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

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Faculty Session B
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?
- To describe the curricular design and evolution of “Introduction to Antimicrobial Stewardship”
  - 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
- To minimize adverse events associated with antimicrobial use / to promote patient safety

Rising abx resistance + Lack of effective abx = Major challenge to patient care
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)

Source: Human antimicrobial use monitoring in Canada. Key highlights for 2014
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Pharmacists in all practice settings are agents of change for antimicrobial stewardship!

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Three key domains

Core ID & antimicrobial stewardship knowledge

Quality improvement, program development & project management

Inter-professional communication & collaboration

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 $\Rightarrow$ 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.”
Challenges

- 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](http://pie.med.utoronto.ca/vic/demo/pharmacycases))
• 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