Background

- Nearly 154 million ambulatory encounters in the United States result in an outpatient antibiotic prescription annually, 30% of which are unnecessary.1
- The remaining 70% of prescriptions may benefit from optimization in antibiotic selection, in accordance with clinical practice guideline recommendations.2
- The CDC Core Elements of Outpatient Antibiotic Stewardship recommend tracking and reporting prescribing practices, particularly for high-priority infections.3
- Cleveland Clinic Health System has developed an institutional report which tracks prescription issuance rate and assessment of antibiotic selection for 4 common infectious diagnoses.

Objectives

1. Calculate the percent of outpatient encounters that resulted in issuance of ≥ 1 antibiotic prescription for diagnoses of otitis media, pharyngitis, sinusitis, and urinary tract infection (UTI).
2. Of outpatient encounters in which a prescription was issued, calculate the percent of guideline-concordant versus guideline-discordant antibiotic selection.

Methods

Study Design

- Observational pharmacoepidemiologic study from January 1, 2016 – March 1, 2017
- Outpatient prescribing data from 33 care institutes, 106 ambulatory sites, and 1,400 Cleveland Clinic-affiliated prescribers in Northeast Ohio.

Data Collected

- Encounter location and date
- Encounter diagnosis (otitis, pharyngitis, sinusitis, UTI)
- Encounter type (office/telephone)
- Age group (0-19, 20-64, 65+)
- Prescriber and associated department

Report Structure

- Encounter Diagnosis Code: Otitis Media, Pharyngitis, Sinusitis, UTI
- Encounter Location: Inpatient, Outpatient
- Encounter Type: Office, Telephone
- Age Group: 0-19, 20-64, 65+
- Antibiotic Prescribed

Guideline-Concordant Antibiotic Selection by Allergy Status

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>No Penicillin Allergy</th>
<th>Penicillin Allergy Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otis media</td>
<td>3354/46451 (52%)</td>
<td>678/1993 (34%)</td>
</tr>
<tr>
<td>Pharyngitis</td>
<td>7014/12753 (55%)</td>
<td>2848/3930 (84%)</td>
</tr>
<tr>
<td>Sinusitis</td>
<td>24942/34989 (70%)</td>
<td>7009/11354 (62%)</td>
</tr>
<tr>
<td>UTI</td>
<td>5884/11768 (50%)</td>
<td>1885/3696 (51%)</td>
</tr>
</tbody>
</table>

Guideline-Concordant Antibiotic Selection (n = 86,394 encounters)

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>National Estimate2</th>
<th>Cleveland Clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ottis Media</td>
<td>69%</td>
<td>86%</td>
</tr>
<tr>
<td>Pharyngitis</td>
<td>72%</td>
<td>85%</td>
</tr>
<tr>
<td>Sinusitis</td>
<td>52%</td>
<td>78%</td>
</tr>
<tr>
<td>UTI</td>
<td>70%</td>
<td>82%</td>
</tr>
</tbody>
</table>

Conclusion

- Tracking of outpatient prescribing data revealed a high antibiotic prescription rate for four common diagnoses.
- Use of guideline-discordant antibiotics was also prevalent and commonly consisted of macrolides, fluoroquinolones, tetracyclines, and cephalosporins.
- These data provide an important baseline that underscores the need for outpatient stewardship and facilitates implementation of targeted prospective interventions.

References