

COPD:

Tracking Perceptions of
Physicians Who Diagnose
and Treat COPD



National Heart, Lung,
and Blood Institute

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Abstract

The National Heart, Lung, and Blood Institute (NHLBI) gathers insights about health care providers' mindsets around chronic obstructive pulmonary disease (COPD) with yearly web-based surveys. Data from primary care physicians shows that evaluation and diagnosis of COPD continues to rely mainly on patient history, physical examination, and spirometry. Provider decisions not to test potentially at-risk patients are primarily driven by the belief that diagnosis would not alter how they manage the patient and/or lack of equipment to do so. When it comes to smoking, a significant risk factor for the disease, the data indicate that nearly all providers are addressing secondhand smoke exposure when discussing patients' smoking histories. Finally, the data confirm pulmonary rehabilitation as an underutilized resource.

Areas in Need of Focus:

Diagnosis & treatment

expand provider-focused awareness about options for COPD

Testing equipment

increase the availability among PCPs

Pulmonary rehabilitation

promote and optimize the effective utilization of this practice

Background and Objectives

Chronic obstructive pulmonary disease, or COPD, is a progressive lung disease characterized by increasing breathlessness. In people affected by COPD, their air sacs are permanently damaged. The disease can cause coughing that produces large amounts of mucus, wheezing, shortness of breath, chest tightness, and other symptoms. When left untreated, people with COPD gradually lose their stamina and ability to perform daily activities. Other names for COPD include emphysema and chronic bronchitis.

COPD is the fourth leading cause of death in the United States, after heart disease, cancer, and unintentional injuries.¹ However, the disease is highly treatable and manageable when detected early. In the United States, prevalence of COPD in adults 18 years of age and older is 6.5%. More than 15.7 million people are currently diagnosed with COPD and it is estimated that millions more have the disease without realizing it. Part of this may be due to symptoms coming on slowly and worsening over time, causing people affected to make subtle, gradual lifestyle changes to accommodate their changes in health.

The disease is more common than people realize and disproportionately affects some United States ethnic groups, women, and those living in the southern states along the Ohio River Valley.² Women are 35% more likely to have COPD than men, and more women (52%) die of COPD than men (48%). It is estimated that one in five adults over the age of 45 in the United States suffers from the disease. Smoking is most often associated with COPD, although up to 25% of patients never smoked.³ Other causes may be to blame as well, including long-term exposure to lung irritants – such as dust or fumes in the workplace, secondhand smoke, or other air pollutants. In some people, COPD is caused

by a genetic condition known as alpha-1 antitrypsin (AAT) deficiency. People with AAT deficiency can develop COPD even if they have never smoked or did not have long-term exposure to harmful pollutants. AAT deficiency is an under-recognized condition and estimates suggest that there are currently 100,000 Americans who are homozygotes for the mutation and have the condition, but only 15,000 Americans have received the diagnosis. Additionally, studies are underway to address if heterozygotes are susceptible to COPD.⁴

Each year, the National Heart, Lung, and Blood Institute (NHLBI) participates in Porter Novelli's Styles surveys to gain further understanding of consumer and health care provider mindsets around COPD. The objective of these annual studies is to track and gather insights into consumer and health care provider attitudes and behaviors, including disease awareness and knowledge, relationship with the disease, experience of symptoms, patient communication and information, and providers' approaches to COPD diagnosis, treatment, and management. NHLBI uses the information garnered to enhance the outreach activities of its [COPD Learn More Breathe Better®](#) program, which aims to increase awareness about COPD and encourage people at risk to get diagnosed and treated early.

Methods

Physician data for this report were licensed from the Porter Novelli DocStyles program. DocStyles is an annual web-based survey conducted among physicians and other health care professionals to gain insight into their attitudes and behaviors concerning a variety of health issues and to assess their use of and trust in available health information sources.

DocStyles 2017

In June 2017, the DocStyles survey was sent to a sample of 6,625 health care providers from SERMO's Global Medical Panel.⁵ Panelists are verified using a double opt-in sign-up process with telephone confirmation at their place of work. Quotas were set to reach 1,000 primary care physicians (internists and family practitioners), 250 pediatricians, 250 obstetricians/gynecologists, 250 nurse practitioners, and 250 pharmacists. To be eligible to participate, respondents were required to reside in the United States, see a minimum of 10 patients per week, and have been practicing medicine for at least three years. Participation was voluntary and respondents could exit the survey at any time. A total of 2,260 health care providers completed the survey, a response rate of 34%. The sample sizes and response rates per group were: 1,003 primary care physicians (63%), 251 OB/GYNs (57%), 250 pediatricians (58%), 256 nurse practitioners (14%), and 250 pharmacists (60%). Those who completed the survey were paid an honorarium of \$23 to \$85, depending on the number of questions asked of their specialty.

DocStyles 2015 and 2016

In both 2015 and 2016, the DocStyles survey was administered in June to members of SERMO's Global Medical Panel in the same manner as described for 2017. In 2016, 2,006 out of 3,110 health care providers completed the survey, a response rate of 64%. The sample sizes and response rates per group were: 1,003 primary care physicians (70%), 250 OB/GYNs (71%), 250 pediatricians (68%), 253 nurse practitioners (41%), and 250 pharmacists (70%). In 2015, 1,751 out of 2,281 health care providers completed the survey, a response rate of 77%. The sample sizes and response rates per group were: 1,000 primary care physicians (89%), 250 OB/GYNs (72%), 250 pediatricians (77%), and 251 nurse practitioners (52%).

Results

The analyses are based on the primary care physicians (PCPs), OB/GYNs, and nurse practitioners who were asked COPD-related questions through the DocStyles surveys. Differences based on primary care physician location are examined and – where available – trend data is also presented. Sample sizes, response rates, and demographic characteristics of primary care physicians who answered DocStyles from 2009 to 2017 are provided in Appendix A.

Not all columns add to 100% due to rounding or allowance of multiple selections (indicated within each table).

PCPs assess patients by:

86%
history and physical
examination

76%
spirometry

Physicians' Approaches to COPD Evaluation

In 2017, primary care physicians were most likely to assess patients they suspected of having COPD by evaluating history and performing a physical examination (86%) and/or using spirometry (76%). Many also used chest imaging (45%) and oximetry (43%). Only 16% referred patients with COPD symptoms.

Table 1 shows that primary care physicians' evaluation practices for COPD from 2009 to 2017 appear to have been rather constant.

Table 1. How Physicians Evaluate COPD: 2009-2017

How do you evaluate patients you suspect of having COPD?

(Multiple selections allowed)

	PCP									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	
History & physical examination	86%	77%	82%	90%	92%	90%	95%	92%	78%	
Spirometry	76%	71%	76%	83%	81%	86%	82%	83%	76%	
Chest imaging	45%	46%	46%	64%	NA*	NA	NA	NA	NA	
Oximetry	43%	41%	43%	60%	60%	60%	49%	48%	29%	
Peak-flow test	30%	37%	39%	46%	46%	36%	36%	31%	24%	
A patient questionnaire	28%	28%	26%	35%	37%	28%	28%	17%	17%	
Refer patient	16%	18%	16%	24%	22%	18%	21%	18%	10%	
None of these	0%	1%	0%	1%	1%	0%	0%	NA	1%	

*Answer category was not included where noted.

Results

OB/GYNs are:

4x

more likely to refer patients for COPD evaluation

Nurse practitioners are using:

more

questionnaires and referrals

less

spirometry and chest imaging

OB/GYNs were four times as likely as primary care physicians to refer patients for COPD evaluation, up from 55% in 2016 to 65% in 2017 (see Table 2).

While nurse practitioners are using chest imaging, oximetry, peak-flow tests, and patient questionnaires at rates similar to primary care physicians, they are less likely to use patients' histories, physical examinations, and spirometry for COPD evaluation. Use of patient questionnaires and referrals rose among nurse practitioners from 2016, while use of spirometry and chest imaging declined.

Table 2. COPD Evaluation by Provider Type

How do you evaluate patients you suspect of having COPD?

(Multiple selections allowed)

	PCP		OB/GYN		Nurse Practitioner	
	2017	2016	2017	2016	2017	2016
History & physical examination	86%	77%	35%	35%	69%	73%
Spirometry	76%	71%	14%	12%	47%	57%
Chest imaging	45%	46%	11%	10%	40%	46%
Oximetry	43%	41%	10%	9%	48%	47%
Peak-flow test	30%	37%	14%	13%	31%	33%
A patient questionnaire	28%	28%	10%	10%	31%	25%
Refer patient	16%	18%	65%	55%	36%	30%
None of these	0%	1%	14%	23%	6%	9%

Results

PCPs are:

2x

as likely to refer COPD patients in urban areas than non-urban areas

Primary care physicians in urban areas were more likely than those in non-urban areas to use patient questionnaires for COPD evaluation and to refer patients (see Table 3).

No statistically significant results were noted by census region; however, primary care physicians in the Northeast did show a slightly greater tendency than physicians in other regions to refer patients for COPD evaluation.

Table 3. COPD Evaluation by Location: PCPs Only

How do you evaluate patients you suspect of having COPD?

(Multiple selections allowed)

	PCP					
	Urban*	Non-Urban	Northeast	South	Midwest	West
	2017	2017	2017	2017	2017	2017
History & physical examination	87%	84%	85%	87%	88%	85%
Spirometry	75%	82%	72%	74%	80%	80%
Chest imaging	45%	54%	40%	47%	44%	51%
Oximetry	43%	50%	40%	46%	41%	44%
Peak-flow test	30%	25%	30%	29%	33%	30%
A patient questionnaire	29%	19%	27%	29%	28%	27%
Refer patient	18%	9%	21%	16%	13%	15%
None of these	0%	0%	1%	0%	0%	0%

*Urban includes metropolitan areas while non-urban includes micropolitan areas, small towns, and rural areas.

4 in 10

PCPs are not influenced to test by the listed factors

29%

of PCPs believe testing will not affect patient management

Factors Influencing Testing

Providers were asked about the factors that influence their decision not to test a patient who may be at risk for COPD. Four out of 10 primary care physicians did not consider any of the listed factors to be influential (see Table 4).

The most significant factor for primary care physicians was that testing would not affect their management of the patient (29%), followed by one-quarter not having the right equipment to test for COPD in their office. Lack of equipment was much more pronounced among the other provider groups with almost half of nurse practitioners and nearly three-quarters of OB/GYNs reporting this obstacle.

Table 4. Factors Influencing Testing by Provider Type

Which of the following factors influence your decision not to test a patient who may be at risk for COPD?

(Multiple selections allowed)

	PCP	OB/GYN	Nurse Practitioner
	2017	2017	2017
Testing will not affect my management of the patient	29%	10%	19%
I do not have the equipment to test for COPD in my office	26%	72%	48%
Testing for COPD is too expensive/not covered by insurance	12%	2%	8%
My patients with COPD symptoms have more serious conditions	11%	6%	9%
Benefits of testing do not justify amount of time required	8%	2%	4%
None of these	39%	20%	30%

Results

28%

of urban PCPs do not have COPD testing equipment

No statistically significant results were noted by metro status; however, primary care physicians in urban areas did show a slightly greater tendency to say they lacked the right equipment for testing (see Table 5).

Regionally, primary care physicians in the Midwest were more likely than those in the Northeast to say testing would not change how they manage their patients. Midwest physicians were also more likely than those in the West to cite the cost of testing as an issue.

Table 5. Factors Influencing Testing by Location: PCPs Only

Which of the following factors influence your decision not to test a patient who may be at risk for COPD?

(Multiple selections allowed)

	PCP					
	Urban 2017	Non-Urban 2017	Northeast 2017	South 2017	Midwest 2017	West 2017
Testing will not affect my management of the patient	29%	35%	23%	29%	36%	28%
I do not have the equipment to test for COPD in my office	28%	21%	28%	27%	23%	25%
Testing for COPD is too expensive/ not covered by insurance	13%	15%	10%	14%	17%	8%
My patients with COPD symptoms have more serious conditions	10%	13%	13%	11%	7%	12%
Benefits of testing do not justify amount of time required	8%	6%	8%	10%	9%	6%
None of these	37%	40%	42%	36%	38%	43%

Results

PCPs report:

49%

of patients do not fully report symptoms

41%

of patients have more pressing health concerns

38%

of patients are not forthcoming about smoking history

Physicians' Perceived Barriers to COPD Diagnosis

Prior waves of DocStyles have explored other potential reasons physicians might experience barriers to treating COPD, beyond just the idea of testing for COPD. In 2015, primary care physicians were asked about the most significant barriers to COPD diagnosis. As shown in Table 6, the key constraints noted by these physicians were that patients do not fully report their symptoms (49%) or smoking history (38%), patients have more immediate health issues (41%), and patients are not likely to adhere to treatment (39%). More than a quarter of physicians (26%) noted the cost of testing procedures as an obstacle, while 17% lacked access to diagnostic tests.

Table 6. Perceived Barriers to Diagnosis

Aside from time, which of the following do you see as the most significant issues regarding diagnosis of patients with COPD?

(Multiple selections allowed)

	PCP
	2015
Patient does not fully report symptoms	49%
Patient has more immediate health issues	41%
Patient is not likely to adhere to treatment	39%
Patient does not fully report smoking history	38%
Cost of testing procedures to patient	26%
Difficult to differentiate COPD from asthma	24%
Lack of access to diagnostic tests	17%
There is no treatment to offer the patient	5%
None of these	6%

85%

of PCPs address
secondhand smoke
exposure

Evaluating Non-Smokers

In 2017, participants were asked about smoking status and discussions about smoking. Over half of the primary care physicians and nurse practitioners indicated that less than 5% of their patients with COPD are not current or former smokers (see Table 7).

OB/GYNs were more likely than other providers to not be able to answer this question. Most health care providers said they address secondhand smoke exposure when discussing their patients' smoking histories, though OB/GYNs (77%) were slightly less likely than primary care physicians (84%) or nurse practitioners (88%) to do so.

Table 7. Evaluating Non-Smokers by Provider Type

Approximately what proportion of the patients you see that have COPD are not current or former smokers?

	PCP	OB/GYN	Nurse Practitioner
	2017	2017	2017
Less than 5%	56%	34%	56%
5-20%	30%	16%	18%
21-30%	8%	4%	4%
More than 30%	4%	3%	3%
Don't know	3%	43%	19%

When you discuss a patient's smoking history with them, do you bring up potential exposure to secondhand smoke?

Yes	84%	77%	88%
No	16%	23%	12%

Results

As shown in Table 8, primary care physicians' evaluations of non-smokers were consistent across metro status as well as region.

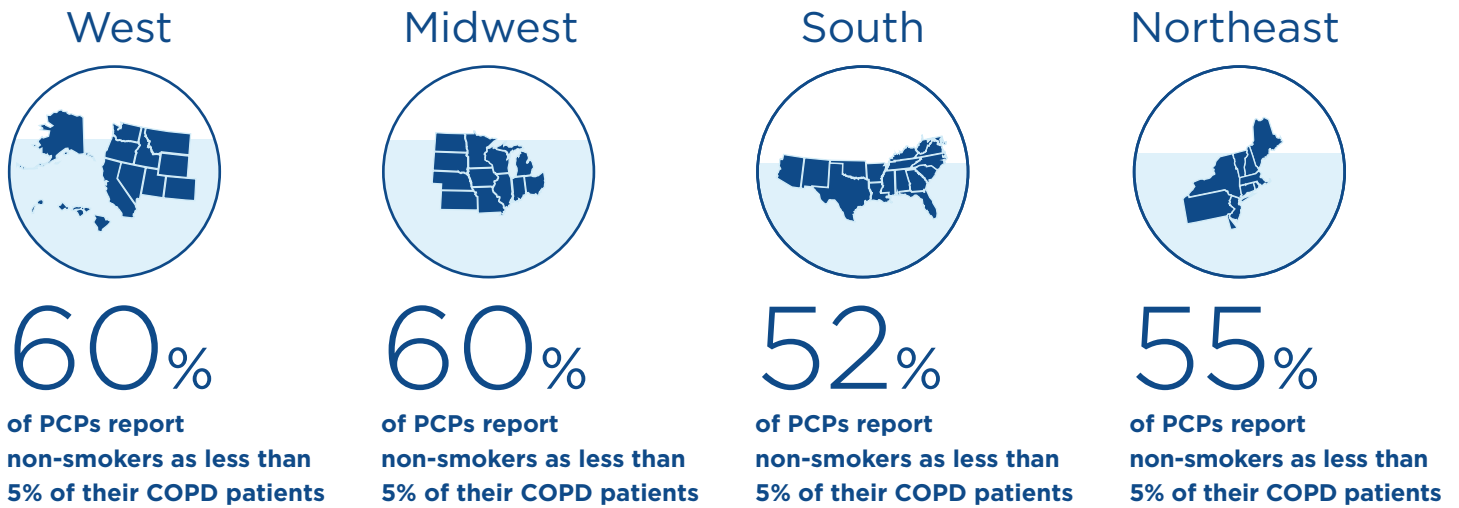


Table 8. Evaluating Non-Smokers by Location: PCPs Only

Approximately what proportion of the patients you see that have COPD are not current or former smokers?

	PCP					
	Urban	Non-Urban	Northeast	South	Midwest	West
	2017	2017	2017	2017	2017	2017
Less than 5%	56%	56%	55%	52%	60%	60%
5-20%	29%	34%	28%	35%	25%	28%
21-30%	8%	4%	11%	7%	6%	7%
More than 30%	4%	5%	4%	4%	5%	3%
Don't know	3%	1%	3%	2%	4%	2%

When you discuss a patient's smoking history with them, do you bring up potential exposure to secondhand smoke?

Yes	83%	90%	87%	83%	84%	85%
No	17%	10%	13%	17%	16%	15%

Among PCPs:

33%

'rarely' or 'never' prescribe pulmonary rehabilitation

28%

refer patients to a specialist instead

Use of Pulmonary Rehabilitation

In 2016, more than two-thirds of primary care physicians indicated that there are pulmonary rehabilitation programs available to their patients. Yet only 38% of physicians said that they routinely prescribe pulmonary rehabilitation for their patients diagnosed with COPD. One-third never or rarely did so, and more than a quarter did not prescribe pulmonary rehabilitation because they referred COPD patients to a specialist.

Table 9 presents known availability and prescription of pulmonary rehabilitation.

Table 9. Availability and Prescription of Pulmonary Rehabilitation

Are pulmonary rehabilitation programs available to your patients?

	PCP
	2016
Yes	68%
No	20%
Don't know	12%

How often do you prescribe pulmonary rehabilitation for patients diagnosed with COPD?

	PCP
	2016
Never	5%
Rarely	28%
Most of the time	33%
Always	5%
I don't prescribe this because I refer them to a specialist	28%
I don't treat patients with COPD	1%

Discussion

To gather insights about American health care providers' mindsets around COPD, the National Heart, Lung, and Blood Institute (NHLBI) participates in Porter Novelli's Styles program, an annual series of web-based surveys about health attitudes and behaviors. The data reported here show that health care provider evaluation and diagnosis of COPD relied on patient history, physical examination, and spirometry in the period from 2009 to 2017 (~80% use these tools).

Key Points Discussed:

Lack of equipment
and how it prevents testing for many health care providers

Impact on physician treatment
and how significant testing is for health care providers

Patient history of smoking
and its affect on treatment of potential COPD patients

51%

**of health care providers
who lack equipment refer
patients to a specialist**

The data revealed that one key barrier to testing for COPD is lack of equipment, which was reported by one-quarter of primary care physicians, half of the nurse practitioners, and nearly three-quarters of the OB/GYNs. The good news is that more than half (51%) of the health care providers who said they do not have equipment in their offices reported referring their patients for COPD evaluation. Further research needs to assess the rate at which patients are following through on these referrals. It is important to continue educating about COPD to encourage these referrals where equipment is not readily accessible. Additionally, with the high prevalence of COPD in women, OB/GYNs could be an important conduit to making patients aware of their breathing and educating about COPD in general.

Another key barrier to testing for COPD is that almost a third of primary care physicians do not believe that testing will affect their management of the patient. Primary care physicians need to continue to be included in educational outreach about signs and symptoms, latest diagnostic tools beyond spirometry, as well as latest research and treatment options.

The data also showed that a majority of providers (>50%) believe that less than 5% of their patients with COPD are not current or former smokers. Luckily, most providers (>80%) reported asking their patients about exposure to secondhand smoke. While the majority of COPD cases are associated with a history of smoking, other factors can be at play. This may suggest a need to assess provider awareness of alpha-1 antitrypsin (AAT) deficiency and other non-smoking causes of COPD and provide broader distribution of this information.

Finally, confirming a recent statement from the American Thoracic Society/European Respiratory Society,⁶ the data show the use of pulmonary rehabilitation remains an underutilized resource, as physicians are aware of programs being available to their patients (68%), but the direct prescription of rehabilitation happens only about 38% of the time. Suffering from COPD is strongly associated with a negative impact on quality of life⁷ and patients often cite pulmonary rehab as key to improving everyday life.⁸ The data provide an opportunity to further educate providers and patients and their caregivers on the benefits of intervention.

Discussion

COPD is the fourth leading cause of death and the fourth leading cause of disability in the United States,⁹ and disease-associated health care costs are estimated at more than \$50 billion annually.¹⁰

These data collectively highlight the necessity to continue programs that promote COPD awareness among United States health care providers and point toward two major gaps that need to be filled:

1 Increase
communication
about the causes of COPD
and new therapeutic options

2 Promote &
optimize
the effective utilization of
pulmonary rehabilitation

Limitations

There are several limitations to this study. First, all survey data was self-reported and therefore subject to recall and social demand biases. Second, while DocStyles is a large, national survey, it may not provide a nationally-representative sample given that it is an opt-in panel. However, the selection of invited participants using quota sampling has been found to include participants that were demographically comparable (gender, age, average years in practice) with physicians in the AMA Masterfile (unpublished data, Porter Novelli, DocStyles 2017 Methods, Washington, DC, 2016). Lastly, the sampling frame changed over time, which may limit comparability across the total trend span.

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Appendix A. Trend Data Methods

DocStyles 2009-2017

From 2009 to 2012, DocStyles was conducted via Epocrates' Honors Panel. In 2013 and 2014, DocStyles samples were drawn from World One's Global Medical Panel. In 2015, World One's Global Medical Panel was bought by SERMO and renamed SERMO's Global Medical Panel. As of 2017, the SERMO Global Medical Panel has approximately 350,000 medical professionals enrolled in the United States, of whom approximately 50,000 participate in survey research. Sample sizes, response rates, and demographics for each year are presented in Table 12.

Table 12

DocStyles Primary Care Physician Samples 2009-2017

(Unweighted)

	2017	2016	2015	2014	2013	2012	2011	2010	2009
Sample size	1,003	1,003	1,000	1,008	1,006	1,001	1,002	1,000	1,000
Response rate	63%	70%	89%	74%	70%	46%	53%	53%	43%
GENDER									
Male	68%	72%	74%	73%	75%	71%	70%	68%	72%
Female	32%	28%	26%	27%	25%	29%	30%	32%	28%
Average age (years)	47.2	47.0	45.9	46.0	48.8	46.6	45.4	45.3	45.0
Average years in practice	16.9	16.4	15.4	15.3	17.3	15.9	14.5	14.5	14.2
REGION									
Northeast	25%	27%	26%	25%	26%	27%	23%	23%	24%
Midwest	20%	21%	23%	23%	23%	22%	24%	21%	22%
South	34%	31%	30%	31%	31%	24%	32%	35%	34%
West	21%	21%	21%	20%	21%	27%	22%	21%	20%

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