Challenges and Recommendations for Improving Access to Evidence-Based COPD Management among Rural Veterans: Rural Primary Care Provider Perspectives

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INTRODUCTION

Chronic obstructive pulmonary disease (COPD), a leading cause of disability and death in the U.S., disproportionately affects rural residents.[1] Rural counties experience more COPD-related exacerbations, hospitalizations, and deaths than urban counties.[1,2] Furthermore, isolated rural veterans have a higher risk of mortality following hospitalization for an acute exacerbation compared to urban veterans.[3] Rural–urban disparities in COPD outcomes are multifactorial in origin with contributions from factors such as occupational exposures, tobacco use, and socioeconomic status.[4,5] Lack of access to resources required to deliver evidence-based COPD management, such as outpatient pulmonary rehabilitation, likely also affects rural disparities in COPD.[6] To address this, we aimed to assess barriers to, facilitators of, and recommendations for improving evidence-based COPD management in rural clinics.

METHODS

We conducted a qualitative study of primary care providers (PCPs) who manage patients with COPD in rural clinics. A total of 101 PCPs from the Veterans Health Administration (VHA) Midwest Health Care Network were sent an email invitation to participate. A total of 12 PCPs were willing and able to participate in the interview. We performed 30 min semi-structured interviews over video conference with probes designed to elicit perceived factors that impact evidence-based COPD management for rural veterans. Interviews were audio-recorded and transcribed. Two investigators (AKB and TW) used NVivo (QSR, International, Burlington, MA, USA) to perform qualitative analysis; interviews were coded using an inductive approach and themes were organized into a hierarchical frame. This study was approved by institutional review boards at the Minneapolis VA Health Care System (VAM-20-00,583) and the University of Minnesota (STUDY00011069).

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RESULTS

Twelve primary care providers whose clinics were located across four states (Iowa, Minnesota, Nebraska, South Dakota) in the VA Midwest Health Care Network were interviewed, including five physicians, six nurse practitioners, and one physician assistant. The mean age was 52 ± 12 years and the majority had $\geq$20 years of clinical experience. Representative quotes are displayed in Table 1.

Table 2 provides a summary of the key barriers (limited clinic resources and challenges in coordinating care), facilitators (multidisciplinary clinic support and resources for tobacco cessation), and recommendations (improve access to pulmonary specialty care, develop clinical support tools, and establish COPD management program) to improve evidence-based COPD care.

DISCUSSION

Rural PCPs identified many barriers to, facilitators of, and recommendations toward improving evidence-based COPD management in rural VA clinics. Although PCPs face challenges in coordinating care and overcoming resource barriers, they also acknowledge that evidence-based COPD care is bolstered by multidisciplinary clinical support and tobacco cessation options.

Our findings provide a pathway forward to improve evidence-based COPD care for rural veterans. Actionable steps include increasing access to spirometry in rural clinics improve accuracy of COPD diagnosis and improving transportation services to and from VA health care facilities where services are available to reduce travel burden for rural veterans. Improving primary care clinic staffing and specialty care outreach to rural clinics may also improve provision of care within the VA system that can lead to reduced fragmentation of care and improved patient and PCP satisfaction.

Future research should build on our findings. Further research should include perspectives from other stakeholders, including patients and health system leadership to inform future delivery models. This will improve delivery of evidence-based COPD care, while also increasing access to care for rural COPD patients. For example, given consensus that a COPD management program would be beneficial, efforts could focus on leveraging multidisciplinary teams, including pharmacists, to improve COPD care by targeting rural patients with frequent exacerbations who are at

Table 1 Elucidative Quotes Describing Rural Primary Care Perspectives on the Challenges, Facilitators, and Recommendations to Improve Access to Evidence-Based COPD Management

Theme	Clinician	Quote
Challenges		
Access to clinicians with time to address COPD	Provider 1	"We all are managing huge panels of people, and doing work for every specialist they see. We have to get everything kicked back to us, so we don't have a lot of time to do this work or think about it."
Access to technical resources	Provider 6	"No, we don't have spirometry. So, unfortunately at our clinic, we are very limited to things that we can do here…"
Access to integrated primary and specialty care	Provider 7	"The less community care referrals I have, it's easier for me, and it's easier for them. We have less cracks. We have a more standardized approach."
Access to expertise in COPD guidelines	Provider 7	"I think guidelines sometimes are hard to follow. I have got to even look back at the new recommendations. You know they change all the time."
Facilitators		
Access to multidisciplinary support	Provider 9	"We've got a pharmacist here… she is really good about looking and making sure that we've got everything on board that we can…"
Access to tobacco cessation options	Provider 8	"I think the resources are available and the patients know that and, you know, it's kind of the ball is in their court. I mean there is help available."
Access to clinic appointments	Provider 2	"My clinic access is actually very good compared to other clinics…we try to see them when they need to be seen."
Recommendations for improvement		
Increased access to COPD disease management program	Provider 2	"I would like to see a [COPD case management] program. I think the more education we can give to the vets, the more they understand about it and the more they'll take ownership of it."
Access to electronic health record support tools	Provider 5	"It would be kind of interesting to have something like a [clinical decision support tool] for pulmonary medications."
Increased access to pulmonary specialty care consultation	Provider 9	"I would love even if [the regional] system could do an E-consult so they could review my notes. When we get PFTs in the clinic, they could review the PFTs and medications, and they could give us some extra insight."
Improved resource access	Provider 8	"Well it would be nice if we could get pulmonary function testing done more quickly and easily."

Table 2 Summary of Key Barriers, Facilitators, and Recommendations to Improve Evidence-Based COPD Management in Rural Clinics

Barriers	Facilitators	Recommendations
• Limited practical resources such as spirometry and transportation assistance • Insufficient time in clinic • Lack of integrated primary and specialty care • Low provider familiarity with COPD guidelines • Inadequate internet coverage for patients • Difficult coordination of care for non-VA referrals	• Multidisciplinary clinical support • Some PCPs with adequate time and appointment availability • Sufficient resources for tobacco cessation	• Increase access to pulmonary subspecialty care such as electronic consultation options • Develop electronic health record (EHR)-based clinical decision support tool • Establish COPD management program

highest risk for poor outcomes. Lastly, research on utilizing telehealth to provide access to evidence-based services, such as spirometry and pulmonary rehabilitation, would be beneficial.

This work has limitations: PCP perspectives from the Midwest region only; modest sample size, though we reached thematic saturation; potential for selection bias; and narrow focus on access to COPD care, which may not be applicable across other diseases or specialty care. Still, this study provides concrete steps forward to improve COPD care and outcomes for rural veterans.

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Declarations

Conflict of Interest *KMK reports personal fees from Nuvaira (Data Safety and Monitoring Board), Allergan and Organicell (Consulting). All other authors declare that they have no conflict of interests related to this study.*

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