Respiratory Therapists as COPD Educators

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Disclosure Statement

I have no financial relationship with any manufacturer of any commercial product and/or provider of commercial services discussed in the CME activity.
Objectives

• Define the challenges of providing care for patients with COPD
• Review the Hospital Readmission Reduction Program
• Discuss newly implemented respiratory therapy COPD education initiative at University of Iowa Health Care
Chronic Obstructive Pulmonary disease (COPD)

Definition: Chronic Obstructive Pulmonary Disease is a common, preventable and treatable disease characterized by persistent respiratory symptoms and airflow limitation that is due to airway and/or alveolar abnormalities, usually caused by significant exposure to noxious particles of gases.

Diagnosis:
- Signs and symptoms
- Hx exposure to lung irritants
- Family history
- Spirometry

COPD Pearls….
Spirometry is to COPD as a blood pressure cuff is to hypertension.

COPD Health Concern

• Global prevalence 11.7%
• Leading cause of morbidity & mortality in USA
  – 15 million cases diagnosed
  – Estimated 13 million more undiagnosed
  – Over 10 million provider office visits
  – 1.5 million ED visits
  – 700,000 hospitalizations each year in the U.S.
  – Estimated 138,080 deaths/year
• Direct and indirect annual cost
  > $52 billion

Aggregate charges for inpatient stays for COPD or bronchiectasis among patients aged ≥ 18 y. Nationwide sample 2001-2012

Global Strategy for the Diagnosis, Management, and Prevention of COPD, Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2018
Chest 2015; 147(4): 989-998
Age-adjusted rate of hospitalizations for selected chronic conditions among patients aged ≥ 18 y, Nationwide Inpatient Sample 2001-2012. AMI = acute myocardial infarction; B = bronchiectasis; CA = coronary atherosclerosis; CHF = congestive heart failure; OHD = other heart disease.

Age-adjusted rate of ED visits for selected chronic conditions among patients aged ≥ 18 y, Nationwide Emergency Department Sample 2006-2011. See Figure 2 legend for expansion of abbreviations.
Hospital Readmissions Reduction Program (HRRP)

- Penalize hospitals for ‘excess’ 30 day readmissions when compared to ‘expected’ levels of readmissions.
- Penalty - up to 3% of Medicare payments
- 2015 COPD added
- Flaw – policy penalizes hospitals for unrelated admissions that occur within 30 days of the original hospitalization.

Risk Factors for Increased 30-day All-cause Readmission Rates for COPD

<table>
<thead>
<tr>
<th>Patient Demographics</th>
<th>Co-morbidities</th>
<th>Healthcare Resource Utilization</th>
<th>Severity of Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, older vs younger [mixed evidence]</td>
<td>Malignancy</td>
<td>Longer length of stay</td>
<td>Home oxygen use</td>
</tr>
<tr>
<td>Insurance coverage [Medicare, Medicaid, and dual-eligibles ↑][8,14]</td>
<td>Depression, anxiety, psychosis ↑</td>
<td>Previous hospitalization for any cause ↑</td>
<td>Low activity or non-ambulatory at discharge ↑</td>
</tr>
<tr>
<td>Gender [male ↑]</td>
<td>Congestive heart failure ↑</td>
<td>Discharge to home vs home health vs skilled nursing facility [mixed evidence]↑</td>
<td>Severe complexity COPD ↑</td>
</tr>
<tr>
<td>Socioeconomics [lower income ↑]</td>
<td>Pulmonary fibrosis ↑</td>
<td>Visit to the ED or observational stay prior to re-hospitalization ↑</td>
<td>Hospital stay in the ICU ↑</td>
</tr>
</tbody>
</table>

COPD = chronic obstructive pulmonary disease; ED = emergency department; ICU = intensive care unit.


(Payer_COPD_Understanding and Reducing Hospital Readmissions provided by GSK)
History in diagnosing COPD
Lack of spirometry skewing the numbers?

• Clinical Practice Guidelines are not followed
  – If it smells like COPD (smoker), it must be COPD train of thought……
  – Of the 55% primary care physicians actually aware of major COPD guidelines, only 25% used them to guide decision making

• How prevalent is the problem?
  – 30-50% of diagnosed COPD patients have not had spirometry

(Foster, Yawn, Maziar, Jenkins, Rennard, & Casebeer, 2007)
Misdiagnosis impact

- 6,018 patients admitted with COPD
  - 21% had confirmatory spirometry in prior 2 years
  - 8.4% had spirometry during hospitalization
    - 69% (n=270) confirmed COPD dx
    - 31% (n=120) COPD dx refuted by PFTS
  - 43% (n=54) without COPD had persistent COPD dx on discharge
  - 26% (n=32) oral steroids
  - 31% (n=39) LABA/LAMA

[References]
Respir Care. 2016 Sep;61(9):1192-200. doi: 10.4187/respcare.04647. Epub 2016 May 10
https://doi.org/10.2147/COPD.S139919
Why isn’t spirometry being used?
A clinician’s prospective

• Difficult to perform in hospitalized patients
• It can wait until after discharge
• I’m sure it was already done if they were diagnosed with it
• I don’t know how to read the stupid things
• I know COPD when I see it
• Guidelines, what guidelines?
• Patient is a smoker, don’t need spirometry
Patient knowledge of their COPD

How bad is it?

- 82% claimed to understand disease and available treatments
  - 45% were knowledgeable about COPD symptoms.
  - 44% knowledgeable about causes of COPD
  - 35% knowledgeable about medications
  - 27% aware of importance of preventing symptoms (exacerbation)

Where does education start
…….if it even happens?

Fig. 2. Percentage of subjects stating what was discussed with them on their first office visit for COPD.

Fig. 3. Percentage of subjects stating when inhaler technique and cleaning methods are assessed.

(Dhand, et al., 2018)
Inhaler technique is a high priority

“Drugs don’t work in people who don’t take them” – C. Everett Kopp, MD

- When a treatment is given by the inhaled route, the importance of education and training in inhaler device technique cannot be over-emphasized.

<table>
<thead>
<tr>
<th>Errors Experienced by Patients Using Handheld Inhalers</th>
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<tbody>
<tr>
<td>Study</td>
</tr>
<tr>
<td>Pothirat, 2015</td>
</tr>
<tr>
<td>Melani, 2011</td>
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<tr>
<td>Souza, 2009</td>
</tr>
<tr>
<td>Molimard, 2003</td>
</tr>
</tbody>
</table>

- Choice of inhaler device individually tailored and depend on:
  - Access
  - Cost
  - Prescriber
  - Patient’s ability and preference

Respiratory Therapy’s role is evolving
Bridging the gap

• Advocate and Educate
  – Physicians
    • PFTs
    • EBP
    • Medications
    • Pulmonary Rehab
    • Referrals
  – Patients
    • Disease process
    • Self management
    • Risk reduction
    • Stress management
    • Inhaler technique
    • Action plan
    • Breathing techniques

(Foster, Yawn, Maziar, Jenkins, Rennard, & Casebeer, 2007)
Defining the problem at UIHC

- Lack of knowledge and utilization of EBP
- Increasing complexities in pharmacologic therapy for COPD
- Patient education lacking
- Pulmonary rehab and smoking cessation opportunities missed
- No standard COPD admission order set
- No COPD bronchodilator protocol
University of Iowa Health Care
Respiratory Therapy Driven Education

Phase I – Outpatient
- Collaboration
- Outpatient and inpatient component
- Outpatient implemented 1st
  - Staff education
  - Documentation template/script
  - Order creation
  - Inhaler education tool kit
  - Note documentation
  - Inhaler inspiratory flow w/resistance training
Device selection & Peak Inspiratory Flow Rate

Importance of peak inspiratory flow rate (PIFR)

- 1 in every 4 achieved PIF <60 L/min using medium-low resistance, yet 70% were receiving meds via DPIs.
- More than 1/3 of commonly prescribed COPD inhalers require optimal PIF to activate effectively.
- 60% of patients with mild COPD fail to reach adequate PIF for a high resistance device.

Inhaler Resistance Range

- High
- Med High
- Medium
- Med Low
- Low

MDI/Respimat, Diskus, HandiHaler

Alliance Tech Medical
PO Box 6024, Granbury, TX 76049
1.800.848.8923 / 817.326.8357 Fax: 817.326.2182
www.alliancetechnomedical.com

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Phase II - Inpatient

- EPIC report identifying COPD admissions
- Core therapists
  - COPD Educator Course
- Education 3-4 sessions
- Collaboration with multi-disciplinary team
- Follow-up post discharge
- Data collection
Inpatient education workflow

• Patient checklist
• Medical record review
• Educational assessment
• General information folder
  – Instructional handouts
  – Action plan
  – Resource links
  – Contact numbers
• Individualized patient educational sessions
• Data collection
Inpatient education sessions

- Table-top display flip book
- Simplified patient view
- Detailed therapist script
- Sections:
  - COPD and Symptoms
  - COPD Medications
  - COPD Triggers
  - Self-Management Strategies
- Evaluation and demonstration of inhalers
**Inpatient education**

**Collaboration**

- Physician contact
  - Insufficient PIFR
  - Pulmonary function testing needs
  - Stop-Bang Sleep Apnea Score
  - Home oxygen needs
  - Pulmonary rehab consult
  - Smoking cessation consult
  - Obstructive Pulmonary Disease Clinic Follow-up
- Social work
- DME
Next steps

• Instructional videos on inhaler and breathing techniques
• Pharmacy evaluating inhalers on formulary
• COPD exacerbation admission order set
• RT COPD bronchodilator protocol
• Expand to include asthma
Lessons learned

• Network
• Expect changes and adapt
• Anticipate resistance
• Choose the right people

Questions?