Effect of Community Pharmacist-Led Disease State Education on Quality of Life and Symptom Control for Patients with COPD and Heart Failure

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BACKGROUND

- Realo Discount Drugs is a group of 18 community pharmacies serving eastern North Carolina with enhanced services.
- Coastal Carolina Health Care, PA (CCHC) is a multi-specialty group practice in the Coastal Carolina Quality Care Accountable Care Organization in Craven County, North Carolina that includes a network of physicians, nurses, and care managers.
- Individuals with COPD or heart failure are at high risk for hospital readmission, with the national readmission data approximating 20% for these conditions in the year 2013.
- Previous studies have shown pharmacist intervention with disease state education has improved symptom control and medication adherence.
- The Minnesota Living with Heart Failure Questionnaire (MLHFQ) and the St. George Respiratory Questionnaire for COPD (SGRQ-c) are used in clinical practice to assess quality of life in heart failure and COPD patients.

OBJECTIVES

- **Primary**: Assess the impact of pharmacist-led disease state education on disease specific quality of life and symptom control.
- **Secondary**: Assess impact of pharmacist intervention on medication adherence.

METHODS

**Study Design**: 120-day, prospective, cohort study at 3 outpatient CCHC clinics

**Inclusion Criteria**: Patients ≥18 years, English-speaking, with COPD or heart failure, enrolled in Medicare or were Medicare-eligible

**Exclusion Criteria**: Patients who were cognitively impaired

**Methods**

### Patient Demographics

<table>
<thead>
<tr>
<th>Patient Identifier</th>
<th>HF (n=1)</th>
<th>COPD (n=4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>70 64 67 66 75</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Male Female Male Female Male Female</td>
<td></td>
</tr>
<tr>
<td>Recent Hospitalization?</td>
<td>No No Yes No No</td>
<td></td>
</tr>
<tr>
<td>Current Smoker?</td>
<td>No Yes No No No</td>
<td></td>
</tr>
<tr>
<td>On Guideline-Recommended Therapy?</td>
<td>No No Yes Yes Yes</td>
<td></td>
</tr>
<tr>
<td>Number of DTPs Identified at First Visit</td>
<td>5 3 4 2 1</td>
<td></td>
</tr>
</tbody>
</table>

### RESULTS

#### Adherence

<table>
<thead>
<tr>
<th>Changes in Adherence</th>
<th>Average Missed Doses Per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient A</td>
<td>2 0 1 2</td>
</tr>
<tr>
<td>Patient B</td>
<td>3 1 2</td>
</tr>
<tr>
<td>Patient C</td>
<td>3 2 1</td>
</tr>
</tbody>
</table>

#### Quality of Life Questionnaires

**Heart Failure**

- **Baseline**: 59
- **Final**: 30

**COPD**

- **Baseline**: 22.7 18.3
- **Final**: 31.3 28.7

### DISCUSSION

- Patient A demonstrated a clinically significant 29 point decrease in pre- and post-MLHFQ questionnaire score, which is a 50.8% improvement on quality of life over 60 days.
- Patient B and Patient C demonstrated a clinically significant decrease in pre- and post- SGRQ-c scores by 4.4% and 2.6%, respectively, which is an average 3.5% improvement on quality of life over 60 days.
- In relation to adherence, patients reported increased adherence post-pharmacist intervention.
- Patients reported the log charts were efficient but failed to return them to the pharmacist appointment due to memory and motivational reasons.
- Positive feedback from the patients enrolled in the study consisted of improvements in disease state-specific knowledge and why they were taking the medications they were prescribed in relation to their disease state.
- Patient D and Patient E dropped out of the study due to lack of interest and inability to be contacted after first appointment.
- Strengths of the study include provider response to the involvement of a pharmacist and inter-professional collaborations.
- Some limitations of the study include the small sample size, duration of the protocol, and the educational materials used.

### CONCLUSION

As a result of mean reductions in the MLHFQ of 50.8% and SGRQ-c of 3.5%, pharmacist-delivered disease state education may lead to improved quality of life and symptom control for patients with COPD and Heart Failure.

### ACKNOWLEDGMENTS

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