COPD: Focus on Management of Chronic Disease Post-Discharge
BACKGROUND

In an effort to improve the quality of care in patients with chronic obstructive pulmonary disease (COPD), the Centers for Medicare and Medicaid Services (CMS) has now included COPD-related 30-day hospital readmissions to the prior CMS Readmissions measures that were in place for acute myocardial infarction, heart failure, and pneumonia. This Readmission metric for COPD went into effect as of October 1, 2014, and is reported on Hospital Compare, a database with information about the quality of care at over 4,000 Medicare-certified hospitals across the country.

Hospital readmissions have been the focus of much attention from policymakers over the last several years as an opportunity to increase the quality of care provided to beneficiaries and decrease unnecessary health care costs and utilization. Nearly one-fifth (19.6%) of all Medicare fee-for-service beneficiaries are readmitted within 30 days of discharge from the hospital. Additionally mean COPD readmission rates across the nation range from 17-28% with the national average at 20.2%. However readmission rates have remained the same since 2010, costing an estimated 1.7 billion dollars each year, with hospitals receiving an average of $0.88 for every dollar spent from Medicare, the urgency to reduce readmissions for this population has become paramount.

Some readmissions are predictable components of a treatment plan, such as staged or planned surgeries, while others are due to the lack of a transition or post discharge plan of care. Others are unplanned but difficult to prevent. When patients go home, new and unexpected problems can arise, and some require an immediate trip back to the hospital.

Many readmissions can and should be prevented. They are the result of a fragmented system of care that lacks support for the patient as they leave the acute care setting. In addition, it fails to provide both the patient and the providers caring for them the information and recommendations necessary to successfully transition back to home and the community. This failure of the system leaves discharged patients to their own devices, often time unaware of their follow up care needs or unable to follow instructions they didn’t understand. Also, patients do not take their medications correctly, especially when changes have been made during hospitalization, and they do not understand their disease state or get the necessary follow-up care.

One area of significant disconnect in the process is the discharges related to patients admitted for or experiencing exacerbation of existing chronic conditions. The chronic conditions that frequently result in readmissions include: heart failure, COPD, diabetes, hypertension, and chronic kidney disease among others.

In 2007, the Medicare Payment Advisory Committee (MedPAC) published a report to Congress in which it identified the seven conditions associated with the most costly potentially preventable readmissions. Among these seven, COPD ranked fourth.
COPD is a priority because it is a common, debilitating condition associated with considerable morbidity and mortality. The statistics on COPD are significant. In 2008, 13.7 million U.S. adults were estimated to have COPD resulting in approximately 672,000 hospital discharges. It is currently the third leading cause of death in the US.

The 30-day readmission rate among Medicare Fee-For-Service (FFS) patients hospitalized for COPD is 22.6% and accounts for 4% of all 30-day readmissions.

At the same time, the average cost of hospital admission from COPD as a principle diagnosis is $10,900. The cost of a typical exacerbation and hospital re-admission is between $10,000 and $15,000 for Medicare Advantage (MA) Plans.

**PILOT PROGRAM**

Understanding this impact to quality of life for this population and the cost of care issue for MA Plans, SuperCare Health set out to improve the quality of life of the patients and reduce the cost of care secondary to poorly coordinated disjointed handoffs at the time of discharge.

This endeavor led to the development of a program concentrated on the support and management of patients during the 30 days after discharge from the hospital. This program was focused on a few basic and core components. These core components include:

- Discharge coordination to ensure patients arrived home with all necessary medications and respiratory equipment
- Regularly scheduled follow-up contact with the patients using a mixture of automated phone calls, live calls from a respiratory therapist (RT), and home visits when appropriate
- These continuous points of contact served multiple function:
  - Medication reminders
  - Assessment of treatment compliance
  - Identification of therapy issues
  - Forum for patient education provided by RTs

The patients were referred to the program by the hospital discharge staff at the time of discharge from an acute level of care hospital or a subsequent skilled stay. The primary diagnosis of these patients was COPD; co-morbidities included CHF, diabetes, hypertension, and stroke among others.
A total of 1,000 patients were enrolled in this initial version of the program over an 18-month period from a variety of acute care facilities across the greater Los Angeles area. This program demonstrated the following outcomes:

- 34% Hospital Readmission Reduction
- 89% Patient Adherence
- 94% Customer Satisfaction

**CHRONIC CARE MANAGEMENT CHALLENGES**

**System Issues:**
- Lack of prioritization and classification of who is at high risk for re-admission
- Patients with Chronic Diseases with history of multiple hospitalizations not being considered until another hospital visit occurs
- Medication changes during admission not communicated to involved providers at the time of discharge
- Primary Care Physician not involved in the process or notified
- Hospitalists not communicating with Primary Care Physician
- Specialists not communicating with Primary Care Physician
- Many discharges completed prematurely due to reimbursement pressures
- Hospital discharge education happens the day of the discharge not the day of admission as it should
- Patient does not see his Primary Care Physician in a timely fashion (72 hours) after discharge; instead he may see his PCP 1-2 weeks after discharge
- Lack of Specialists follow-up
- Hospital acquired infections

**Patient Specific Issues:**
- Lack of understanding of the complexity of the disease and identification of symptoms of disease exacerbation
- Inadequate treatment/medication regimen
- Poor understanding of medication/equipment regimen and affecting medication/equipment compliance
- Polypharmacy and duplicate medications
- Little or no diet education
- Psychosocial or economically disadvantaged patient populations
- Many of these patients may have multiple morbidities i.e.: COPD, Diabetes, Hypertension and others are not addressed at the time of discharge as part of discharge orders
- Lack of care coordination and communication across the continuum creating a gap for patient and their families
The resulting problem of these challenges, whether single or combined, is not the basic issue associated with discharge diagnosis, but instead, the failure of treating all patients based on their individual condition and/or situation. Medications, diet, head-to-toe clinical, environmental and psychosocial assessments in the home are essential to the success of any program.

In a retrospective cohort study undertaken from the time of discharge from a number of acute care facilities in the state of California, we observed that a multifaceted intervention that involved an initial in home Respiratory Therapy face to face visit and multi-modality assessment, medication reconciliation and recommendations by a pharmacist, appropriate oxygen therapy initiation, and patient education led to significant reduction in re-hospitalization.

HEALTHCARE AT HOME
SuperCare Health identified the need for a more comprehensive approach to readmission management and evolved this initial pilot into the current Healthcare at Home program. Analyzing the outcome data and reviewing the Exit Interview patient feedback, SuperCare Health enhanced the program in a number of ways.

The original team consisted of the respiratory therapist, a respiratory support technician, and a consult with the pharmacist. A more comprehensive approach expanded that core support to a full-fledged Interdisciplinary Care Team comprised of an RT, nurse care manager, pharmacist, dietitian, social worker, and support technician.

Healthcare at Home is focused on the management of chronic respiratory disease and associated comorbid conditions the 30 days after a discharge from an acute hospital admission. The approach to care is centered on the patient, family/caregiver, and Primary Care Physician (PCP)/Pulmonologist. The focus is on education related to symptom management, medication and treatment plan compliance, and empowerment to the patient to manage their disease as an integral part of a team.

In addition, assessment of prescribed equipment, adjustments, and recommendations for additional or more appropriate equipment led to increased compliance and better outcomes.

The core components of the Healthcare at Home program include:

- An initial in home Respiratory Therapist (RT) visit
- Clinical Assessment: respiratory status including base line Spirometry, Pulse Ox, Peak Flow and heart rate; COPD clinical assessment tool questions (CAT); safety evaluation; patient adherence to treatment plan; Patient/Caregiver Competence and Quality of Life assessments.
Pharmacist review of medication list: Medication Therapy Reconciliation and Pharmacist recommendations for improved disease management through medication therapy optimization

Education on signs and symptoms of disease progression and exacerbations: using the GOLD Report of management of COPD including the Red-Yellow-Green Zone management

Scheduled video patient contacts with established questions

An exit visit by the RT and reassessment of the clinical status of the disease, patient adherence to treatment plan, perceived Quality of Life changes, and Patient Satisfaction

The functional pillars to our program include:

- Accurately identify the population by appropriate diagnostic assessment in a face to face, home based setting
- Stratify the population grounded on evidence based risk scoring
- Implement evidence based multidisciplinary care management strategies
- Health Risk Assessments
- Follow-up assessments on proscribed schedule via video conferencing
- Engage members and families
- Provider engagement and communication at time of enrollment, at time of changes in condition, and at time of Transition back at the end of program participation
- Compassionate and professional multidisciplinary staff: Respiratory Therapist, Registered Nurse, Social Worker, Pharmacist, Dietitian, specially trained Administrative Support Staff
- Bilingual education - patients and caregivers targeted to disease process with anticipatory guidelines
- Continued video face to face communication with patient and caregivers
- 24/7 Telephonic support
- Equipment assessment and recommendations for improved compliance by respiratory therapist
- Medication reconciliation, drug interactions analysis, and optimization by a pharmacist
- Communication with Primary Physician and others in the care team
- Proprietary Bluetooth enabled TeleHealth equipment deployment and service
- Bluetooth communicated collected data directly back to care team with embedded alert status for out of range results
- Transition to self-management
- HIPAA complaint EMR and portals
- Partnership with Health Plans
- Value Based Measured Outcomes
IBREATHE CLINICAL TRIAL
SuperCare Health entered into a clinical trial partnership with HealthCare Partners (HCP) in 2015 to assess the impact of the Healthcare at Home program on COPD readmissions and health provider costs compared to the standard treatment approach already provided. Healthcare at Home was branded as iBreathe by HCP for the clinical trial. The trial began enrollment in late 2015 to enroll 100 patients in the intervention arm and 100 patients in the control arm, and is still in progress as of April 2016.

PROGRAM SUMMARY
Based on the information reviewed at this point, there have been significant improvements noted for the enrolled patients. These improvements have included compliance with plan of care, medication, and primary care physician visits; as well as, an improvement of Blood Oxygen Saturation (SpO2) and medication optimization. In addition, patients have reported an improved quality of life, an increased understanding of the disease process, transition to self-care, and an increase knowledge of their disease process and management skills.

PROGRAM EXPANSION
Having this data at hand, SuperCare Health will expand the program as they continue to identify other diagnosis and treatment modalities that could benefit from a more proactive approach to chronically ill and frail seniors transitioning from the hospital to home. SuperCare Health continues to partner with hospitals and payers that are searching for effective ways to reduce admissions, improve the quality of care for patients, families and their care givers, and gather important data allowing for patients to be identified early for appropriate management prior to a change in condition.