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# **National Advisory Committee on Rural Health and Human Services**

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## **Addressing the Burden of Chronic Obstructive Pulmonary Disease (COPD) in Rural America**

### *Policy Brief and Recommendations*

**December 2018**

### EDITORIAL NOTE

During its September 2018 meeting in and near Charlotte, North Carolina, the National Advisory Committee on Rural Health and Human Services (hereinafter referred to as “the Committee”) focused on chronic obstructive pulmonary disease (COPD) in rural areas as one of two topics. During the course of its meeting, the Committee examined the delivery and quality of COPD care and treatment, payment for pulmonary rehabilitation services, and COPD surveillance. Over the two-and-a-half day meeting, the Committee first heard from subject matter experts from both national- and state-level perspectives. The subcommittee tasked with this issue then visited a Grace Anne Dorney Pulmonary Rehabilitation Center at the Happy Valley Medical Center located in Lenoir, North Carolina. There, Committee members heard from community stakeholders, including COPD patients and health care providers (see **Appendix A**).

### ACKNOWLEDGEMENTS

The Committee would like to acknowledge all those whose participation helped make the September 2018 meeting in and near Charlotte and this policy brief possible.

The Committee expresses its thanks to each of the presenters for their contributions to the meeting and for providing a foundation of knowledge and expertise on the subject. These individuals are: Normandy Brangan, MA (Federal Office of Rural Health Policy); Grace Anne Dorney Koppel, MA, JD (Dorney-Koppel Foundation); Kurt J. Greenlund, PhD (National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention); Antonello (Tony) Punturieri, MD, PhD (National Heart, Lung, and Blood Institute, National Institutes of Health); and Betsey Tilson, MD, MPH (North Carolina Department of Health and Human Services).

The Committee would also like to thank each of the community stakeholders who shared their insights and experiences during the site visit meeting. These individuals are: Eddie, Jerry, Mary, and Nancy (COPD patients); Hector Estepan, MD and Debra Stallings, RRT (Happy Valley Medical Center); Michael (Brad) Drummond, MD, MHS (University of North Carolina at Chapel Hill); Dan Doyle, MD and Lisa Emery, RRT (New River Health System); Chuck Elliot, MHA, FACHE and Peter Charvat, MD (Johnston Health); Curt Hiller, RRT (retired); John Francis (Helping Hands Clinic); Joshua Swift, MPH (Caldwell County Health Department); Jeff Heck, MD (Mountain Area Health Education Center); Bryan Belcher, MPH (High Country Community Health); and Michelle Waters, FNP-BC (Caldwell UNC Health Care).

The Committee expresses its appreciation to Rhett N. Mabry, MHA and the staff at The Duke Endowment for hosting the Committee on its first day and Tom McRary, MBA and the staff at the Happy Valley Medical Center for hosting the site visit on the second day.

Finally, the Committee extends its gratitude to Alfred Delena for coordinating the activities of this meeting, the Committee’s findings, and this policy brief.

## **RECOMMENDATIONS**

1. The Committee recommends the Secretary and the Department of Health and Human Services undertake a national campaign to educate rural primary care providers and individuals with COPD symptoms about rural-urban disparities in COPD outcomes with an emphasis on the need to do more screening and referral for effective treatments to help manage the disease.
2. The Committee recommends that prior to the next revaluation of outpatient prospective payment rates, the Department of Health and Human Services consult with experts in pulmonary treatment to refine the definition of rehabilitation services and, in Medicare cost reports, confirm that there is adequate accurate data on this service to be used as a basis for the rate.
3. The Committee recommends the Secretary work with Congress to expand direct supervision of pulmonary rehabilitation to include physician assistants, nurse practitioners and other primary care providers under general supervision of a physician.

## **INTRODUCTION**

Chronic obstructive pulmonary disease (COPD) is a leading contributor to mortality, morbidity and disability in the United States. COPD, an all-encompassing term used to describe a group of progressive lung diseases that make it difficult to breathe, is characterized by a set of symptoms that includes coughing, shortness of breath, wheezing, and tightness in the chest. While there is no current cure, prescribed medications, pulmonary rehabilitation, oxygen therapy, and surgical procedures are several treatments that can help alleviate COPD symptoms.<sup>1</sup>

Nationally, COPD affects 15-16 million Americans,<sup>1,2</sup> with millions more who are undiagnosed and unaware that they have the disease. In 2016, chronic lower respiratory disease—primarily COPD—was the fourth leading cause of death in the U.S. with an age-adjusted death rate (per 100,000 population) of 40.6.<sup>3</sup> National surveillance of COPD also highlights disparities based on certain demographics.<sup>1,2,4</sup> By gender, the age-adjusted prevalence of the disease is higher among women (6.6%) compared to men (5.4%).<sup>2</sup> By race/ethnicity, COPD disproportionately affects the American Indian and Alaska Native population (10.2%) relative to non-Hispanic whites (6.3%).<sup>2</sup> By geography, COPD significantly affects rural residents as compared to individuals who live in urban centers.<sup>1</sup> Research findings from a 2018 Johns Hopkins study revealed a higher estimated COPD prevalence among rural, poor communities, suggesting that rural residence and poverty are independent COPD risk factors.<sup>5</sup>

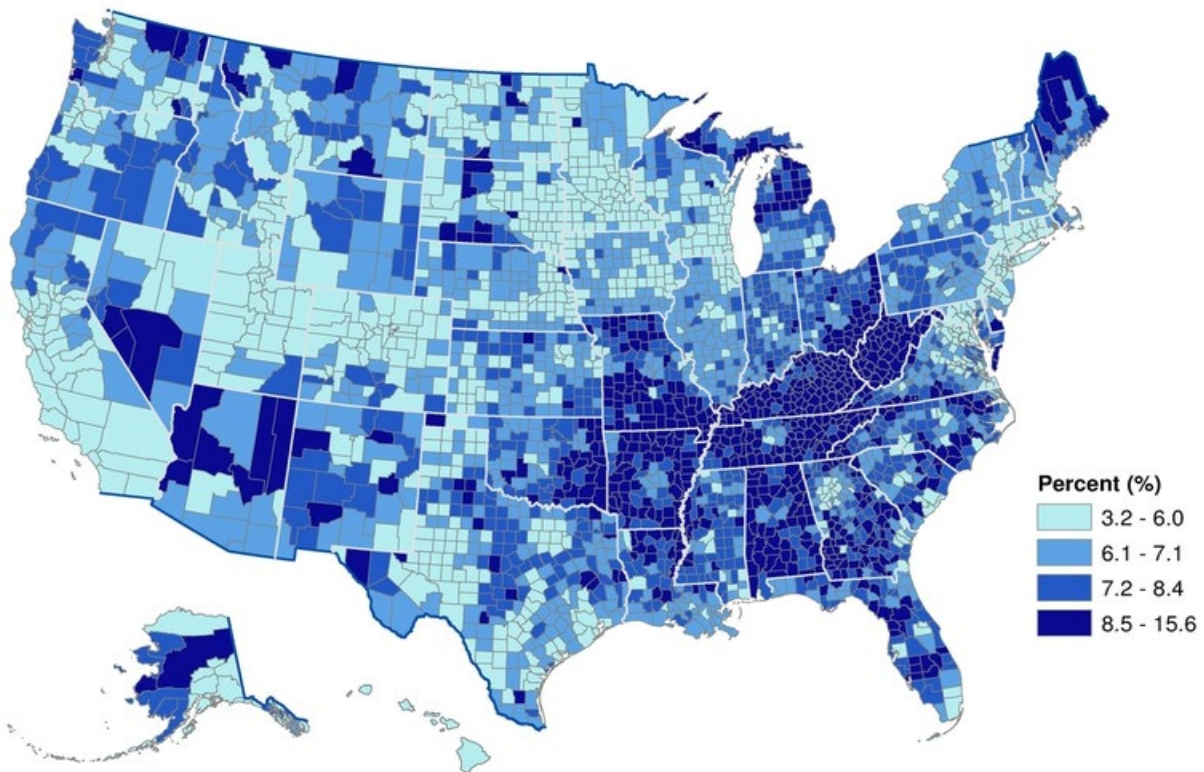
## **BACKGROUND**

### **Rural COPD**

COPD is among the five leading causes of death in rural America. Between 1999 and 2014, annual age-adjusted death rates from chronic lower respiratory disease increased in nonmetropolitan (rural) counties

<sup>i</sup> Visit the [National Heart, Lung, and Blood Institute](#) for more information about COPD.

despite decreasing in metropolitan (urban) areas.<sup>6</sup> Although annual rural death rates for three other leading causes—heart disease, cancer, and stroke—decreased, the rural mortality rate for COPD increased,<sup>6</sup> suggesting that the disease is showing no signs of abatement for this population. Recent findings from the Centers for Disease Control and Prevention (CDC) reveal significantly higher estimates of adult prevalence, Medicare hospitalizations, and deaths along an increasing rurality gradient. Specifically, the age-adjusted prevalence of doctor-diagnosed COPD among rural counties was nearly twice as high as that of urban centers (8.2% vs. 4.7%, respectively).<sup>1</sup> Historically, research has documented that the highest quartile of reported COPD prevalence is often concentrated in Appalachia and the South; geographic regions that tend to have states with higher rural populations (see **Figure 1**).<sup>1,2,4</sup> Among Medicare beneficiaries aged 65 and over, COPD-related hospitalizations (per 1,000 enrollees) were higher among rural enrollees (13.8) compared to urban (11.4).<sup>1</sup> Moreover, as counties became less urbanized, the age-adjusted mortality rate for COPD as the underlying cause of death increased,<sup>1</sup> further demonstrating a rural-urban disparity.



**Figure 1:** Unadjusted prevalence of COPD among adults ages 18+, by county – United States, 2015<sup>1</sup>

The Committee recognizes that because of a lack of access and availability of transportation services, specialty care, and treatment options, the disparity in COPD outcomes might be even more pronounced between rural and non-rural areas. Moreover, exposure to certain COPD risk factors—including rurality and poverty<sup>5</sup>—may also explain the rural-urban disparity as smoking and certain environmental and occupational exposures affect rural communities to a higher degree than urban centers.

### Rural-Related Risk Factors

Cigarette smoking is an identifiable main risk factor for developing COPD.<sup>7</sup> Research demonstrates that those living in rural areas have higher rates of cigarette smoking and secondhand smoke exposure

compared to the rest of the nation.<sup>8,9</sup> For instance, from 2010-2011, rural adults (25% of women and 29% of men) were significantly more likely to smoke compared to urban adults (13% of women and 19% of men).<sup>8</sup> These differences were particularly pronounced in the South, which also had a greater rural-urban difference. In addition, an analysis of 2011-2012 data from the National Survey on Children's Health indicates that rural children (35%) experience a greater degree of secondhand smoke exposure in the household compared to urban children (24.4%).<sup>10</sup>

Although a majority of individuals with COPD symptoms have reported a history of smoking, roughly 25% of those with the disease in the U.S., however, have never smoked.<sup>11</sup> Besides smoking, other factors that contribute to the onset of COPD include exposures to certain dusts, chemicals, and other pollutants from environmental and occupational activities such as farming and coal mining.

Within the agricultural industry, exposures to an array of pollutants<sup>ii</sup> correlate with increased risks for COPD and other respiratory diseases, including hypersensitivity pneumonitis ("farmer's lung").<sup>12</sup> In a review, researchers highlight observable differences in elevated COPD symptoms and rates among non-smoking dairy farmers (10.7%) compared to office workers (2.7%).<sup>12</sup> Moreover, in a 2007 study, rural veterans<sup>iii</sup> who spent more time working in the agricultural sector had worsening outcomes on pulmonary function tests.<sup>13</sup> Among coal miners, decades of research has shown associations between prolonged exposure to coal mine dust and the development of coal mine dust lung disease (CMDLD).<sup>14,15</sup> Caused by inhaling coal mine dust, CMDLD refers to a spectrum of lung diseases that includes COPD, coal workers' pneumoconiosis (also known as black lung disease), mixed dust pneumoconiosis, silicosis and dust-related diffuse fibrosis. With a persistent increase in the prevalence of black lung disease<sup>16</sup> and a revival of its most severe form, progressive massive fibrosis (PMF),<sup>17</sup> existing evidence demonstrates a higher burden of COPD-related symptoms and outcomes among coal miners. This higher burden may also affect rural populations more so than urban areas as coal mines tend to be located in more isolated, rural regions of the country.<sup>18</sup>

## Re-Examining Rural Health Care Disparities

For rural Americans living with COPD, differences in the availability and allocation of health care services, specifically access to transportation and specialty care and treatment, affects their ability to manage the disease effectively.

### *Access to Transportation*

Lack of transportation in rural areas is frequently raised to the Committee as a critical access-to-care issue. Transportation difficulties often results in delayed or missed clinical appointments, challenges with visiting the pharmacy for medication refills and subsequent adherence, and a greater likelihood of delaying care, especially among tribal communities.<sup>19</sup> Moreover, a study conducted by the WWAMI Rural Health Research Center found that among Medicare beneficiaries in five states, patients living in small rural locations had to drive an average of 33.4 miles, spending more than 42 minutes traveling to receive pulmonary function tests.<sup>20</sup>

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<sup>ii</sup> Exposures to agricultural-related pollutants include certain gases, organic dusts containing bacteria, fungal spores, pesticides, and herbicides.

<sup>iii</sup> According to a [2012 study](#) from the Veterans Health Administration's Office of Rural Health, veterans with COPD symptoms living in isolated rural areas had a 42% increased risk of dying from a COPD exacerbation compared to veterans living in urban areas. Data from the U.S. Census Bureau's American Community Survey points out that an estimated [5 million U.S. veterans resided in rural-designated areas](#) from 2011-2015.

### *Access to Specialty Care*

With limited transportation services, additional barriers to accessing specialty care becomes even more challenging. In a 2018 study published by the University of Minnesota's Rural Health Research Center, researchers observed a rural-urban disparity in the provision of respiratory care based on hospital type.<sup>21</sup> Specifically, Critical Access Hospitals (CAHs) were significantly less likely to provide respiratory therapy and employ respiratory therapists compared to both rural PPS (Prospective Payment System) and urban PPS hospitals.<sup>21</sup> This finding implies that in order to access essential respiratory services, rural patients have to travel longer distances to receive appropriate care and treatment. While this is the case, the Committee notes that CAHs would be best positioned to offer such services to individuals with COPD symptoms who live in rural areas as an estimated 71% (1,341) of rural hospitals are CAHs.<sup>iv</sup>

Although the availability of pulmonary care specialists may reduce hospital utilizations,<sup>22</sup> rural residents rarely have any type of specialists practicing in their communities. For instance, data analysis from the CDC revealed geographic variation in the availability of pulmonologists. In particular, among the 12,392 self-identified pulmonologists in the U.S. in 2013, a higher concentration of pulmonologists (92.2%) were located in urban centers compared to rural areas (2.1%).<sup>23</sup> The CDC analysis also reported decreased access based on driving distances. Among rural populations, 95.2% had access to at least one pulmonologist that was within 50 miles while 34.5% had access to one that was within 10 miles. By comparison, among urban residents, 100% had access to a pulmonologist that was within 50 miles and 97.5% could find one that was less than 10 miles away.<sup>23</sup> Moreover, because of geographic isolation and transportation challenges, rural populations often have limited access to effective treatment including pulmonary rehabilitation.<sup>v</sup>

## FEDERAL EFFORTS

Several agencies within the U.S. Department of Health and Human Services (HHS) play important roles by identifying national health care issues, conducting research and surveillance, and providing clinical health services to improve outcomes for those with COPD. Primarily, these agencies include the CDC, the Centers for Medicare & Medicaid Services (CMS), the Health Resources and Services Administration (HRSA) and, within the National Institutes of Health, the National Heart, Lung, and Blood Institute (NHLBI).

### **CDC Programs**

At the CDC, the National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) receives appropriated funds to address specific chronic conditions and their risk factors among Americans. To date, chronic diseases account for [seven of the ten leading causes of death](#) in the U.S. Although the CDC does not receive dedicated appropriated funds to work specifically on the prevention of COPD, the Division of Population Health (DPH) within NCCDPHP has a history of leveraging existing surveillance data to understand the epidemiology of COPD and inform prevention efforts.

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<sup>iv</sup> Internal analysis conducted using 2017 hospital data provided by the [Cecil G. Sheps Center for Health Services Research](#) at the University of North Carolina at Chapel Hill.

<sup>v</sup> According to the [American Thoracic Society and the European Respiratory Society](#), a pulmonary rehabilitation program is “an evidence-based, multidisciplinary, and comprehensive intervention ... [that] is designed to reduce [chronic respiratory] symptoms, optimize functional status ... and reduce healthcare costs ... [through] patient assessment[s], exercise training, education, nutritional intervention, and psychosocial support.”

NCCDPHP collects state-based information on COPD through the Behavioral Risk Factor Surveillance System (BRFSS), an annual health survey supported by the CDC and conducted by states. BRFSS data allows the CDC to assess geographic and demographic differences in the burden of COPD, including those at the local and community levels. DPH also has a history of collaborating with NHLBI to disseminate surveillance data, public health research findings, and messages about COPD. Furthermore, DPH coordinates with relevant programs within the CDC (e.g., the Office on Smoking and Health), with other HHS agencies (e.g., HRSA), and with external partners (e.g., COPD Foundation) to increase awareness of COPD's burden as a leading cause of death.

### CMS Programs

CMS plays a critical role as a payer of health care services for Medicare and Medicaid beneficiaries with COPD. [Medicare Part B](#) and Medicaid cover a wide array of services, which may include pulmonary rehabilitation, oxygen therapy and smoking cessation. These services can help improve quality of life while reducing costs through avoidable inpatient hospital admissions and re-admissions. CMS also monitors quality of care for COPD patients. In 2012, CMS published an initial set of quality measures that states could voluntarily use to measure quality of care. The updated [Medicaid Adult Core Set](#) and the [Medicaid Child Core Set](#) of quality measures capture the diverse needs of Medicaid enrollees, including hospital admissions for adults with COPD and asthma medication ratios for children. In 2015, Medicare added COPD as a condition for the [Hospital Readmission Reduction Program \(HRRP\)](#), which measures hospital performance for “excessive” rates of 30-day readmissions.<sup>24</sup> Lastly, the Merit-based Incentive Payment System (MIPS), which measures physician performance, also includes COPD-focused quality measures.

### HRSA Programs

HRSA funds an array of programs that aim to improve health and achieve health equity through the provision of quality health care services to geographically, economically or medically underserved populations. Within its portfolio, HRSA administers grant funding that supports primary care, workforce development, maternal and child health, HIV/AIDs and rural health. Although HRSA's programs do not specifically target COPD-related activities, opportunities to lessen the disease's burden can be addressed through the [Community Health Center Program](#), which provides essential primary and preventative care to the medically underserved and uninsured communities with 1 in 5 rural residents relying on a health center. Another resource HRSA provides is through the [Black Lung Clinics Program \(BLCP\)](#). BLCP aims to reduce the morbidity and mortality associated with CMDLD, including COPD. Authorized by Section 427(a) of the Federal Mine Safety and Health Act of 1977 and administered by the Federal Office of Rural Health Policy, BLCP awards funding to health facilities that provide medical, outreach, educational, and benefits counseling services to active, inactive, and disabled coal miners throughout the nation regardless of a miner's ability to pay. All BLCP grantees<sup>vi</sup> must provide pulmonary rehabilitation services either onsite, through contract or by referral.

### NHLBI Programs

NHLBI—one of the 27 Institutes and Centers of the National Institutes of Health—is the primary Institute investigating the causes, treatments, and cures for both common and rare lung diseases. The Institute supports both investigator-initiated research and targeted funding opportunities for research on COPD. The areas of research funded cover genetic/genomic determinants of disease susceptibility or resilience, biomarkers and mechanisms of disease pathogenesis, classification of COPD subpopulations and endotypes amenable to targeted interventions, and development of novel therapeutic approaches,

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<sup>vi</sup> A list of current grantees can be found on HRSA's [Data Warehouse](#).

including disease modifying or regenerative therapies. NHLBI is also supporting the [COPD Learn More Breathe Better® program](#), which funds organizations committed to the education and understanding of the disease. In addition, a cross-cutting group of COPD stakeholders, spearheaded by NHLBI, launched the first ever [COPD National Action Plan](#), a guide to preventing COPD and improving the longevity and quality of life for those living with the disease.

### ***COPD National Action Plan Goals***

Developed at request of Congress, NHLBI collaborated with other federal agencies, including the CDC and HRSA, COPD patients, caregivers, health care providers, nonprofit organizations, industry, payers, researchers, academicians and other interested stakeholders over the course of a year. The Plan is the nation's "first-ever blueprint ... [that] provides a comprehensive framework for action by those affected by the disease and who care about reducing its burden."<sup>25</sup> To set the groundwork for creating the Plan, NHLBI, in collaboration with federal partners, hosted a series of workshops and a National Town Hall Meeting to establish five core goals and further develop each goal's objectives and strategies. Elevating public awareness, improving the quality and delivery of care, and enhancing data collection and research are all highlights of the Plan.

1. Empower people with COPD, their families, and caregivers to recognize and reduce the burden of COPD.
2. Improve the prevention, diagnosis, treatment, and management of COPD by improving the quality of care delivered across the health care continuum.
3. Collect, analyze, report, and disseminate COPD-related public health data that drive change and track progress.
4. Increase and sustain research to better understand the prevention, pathogenesis, diagnosis, treatment, and management of COPD.
5. Translate national policy, educational, and program recommendations into research and public health care actions.

## **POLICY RECOMMENDATIONS**

In alignment with the congressionally mandated *COPD National Action Plan*, the Committee offers the following recommendations to help improve access to care and treatment for individuals with COPD symptoms who live in rural areas. These recommendations were informed by expert testimony as well as conversations held during the Committee's site visit to a Grace Anne Dorney Pulmonary Rehabilitation Center at Happy Valley Medical Center in Lenoir, North Carolina (see **Appendix A**).

### **Undertake a National COPD Education and Awareness Campaign**

During its meeting, the Committee consistently heard about the important role rural primary care providers (e.g., physicians, physician assistants and nurse practitioners) play in detecting, diagnosing and treating individuals with COPD symptoms. However, the stakeholders expressed concerns about the need for rural primary care providers to be better educated about diagnosing COPD using spirometry<sup>vii</sup> and about making referrals to effective treatments like pulmonary rehabilitation. As many of the presenters noted, even when COPD is diagnosed, timely referrals for pulmonary rehabilitation may not be made. The

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<sup>vii</sup> [Spirometry](#) is a standard test that measures lung function and is used to determine if a person has COPD.



delay may perhaps be due to a lack of access to pulmonary rehabilitation services, but it might also be due to a lack of understanding of the *benefits* of pulmonary rehabilitation.

Given the rural-urban disparities in COPD prevalence, hospitalizations, and deaths,<sup>1</sup> along with COPD being underdiagnosed in the U.S. as a whole,<sup>26,27</sup> the Committee believes a national campaign to raise awareness about COPD among rural providers and individuals with symptoms of COPD is needed. The Committee envisions a campaign similar to the HHS campaign that was undertaken by HRSA's Federal Office of Rural Health Policy (FORHP) and CMS' Office of Minority Health on chronic care management (CCM). Under Section 103 of the [Medicare Access and CHIP Reauthorization Act of 2015 \(MACRA; P.L. 114-10\)](#), Congress required HHS and the Secretary to "conduct an education and outreach campaign to inform professionals who provide Part B services and beneficiaries ... of the benefits for CCM services and to encourage individuals with chronic care needs to receive such care."<sup>28</sup> This campaign was specifically aimed to educate providers and patients in rural and underserved areas. For a national COPD campaign, the Committee encourages the Secretary to include the CDC, CMS, FORHP, NHLBI, and the Administration for Community Living in the campaign's development and implementation.

A national COPD campaign would align with the [CMS Rural Health Strategy](#) as well as several goals of the *COPD National Action Plan*.<sup>25</sup> The Committee believes this national campaign would benefit and engage rural individuals with COPD symptoms and providers. During its site visit to Lenoir, the Committee gained valuable insights from the patients' perspective on managing COPD. The patients discussed feeling empowered after learning more information about the disease and the social and physical benefits reaped from participating in the pulmonary rehabilitation program at Happy Valley Medical Center. A national campaign would help rural individuals with COPD symptoms learn about risk factors and effective treatments and may even broaden the education of disease management to family members and caregivers. Among rural primary care providers, this national campaign would help to decentralize expertise from tertiary care centers down to the community level and would help providers bill correctly for services.

**Recommendation 1:** The Committee recommends the Secretary and HHS undertake a national campaign to educate rural primary care providers and individuals with COPD symptoms about rural-urban disparities in COPD outcomes with an emphasis on the need to do more screening and referral to effective treatments to help manage the disease.

### **Examine Value and Expand Direct Supervision for Pulmonary Rehabilitation Services**

Experts have established that pulmonary rehabilitation programs are among the most effective treatments to help manage COPD. Based on an abundance of research findings, the American Thoracic Society and the European Respiratory Society (ATS/ERS) reported a number of benefits gained for COPD patients who undergo a pulmonary rehabilitation program.<sup>29</sup> With pulmonary rehabilitation, patients experience improvements in exercise capacity, in health-related quality of life and in functional capacity.<sup>29</sup> Patients have also reported reductions in hospitalizations,<sup>30</sup> in unscheduled health care visits, and in symptoms of dyspnea and leg discomfort.<sup>29</sup> One study conducted among three rural health centers and a large referral hospital in rural Appalachia found significant improvements in all clinical outcomes measured.<sup>31</sup> Moreover, researchers noted the feasibility of implementing a pulmonary rehabilitation program in rural settings and the benefit and expertise of having respiratory therapists as part of the healthcare team.<sup>31</sup>

Determining appropriate pricing structures for Medicare services is an ongoing public policy challenge, and pulmonary rehabilitation is no exception. Despite evidence supporting the effectiveness of pulmonary rehabilitation, the ATS/ERS reports that payer awareness of pulmonary rehabilitation is often poor.<sup>29</sup> The presenters and community stakeholders at the meeting further emphasized the need for adequate payment, as current Medicare reimbursement rates are not sufficient to sustain pulmonary rehabilitation programs. Since 2010, when pulmonary rehabilitation was first recognized as a covered service, Medicare payment rates have varied substantially due at first to a scarcity of hospital cost data and later to uncertainty about the types and volume of services included in a rehabilitation visit. Given the specificity of this issue, the Committee requested staff at FORHP to look more directly into the history of pulmonary rehabilitation under Medicare (see accompanying text box). Given the current Medicare payment of \$55.96 per session, the Committee is concerned that low reimbursement will discourage health systems in rural areas from investing in cost effective pulmonary rehabilitation programs.

**Recommendation 2:** The Committee recommends that prior to the next reevaluation of outpatient prospective payment rates, HHS consult with experts in pulmonary treatment to refine the definition of rehabilitation services and, in Medicare cost reports, confirm that there is adequate accurate data on this service to be used as a basis for the rate.

### History of Medicare Reimbursement for Pulmonary Rehabilitation Services

In the [Medicare Improvements for Patients and Providers Act of 2008 \(MIPPA; P.L. 110-275\)](#), Congress required that Medicare provide coverage and payment for a comprehensive program of pulmonary rehabilitation services furnished to beneficiaries with COPD, effective January 1, 2010. Because these services did not previously exist under Medicare, CMS created unique procedure codes under the Outpatient Prospective Payment System (OPPS) based on historical hospital claims for pulmonary therapeutic services that were billed in combination of one another. CMS also created an Ambulatory Payment Classification (APC) group in order to determine a rate-per-service. CMS then simulated hospital charges in order to determine that a median per session cost for calendar year (CY) 2010 to be approximately \$50 for pulmonary rehabilitation. In CY2011, CMS had to simulate hospital charges again due to a lack of data, which resulted in a median payment rate of \$62 per session.

For CY2012, a robust set of claims had been submitted on which hospitals reported charges for providing comprehensive rehabilitation services. CMS applied its standard method of calculating payment rates to these data and determined the median payment rate to be \$37 per session. For CY2014, CMS changed the APC group to reflect the services reported on the claims. Through the rulemaking process, stakeholders commented that hospitals may be underreporting the costs of the procedures and may be confused on how to report on the claims. The median payment rate remained stable at about \$39 per session.

For CY2017, CMS revisited how to classify pulmonary rehabilitation services and proposed to reassign the procedures to a new APC group. This proposed change was estimated to increase the payment per session to about \$161. Comments received through the rulemaking process requested that CMS consider changing the indicator code from a 'packaged service' (status indicator code Q1) to a 'significant procedure not subject to multiple discount' (status indicator code S). CMS agreed to make this change, which resulted in a final median payment in CY2017 of \$54.53. For CY 2018 and CY2019, CMS did not make any further changes to the codes used for pulmonary rehabilitation services. The resulting payment rates were respectively, \$55.96 and \$55.90 per session.

**Source:** [Federal Registers 2011 – 2018, Medicare and Medicaid Programs: Hospital Outpatient Prospective Payment; Ambulatory Surgical Center Payment; Hospital Value-Based Purchasing Program; Physician Self-Referral; and Patient Notification Requirements in Provider Agreements.](#)

In addition to reimbursement issues, current regulations under Medicare are potentially burdensome for rural health facilities that offer pulmonary rehabilitation services, specifically with regard to who can provide direct supervision for such programs. Under Section 144 of MIPPA, Medicare requires that a physician be available for each pulmonary rehabilitation session. Since Congress stated that services must be “physician-supervised,” non-physician practitioners (NPPs) are unable to serve in the supervising role for pulmonary rehabilitation services despite being allowed, at times, to supervise other services under separate legal authority (e.g., state law).

Although the Committee recognizes the intent of Congress to improve access to pulmonary rehabilitation services through MIPPA, the Committee is concerned that such a requirement may actually be difficult for rural facilities to fulfill, given the shortage of rural health professionals. Since the availability of NPPs reflects the clinical resources and reality in rural areas, the Committee believes that direct physician supervision needs to be expanded to include primary care providers. The Committee is not aware of research that shows patients would be at risk if NPPs were allowed to supervise pulmonary rehabilitation. Given that quality of care is not known to be negatively affected and given the overriding value of increasing access points to pulmonary rehabilitation, especially in areas where COPD is more prevalent, the Committee does not see a clear reason to limit the scope of supervision. Moreover, the Committee believes that addressing supervision of pulmonary rehabilitation is as important as addressing reimbursement issues.

**Recommendation 3:** The Committee recommends the Secretary work with Congress to expand direct supervision of pulmonary rehabilitation to include physician assistants, nurse practitioners and other primary care providers under general supervision of a physician.

## POLICY CONSIDERATIONS

In addition to the specific recommendations offered above, the Committee would also like to draw attention to additional policy concerns for the Secretary’s consideration.

The Committee learned about the underutilization of spirometry to diagnose COPD in rural non-pulmonary clinics. The Committee also learned about the need for more spirometry testing in primary care settings, especially for areas that report higher COPD prevalence, hospitalizations, and deaths. As part of the recommendation for a national COPD campaign (Recommendation 1), the Committee encourages the Secretary to consider promoting the expansion of spirometry testing in rural primary care facilities to better detect and treat undiagnosed cases of COPD. Several HHS-funded programs seem especially suited to contribute to this and the broader national COPD campaign. Specifically, the Committee encourages HHS to consider the role that [HRSA-funded Area Health Education Centers](#) and [CMS-funded Quality Improvement Organizations](#) play in supporting these efforts.

Another area of widespread concern voiced by several providers during the site visit relates to the high cost of COPD medications. Although the affordability of medications affects both rural and urban areas, this barrier is pertinent in rural areas given the underlying economics and higher burden of poverty.<sup>32</sup> The Committee believes any efforts to address this for individuals with COPD symptoms living in rural areas will be important as it also aligns with the Secretary’s priority on affordable drug pricing. Additionally, the Committee believes that if HHS could do more to address the affordability issue, HHS should link patient

education and medication adherence to a pulmonary rehabilitation program as such programs educate patients on how to correctly use prescribed medications to increase efficacy of treatment.

Related to workforce and transportation, several presenters and community stakeholders pointed to the potential of leveraging telehealth to enhance access to COPD-related services. Given the shortage of pulmonologists in rural areas,<sup>23</sup> the Committee sees the value of having the ability to link individuals with COPD symptoms to distant specialists. Although the evidence base for COPD-related telehealth services is limited, HHS may want to consider assessing how telehealth can support access to COPD services. This could be done through the [HRSA-funded Telehealth Centers for Excellence](#).

Lastly, unlike other chronic diseases, COPD does not explicitly have a home within the broader HHS surveillance and research infrastructure and therefore does not have direct funding lines. Given the high burden of COPD-related outcomes among rural areas, the Committee encourages the Secretary to consider working with Congress to fund the CDC to create a National COPD Control Program (NCCP). Such a program would address Goals 1, 2, and 3 of the *COPD National Action Plan*. Goals for NCCP should include reducing the number of deaths, hospitalizations, emergency department visits, workdays missed, and limitations on activity due to COPD. Moreover, the CDC should fund health departments in 50 states, the District of Columbia and Puerto Rico to ensure the availability of and access to guidelines-based medical management and pharmacotherapy for all people with COPD. Furthermore, the CDC should address the intersection of public health and healthcare by funding state programs and national organizations, promoting COPD quality measures, and informing policy makers about the burden of COPD.

## CONCLUSION

While COPD is indeed a national health concern, costing the U.S. an estimated \$32.1 billion in 2010,<sup>33</sup> the burden of this disease is disproportionately felt in rural areas. In this brief, the Committee highlights existing healthcare barriers—lack of access to transportation and specialty care, workforce shortages, and insurance challenges, among others—that contribute to greater disparities in the prevalence and mortality of the disease. The Committee also provides its policy recommendations and considerations to the Secretary and the Department that offer important first steps to addressing these barriers. The congressionally mandated *COPD National Action Plan* also serves as a useful framework for aligning challenges with opportunities to have a greater impact on lessening the disease.

At its core, COPD is a preventable chronic disease and while there is currently no cure, treatment through the provision of effective services such as pulmonary rehabilitation can significantly improve patients' quality of life and reduce downstream economic costs for the U.S. healthcare system.

## APPENDIX A: SITE VISIT PROFILE

During its site visit to Lenoir, North Carolina, the Committee heard moving testimonials from COPD patients and providers. The Committee provides the following to spotlight patients' experience with the disease and the significant benefits gained from the pulmonary rehabilitation program.<sup>viii</sup>

"When you have COPD ... [you] don't have a lot of hope." Under a year ago, in 2017, Nancy was admitted to hospice care. With very severe COPD, weighing 89 pounds and told she would live for only a few more months, Nancy was reluctant at first to join the pulmonary rehabilitation program at Happy Valley Medical Center. She could not fathom the idea of walking on a treadmill or peddling on a stationary bike as it was already challenging for her to perform daily tasks. However, with encouragement and support from hospice staff, Nancy decided to give the pulmonary rehabilitation program a try. In her own words, "It is the best decision I have ever made. ... [The program] focuses on what each individual can accomplish and there is one-on-one attention from the [respiratory] therapists—they take good care of you." Nancy's mindset about joining pulmonary rehabilitation was changed when she started to see and feel herself become stronger: she was amazed when she was able to exercise on the machine for three full minutes; she felt uplifted when she noticed her back was getting better; and she felt accomplished when she met her program goal of walking her dog.

In addition to the benefits of supervised exercise and interactions with respiratory therapists, Eddie, another COPD patient of Happy Valley Medical Center, emphasized the value of the program in knowing he is not struggling in isolation: "When you are in a COPD class, you are with other people who are going through the same thing that you are. It makes you feel like you are not alone."

Established in 1985 and designated as a Federal Qualified Health Center (FQHC) in 2009 by HRSA, Happy Valley Medical Center is one of two FQHCs overseen by the [West Caldwell Health Council, Inc. \(WCHC\)](#). WCHC provides comprehensive primary care services for the insured and uninsured population living in and around Caldwell County.

Happy Valley Medical Center is also one of 11 current Grace Anne Dorney Pulmonary Rehabilitation Centers (GADPRC) funded by the Dorney-Koppel Foundation, in partnership with other foundations. In 2001, Grace Anne was diagnosed with COPD and heart disease on the same day. She lost 70% of her lung function and had Stage 1 ischemic heart disease. However, after receiving a referral for pulmonary rehabilitation, Grace Anne's life—much like Nancy's—was forever altered. Today, 17 years after her COPD diagnosis, Grace Anne is a lung cancer survivor of 13 years, has no clinical or physical evidence of heart disease, and to keep her osteopenia at bay, she exercises on the treadmill every day for 45-60 minutes. For Grace Anne, "Breath is life. If you do not breathe well, you will not live long in life. Living with the disease is an hourly and daily struggle. Some patients refer to the struggle to breathe as suffocation." Inspired by the impact of pulmonary rehabilitation, Grace Anne, and her husband, Ted Koppel, have used their resources to create partnerships to help established pulmonary rehabilitation centers in rural America where COPD prevalence is high but there is limited to no access to pulmonary rehabilitation. The GADPRC has as its goal, empowering people with COPD to learn about how to manage their disease and instill hope, function and dignity. Ten of the current 11 GADPRC formed a network known as the Appalachian Pulmonary Health Project, which strives to improve lung function and expand access to pulmonary rehabilitation in rural areas.

To quote Nancy, the GADPRC at Happy Valley Medical Center "... gives people with COPD, like me, hope." She goes on to say, "When you get into hospice, there isn't anywhere to go but up." For those with COPD symptoms living in geographically isolated areas of the country, the exercise, education, and empowerment gained from pulmonary rehabilitation is both transformational and lifesaving.

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<sup>viii</sup> The [GADPRC at Cabin Creek Health Center](#) in Cabin Creek, West Virginia provides additional COPD patient perspectives.

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