COPD Hospital Admission Reduction Playbook: Incorporating Telehealth in the Home
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Presented by:
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Objectives

- Identify a specific disease population that will benefit from a coordinated team approach incorporating Telehealth
- Understand the organization’s progress in measuring clinical outcomes of the program
- Explain the observed benefits and opportunities for program application/extrapolation
- Understand the need for innovations in care delivery Models under PDGM

What is COPD?

**Chronic Obstructive Pulmonary Disease (COPD) is an umbrella term used to describe progressive lung diseases**

- Emphysema, chronic bronchitis, refractory (non-reversible) asthma, and some forms of bronchiectasis.
- Characterized by increasing breathlessness, wheezing, sputum production and cough

COPD can develop for years without noticeable symptoms of shortness of breath. These symptoms develop in progressive stages over years. Many people mistake their increased breathlessness and coughing as a normal part of aging.

www.copdfoundation.org/What-is-COPD/Understanding-COPD/What-is-COPD.aspx
A Few Facts about COPD

- COPD affects an estimated 15 million
- Early screening is vital
- 3rd leading cause of death in the United States in 2017
- Most often, first shows at age 35 to 40
- 75% of people with COPD are smokers or former smokers, the other 25% have had long term exposure to other lung irritants or genetic cause of Alpha 1 Antitrypsin deficiency

https://www.cdc.gov/copd/basics-about.html
COPD Telemonitor Program

- Ultimate GOAL - Prevent readmissions and improve quality of life (by extending length of time a patient with the diagnosis of COPD receives daily monitoring by the home care telemonitor RNs for the remaining 60 day certification period without skilled services)
- COPD Pilot team assists in the management of the patient with COPD
  - Telemonitor services are initiated upon admission to home care in conjunction with the dx of COPD (primary, tertiary, etc)
  - Referral to COPD Telemonitor Pilot Program prior to discharge from skilled services
  - Reinforced education from telemonitor RNs based on the education already received from skilled services.
  - Empower self management of symptom identification (COPD Zones)

COPD Telemonitor Program Cont’d

The team is comprised of expert telemonitoring RNs and a COPD RN care manager with the goal to target patients that may be decompensating to prevent a re-hospitalization.

- Calls also are vital to the reinforcement of patient self management and success (Zones and relationship to medication/pulmonary hygiene)
- Education using COPD Zones with patients and caregivers from day one telemonitor is installed

Standardized process for targeted interventions: Telemonitor RN calls to request a telephonic visit by the COPD RN care manager to assess changes in patients daily symptoms. The COPD RN care manager determines the triage plan.

- Resolve any issues over the phone
- COPD RN care manager does a home visit to assess respiratory status
- COPD RN care manager contacts Care of Sick (Med-Surg) Supervisor to reinstate patient as active
COPD RN Care Mgr’s Interventional Plays!

- **When patient presents with “yellow zone” symptoms:** If PRN medications are not effective in relieving symptoms, the Pulmonologist is notified and further action plan is implemented. (Typically = prednisone taper and/or antibiotic).
- **Face to face visits** from COPD RN Care Mgr
- **Referral** to Hospice or back to COS for skilled care.
- **Connect** with patients so that they are more open to education.

TIP: Place the Zones in every TOOLBOX

- Evidence based Patient Educational Tool for COPD
- Easy/reliable Symptom Awareness tool
- Used daily will reinforce patient awareness of subtle signs and symptoms that can easily be overlooked
- Use Zones as a “match” game to teach patients when to take ACTION for common signs and symptoms of COPD exacerbations
Green Zone
Goal
You are doing well
You have all of these:
● Your breathing is good
● You're able to do usual activity
● Your pills and inhalers control your symptoms
● No new symptoms
● No chest pain

Yellow Zone
Warning
If you have any of these signs:
● Increased shortness of breath with usual activity
● First signs of a cold
● Coughing or wheezing more than usual
● Increased or changes in mucus color
● Increased use of inhaler or nebulizer
● Feeling more tired, anxious, restless, or uneasy
● Hard to breathe lying down – need to use more pillows or need to sleep sitting up in a chair

Red Zone
Call 911
Go to the emergency room
You have any these signs:
● Medicine is not helping
● Hard to breathe at rest
● Wheezing or chest pain that doesn't go away
● Change in color of your skin, nails or lips to gray or blue
● Feeling very drowsy
● Can't talk well or think clearly

Which ZONE matches each of these common Signs and Symptoms?

- Increased shortness of breath with usual activity
- First signs of a cold
- Coughing or wheezing more than usual
- Increased or changes in mucus color
- Increased use of inhaler or nebulizer
- Feeling more tired, anxious, restless, or uneasy
- Hard to breathe lying down – need to use more pillows or need to sleep sitting up in a chair

What is the “action” that patients/caregivers should take?
# COPD ACTION PLAN

**GO Zone: Use these medications every day! Check your COPD Zones every day.**

<table>
<thead>
<tr>
<th>Control Medication</th>
<th>How Much</th>
<th>How often/when</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td>AM/PM</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>AM/PM</td>
</tr>
<tr>
<td>3. Albuterol Inhaler (Rescue inhaler)</td>
<td>2 puffs (with spacer)</td>
<td>Every 4-6 hrs for cough, wheeze, or mucus</td>
</tr>
<tr>
<td>4. Other Rescue Inhaler: Combivent,</td>
<td>___ puffs</td>
<td>Every 4-6 hrs ...</td>
</tr>
<tr>
<td>5. Nebulizer Albuterol 2.5 mg and/or DUO nebulizer</td>
<td>1 vial inhaled</td>
<td>Every 4-6 hrs ...</td>
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**CAUTION Zone: Continue your GO medications, ADD the following medications and CALL your PROVIDER to report signs! (increasing cough, trouble breathing wheezing)**

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<td>Every 4-6 hrs for cough, wheeze, or mucus</td>
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<tr>
<td>2. Other Rescue Inhaler: Combivent (example),</td>
<td>___ puffs</td>
<td>Every 4-6 hrs ...</td>
</tr>
<tr>
<td>3. Nebulizer Albuterol 2.5 mg and/or DUO nebulizer</td>
<td>1 vial inhaled</td>
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<tr>
<td>4.</td>
<td></td>
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## COPD ACTION PLAN

**DANGER Zone: Take these medications, CALL your PROVIDER, GO directly to EMERGENCY ROOM or dial 911**

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<tr>
<td>1. Albuterol Rescue Inhaler __________________</td>
<td>2 puffs (with spacer)</td>
<td>IMMEDIATELY</td>
</tr>
<tr>
<td>2. Other Rescue Inhaler: Combivent, (example)</td>
<td>___ puffs</td>
<td>IMMEDIATELY</td>
</tr>
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<td>2. Nebulizer Albuterol 2.5 mg and/or DUO Nebulizer</td>
<td>1 vial inhaled</td>
<td>IMMEDIATELY</td>
</tr>
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## The Key to Success

The success of reducing the readmission rate of those patients involved is directly related to:

- Daily monitoring of signs and symptoms
- Outreach calls with person to person connection upon alert of new signs and symptoms (Zones)
- Discussing medication management during times of increased signs and symptoms
- Notification to providers to discuss episodic sick visits and/or medication changes needed
- Or simply spending the time to talk with the patient to reduce anxiety related to a progressive chronic disease
Improved Quality of Life for COPD Pilot participants

Two Patient Case Studies.....

The COPD Pilot patient “Judy”

68 yo female admitted to homecare services for cardiopulmonary education/assessment, home safety, with skilled nursing and occupational therapy as well as home health aides for personal care. PMHx: COPD, CHF, anxiety, depression, PTSD, chronic pain, chronic hypoxic respiratory failure oxygen dependent, obstructive sleep apnea, moderate pulmonary hypertension, lower gastrointestinal bleeding history, colectomy for diverticular disease, diabetes mellitus type 2, osteoporosis, emphysema.

Medications: Astepro (antihistamine), biotin, Duoneb, Lexapro, hydrocodone APAP, lipitor, Lorazepam, metformin, mucinex, multivitamin, oxygen, prednisone, saline nose, symbicort, ventolin. Skilled services provided on and off for over two years, with transitions to the COPD Pilot Program of daily telemonitoring and reinforcement of teaching medication use and COPD zones after multiple episodes. Outreach calls performed with increase s/sx reported by patient.

Result: In over a year for this end stage COPD patient, only one readmission to hospital due to an attempt by the patient to go to an outpatient visit to her primary care MD in humid summer weather. The telemonitoring nurse called the PCP office and arranged home visits for the patient, resulting in prevention of further readmissions to the hospital.
The COPD Pilot patient “Caroline”

Patient with 6 readmissions to the hospital in 9 months. Homecare after each discharge from the hospital.

Skilled services after each discharge. Patient accepted transition to palliative care during the COS episode. Pall Care services discharged her to the COPD Pilot Program. Patient had a COPD exacerbation, went to the ED and was re-admitted to the hospital. She returned home, resumed by COS and was transitioned back to the COPD Pilot Program where she again had increased s/sx, a visit was made by COPD RN Care Mgr, who then made a referral back to COS resulting in a referral to hospice.

Result: She has not been re-hospitalized since being on hospice and her symptoms continue to be well managed

Tips

Educate using COPD Zones EVERY interaction (face to face or telemonitor calls) for patients and caregivers

Develop:
- Trust and comfort with patient related to self worth
- Allow for open conversation to control symptoms
- Improve quality of life and overall decrease the progression of the disease and hospitalizations.

Stress that adherence to maintenance medication, when patients feels well/stable, is vital.

Remember: COPD ZONES directly relate to patients management of COPD exacerbations “YELLOW Zones” = the possibility of progression to the red zone.
PROGRAM BACKGROUND

- Patients identified by COPD Diagnosis or primary care referral
- Patients offered telemonitoring for remainder of 60-day home care certification period
- Empowers patients to self-manage
- Education on medications, symptom management and identification (COPD Zones and Action Plan)

Analysis Methods

- Retrospective program evaluation
- Inclusion Criteria: COPD Patients identified by program within the time period
- Exclusion Criteria: Program exclusions such as inability to independently use telemonitoring device, deaths within 60 days of program (1)
- Pre and Post comparisons of hospital admissions
- Negative binomial regression
Analysis Timeline

Index admission – defined as the patient’s admission that precedes enrollment in the program
Pre-Admission Period – 1 year prior to index admission
Post Admission Period – up to 1 year after discharge from index admission
Intervention period – days on the telemonitoring program

RESULTS

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients (n)</td>
<td>72</td>
</tr>
<tr>
<td>Average Age</td>
<td>76.8±10.2 years</td>
</tr>
<tr>
<td>Gender</td>
<td>40% male 60% female</td>
</tr>
<tr>
<td>Patients with &gt;= 2 co-morbid conditions (non-mental health)</td>
<td>30%</td>
</tr>
<tr>
<td>Patients with high LACE score</td>
<td>78%</td>
</tr>
</tbody>
</table>
Admission Rates

<table>
<thead>
<tr>
<th></th>
<th>0-30 day</th>
<th>0-60 day</th>
<th>0-90 day</th>
<th>0-120 day</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-intervention</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Event rate/member</td>
<td>0.33</td>
<td>0.57</td>
<td>0.78</td>
<td>0.97</td>
</tr>
<tr>
<td>Event count</td>
<td>24</td>
<td>41</td>
<td>56</td>
<td>70</td>
</tr>
<tr>
<td><strong>Post-intervention</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Event rate/member</td>
<td>0.22</td>
<td>0.43</td>
<td>0.64</td>
<td>0.74</td>
</tr>
<tr>
<td>Event count</td>
<td>16</td>
<td>31</td>
<td>46</td>
<td>53</td>
</tr>
<tr>
<td><strong>Rate Ratio</strong></td>
<td>0.67</td>
<td>0.76</td>
<td>0.82</td>
<td>0.76</td>
</tr>
</tbody>
</table>

RESULTS

Admission/ER Event Count by Days From Index Admission
PDGM in a Nutshell

- Budget Neutral, huge win (no cuts)
- Replaces 60-day payment episodes with 30-day periods
- Admission Source and Timing (from claims)
- Clinical Grouping (Principal Dx reported on claims)
- Functional Impairment Level (Oasis Items)
- Comorbidity Adjustment (Secondary Dx reported on claims)
- Eliminates the number of therapy visits in payment determination
- Increases total # of case-mix weights (HHRGS) from 153 to 432
- Modification to LUPAS (Low Utilization Payment Adjustments)

Patient Driven Groupings Model (PDGM)
Requires creativity in Care Model delivery

Biggest change in Home Health in 20 years

PDGM, Accountable Care Organizations (ACOs), BPCI-A Bundles

All require a different mind-set to continue to provide efficient and effective care which includes the use of technology to impact chronic care populations to prevent readmissions and keep patients home where they want to be!

Example: 1 RN case manager doing face to face visits who manages a caseload of 20 patients versus 1 Telehealth RN* who manages up to 100 patients with the chronic conditions of (COPD, HF) via a telehealth service using telephonic outreach when the patient is having symptoms and/or vital signs are not within parameters

*Telehealth Chronic Care Population Mgmt. Model: Provides care coordination, driven by patient need, in real-time.
Future Integration of Telehealth in Managing Populations with Chronic Disease

- By definition, simply put - Population Health is managing health outcomes for a defined group of individuals.

- Answers the “Perfect Storm” of a growing, aging, more complex population with fewer providers and caregivers

- Look for opportunities to partner with others to develop best practices and approaches to improve the care of COPD population

Application and Extrapolation Ideas

- Post hospital 48 hour automated calls with call backs by RN Case Managers

- Automated for COPD population 48 hours, 8 and 16 days after hospitalization

- Extended time period of connection and coaching through “Connect Calls”

- Triage Intervention for Automated Post D/C Care Calls to Monitor and Connect HF Patients by Disease Management Protocols
Connect to.........

THANK YOU!
ANY QUESTIONS?