



Pan-Canadian Action on AMR

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Disclosure Statement

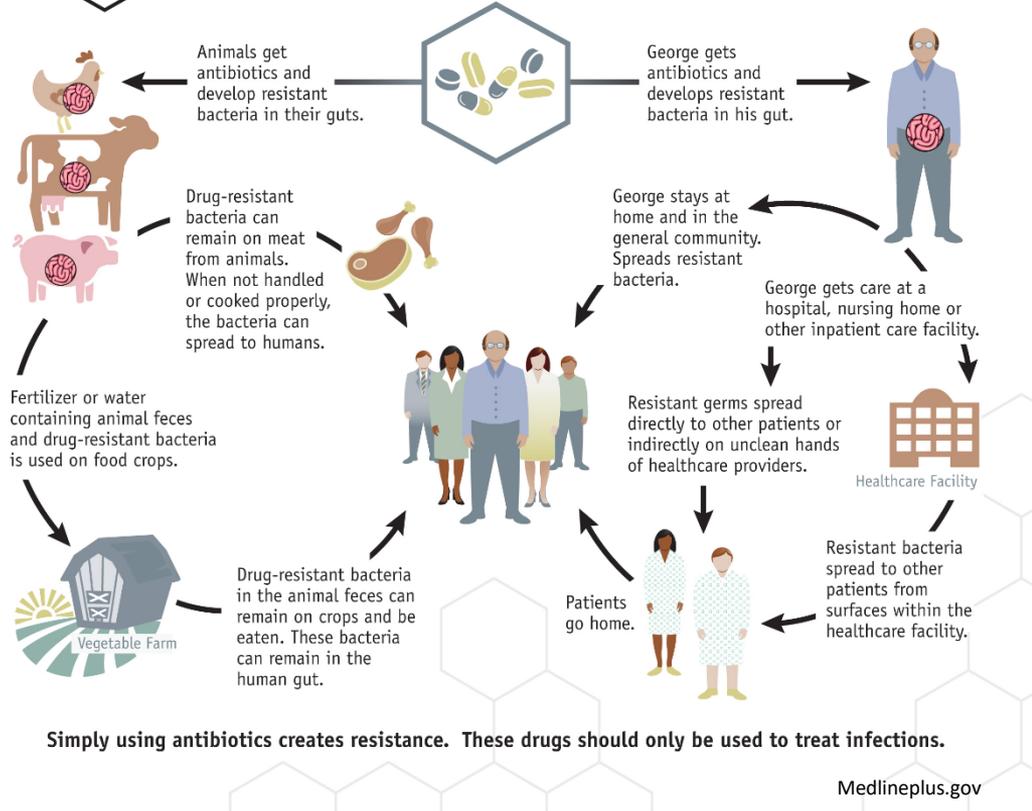
- I have no affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

Overview

- The Pan-Canadian Framework for Action
 - And development of a Pan-Canadian Action Plan
- Antimicrobial resistance (AMR) and public health



Examples of How Antibiotic Resistance Spreads



Antimicrobial resistance (AMR) refers to organisms (bacteria, viruses, fungi, parasites) that have mutated (so-called "superbugs") to become impervious to the very drugs designed to kill them

Increasing levels of resistance are largely caused by human behaviour:

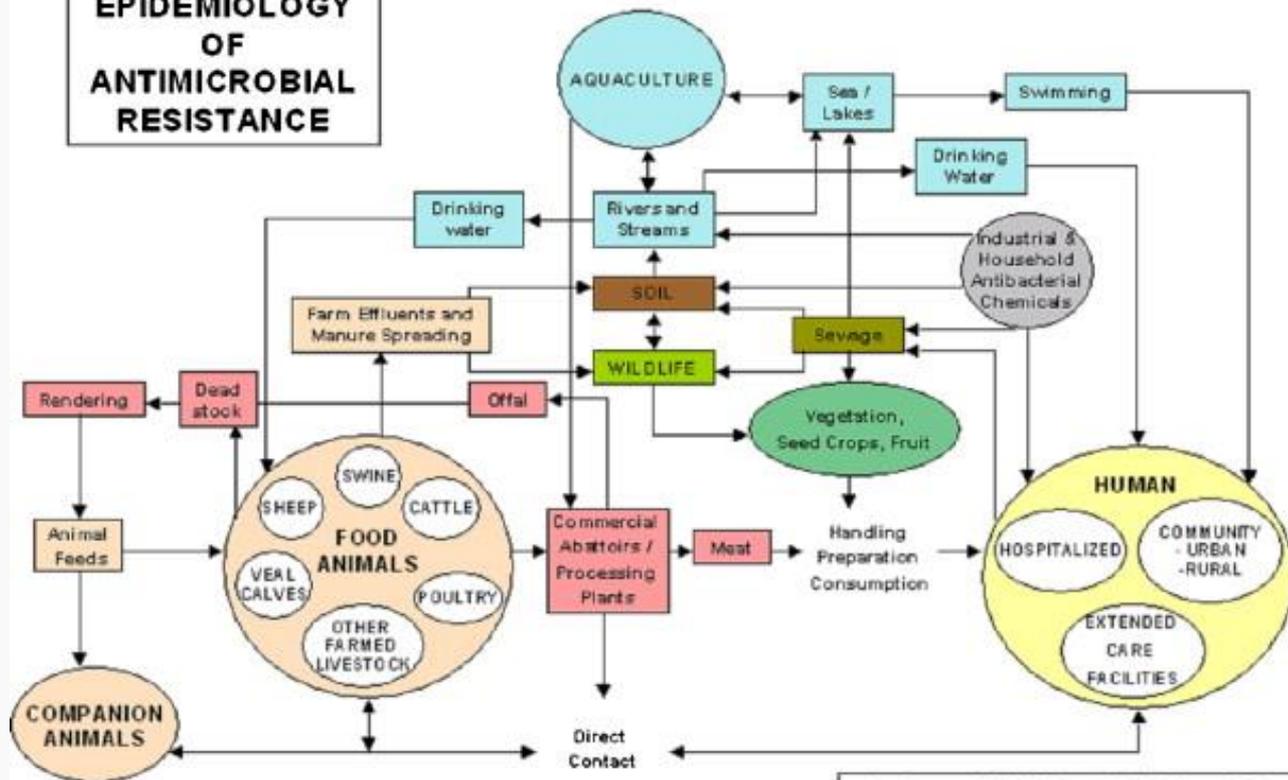
Inappropriate use of antibiotics in

- human medicine (prescribers; patients)
- veterinary medicine
- agri-food sector

One Health:

- Human
- Animal
- Agriculture
- Food
- Environment

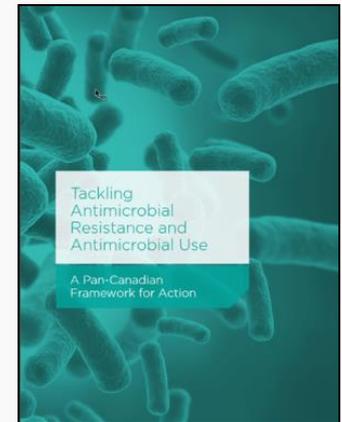
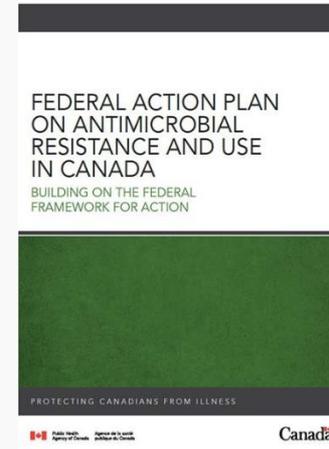
EPIDEMIOLOGY OF ANTIMICROBIAL RESISTANCE



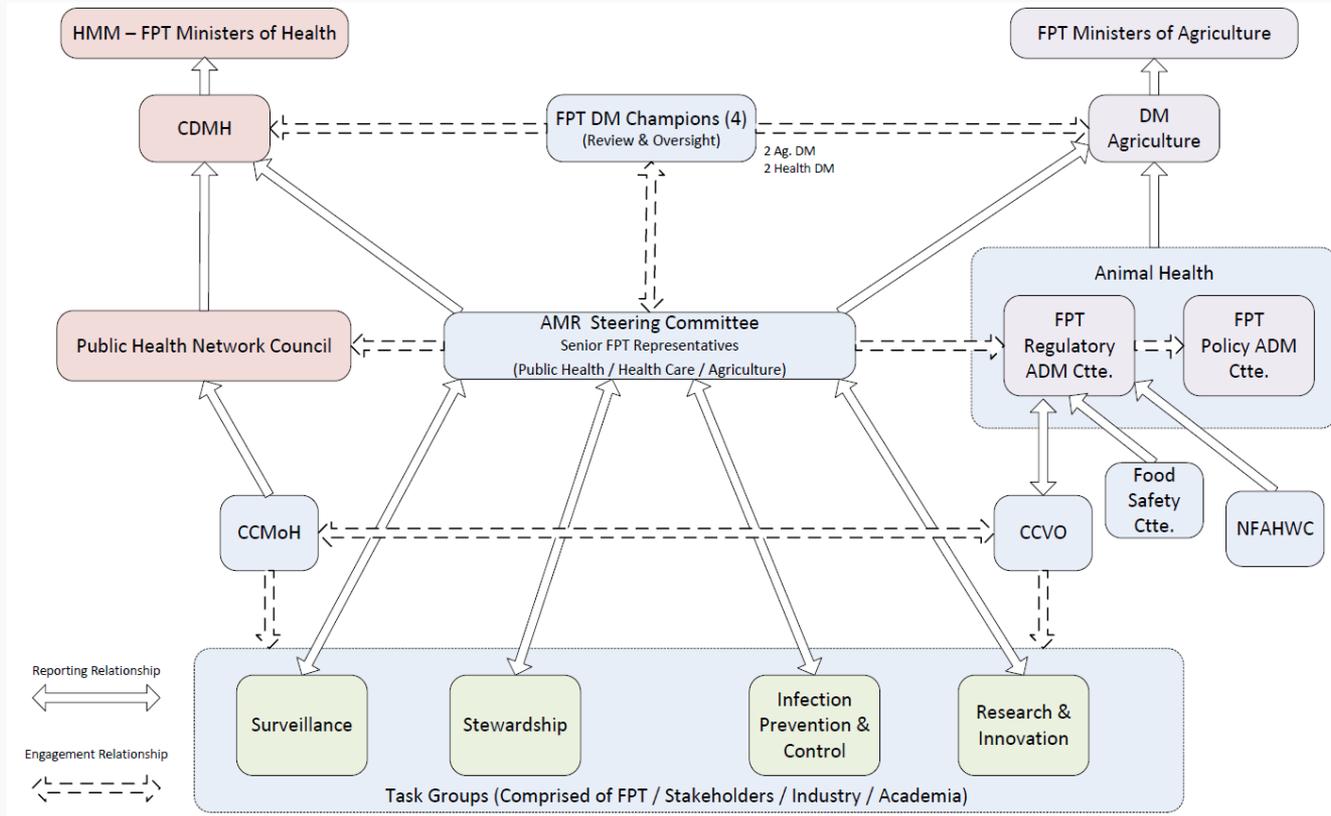
after Linton AH (1977), modified by Irwin RJ

Tackling AMR

- 2014: *Federal Framework on Antimicrobial Resistance and Use*
- 2015: *Federal Action Plan on Antimicrobial Resistance and Use*
- 2017: *Tackling Antibiotic Resistance and Use: A Pan-Canadian Framework for Action*
- May 2018: Standing Committee on Health's Report on AMR
- **September 2019: *Pan-Canadian Action Plan on AMR***



AMR Governance



A Framework for AMR

- The pan-Canadian AMR Framework was released in September 2017 – identified opportunities for action
<https://www.canada.ca/en/health-canada/services/publications/drugs-health-products/tackling-antimicrobial-resistance-use-pan-canadian-framework-action.html>
 - This set the stage for the development of the pan-Canadian Action Plan, which will support the implementation of the Framework
- Federal, provincial, territorial (FPT) governance structure for AMR with Task Groups established for each of the four components of the pan-Canadian framework:
 1. Surveillance
 2. Infection Prevention and Control
 3. Stewardship
 4. Research and Innovation
- Building on the Framework, Task Groups are providing an FPT AMR Steering Committee with advice and recommendations on:
 - priority Areas of Action
 - concrete Actions for the human health, animal health, animal/food/agriculture sectors

Antimicrobial Resistance and Antimicrobial Use

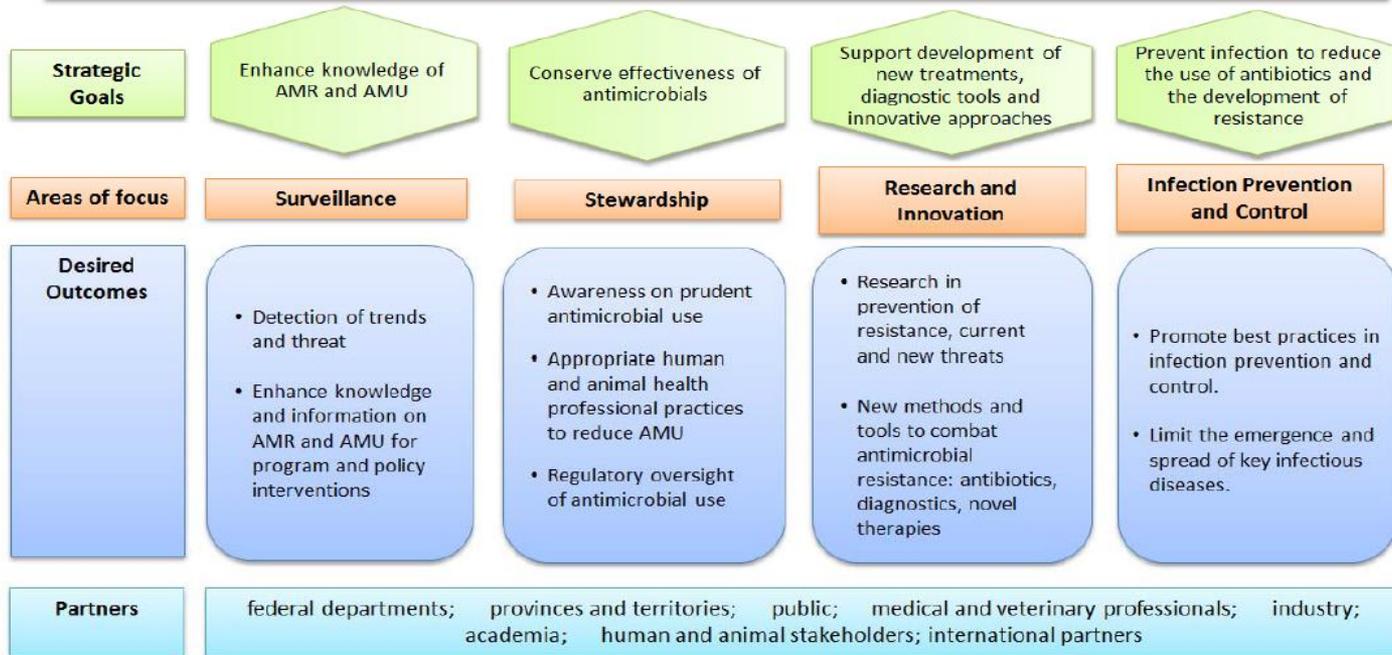
A Pan-Canadian Framework For Action

VISION

The health of humans, animals, and the environment is protected through comprehensive and coordinated actions to conserve the effectiveness of antimicrobials now and into the future.

OVERARCHING GOAL

To protect Canadians from the health risks related to antimicrobial resistance.



A Pan-Canadian Action Plan

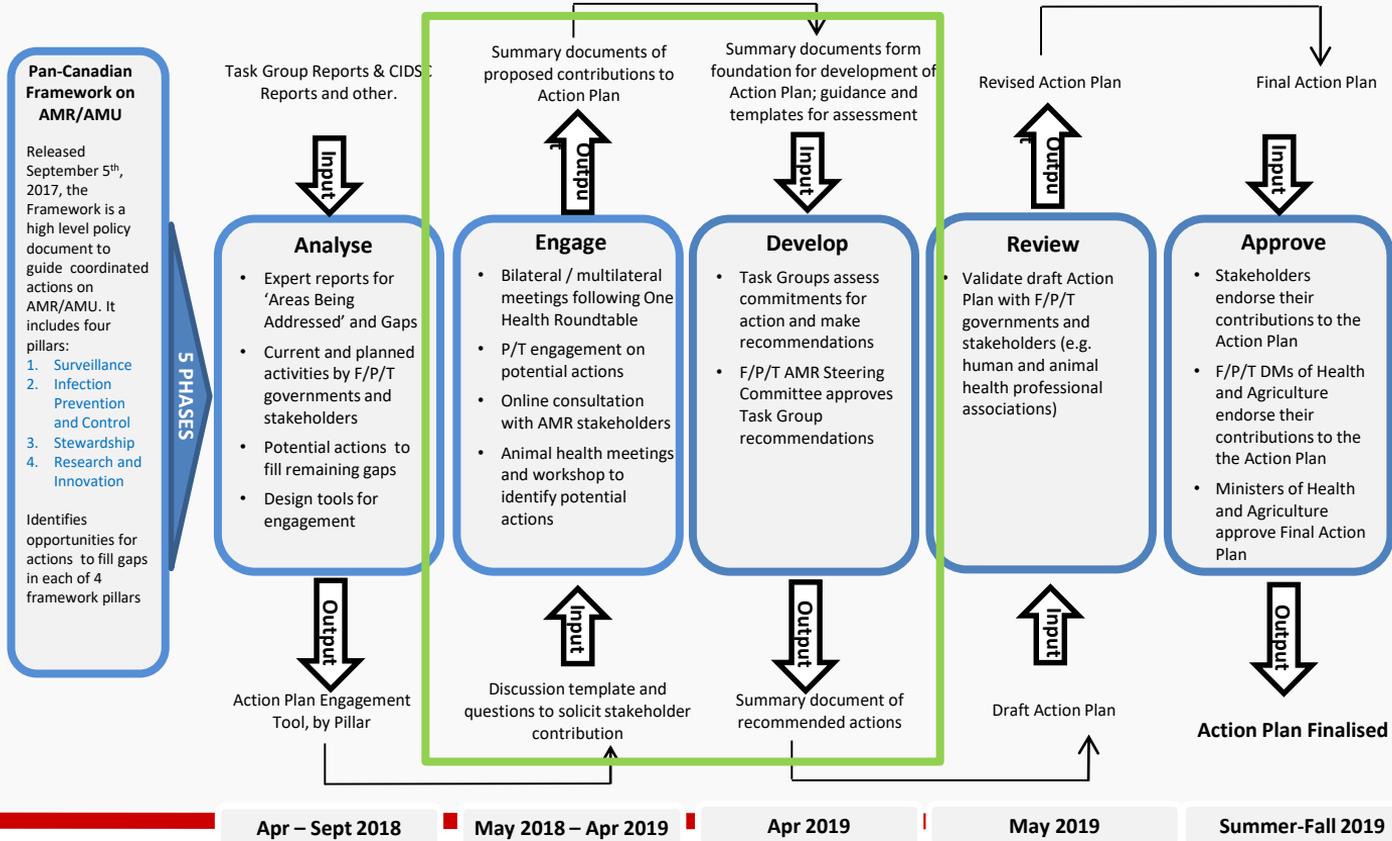
- Finalization of Action Plan planned for late August 2019
 - Surveillance
 - Infection Prevention and Control
 - Stewardship
 - Research and Innovation
- Action Plan will:
 - Cover a five-year period
 - Be aspirational in nature (i.e., what *needs to be done* in Canada to address the growing issue of AMR and ensure appropriate antimicrobial use)
 - Includes actions that could be taken by governments, professional associations, academia and researchers, health professionals, NGOs, and industry
 - Aligns with international efforts



Following Action Plan finalisation, continue dialogue among governments and key stakeholders on implementation approaches

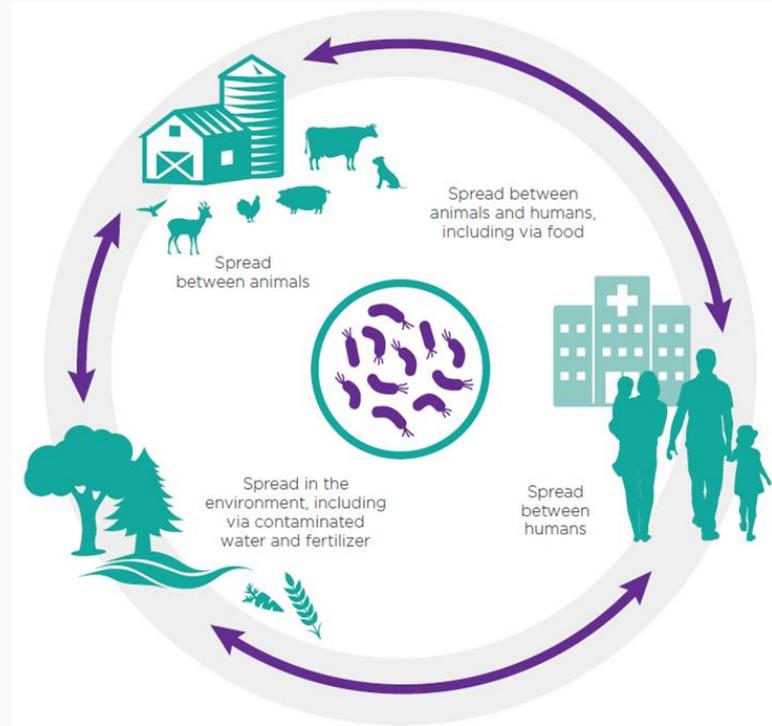
Development Approach

PHAC & CFIA lead sector specific gap analysis and engagement activities to feed action plan development and support the review and approval process of the action plan through their respective F/P/T health and agriculture governance tables and external stakeholders.



“One Health” Approach

- Need to take a One Health approach to AMR, given the interconnectedness of humans, animals and the environment in the development of resistant organisms
- AMR is a complex challenge (akin to climate change) where human behaviour is the driver and will determine whether we are successful in preserving the effectiveness of antimicrobials in human and animal health



Human Health Impact of AMR

Public health impacts of AMR

- Previously easily treated infections such as pneumonia, tuberculosis, gonorrhoea, typhoid, food illnesses can become serious public health threats
- Previously routine medical procedures, cancer treatment, and organ transplants become more dangerous
- Determinants of health impacts – i.e., CA-MRSA
- Ongoing global spread of resistant bacteria
 - e.g. travel, medical tourism
- Very few new antibiotics are in development
 - research is costly, low return on investment by industry
- Need to focus on prevention of infection and changing behaviours about antimicrobial use

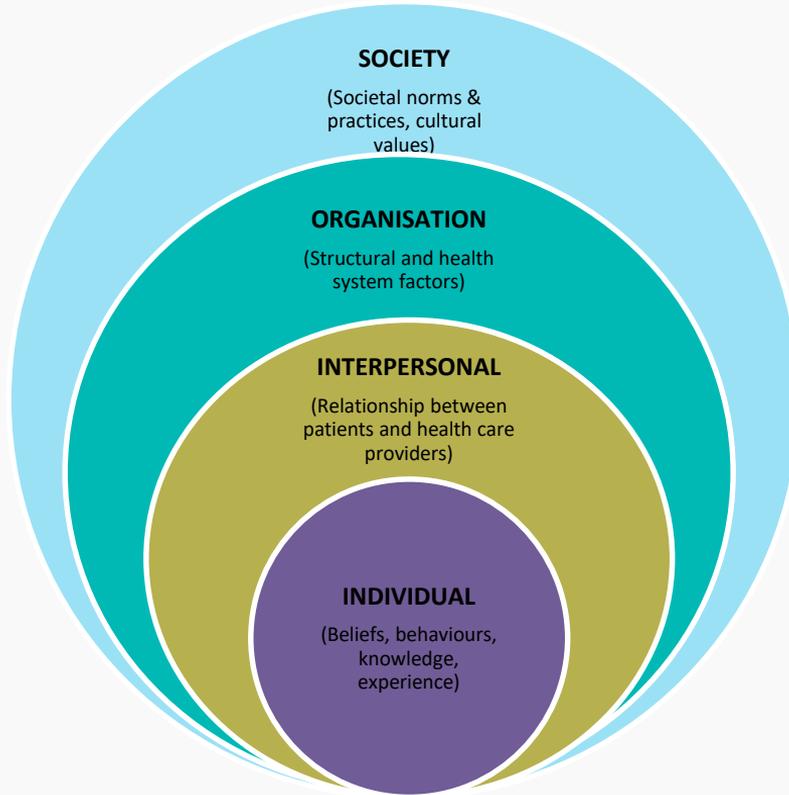
Antimicrobial resistant infections will become more frequent and difficult to treat

Changing how we use antibiotics is the key to reducing AMR

Canada prescribes 33% more antibiotics than the Netherlands, Sweden and Germany (CIHI, 2017)

From Dr. Theresa Tam, Chief Public Health Officer, Public Health Agency of Canada:

Sociocultural Drivers of Antibiotic Use



SOCIETY:

- Historical context (e.g., golden age of antibiotics)
- Social expectations (e.g., pills seen as “norm”)
- Immunization programs
- Socioeconomic factors (e.g., poverty, indigenous)
- Social and culture norms (e.g. shifting blame between sectors and/or between practitioner and patient communities)

ORGANISATION:

- Health care system & policies (e.g., access to medication/care)
- Patient volume and time pressure
- Practitioners guidelines, tools, audits
- Medical curricula & training
- Locally tailored surveillance and stewardship

INTERPERSONAL:

- Quality of interactions (relationships) between patients and health care providers
- Peer pressure and influence (e.g., feedback from colleagues)

INDIVIDUAL (Health Care Provider & Patient):

- Perceptions, beliefs and attitudes (“trust”) around illness and care
- Knowledge and experience around AMR, antibiotics, and disease management
- Cultural and socioeconomic factors (e.g., age, parent, foreign born, prescriber type)

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PRESCRIBE ANTIBIOTICS WISELY



The overuse and misuse of antibiotics is contributing to the development of antibiotic resistance.

Adults aged 60 years and older are prescribed antibiotics 1.5 times more than any other age group in Canada.

Asymptomatic bacteriuria and upper respiratory infections, including sinusitis, are the most likely conditions where antibiotics are prescribed unnecessarily.

- Up to 80% of patients with asymptomatic bacteriuria receive antibiotics. This can lead to adverse events such as *C. difficile* infections.
- Antibiotics are rarely indicated for upper respiratory illnesses, which are often viral or, if bacterial, are typically self-limited.

KEY CLINICAL POINTS

Asymptomatic bacteriuria:

- The presence of bacteria in the bladder/urine without symptoms pertaining to the urinary tract is referred to as asymptomatic bacteriuria. This represents a colonization state rather than a bacterial infection.
- Pyuria (white blood cells in urine) is very common in asymptomatic bacteriuria and is not an indication for antibiotic therapy.
- Screening urine for bacteriuria or pyuria in an asymptomatic patient or a patient with non-specific symptoms is not recommended.

Canada

Stewardship – Role for Public Health

Inappropriate use of antibiotics is driving AMR; changing prescribing and use practices is a priority



Choosing Wisely: a national campaign to reduce unnecessary antibiotic use in the community, where 92% of antibiotics are prescribed



Infection Prevention and Control (IPC)

- Every infection prevented is an antibiotic treatment avoided
 - IPC programs are a cornerstone to preventing community and health care acquired infections and key in preventing the emergence and spread of AMR
 - Preventing infections reduces the spread of resistant germs, and reduces the need for antibiotics
 - Examples include vaccinations, handwashing, other hygiene practices
- Infection prevention and control programs in community and health care settings are essential
 - IPC programs have been shown to decrease rates of some hospital-associated infections dramatically

National rates of hospital-acquired *C. difficile* infection (causes severe diarrhea) decreased by 36% (2009-2015); improved hand washing among the reasons for decrease



Special thanks to my
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Thank you!

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