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ISSUE BRIEF

COPD In New Hampshire

August 2011

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What Is COPD?

COPD (chronic obstructive pulmonary disease) is a serious lung disease that makes it hard to breathe. Often known by other names, such as emphysema and chronic bronchitis, COPD is now the fourth leading cause of death and a major cause of illness and disability in the United States.

More than 12 million people in the U.S. are currently diagnosed with COPD and at least another 12 million may have COPD but not know it. It is important to remember that COPD moved into its position as the fourth leading cause of death in the United States more than a decade ago; and the mortality rate for COPD has markedly increased while other leading causes of death have decreased[1].

COPD is estimated to cause one out of every 20 deaths in the United States. Smoking is the most common risk factor for developing COPD. Healthcare expenditures are estimated at nearly $6,000 annually for every COPD patient in the United States[2].

How Does COPD Affect Breathing?

The "airways" are the tubes that carry air through the nose and mouth and in and out of the lungs. Healthy airways and alveoli (air sacs) in the lungs expand when you inhale and contract when you exhale (or breathe out). These airways and air sacs are elastic — they bounce back to their original shape after being stretched or filled with air, just the way a new rubber band or balloon does. This elastic quality helps retain the normal structure of the lung and helps to move the air quickly in and out.

When someone has COPD, the air sacs no longer bounce back to their original size. Airways can also become swollen or thicker than normal, and mucus production may increase. The airways are blocked, or obstructed, making it even harder to get air into or out of the lungs.

People with longtime exposure to cigarette smoke or other irritants may not develop signs (a positive screening test) or symptoms (such as shortness of breath) suggestive of COPD until several years after their initial exposure. COPD and its consequences typically get worse over time, even with treatment; individuals with COPD can die as a result of respiratory failure, as well as cardiovascular co-morbidities such as heart attack, congestive heart failure and stroke.

But much can be done to help a person live a healthier and longer life while living with COPD by adopting healthy lifestyles and using existing therapies.

Who's at Risk for Getting COPD?

Many individuals are at risk for COPD. However, most people who are at risk for developing COPD have never heard of it and, in many cases, do not know that the condition has a name. Below are a few things that alone or in combination put someone at risk for COPD:

Smoking — COPD most often occurs in people age 40 and over with a history of smoking (either current or past smokers). Smoking is the most common risk factor for COPD. While smoking is a common risk factor for developing COPD, it is important to note that as many as one out of six Americans with COPD has never smoked. There are several other causes of COPD.

One in five Americans over the age of 45 has COPD — but as many as half are undiagnosed.

Environment — COPD can also occur in people who have had long-term exposure to lung irritants such as certain chemicals, dust, or fumes in the home or work-place. Heavy or long-term exposure to secondhand smoke or other air pollutants may also cause COPD. The National Heart, Lung and Blood Institute (NHLNBI) estimates that 10 to 20 percent of all COPD cases may be due to environmental and occupational exposures.

Genetic Factors — COPD can also run in families. COPD can be caused by a genetic condition known as alpha-1 antitrypsin, or AAT, deficiency. While very few people know they have AAT deficiency, it is estimated that 100,000 Americans have it. People with AAT deficiency can get COPD even if they have never smoked or had long-term exposure to harmful pollutants.

COPD Symptoms

Many people with COPD avoid activities they used to enjoy because they become short of breath easily. Feeling short of breath is the most common symptom of COPD. Other symptoms may include:

- frequent coughing, sometimes called a "smoker's cough"
- excess mucus and phlegm in airways
- feeling unable to breathe or take a deep breath
- wheezing
- suffering from lung infections

When COPD is severe, shortness of breath and other symptoms can get in the way of even the most basic tasks, such as doing light housework, taking a walk, washing, and dressing. Because COPD develops slowly, many people think their shortness of breath is just a natural sign of aging and do not think it is COPD.

Breathing Better with COPD

COPD does not yet have a cure. However, the right treatment along with lifestyle changes can help those living with COPD feel better, stay active, and slow the damage to the lungs.

The NHLBI's COPD *Learn More Breathe Better*® national campaign is helping to raise awareness about COPD and its symptoms and encourage people at risk to get a simple breathing test.

According to the NHLBI, taking the following steps can help a person live better with COPD:

- Quit smoking
- Avoid pollutants, such as smoke and smog
- Visit a doctor regularly
- Get vaccines to protect against the flu (seasonal and H1N1), pneumonia and other infections

Because the number of people who have COPD is on the rise and the impact on those who have it is significant, many organizations including Breathe New Hampshire (Breathe NH) and the NHLBI are taking action to help prevent COPD and assist those already affected by COPD. For more information about COPD efforts in New Hampshire, please visit: www.breathenh.org.

About This Document

This brief was produced by Breathe NH, a New Hampshire nonprofit organization committed to eliminating lung disease and improving the quality of life for those living with lung disease in New Hampshire.

Breathe NH is a Breathe Better Leadership Partner with the NHLBI's COPD *Learn More Breathe Better*® COPD awareness campaign.

The information presented in this report includes the first COPD specific data that has been gathered in the state. Breathe NH recognized the necessity for gathering and analyzing this data as the first step in its campaign to help bring more attention to COPD and identify steps that individuals and organizations can take to better address the chronic disease.

Breathe NH used the 2008 New Hampshire Behavioral Risk Factor Surveillance Survey (NH BRFSS) to gather this baseline data. The NH BRFSS is an annual telephone health survey administered by the New Hampshire Department of Health and Human Services, Bureau of Public Health Statistics and Informatics, (BPHSI) in the Division of Public Health Services. Data collected in the 2008 NH BRFSS includes anonymous information from individuals on their own various medical conditions, quality of life, health care access and utilization, and smoking status. Questions about COPD are not included in the standard survey, however, specific targeted questions may be added, if approved and funded. Breathe NH sponsored the addition of a question about COPD to assess the prevalence of COPD diagnoses in the state, and to learn more about the characteristics of individuals with COPD based on their own answers. Among the 6,892 respondents, 6,723 adults responded to the COPD question.

Since the data presented in this report are based on surveys that are weighted to represent New Hampshire's population, all figures are presented with 95% confidence intervals (CI). The 95% CI represents the range of values that, with 95% certainty, includes the true value for the entire population. When making comparisons between two groups (i.e. those with and without COPD), the 95% CI can be used to determine if there is a statistically significant difference between the two groups. When the survey sample is small, confidence intervals tend to be wider. All results mentioned in the brief are considered statistically significant, meaning the probability that the differences mentioned are due to random chance is very small. (Note: the CI is not visually depicted in the charts and graphs in this document.)

Breathe NH presents the information in this document as a resource for New Hampshire's public health community and advocacy groups. The data provide a baseline for future COPD data collection, analysis, and program planning.

COPD Prevalence

Table 1. Prevalence and estimated percentage of New Hampshire population reporting they have a COPD diagnosis

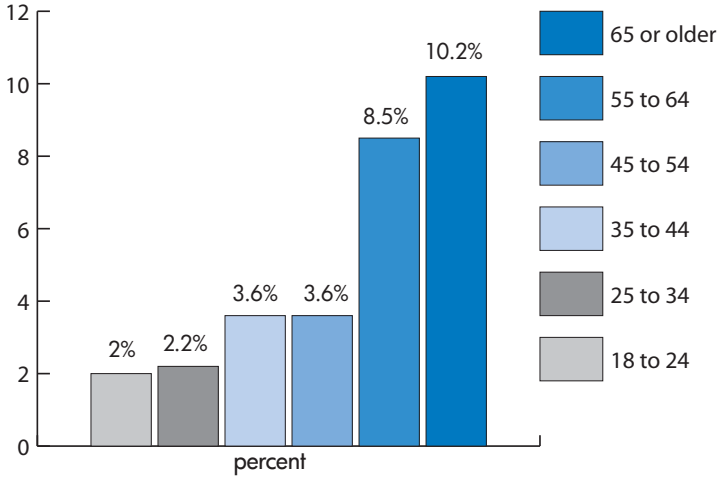
	Percent	95% CI for percent
Total	5.3%	4.6% - 5.9%
Male	4.2%	3.3% - 5.2%
Female	6.2%	5.4% - 7.1%

Data show 5.3% of adults in New Hampshire reported having been diagnosed with COPD. It is important to remember that now the fourth leading cause of death in the United States, COPD's mortality rate has been markedly increasing while other leading causes of death have been decreasing.

Current data show that COPD prevalence is significantly higher among women than men in New Hampshire, and that COPD prevalence increases with age. (Figure 1) The proportion of adults with COPD in Grafton County was significantly lower than the state average. No other significant differences were found when comparing county rates to the New Hampshire average.

The data also show that COPD prevalence among New Hampshire adults declines as education and income levels increase.

Figure 1. Prevalence of COPD increases significantly as age increases



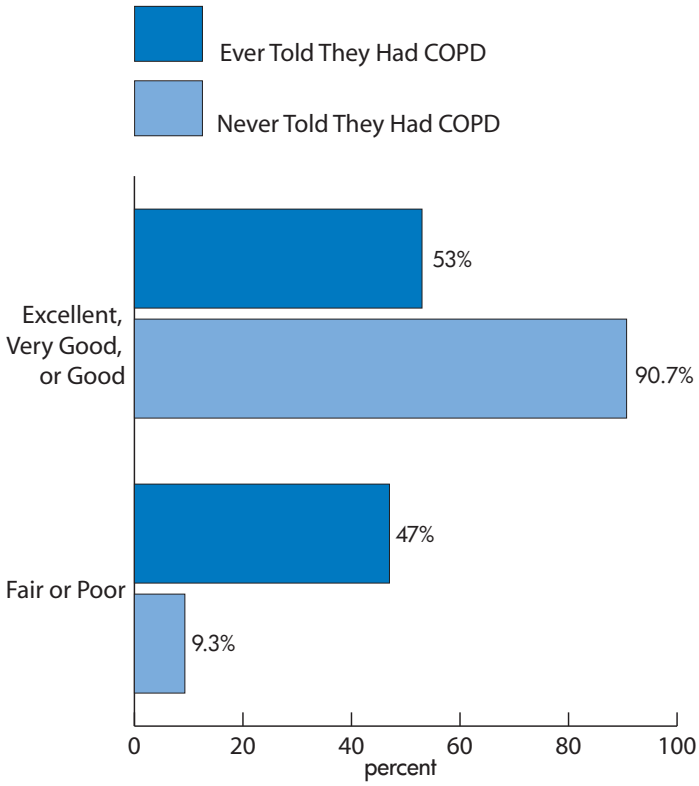
Asthma

Of those living with COPD, 36.4% reported having current asthma compared to only 9% of those without COPD, much of which is due to misdiagnosis of the symptoms of asthma that actually may represent symptoms of COPD.

Health Related Quality of Life

For those living with COPD, many daily or common tasks can be difficult such as doing light housework, taking a walk, or dressing. Among adults diagnosed with COPD in New Hampshire, a significantly higher proportion reported their health as fair or poor (47%) as compared to adults without COPD (9.3%).

Figure 2. Health status and health related quality of life

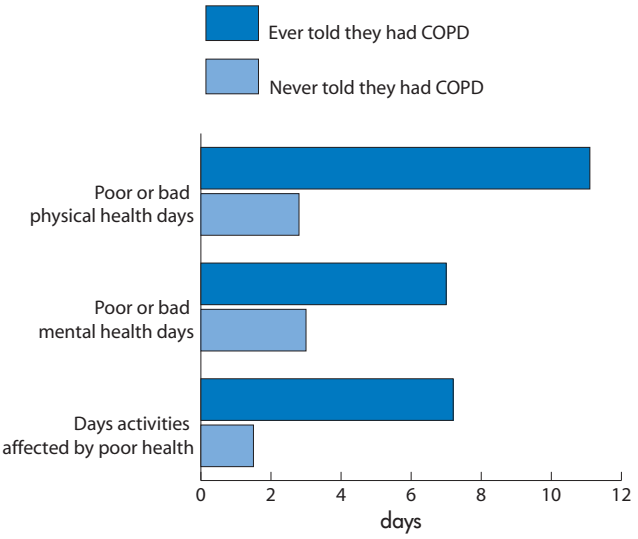


"Sick lungs don't show. If I were to take this cannula (the hose that delivers the oxygen) off right now, I'd look like anybody else. The end result is that many times, we hear "Oh, if you'd only get off your rear end and get moving…' or 'You're just lazy' or 'You're using a little problem as a big excuse'. And that's just not the case."

...Chip Gatchell, COPD patient

Adults living with COPD also reported significantly more bad health days than adults without COPD.

Figure 3. Health status by type of day



For example, within the past 30 days, those with COPD reported having 11.1 days when their physical health was not good, 7 days when their mental health was not good, and 7.2 days when poor health kept them from usual activities such as self-care, work, or recreation. In contrast, adults without COPD reported, on average, that in the past 30 days they had 2.8 days when their physical heath was not good, three days when their mental health was not good, and 1.5 days when poor health kept them from usual activities.

Figure 4. Employment status of those who have ever been told they have COPD

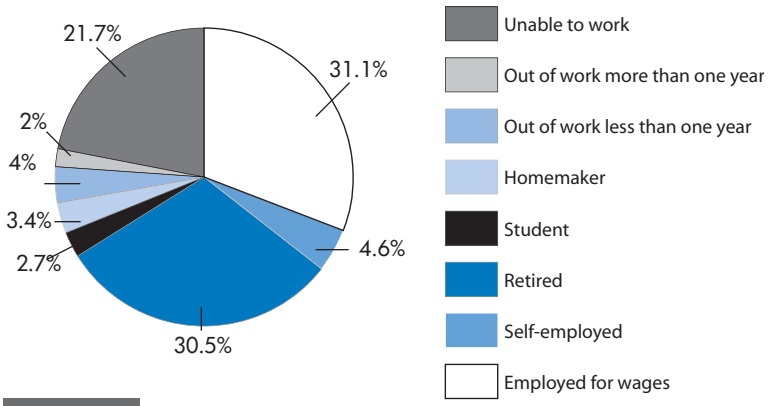
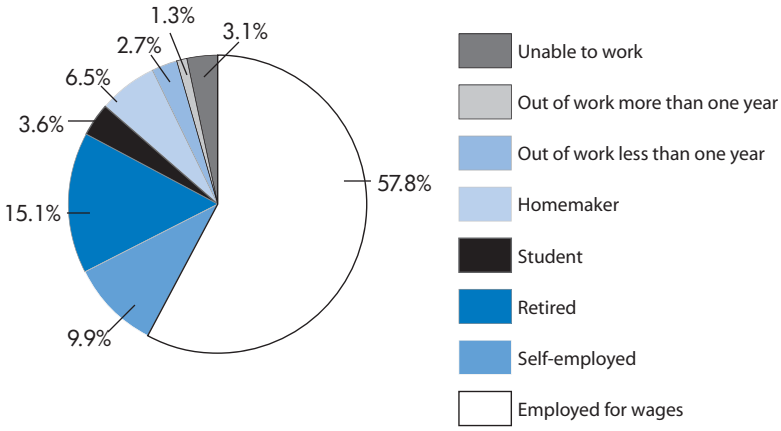


Figure 5. Employment status of those who have never been told they have COPD



Health Care Access

Among New Hampshire adults, there was no significant difference in health care coverage between those with and without COPD. However, a significantly higher proportion of adults with COPD said they were unable to obtain needed medical care because of cost (20.9%) as compared to only 10.1% of those without COPD. Despite cost being a potential barrier to care for COPD patients, they were more likely to have had a routine checkup in the last year (80.8%) as compared to those not reporting COPD (70.6%).

A significantly higher proportion of those living with COPD in New Hampshire had Medicaid or Medicare for health insurance as compared to adults not reporting COPD.

Figure 6. Insurance source/ever told they have COPD

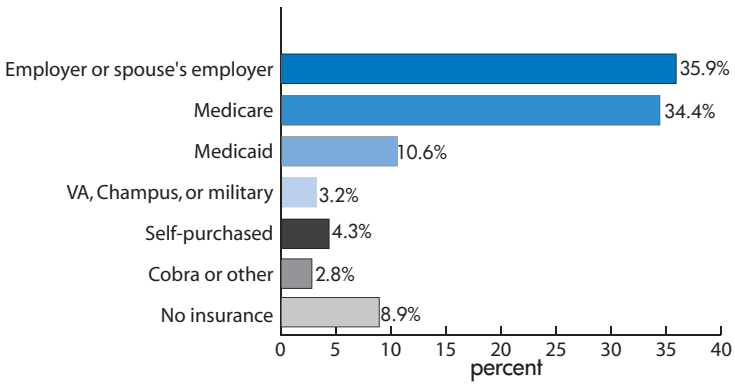
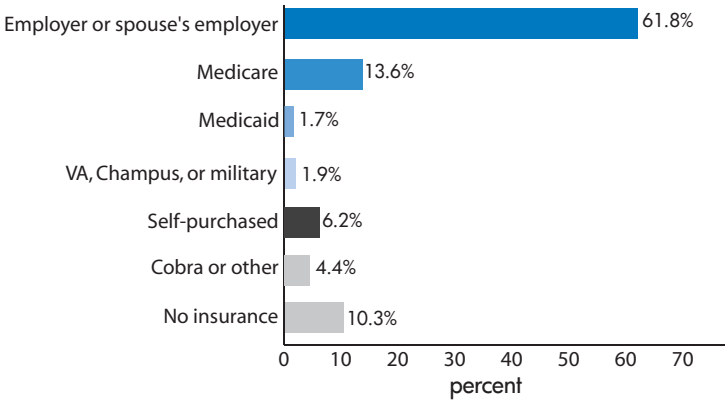


Figure 7. Insurance source/never told they have COPD



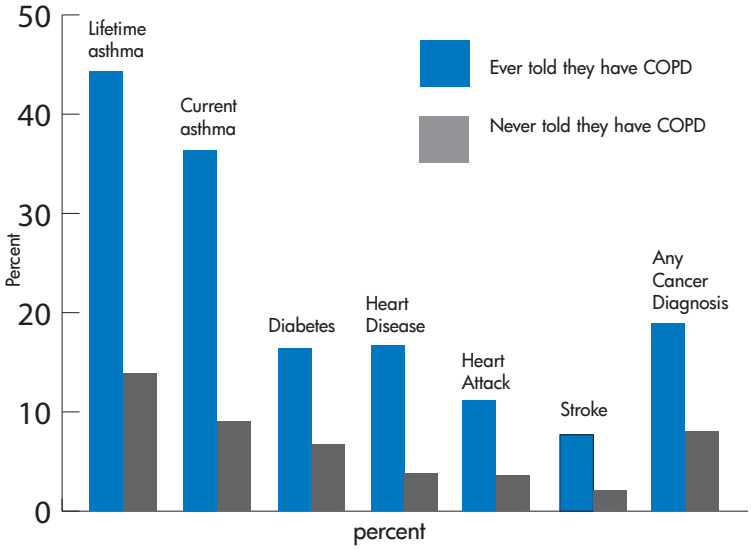
Co-Morbidities

Those living with COPD often have other health conditions (known as co-morbidities) such as heart disease, diabetes, lung cancer, hypertension, osteoporosis, and psychological disorders. According to guidelines from the Global Initiative for Chronic Obstructive Lung Disease, these co-morbidities are common in COPD and should be actively identified as they often complicate the clinical management of individuals with COPD, and vice versa. The main risk factor for COPD, tobacco smoking, is also a main risk factor for many other chronic diseases. Hence, COPD patients often must deal with multiple medicines, side effects, and health care providers.

It is helpful to know how the lungs work in order to understand the relationship between COPD and other illnesses. The lungs provide oxygen to our blood, which is used to fuel the body for work. The lungs of those living with COPD do not work well enough to provide the amount of oxygen that the body needs, which causes the organ systems to work harder and start to break down. This added stress on the body can increase the likelihood of developing co-morbid conditions.

In NH, those living with COPD reported higher rates of other chronic conditions than among adults without COPD.

Figure 8. Other chronic conditions among those living with COPD



Smoking

Smoking is the most common risk factor for developing COPD. Quitting smoking is the best and most cost-effective way to reduce a person's risk of developing COPD and preventing the condition from worsening if they already have COPD. If a smoker also has a family history of COPD, their risk of getting COPD is much higher. A significantly higher proportion of adults with COPD reported they smoked every day, smoked some days, or were former smokers when compared to NH adults without COPD. Despite a strong link between

"I believe the public and the medical profession have somewhat of a prejudice against people with COPD. Cigarette smoking does increase your risk for COPD, but this often leads people to be ashamed of their disease, and they're hesitant to get treatment. As far as professionals go, many communities will not provide pulmonary rehabilitation to patients if they still smoke. So, we still have some prejudices to overcome."

...Deb Chabot, RN

smoking and COPD, 26.8% of those living with COPD said they had never smoked compared to 53.7% of adults not reporting COPD.

Figure 9. Smoking History/Current Status

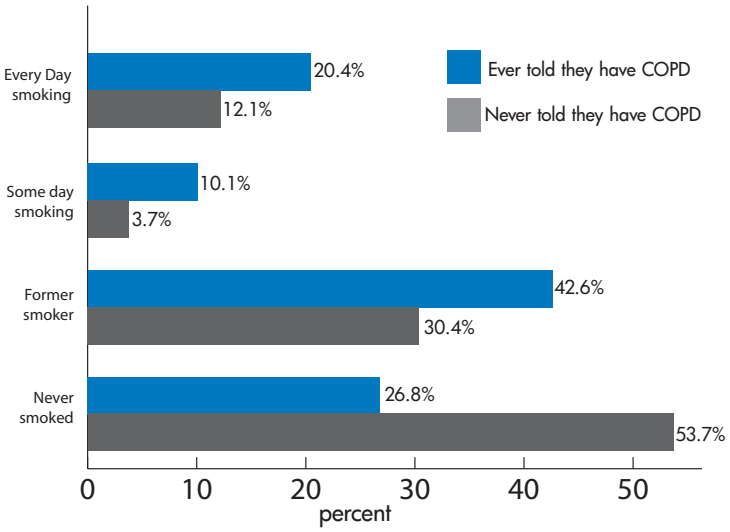
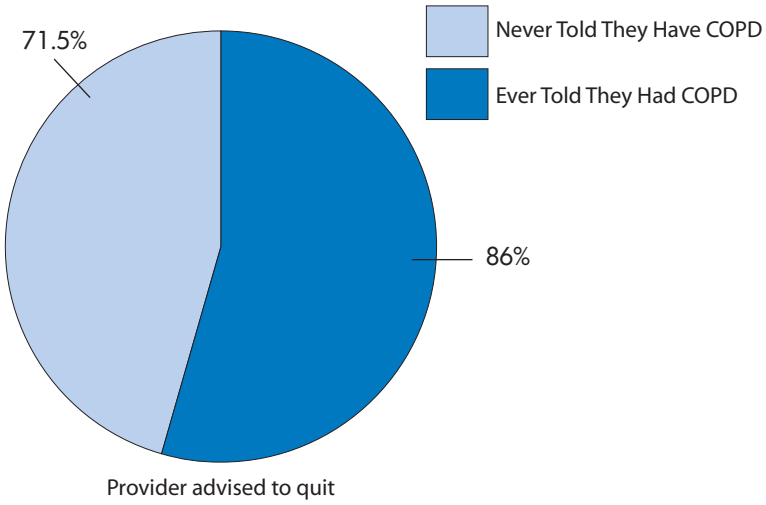


Figure 10. Providers advised patient to quit smoking



While the number of attempts to quit smoking do not vary between those with and without COPD, COPD patients were more likely to be advised by their health care provider to quit smoking than adults without COPD.

Immunization

Infections such as the flu (influenza) and pneumonia can cause serious problems for people with COPD. Those living with COPD are at higher risk for developing pneumonia or bronchitis or getting sick from seasonal flu or H1N1 flu than people who do not have COPD. Immunizations can help prevent these illnesses. Among those reporting COPD, 61.7% reported getting a flu shot and 64.9% reported having a pneumonia shot.

Other Significant Health Differences Between Those Living with COPD and Those Without COPD

- On average, adults with COPD said they did not get enough rest or sleep on 11.4 of the past 30 days, compared to 8.4 days among adults not reporting COPD.
- A higher proportion of adults with COPD were considered to be obese (35.2%) as compared to 24.5% among those without COPD.
- Those with COPD experience significantly higher rates of activity limitations (61%) versus those without COPD (19.2%) due to physical, mental or emotional problems.
- About one in four adults with COPD report they have a health problem that requires special equipment as compared to only 5.6% of those without COPD reporting needed special equipment.

Discussion

The data presented in this report indicate:

- Women have a significantly higher rate of COPD than men in NH.
- A significantly higher proportion of NH adults with COPD say their health is fair or poor, have more bad health days, and have activity limitations because of physical, mental or emotional problems as compared to adults without COPD.
- Nearly one out of five adults with COPD (21.7%) are not able to work compared to only 3.1% of adults without COPD.
- Tobacco use remains the main risk factor for developing COPD and NH adults with COPD are more likely to be current or former smokers.

Studies indicate that at least 12 million people have COPD symptoms but are either not yet diagnosed or misdiagnosed. Given this fact, the prevalence of COPD is likely to be underreported in the 2008 NH BRFSS. New Hampshire's data on the characteristics of the population with COPD diagnoses parallel national data and point to the need for more support for those living with the disease and more action to reduce or eliminate smoking, the main risk factor for developing COPD.

A correct diagnosis and early treatment can improve the quality of life for those living with, and affected by, COPD. A simple breathing test, called spirometry, is used to screen for COPD. This test can detect signs of COPD before symptoms become severe. Spirometry is one of the best and most common lung function tests. Primary care and family physicians, as well as pediatricians and providers practicing internal medicine, have a key role in the diagnosis and management of COPD. A COPD diagnosis should be considered in adults who have shortness of breath, a regular cough, excess sputum production, or wheezing. Also, risk factors in the home or work environment, other than cigarette smoking history, should be taken into account. In addition, there are effective medicines and treatments that can be prescribed to help those with COPD live a longer and better life.

Pulmonary rehabilitation is one example of a helpful treatment for those living with COPD. This multi-session program of exercise, education, support, and smoking cessation assistance has been shown to improve quality of life among COPD patients and is considered an effective treatment by leading respiratory health organizations, including the American Thoracic Society and American College of Chest Physicians. New Hampshire has many hospital-based pulmonary rehabilitation programs; for a current list of these programs, visit: www.breathenh.org.

Breathe New Hampshire thanks the following organizations and individuals for helping to create and review this report:

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Recommendations

Get Involved to Prevent & Manage COPD

While we have made progress in New Hampshire and nationally to better address COPD, much work is needed to control this growing public health problem. Raising awareness about COPD is the first step to improved prevention and management of the disease. This requires the involvement of patients and their family members, health care workers, public health agencies, businesses, and government to help bring more attention to COPD. For ways to get involved, visit www.breathenh.org or join Breathe New Hampshire's COPD Network.

Reduce Stigma

All too often, those living with COPD are blamed for their illness because many of them smoked. Health care professionals and the general public need to understand that:

1. Smoking is a disease (nicotine use dependency disorder) that causes both physical and emotional addiction and often needs treatment as a chronic disease with multiple therapies.

2. Quitting smoking often requires many quit attempts.

3. Quit smoking aides, such as nicotine patches and prescription medicines, can double a person's chances of quitting and staying quit as can brief counseling and advice from a health care provider.

4. Most smokers start as pre-teens or teens and therefore became addicted at an early age.

5. As many as one out of six COPD patients never smoked.

Treatment should be available to all those living with COPD.

Health Care Professionals Must Follow Clinical Guidelines

It is important for primary care physicians to follow COPD guidelines to ensure they are using the latest research and information to effectively diagnose, manage and treat COPD. Several professional associations have issued evidence-based guidelines including the American Thoracic Society, the Global Initiative for Chronic Obstructive Lung Disease (GOLD), and the American College of Physicians.

There are many options available to help manage COPD so that patients have fewer symptoms, fewer flare-ups, and an improved quality of life. Besides recommended medications, options include:

- Smoking cessation is the single most effective — and cost effective — method to prevent COPD and stop its progression. All smokers should be offered help to quit smoking and be supported with as many resources as possible.

- Pulmonary rehabilitation programs have been shown to lessen symptoms, improve quality of life, and increase a person's ability to perform daily tasks by improving their physical and emotional health. All COPD patients can benefit from exercise.

- Long-term oxygen therapy, when appropriate, has been shown to increase survival, help a person's mental state, and improve their ability to exercise.

- Evidence shows that flu vaccination can reduce serious illness and death in COPD patients by an estimated 50%[3]. All COPD patients should receive an annual flu shot and ask their doctor if they need other vaccines such as pneumonia.

More Spirometry Screening & Testing are Needed

Everyone who is at risk for COPD and those who have symptoms should be tested for the disease. Spirometry is the gold standard for screening for and evaluating COPD. Spirometry is a simple, non-invasive breathing test that measures the amount of air a person can blow out of the lungs (volume) and how fast he or she can blow it out (flow).

Spirometry can detect COPD before symptoms become severe. The test can let a person know if they may have COPD, and if so, how severe it is. Doctors can use spirometry test results to determine the best treatment.

All health care professionals should look for COPD in patients who are over 40 and have:

- Persistent or progressive dyspnea (shortness of breath on exertion)
- Chronic cough or excess sputum production
- Decline in level of activity
- Wheezing

COPD is more likely if there is a history of smoking. Genetic factors and environmental or occupational exposures may also play a role: as many as one out of six Americans with COPD has never smoked.

Additional Information:

Breathe New Hampshire: visit www.breathenh.org or call 1-800-835-8647 for information about the lending library, educational material, and other lists of resources in New Hampshire.

Visit NHLBI's national campaign Learn More Breathe Better® website at http://www.LearnAboutCOPD.org to learn more about COPD and the initiatives they are taking to educate those at risk for COPD.

Visit the Center for Disease Control and Prevention website for facts and statistics on COPD at http://www.cdc.gov/copd.

Helpful information for those living with COPD can be found in the COPD Foundation's COPD Big Fat Reference Guide at http://www.copdbfrg.org.

The NH Tobacco Prevention and Control Program (TPCP) is funded by the Centers for Disease Control and Prevention, and is dedicated to the implementation of a comprehensive program designed to reduce the prevalence and consumption of tobacco use in New Hampshire. The TPCP provides free, personalized and confidential help through 1-800-Try-To-STOP (1-800-879-8678). The NH Smokers' Helpline and the Tobacco Resource Center use evidence-based interventions to assist those willing to quit.

The New Hampshire Asthma Control Program has information and reports on asthma. For more information contact (800) 852-3345 ext. 0855.

References:

1 http://www.nhlbi.nih.gov/health/public/lung/copd/health-care-professionals/index.htm

2 Deaths from Chronic Obstructive Pulmonary Disease - United States, 2000-2005. MMWR 2008;57(45):1229-1232.

3 Global Strategy for the Diagnosis, Management and Prevention of Chronic Obstructive Pulmonary Disease, 2009.

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