

Introduction

- Acute RTI accounts for **14 million** visits to the emergency department annually
- Only **5-15%** of RTI cases are attributable to bacterial infection
- Evidence shows that practitioners are choosing more **broad-spectrum** antibiotics
- Current ACCP and CDC guidelines recommend against the use of antibiotics to treat RTI with non-bacterial etiology
- However, the frequency of prescriptions for antibiotics for acute bronchitis has decreased only modestly, from approximately **75 to 60** percent in the past decade
- Aim of the current study is to reduce unnecessary antibiotic prescribing for RTI focusing on common cold and acute bronchitis

Background and Significance

- Approximately **55%** of all money spent in the outpatient environment is attributed to antibiotics
- Antibiotic resistance adds **\$1383** to the cost of treating a patient with bacterial infection.
- Antibiotic resistance has an estimated national cost of **\$2.2 billion** annually
- 35,000** people in the U.S, and **700,000** worldwide die each year as a result of antibiotic-resistant infections.
- By **2050** annual global mortality rate will increase to **10,000,000** people
- Healthy People 2020: eliminate antibiotic prescribing for the sole diagnosis of common cold and acute bronchitis

Clinical Pathway

HPI

- Cough, with or without sputum >5days<3wks in most cases.

Medical history

- Vaccination history, travel history, and cigarette smoking
- Differentiate from comorbid conditions e.g GERD, asthma

Physical exam

- Fever suggests either influenza or pneumonia
- Focal consolidation, egophony, rales or fremitus on chest exam
- HR>100, RR>24, SaO2<95% and Age > 65yr

Diagnostic Test

- No role for routine chest x-ray, viral culture, serological assay, sputum culture, Gram stain or pulmonary function testing/spirometry

- Recommend specific symptomatic therapy: Cough suppressant, antihistamine, decongestant

Ideas Concerns Expectations Method

- Ideas:** Ask the patient about their ideas regarding diagnosis, treatment and prognosis.
- Concerns:** Ask the patient about their fears and worries
- Expectation:** Ask what the patient wants

Methods

Design

- Quality improvement project with pre- and post-intervention comparison

Study participants

- 15 physicians, 5 nurse practitioners, and 3 physician assistants.

Setting

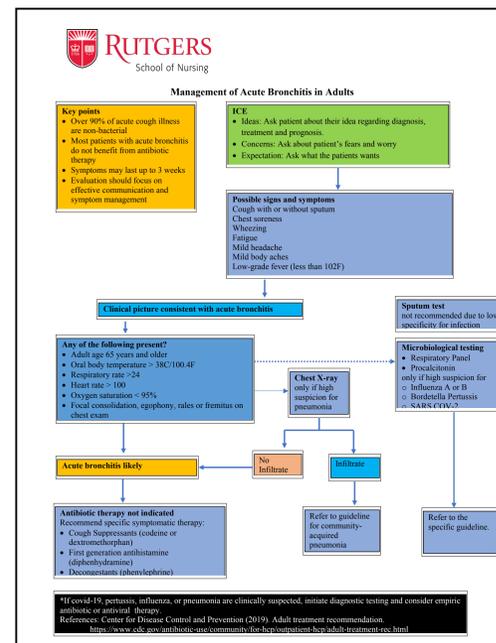
- Emergency room of a 451-bed, acute-care not-for profit hospital in northern New Jersey

Outcomes

- Antibiotic prescribing rate for RTI pre- and post-intervention, using patient records for visits with matching ICD codes for common cold and acute bronchitis during the study period n = 100
- 5 item Likert-type questionnaire to measure the attitudes of ED providers regarding the clinical pathway and ICE method.

Data Analysis

- Microsoft Excel and SAS statistical package Red Hat 64
- Non-parametric descriptive statistics to describe frequencies
- Chi squared test used to compare the frequencies of antibiotic prescribing between pre- and post- intervention periods.
- A p-value of less than 0.05 was considered statistically significant



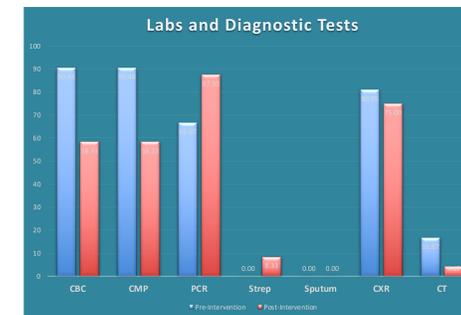
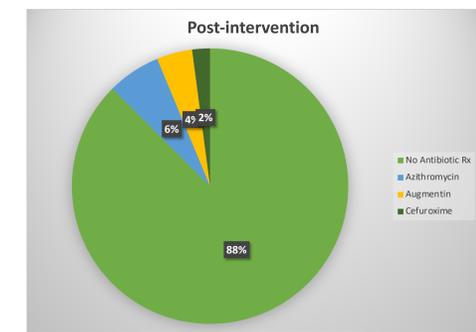
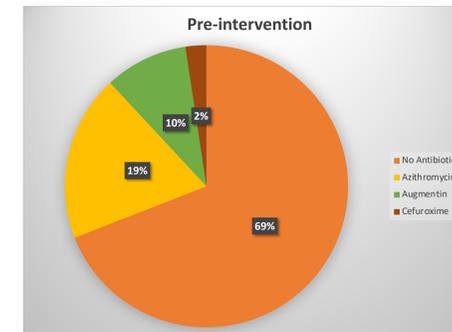
Diagnosis	Pre intervention	Post intervention
URI	6	23
Acute Bronchitis	36	25

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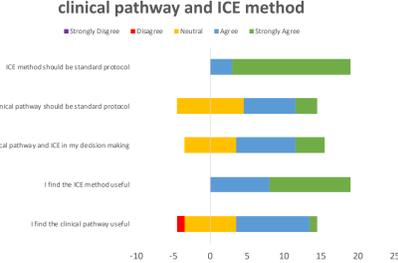
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Results

- Pre-intervention **42** patients were treated for RTIs compared to **48** post-intervention
- Statistically significant decrease in antibiotic prescribing from **30.95%** pre-intervention to **12.50%** post-intervention (**p=0.03**)
- Amoxicillin/Clavulanate was prescribed most frequently, followed by Azithromycin and Cefuroxime
- Reduction in utilization of labs and diagnostic tests, although not statistically significant (p= 0.07)
- 83%** of participants agreed and **16%** strongly agreed that ICE method should be a standard approach to patients with RTIS



Survey of ED providers on the use of the clinical pathway and ICE method



Conclusions and Implications

Conclusions

- Statistically significant reduction in antibiotic prescribing following the implementation of a clinical pathway and the ICE method
- Future studies should aim to replicate similar methods with larger sample size and follow-up to assess long-term effect

Implications

- Practice:** Training of the ICE method should be implemented on a regular basis. The study provides data to assess the performance of the Emergency Department in meeting guideline objectives regarding the diagnosis and treatment of RTIs
- Patient care:** Practical approach of using shared decision making to improve patient's outcomes
- Policy:** Organizations may use this data to develop broad policies to guide practice
- Economy:** Potential cost benefit to the patients and healthcare institutions

References

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