Reducing Outpatient Antibiotic Prescribing for Adult Patients with Acute Respiratory Infections

Joan Guzik, MBA, CPHQ; Pooja Kothari, RN, MPH; Misha Sharp, MPH
United Hospital Fund

Background
Antibiotic resistance is a major public health threat that leads to an estimated 2 million infections and 23,000 deaths per year in the U.S. Approximately 30% of outpatient antibiotic use in the United States is unnecessary, with many prescriptions written for respiratory conditions, such as acute bronchitis, for which antibiotics are generally not indicated. The unnecessary use of antibiotics contributes to the growing global problem of antibiotic resistance.

Aim
Improve appropriate outpatient antibiotic prescribing for adults (>18 years) with acute respiratory infections (ARIs) by assessing antibiotic prescribing practices and implementing antibiotic stewardship interventions.

Project Design
United Hospital Fund (UHF), a non-profit organization working to build a more effective health care system for all New Yorkers, developed a grant initiative to support a learning collaborative aimed at creating outpatient antibiotic stewardship interventions and decreasing inappropriate prescribing; grant funding for this initiative totaled over $650,000.

Seven New York City area hospitals and their 34 hospital-owned practices participated in an assessment of antibiotic prescribing and implemented antibiotic stewardship interventions using the Centers for Disease Control and Prevention’s core elements of outpatient antibiotic stewardship as a framework.

Multidisciplinary project teams participated in collaborative in-person learning sessions and webinars which enabled them to share activities and best practices. Pre- and post-intervention data collection and collaborative activities allowed the outpatient practices to test, develop, implement and evaluate interventions.

The teams used the following tools to gather information on antibiotic prescribing:

- Assessment of Current Antibiotic Stewardship Practices: patients
- Chart Abstraction: assessed antibiotic use via a structured format to guide chart review. Practices reviewed a minimum of 30 randomly selected charts for patients with ARIs.
- Survey of Antibiotic Prescribers: gathered prescribers’ knowledge of antibiotic utilization, with a focus on decisions to prescribe and antibiotic selection, dose, and duration.
- Patient Survey: gathered patients’ knowledge about antibiotic resistance and assessed provider-patient communication via a survey translated into 6 languages.

Interventions
After collecting and reviewing antibiotic prescribing data during the baseline period, teams developed an antibiotic stewardship action plan which outlined several types of interventions to pilot and implement.

Results
- Overall antibiotic prescribing decreased from 31% to 26% (p < 0.05)
- Five of seven hospitals/health systems decreased antibiotic prescribing for ARIs following implementation of antibiotic stewardship interventions
- A large decrease in prescribing for bronchitis, not specified (19 percentage points) and acute sinusitis (10 percentage points)
- A decrease in prescribing was observed for macrolides, which are typically not the first-line agent for most of the ARI diagnoses that were reviewed
- Gaps remain in patients’ understanding about antibiotic use – which conditions require antibiotics and appropriate use of antibiotics

Lessons Learned
- Leadership support, actively engaged clinical champions, and multidisciplinary teams played a key role in the establishment of antibiotic stewardship interventions.
- Considerations about clinic workflow, staffing, and resources were important and led to tailored interventions at each outpatient practice
- For hospitals/health systems that drove large decreases in prescribing, a majority of their practices implemented:
  - Provider feedback reports
  - Face-to-face educational training
  - Communications skills training
  - Patient education interventions
- Next steps to address gaps in knowledge for patients and providers – practices plan to continue educational sessions, focus on patient education especially during flu season, recruit more clinical champions, use clinical decision support and guidelines, and implement provider feedback reports and incorporate them into the existing IQ infrastructure.

References

Acknowledgements
We would like to thank our faculty advisors, Dr. Belinda Ostronski, MD, Medical Director, NYU Rady Children’s Hospital, and Dr. Anne-Marie Audet, Senior Medical Officer at United Hospital Fund for their strategic input and guidance. We would also like to thank our colleagues at the UHF Quality Institute for their advice and support.

We would like to acknowledge our participating hospitals/health systems: Interfaith Medical Center, Methodist Health Network, Memorial Sloan Kettering Cancer Center, Montefiore Medical Center, Mount Sinai Health System, New York Presbyterian/Queens, Northwell Health, NYU Langone Medical Center, and Wyckoff Heights Medical Center.

doi: 10.1017/ic.2018.227