Outcomes improvement analytics for Chronic Obstructive Pulmonary Disease (COPD)

The Chronic Obstructive Pulmonary Disease (COPD) is intended for clinical and medical directors; guidance and outcome improvement teams; and front-line clinical staff that are engaged in outcomes improvement for patients that have been diagnosed with COPD. Helps teams guide assessment and interventions, measure impact, and improve outcomes for patients with Chronic Obstructive Pulmonary Disease (COPD).

Data Sources

- EMR
Features and Benefits

- Stratification of patients currently admitted – provides relative 90-day readmission risk score with factors contributing to overall score
- Outcome metrics include mortality, readmission, LOS, ICU LOS, and cost per case.
- Optimize order set utilization across facilities, departments and various provider groups
- Process Interventions - tracks medication reconciliation, follow-up appointment scheduling, follow-up telephone calls, utilization of a pulmonary navigator, referrals to pulmonary rehab, palliative care, and other activities related to transitions in care.

Background and Problem Summary

COPD is the third leading cause of death in the U.S. and the fourth leading cause in Canada. It is the only major disease for which prevalence, hospitalizations, and mortality are currently increasing. COPD places a significant cost burden on patients and health systems.

- Medication management for COPD frequently deviates from guideline recommendations. Medication for COPD has shown to substantially reduce symptoms and improve quality of life—but approximately one-third of patients are not receiving any COPD-related drug therapy, and less than half receive guideline-directed care. Maintenance therapy in particular is underutilized, with only 30% to 35% of patients with COPD in private and public health insurance plans receiving prescriptions for maintenance therapy.
- Addressing barriers to guideline-adherent therapy can improve patients' lives and lower costs. Skepticism regarding benefits of treatment, clinical inertia—the failure to initiate or intensify therapy in response to need—and lack of familiarity with guidelines have emerged as common drivers of suboptimal medical management.
Intended Users

This app is intended for clinical and medical directors; guidance and outcome improvement teams; and front-line clinical staff that are engaged in outcomes improvement for patients that have been diagnosed with COPD.

Use Cases

- Two years ago the COPD Outcomes Improvement Team revised a COPD Admission Order Set and they are now wanting to update the Order Set with the goal of increasing ordering provider use by decreasing the time required to order and activate this Order Set. To streamline the Order Set, the team is interested uses the application to determine which: 1) orderable items should be default; 2) orders can be removed from the Order Set that since they are not routinely ordered; 3) defaulting orders that are currently unselected orders that are ordered routinely; and 4) orders that are currently preselected that should be unselected due to the frequency in unselecting these order(s) by the various ordering providers.
- The COPD Outcomes Improvement Team wanted to maximize the allocation of resources that could consistently be provided to patients with COPD. As part of this work, the team utilized analytics to identify patters in patients with COPD who were frequently readmitted to the hospital within 90 days of discharge. By being able to stratify patients who were at highest risk for readmission, clinicians were able to easily assign patients, early in the hospital stay, to appropriate levels of services and interventions based upon their individual risk score.

Opportunity Insights

- Reduction in readmission rates
- Reduction in Health resource utilization
- Decreased cost per case
- Decreased length of stay
- Improved Health-related quality of life
Potential Improvements

**Opportunity Identification**: Identify patients that are currently hospitalized with COPD in order for organizations to assign patients to appropriate set/intensity of services and interventions based upon risk for readmission

**Process Improvements**: Increase:

- Order set utilization across department and facilities
- Volume of patients with a diagnosis of COPD that have had appropriate confirmatory spirometry testing
- Volume of patients referred to pulmonary rehabilitation
- Volume of patients who have a COPD action plan

**Outcomes Improvement**: 

- Reduced readmission rates
- Reduced length of stay
- Decreased cost per case
- Improved patient experience and health-related quality of life