Does implementation of a local AECOPD treatment guideline improve patient orientated outcomes?

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Background
Published COPD guidelines highlight the importance of oxygen therapy, bronchodilators, corticosteroids and appropriate antibiotics in the treatment of acute exacerbations of COPD (AECOPD).¹,² We have previously reported that a local guideline implementation process increased awareness and usage of bronchodilators, systemic steroids and antibiotics by emergency physicians, respiratory therapists and nurses in our emergency department. We wished to see if this process had any effect on patient orientated outcomes, such as return rates and treatment failure rates.

Methods
This study was conducted at a tertiary hospital ED. Local COPD guidelines were developed by a quality improvement group. Guidelines were posted in the department. Educational sessions were provided for staff, and sign off was required. We conducted a retrospective chart review and looked at 1849 patient visits from Dec 2011 to Feb 2012 and Dec 2012 to Feb 2013.

Inclusion criteria were: history of COPD, age >40, MD diagnosis of AECOPD, COPD, LRTI or bronchitis; as well as two or more of the following: increased dyspnea, cough, production or change in sputum character for at least 2 days. Patient visits were excluded if they presented 30 days prior to the beginning of the study period or were treated outside our ED in the previous 30 days. Data were collected using a standardized abstraction tool, and captured exacerbation severity, as well as use of bronchodilators, systemic steroids and antibiotics.

For non-admitted patients, we recorded 30-day return rates and treatment failures occurring within 30 days of presenting to the ED. Treatment failure was defined as intensification of drug treatment, admission, intubation or death, within 30 days of ED discharge. Once a patient failed their initial ED treatment, they were excluded from the study for a period of 30 days from their discharge from hospital.

Pre and post implementation data were analyzed by Fisher’s exact tests.

Results
Overall, 86 non-admission patient visits were evaluated: 35 visits prior to implementation, and 51 post-implementation. In non-admitted AECOPD patients, prior to guideline implementation, 8/35 patients (23%; 12-39%) returned to the ED within 30 days for an AECOPD related complaint compared to 7/51 patients (14%; 7-26%; p=0.39) following implementation. Six of 35 patients (17%; 8-33%) failed their initial AECOPD treatment prior to implementation, compared to 5/51 patients (10%; 4-21%; p=0.34) following guideline implementation.

Conclusion
Our previous work has shown that the implementation process for a local COPD guideline successfully increased awareness, claims of use and antibiotic stewardship among emergency staff. However, improvements in patient oriented outcomes were not statistically significant in this small cohort of non-admitted AECOPD patients.