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Reducing COPD Readmissions through the Implementation of a Guideline-Based Clinical Pathway: An Evidence-Based Practice Improvement Project

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Reducing COPD Readmissions through the Implementation of a Guideline-Based Clinical Pathway: An Evidence-Based Practice Improvement Project

HANNAH HALL, MSN, FNP-BC; ALLYSON NEAL, DNP, PMHNP-BC; KATIE GARDNER, DO

BACKGROUND
- Chronic obstructive pulmonary disease (COPD) is a leading cause of death worldwide. It is characterized by airway inflammation and damage that inhibits appropriate airflow.
- Exacerbations of COPD (ECOPD) hasten disease progression, and those requiring hospitalization have profound impacts on the patients.
- The adequate treatment of COPD is vital for the prevention of exacerbations and improving prognosis.

LOCAL PROBLEM
- East Tennesseans experience higher rates of COPD than the rest of the state.
  - Prevalence in TN: 8.6%
  - Mortality: 147.9 deaths per 100,000
- Community members at the project site identified that the inpatient management of ECOPD is inconsistent and discordant with the 2023 Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines.
- An algorithm was developed to facilitate decision-making. This was distributed to hospitalists and internal medicine specialists.

METHODS
- The Evidence-Based Practice Improvement Model was used to design and implement the project. The literature supports the use of algorithms to reduce readmissions.
- Plan-Do-Study-Act (PDSA) cycles were conducted through the planning and implementation phases.
- 30-day readmissions, length of stay, mortality, complications, and drug regimen guideline concordance were measured.
- Pre-intervention: January 2023
- Post-intervention: January 2024

RESULTS
- There were no statistically significant changes in any measure.
  - Guideline concordance did improve by 12.5%, which was a clinically significant change.

CONCLUSIONS
- The algorithm alone was not sufficient for the reduction of 30-day readmissions.
  - Guideline concordance improved
  - The project did not meet its specific aim.
- There were several limitations, including time constraints and workload for the project site departments involved.
- While this project did not achieve its aim, it demonstrates the need for sustained interventions.

Acknowledgments/Funding Disclosure:
Thank you to the project site for its support, as well as my community member and the departments involved. The project site provided funding for the pocket cards distributed.

30-day readmissions were not significantly affected by the implementation of the algorithm, but there was a clinically significant improvement in the guideline concordance for discharge maintenance bronchodilators.

<table>
<thead>
<tr>
<th>30-Day Readmissions</th>
<th>Guideline Concordance</th>
</tr>
</thead>
<tbody>
<tr>
<td>p = 1.00</td>
<td>p = 0.445</td>
</tr>
<tr>
<td>1/2023</td>
<td>1/2023</td>
</tr>
<tr>
<td>7/40 patients (17.5%)</td>
<td>19/40 (47.5%)</td>
</tr>
<tr>
<td>1/2024</td>
<td>1/2024</td>
</tr>
<tr>
<td>5/25 patients (20%)</td>
<td>15/25 (60%)</td>
</tr>
</tbody>
</table>

Mortality
- p = 0.558
  - 1/2023 – 1/40 (2.4%)
  - 1/2024 – 2/25 (7.4%)

Complications
- p = 0.795
  - 1/2023 – 13/40 (32.5%)
  - 1/2024 – 10/27 (37%)

LOS
- p = 0.401
  - 1/2023 – 4 days (median)
  - 1/2024 – 3 days (median)