Introduction/Background/History: Please include any relevant information that may be helpful for others to understand this initiative.

Primary care providers (PCPs) are the most likely clinicians to test for, diagnose and treat COPD. Recent data suggest that, in general, very poor rates and quality of testing with spirometry are common, and the disease is not usually treated aggressively once identified. Compounding the problem is the general belief held by many primary care providers that COPD treatments are ineffective. This misperception becomes reality when the gold standard test for COPD, spirometry, is not conducted in the primary care setting and aggressive treatment is not implemented. Approximately half the cases of COPD go undiagnosed and, therefore, untreated. Data also show that when spirometers are available in the office (and they are only about 30% of the time), they are often underused and the quality of results or interpretation are poor when they are used.

The University of North Texas Health Science Center’s Office for Professional and Continuing Education (UNTHSC-PACE) identified multiple barriers in its research which were borne out through its COPD CME activity outcomes assessment. The barriers encountered most frequently include:

- Participants were mostly unaware of the frequency of which a spirometer should be calibrated to ensure accurate readings
- Participants mostly lacked confidence (pre-intervention) in their ability to accurately conduct and/or interpret spirometry
- Participants were unaware of or did not use current diagnostic/treatment guidelines for COPD
- Participants mostly lacked confidence (pre-intervention) in their ability to provide meaningful patient education related to risk avoidance and self-management
- Lack of community supports/resources impacted patient adherence

UNTHSC’s Family Medicine clinic requested PACE’s assistance in assessing the quality of the COPD care relative to national guidelines and develop interventions to narrow any gaps that are identified through the assessment. An analysis of EHR data suggests there may be variations in the way COPD is diagnosed/monitored and managed.

Initiative Goal: Please describe the overall goal of this initiative, including the patient population or disease area that this initiative will address.

This activity is designed to improve:

- Confidence and competence of UNTHSC and other family physicians related to COPD diagnosis and management

- Processes and procedures to facilitate spirometry and monitoring of COPD
- Access to patient supports

**Target Learners:** Please describe the intended participants of this educational initiative, as well as the estimated number of learners.

45 clinicians from UNTHSC clinics (family medicine and other primary care clinics) and community-based rural clinics are expected to participate in the performance improvement component.

The associated interventions, which will mostly be made public, are estimated to register 350 clinicians.

In all, it is estimated that 395 clinicians will participate.

**Collaborators:** Please include a brief description of the role of each collaborator in the initiative.

UNTHSC-PACE is working with multiple units within the health science center to accomplish this initiative:

- UNT Health (encompasses Quality Improvement, QI)
- UNTHSC Primary Care Research Center (PCRC)
- UNTHSC Family Medicine Clinic (FM)
- School of Public Health (SPH)

**Educational Design:** Please describe how this initiative will be designed, as well as the approximate time span of this initiative.

UNTHSC-PACE plans to employ macro and micro quality improvement to affect systems change and individual clinician performance, resulting in improved patient care.

On the clinician level, UNTHSC-PACE will work with QI and the PCRC to assess individual clinician performance, plan educational interventions and determine if individual performance is realized. To improve patient outcomes, a community health worker (CHW) in UNTHSC’s School of Public Health will implement patient supports.

On the systems level, UNTHSC-PACE will work with QI and the PCRC to identify and determine what processes within Family Medicine (FM) should be improved upon or modified to facilitate same-visit screening using spirometry.

The clinician improvement component will be structured as a performance improvement CME (PI-CME) activity and award each clinician who completes all three phases 20 CME credits, in addition to credits earned while completing assigned interventions. As a QI initiative, recruitment and retention complications common with other PI-CME activities will be minimized and managed internally.

**Assessment**

UNTHSC-PACE, QI and the PCRC will collaborate to conduct a detailed assessment of each clinician’s (physician, NP, PA and nurse) knowledge, competence, performance, attitudes and beliefs related to spirometry. This assessment will use a mixed-methods approach. Quantitative data collection will include:

- Electronic Medical Record

Skills testing and demonstration
Performance on educational module where diagnosis and differential diagnosis is made based on spirometry (existing)

Qualitative data collection will include:

- Interviews
- Surveys

The combined data sets will be used to develop a comprehensive performance profile. Both sets of data will provide insight into the “what” (qualitative), e.g. less than optimal performance, and the “why” (quantitative), e.g. confidence is low in testing, machine usage or interpreting results. The profile will be shared with each clinician, who will also be provided with the average quantitative scores of other clinicians in the clinic.

Performance measures to compare individual performance to the ideal will include the following:


These measures were selected because they specifically address spirometry and its place in primary care, although other measures will be considered as they are updated or become available. The measures will be used to benchmark each clinician against “ideal” performance so specific interventions to narrow personal practice gaps can be identified.

Interventions

UNTHCS-PACE and QI will examine each clinician’s compiled profile (baseline) to identify interventions that, when completed, will narrow specific performance gaps. These interventions could include:

- Existing online and enduring material designed to improve competence and performance related to spirometry
- Adapting existing and newly created content to address specific performance gaps
- One-on-one and/or small-group preceptoring to narrow specific performance gaps
- Grand Rounds (live and broadcast)
- Other types of activities, flow sheets or non-educational interventions

When possible, UNTHSC-PACE will utilize existing content developed from other initiatives. This content (slide decks, enduring cases, online activities and others) will be

updated to include the most current guidelines and data from literature reviews. Repurposing allows the provision of a richer set of resources without the costs of developing activities and content from scratch.

Interventions will be provided to each clinician in a confidential manner. In addition, any intervention developed for this initiative will be made available to students and residents, as well as community-based physicians.

**Re-Assessment**

The final stage in the individual clinician performance improvement will be to reassess each clinician 60-90 days after completing the interventions. The approach used in the initial assessment will be used in the re-assessment, ensuring complementary data are collected. The clinician’s profile will be updated to include the new data, and provided as a learning and reflection instrument. It is anticipated that most clinicians will realize improvement in clinical performance.

**Systems Improvement**

Improving clinician performance is only one facet of delivering improved patient care within a health system. For that improved performance to be appropriately utilized, the system must be adapted to allow the application of new knowledge and increased competence, as well as enhance the patient’s experience. UNTHSC-PACE will work with QI and the PCRC to identify current processes and recommend process improvements to facilitate in-clinic spirometry.

UNTHSC-PACE and the PCRC will interview key clinical and non-clinical staff to identify the most appropriate place during a patient’s visit to identify the need for spirometry and who will conduct it, if needed. The “Plan-Do-Study-Act” cycle will be utilized to pilot the new process at one clinic site, with feedback from key staff and patients, as well as objective data mined from the EMR system, sought to refine the process. This process is more objective and less intrusive on patient care than direct observation. Once refined, the processes will be presented to Family Medicine for full implementation.

**Patient Improvement**

UNTHSC-PACE will work with UNT’s School of Public Health and one of its community health workers (CHW) to establish patient supports for Family Medicine and other patients who undergo spirometry and are diagnosed with COPD.

UNTHSC will track the number of patients with COPD referred to the program, and if exercise tolerance improved. Patient surveys and follow-up interviews will be conducted by a community health worker. In addition to recommendation of the program to patients, UNTHSC will also assess patient improvement represented by patient scores on METS, DASI, FuncMETS and Dartmouth measures to statistically analyze and compare to results with data collected in the previous project. To support this effort, patient education materials will be identified and/or developed as non-CME certified content.

**Time Span:**

This initiative is expected to be completed in an 18 month time span.

<table>
<thead>
<tr>
<th>Educational/Quality/Professional Practice Gaps</th>
<th>Strategies Used to Identify Gaps (eg, peer-reviewed published data, national consensus sources for clinical performance/quality measures, chart audit/EHR data, medical claims data, etc)</th>
<th>Learning Objectives</th>
<th>ABMS MOC Process (Part I-IV) and/or Core Competencies Addressed (eg, IOM, ACGME, ABMS)</th>
<th>Educational Outcomes/Measures (Please include Moore Level(^1) when appropriate)</th>
<th>Strategies Used to Measure Outcomes (eg, direct and objective performance assessments, chart audits, medical claims data, EHR data, disease screening audits, patient surveys, etc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wide variability exists in clinician expertise and performance related to spirometry (competence and performance)</td>
<td>Literature review, interviews with clinical chair, subject matter experts, discussions with QI, gaps identified through similar educational initiative</td>
<td>Assess current gaps in the diagnosis of COPD using EMR data, interviews and performance on clinical scenarios Re-assess individual and department performance</td>
<td>Medical knowledge</td>
<td>Increased confidence, competency and performance conducting and interpreting spirometry (Levels 4, 5)</td>
<td>Baseline vs. post-intervention confidence &amp; Skills testing Electronic Medical Record (EMR) data provided by Quality Improvement Objective assessment of accuracy differentiating progressively more difficult spirometry results measured by an artificial intelligence differential diagnosis tutor.</td>
</tr>
</tbody>
</table>

Patients are referred to a specialty clinic, increasing wait times and healthcare costs while decreasing the likelihood that an early diagnosis of COPD is made (performance and patient care)

<table>
<thead>
<tr>
<th>Literature review, guideline review, interviews with clinical chair, discussions with QI, subject matter experts</th>
<th>Identify and implement educational interventions to improve individual clinician performance related to diagnosis</th>
<th>Patient Care Medical Knowledge Systems-Based Practice</th>
<th>Improved clinical performance and patient outcomes realized through earlier diagnosis (Levels 5, 6, 7)</th>
<th>Electronic Medical Record (EMR) data provided by Quality Improvement on spirometry ordered, completed and where completed (if completed in a UNTHSC clinic)</th>
</tr>
</thead>
</table>

Patient supports are not in place (patient care)

<table>
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<tr>
<th>Literature review, interviews with clinical chair, discussions with QI, subject matter experts and gaps identified through similar educational initiative</th>
<th>Develop patient education resources to improve self-management</th>
<th>Systems-Based Practice Patient Care Professionalism Interpersonal and Communication Skills</th>
<th>Improved patient outcomes (Level 5, 6)</th>
<th>Electronic Medical Record (EMR) data provided by Quality Improvement on referrals to program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please contact the independent medical education provider for additional information regarding the initiative.</td>
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