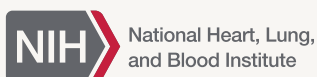


COPD

Tracking Perceptions of the Individuals Affected
and the Providers Who Treat Them

2018 REPORT



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COPD
LEARN MORE
BREATHE BETTER®

A program of the National Institutes of Health.

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Abstract

Chronic obstructive pulmonary disease (COPD) is a leading cause of death in the United States. Since 2009 the National Heart, Lung, and Blood Institute's (NHLBI) *COPD Learn More Breathe Better*[®] program has been gathering insights about American consumers' and physicians' mindsets around COPD with web-based surveys. While American consumers' knowledge and awareness of COPD have steadily increased over the decade, with the disease being recognized by 71% of the respondents, barriers to earlier diagnosis and treatment remain. Slightly lower than the prevalence of COPD among the U.S. population (6.3%),¹ 4% of the respondents reported having the disease and 40% of adults who have heard of COPD also reported having personal experience with the disease. The percent of symptomatic patients who disclosed their symptoms to their health care provider remained constant at around 72% from 2009 to 2018, leaving about 30% of symptomatic people undiagnosed and untreated. Data from the physicians' survey show that evaluation and diagnosis of COPD continues to rely mainly on patient history, physical examination, and spirometry; however, physicians increasingly report that patient nonadherence is the single biggest barrier to diagnosis. Finally, the data confirm pulmonary rehabilitation as an underutilized resource.

The data collectively highlight the necessity to:



**Expand
Educational Initiatives**
about COPD



**Increase
Communication**
between patients, their
caregivers, and the providers
and researchers that treat
and assess the disease



Promote and Optimize
the effective utilization of
pulmonary rehabilitation

Background and Objectives

Chronic obstructive pulmonary disease, or COPD, is a progressive lung disease that over time makes it hard to breathe. In people with COPD, 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 a leading cause of death in the U.S., after heart disease, cancer, and unintentional injuries.² However, the disease is highly treatable and manageable when detected early.

In the U.S., prevalence of COPD in adults 18 years of age and older is 6.5%. About 16 million people are currently diagnosed with COPD and it is estimated that millions more have the disease without realizing.³ 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 it disproportionately affects some U.S. ethnic groups, women, and those living in southern states along the Ohio River Valley.³ Further, COPD is almost twice as common in rural parts of the country than in urban parts.⁴ 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 U.S. suffers from the disease. Smoking is most often associated with COPD, although up to 25% of patients never smoked;⁵ other causes may be to blame as well, including long-term exposure to lung irritants – such as dust or fumes in the workplace – second-hand 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 get 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 there are currently 100,000 Americans who are homozygotes for the mutation and have the condition, but only 15,000 have received the diagnosis. Additionally, studies are underway to address if heterozygotes are susceptible to COPD.⁶

Each year, the National Heart, Lung, and Blood Institute (NHLBI) participates in Porter Novelli's Styles study to gain further understanding of consumer and health care provider mindsets around COPD. The objective of this annual study 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 physicians' approaches to COPD 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

Consumer and physician data for this report were licensed from the Porter Novelli Styles program. ConsumerStyles is an annual series of web-based surveys that gather insights about American consumers, including information about their health attitudes and behaviors. 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.

CONSUMERSTYLES 2018

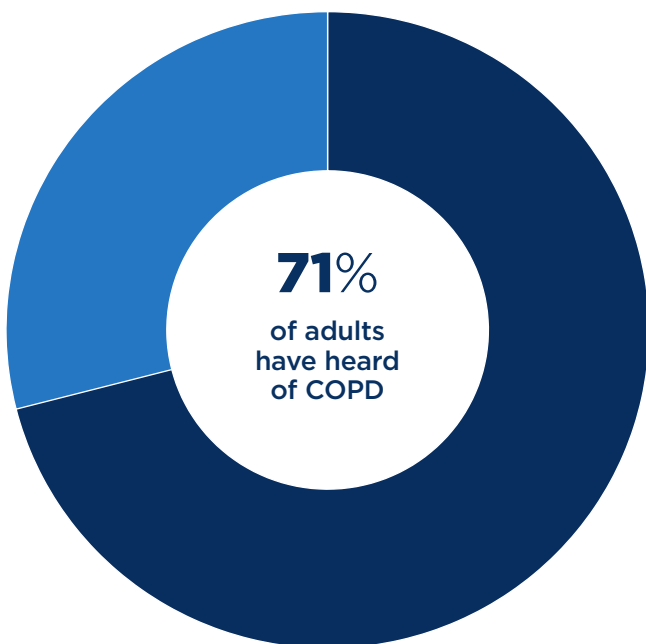
In 2018, the Spring ConsumerStyles wave was conducted among 6,427 adults age 18 or older who belong to GfK's Knowledge Panel®.⁷ The Summer ConsumerStyles survey wave was sent in June to 5,584 adults who previously completed the Spring wave. Questions related to COPD were included in the Summer wave. Respondents were not required to answer any of the questions and could exit the survey at any time. Those who completed the survey received reward points worth approximately \$5 and were entered in a monthly sweepstakes. The survey took approximately 28 minutes (median) to complete. A total of 4,088 adults completed the survey for a response rate of 73%. The resulting data were weighted to match the U.S. Current Population Survey proportions for sex, age, household income, race/ethnicity, household size, education level, census region, and metro status.

DOCSTYLES 2018

In June 2018, the DocStyles survey was sent to a sample of 2,582 health care providers from SERMO's Global Medical Panel⁸, which includes over 350,000 medical professionals in the United States. Panelists were 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 obstetricians/gynecologists (OB/GYNs), and 250 nurse practitioners. To be eligible to participate, respondents were required to reside in the U.S., 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 1,505 health care providers completed the survey, a response rate of 58%. The sample sizes and response rates per group were: 1,004 primary care physicians (62%), 250 OB/GYNs (82%), and 251 nurse practitioners (38%). Those who completed the survey were paid an honorarium of \$55 to \$77, depending on the number of questions asked of their specialty.

Results

The primary analyses are based on the 4,088 adult consumers and 1,004 primary care physicians who were asked COPD-related questions in 2018. Where available, trend data is also presented. Methodology, sample sizes, response rates, and demographic characteristics of participants who answered ConsumerStyles from 2008 to 2018 and DocStyles from 2009 to 2018 are provided in **Appendix A**. Not all columns add to 100% due to rounding or allowance of multiple selections (indicated within each table).

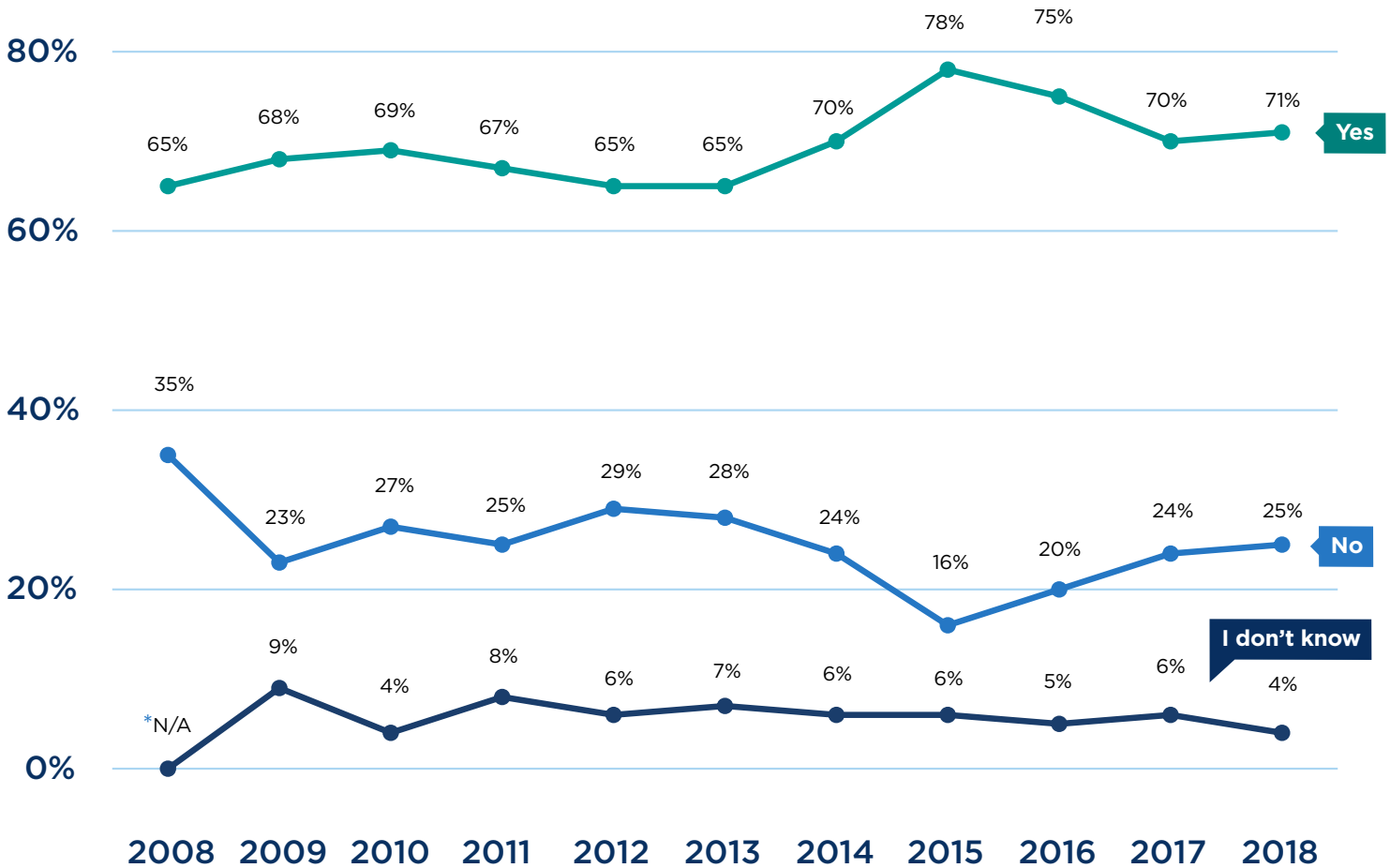


CONSUMER AWARENESS & KNOWLEDGE OF COPD

In 2018, seven out of 10 American adults said they have heard of chronic obstructive pulmonary disease or COPD. One-quarter indicated they were not aware of COPD and 4% were not sure. Awareness has fluctuated over the past 11 years, but has generally increased slightly, from 65% in 2008 to 71% in 2018. **GRAPH 1** presents COPD consumer awareness trends.

GRAPH 1. CONSUMER AWARENESS 2008-2018

Have you ever heard of a condition called chronic pulmonary disease or COPD?



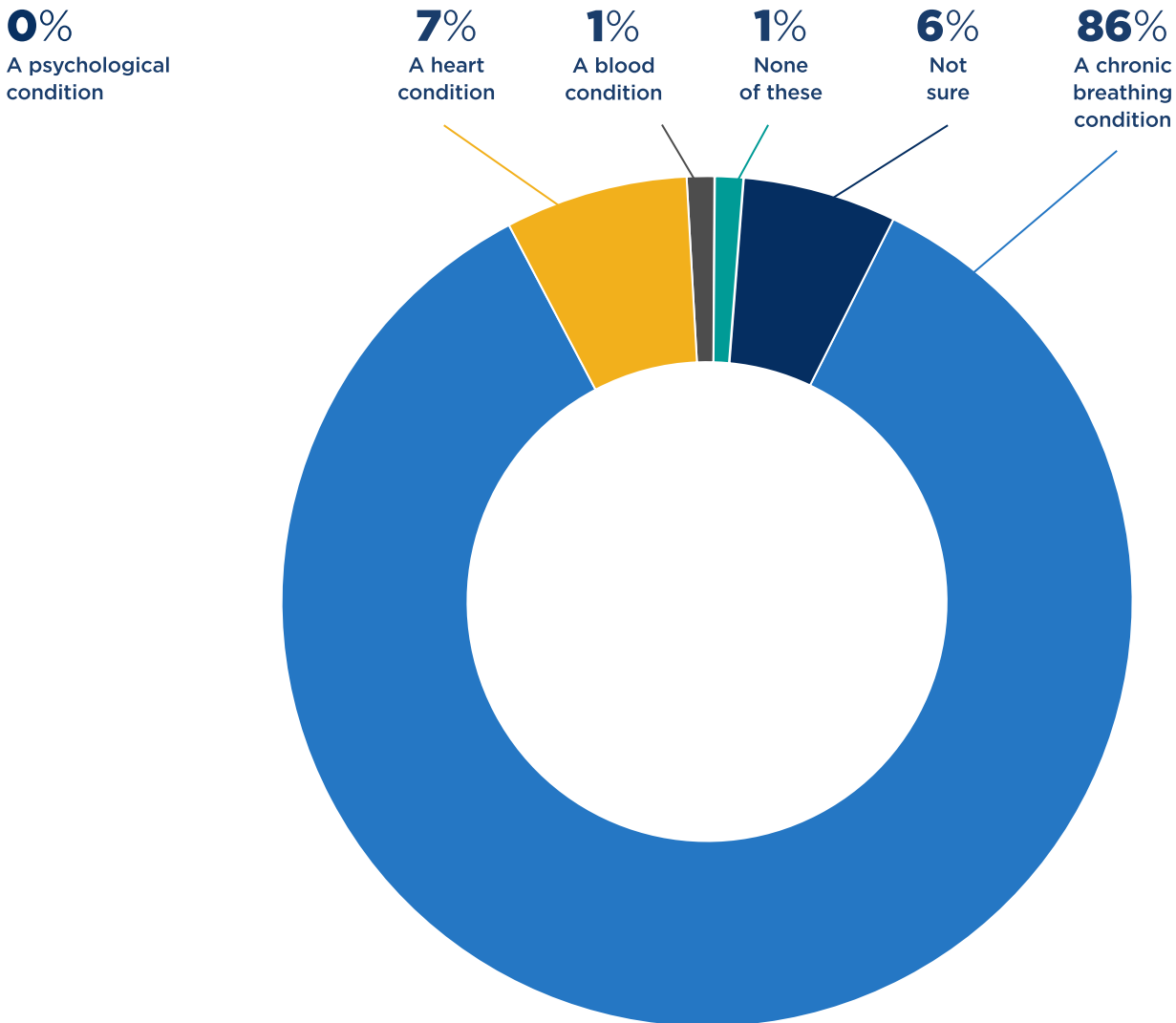
*This answer category was not included in 2008.

In 2016, most adults who have heard of COPD were accurately able to categorize it as a chronic breathing condition when given a list of choices (see **GRAPH 2**). Only a minority thought it was a heart condition (7%) or blood condition (1%), and 6% were not sure.

GRAPH 2. CONSUMER KNOWLEDGE OF COPD

What is COPD?

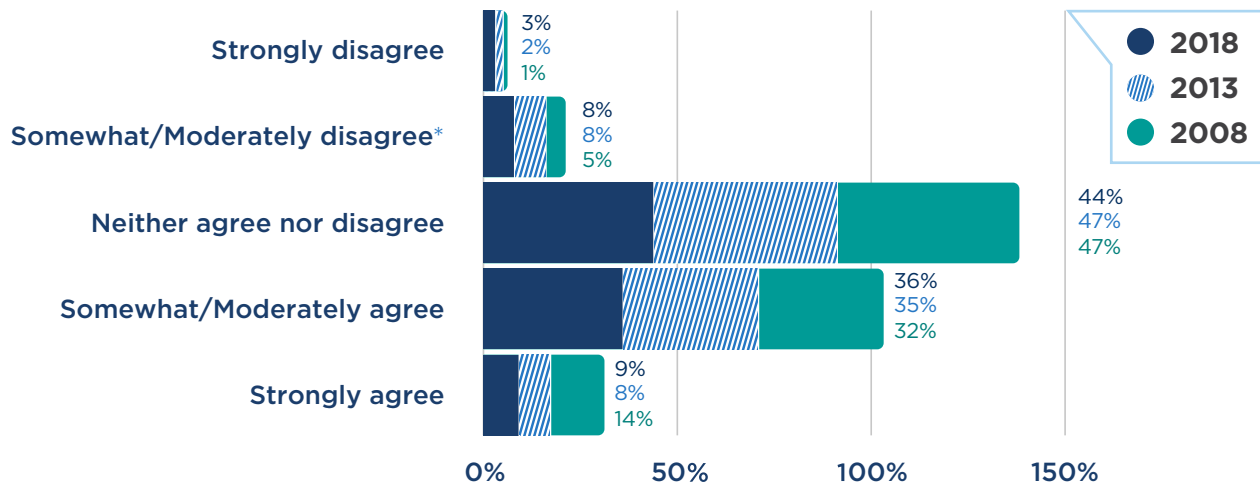
(Asked of those who have heard of COPD)



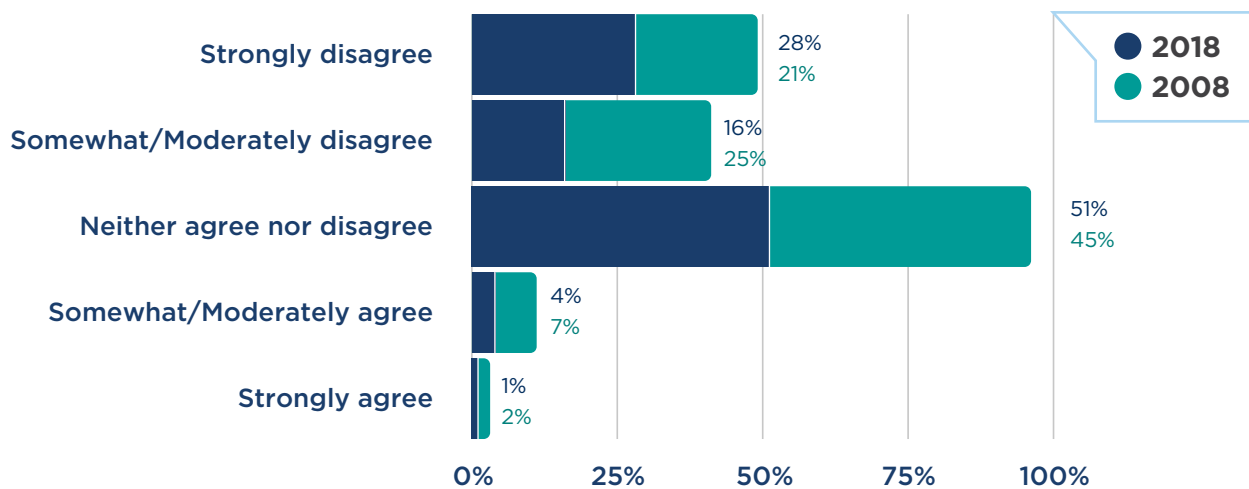
Although respondents may understand that COPD is a breathing condition, many adults may be unsure about the details. In 2018, 45% of adults agreed that COPD is treatable while almost as many (44%) neither agreed nor disagreed with this statement (see **GRAPH 3**). Similarly, 44% of adults did not believe that COPD is primarily a disease of men, while half (51%) chose the neutral answer. Consumer opinions about COPD have not changed significantly from 2008 to 2018.

GRAPH 3. CONSUMER OPINIONS ABOUT COPD

Chronic obstructive pulmonary disease (COPD) is treatable.



Chronic obstructive pulmonary disease is primarily a disease of men.**



*Note that the answer scale was worded as “Somewhat” in 2013 and 2018, but as “Moderately” in 2008.

**This question was not asked in 2013.

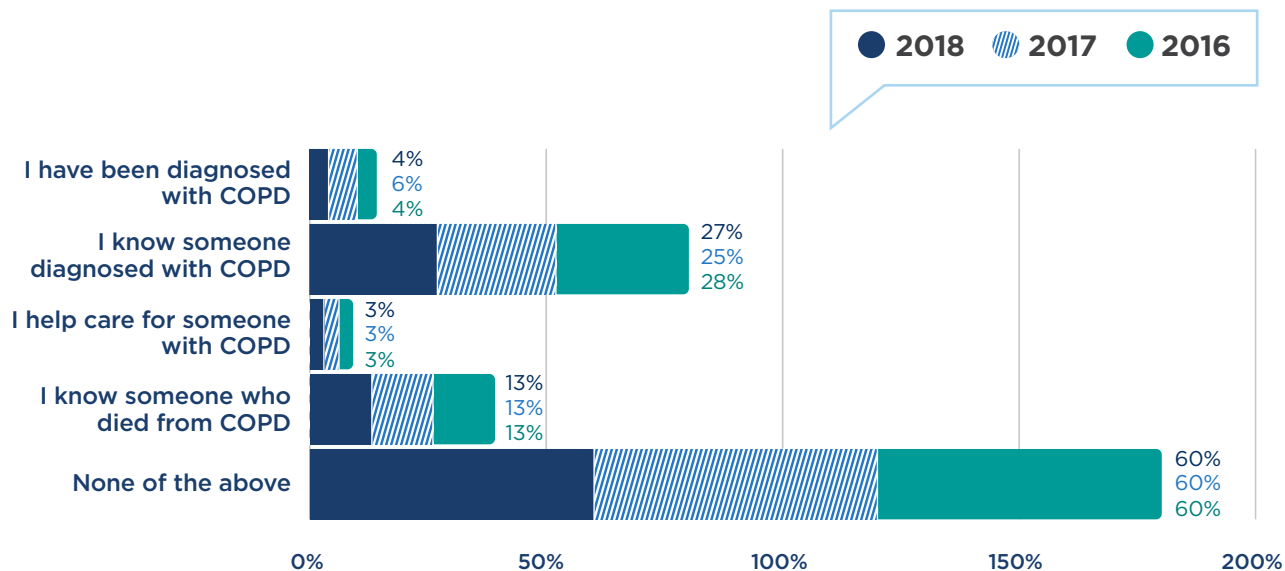
CONSUMERS' EXPERIENCE WITH COPD & ITS SYMPTOMS

In 2018, four out of 10 adults who have heard of COPD reported having personal experience with the disease. While some reported having been diagnosed with COPD themselves (4%), more than a quarter (27%) knew someone who had been diagnosed and 13% knew someone who had died from COPD (see **GRAPH 4**).

GRAPH 4. CONSUMERS' RELATIONSHIP WITH COPD

Which of the following statements describe you?

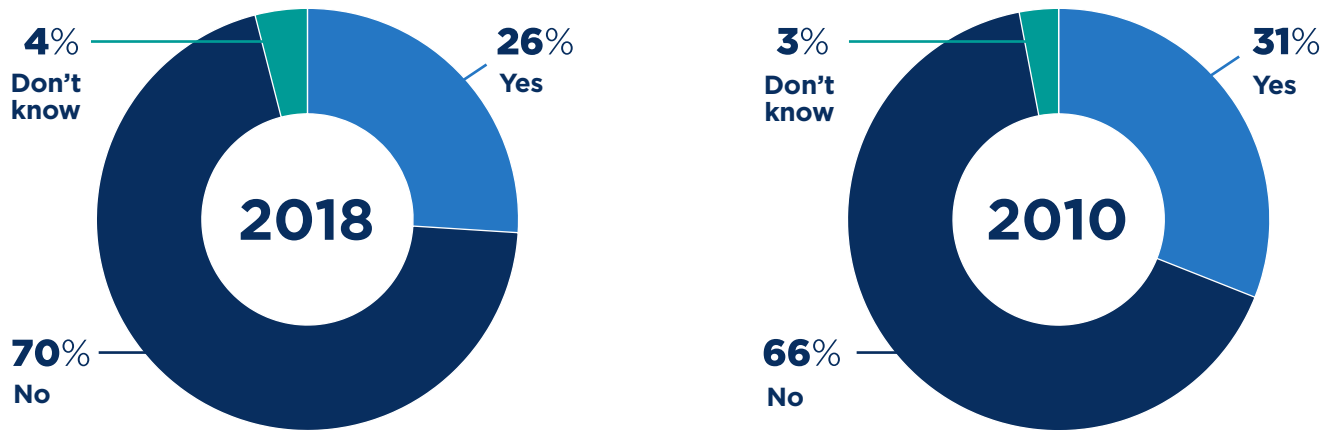
(Asked of those who have heard of COPD)
(Multiple selections allowed)



Despite relatively wide-spread experience with COPD, only about a quarter of adults (26%) had ever taken a spirometry test to measure how well their lungs are functioning. The percent of adults who have been tested showed a slight decrease from 31% in 2010 to 26% in 2018 (see **GRAPH 5**).

GRAPH 5. TESTING

Has your doctor ever performed or ordered a test of your lungs that required you to blow into a machine?



It is important to track the presence of COPD symptoms because breathing difficulties represent another way to assess the disease. In 2018, one in 10 adults (11%) said they have suffered from chronic cough, wheezing, or being too short of breath to do normal activities over the past year. The percentage of adults with symptoms has varied only slightly over the past 10 years (see [TABLE 1](#)).

TABLE 1. SYMPTOMATIC ADULTS 2009-2018

Over the past year, have you suffered from chronic cough, wheezing, or being too short of breath to do normal activities?

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Yes	11%	11%	10%	13%	12%	11%	11%	13%	15%	17%
No, I have not suffered from any of these conditions	89%	89%	90%	87%	88%	89%	89%	87%	85%	83%

PATIENT COMMUNICATION WITH DOCTORS & INFORMATION RECEIVED

More than seven out of 10 adults who have suffered from COPD symptoms in 2018 said they had talked to their doctor about their chronic cough, wheezing, or shortness of breath (see **TABLE 2**). The percentage of symptomatic adults who have discussed their symptoms has fluctuated over the past 10 years, with an average of 72%.

TABLE 2. PATIENT COMMUNICATION 2009-2018

Have you talked to your doctor about your chronic cough, wheezing, or being too short of breath to do normal activities?

(Among those with symptoms)

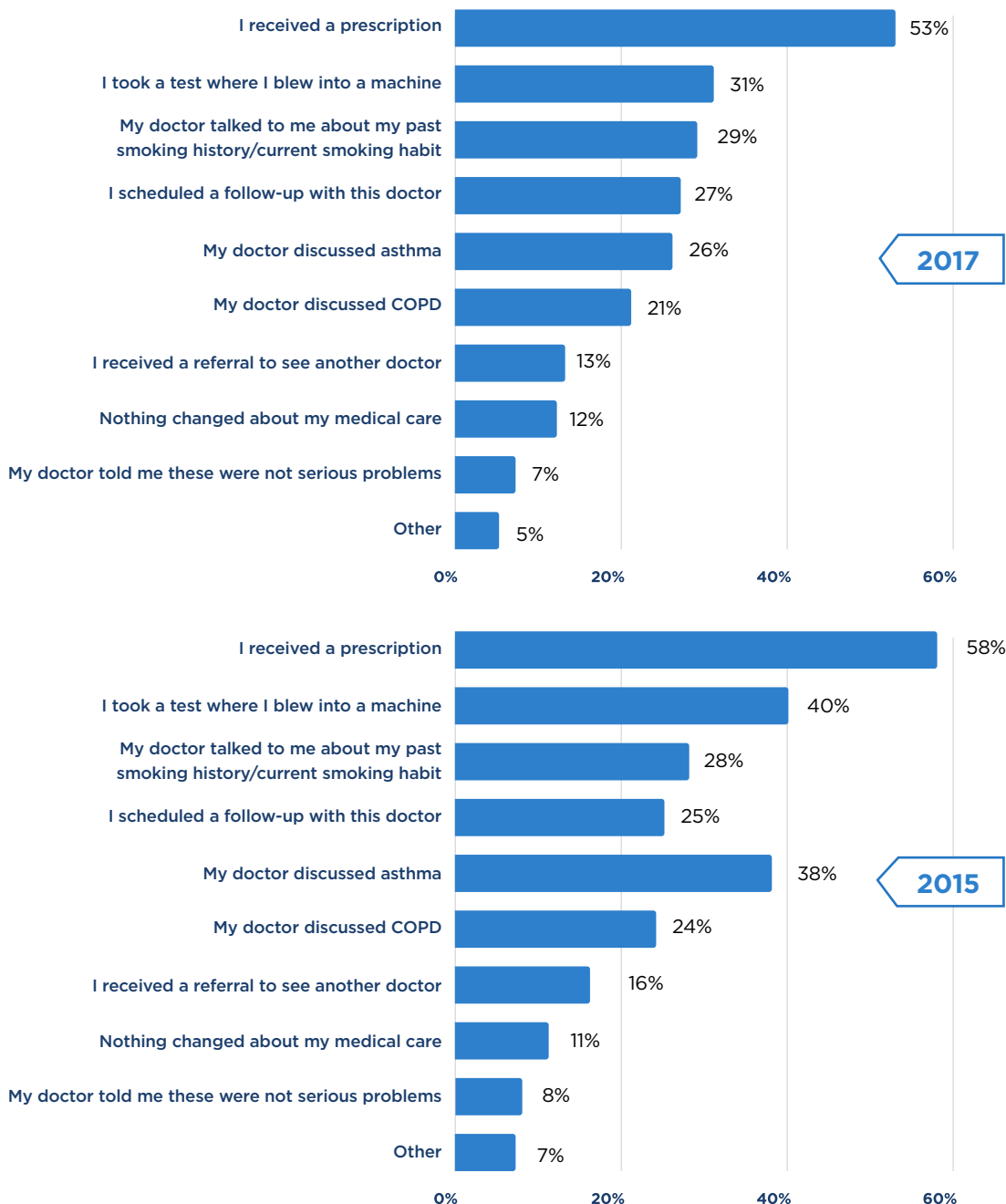
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Yes	71%	69%	73%	75%	70%	74%	75%	67%	77%	70%
No, I have not talked to my doctor about these conditions	29%	31%	27%	25%	30%	26%	25%	33%	23%	30%

Patients who have talked to their doctor about their symptoms indicated a variety of outcomes. More than half (53%) received a prescription, three out of 10 (31%) were given a spirometry test, and 29% said their doctor discussed their smoking history with them (see **GRAPH 6**). One-quarter of patients (27%) scheduled a follow-up with their doctor, while half as many (13%) received a referral. Only two in 10 patients said their doctor discussed COPD. Fewer patients reported taking a spirometry test in 2017 (31%) compared to 2015 (40%) as an outcome of talking to their doctor.

GRAPH 6. OUTCOMES OF PATIENT-DOCTOR DISCUSSIONS

Which of the following happened when you talked to your doctor about your chronic cough, wheezing, or being too short of breath to do normal activities?

(Asked of those who have talked to their doctors about their symptoms)
(Multiple selections allowed)

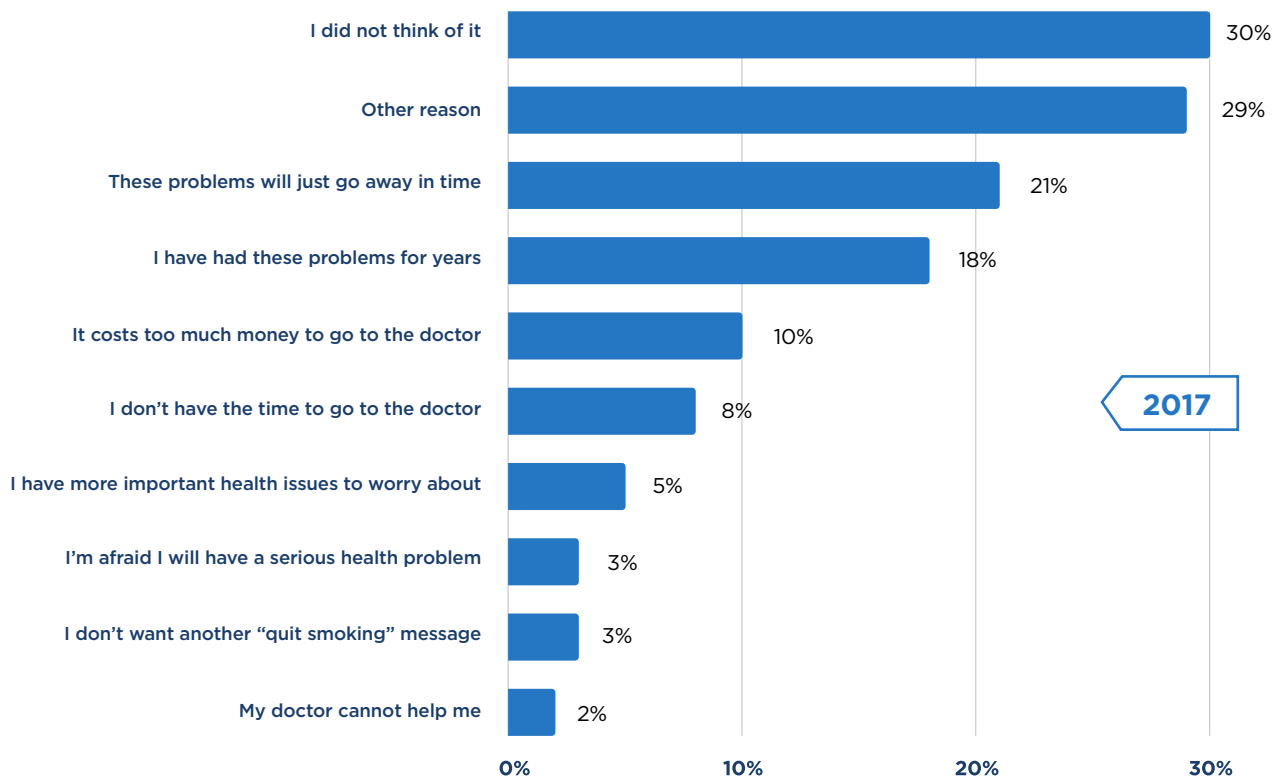


Symptomatic patients who have not talked to their doctors indicated a variety of reasons for not doing so. Three out of 10 simply “did not think of it” (see **GRAPH 7**). Approximately one in five thought their problems would go away in time, and 29% had a reason that was not listed. Only 10% identified cost as a barrier, and 8% identified lacked time for an office visit.

GRAPH 7. REASONS FOR NOT CONSULTING DOCTORS

Why have you not talked to your doctor about your chronic cough, wheezing, or being too short of breath to do normal activities?

(Asked of those who have not talked to their doctors about their symptoms)
(Multiple selections allowed)

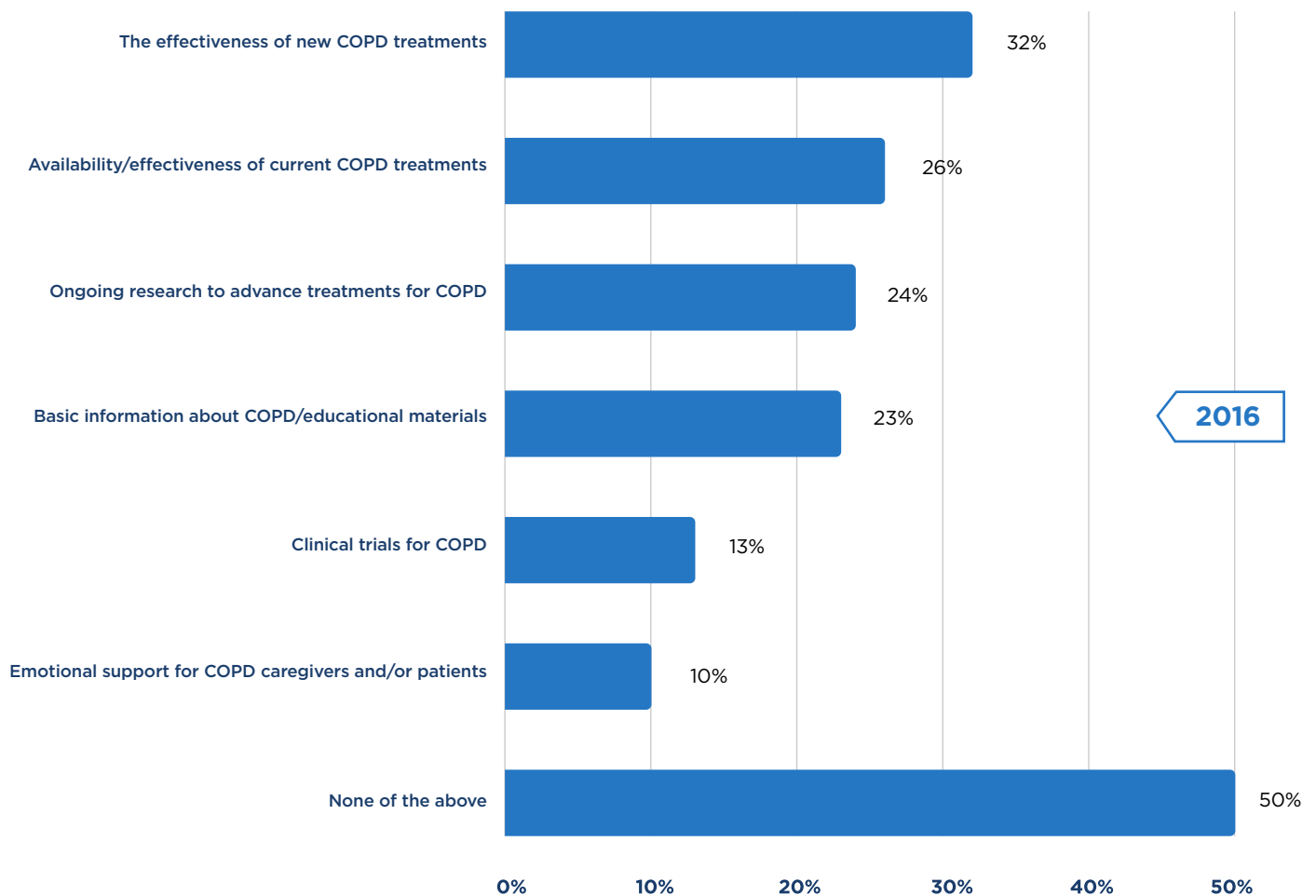


In 2016, half of adults who have personal experience with COPD (have been diagnosed, know someone who has been diagnosed, or care for someone with COPD) indicated that they would be interested in learning about one or more COPD topics. They were most likely to be interested in the effectiveness of new treatments (32%), the availability and effectiveness of current treatments (26%), and ongoing research advancing treatments for COPD (24%). **GRAPH 8** presents the types of information patients and caregivers are interested in.

GRAPH 8. DESIRED PATIENT INFORMATION

Choosing from the list below, what would you like to know more about related to COPD?

(Asked of those who have been diagnosed, know someone diagnosed, or care for someone with COPD)
(Multiple selections allowed)



PHYSICIANS' APPROACHES TO COPD EVALUATION

In 2018, nine out of 10 physicians said they assess patients they suspected of having COPD by taking their history and doing a physical examination while eight out of 10 said they use spirometry (see **TABLE 3**). Many also used chest imaging (69%) and oximetry (61%). Approximately one-quarter referred patients with COPD symptoms. While the percentage of physicians reporting use of each approach has varied from 2009 to 2018, the order of the approaches in terms of most used (history and physical exam) to least used (referral) has remained relatively consistent.

TABLE 3. HOW PHYSICIANS EVALUATE COPD: 2009-2018

How do you evaluate patients you suspect of having COPD?

(Asked among primary care physicians)

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
History & physical examination	90%	86%	77%	82%	90%	92%	90%	95%	92%	78%
Spirometry	80%	76%	71%	76%	83%	81%	86%	82%	83%	76%
Chest imaging	69%	45%	46%	46%	64%	NA*	NA	NA	NA	NA
Oximetry	61%	43%	41%	43%	60%	60%	60%	49%	48%	29%
Peak-flow test	41%	30%	37%	39%	46%	46%	36%	36%	31%	24%
A patient questionnaire	32%	28%	28%	26%	35%	37%	28%	28%	17%	17%
Refer patient	24%	16%	18%	16%	24%	22%	18%	21%	18%	10%
None of these	0%	0%	1%	0%	1%	1%	0%	0%	NA	1%

*Answer category was not included where noted.

FACTORS INFLUENCING TESTING

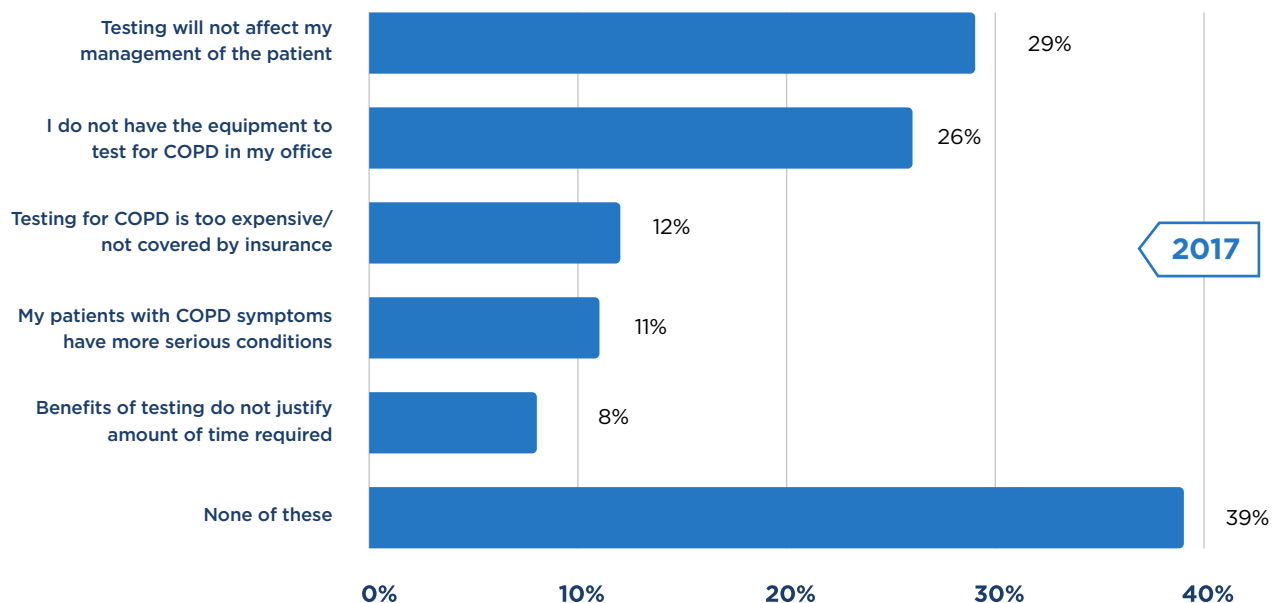
In 2017, physicians were asked about the factors that influence their decision not to test a patient who may be at risk for COPD. Almost four out of 10 did not consider any of the listed factors to be influential (see **GRAPH 9**). The most significant factor for primary care physicians was that testing 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. Both of these responses point to the fact that primary care physicians need educational reinforcement on the utility of spirometry.

26%
of physicians
lack COPD
testing
equipment

GRAPH 9. FACTORS INFLUENCING TESTING

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

(Multiple selections allowed)
(Asked of primary care providers)



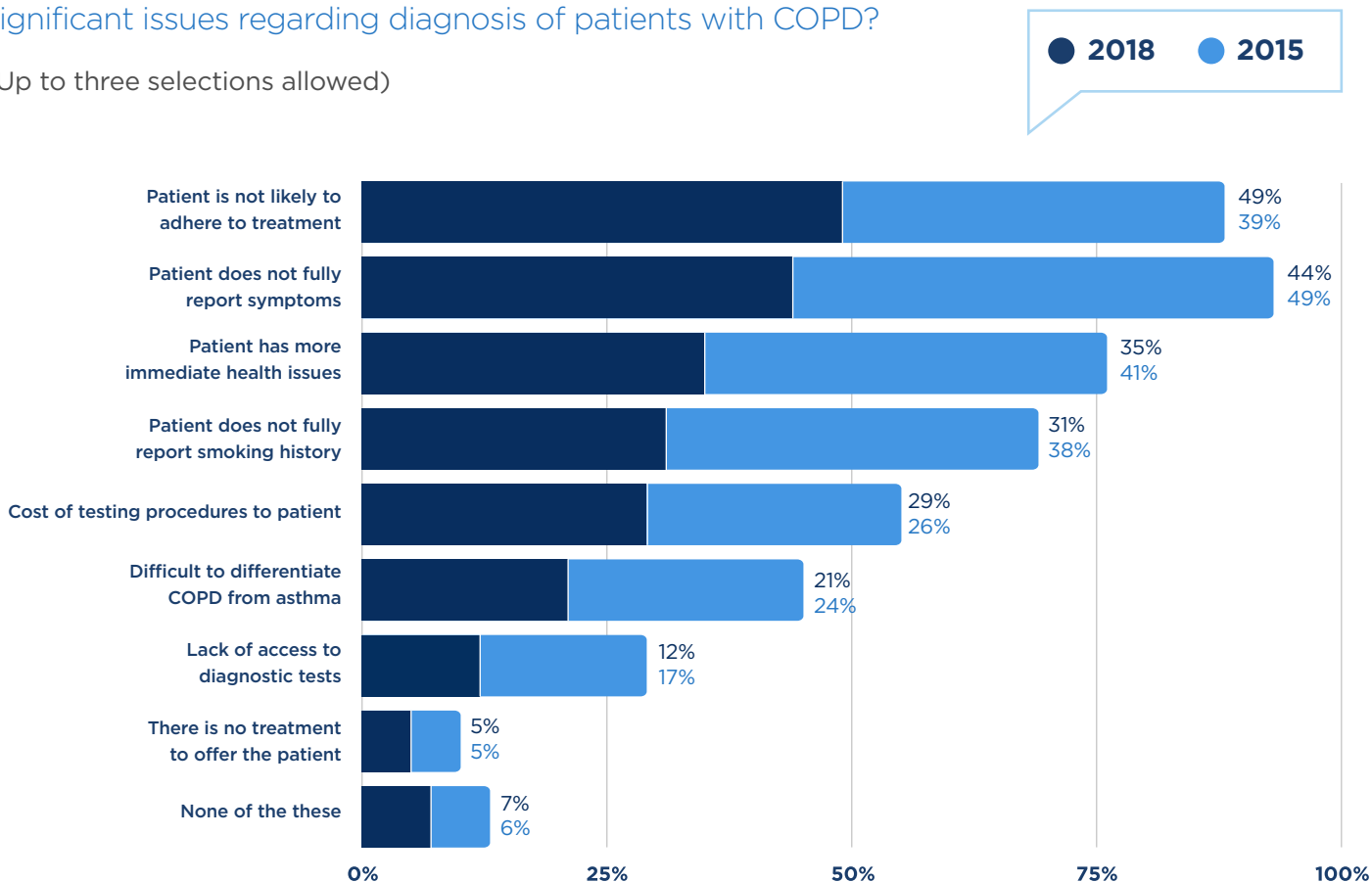
PHYSICIANS' PERCEIVED BARRIERS TO COPD DIAGNOSIS

Physicians were asked what they see as the most significant issues regarding diagnoses of patients with COPD aside from time. The key constraints noted by physicians in 2018 aside from time were that patients are not likely to adhere to treatment (49%), patients do not fully report their symptoms (44%) or smoking history (31%), and patients have more immediate health issues (35%), (see **GRAPH 10**). More than a quarter of physicians (29%) noted the cost of testing procedures as an obstacle, while 12% lacked access to diagnostic tests. Physicians were more likely to consider lack of adherence to treatment as a significant issue in 2018 (49%) compared to 2015 (39%).

GRAPH 10. 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?

(Up to three selections allowed)



EVALUATING NON-SMOKERS

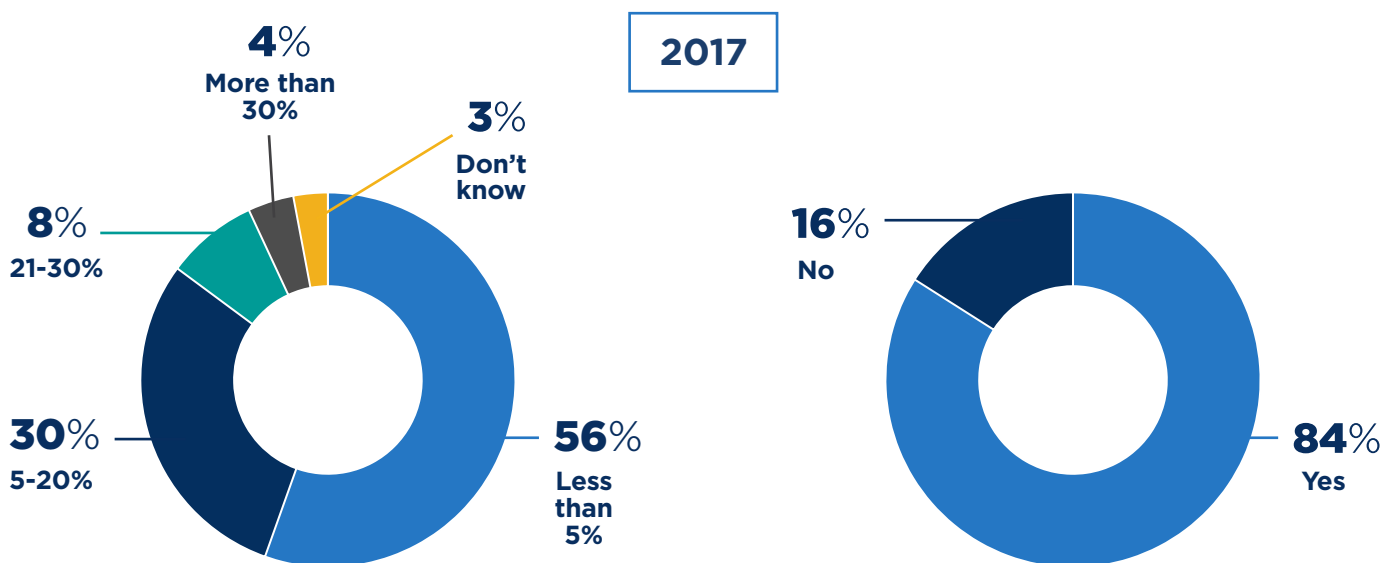
In 2017, physicians were asked about patients' smoking status and discussions about smoking. Over half of the primary care physicians indicated that less than 5% of their patients with COPD are not current or former smokers (see **GRAPH 11**). Most physicians (84%) said they address secondhand smoke exposure when discussing their patients' smoking histories.

GRAPH 11. EVALUATING NON-SMOKERS

(Asked of primary care physicians)

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

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



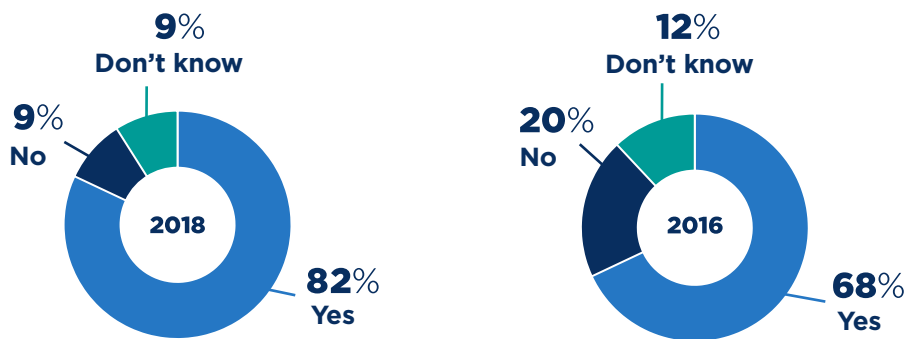
USE OF PULMONARY REHABILITATION

In 2018, more than eight out of 10 physicians indicated that there are pulmonary rehabilitation programs available to their patients, up from 68% in 2016 (see **GRAPH 12**). Despite this growth in availability of programs, only 42% of physicians reported they routinely prescribe pulmonary rehabilitation for their patients diagnosed with COPD. One-third (35%) never or rarely do so, and 22% said they do not prescribe pulmonary rehabilitation because they refer COPD patients to a specialist.

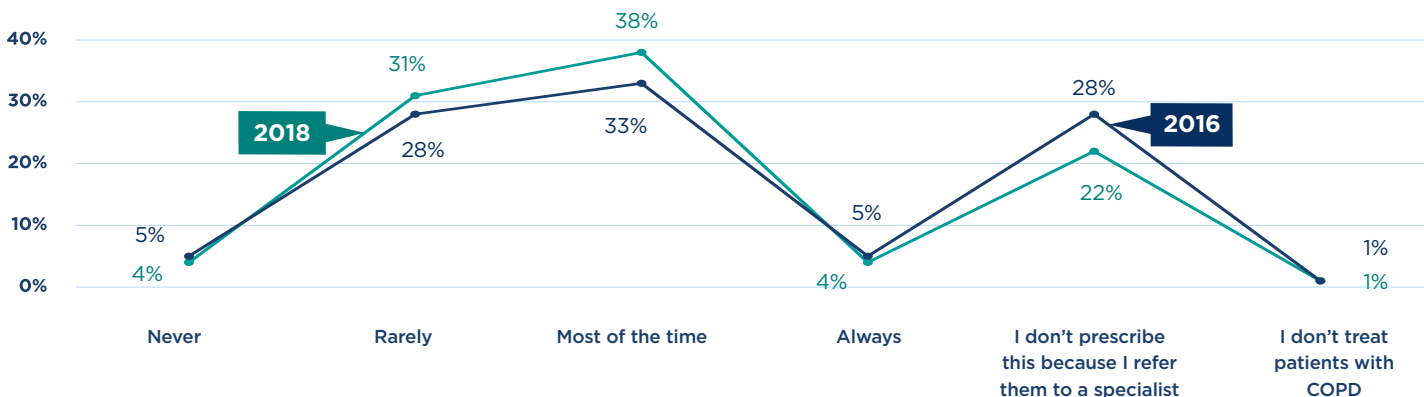
GRAPH 12. AVAILABILITY AND PRESCRIPTION OF PULMONARY REHABILITATION

(Asked of primary care physicians)

Are pulmonary rehabilitation programs available to your patients?



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

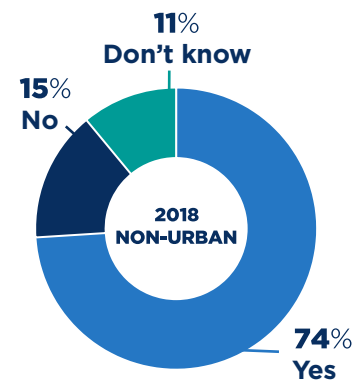
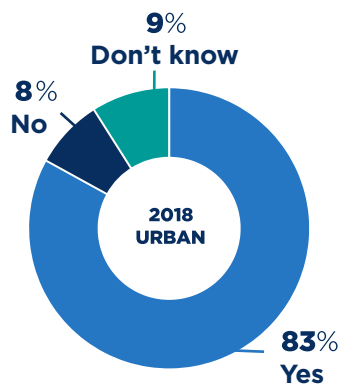


Physicians located in urban areas (83%) are more likely than those in non-urban areas (74%) to have pulmonary rehabilitation programs available in their areas (see **GRAPH 13**). Despite availability, urban physicians are not any more likely than non-urban physicians to regularly prescribe pulmonary rehabilitation—just over 40% of both groups do so ‘most of the time’ or ‘always.’ However, urban physicians (23%) are almost twice as likely as their non-urban counterparts (12%) to refer their patients to a specialist instead of prescribing pulmonary rehabilitation.

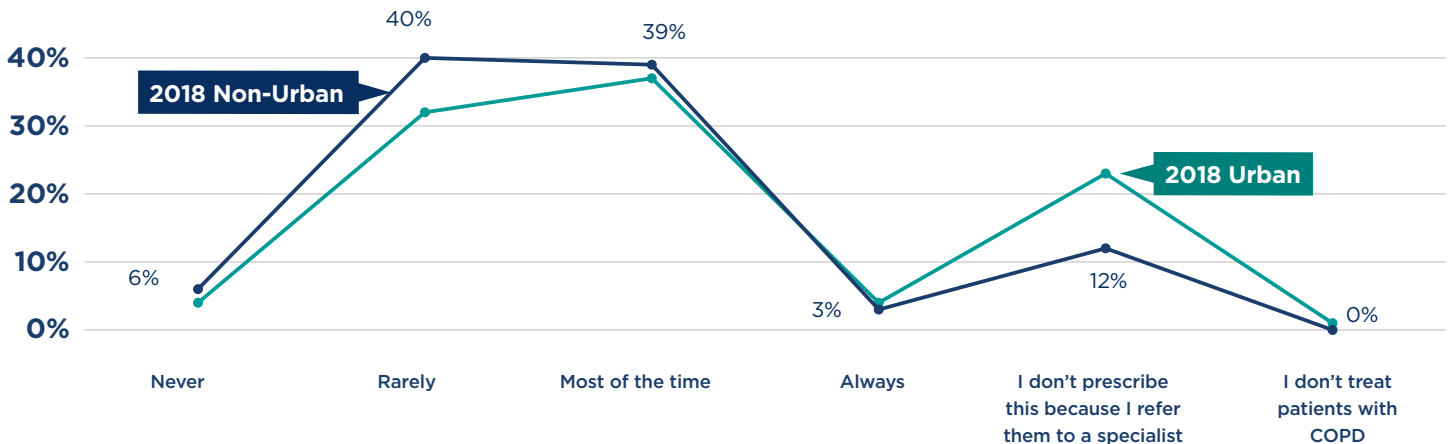
GRAPH 13. AVAILABILITY AND PRESCRIPTION OF PULMONARY REHABILITATION BY LOCATION

(Asked of primary care physicians)

Are pulmonary rehabilitation programs available to your patients?



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



OPINIONS ABOUT COPD TREATMENTS

Physicians were slightly less optimistic about COPD treatments in 2018 than they were in 2009. Three-quarters of physicians (76%) agreed that current treatments for COPD are helpful for optimizing a patient’s quality of life in 2018, which is down from 89% in 2009 (see **GRAPH 14**).

GRAPH 14. PHYSICIAN OPINIONS ABOUT COPD TREATMENTS

Current treatments for COPD are helpful for optimizing a patient’s quality of life.

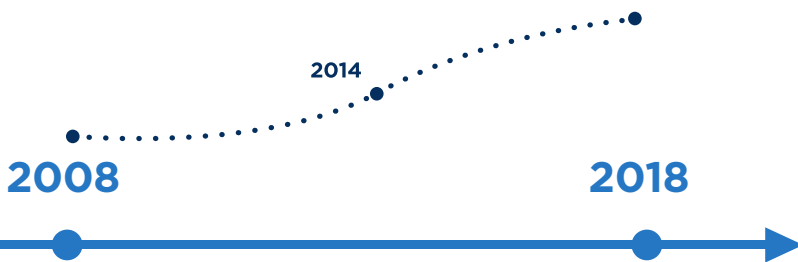
(Asked of primary care providers)



Discussion

COPD is a leading cause of death and disability in the U.S., and disease-associated health care costs are estimated at \$50 billion annually.¹⁰ The need for awareness and education on the disease remains high. Additionally, the strong levels of personal connections to the disease provide opportunities to reinforce the relevance and reach of COPD to an even wider audience.

To understand American consumers' and physicians' 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.



COPD has progressively become more of a household name from 2008 to 2018, with awareness remaining in the 70% plus range in the last five years of tracking - this results in an average increase of six percentage points in awareness from the period prior to 2014.

Further, most adults who have heard of COPD recognize it as a chronic breathing condition (86%).

Although only 4% of the respondents who have heard of the disease identified themselves as having COPD, many more know or care for someone with COPD (40%). Additional data show the proportion of respondents that experience COPD symptoms and have talked to their health care provider about them appears, with some fluctuations, to have remained the same during the period from 2009 to 2018 (-11% and -72%, respectively). Consumers' increase in awareness is also accompanied by a desire to know more about the disease, its treatment, and – related to the fact that COPD is so far an incurable disease – the need for ongoing research to advance treatments for the disease.

Data from the physicians' survey show that evaluation and diagnosis of COPD relied on patient history, physical examination, and spirometry in the period from 2009 to 2018 (80% or more use these tools). Finally, confirming a statement from the American Thoracic Society/European Respiratory Society,⁹ data show the use of pulmonary rehabilitation programs remains an underutilized resource. While awareness of program availability to their patients has significantly increased compared to 2016 (68% to 82%), the direct prescription of rehabilitation happens only about 42% of the time.

The high, and relatively stable, levels of awareness, as well as overall disease knowledge are promising, but one of the major challenges of diagnosing and treating COPD is reflected in the constant number of respondents in the past 10 years who have not spoken to their health care provider about their symptoms (see **TABLE 2**). The provider-patient communication gap appears to be bilateral: health care providers' responses to past DocStyles surveys suggest patients' lack of willingness to report full health symptoms or to discuss smoking behaviors contribute to this gap. Additionally, lack of adherence to treatment by patients is perceived as a significant issue for health care providers. Patients indicate that health care providers most often provide a prescription or a test (such as spirometry), but less

frequently discuss smoking or asthma, or do nothing. Additional obstacles are represented by the presence of multi-comorbid conditions in these patients and the costs associated with treatments (see **GRAPH 10**).

Survey respondents in 2016 also indicated a desire for general disease education and to know more about advancements in COPD research and treatment. At the same time, however, half of all respondents said they did not want any of the listed resources (see **GRAPH 8**). More research is needed to further understand consumers' underlying reasons and desires for general disease education. People could feel overwhelmed by the disease and opt for less information as a way of avoidance; or could be thinking that finding a cure or a way to prevent the disease all together seem unavailable and out of reach; or the stigma associated to the disease, from cigarette smoking, could be another possible deterrent.

Suffering from COPD is strongly associated with a negative impact on quality of life¹⁰ and patients often cite pulmonary rehabilitation as a key to improving everyday life.¹¹ While a substantial number of providers are aware of pulmonary rehabilitation in their areas, the percentage of physicians prescribing this type of treatment remains low and just about one quarter refer their COPD patients to a specialist. The data provide an opportunity to further educate providers and patients and their caregivers on the benefits of intervention.

In summary, these data collectively highlight the necessity to continue educational programs and initiatives that promote COPD awareness among the U.S. population and point toward two major gaps that need to be filled: 1) increase communication between patients, their caregivers, and the providers and researchers that treat the disease, and search for new therapeutic options; and 2) promote and optimize the effective utilization of pulmonary rehabilitation by COPD patients through the help of health care providers.

Limitations

There are several limitations to both the consumer and physician portions of this study. First, all survey data was self-reported and therefore subject to recall and social demand biases. Second, sampling consumers from a web-based panel may have resulted in selection bias. However, research suggests that findings from probability samples reached via random-digit dialing who were invited to join a web-based panel were comparable to surveys conducted via the telephone.¹² Third, while DocStyles is a large, national survey, it may not provide a nationally-representative sample in that SERMO only covers 80% of the physicians in the U.S.

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 American Medical Association Masterfile (unpublished data, Porter Novelli, DocStyles 2018 Methods, Washington D.C., 2018). Lastly, for both consumers and physicians, the sampling frames changed over time, which may limit comparability across the total trend span.

References

- ¹Centers for Disease Control and Prevention. Chronic obstructive pulmonary disease among adults – United States, 2011. *MMWR Morb Mortal Wkly Rep.* 2012;61(46):938–943. PMID:23169314
- ²Kochanek KD, Murphy SL, Xu JQ, Arias E. Mortality in the United States, 2016. *NCHS Data Brief, no 293.* Hyattsville, MD: National Center for Health Statistics. 2017.
- ³Ford ES, Croft JB, Mannino DM, Wheaton AG, Zhang X, Giles WH. COPD surveillance – United States, 1999–2011. *Chest.* 2013;144(1):284–305. doi: 10.1378/chest.13-0809. PMID:23619732
- ⁴Croft, JB, Wheaton, AG, Liu Y, et al. Urban-Rural Country and State Differences in Chronic Obstructive Pulmonary Disease – United States, 2015. *MMWR Morb Mortal Wkly Rep* 2018;67:205–211.
- ⁵Wheaton AG, Cunningham TJ, Ford ES, Croft JB. Employment and activity limitations among adults with chronic obstructive pulmonary disease—United States, 2013. *MMWR Morb Mortal Wkly Rep.* 2015;64(11):289–295. PMID:25811677
- ⁶Hatipoğlu U, Stoller JK. Alpha1-antitrypsin deficiency. *Clin Chest Med* 2016;37:487–504. doi: 10.1016/j.ccm.2016.04.011. PMID:27514595
- ⁷GfK’s KnowledgePanel® members are randomly recruited using probability-based sampling and include respondents regardless of whether they have landline phones or Internet access. If needed, households are provided with a web-enabled device and access to the Internet. The panel is continuously replenished and maintains approximately 50,000 panelists.
- ⁸SERMO is a global market research company. sermo.com
- ⁹Rochester CL, Vogiatzis I, Holland AE, et al. ATS/ERS task force on policy in pulmonary rehabilitation. An Official American Thoracic Society/ European Respiratory Society policy statement: enhancing implementation, use, and delivery of pulmonary rehabilitation. *American Journal of Respiratory and Critical Care Medicine.* 2015;192(11):1373–1386. doi: 10.1164/rccm.201510-1966ST. PMID:26623686
- ¹⁰Guarascio AJ, Ray SM, Finch CK, Self TH. The clinical and economic burden of chronic obstructive pulmonary disease in the USA. *Clinicoecon Outcomes Res.* 2013;5:235–245.
- ¹¹McCarthy B, Casey D, Devane D, Murphy K, Murphy E, Lacasse Y. Pulmonary rehabilitation for chronic obstructive pulmonary disease. *Cochrane Database of Systematic Reviews* 2015, Issue 2. Art. No.: CD003793. DOI: 10.1002/14651858.CD003793.pub3.
- ¹²Krosnick J, Chang L. A Comparison of the Random Digit Dialing Telephone Survey Methodology with Internet Survey Methodology as Implemented by Knowledge Networks and Harris Interactive. *Conference of the American Association for Public Opinion Research.* Boston, MA; 2001.



TREND DATA METHODS

CONSUMERSTYLES

2008-2018

From 2008 to 2010, ConsumerStyles data was collected using Synovate’s mail panel. This opt-in, mail panel of approximately 200,000 households was acquired by Ipsos in 2011. All subsequent ConsumerStyles surveys have been conducted using GfK’s Knowledge Panel,[®] which uses probability-based sampling and does not allow opt-in participation. **TABLE 4** shows the unweighted demographic composition of the sample each year as well as the response rates. Non-white participation was higher from 2008 to 2010 because the mail panel surveys specifically oversampled minority respondents as part of the study design.

TABLE 4. CONSUMERSTYLES SAMPLES 2008-2016 (UNWEIGHTED)

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Sample size	4,088	4,107	4,203	4,127	4,269	4,033	4,044	4,050	4,184	4,172	5,399
Response rate	73%	74%	68%	67%	69%	66%	86%	69%	67%	58%	77%

GENDER

Male	50%	49%	48%	46%	47%	48%	48%	49%	48%	48%	45%
Female	50%	51%	52%	54%	53%	52%	52%	51%	52%	52%	55%

EDUCATION

High school or less	34%	38%	37%	37%	33%	33%	34%	31%	28%	32%	33%
Some college	29%	30%	30%	30%	32%	32%	31%	32%	37%	36%	37%
College degree +	37%	32%	33%	33%	35%	34%	35%	37%	35%	32%	30%

RACE/ETHNICITY

White	74%	73%	74%	75%	74%	77%	74%	76%	68%	64%	68%
Black	9%	9%	10%	10%	10%	9%	10%	9%	11%	13%	12%
Hispanic	10%	12%	11%	11%	10%	9%	11%	9%	12%	15%	12%
Other	7%	6%	5%	5%	6%	5%	5%	7%	9%	7%	8%

DOCSTYLES 2009-2018

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 U.S. of whom approximately 50,000 participate in survey research. Sample sizes, response rates, and demographics for each year are presented in **TABLE 5**.

TABLE 5. DOCSTYLES PRIMARY CARE PHYSICIAN SAMPLES 2009-2018 (UNWEIGHTED)

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Sample size	1,004	1,003	1,003	1,000	1,008	1,006	1,001	1,002	1,000	1,000
Response rate	62%	63%	70%	89%	74%	70%	46%	53%	53%	43%
GENDER										
Male	67%	68%	72%	74%	73%	75%	71%	70%	68%	72%
Female	33%	32%	28%	26%	27%	25%	29%	30%	32%	28%
Average age (years)	48.9	47.2	47.0	45.9	46.0	48.8	46.6	45.4	45.3	45.0
Average years in practice	18.1	16.9	16.4	15.4	15.3	17.3	15.9	14.5	14.5	14.2
REGION										
Northeast	24%	25%	27%	26%	25%	26%	27%	23%	23%	24%
Midwest	24%	20%	21%	23%	23%	23%	22%	24%	21%	22%
South	33%	34%	31%	30%	31%	31%	24%	32%	35%	34%
West	19%	21%	21%	21%	20%	21%	27%	22%	21%	20%

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