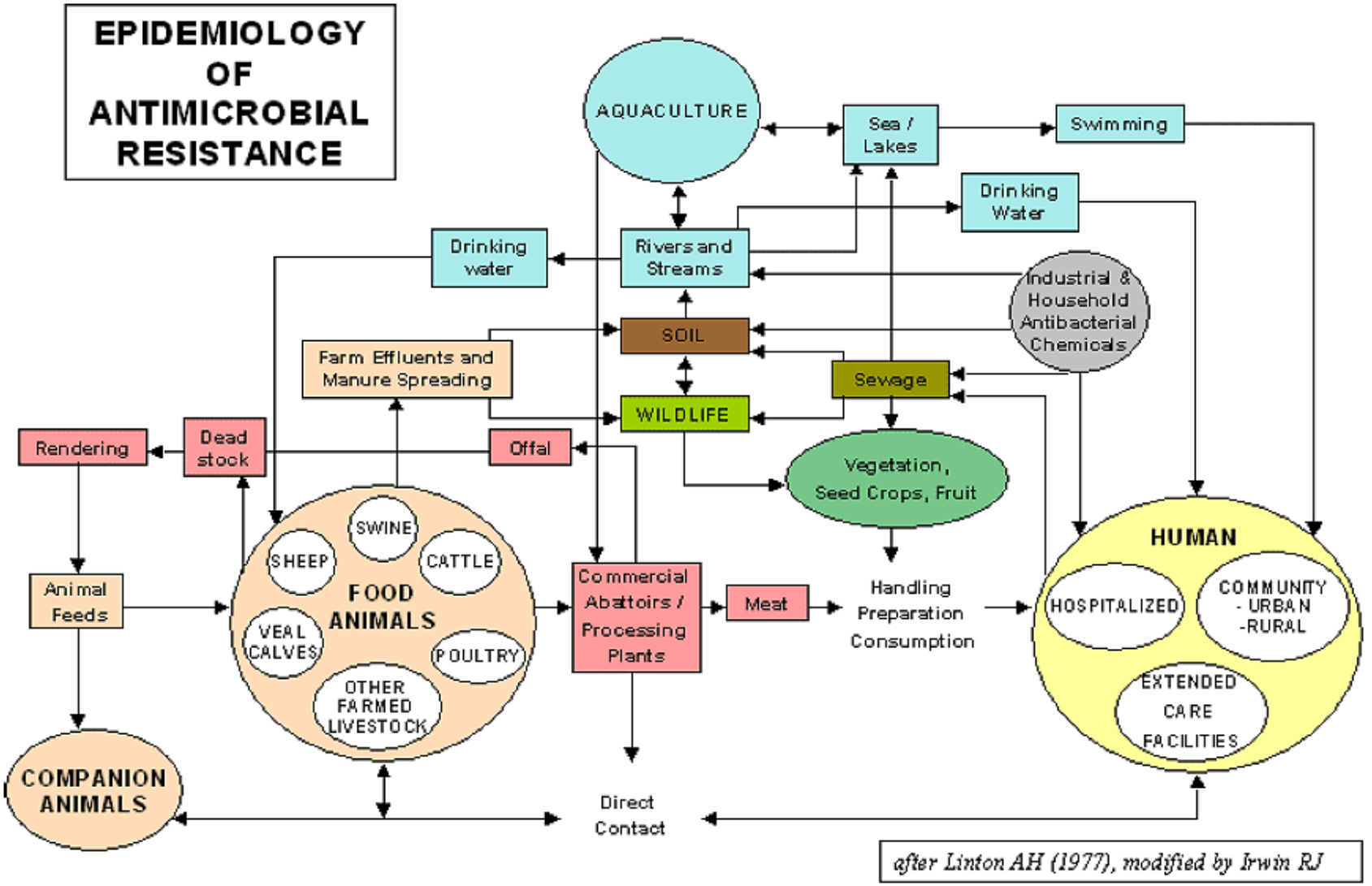
G7 Science Ministers agree to collaborate on antimicrobial resistance, June 2013

Antibiotic resistance will dominate the global political agenda for many years

It’s real. It’s serious

NATIONAL POST

Superbugs spreading in Canada due to lax laws governing antibiotics used by farmers: leading doctors



Resistance ANYWHERE is potentially resistance EVERYWHERE

Antibiotic resistance is complex

Complex problems need multiple solutions

Antimicrobial stewardship in animals in Canada

Good things we've done 1999-2014

- National Conferences 1999, 2005, 2011
- Health Canada animal use 2002 Report
- CIPARS
- CVMA education, guidelines
- "Prescription only" Québec 1985 similar actions in Nfld and NB
- Canadian Animal Health Institute, Health Canada actions on medically important drugs used in feed and water
- QA, On-Farm Food Safety Assurance programs of farm groups and feed industry
- Canadian Chicken Farmers ban extra-label use of antibiotics in hatcheries, adopts responsible use principles 2014

Prioritization and ranking of stewardship of antimicrobial drugs in animals in Canada by Ad-Hoc Committee

How were we doing in 2013?

Canadian Veterinary Journal
March 2014

Prioritization and ranking of stewardship against major recommendations of:

- World Health Organization
- Health Canada's 2002 Report: Use of Antimicrobials in Food Animals in Canada
- World Animal Health Organization
- US FDA Guidance 213

How were we doing in 2013?

Priority	Issue	Rank
1	Create a national system to monitor use of antimicrobials in food animals	C
2	Terminate growth promotion if drugs used in humans	D
3	Stop the importation, sale and use of antimicrobials not evaluated and registered by Health Canada (“Own use”, “Active Pharmaceutical Ingredients”)	F
4	Monitor resistance and take corrective action if needed	C
5	Prescription only of antibiotics for food animals	D
6	Develop an extra-label use policy, which ensures no endangerment to human health	D
7	Follow OIE guidelines re fluoroquinolones and 3rd generation cephalosporins	D
8	Initiate Veterinary Feed Directive to ensure veterinary oversight of critically important drugs	C
9	Develop national leadership and oversight in Canada	C

Canada was not meeting international standards or national recommendations in 2013

Overall ranking: C-

Major recent developments

Major recent developments

- U.S. FDA Guidance 213: Phasing out growth promotional use of antibiotics; Veterinary oversight of antibiotics for food animals (December 2013)

- Health Canada (VDD) and Canadian Animal Health Institute agree to align with the U.S. FDA actions (April 2014)

Federal Framework for Action

October 2014

Antimicrobial resistance and Use in Canada: A Federal Framework

Areas of Focus	Actions
Surveillance	Strengthen promotion appropriate use in human and veterinary medicine
Stewardship	Strengthen regulatory framework on veterinary medicine and feeds, facilitate access to alternatives to antibiotics, encourage adoption of practices to reduce use of antimicrobials
Innovation	Research and development efforts on resistance nationally and internationally; new antibiotics, diagnostics, therapies

Ad-Hoc Committee
Environmental Petition
through Auditor General to
Federal Ministers 2012

Auditor General's Report April 2015

- Critical of PHAC's and Health Canada's failure to address international standards and national recommendations around animal use of antibiotics
- Identified need for a Pan-Canadian Strategy

Federal ***Action*** Plan March 2015

- Commitment to leadership
- Building surveillance of use in agriculture by 2016
- Veterinary oversight of food animal use by Dec 2016
- Remove growth promotion use by Dec 2016
- Address OUI and API issues, 2017
- Alternatives to antimicrobials – support for innovation; need for enabling regulation

“Veterinary oversight” of antibiotics in feed and water of food animals is a paradigm shifting development

Will it improve stewardship and reduce resistance and use?

What the Ad-Hoc Stewardship Committee urges

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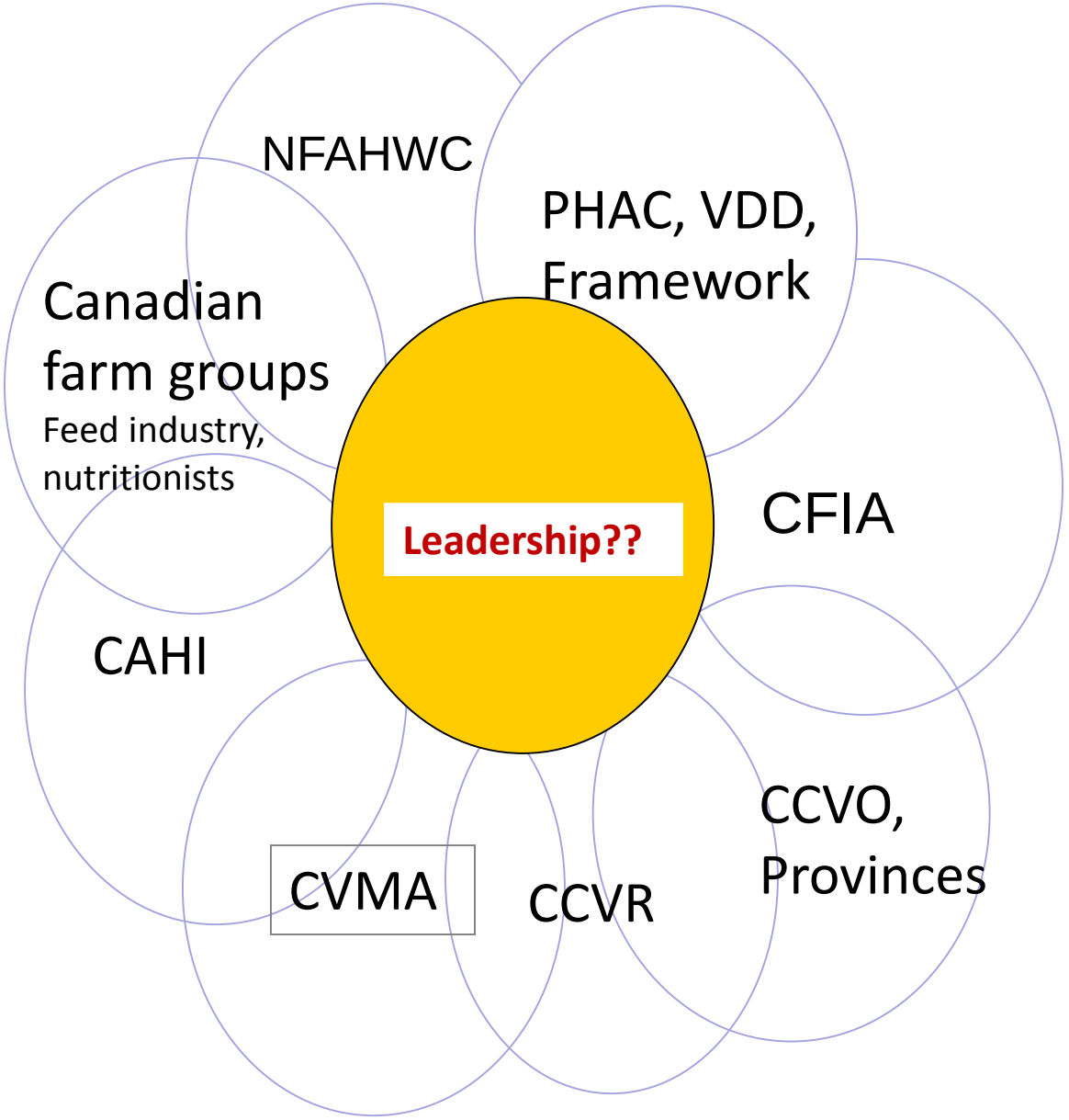
- Implementation of the 2015 Federal Action Plan.

- National leadership that integrates and promotes antibiotic stewardship in human and veterinary medicine.

- Pan Canadian Strategy development and implementation

Stewardship of antibiotics in food animals in Canada



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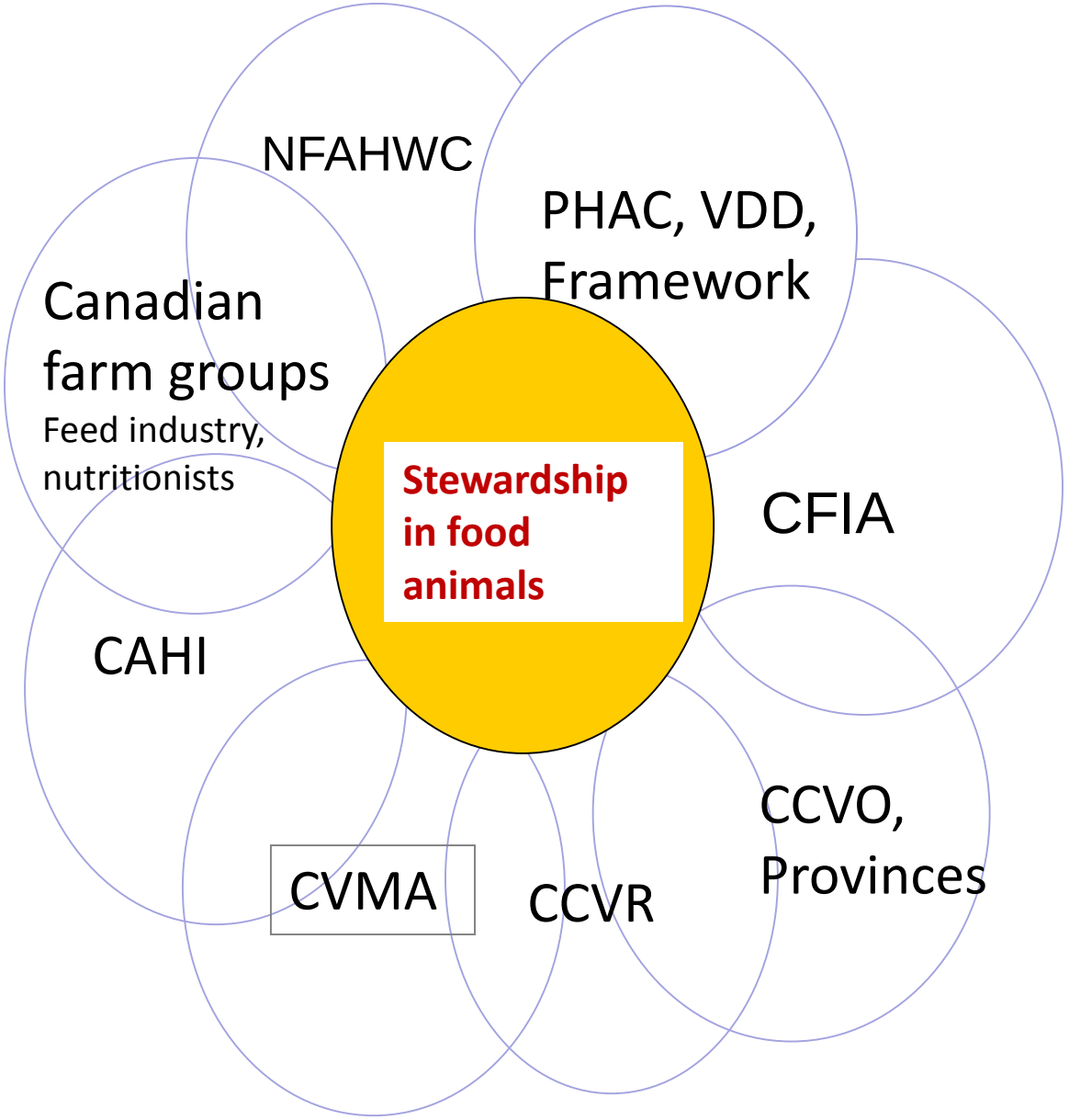

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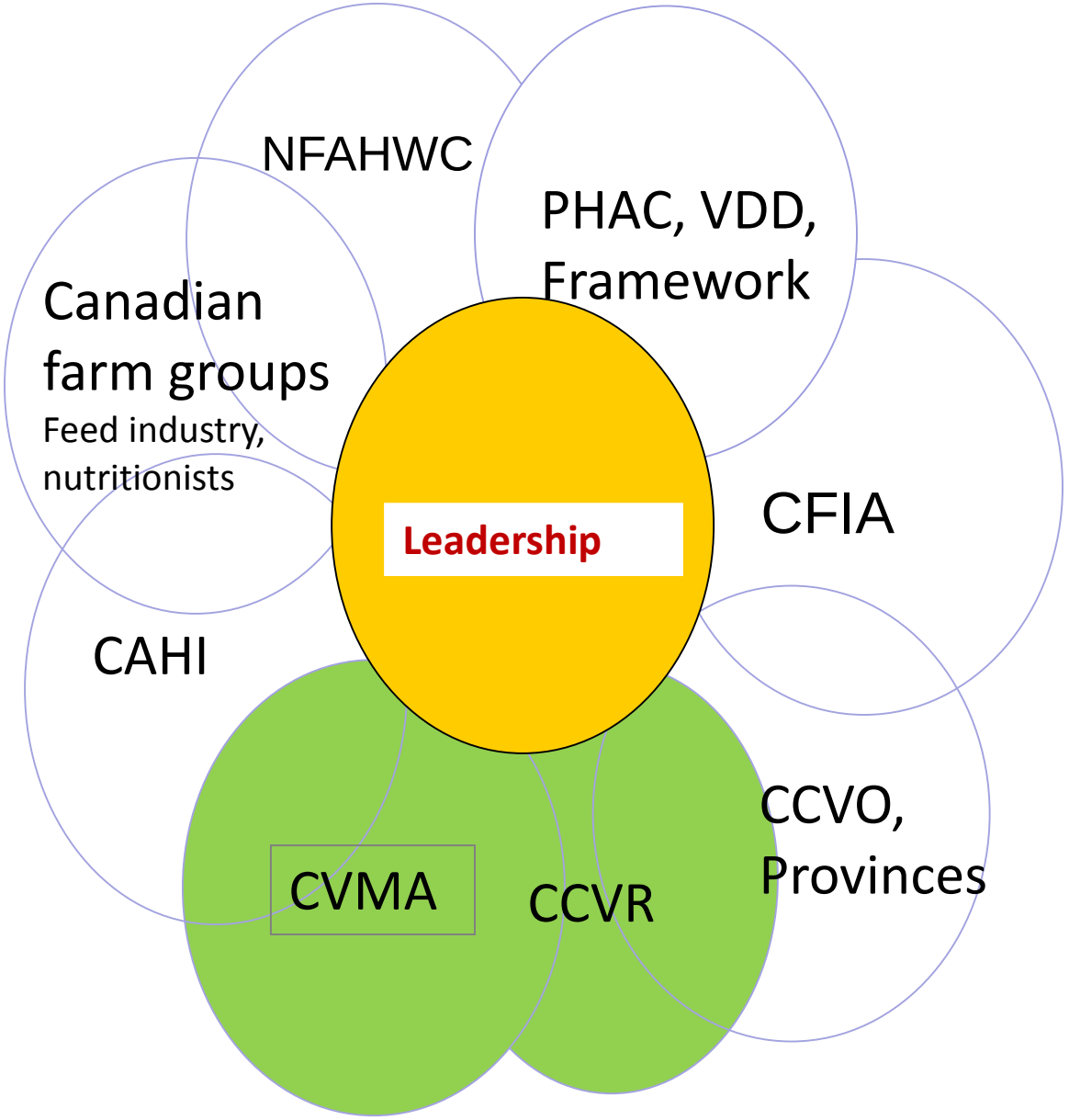


What the Ad-Hoc Stewardship Committee urges

- A harmonized, pan-Canadian, regulatory framework for antimicrobial stewardship in agriculture and veterinary medicine that meets national recommendations and international standards.

- Commitment by the veterinary and pharmacy regulatory bodies to develop, implement and ensure compliance with ethics and codes of practice around antimicrobial use, and promotion of continuing education around Good Stewardship Practice.

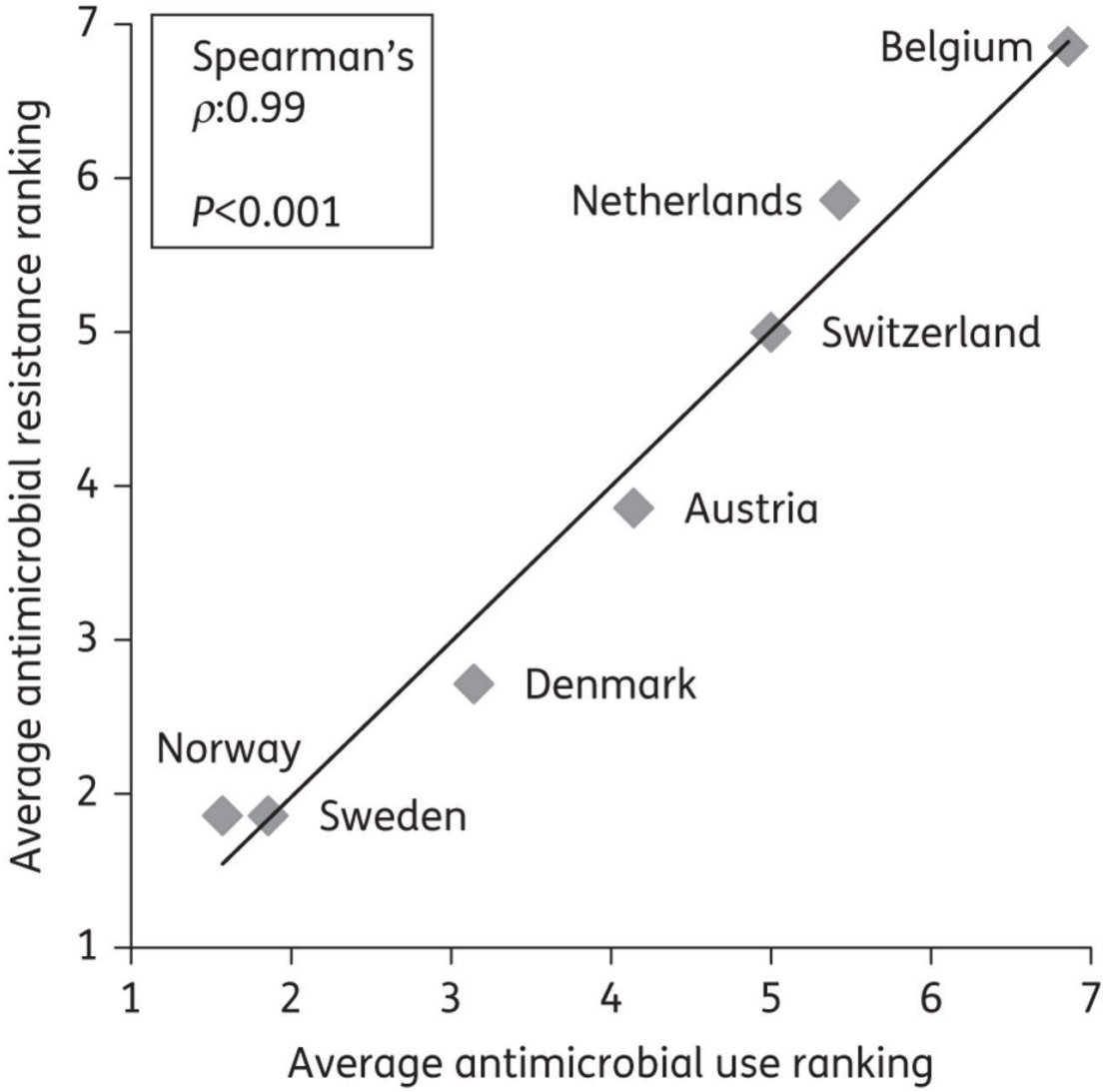
What the Ad-Hoc Stewardship Committee urges

An effective pan-Canadian system for monitoring antimicrobial use and resistance in agriculture and veterinary medicine, with the ability to identify and to respond effectively in a timely way to emerging problems.

We need to focus on smarter production leading to antibiotic reduction

Resistance follows use

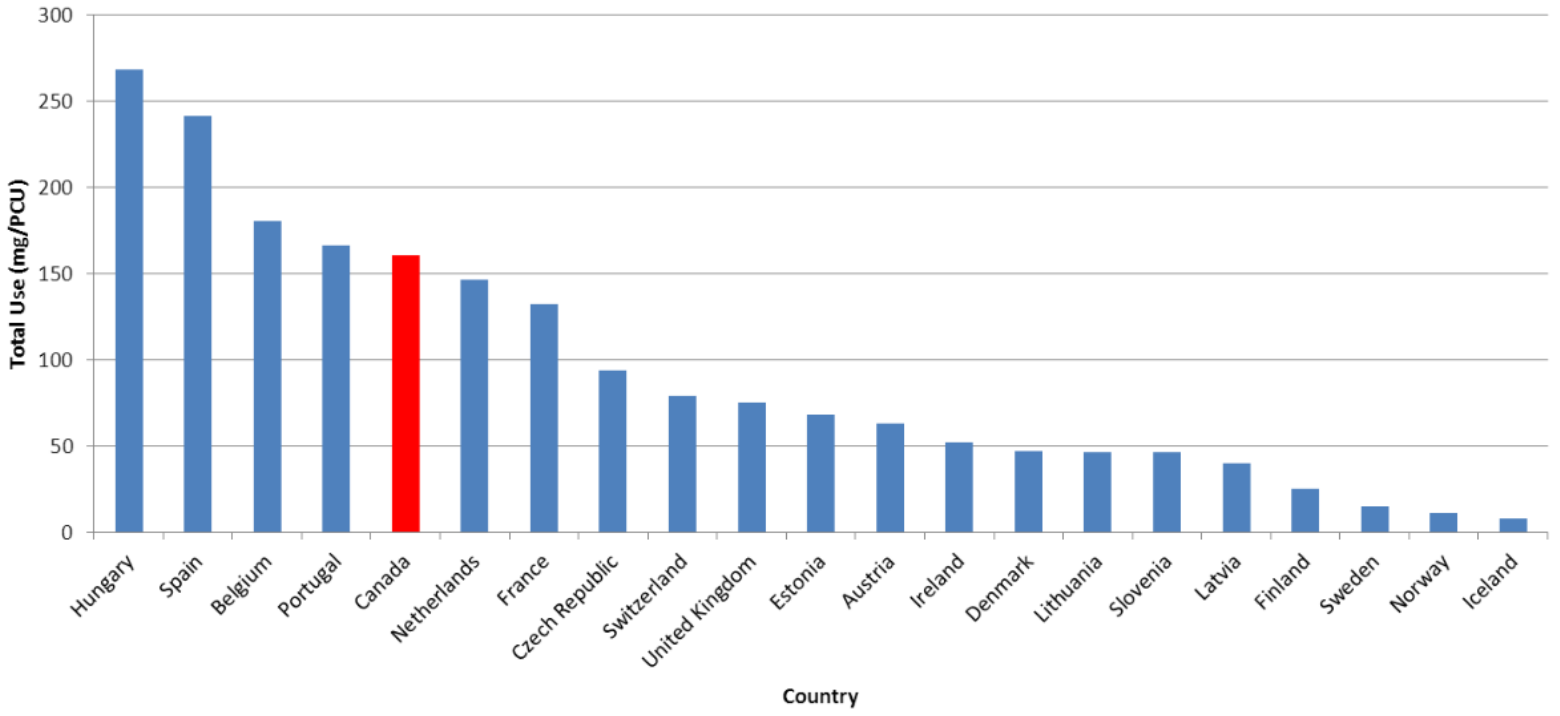
Correlation between antimicrobial use ranking of country and antimicrobial resistance ranking of indicator *Escherichia coli* for food-producing animals.



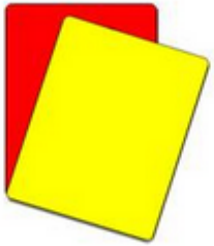
The challenge for agriculture and veterinary medicine is to show that it is using antibiotics responsibly and wisely, where the benefits are clear and substantial

And that agriculture can prove this, and that it can respond to identified problems

Comparison with ESVAC participating countries 2010

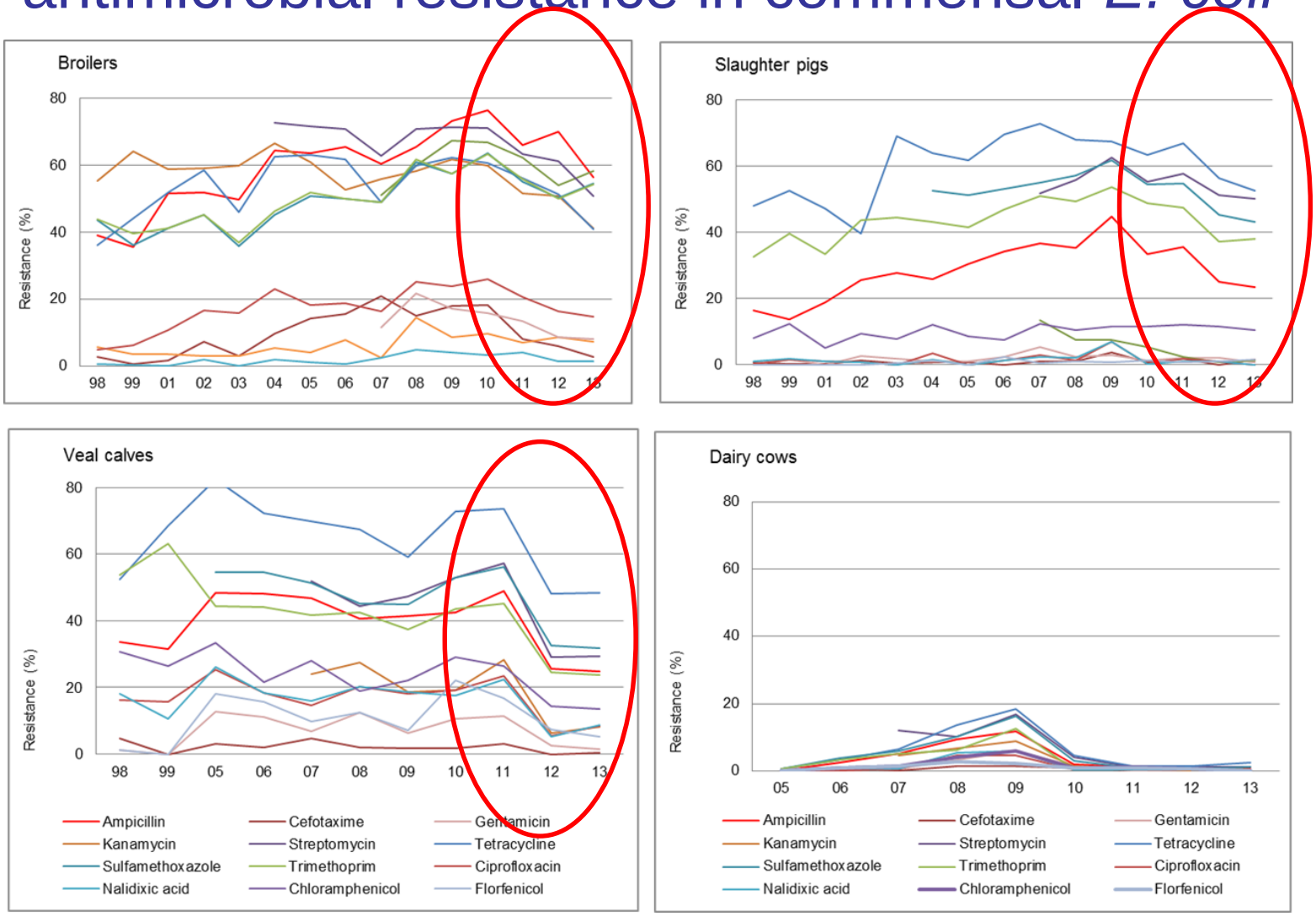


Note: To harmonize with ESVAC, the PCU was calculated using European average weights & production animals only (ESVAC does not have denominator data on companion animals for all countries, so they are excluded). Canadian numerator data includes antimicrobials for both production & companion animals (because numerator data by animal type is not available until 2011), however ESVAC excludes tablets for use in companion animals, but not injectables. For Canada, AMU data does not include OUI/API.



Danish and Dutch “yellow card” system for vets and farms?

Effect of reductions on the occurrence of antimicrobial resistance in commensal *E. coli*



Wagenaar, 2015

What the Ad-Hoc Stewardship Committee urges

- A culture in Canadian agriculture and veterinary medicine committed to antimicrobial stewardship and to Good Stewardship Practice

- Developed through a continuing education program for current and future producers and veterinarians.

Good Stewardship Practice

Continuous improvement

A 5R approach of responsibility, reduction, refinement, replacement, and review

What's needed in Canada?

- Embrace antimicrobial stewardship in agriculture
- Embrace the 5Rs…..responsibility, reduction, refinement, replacement, and review
- Make it a very good news story
- Start a robust and committed process of improving stewardship in agriculture

We are talking about the future of agriculture