ANTIMICROBIAL STEWARDSHIP IN PRIMARY CARE:

FACTORS ASSOCIATED WITH POTENTIALLY INAPPROPRIATE ANTIMICROBIAL PRESCRIBING

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Objectives

• To assess patient, provider, or practice factors 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

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Prescription in Accordance with Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Urinary Tract Infection</td>
<td>40.3%</td>
</tr>
<tr>
<td>Pharyngitis</td>
<td>71.4%</td>
</tr>
<tr>
<td>Skin/Soft Tissue Infection / Cellulitis</td>
<td>48.3%</td>
</tr>
<tr>
<td><strong>Pneumonia</strong></td>
<td><strong>11%</strong></td>
</tr>
</tbody>
</table>

- 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

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Appointments with Associated Prescriptions</th>
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</thead>
<tbody>
<tr>
<td>Acute mild-to-moderate sinusitis</td>
<td>37.1%</td>
</tr>
<tr>
<td>Acute laryngitis and trachealis</td>
<td>1.1%</td>
</tr>
<tr>
<td>Upper respiratory tract infection</td>
<td>31%</td>
</tr>
<tr>
<td>Bronchitis</td>
<td>28%</td>
</tr>
<tr>
<td>Acute rhinitis</td>
<td>0.4%</td>
</tr>
<tr>
<td>Nasopharyngitis</td>
<td>1%</td>
</tr>
<tr>
<td>Influenza</td>
<td>1%</td>
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</tbody>
</table>
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?

• 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
EXPLORER INNOVATOR PIONEER ADVENTURER VISIONARY TRAILBLAZER

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
QUESTIONS?

MaPCReN

Manitoba Primary Care Research Network
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