

Antimicrobial Stewardship: Creating the Next Generation of Stewards as Agents of Change

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Faculty Session B



UNIVERSITY OF TORONTO
LESLIE DAN FACULTY OF PHARMACY



**Mount Sinai
Hospital**

Sinai Health System
Joseph & Wolf Lebovic
Health Complex



UHN

Toronto General
Toronto Western
Princess Margaret
Toronto Rehab

Objectives

- To characterize the current state of Antimicrobial Stewardship in the Canadian healthcare system
- To describe the curricular design and evolution of “Introduction to Antimicrobial Stewardship”
- To envision a future state of the course to meet upcoming needs

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 - What are the roles that are fulfilled by Pharmacists?
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 - A Year 3 elective offered at Leslie Dan Faculty of Pharmacy, University of Toronto since 2013/14
- To envision the future state of the course
 - Implementation of education technology

Antimicrobial Stewardship Program

- Coordinated interventions to improve, advocate and measure appropriate use of antimicrobials
- To preserve effective antimicrobials for those who need them

Rising abx resistance



**Lack of
effective abx**



**Major challenge
to patient care**

- To minimize adverse events associated with antimicrobial use / to promote patient safety

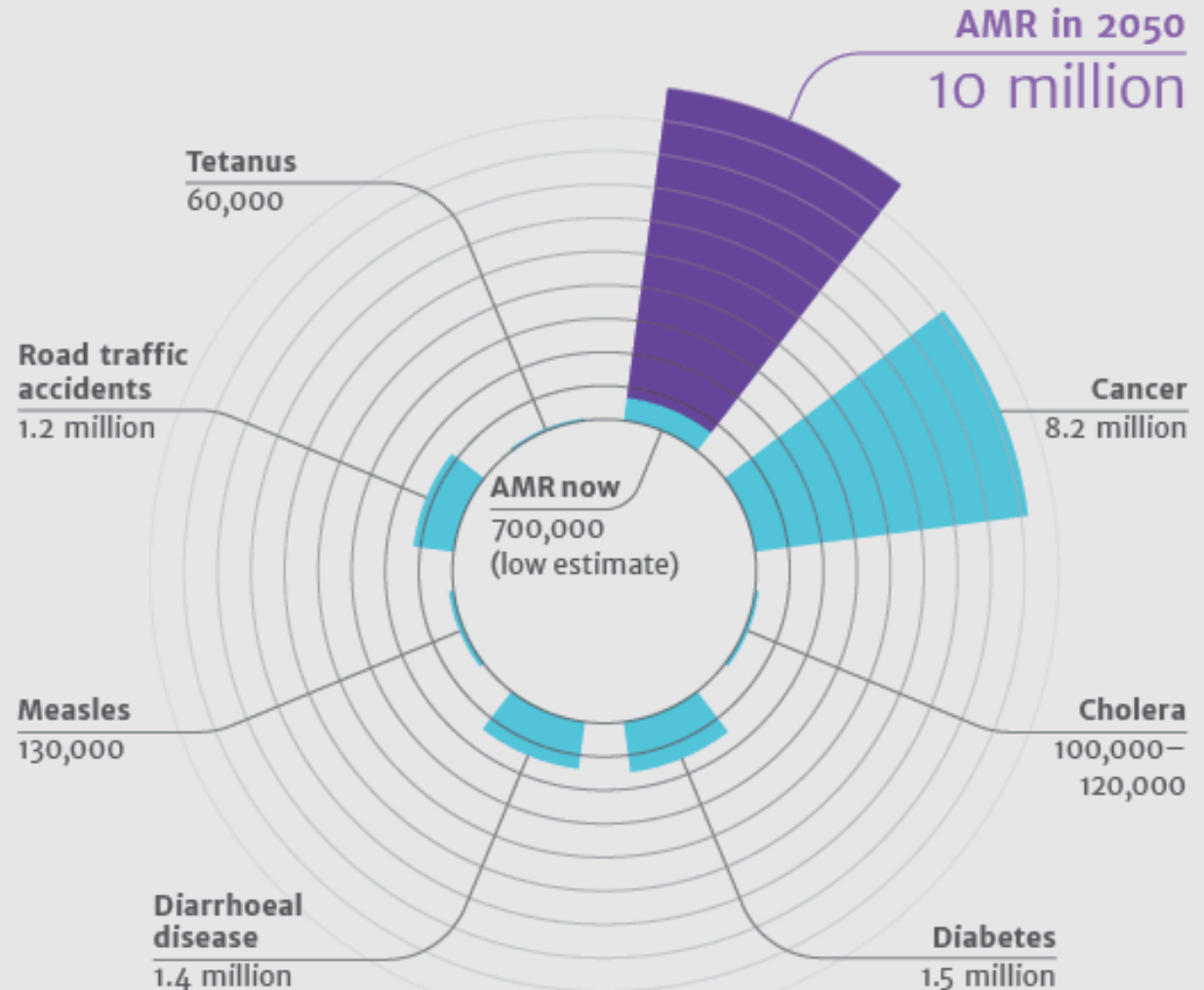
Source:

UK's "O'Neill Report May 2016"

Review on antimicrobial resistance –Tackling crisis for the health and wealth of nations

Deaths attributable to AMR every year compared to other major causes of death

Associated with total GDP loss of USD\$100.2 trillions



Accreditation Canada Required Organizational Practices

Medication management standards since 2013

Where?

Acute care, cancer care,
long term care facilities

Who?

ASP team, pharmacy,
medical staff, nursing,
infection control,
microbiology, hospital
administration

How?

Audit and feedback; formulary
management; tracking antimicrobial
use; local guidelines (empiric
regimens); de-escalation;
IV-to-PO; dose optimization
(pharmacokinetics/pharmacodynamics)

Transparent, ongoing evaluation of
program, with feedback to stakeholders



But what about those outside of hospitals?



- On average, 65% Canadians filled an Rx for antibiotics in 2014
- Community pharmacy dispensing accounts for 93% of all antimicrobial use
- \$786 million spent in 2014
- On antimicrobial consumption, Canada ranked 12th out of 31 countries (by increasing consumption level)

But what about those outside of hospitals?



Pharmacists in all practice settings are agents of change for antimicrobial stewardship!

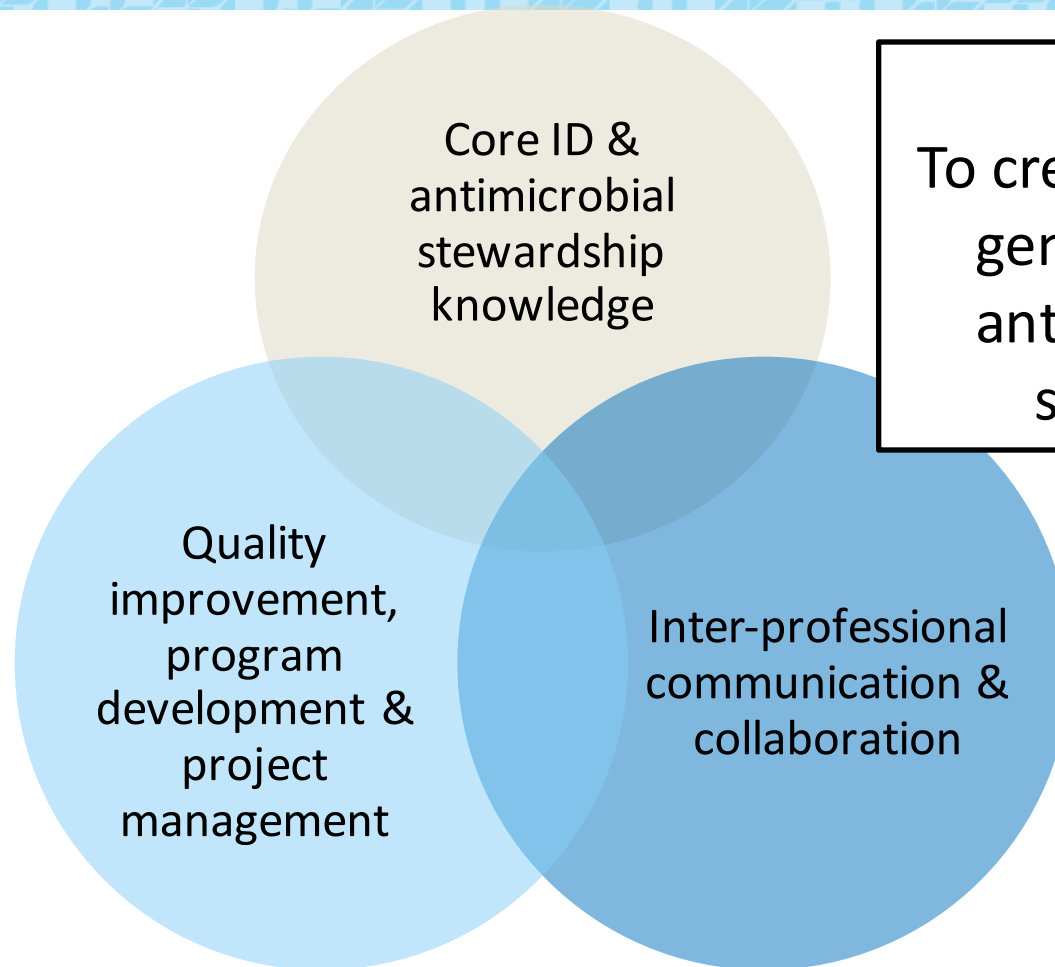
- On average, 65% of all antibiotics in 2014
- Community pharmacies are agents of change for 93% of all antimicrobial use
- \$786 million spent on antimicrobials for 93% of all
- On antimicrobial stewardship, Canada ranked 12th out of 31 countries (by population level)



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Three key domains



Goal:
To create the next generation of antimicrobial stewards

Core ID knowledge & antimicrobial stewardship principles

- “Bread-and-butter” infections presented in different populations
 - General medicine (includes oncology); ICU; paediatrics; long-term care residents
 - 10 case study sessions → output = recommendation on antimicrobials made (wearing the hat of the ASP pharmacist or the clinical pharmacist) to the prescriber
 - Practise critical appraisal skills on current literature
 - Application of antimicrobial stewardship principles
 - Assessment: video assignment, case-based questions in exams

Inter-professional collaboration & communications

- Building effective inter-professional relationships
 - Understand communication styles among different health professions
 - What does it take to create professional rapport?
 - How can we play together nicely “in the sandbox”?
- Didactic lecture, interactive role play
- Assessment: video assignment; ASP “pitch”; stewardship, recommendation in exams

QI, program development & project management

- QI methodologies in the context of Antimicrobial Stewardship Program
 - Application of QI methods to create or refine an ASP
 - Understand how to change organizational culture
- Project management: stakeholder engagement, scope definition, project charter, deliverables
- “Dragons’ Den”: each team presents their proposal to a panel of judges (who in real life are experts in ASP)
- Assessment: proposal presentation, scenario-based questions in exams

Students' feedback on PHM383H

- Knowledge and skills on antimicrobial stewardship
 - “Material challenging but concepts were reinforced with case studies and regular evaluations”
 - “Loved the case studies”
- Learning experience
 - “Excellent learning experience”
 - “Particularly enjoy the QI group work”
 - “Dragons’ Den was a v. rewarding experience”
- Relevance to practice and transfer of skills
 - “I feel ready for my APPE rotations.”



- Work habits and styles of millennials
- Lack of preparation and participation in case study sessions from some students

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New for 16/17: incorporation of education technology

- Flipped classroom for 2 case studies
- Incorporation of Virtual Interactive Cases software for those two cases in class (example of cases made with the software <http://pie.med.utoronto.ca/vic/demo/pharmacycases>)

Patient Presentation

DTP and Care Plan

Patient Chart Orders Communication Lab/Test Results Diagnostic Imaging

Patient

Contract All Expand All

→ Patient Interview Best Possible Medication History (BPMH)

- Do you take any prescription medication?
- Do you check your blood sugar at home?
- Do you check your blood pressure at home?
- When was the last time you had your INR checked?
- Do you take any medications you can buy without a prescription?
- Do you take any vitamins, minerals or herbal supplements?
- How is your pain?
- Do you take any medications that are not oral? such as patches or creams? eye/ear/nose drops? injections? inhalers?
- When was the last time you had a Bone Mineral Density test?

Time: 00:08:00 Cost: \$24

HospPhmAsthmaCase1

Licensed for use by the University Health Network.

Developed by Perioperative Interactive Education (PIE) - <http://pie.med.utoronto.ca>

Summary

- PHM 383H is a year 3 elective dedicated to antimicrobial stewardship
- Goal: to create the next generation of pharmacists with skills and knowledge in antimicrobial stewardship, regardless of their practice settings
- Addresses 3 key domains: core ID knowledge and antimicrobial stewardship principles; QI/program development and project management; inter-professional collaboration and communication
- Next iteration: education technology (VIC) in the classroom to improve participation, as a launching point to generate discussions