Clinical Safety & Effectiveness
Cohort # 15

Spirometry Testing for COPD Patients

CENTER FOR PATIENT SAFETY & HEALTH POLICY
UT Health Science Center
SAN ANTONIO

Educating for Quality Improvement & Patient Safety
The Team

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AIM STATEMENT

By January 2015, at least 65% of COPD patients seen in University-based primary care clinics will have documentation of spirometry to confirm the diagnosis of COPD (represents an 18% increase from 55% currently)
Project Milestones

- Team Created 9/5/14
- AIM statement created 9/5/14
- Regular Team Meetings 9/15; 9/22; 10/10; 11/10
- Background Data, Brainstorm Sessions 9/5; 9/22; 10/04; 10/31
- Workflow and Fishbone Analyses 10/10/14
- Interventions Implemented 10/10/14~Still in progress
- Data Analysis 1/2015 - Ongoing
- CS&E Presentation 01/23/15
Background

- Chronic Obstructive Pulmonary Disease (COPD): 3rd leading cause of death in the US and is associated with high healthcare utilization
- Post-bronchodilator spirometry is required for the diagnosis
- Despite this fact, clinicians often treat/manage patients for COPD without ever having performed spirometry; thus, without confirming the diagnosis
Patient comes to clinic with a diagnosis or suspicion of COPD

- Previously diagnosed with COPD
- Suspected for COPD

- Manage COPD
  - Does the patient improve?
    - Yes: Continue medication therapy
    - No: Clinician decides to perform spirometry

Clinician decides to perform spirometry

- Spirometry done in PFT lab
  - Diagnosis is completed
  - Try other medicines
    - Does the patient improve?
      - Yes: Manage COPD
      - No: Refer to PFT lab
  - Diagnosis:
    - Yes: Refer to Pulmonary Consultant Clinic
    - No: Diagnosis NOT consistent with COPD
Only 55% of COPD patients have spirometry
Pre-intervention Baseline Data

The current baseline data criteria:

• Total number of unique patients (alive, age ≥ 40 years)
• Who have had one visit in one of the PCC clinics (MARC, Senior Health, Medical Drive and/or Westover Hills)
• Between 09/01/2013 and 08/31/14

Based on the criteria:

• 10,855 unique patients met criteria
• 493 patients had a diagnosis of COPD (by ICD-9 code)
• Prevalence = 493/10,855 = 4.5%
• 273/493 (55.3%) of patients had spirometry testing

PCC = Primary Care Clinic
Interventions

October 15, 2014
• Introductions and 1st meeting to start educating staff and clinicians
• IT changes: spirometry reminder added to all COPD patients’ charts

November 4, 2014
• Provided access to the online WipeCOPD™ educational modules
• Assigned approximately one hour of education modules to provide the foundation for the “live” training sessions

November 10, 2014
• 2nd monthly meeting with MARC clinicians in order to reinforce the online education and to “live teach” topics such as recognition, diagnosis and optimal management of COPD

December 8, 2014
• 3rd monthly meeting with MARC clinicians in order to “live teach” topics such as spirometry interpretation, billing and comorbidities associated with COPD
Interventions - Continued

Ongoing / Future Interventions

• Spirometers purchased for clinics to confirm COPD diagnosis
• Ongoing education / quality checks for spirometry interpretation
• IT interventions: COPD health maintenance plan/form
  o Place for spirometry values
  o Dyspnea score
  o Cough +/- sputum production
  o Number and severity of acute exacerbations of COPD
• Feedback to each provider
Results/Impact: Prevalence of COPD

August 2014 - December 2014

- August: 4.2%
- September: 3.6%
- October: 3.0%
- November: 5.4%
- December: 8.6%

Intervention
Results/Impact:
Percentage of COPD Patients with Spirometry

August 2014 - December 2014
ACT: Sustaining the Results

• Two-year grant to further implement improvements in the diagnosis and management of COPD in two other clinics
• The IT reminders and COPD Health Maintenance Form will be permanently in EPIC
• These “reminders” also serve to educate new providers on optimal evaluation and management of COPD patients
• The support staff are being evaluated at least annually to ensure competence in performing spirometry
Return on Investment

Reimbursement rate over the last year:
- 273 of 493 patients have had spirometry (within the last 10 years)
- $273 \times 64.00/\text{per test} = \$17,472$

Reimbursement rate in current and future state:
- Based on the achieved aim, an additional 97 patients had spirometry in 4 months (September through December)
- $97 \times 64 / \text{per test} = \$6,208 \text{ (over this 4-month period)}$
- Approximately $\$18,624 \text{ over the first year}$
Return on Investment

- Cost of equipment to do spirometry:
  - $2,148 \times 2 = $4,296
- Cost of spirettes and nose clips:
  - $1.86 \times 97 = $180
- ROI ratio = $6,208 / $4,476 = 1.39 (Cost for this particular aim over 4 months)
- Anticipated returns = 291 \times ($64 - $1.86) = $18,083
- ROI ratio = $18,083 / $4,476 = 4.04
Conclusion/What’s Next

Final Conclusions
• CME plus IT reminders/prompts plus teamwork can improve the identification and appropriate diagnosis of patients with COPD

Future Goals
• Primary care clinics (MARC, Medical Drive and Westover Hills) will adopt/implement a Health Maintenance Plan specific to COPD
• More patients will be diagnosed: 493/10,085 = 4.5% (prevalence), Texas prevalence is 5.5%, MARC prevalence is between 5.6%-6.2% (over the last 2 months)
• Better care / optimal care (currently 23% on long-acting bronchodilator therapy) → reducing hospitalizations for exacerbations
Thank you!