Asthma COPD Coalition: Improving Inpatient and Outpatient Treatment of COPD: What Local Coalitions Can Do?

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Sidney S. Braman, MD, FCCP
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Objectives

- Recognition of the COPD Patient
- Improvements In Care for COPD
- Impediments to Optimal Care for COPD
- What Can COPD Coalitions do to improve outcomes?
Recognition of the COPD
Over 12.7 million people in the United States have been diagnosed with COPD

Data from NHANES III indicate that approximately 24 million United States adults have evidence of impaired lung function indicative of COPD

Most (70%) of patients with undiagnosed COPD are <65 years of age

COPD Is a Major Public Health Problem

- 15 million office visits each year due to COPD
- 721,000 hospitalizations each year for COPD
  - 21% mortality rate at one year after being hospitalized for an exacerbation
- COPD is currently the 4th-leading cause of death in the United States
- On average, more people die every day from COPD than diabetes or breast cancer
  - 357 per day from COPD
  - 208 per day from diabetes
  - 114 per day from breast cancer
COPD is a disease that develops over decades:

Many teen-agers have cigarette addiction before their 18th birthday
COPD is a disease that develops over decades:
The disease remains silent in mid-life
COPD is a disease that develops over decades:
The disease remains silent in mid-life
COPD is a disease that develops over decades:

Symptoms often ignored: “I am just getting older”

Lung function testing underutilized
COPD is a disease that develops over decades:

The disease is finally recognized at an advanced age.
How can we improve care for COPD?
Evidence-based Measures That Improve COPD Outcomes

- Reduce risk factors
- Immunizations
- Medications
- Pulmonary rehabilitation
- Supplemental oxygen
- Integrated patient education programs
Do These Measures Work?
Higher Adherence to Therapy Lowers Risk for Hospitalization in COPD

- Rate of Hospitalization (per patient year)
- Percent of Days Covered with Prescribed Medication

- ≥80%: 0.88
- <80%: 1.13

*P<0.05*

Higher Adherence to Therapy Is Associated with Decreased Mortality in COPD

Good adherence was associated with a 60% mortality risk reduction independent of study therapy

Reducing Risk Factors for COPD Reduces Exacerbations\textsuperscript{4}
Underutilization of Long term Oxygen Therapy is Associated with Higher Risk of Hospitalization$^{23}$

- In a multivariate model the following cause higher hospitalization rates:
  - Three or more COPD admissions in the previous year, (OR 6.21 P=0.008)
  - Underprescription of long term oxygen (OR 22.64) P=0.007
Pulmonary Rehabilitation Reduces Risk of Unplanned Admission

<table>
<thead>
<tr>
<th>Study (in rehabilitation/usual care group)</th>
<th>Length of follow-up</th>
<th>Risk ratio (95% CI)</th>
<th>Weight in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behnke (14/12)</td>
<td>18 months</td>
<td>0.29 (0.10 to 0.82)</td>
<td>37%</td>
</tr>
<tr>
<td>Man (20/21)</td>
<td>3 months</td>
<td>0.17 (0.04 to 0.69)</td>
<td>44%</td>
</tr>
<tr>
<td>Murphy (13/13)</td>
<td>6 months</td>
<td>0.40 (0.09 to 1.70)</td>
<td>19%</td>
</tr>
<tr>
<td>Overall (47/46)</td>
<td></td>
<td>0.26 (0.12 to 0.54)</td>
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</tbody>
</table>

Chi-Squared 0.70, p=0.71

Favors rehabilitation: Risk of unplanned hospital admission
Favors usual care
Following Hospitalization for an Acute Exacerbation, Walking Time Is Reduced

AE=acute exacerbation.

Data are shown as box plots with the lower portion (dark blue) representing the 25% percentile, the center line reflecting the median, and the upper portion (light blue) representing the 75% percentile.
Pneumococcal and Influenza Vaccinations Reduce COPD Exacerbations

Pneumococcal vaccination
- COPD hospitalization
- All-cause mortality

Pneumococcal + influenza vaccination
- COPD hospitalization
- All-cause mortality

Relative Risk (95% CI)
Patient Education in COPD Reduces Exacerbations

- Reduction versus Control (%)

- Hospital Admissions for Exacerbations: -39.8
- Hospital Admissions for Other Reasons: -57.1
- Emergency Department Visits: -41
- Unscheduled Physician Visits: -58.9

COPD Exacerbations Result in Hospitalizations

In US, 1.5 MM Emergency Department visits due to COPD exacerbations annually

Admit based on clinical signs, patient’s subjective needs, and assessment of home environment

Mannino DM. Respir Care 2003;48:1185–91.
Based on market research data of healthcare providers within hospital settings, including ED, hospitalists, pulmonology (n=70).
COPD Exacerbations Lead to Poor Patient Outcomes

Patients with Frequent Exacerbations

- Faster Decline in Lung Function
- Poorer Quality of Life
- Higher Mortality
- Weight loss and deconditioning
Total estimated direct costs of COPD in the US are $29.5 Billion

The costs that are presented here are not exclusively related to COPD exacerbations.

CMS Readmissions Reduction Program

- Readmission occurs when a patient is discharged from a hospital and then readmitted to the same hospital or another hospital within a time period specified by the Secretary of Health and Human Services (HHS).
- In 2012, CMS will reduce Medicare payments to hospitals with excessive readmissions of patients admitted for heart attack, heart failure, or pneumonia.
- In 2013, the list will expand to include COPD, bypass surgery, and other heart and vascular procedures.
- The reduction in payments will begin in 2013.
## 30-Day Readmission Rates Among COPD Patients in 15 States

<table>
<thead>
<tr>
<th></th>
<th>Percentage of Index Admissions Followed by a Readmission</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>COPD is Principle Diagnosis</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7.1%</td>
</tr>
<tr>
<td>40-64 years of age</td>
<td>7.8%</td>
</tr>
<tr>
<td>≥65 years of age</td>
<td>6.8%</td>
</tr>
<tr>
<td>Male</td>
<td>7.6%</td>
</tr>
<tr>
<td>Female</td>
<td>6.7%</td>
</tr>
<tr>
<td>Race/ethnicity (data from 12 states that provide information on patient’s race)</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>7.2%</td>
</tr>
<tr>
<td>Black</td>
<td>8.0%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>6.1%</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>6.1%</td>
</tr>
<tr>
<td>Median household income</td>
<td></td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; quartile (lowest income)</td>
<td>7.8%</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; quartile</td>
<td>7.1%</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; quartile</td>
<td>6.6%</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; quartile (highest income)</td>
<td>6.4%</td>
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Barriers to Improved Care for COPD
Barriers to Improved Care for COPD

- Failure to communicate to patient need for medical treatment
- Poor patient self-management skills
- Inadequate follow-up in the post-discharge setting
- Community infrastructure and awareness problems
- Insufficient patient support, including support from family caregivers
- Medication discrepancies that occur during an initial admission or following a discharge and which may result in illness or harm to a patient.
Persistence with Inhaled Medications Declines to About 50% within 6 Months of Initiation

Persistence with any inhaler was 36%, 23%, and 17% at years 1, 2, and 3, respectively

The Most Common Reason for Nonadherence in COPD Patients Is Lack of Symptoms

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percent Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family problems interfered</td>
<td>5</td>
</tr>
<tr>
<td>Insufficient funds to purchase medications</td>
<td>10</td>
</tr>
<tr>
<td>Confused over schedule and decided not to dose</td>
<td>5</td>
</tr>
<tr>
<td>Socially inconvenient</td>
<td>15</td>
</tr>
<tr>
<td>Believed medication was not effective or did not ...</td>
<td>10</td>
</tr>
<tr>
<td>Believed immune to medication: decided not to dose</td>
<td>15</td>
</tr>
<tr>
<td>Ran out of medicine</td>
<td>20</td>
</tr>
<tr>
<td>Side effects</td>
<td>25</td>
</tr>
<tr>
<td>Change in normal routine: unexpected</td>
<td>30</td>
</tr>
<tr>
<td>Change in normal routine: planned</td>
<td>35</td>
</tr>
<tr>
<td>Interrupted prior to doing and forgot</td>
<td>40</td>
</tr>
<tr>
<td>Absorbed in activity and forgot</td>
<td>45</td>
</tr>
<tr>
<td>Felt good and forgot to dose</td>
<td>50</td>
</tr>
<tr>
<td>Felt good and decided not to dose</td>
<td>55</td>
</tr>
</tbody>
</table>

Patient-related Factors: Belief in Treatment Efficacy Is Associated with Higher Adherence

Improving Care for COPD
Patients An Integrated Goal-directed Program

1. Develop COPD registry of all patients admitted with acute exacerbation
2. Patients will be identified by Respiratory Care Department when called for treatments
3. At discharge, patients are referred to follow up with multidisciplinary hospital COPD Care Team (physician, therapist, case manager?)
4. This single visit will take place approximately one week post discharge
5. Follow up phone calls will be done after visit by COPD Care Team
Improving Care for COPD
An Integrated Goal-directed Program

During visit COPD Care Team will:
– Confirm diagnosis and staging with spirometry
– Establish goals and review care plan for recovery period
– Confirm smoking cessation efforts/avoidance of risk factors
– Confirm immunization (influenza/pneumovax)
– Review medication list and patient adherence
– Teach proper technique with inhaled medications
– Teach proper breathing and cough techniques
– Assure adherence to oxygen prescription
– Assess eligibility for pulmonary rehabilitation
Improving Care for COPD
An Integrated Goal-directed Program

During visit COPD Care Team will:

– Assess for uncontrolled co-morbidities including:
  • Depression (administer depression scale)
  • Obstructive sleep apnea (Epworth sleep assessment)
  • Osteoporosis (assure recent bone density test)
– Review action plans for next exacerbation and for stress
– Discuss appropriate advanced directives
– Confirm next appointment with primary care practitioner
  or specialist and communicate with this personal physician
– Send letter to personal care provider with suggestions for
  ongoing care
Pharmacist-Led COPD Self-Management Program: Increased Belief in Treatment, Better Adherence, and Fewer Hospitalizations

- **Medication Adherence**: $P=0.017$
- **Medication Beliefs**: $P=0.008$
- **Hospital Admissions**: $P=0.031$

N=133

What Can COPD Coalitions do to improve outcomes?
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- To increase COPD awareness and education by connecting individuals with tools and resources that will improve their quality of life.
- To impact state and local government, employer and insurer policies related to COPD
- Improve and expand COPD surveillance and data collection and research