Care Quality for Patients with Chronic Obstructive Pulmonary Disease
in the Readmission Penalty Era

Presenting Author: Sukarn Chokkara
Co -Authors: Juan Rojas MD, Mengqi Zhu MS, Peter Lindauer MD, MSc, Valerie Press MD, MPH

Introduction

- Chronic obstructive pulmonary disease (COPD) is currently the third leading cause of hospital readmission in the US costing nearly 49 billion dollars in 2020.
- In October 2014, the Centers for Medicare & Medicaid Services (CMS) added COPD as a designated condition under the Hospital Readmissions Reduction Program (HRRP). This implemented a financial penalty for hospitals with excessive readmissions for COPD.
- While other work has examined the impact of the HRRP on readmission rates, this is the first to examine the impact of the HRRP on COPD quality of care.

Methods

- We conducted a retrospective cohort study using hospital admission data from the Premier Healthcare Database representing over 975 hospitals and 25% of US inpatient discharges ranging from 2010 – 2018.
- Inpatients (>40 years) admitted for COPD were determined using ICD-9 and 10 codes while patients with a secondary diagnosis of pneumonia were excluded. Additionally, patients with unavailable information were excluded.
- Quality of care, as determined by the American College of Physicians and the American College of Chest Physicians and the 2017 GOLD guidelines, was set into three categories: ideal care, recommended care, and nonrecommended care. (Fig. 1)

Fig. 1 - Diagram of care categories.

Table 1 - Baseline Patient Characteristics Before and After Hospital Readmissions Reduction Program (HRRP) COPD Designation.

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-HRRP</th>
<th>Post-HRRP</th>
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<tbody>
<tr>
<td>Number of Patients</td>
<td>662,842</td>
<td>285,508</td>
</tr>
<tr>
<td>Recommended care</td>
<td>474,338</td>
<td>216,575</td>
</tr>
<tr>
<td>Nonrecommended care</td>
<td>235,496</td>
<td>89,392</td>
</tr>
<tr>
<td>Ideal care</td>
<td>290,094</td>
<td>143,436</td>
</tr>
</tbody>
</table>

Results

- A total of 662,842 patients pre-HRRP and 285,508 post-HRRP meeting the inclusion criteria were obtained from the Premier database.
- In the pre-HRRP period, 72% of patients received recommended care, 36% non-recommended care, and 44% ideal care. In the post-HRRP period, 76% of patients received recommended care, 31% non-recommended care, and 50% ideal care. (Table 1)
- Following the designation of the COPD as a target condition under the HRRP, the rates of improvement in recommended care, non-recommended care, and ideal care all slowed. (Fig. 2)

Fig. 2 - This figure depicts the trends in ideal care, recommended care, and non-recommended care from 2010-2018.

Conclusion

- The analysis found that since a national policy change, i.e., CMS’ readmission penalties for excess rehospitalizations, there has been a decrease in the rate of increase for recommended and ideal care as well as an increase in the rate of nonrecommended care.
- Limitations:
  - The use of administrative data only allowed for us to study a maximum of 25% of nationwide inpatient encounters.
  - Significant decrease in patient encounters reported in 2017 and 2018.

Acknowledgements

- Funding source - Center for Healthcare Delivery Science and Innovation