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Antimicrobial Stewardship in Primary Care:

Factors Associated with Potentially Inappropriate Antimicrobial Prescribing

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MaPCReN
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Objectives

- To assess patient, provider, or practice factors are associated with inappropriate prescribing in Manitoba
- Measuring adherence to up to date antibiotic prescribing guidelines
- To establish baseline information on antimicrobial prescribing to inform Antimicrobial Stewardship Programs (ASP)

Why is Antimicrobial Stewardship Important?

- Misuse of antibiotics harms patients
  - adverse drug events, economic impacts, promotion of resistant organisms, and risk of C. difficile diarrhea
- Antimicrobial stewardship programs (ASP) are systems-based approaches to promote the optimal use of antibiotics and safe patient care.
  - Establishing benchmarking data is imperative to gauge the impact of future ASP initiatives in the community

Methods

- Retrospective analysis was conducted using the Manitoba Primary Care Research Network (MaPCReN) repository
  - Representing over 40 primary care offices, representing over 250 providers and over 230,000 patients in Manitoba.
- Matched diagnosis to antimicrobial prescription
  - Group 1: Likely Bacterial Infections
  - Group 2: Likely Viral Infections

Results

- Approximately 17% of physician visits were associated with an inappropriate prescription of an antimicrobial
- Group 1: Likely bacterial infections
  - 60% of prescriptions potentially inappropriate
- Group 2: Likely viral infection
  - 14.8% potentially inappropriate

Group 1: Likely Bacterial Infection

- Antimicrobial prescription deemed likely indicated

Appropriate Antimicrobial Prescribing of "Likely Bacterial Infections "		
Diagnosis	Prescription in Accordance with Guidelines	
	Yes	No
Urinary Tract Infection	40.3%	59.7%
Pharyngitis	71.4%	28.7%
Skin/Soft Tissue Infection / Cellulitis	48.3%	51.7%
Pneumonia	11%	**89%**

- Antimicrobial type and prescription duration in accordance with IDSA Guidelines

Inappropriate Prescribing of Bacterial Infections

- 69% of inappropriate prescriptions the incorrect antimicrobial was prescribed
- 25% of inappropriate prescriptions prescribed for a duration longer than suggested

More about Bacterial Infections…

- Most frequent Rx inappropriately prescribed:
  - Macrolides (44%)
  - Beta-lactams (21%)
  - Fluoroquinolones (16%)
- Higher odds of inappropriate prescription among female patients
  - 30% of female patients had an inappropriate prescription
- Prescriber and practice factors not associated

Group 2: Likely Viral Infection

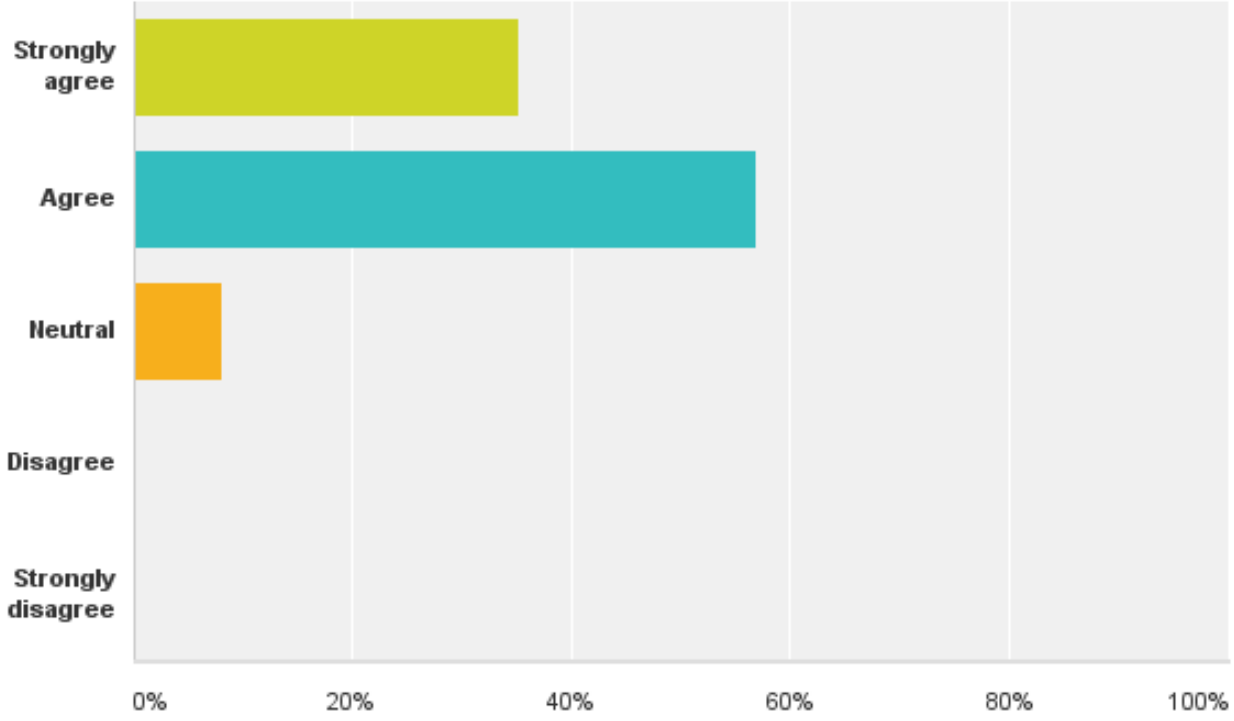
Appropriate Antimicrobial Prescribing of “Likely Viral Infections “	
Diagnosis	Appointments with Associated Prescriptions
Acute mild-to-moderate sinusitis	**37.1%**
Acute laryngitis and trachealis	1.1%
Upper respiratory tract infection	**31%**
Bronchitis	**28%**
Acute rhinitis	0.4%
Nasopharyngitis	1%
Influenza	1%

Inappropriate Prescribing of Viral Infections

- 14.8% prescriptions written for viral infections
- Largely written for:
  - Beta lactams (46%)
  - Macrolides (39%)
- More likely among rural practices
- Odds ration increased in patients with a greater number of co-morbidities and more frequent office visits

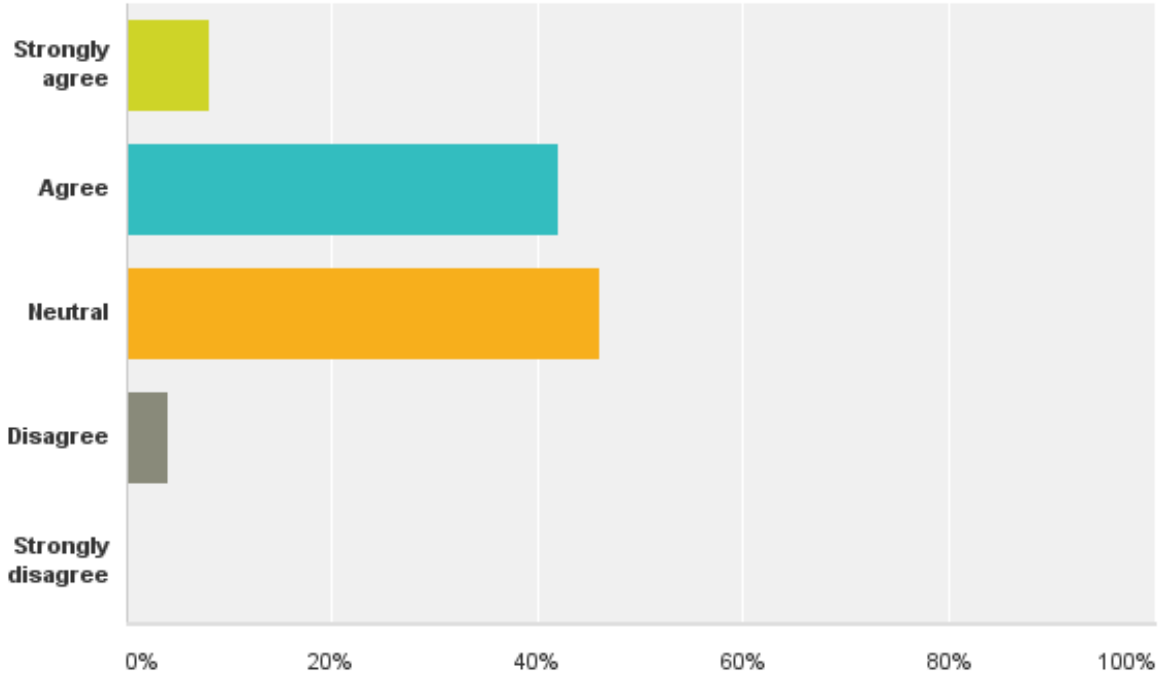
Q14 Overall, antibiotics are over-prescribed to children in Canada.

Answered: 74 Skipped: 2



Q15 Overall, antibiotics are over-prescribed to children at Children's Hospital in Winnipeg.

Answered: 74 Skipped: 2



Why is this important?

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- Province wide (and National/International) issue
  - Majority of patient, provider and practice factors were not associated with inappropriate prescribing

- Collaboration with primary care stakeholders will be key in promoting practice change and establishing dedicated stewardship resources that will benefit all patients in terms of optimal antimicrobial use


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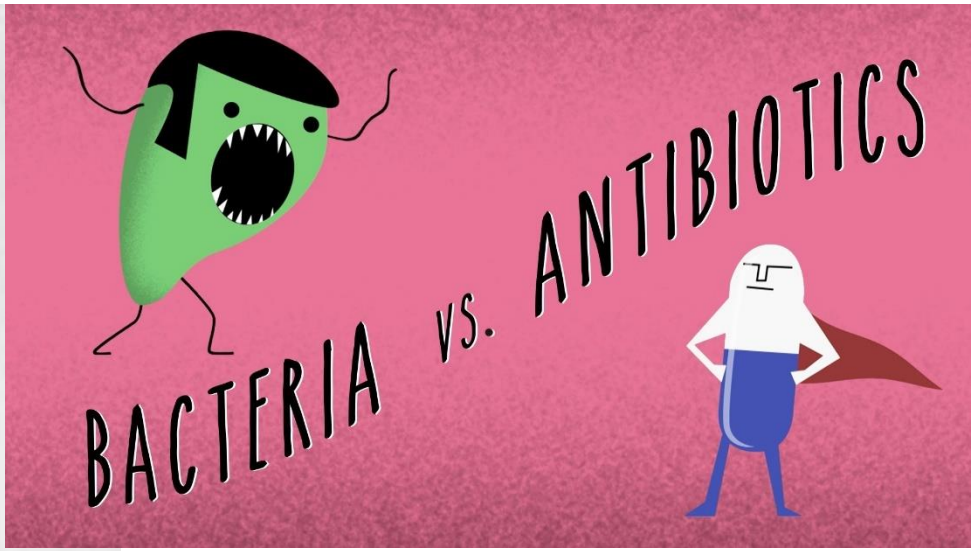

BACTERIA vs. ANTIBIOTICS

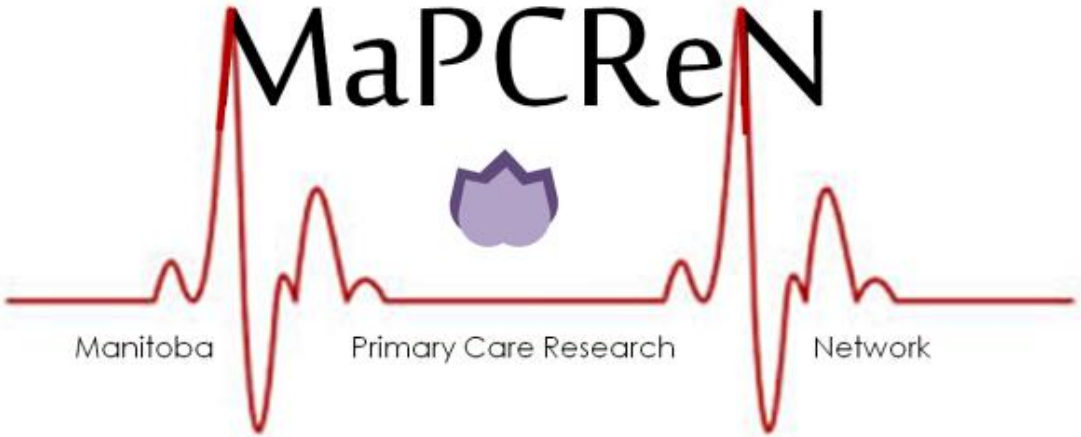
Symptom-Free Pee: LET IT BE

A national initiative to stop inappropriate antibiotic use for asymptomatic bacteriuria in long-term care residents.

For more direction and guidance:
www.ammi.ca
#SymptomFreeLetItBe

AMMI™ Canada

QUESTIONS?



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