

Quality of Care for Patients Hospitalized with Acute Exacerbation of Chronic Obstructive Pulmonary Disease

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Problem

- Adherence to guideline recommendations for treating patients hospitalized with acute exacerbations of chronic obstructive pulmonary disease (AECOPD) has been associated with improved clinical and economic outcomes.
- Patients hospitalized with AECOPD undergo a variety of treatments, some of which are recognized as non-beneficial.
- The Centers for Medicare & Medicaid Services (CMS) designated COPD as a condition under the Hospital Readmissions Reduction Program (HRRP) in October 2014 to curtail COPD readmissions.
- Our academic hospital implemented a COPD transitions of care program to improve inpatient COPD care and reduce readmission rates.

Goals

- Our study aims to determine whether our program was associated with improvements in care quality for patients hospitalized with an AECOPD.
- This appraisal of our intervention will inform future iterations at our institution and potential dissemination to other conditions and contexts

Appraisal Design

- Single center, retrospective cohort study of care quality for our Medicare-bundled Payment for Care Innovation program.
 - Control period: 10/2013–9/2014
 - Intervention period: 10/2015–9/2018
- Quality of care metrics:
 - Non-recommended care: receiving ≥ 1 non-beneficial treatments, per GOLD guidelines
 - Recommended care: receiving all recommended treatments, per GOLD guidelines
 - Ideal care: receiving all recommended treatments + 0 non-beneficial treatments
- Analysis:
 - Chi Squared statistical analysis

For AECOPD admissions, the Global Initiative for Chronic Obstructive Lung Disease (GOLD) recommends:

- chest radiography
- systemic steroids
- bronchodilators
- antibiotics.

GOLD recognizes non-beneficial treatments as:

- methylxanthine bronchodilators
- sputum testing
- chest physiotherapy
- mucolytic medications

Results to Date

Quality of Care Outcomes	Control (n=72)		Intervention (n=209)		Total (n = 281)		p Value
	Number	%	Number	%	Number	%	
Non-recommended Care							
- 1 \geq Non-beneficial Treatments	24	33%	67	32%	91	32%	0.84
Recommended Care							
- All 4 Recommended Treatments	54	75%	165	79%	219	78%	0.49
Ideal Care							
- all 4 recommended + 0 non-recommended	35	49%	112	53%	147	52%	0.46
Readmission within 30 days (All-cause)	17	24%	27	13%	44	16%	0.03
ED visit within 30 days (All-cause)	13	18%	38	18%	51	18%	0.98

ED = Emergency Department

- No difference was found in any single beneficial or non-beneficial treatment
- No difference was found in 30-day hospital readmissions whether patient received non-recommended, recommended, or ideal care.
- No difference was found in 30-day hospital readmissions whether patient received a COPD consult note or 1 to 2-week outpatient follow-up appointment with COPD service

Conclusions and Next Steps

- 30-day readmissions to the same institution were significantly reduced between control and intervention periods.
- However, our measures of care quality did not improve significantly following implementation of a COPD readmission reduction program.
- This discordance suggests external factors or other uncaptured process measures beyond inpatient AECOPD treatments may have reduced readmissions.
- It should be recognized that quality of care metrics may have improved following intervention, but our study was underpowered to detect differences in any single metric.
- Future research is ongoing to identify interventions more likely to be successful at improving adherence to guideline-based treatment for patients hospitalized with AECOPD.

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