

Spring 5-3-2019

# Treating Acute Bronchitis in Primary Care

Haylie Patterson

Stacy Wieland

*Southern Illinois University Edwardsville*

Follow this and additional works at: <https://spark.siu.edu/dnp/projects>

Part of the [Nursing Commons](#)

---

## Recommended Citation

Patterson, Haylie and Wieland, Stacy, "Treating Acute Bronchitis in Primary Care" (2019). *Doctor of Nursing Practice Projects*. 67.  
<https://spark.siu.edu/dnp/projects/67>

This DNP Project is brought to you for free and open access by the School of Nursing at SPARK. It has been accepted for inclusion in Doctor of Nursing Practice Projects by an authorized administrator of SPARK. For more information, please contact [magraser@siue.edu](mailto:magraser@siue.edu).

Antibiotic Stewardship for Acute Bronchitis: Lessons Learned

Southern Illinois University Edwardsville N697

Haylie Patterson and Stacy Wieland

## **Antibiotic Stewardship for Acute Bronchitis: Lessons Learned**

### **Introduction to the Problem**

Primary care practitioners should be confident in their ability to assess, diagnose, and appropriately treat patients with consideration to evidence-based practice guidelines. There has been a significant rise in inappropriate antibiotic prescribing in the United States with at least 30 percent of antibiotics prescribed deemed unnecessary (Fiore, Fetic, Wright, & Ferrara, 2017). Due to multiple factors, clinicians are inappropriately prescribing antibiotics for the treatment of acute bronchitis. Over-prescribing antibiotics for viral illnesses such as acute bronchitis leads to antimicrobial resistance, unwanted side effects and higher costs. Antimicrobial resistance is the most concerning result of inappropriate prescribing habits because it reduces the effectiveness of how infections are treated.

### **Literature Review**

The United States has seen a steady rise in inappropriate antibiotic prescribing practices, with at least 30 percent of antibiotics deemed unnecessary and lacking evidence based (Fiore et. al., 2017). Inappropriate antibiotic prescribing is a major concern in healthcare today because it can lead to antimicrobial resistance, unwanted side effects, and higher costs (Fiore et al., 2017). Each year, at least 2 million people become injected with bacteria that are resistant to antibiotics and at least 23,000 people die each year as a result of these infections (Ness, Price, Currie, & Reilly, 2016). Most of these unnecessary antibiotics are being prescribed for viral respiratory conditions, which do not respond to antibiotics [The Centers for Disease Control and Prevention (CDC), 2017]. One of the most common acute respiratory conditions associated with inappropriate

antibiotic prescribing is bronchitis (Fiore et al., 2017). Acute bronchitis is a self-limiting inflammation of the large airways that presents with cough that can last for up to three weeks (Zoorob, Sidani, Fremont, & Kihlber, 2012). The mainstay of treatment for acute bronchitis is symptom management and supportive care. Symptom management may include beta-2 agonists bronchodilators and antitussive agents for select patients. Acute bronchitis will resolve on its own without antibiotic use (CDC, 2017). “Using antibiotics when not needed will do more harm than good” (CDC, 2017, p.2). Patients should be educated that an antibiotic will not help them get better but the following may ease their symptoms: rest, fluids, humidifier, throat lozenges, and over the counter cold medications.

### **Project Methods**

Antibiotic prescribing trends for a Midwestern rural clinic were obtained through a retrospective and prospective analysis. The retrospective data revealed patients that presented to this Midwestern rural clinic were prescribed antibiotics such as Azithromycin, Amoxicillin, Augmentin, and Doxycycline for a diagnosis of Acute Bronchitis (J20.9). The primary aim of this project was to develop and implement a decision tool to help guide primary care providers in reducing rates of antibiotics prescribed for the treatment of acute bronchitis. A decision flowsheet for the diagnosis and treatment of acute bronchitis was implemented from November 1st, 2018- February 28th, 2019. Two physicians and one nurse practitioner from two different clinical sites were included in the project. Criteria for inclusion: patient age between 18-64 years old and ICD 10-CM code of acute bronchitis. Exclusion criteria included adolescent or pediatric patients who are 17 years of age and younger, patients greater than 64 years of

age, patient with chronic pulmonary disease, immunodeficiency, and cancer. The project was submitted to Southern Illinois University Edwardsville Institutional Review Board (IRB) and qualified for exemption.

### **Evaluation**

Unfortunately, there were multiple barriers that prevented the project from displaying its full potential. The initial barrier was the lack of connection of the administrators and the physicians. Administrators were eager to implement this project and volunteered clinic participation. The physicians that were volunteered for this project did agree to participate but did not realize how much time and effort would be involved. Continued efforts were made to engage these providers as partners in the project. However, the demands and responsibilities of a primary care physician leave little time to commit to outside projects. Several attempts were even made with administrators at this clinic site, but they chose not to attend any meetings held with the providers.

After multiple failed attempts to engage family practice clinics, two physicians and one nurse practitioner did agree to work in partnership to help identify prescribing practices for acute bronchitis. Initially, a retrospective chart review was provided to analyze how many antibiotics were prescribed for acute bronchitis between November 1<sup>st</sup>, 2017 and February 28<sup>th</sup>, 2018. Between the three providers, a total of 130 patients were seen with respiratory complaints. Data revealed a total of thirty-eight patients (29%) were diagnosed with acute bronchitis. Twenty-five of those patients (65%) were given antibiotics for a diagnosis of acute bronchitis.

Project expectations and requirements were discussed with each provider. Despite committing to the project, one physician did not use any of the flow sheets and

the other physician used only 5 flowsheets. The nurse practitioner was able to complete 28 flowsheets between November 1<sup>st</sup> and February 28<sup>th</sup>, 2019. However, only 11 flowsheets met the criteria for this project. Of those, five of the 11 patients were prescribed an antibiotic.

Another barrier for this project was high productivity demand from the providers. On an average day one provider will see 40 patients. The high patient demand made providers feel pressured to prescribe antibiotics for acute bronchitis because of the patient expectation of receiving an antibiotic and the limited time to educate patients about unnecessary antibiotic treatment.

Among the flow sheets, acute sinusitis was coded along with acute bronchitis for 36% of those who were prescribed an antibiotic. In order to justify giving an antibiotic, providers coded for both acute sinusitis and acute bronchitis regardless of the patient's true presentation. One physician stated clinical judgement outweighed current practice guidelines and acknowledged he would code for acute sinusitis in order to prescribe antibiotics. Improper coding significantly affected the validity of the findings. Based on this finding, it could not be determined how many patients were prescribed antibiotics for acute bronchitis. Therefore, statistical analysis was not performed because of improper coding for acute bronchitis.

In retrospect, changes could have been implemented that may have improved the outcome of the project. Further engaging the physicians and the nurse practitioner, as well as the registered nurses may have resulted in improved project compliance. Instead of sending emails as correspondence, face to face communication would be preferred. In addition to improving outcomes for this project, providing educational brochures for the

providers to handout to patients or displaying educational material in the office could have helped educate patients about bronchitis and their expectation for treatment. This may have saved time for providers in educating their patients about bronchitis and served as a helpful reminder for the providers to remember to fill out the flowsheets.

### **Impact on Practice**

Over-prescribing antibiotics has a negative impact on the future of healthcare. Despite the knowledge of the consequences of inappropriate prescribing, physicians and nurse practitioners continue to prescribe antibiotics for acute bronchitis. More research is necessary and recommended to find if other providers are coding for additional illnesses in order to prescribe an antibiotic for acute bronchitis. How often is dual coding occurring?

### **Conclusions**

Regardless of the project outcome, the need to address the problem related to inappropriate coding and antibiotic prescribing practices is important. It is imperative to engage physicians and nurse practitioners in the effort to reduce unnecessary antibiotic administration. Creating discussion among prescribers, colleges, and patients and continuing to educate patients regarding viral infections and their treatment is an important in reducing misuse of antibiotics and creating antibiotic resistance.

### **Author Contact Information**

- Haylie Patterson- hapatte@siue.edu
- Stacy Wieland -stasmit@siue.edu

