Anatomy of An Overdiagnosis: Sinusitis

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Presentation
Overview

• Background of Problem
• Project Goal
• Project Methods
• Results/Findings
• Discussion/Conclusion/Next Steps
• Acknowledgments
Antibiotic Overuse and Sinusitis

• Antibiotic overuse for Upper Respiratory Infections (“URI”) is a public health concern

• Sinusitis is commonly overdiagnosed, resulting in antibiotic overuse

Pathway to “evidence-based” sinusitis diagnosis

1. Nasal symptoms & cough ≥ 10 days without improvement
   - Yes
   - No

2. Length of illness ≥ 3 days with nasal discharge that is not clear and persistent OR high fever
   - Yes
   - No

3. Not sinusitis

4. Sinusitis
Project Goal

• Because reductions in antibiotic use for sinusitis rest on communication of the illness history, we examined this communication in URI visits with and without sinusitis diagnoses
Data

- Surveys/videos for 100 Pediatric URI Visits of Southern California children 0-10 years of age
  - Selected for physician diagnosis of
    - URI diagnosis (n=80)
    - Sinusitis diagnosis (n=20)
- Coded data reflecting whether physician diagnosis met criteria for being “evidence-based” diagnosis
  - Only 4 of the 20 sinusitis diagnosis met “evidence-based” diagnosis
Assessing Illness History

• Create and apply illness history coding scheme to communication in visit videos
  • Salient components of illness history
    • length of illness
    • fever
    • cough/nasal symptoms
    • face/dental pain
  • 1 of 2 trained coders
  • Double coded 20% (n=20) for intercoder reliability
Analysis

- Cramer’s phi for intercoder reliability of illness history components
- Chi square to compare proportion of sinusitis and URI diagnosis visits containing communication of key illness history components
Parent Characteristics (n=100)
MD Characteristics (n=31)
Intercoder Reliability

• Intercoder reliability for illness history communication components was “almost perfect”

<table>
<thead>
<tr>
<th>Communication Event</th>
<th>Phi</th>
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<tbody>
<tr>
<td>Length of Illness</td>
<td>0.97</td>
</tr>
<tr>
<td>Cough</td>
<td>0.97</td>
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<tr>
<td>Nasal Symptoms</td>
<td>0.95</td>
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How Diagnosis Relates to Illness History

• Coded Communication Criteria
  • Length of Illness discussed in 8 (50%) of 16 videos diagnosed with sinusitis that did not meet “evidence-based” diagnosis
  • Length of Illness discussed in 4 (100%) of the 4 videos with “evidence-based” diagnosis of sinusitis
  • Length of Illness discussed in 57 (72%) of the 80 videos diagnosed as URI

• Chi-Square results: P=.331
Discussion/Conclusion

• Illness history communication can be reliably assessed from visit videos
• Length of illness communication not significantly different between sinusitis and URI diagnosed videos
• Limitations
  • Small sample size
  • Cluster of physician diagnoses
Next steps

• Complete analysis relating diagnosis to remaining illness history items

• Based on findings, develop and pilot test an illness history query for triage in pediatric offices
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