

COPD

# Rural Prevalence and Impact Webinar

National Rural Health Resource Center

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**COPD Patient**



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# Times

**Grace Anne Dorney Koppel**  
LEADS EFFORTS  
TO HELP COPD  
Patients Through  
Pulmonary  
Rehab





# COPD: A Public Health Epidemic

## ❑ COPD Deaths

- 2015 – 3<sup>rd</sup> leading cause of death (N=155,041)
- 2016 – 4<sup>th</sup> leading cause of death (N=154,596)
- 97% are COPD

## ❑ Costs of COPD

- \$32 billion on COPD-related patient care in 2010
- \$49 billion by 2020
- Does not include billions in indirect costs

## ❑ 15.7 million Americans have diagnosed COPD

- 6.1% in 2016
- Millions more may have undiagnosed COPD symptoms
- Rural populations had the greatest risk in 2015- twice that of urban

# COPD is nearly twice as common in rural areas.

Learn about its risk factors.



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**COPD**  
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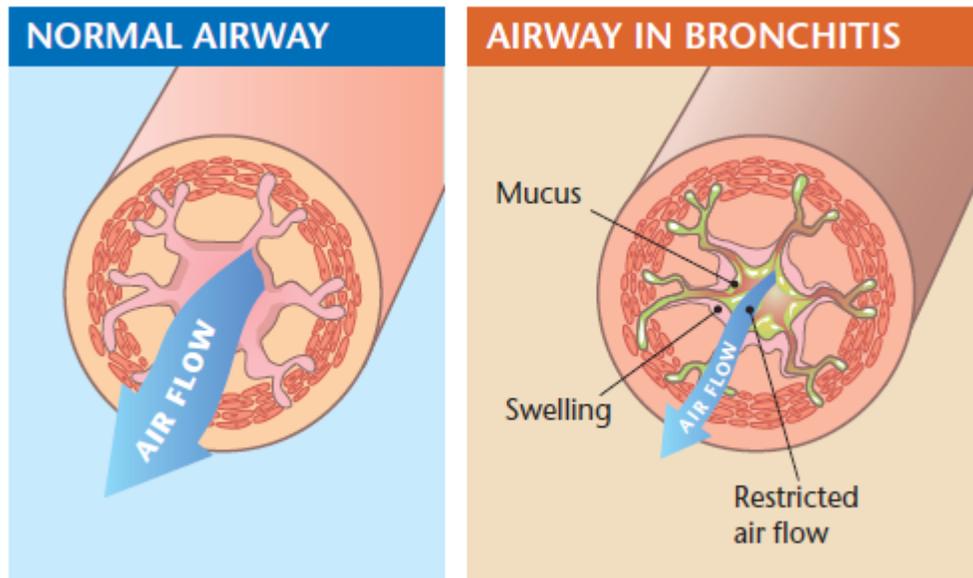
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# What is Chronic Obstructive Pulmonary Disease (COPD)?

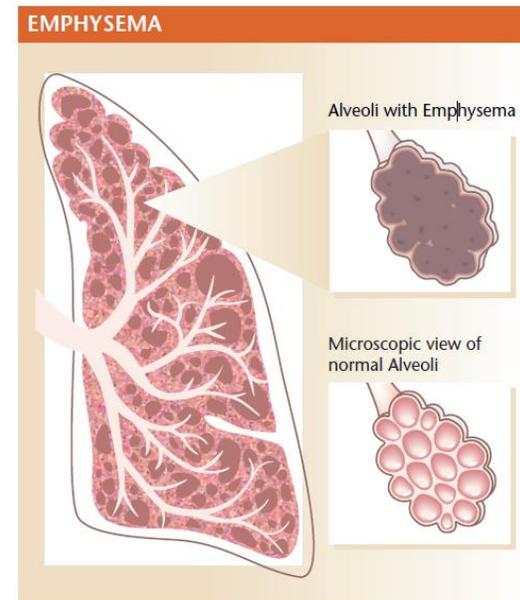
It is a preventable and treatable disease that makes it difficult to empty air out of the lungs.

Airflow obstruction can lead to shortness of breath or feeling tired because the affected individual is working harder to breathe (to maintain adequate oxygen levels).



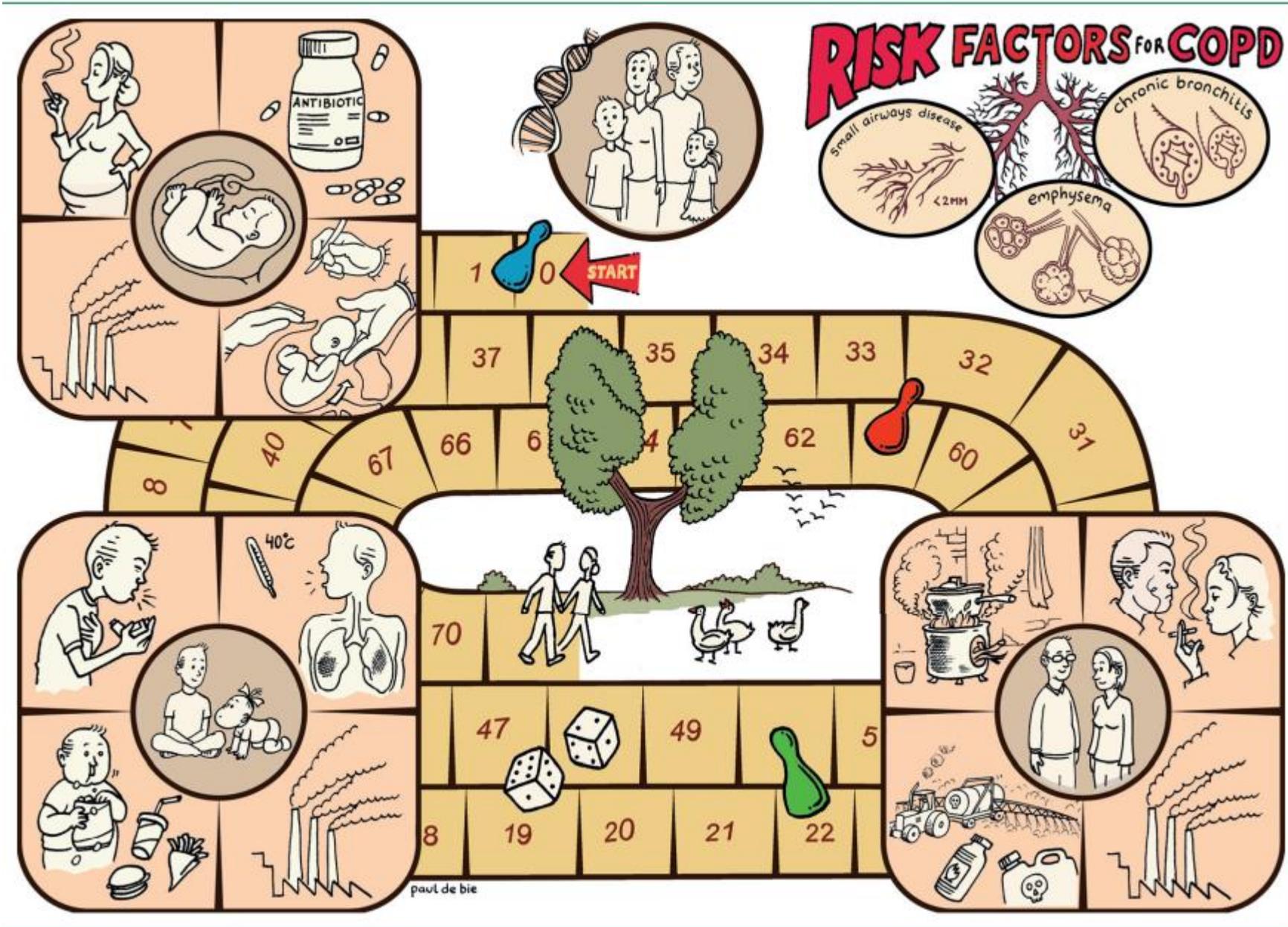
**COPD is a term that includes chronic bronchitis and emphysema.**

**In most patients there is a combination of both conditions.**



**Asthma is also a disease where it is difficult to empty the air out of the lungs, but asthma is not included in the definition of COPD. A person with COPD can frequently have some degree of asthma.**





# Rural Populations Have Greater COPD Risk Factors

## ❑ Tobacco Use

- Higher % with smoking history
- Greater exposure to secondhand smoking
- Less access to smoking cessation programs

## ❑ Environmental and Occupational Exposures

- Mold spores, organic toxic dust, nitrogen dioxide
- Vapors, gas, dust, fumes, microbial agents
- Smoke from burning biomass fuels

## ❑ Other Factors

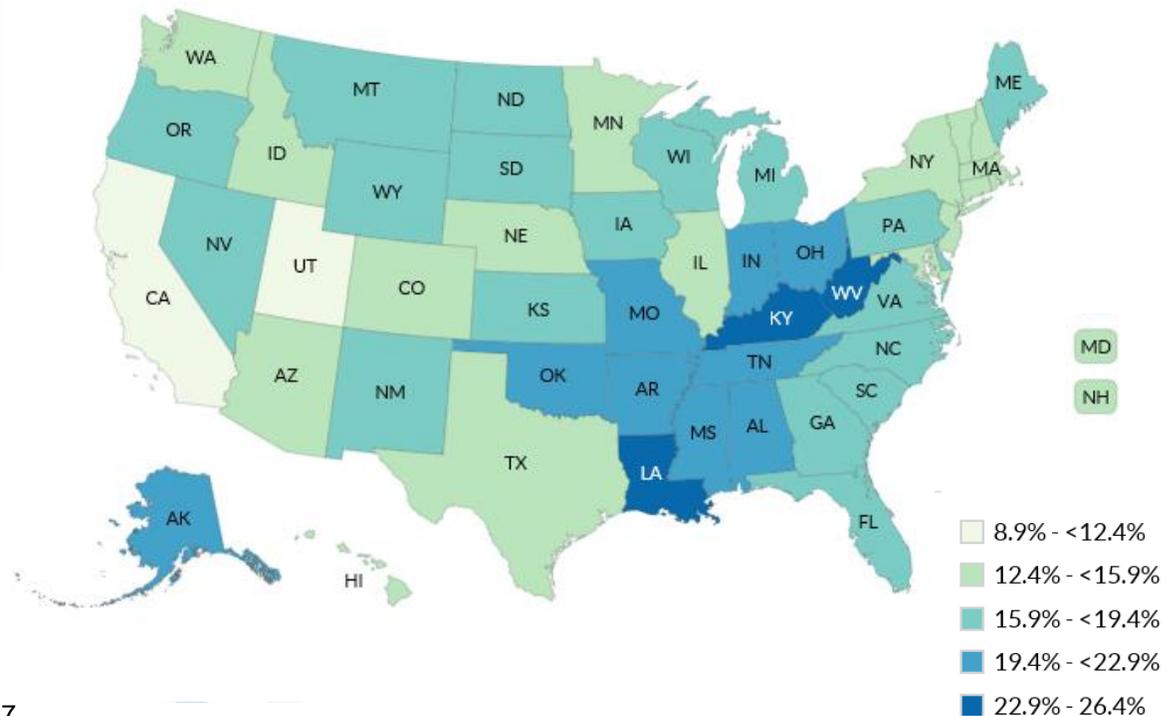
- Genetics
- Respiratory infections
- Asthma history
- Greater proportions of older ages and low socioeconomic status

# COPD Risk Factors

- **Worldwide: Indoor air pollution from biomass fuels**
- **United States: Cigarette Smoking**



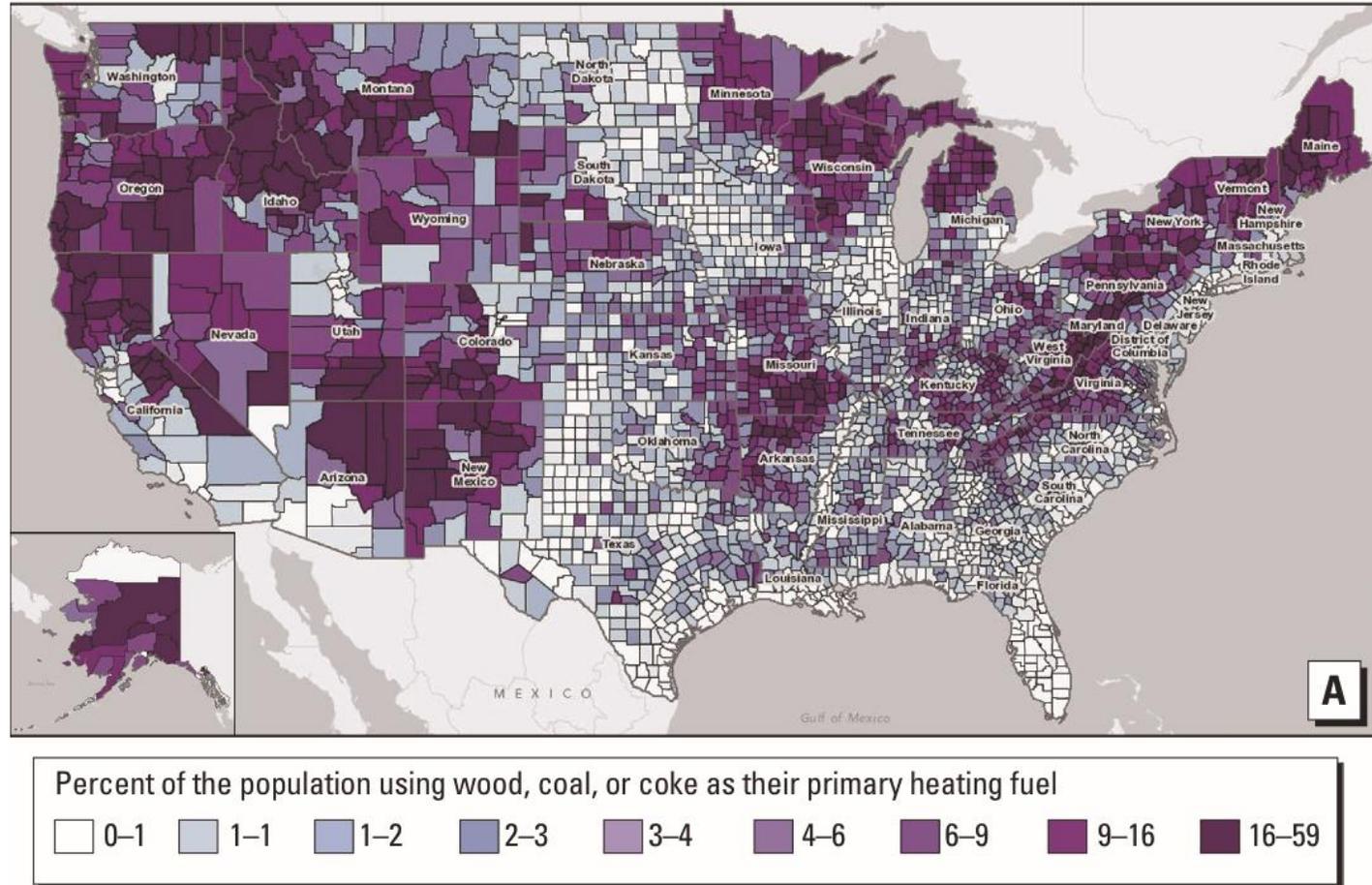
Cigarette Use among U.S. Adults 2017



# Sources of Indoor and Outdoor Pollution

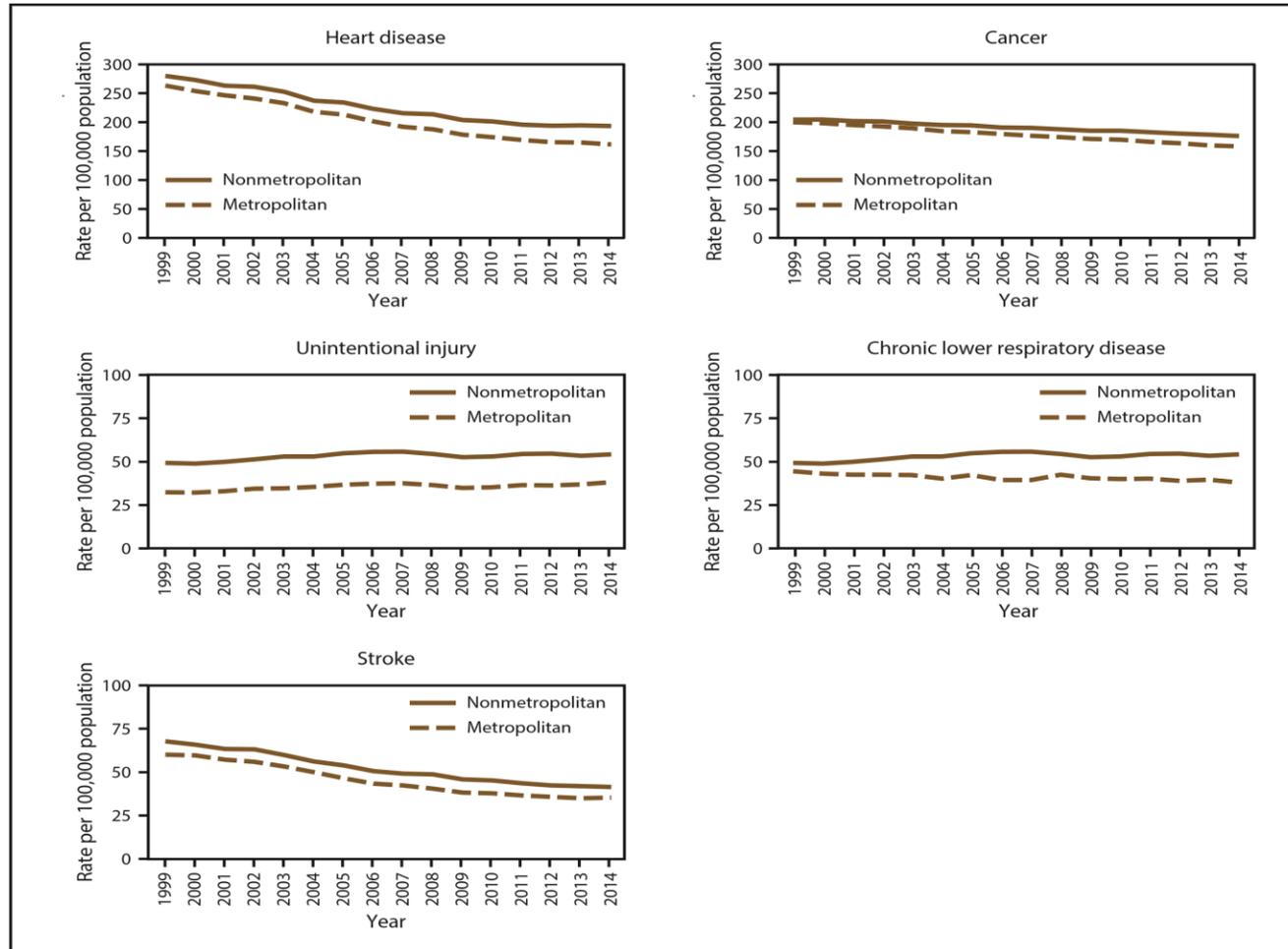


# Solid Fuel Use as Primary Heating Source in the United States



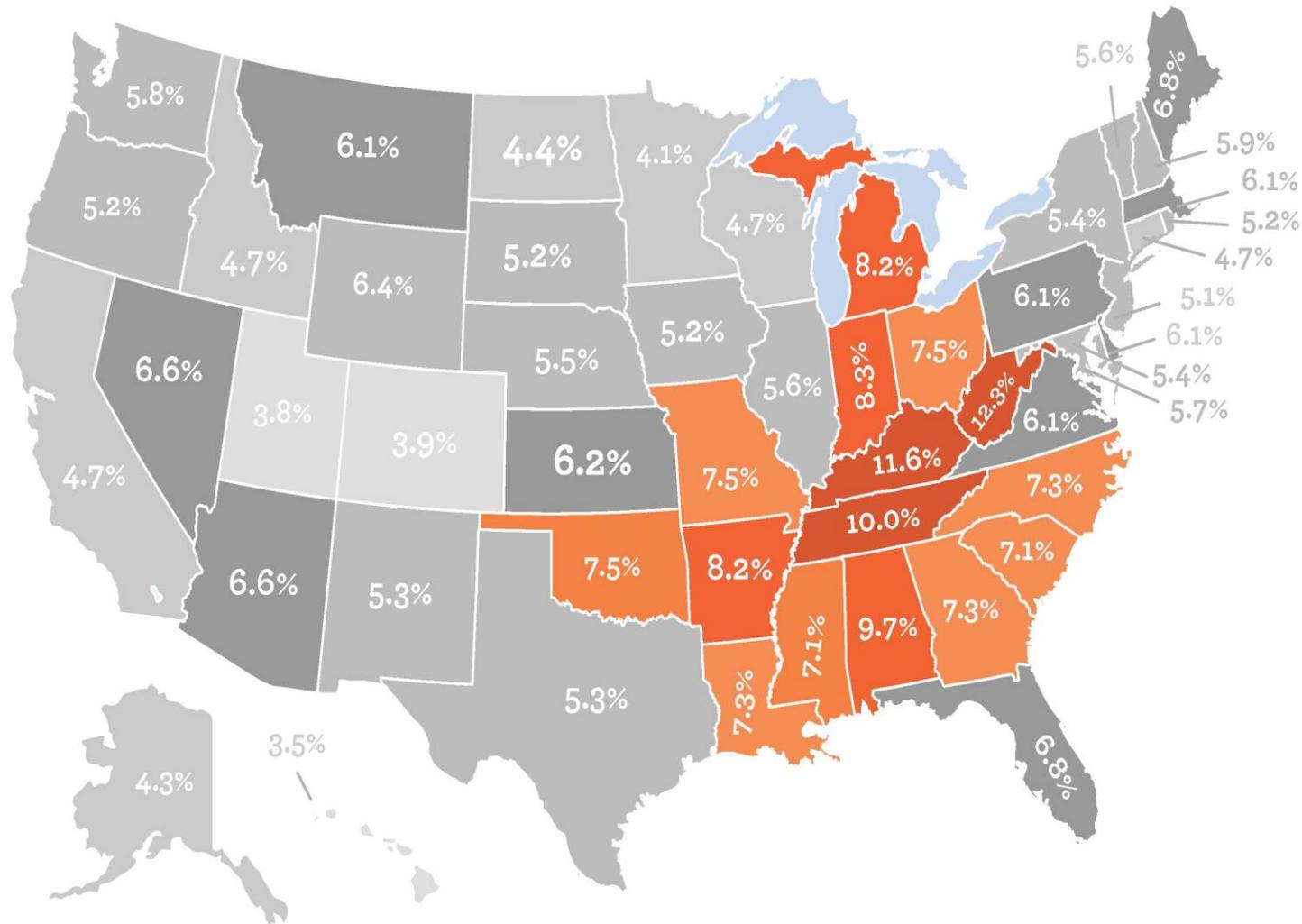
**Solid fuel is the primary heating source for >2.5 million U.S. households or 6.5 million people.**

# Age-adjusted death rates among persons of all ages for five leading causes of death in nonmetropolitan and metropolitan areas,\* by year — National Vital Statistics System, United States, 1999–2014



Source: Moy et al. MMWR / January 13, 2017 / Vol. 66 / No. 1

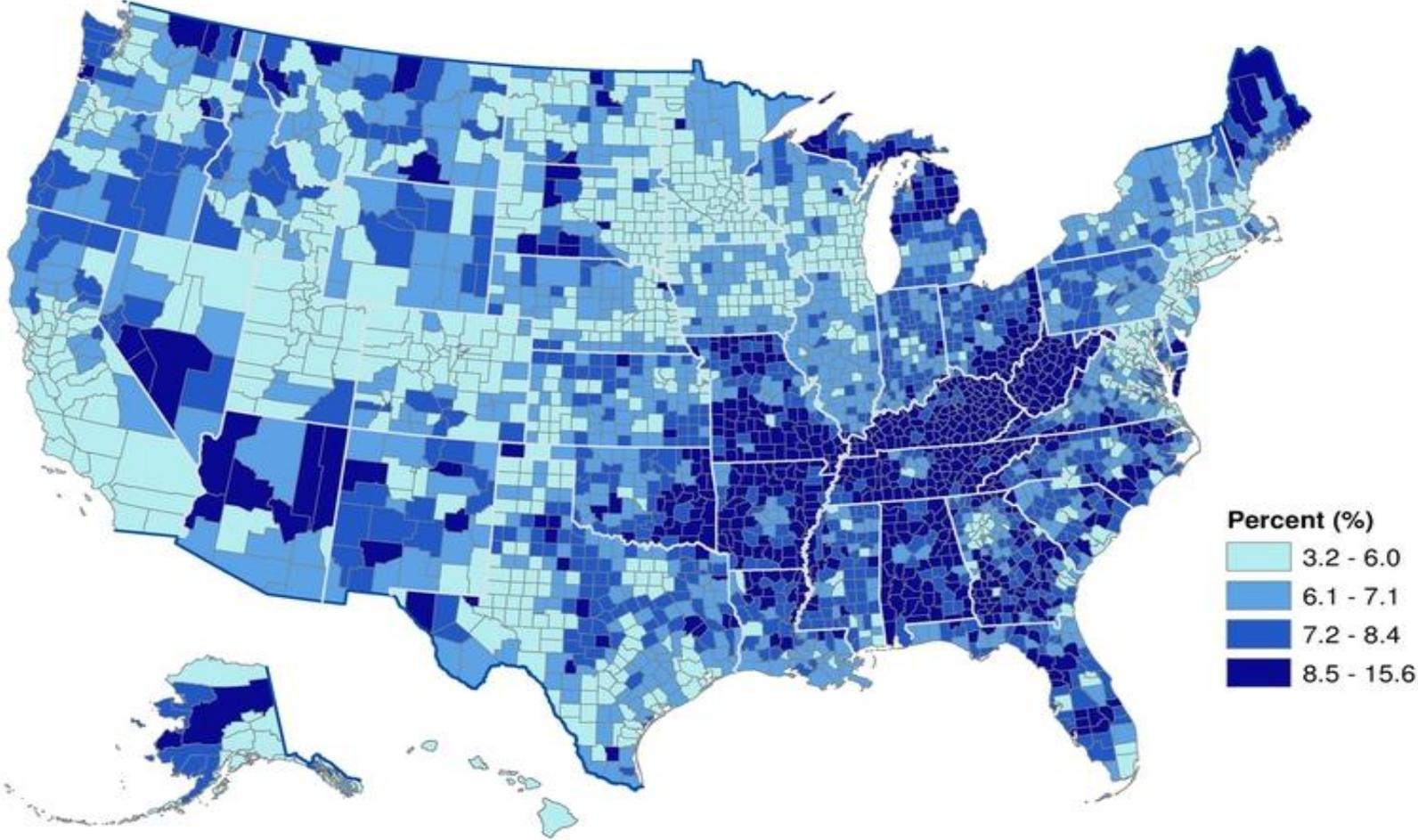
# COPD IN THE U.S.



- Prevalence in 18 and up age group: 6.1%
- Prevalence in 45 and up age group 9.0%
- Women reported higher COPD rates: 6.5% vs 5.4%
- 24.9% of those with COPD never smoked
- 43.2% saw physician re COPD in last year
- 17.7% ER visit or hospitalization in last year
- Health disparities in COPD: 9.9% reported in individuals with income less than \$25,000
- 43.9% of adults with COPD continue to smoke

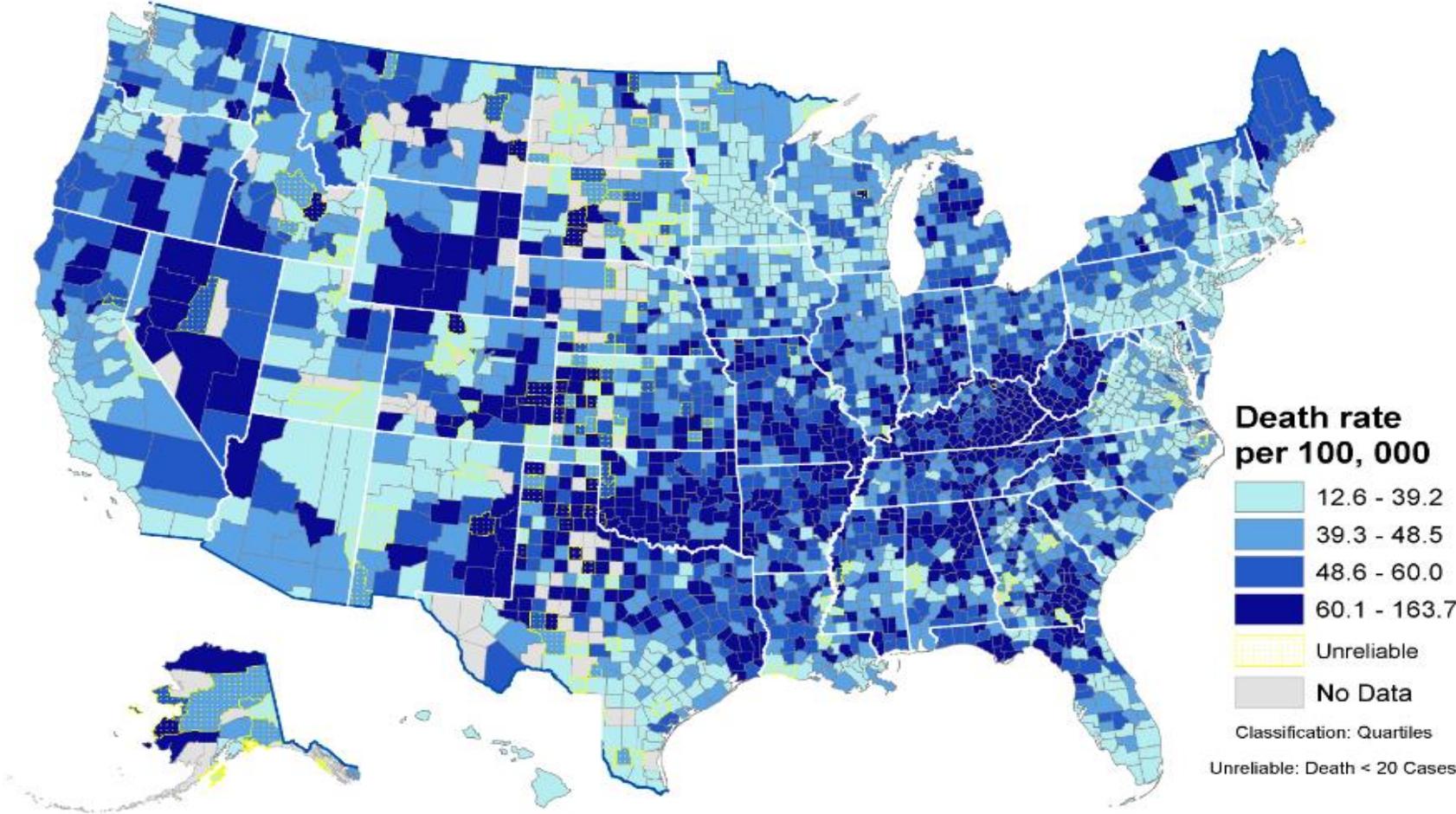
DATA FROM BRFSS-Centers for Disease Control & Prevention:  
2011-14

# Why do some rural counties in the Midwest and Great Plains have low pr



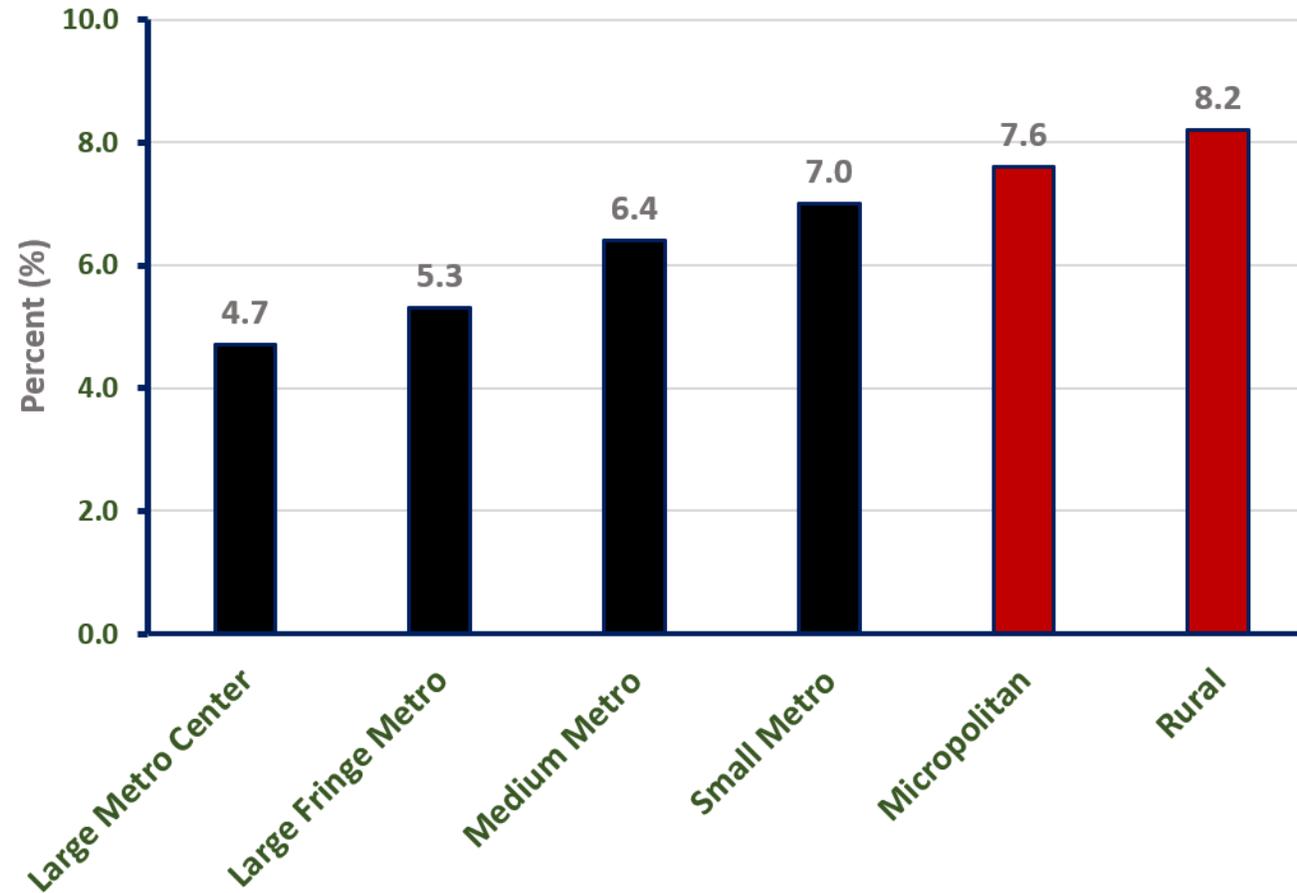
Source: CDC. *MMWR* 2018;67(7):205-211.

But have very high COPD death rates?  
Early diagnosis and treatment may come too late



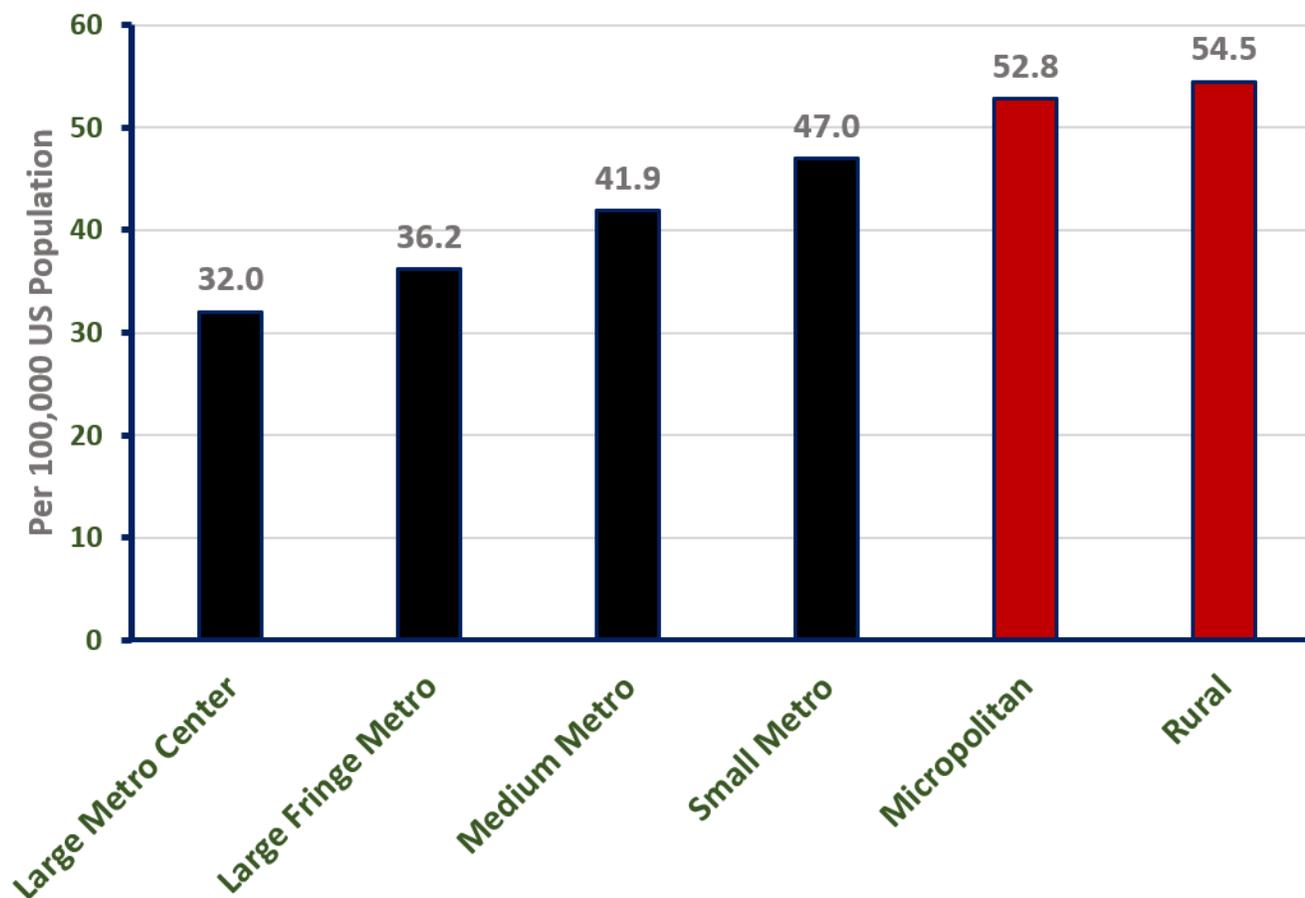
Source: CDC. Unpublished death certificate data, 2010-2015.

# Age-adjusted prevalence of doctor-diagnosed COPD among adults aged $\geq 18$ years, by urban-rural status: BRFSS, 2015



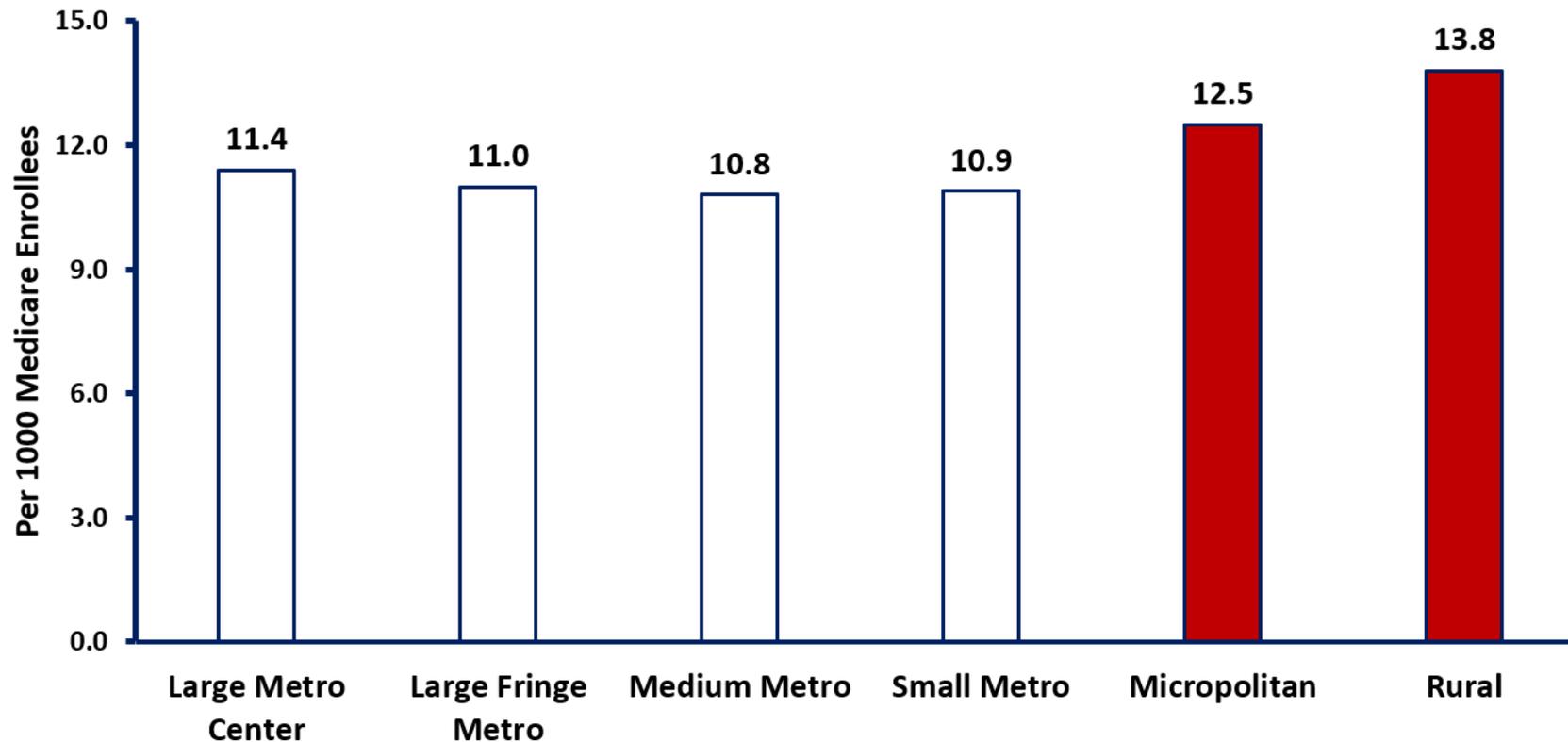
Source: CDC. *MMWR* 2018;67(7):205-211.

# Age-adjusted death rates (per 100,000) for COPD as underlying cause of death, by urban-rural status: US Vital Statistics, 2015



Source: CDC. *MMWR* 2018;67(7):205-211.

# Hospital discharges for COPD as first-listed diagnosis among Medicare enrollees aged $\geq 65$ years are higher in rural settings



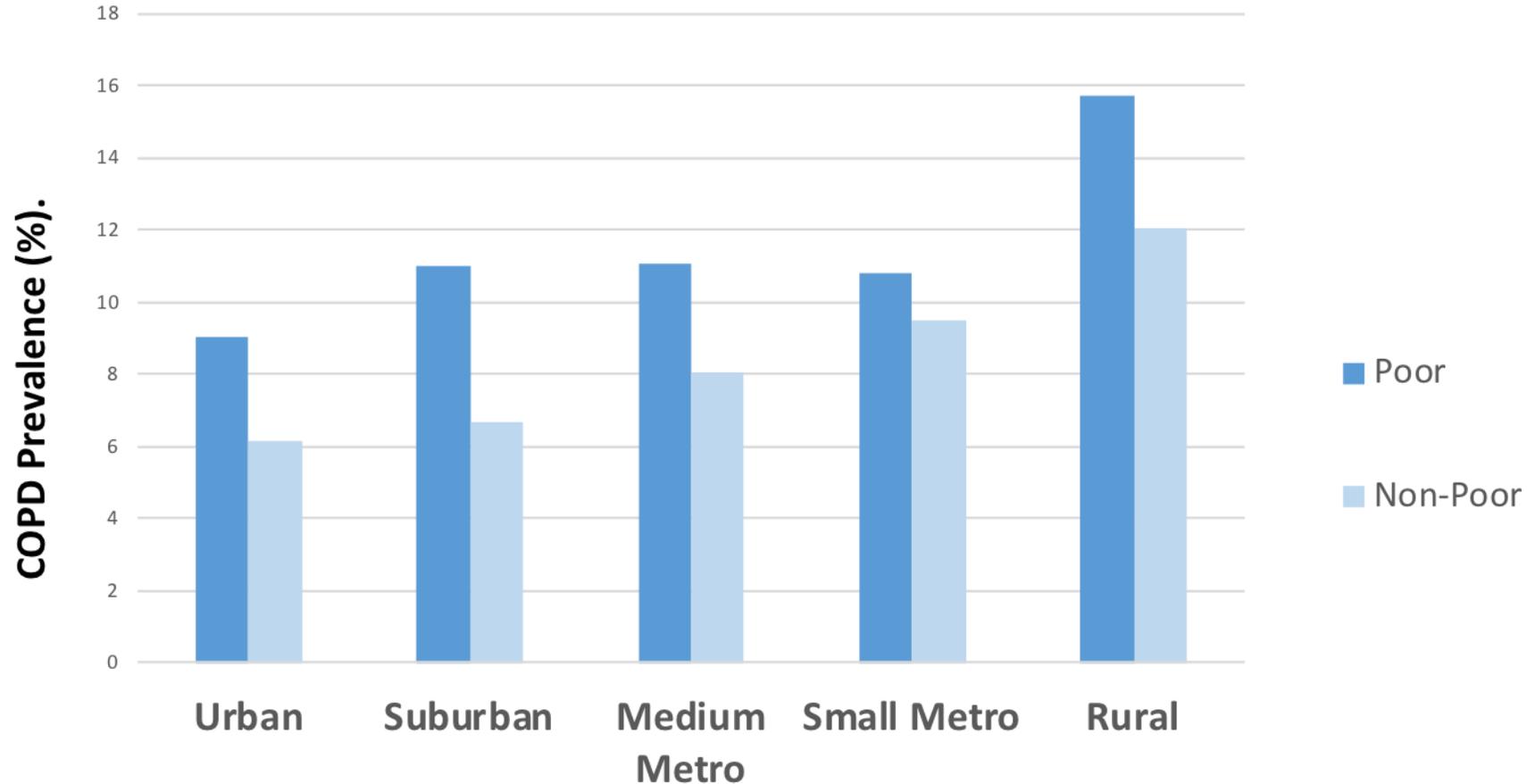
Source: CDC. MMWR 2018;67(7):205-211.



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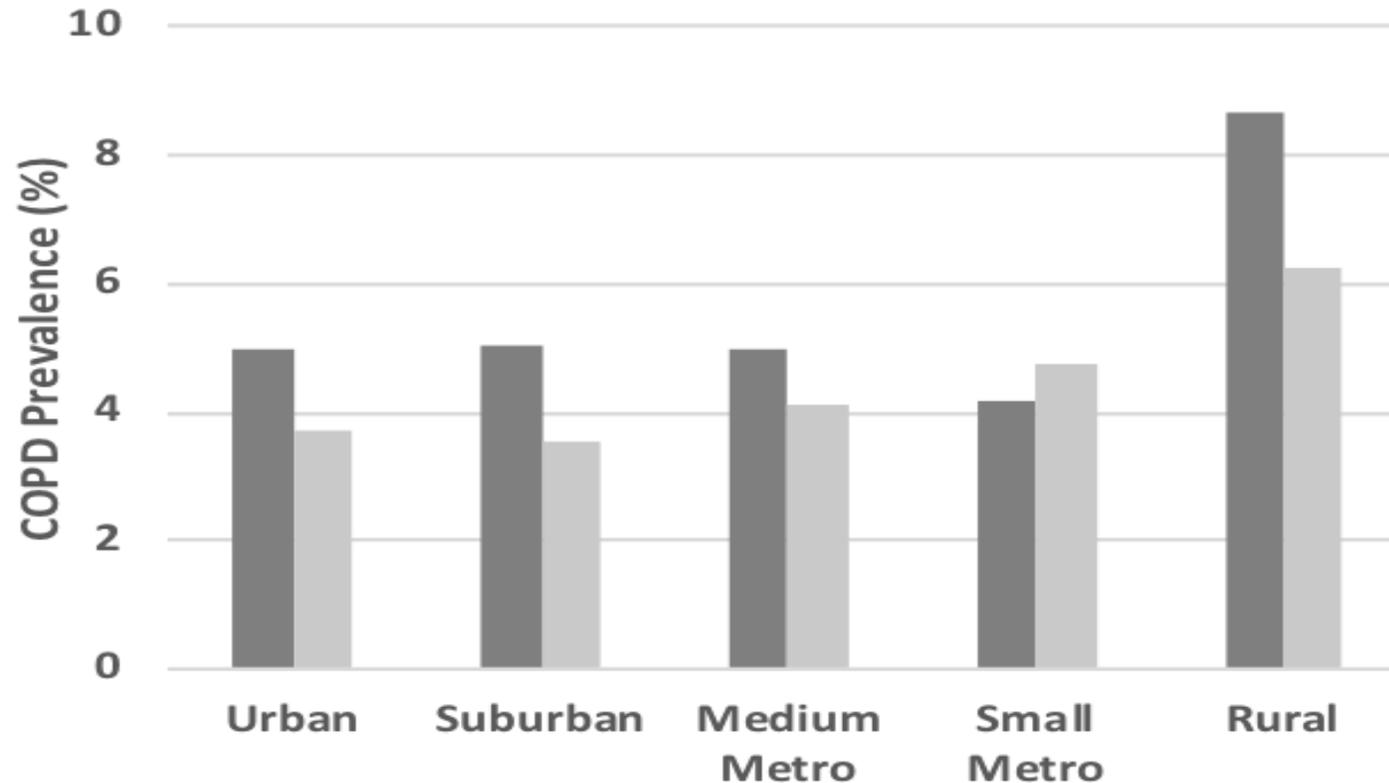
A program of the National Institutes of Health.

# In a nationally representative sample, increased COPD prevalence in rural, poor regions



The prevalence of COPD was 8.4% nationwide with the highest prevalence of 15.7% in rural, poor communities.

## Residents in rural, poor regions had increased prevalence of COPD among never smokers



Among never smokers, community level use of coal for fuel was associated with COPD prevalence.

# Patient-Provider Awareness Gaps for Adults with COPD

## Adults with COPD symptoms in 2016

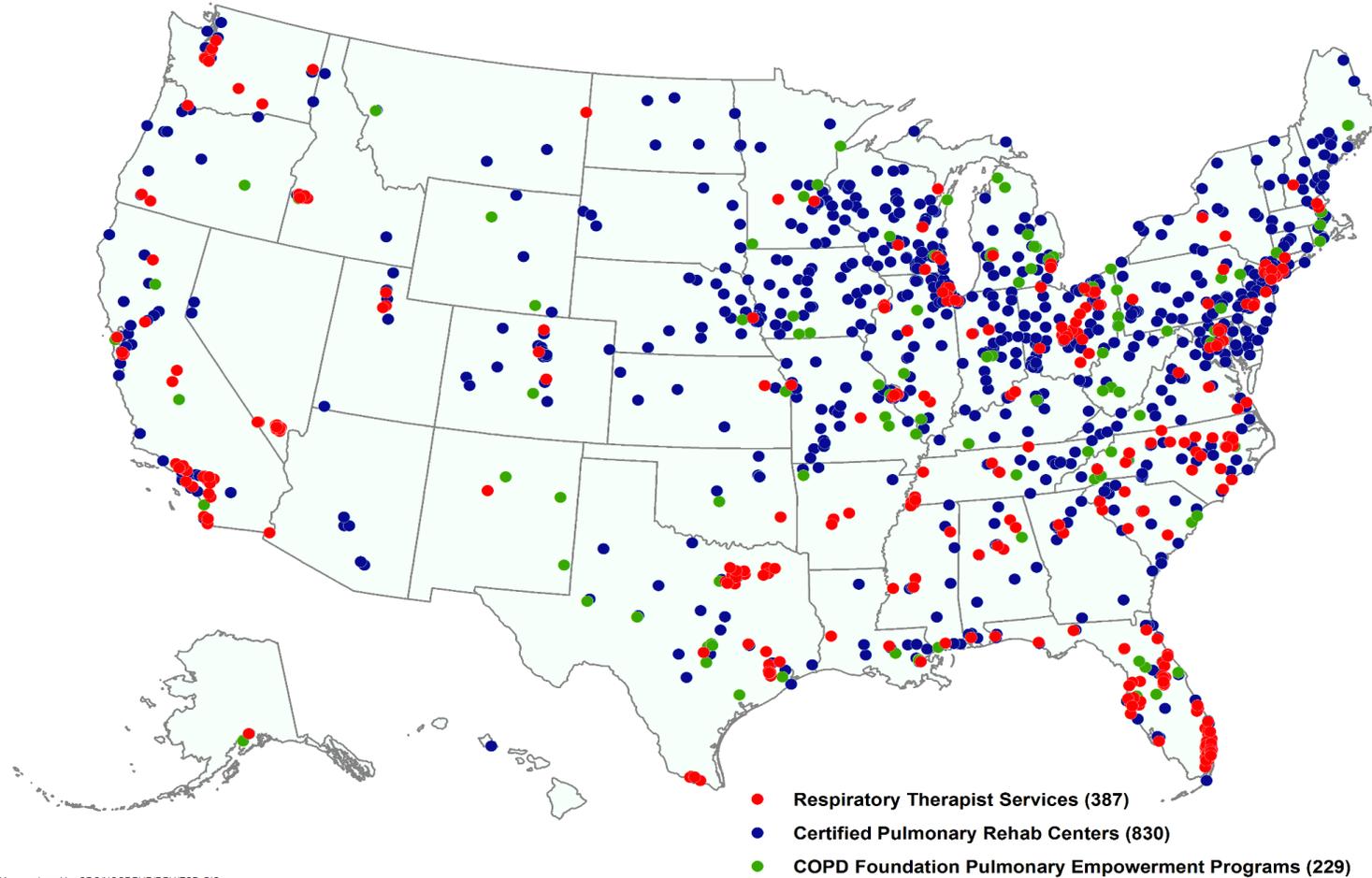
- Only 73% talked to physician about their symptoms
- Only 40% were given a breathing test (spirometry)

## Primary Care Providers in 2016

- Only 71% evaluate COPD symptoms with spirometry
- Only 68% acknowledge pulmonary rehabilitation programs are available
- Only 38% routinely prescribe pulmonary rehabilitation for patients diagnosed with COPD



Pulmonary Rehabilitation: major therapy to improve exercise tolerance, but...  
poor rural access to 1,446 accredited services



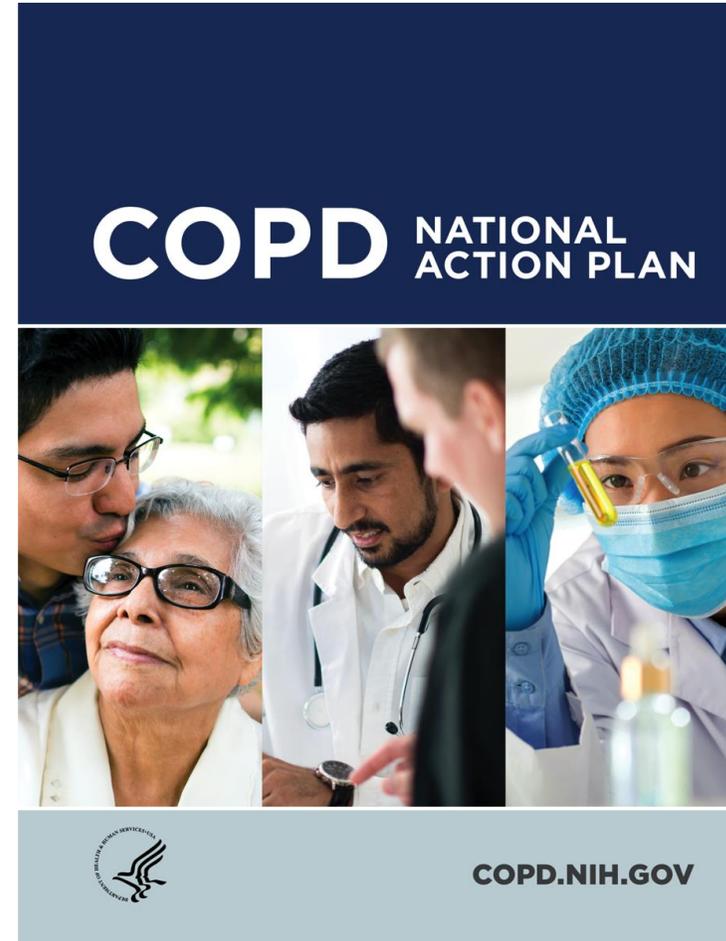
Map produced by CDC/NCCDPHP/DPH/ESB-GIS

Date: 3/2/2018

CDC. Unpublished pulmonary rehabilitation location data, 2015-2017.

# The 2017 COPD National Action Plan

- The first-ever
- Developed at the request of Congress with input from the broad COPD community
- Provides a comprehensive framework for action



Downloadable for free at:

<https://www.nhlbi.nih.gov/health-topics/education-and-awareness/COPD-national-action-plan>



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# Dissemination & Implementation

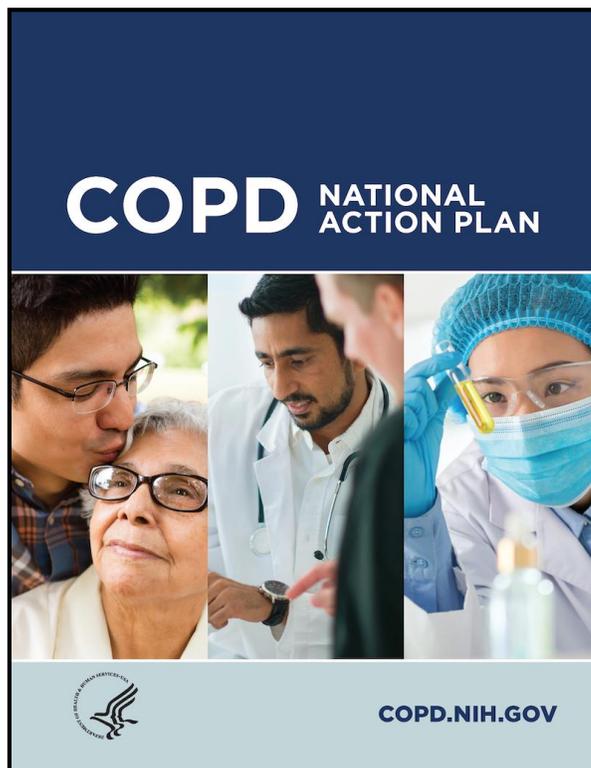
All COPD stakeholders own the plan and have an active role in its implementation

Patients and  
their Families

Industry Partners

Payors

Public Interest  
Organizations  
and Advocacy Groups



Government  
Agencies

Professional  
Societies

Scientific  
Investigators and  
Health Care Providers



# 3.5 million people living in rural counties have been diagnosed with COPD.

And hundreds of thousands more don't know they have it.



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**Source:** 1. Pew Research Center, May 2018, "What Unites and Divides Urban, Suburban and Rural Communities"  
2. Urban-Rural Country and State Differences in Chronic Obstructive Pulmonary Disease — United States, 2015.  
Janet B. Croft, PhD; Anne G. Wheaton, PhD; Yong Liu, MD, et al. MMWR Morb Mortal Wkly Rep 2018;67:205-211

## Quote

“Hope is like a path in the countryside. At first there is no path, but if enough people walk in the same direction, the path appears.”

Lu Xun