

Background

- COPD is the 4th leading cause of mortality in the US¹. Because this disease is commonly managed in primary care settings, numerous campaigns have been undertaken to increase awareness of COPD and to improve best clinical practices among primary care physicians (PCPs). Despite these efforts, significant gaps in clinical care have been documented².
- Physician characteristics partly explain variations from optimal care, but other factors such as practice and geographic influences may also be significant³. A better understanding of these determinants and their relationships may lead to better tailored interventions to improve COPD care.

Purpose

- As part of an educational needs assessment, this study sought to examine variability in geographic and physician characteristics that may influence how PCPs diagnose and treat patients with COPD.

Methodology

- A survey was distributed to US PCPs to examine practice patterns and perceptions⁴. The survey included case vignettes describing patients with mild-to-moderate COPD and a set of clinical decision-making questions. Responses from 656 practicing physicians were used in analysis.
- Survey responses were merged with county-level COPD mortality data⁵. The merged data set was analyzed using Latent Class Analysis⁶ to identify groups of PCPs with shared characteristics.

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Methods - Measures Examined

Physician Characteristics

- High confidence in COPD care
 - Early Detection
 - Accurate Diagnosis and Staging
 - Up-to-date Management
- On-site spirometry access and use
- COPD guideline familiarity and use
- Evidence-based clinical decision-making
 - 4+ of 7 questions on diagnosis & management of mild-to-moderate COPD answered according to guidelines

Geographic Characteristics

- COPD mortality rate - county level

Results - Physician Clusters

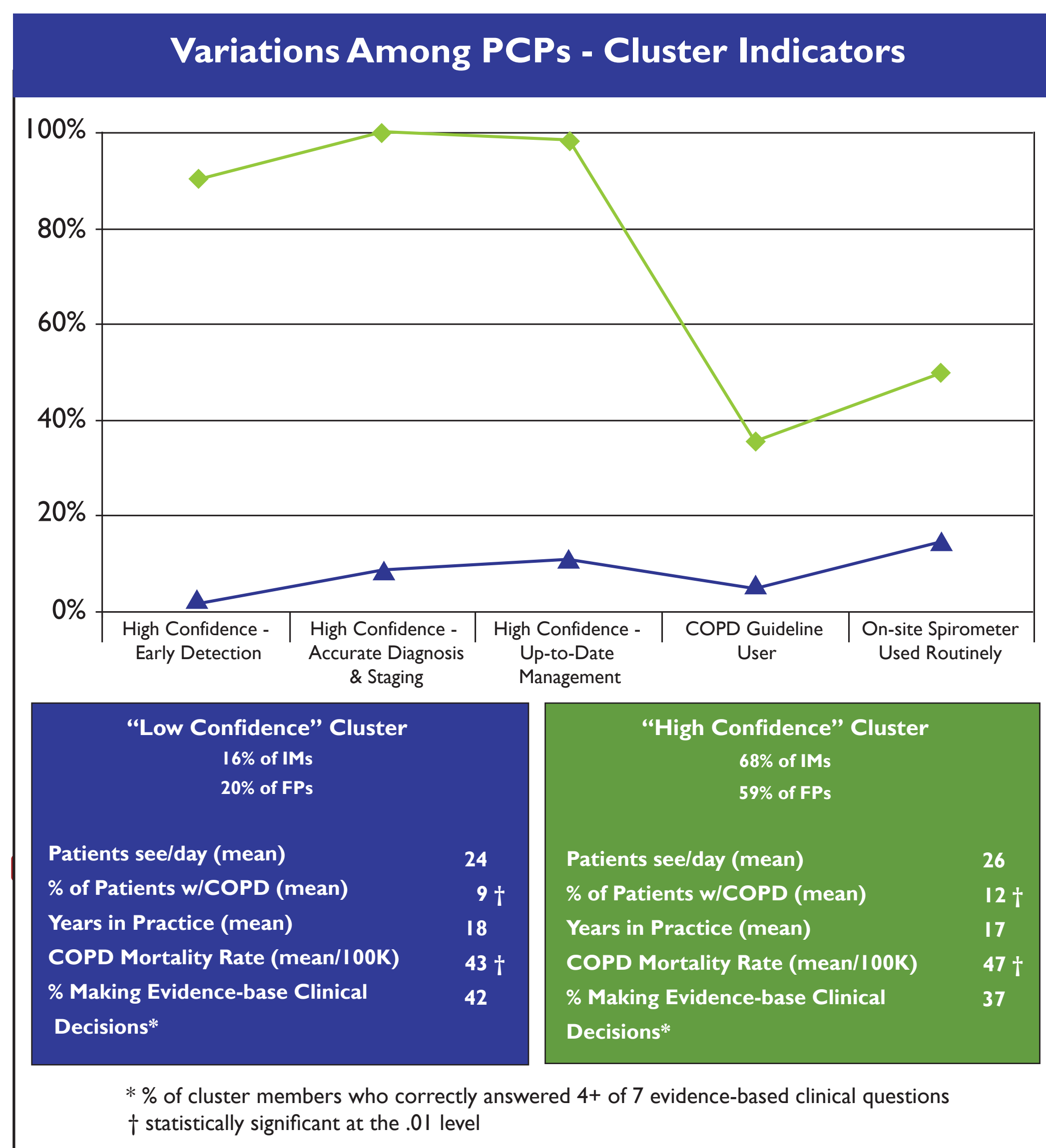
- Latent Class Analysis identified 3 distinct physician clusters. The Cluster Indicators - those characteristics that tended to be similar and defined the groups - were self-reported confidence in COPD care, on-site spirometry experience, and COPD guideline usage.

Physician Group	% of PCPs in Cluster
"High Confidence" Group	57 %
"Intermediate Confidence" Group (not shown)	26 %
"Low Confidence" Group	17 %

* Notably, physicians' cluster assignment was not correlated with evidence-based clinical decision-making.

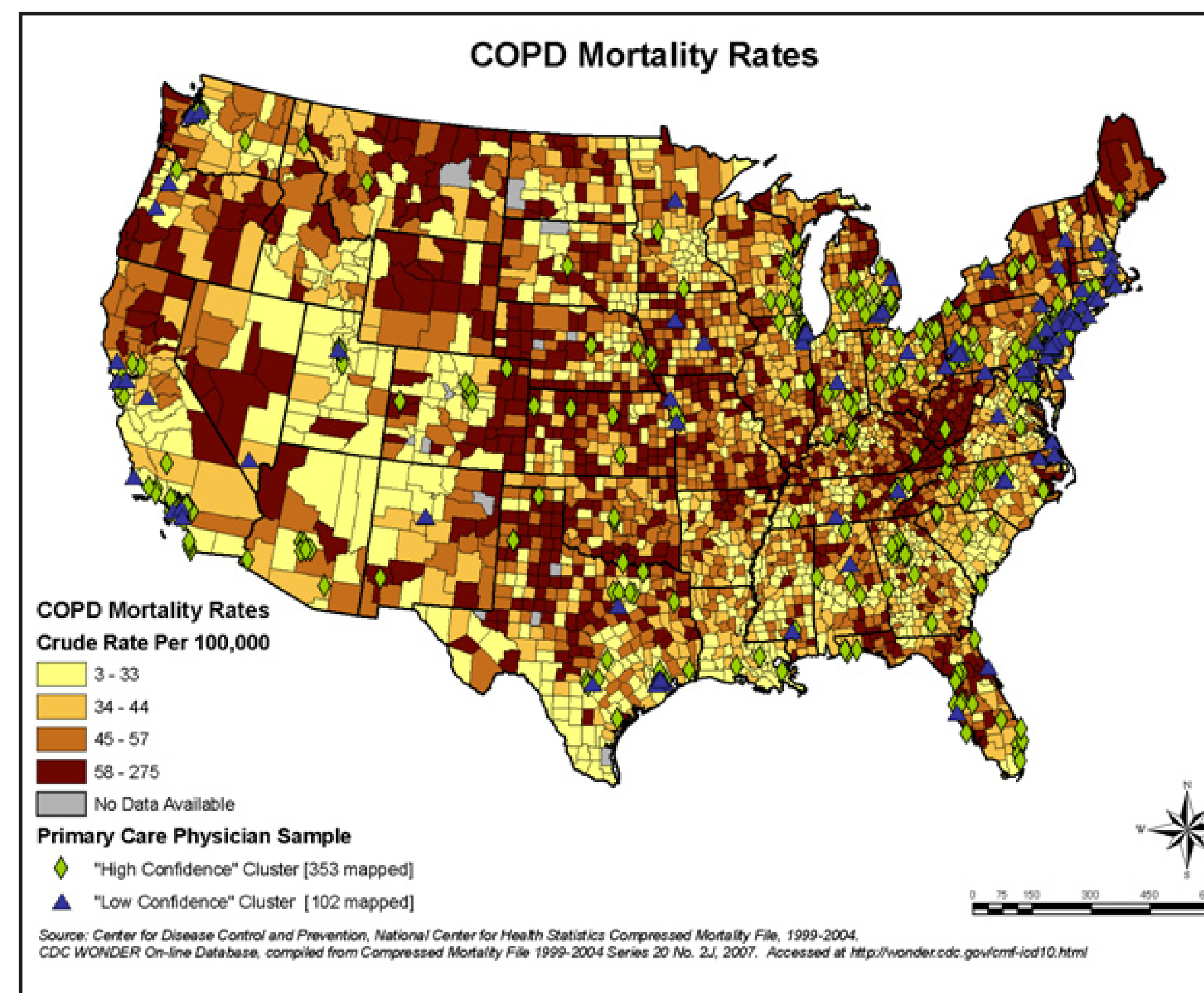
PCPs in the "High Confidence" cluster had significant knowledge and practice gaps in COPD diagnosis and treatment.

Results: Cluster Characteristics



Higher confidence physicians practice in areas of higher COPD mortality.

Geographic Variation



Discussion

- In this study, a "High Confidence" cluster characterized the majority of PCPs. These PCPs tended to live in areas with a higher COPD burden and had a higher percentage of patients with COPD in their practices.
- High confidence levels were associated with COPD guideline usage and routine use of on-site spirometry, suggesting potential mechanisms to enhance physicians' comfort in COPD care.
- Many "Low Confidence" PCPs practice in the Northeastern US where pulmonologists are relatively abundant. As a result of easy access to pulmonary specialists, these PCPs may care for fewer COPD patients than PCPs in high mortality areas, which are often rural and may have less access to specialists.
- Surprisingly, PCPs in the "High Confidence" cluster had significant knowledge and practice gaps in COPD diagnosis and treatment. These occurred at a rate comparable to the "Low Confidence" cluster. This finding may reflect limitations of current COPD guidelines which may provide insufficient guidance for clinical decision-making in the primary care setting. Although hands-on spirometry experience was also associated with greater confidence, study findings suggest that periodic opportunities to assess spirometry testing and interpretation skills may be important.

Implications for Education

- A majority of PCPs are confident in their COPD care and are often experienced with on-site spirometry and COPD guidelines, but still appear to have significant educational needs. Because of their high confidence, educational initiatives need to be carefully tailored to engage this physician group and should specifically address key diagnostic and therapeutic errors that may not be readily apparent to seasoned clinicians.
- A small but significant number of PCPs have low confidence in COPD care, are unfamiliar with guidelines and may lack access or comfort with spirometry. These physicians see fewer COPD patients in their practices. It is unclear whether this reflects a greater role of pulmonologists locally or under-detection of COPD. These PCPs may benefit from campaigns to enhance COPD awareness, and because of their low confidence, may be highly receptive to resources and educational opportunities to improve their skills in COPD care.

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