

Overview of presentation of the *Recommendations and Report of the 2012 Senate Memorial 57 Working Group on Chronic Obstructive Pulmonary Disease (COPD)* to the NM Legislative Health and Human Services Interim Committee on 7/26/13

Presented by Susan Baum, MD, MPH and Laura Tomedi, PhD, MPH on behalf of the NM Department of Health and the 2012 SM 57 Working Group on COPD

- 1) Brief summary of the bill (Appendix A, pg. 20, first paragraph; requirements for working group composition, last paragraph pg. 21)
- 2) Brief summary of SM 57 COPD working group process (pg. 3)
- 3) COPD and its causes (pg. 7)
- 4) Burden of COPD in NM (Highlights from data tables/graphs on pp. 8-12)
- 5) Comprehensive evidence-review that informed SM 57 Working Group recommendations (pp. 12-19)
- 6) Final SM 57 Working Group recommendations
 - a. Prevention of COPD (pp. 4-5)
 - b. Diagnosis and management of COPD (pp.5-6)
 - c. Increasing public awareness about COPD (pg. 6)

1. The first step in the process of the development of the National Health Service was the establishment of the National Health Service Act 1946. This Act provided for the creation of a single, comprehensive health service for the United Kingdom, funded by the state. The Act was passed in July 1946 and came into effect in July 1948.

2. The second step was the establishment of the National Health Service Commissioning Board (NHS Commissioning Board) in 2012. This board was created to oversee the commissioning of health services across the country, ensuring that they are of high quality and meet the needs of the population.

3. The third step was the introduction of the Health and Social Care Act 2012. This Act gave the NHS Commissioning Board the power to commission services across the country, and introduced a new system of funding for the NHS based on performance.

4. The fourth step was the introduction of the Health and Social Care Act 2017. This Act gave the NHS Commissioning Board the power to commission services across the country, and introduced a new system of funding for the NHS based on performance.

**Recommendations and Report of
the 2012 Senate Memorial 57
Working Group on Chronic
Obstructive Pulmonary Disease to
the New Mexico Legislative Health
and Human Services Committee**

**Respectfully submitted by Retta Ward, Cabinet Secretary
New Mexico Department of Health
4/26/2013**

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Senate Memorial 57 (SM 57) Working Group members and process

Working Group Members

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Working Group Process

Dr. Baum was appointed on August 29, 2012 to lead the SM 57 working group process on behalf of Cabinet Secretary of Health Catherine D. Torres, MD. Invitations were extended to potential working group members in all of the organizations cited in SM 57. Drs. Baum and Tomedi developed a draft report which was circulated to all confirmed working group participants prior to the first meeting, which was convened on September 27, 2012. Draft recommendations and a revised draft report were developed during the meeting and through subsequent e-mail correspondence between working group members. A second working group meeting was convened on October 18, 2012, during which further revisions to the recommendations and report were identified and approved by consensus. Several working group members provided content via e-mail to support the revisions and propose further additions shortly after the second meeting. Final versions of the recommendations and report were circulated to working group members for review and to establish consensus approval.

It should be noted that the SM 57 working group had access to the most up-to-date data on the burden of chronic obstructive pulmonary disease (COPD) in New Mexico. It also reviewed the results of recent COPD research conducted on a group of current and former New Mexican smokers. The SM 57 working group considered the clinical guidelines on the diagnosis and management of COPD published by various professional organizations, and made its recommendations based on the strength of evidence and clinical usefulness behind the guidelines. Members of the SM 57 working group appreciate having had the opportunity to provide input that supports a healthier New Mexico.

SM 57 Working Group Recommendations to the NM Legislative Health and Human Services Subcommittee

Recommendations

I. Effective Strategies for Prevention of Chronic Obstructive Pulmonary Disease (COPD)

A. Prevent smoking initiation

- i. Ensure the implementation of evidence-based tobacco prevention activities in NM, including those addressing community-based efforts; school tobacco policy; cessation services; public awareness and education campaigns, and initiatives to reduce health disparities
- ii. Expand tobacco surveillance efforts in youth and high-risk populations
 - a. Start collecting data on tobacco use amongst Lesbian, Gay, Bisexual, Transgender (LGBT) youth in NM to determine their rates of tobacco use given that smoking rates amongst LGBT adults in NM are high
- iii. Reduce the use of combustible tobacco products, e.g., cigarettes, cigars, cigarillos, loose tobacco for pipes and roll-your-own products, tobacco for use in hookahs (i.e., waterpipes)
- iv. Defend the Dee Johnson Clean Indoor Air Act

B. Promote smoking cessation

- i. Ensure adequate and sustainable programs using evidence-based tobacco cessation activities in NM, e.g., pro-active telephonic and web-based counseling
- ii. Provide tobacco cessation training to a broad range of health care providers including the use of telehealth and web-based technologies
- iii. Increase awareness that most major health insurance policies are required to cover tobacco cessation services per NM statute
- iv. Encourage the use of appropriate tobacco cessation medications (e.g., varenicline, bupropion SR, nicotine inhalers) prescribed by a health care provider for adults
- v. Increase the use of over-the-counter nicotine replacement therapy provided through QUIT-NOW cessation services so that at least 12 weeks of therapy with adequate dosing can be provided

C. Prevent environmental and occupational exposures that can cause or worsen COPD

- i. Promote a voluntary incentive program for use of the cleanest burning woodstoves possible
- ii. Develop lifetime registries to monitor miners and other workers in dusty trades at increased risk for developing occupational COPD
 - a. Collect data on tobacco use in dusty trades and focus tobacco prevention and cessation efforts in these high risk groups
- iii. Improve air quality to decrease COPD exacerbations
 - a. Decrease generation of air pollutants

- 1) Promote live/work/play and infill development to decrease commuter distances and increase walking and biking
 - 2) Increase availability and use of mass transit
 - 3) In areas of the state without a no-burn policy, develop a system to alert residents at times when there is a recommendation against burning
 - 4) Expand efforts to conserve energy, such as incentives for increased use of household insulation and other energy-saving measures
 - 5) Better control of fugitive dust, perhaps similar to policies in place in Bernalillo County, such as limiting outdoor construction on high wind days and placement of barriers around vacant lots where dust is generated
- b. Greater opportunities for walking and biking
- 1) Increase the number of charge stations for electric cars
 - 2) Promote the use of residential, commercial and non-profit implementation of cleaner sources of energy

II. Best Practices for Diagnosis and Management of COPD

- A. Promote smoking cessation in patients with COPD [see section 1.b. above]
 - i. This is the only intervention that reliably slows decline in lung function due to COPD
- B. Clinical and public health efforts should be guided by the following clinical practice guidelines and recommendations for COPD diagnosis and management.
 - i. The 2011 (or most recent) joint clinical practice guideline on *Diagnosis and Management of Stable COPD* published by the American College of Physicians, the American College of Chest Physicians, the American Thoracic Society, and the European Respiratory Society
 - a. Health care providers should use spirometry to diagnose COPD in symptomatic patients
 - b. Health care providers should not screen for COPD in persons without symptoms
 - c. Treatment (e.g., medications, pulmonary rehab, oxygen) should be guided by outcomes research and COPD severity per the joint guideline cited above and/or the 2011 (or most recent) GOLD Global Strategy for the Diagnosis, Management, and Prevention of COPD
 - ii. The 2008 (or most recent) United States Preventive Services Task Force recommendation on *Screening for COPD Using Spirometry*
 - a. Screening for COPD using spirometry in asymptomatic adults in the general population is strongly advised against (D recommendation)
 - b. Spirometry is indicated as a diagnostic test for individuals who present to their clinician with chronic respiratory symptoms
 - c. Services that should be offered to all patients regardless of COPD status include smoking cessation, annual influenza vaccination, and one- or two-time pneumococcal vaccination, per clinical guidelines

- C. Provide statewide training for spirometry to health care providers in primary care settings
- D. Utilize telehealth initiatives in helping rural primary care providers manage COPD
- E. Provide state-of-the-art pulmonary rehabilitation for indigent and veteran populations
- F. Increase access to healthcare for uninsured persons
- G. Increase access to COPD medications for low income patients
- H. Create a university-based multidisciplinary COPD program in NM (including prevention and education initiatives and an occupational COPD program)
- I. Ensure COPD research through the Lovelace Cohort Study including:
 - i. biomarkers for rapid lung function decliners
 - ii. COPD in non-smokers
 - iii. Wood smoke exposure
 - iv. Native American/Hispanic protective effect
- J. Investigators should be charged to critically evaluate the 'real world' effectiveness of novel models for multidisciplinary care, self-management COPD action plans, teleconsultation, telemonitoring, and telerehabilitation among populations of New Mexico, particularly in rural and underserved communities.

III. Increasing public awareness about COPD

- A. Launch a media campaign to increase public awareness about:
 - i. The causes of COPD, especially smoking
 - ii. The potential health effects of wood burning stoves and fireplaces
 - iii. The symptoms of COPD and the importance of discussing them with a health care provider
 - iv. The benefits of diagnosing and treating COPD in persons with symptoms, because health care providers can:
 - a. Assist with smoking cessation that can slow the decline in lung function
 - b. Prescribe medications that can improve COPD symptoms and decrease flare-ups
 - c. Refer to pulmonary rehabilitation programs that can improve quality of life and exercise tolerance
 - d. Prescribe oxygen therapy that can extend life in persons with very severe COPD

Report

Background

Senate Memorial 57 (SM 57) was sponsored by Senator John M. Sapien and passed during the 2012 New Mexico legislative session. SM 57 requested the Secretary of Health to convene a working group to study the causes and incidence of chronic obstructive pulmonary disease (COPD). The working group has been requested to recommend effective strategies for the prevention and management of COPD, including increasing public awareness of its causes and the importance of early detection (see Appendix A for full content of SM 57).

COPD and Its Causes

COPD is a serious lung disease that makes it hard to breathe and gets worse over time. In the United States, the term "COPD" includes two main conditions—emphysema and chronic bronchitis. Because most people diagnosed with COPD have both emphysema and chronic bronchitis, the general term "COPD" is often used. COPD can cause coughing with or without large amounts of mucus, wheezing, shortness of breath, chest tightness, and other symptoms. COPD adversely affects quality of life. Many people with COPD avoid activities that they used to enjoy because they become short of breath more easily. When COPD is severe, it can cause serious, long-term disability. Lower respiratory diseases, which include COPD, were the 3rd leading cause of death in the United States in 2009 and the 4th leading cause of death in New Mexico in 2011. (Figure 1)

Cigarette smoking is the most common cause of COPD and accounts for as many as 9 out of 10 COPD-related deaths. COPD most often occurs in people ages 40 and older who are current or former cigarette smokers (<http://www.nhlbi.nih.gov/health/public/lung/copd/index.htm>). The natural history of COPD among smokers is that smoking behaviors start during youth, lung function decline becomes apparent when smokers reach age 40-50 years, hospitalizations begin when smokers reach age 50-69, and deaths occur when they reach age 60-79 (<http://www.cdc.gov/mmwr/PDF/ss/ss5106.pdf>).

As many as 1 out of 6 people with COPD, however, never smoked. COPD can also occur in people who have had long-term exposure to things that can irritate the lungs, like certain chemicals, dusts, or fumes in the workplace. Heavy or long-term exposure to secondhand smoke or other air pollutants may also contribute to COPD. In some people, COPD is caused by a rare genetic condition known as alpha-1 antitrypsin deficiency.

Burden of COPD in New Mexico

A. Prevalence

A question about diagnosed COPD was asked for the first time of all respondents in the 2011 Behavioral Risk Factor Surveillance System (BRFSS), a large health-related telephone survey conducted by the Centers for Disease Control and Prevention (CDC) and New Mexico Department of Health. The prevalence of diagnosed COPD in adults was approximately 6% in both New Mexico and the U.S. (CDC BRFSS citation/website). This translates into an estimated 97,000 New Mexican adults who had ever been told they had COPD by a healthcare professional. According to national data sources, however, more than half of adults with COPD may be undiagnosed (<http://www.cdc.gov/mmwr/PDF/ss/ss5106.pdf>), meaning that as many as 233,000 New Mexican adults may be living with COPD.

Table 1 shows the proportion of NM adults in 2011 who had been diagnosed with COPD by age group, race/ethnicity, and sex. There was a steady upward trend with increasing age. Women were statistically more likely to have been diagnosed than men, perhaps reflecting their greater tendency to receive healthcare. Whites were statistically more likely to have been diagnosed than Hispanics, but not than other groups. Although Blacks appear to have the highest rate, there was not a statistically significant difference with other groups. The ability to develop more precise multiyear estimates of diagnosed COPD in New Mexico's smaller racial groups will be enhanced once several more years of this data has been collected in the BRFSS.

Table 1: Prevalence of diagnosed COPD in New Mexico adults by demographic characteristics, New Mexico and U.S., 2011			
	Percent	95% CI LL	95% CI UL
United States overall	6.1	-	-
New Mexico overall	6.2	5.6	6.8
Age group			
18-24	1.3	0.5	3.1
25-34	2.0	1.3	3.1
35-44	3.7	2.5	5.5
45-54	6.7	5.4	8.3
55-64	9.3	7.7	11.2
65-74	11.7	9.8	13.9
75+	14.3	12.0	17.0
Race/Ethnicity			
American Indian	5.1	3.6	7.2
Asian	3.8	1.2	11.6
Black	10.1	4.5	21.2
Hispanic	4.2	3.4	5.0
White	7.9	7.0	8.9
Sex			
Male	5.0	4.2	5.9
Female	7.3	6.5	8.2
Data Source: Behavioral Risk Factor Surveillance System Survey (BRFSS), U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, New Mexico Department of Health.			

Table 2 demonstrates the proportion of NM adults reporting diagnosed COPD by a variety of socioeconomic indicators. Persons with health insurance were significantly more likely to have been diagnosed with COPD than those without insurance, perhaps due to greater access to health care services. Adults who were employed or students were significantly less likely to have been diagnosed with COPD than those who were unemployed or retired, likely related to age distribution and health status. Homemakers were more likely to report diagnosed COPD than employed adults, but less likely than those who were unemployed or retired. Annual household income showed a strong increasing trend of COPD with decreasing income. Adults living in households with an

annual income of less than \$50,000 were significantly more likely to report COPD than those with annual household incomes of \$50,000 or more. At the lowest end of the income scale, those living in households with an annual income below \$10,000 reported COPD significantly more than those with an income of at least \$20,000. College graduates were significantly less likely to report COPD than adults with lower educational attainment. These patterns of reported COPD strongly parallel tobacco use among adults by income and educational status.

Table 2: Prevalence of diagnosed COPD and current smoking in New Mexico adults by socioeconomic status indicators, 2011

	COPD			Smoking		
	Percent	95% CI LL	95% CI UL	Percent	95% CI LL	95% CI UL
Insurance status						
No health insurance	4.0	3.0	5.2	32.6	29.4	36.0
Has health insurance	6.8	6.2	7.6	18.5	17.3	19.7
Employment status						
Employed	3.0	2.5	3.6	21.8	20.1	23.7
Unemployed	13.0	10.9	15.5	36.4	33.0	39.9
Homemaker	5.6	4.1	7.6	13.8	11.0	17.2
Student	1.7	0.8	3.6	16.4	12.1	21.8
Retired	11.1	9.7	12.7	10.8	9.4	12.4
Annual household income						
< \$10,000	13.0	9.9	16.9	36.9	32.0	42.0
\$10,000-19,999	8.3	6.6	10.2	31.3	28.0	34.9
\$20,000-49,999	5.8	5.0	6.8	22.9	20.8	25.1
≥ \$50,000	3.5	2.9	4.4	12.1	10.5	13.9
Educational attainment						
< High school	8.1	7.2	11.5	30.9	27.3	34.7
High school grad/GED	6.2	5.2	7.3	22.4	20.4	24.7
Some college/tech school	6.1	5.2	7.1	23.3	21.1	25.6
College graduate	3.9	3.3	4.7	10.3	9.0	11.7

Data sources: Behavioral Risk Factor Surveillance System Survey (BRFSS), U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, New Mexico Department of Health.

Table 3 demonstrates the proportion of NM adults who have been diagnosed with COPD based on smoking status. Not surprisingly, adults who had never smoked were significantly less likely to report COPD than current or former smokers.

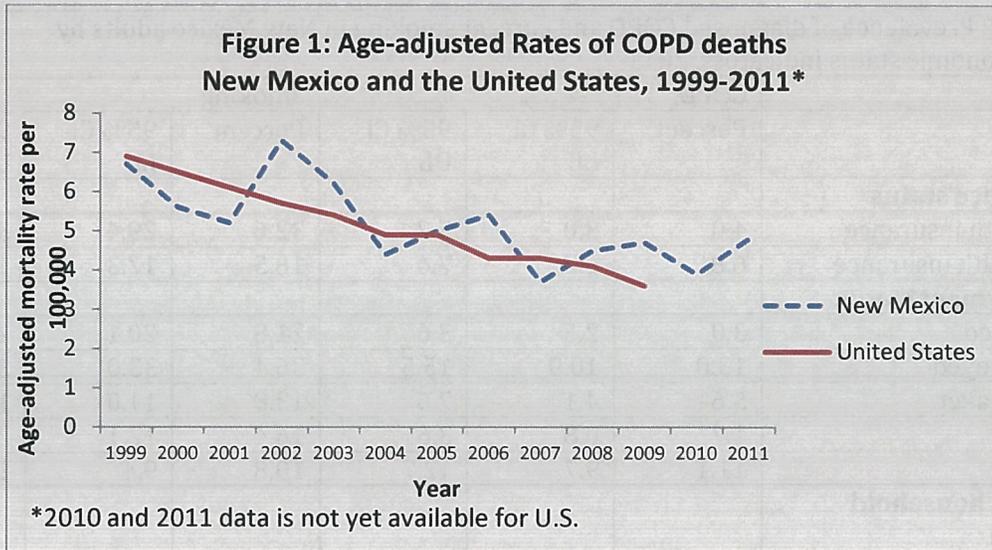
Table 3: Prevalence of diagnosed COPD in New Mexico adults by smoking status, 2011

	Percent	95% CI LL	95% CI UL
Current smoker, everyday	11.6	9.6	13.9
Current smoker some days	6.3	4.1	9.6
Former smoker	9.7	8.4	11.2
Never smoked	3.1	2.6	3.7

Data source: Behavioral Risk Factor Surveillance System Survey (BRFSS), U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, New Mexico Department of Health.

B. Deaths

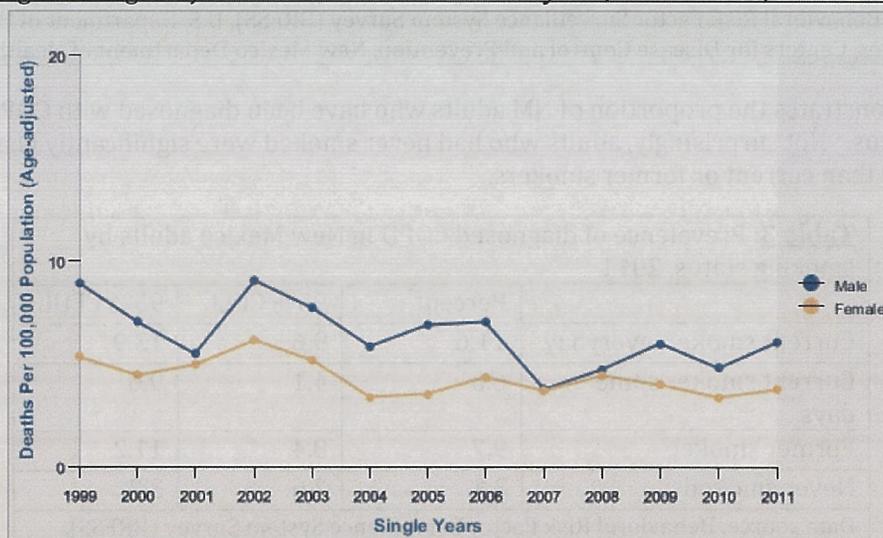
In 2011, there were 107 deaths from COPD in New Mexico, only one of which occurred in a person younger than 40. Figure 1 shows that the COPD mortality rate in New Mexico has been declining over the past decade, and is similar to the national rate. The time period shown in Figure 1, however, was preceded by three decades (1971-2000) of increasing rates of COPD deaths, with a larger increase for women than men (data not shown; *MMWR*. 2002; 51(SS06):1-16).



Data sources: Bureau of Business and Economic Research (BBER) Population Estimates, University of New Mexico. <http://www.unm.edu/~bber/>. Bureau of Vital Records and Health Statistics (BVRHS), New Mexico Department of Health., U.S. Centers for Disease Control and Prevention, National Center for Health Statistics. <http://www.cdc.gov/nchs/>.

During 1999-2011, men in NM had slightly higher rates of dying from COPD than women, although the differences were not statistically significant (Figure 2).

Figure 2: Age-adjusted rates of COPD deaths by Sex, New Mexico, 1999-2011



Data source: Bureau of Business and Economic Research (BBER) Population Estimates, University of New Mexico. <http://www.unm.edu/~bber/>. Bureau of Vital Records and Health Statistics (BVRHS), New Mexico Department of Health, U.S. Centers for Disease Control and Prevention, National Center for Health Statistics. <http://www.cdc.gov/nchs/>.

2007-2011 rates of COPD deaths in NM by race/ethnicity are shown in Table 4. Whites had significantly higher COPD mortality than all other groups. American Indians had significantly lower COPD mortality than Hispanics as well as Whites.

Race/Ethnicity	Deaths Per 100,000	95% CI LL	95%CI UL	Statistical Stability
American Indian	0.9	0.2	1.6	†Warning
Black	2.4	0.2	4.7	†Warning
Hispanic	3.0	2.4	3.6	
White	5.5	4.9	6.1	

*Rate could not be calculated for Asian/Pacific Islanders because of small numbers

†This count or rate is statistically unstable (RSE >0.30), and may fluctuate widely across time periods due to random variation (chance).

Data source: Bureau of Business and Economic Research (BBER) Population Estimates, University of New Mexico. <http://www.unm.edu/~bber/>. Bureau of Vital Records and Health Statistics (BVRHS), New Mexico Department of Health, U.S. Centers for Disease Control and Prevention, National Center for Health Statistics. <http://www.cdc.gov/nchs/>.

COPD death rates in NM by county during 2007-2011 are contained in Appendix B.

C. Hospitalizations

In 2011, there were 2,924 hospitalizations for COPD in New Mexico. It is assumed that this number includes repeat hospitalizations for COPD for a number of individuals, but these data were not readily available. The average length of stay for COPD hospitalizations in New Mexico was 3.9 days. Table 5 shows that women were somewhat more likely to be hospitalized for COPD than men. It also shows that COPD hospitalization rates are 80-fold greater for those who were 75 years and older compared to those 0 - 44 years of age.

	Number	Population	Hospitalization Rate per 100,000
Total	2,924	2,075,056	140.9
Sex			
Female	1,558	1,050,516	148.3
Male	1,366	1,024,541	133.3
Age Group			
0-44	123	1,231,312	10.0
45-54	268	287,127	93.3
55-64	602	264,686	227.4
65-74	852	168,149	506.7
≥75	1,079	123,782	871.7

Source: 2011 New Mexico Hospital Discharge Data (NMHIDD) provided by the Morbidity Surveillance Program, Epidemiology and Response Division, New Mexico Department of Health

D. Emergency Room Visits

In 2010, there were an estimated 5,148 emergency room visits in NM for which the primary diagnosis was COPD. Women had higher COPD emergency room visit rates than men. Rates of COPD emergency room visits trended strongly upward with increasing age. Appendix C contains these data as well as COPD emergency room visit rates by NM county.

E. Recent COPD research studies conducted in NM

Studies conducted by researchers at the Lovelace Respiratory Research Institute (LRRRI) in Albuquerque and their partners have provided a unique opportunity to better understand the determinants of COPD development and progression amongst a cohort of current and former smokers in New Mexico (the Lovelace Smokers Cohort). A study published by Bruse et al. in 2011 (*Am J Respir Crit Care Med*. 2011; 184:1254–1260) found that, even after adjusting for smoking, Hispanics were less likely than non-Hispanic whites to develop COPD and to experience rapid declines in lung function over time. This was true both when Hispanic ethnicity was self-reported and when Native American genetic ancestry proportions were used as predictors instead of self-report of Hispanic ethnicity. Genetic analyses showed that New Mexican Hispanics have approximately one third Native American and two thirds European ancestry. The Native American proportion appeared to protect against lung function decline and COPD risk. These findings highlight the need for comprehensive studies in Hispanics to identify genetic factors that may be responsible for protection against COPD.

Another study conducted using the Lovelace Smokers Cohort and published in 2010 by Sood et al. (*Am J Respir Crit Care Med*. 2010; 182:1098–1104) found that, contrary to popular belief, exposure to wood smoke at levels found in the developed world was independently associated with COPD. In developed countries, people are exposed to wood smoke in a variety of ways, including smoke from residential heating, cooking stoves, campfires, forest fires, and prescribed fires. The study found that associations between wood smoke exposure and COPD were stronger among current cigarette smokers, non-Hispanic whites, and men. The research also identified a novel link between wood smoke exposure and gene promoter methylation that synergistically increases the risk for reduced lung function in cigarette smokers. They concluded that additional research on wood smoke-associated COPD should be performed in cigarette smokers with particular emphasis on understanding the characteristics and dose–response relationship of wood smoke exposure.

Effective Strategies for Prevention of COPD

Given that up to 90% of COPD cases and deaths are caused by cigarette smoking, there's a strong consensus amongst experts that the best way to prevent COPD is through effective tobacco prevention and cessation initiatives. In New Mexico, the Department of Health's Tobacco Use Prevention and Control (TUPAC) program and its partners use a comprehensive, evidence-based approach throughout the state to promote healthy lifestyles that are free from tobacco abuse and addiction. Because most smokers start using cigarettes and develop nicotine addiction before the age of 18, tobacco prevention efforts are strongly targeted at youth. The TUPAC program follows recommendations from the Centers for Disease Control and Prevention (CDC; <http://www.cdc.gov/tobacco/>). TUPAC works with communities, schools, and organizations to implement activities and services that decrease the harmful and addictive use of commercial tobacco, outside of its traditional, sacred or ceremonial purposes amongst Native Americans. TUPAC-supported activities that encompass this comprehensive approach include:

- Community-based programs
 - Example: San Juan County Partnership is a non-profit organization in the Northwest region that partners with the school system to provide prevention education. They

also conduct community education on the difference between ceremonial and commercial tobacco use and promote cessation services.

- School tobacco policy
 - Example: Santa Fe Public Schools established a diverse team of school tobacco policy experts along with youth partners to strengthen and enforce school tobacco policy throughout 89 public school districts in the state.
- Cessation services
 - Example: Alere Wellbeing is a statewide contractor offering free cessation resources ("QUIT NOW") including a phone-based service, web-based service, text message support and free nicotine replacement therapy to New Mexicans.
- Public awareness and education campaigns
 - "Thrive" is a mass media campaign promoting the use of New Mexico QUIT NOW cessation services.
- Initiatives to reduce health disparities
 - The Tobacco Disparities Committee develops outreach and educational intervention to educate Lesbian, Gay, Bi-sexual, Transgender, Questioning and Intersex (LGBTQI) individuals in Santa Fe County. This group is developing an online training for health care professionals to improve cultural competence when treating the LGBTQI population and participates in community pride events.

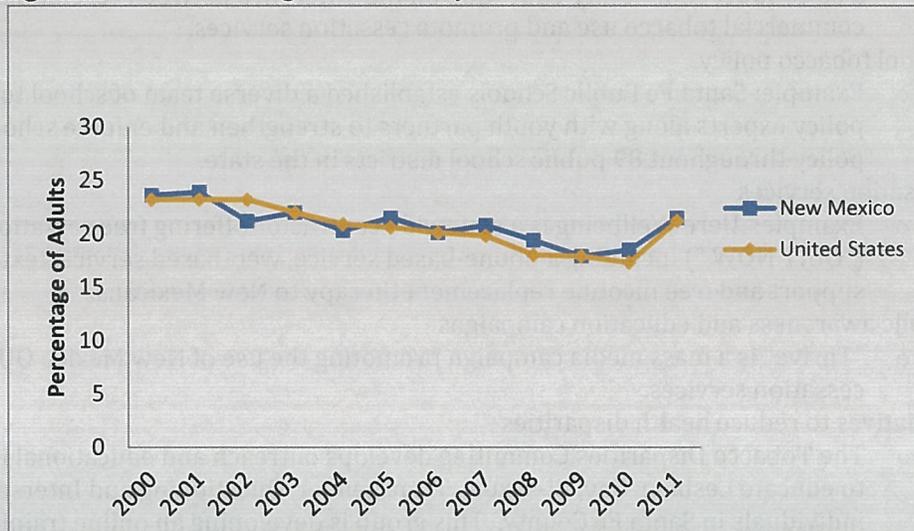
While effective tobacco control initiatives are crucial for COPD prevention, their potential reach and impact are strongly tied to the extent and pervasive nature of available programs. Recent research shows that the more states invest in comprehensive tobacco control programs, the greater the reductions in smoking—and the longer states invest in such programs, the greater and faster the impact (<http://www.cdc.gov/tobacco/>). It has also been demonstrated that when a state reduces programs for tobacco control efforts, tobacco use rates start to go back up (<http://www.tobaccofreekids.org/research/factsheets/pdf/0270.pdf>).

Statewide tobacco control policies can also have a significant impact on rates of tobacco use. As of June 15, 2007, New Mexico became the 17th state in the nation to have a comprehensive law making most public places smoke free. The law, known as the Dee Johnson Clean Indoor Air Act, protects the health of the public and employees by reducing exposure to secondhand smoke on non-native lands. By making smoking less convenient and socially acceptable, the law has likely enhanced the impact of tobacco prevention and cessation efforts.

Increasing the cost of tobacco products is one of the most effective policy strategies in preventing youth tobacco use initiation and motivating smokers to quit.

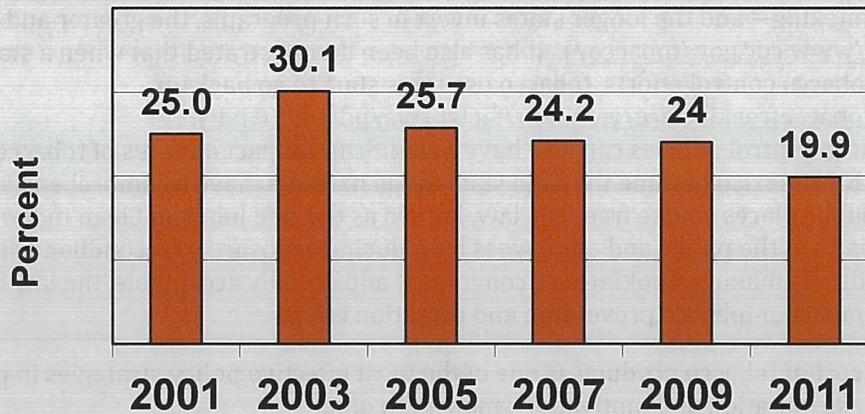
Figures 3 and 4 demonstrate success in reducing smoking rates in both adults and youth over the past decade in New Mexico. Despite decreases in overall adult smoking in NM since 2001, rates are still significantly higher among certain population groups, putting them at increased risk for developing COPD. These groups include adults who are lesbian, gay or bisexual; unemployed; uninsured; low income (less than \$20,000/year household income); low educational attainment (no high school diploma); African American; Asian or Pacific Islander; and 18 to 24 years old.

Figure 3: Adult Smoking Prevalence by Year, New Mexico and U.S., 2000-2011



Data source: Behavioral Risk Factor Surveillance System Survey Data, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, together with New Mexico Department of Health, Injury and Behavioral Epidemiology Bureau.

Figure 4: Percent of High School Youth who Currently Smoke Cigarettes, New Mexico, 2001-2011



Data source: NM Youth Risk & Resiliency Survey, NM Department of Health and NM Public Education Department.

Although cigarette smoking is the major risk factor for COPD, there is good evidence that occupational exposure to dusts, chemicals and gases can also cause COPD. A 2006 review article found that about 15% of COPD is work-related (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1513231/pdf/1745-6673-1-11.pdf>). Coal miners, hard-rock miners, tunnel workers, concrete-manufacturing workers, and non-mining industrial workers have been shown to be at highest risk for developing COPD. There are several strategies that can be used to prevent COPD in workers. Removal of the respiratory irritants and substitution of non-toxic agents are the best approach because they eliminate the work-related COPD hazard. If substitution is not possible, ongoing maintenance of engineering controls, such as enclosure of the industrial process and improving work area ventilation, are useful. Administrative controls (e.g., transfer to another job or change in work practices), and personal protective

equipment (e.g., masks or respirators) should be mentioned, although less effective in decreasing exposures to respiratory tract irritants. For medical surveillance of workers potentially at risk for developing occupational COPD, short symptom questionnaires can be administered before employment and repeated annually. In addition, spirometry can be performed on an annual basis and compared to baseline spirometric testing at the time of hire. Review of breathing test results over several weeks can also detect workers at risk for developing irritant-induced COPD.

Diagnosis and Management of COPD

A health care provider’s initial assessment of an individual with chronic respiratory symptoms suggestive of COPD should include a detailed history about smoking and exposures to lung irritants at work and home. A good indicator of risk for COPD is having smoked the equivalent of 1 pack per day for 55 years (55 pack-years). Self-reported wheezing or hearing wheezing on physical exam also makes COPD more likely (<http://www.thoracic.org/statements/resources/respiratory-disease-adults/179full.pdf>).

COPD can be distinguished from other chronic lung problems, such as asthma, through clinical assessment and a breathing test (spirometry). Although spirometry is a relatively easy test to perform, it does require training of both the test administrator and the patient to obtain an accurate result.

The GOLD classifications are the main method doctors use to describe the severity of COPD (<http://www.webmd.com/lung/copd/gold-criteria-for-copd?page=2>). GOLD is short for the Global Initiative for Chronic Obstructive Lung Disease, a collaboration between the National Institutes of Health and the World Health Organization. GOLD COPD staging uses four categories of severity for COPD, based on the value of a spirometry measure called the one-second forced expiratory volume or FEV₁. Because of lung damage, people with COPD take longer to blow air out, which results in an abnormally low FEV₁. Table 6 shows how the GOLD classification uses FEV₁ values to define the severity of COPD.

Table 6: GOLD Classification of COPD severity

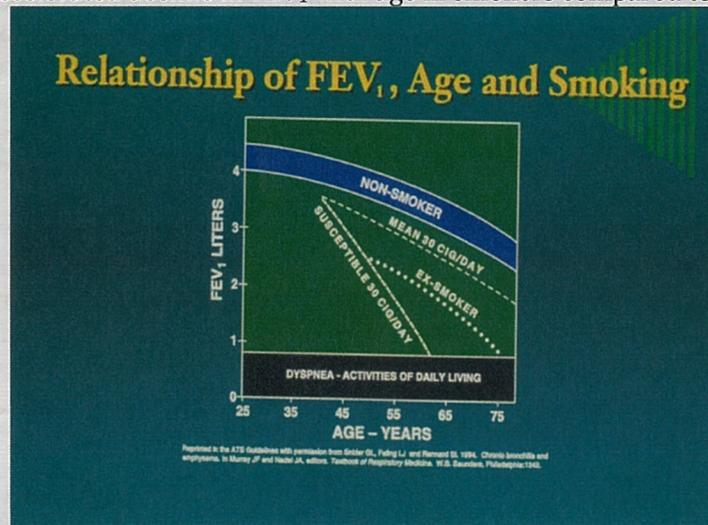
Stage I	Mild COPD	FEV ₁ ≥ 80% normal
Stage II	Moderate COPD	FEV ₁ 50-79% normal
Stage III	Severe COPD	FEV ₁ 30-49% normal
Stage IV	Very Severe COPD	FEV ₁ <30% normal, or <50% normal with chronic respiratory failure present*

* Usually, this means requiring long-term oxygen therapy.

For the purposes of this document, the term “moderate-to-severe” COPD will be used to describe a subcategory of Stage II COPD corresponding to an FEV₁ of 50-59% normal and “moderate” will refer to the remainder of the Stage II category corresponding to an FEV₁ of 60-79% normal.

Figure 5 illustrates that although FEV₁ naturally decreases with age, the decline in FEV₁ is earlier, accelerated, and more likely to interfere with daily activities in current and former smokers compared to lifelong non-smokers. Susceptibility for developing COPD varies amongst individuals and the risk may be higher in persons with a family history of COPD.

Figure 5: Accelerated decline in FEV₁ with age in smokers compared to non-smokers



COPD is a nonreversible condition that worsens over time. The most effective way for persons with COPD to slow their decline in lung function is to stop smoking. In 2011, 24.6% of NM adults diagnosed with COPD reported smoking everyday and an additional 8.9% reported smoking some days. Many are trying to quit. In FY2011 (July 2010-June 2011), 711 people accessing TUPAC-sponsored QUIT NOW services (about 7%) reported having COPD.

In 2011, an updated clinical practice guideline on the diagnosis and management of stable COPD was jointly published by the American College of Physicians, the American College of Chest Physicians, the American Thoracic Society, and the European Respiratory Society (<http://www.thoracic.org/statements/resources/respiratory-disease-adults/179full.pdf>). The authors found that evidence does not support treating patients without COPD symptoms, even those with abnormal breathing test results, because such treatment does not improve outcomes. Strong evidence shows that inhaled medications (i.e., beta-agonists, anticholinergics, and corticosteroids) improve outcomes in symptomatic patients with an FEV₁ (a spirometry test result) less than 60% (moderate-to-severe COPD and worse); weaker evidence indicated benefit in such patients with an FEV₁ between 60% and 80% (moderate COPD). Based on moderate evidence, the authors strongly recommended prescribing pulmonary rehabilitation for symptomatic patients with FEV₁ less than 50% (severe and very severe COPD) and gave a weaker recommendation for considering pulmonary rehabilitation for symptomatic or exercise-limited patients with FEV₁ over 50% (moderate and mild COPD). Strong evidence shows that oxygen therapy helps patients with very low resting blood oxygen levels (very severe COPD).

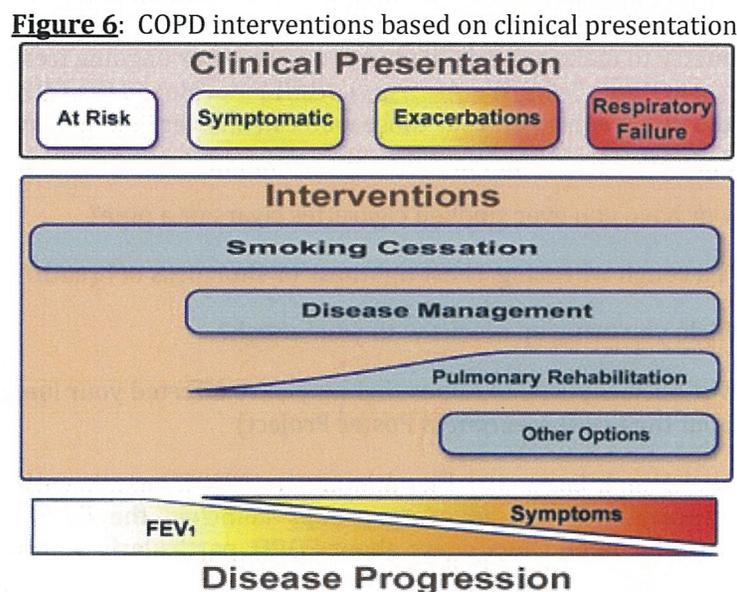
Based on these findings, the joint guideline states that doctors should: 1) use spirometry to diagnose COPD in symptomatic patients, but not to look for COPD in patients without symptoms; 2) consider treatment with long-acting beta-agonists, long-acting anticholinergics, or corticosteroids in symptomatic patients with an FEV₁ of 60% to 80% (moderate COPD); 3) administer inhaled long-acting beta-agonists or long-acting anticholinergic bronchodilators in symptomatic patients with an FEV₁ less than 60% (moderate-to-severe COPD and worse); 4) consider combination therapy with inhaled drugs if the FEV₁ is less than 60% (moderate-to-severe COPD and worse) and symptoms continue after treatment with 1 drug; 5) use pulmonary rehabilitation (which includes education and exercise) in symptomatic patients with an FEV₁ less than 50% (severe and very severe COPD), and consider it for such patients with an FEV₁ greater than 50%; and 6) consider oxygen therapy for patients with COPD who have very low blood oxygen levels at rest (very severe COPD).

The authors noted that this guideline does not address all components of management of a patient with COPD, such as smoking cessation, surgical options, palliative care, end-of-life care, or nocturnal ventilation. In the associated “Summary for Patients”, however, the primary role of smoking cessation in treating COPD is emphasized with the statement “Doctors treat COPD by helping patients who smoke to stop”.

In 2011, an updated version of the *GOLD Global Strategy for the Diagnosis, Management, and Prevention of COPD* was published (<http://www.goldcopd.org/guidelines-global-strategy-for-diagnosis-management.html>). These guidelines introduced a more complex rubric for assessing COPD that assigns patients to groups A through D based on a combination of airflow obstruction, symptoms, and episodes of worsening symptoms (exacerbations). In contrast to the 2011 joint guidelines, the GOLD guidelines include recommendations for using pharmacotherapy for some patients with mild COPD. The GOLD guidelines also recommend that patients with COPD at all stages of disease appear to benefit from exercise training programs, improving with respect to both exercise tolerance and symptoms of shortness of breath and fatigue (Evidence A). The GOLD authors are clear that some of their recommendations for patients with mild to moderate COPD are not based on the results of randomized controlled trials, chiefly because entry criterion into these trials have focused on patients with severe and very severe disease.

COPD control may be facilitated by training and reinforcing the effective self-administration of inhaled medications, oxygen and an exercise program to help maintain an active lifestyle. Regular and consistent self-care, monitoring for exacerbations and patient-initiated rapid response when an impending exacerbation is detected can help control the disease and avert medical emergencies. These skills can be reinforced outside of the clinical setting through ongoing “disease management” programs that are provided by some health plans via telephone, internet, or more intensive case management.

Figure 6 summarizes appropriate interventions for COPD management based on clinical presentation as recommended by the American Thoracic Society.



Source: <http://www.thoracic.org/clinical/best-of-the-web/pages/obstructive-disease/copd-disease-management.php>

In addition to the above measures, it is important that persons with COPD receive a pneumonia vaccine and annual influenza vaccines.

Minimizing exposure to lung irritants at home or at work, such as smoke (e.g., tobacco, wood fire, wildfire), dusts, chemicals, and other air pollutants (e.g., particulate matter, sulfur dioxide) is also important for controlling symptoms and avoiding exacerbations. In New Mexico, residential wood stoves and fireplaces contribute a significant amount of fine particulate matter to outdoor air. Individuals with COPD are at greater risk for air pollution-related health effects. Even short term exposure to fine particles can cause COPD exacerbations. Albuquerque's Air Quality Division has the authority to implement and enforce a 24-hour ban on residential wood burning from October through February, when surface-based inversions are most common. The *Winter Advisory No Burn Program* has been successful in mitigating particulate pollution levels. There are no statewide policies to limit wood burning in stoves or fireplaces.

Workers with irritant-induced COPD may generally continue to work in their usual jobs if their exposure to the inciting agent is diminished via proper engineering controls or respiratory protective equipment if engineering controls are not feasible (<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1513231/pdf/1745-6673-1-11.pdf>).

Increasing Awareness of COPD

There is no question that COPD is frequently undiagnosed in individuals with chronic respiratory symptoms. A public awareness campaign could provide education about the causes of COPD and the benefits of tobacco cessation. The campaign could also encourage individuals with undiagnosed chronic respiratory symptoms to consult a health care provider. The benefits of diagnosis and appropriate treatment of symptomatic persons with COPD can include improved symptoms, better quality of life, decreased frequency of disease flare-ups, better exercise tolerance, and extended lifespan.

There have been several initiatives to increase awareness about COPD. The National Lung Health Education Program (NLHEP) was developed in 1996 as a new healthcare initiative designed to increase awareness of COPD among the public and health care professionals and to encourage the use of simple spirometry to make an early diagnosis and monitor ongoing treatment (<http://www.nlhep.org/Pages/Who-We-Are.aspx>). NLHEP developed the COPD Awareness Poster Project to support the use of spirometry for those who can answer "yes" to any one of the following questions:

- Do you now or have you ever smoked cigarettes cigars or a pipe?
- Do you have a cough wheezing, chest tightness or shortness of breath?
- If you cough, do you bring up mucus with your cough?
- Have you ever been exposed to fumes that may have affected your lungs? (Click here to find out more about the COPD Awareness Poster Project)

In 2007, The National Heart, Lung, and Blood Institute (NHLBI) along with leading professional societies, health organizations, and advocacy groups launched the *COPD Learn More Breathe Better*® campaign to raise public awareness about COPD, particularly among those at risk, those who have the disease, and health care providers. (<http://www.nhlbi.nih.gov/health/public/lung/copd/lmbb-campaign/index.htm>).

The *COPD Learn More Breathe Better*® Campaign was developed to:

- Increase awareness of COPD as a serious lung disease
- Increase understanding that COPD is treatable.
- Encourage people at risk to get a simple breathing test and talk to their doctor or health care providers about treatment options.

Of note, both of the campaigns cited above encourage people “at risk” to be tested for COPD, regardless of whether or not they have symptoms. This may reflect a well-intended but poorly supported notion that early detection and treatment of COPD while it’s asymptomatic might alter its course and prognosis. This is not consistent, however, with the extensively researched 2011 joint clinical practice guideline summarized in the previous section of this document, which only endorses testing for COPD in persons with symptoms. This is because clinical trials found no benefit in treatment outcomes for persons without COPD symptoms, even those with abnormal spirometry results. Furthermore, the guideline found strong evidence for improved treatment outcomes only in symptomatic persons who already had at least moderate-to-severe COPD, with weaker evidence supporting treatment in persons with moderate COPD. The guideline also found that obtaining and providing individuals with spirometry results does not independently improve smoking cessation or the likelihood of continued abstinence.

Screening for COPD using spirometry in asymptomatic adults in the general population is also strongly advised against (D recommendation) by the United States Preventive Services Task Force (USPSTF) in its 2008 statement (<http://www.uspreventiveservicestaskforce.org/uspstf/uspscopd.htm>). This does not apply to persons with a family history of alpha-1-antitrypsin deficiency, who are at high risk of COPD. The statement also notes that spirometry would be indicated as a diagnostic test for individuals who present to their clinician with chronic respiratory symptoms. Services that should be offered to all patients regardless of COPD status include smoking cessation, annual influenza vaccination, and pneumococcal vaccination.

Appendix A

A MEMORIAL

REQUESTING THE SECRETARY OF HEALTH TO CONVENE A WORKING GROUP TO STUDY THE CAUSES AND INCIDENCE OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND REQUESTING THE WORKING GROUP TO RECOMMEND EFFECTIVE STRATEGIES FOR THE PREVENTION AND MANAGEMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE, INCLUDING INCREASING PUBLIC AWARENESS OF ITS CAUSES AND THE IMPORTANCE OF EARLY DIAGNOSIS.

WHEREAS, chronic obstructive pulmonary disease is a largely preventable incurable disease that, if diagnosed, can be treated; and

WHEREAS, chronic obstructive pulmonary disease includes chronic bronchitis and emphysema, which make emptying air from the lungs progressively more difficult, and is characterized by symptoms such as cough, mucus production, wheezing and breathlessness; and

WHEREAS, chronic obstructive pulmonary disease may be unrecognized in its early stages as the quality of life for a person suffering from chronic obstructive pulmonary disease gradually diminishes as the disease progresses; and

WHEREAS, while cigarette smoking is the primary risk factor for developing chronic obstructive pulmonary disease, there are other risk factors, such as exposure to air pollution, including smoke from poorly ventilated wood stoves and the burning of biomass; secondhand smoke; occupational dusts and chemicals; a history of childhood infections; heredity; and socioeconomic status; and

WHEREAS, in 2008, more than thirteen million adults in the United States had chronic obstructive pulmonary disease that had been diagnosed, with an equal number remaining undiagnosed, according to the American lung association; and

WHEREAS, the national center for health statistics of the federal centers for disease control and prevention cites chronic lower respiratory disease, which includes chronic obstructive pulmonary disease and asthma, as the third-leading cause of death in the United States in 2008; and

WHEREAS, research has consistently shown that patients with chronic obstructive pulmonary disease have exceedingly high rates of hospitalization and emergency room visits, which

resulted in one million five hundred thousand emergency room visits and seven hundred twenty-six thousand

hospitalizations in 2000; and

WHEREAS, the American lung association reports that the average chronic obstructive pulmonary disease hospitalization stay lasts slightly longer than four days and costs seventeen thousand sixty-six dollars (\$17,066); and

WHEREAS, a recent study of more than eleven million medicare beneficiaries found chronic obstructive pulmonary disease to be the third most common cause of rehospitalization within thirty days of discharge; and

WHEREAS, the cost of chronic obstructive pulmonary disease in terms of medical expense and lost productivity totals fifty billion dollars (\$50,000,000,000) per year in the United States, according to the national heart, lung, and blood institute; and

WHEREAS, the death rate for women with chronic obstructive pulmonary disease has recently surpassed that of men, reflecting increased smoking rates among women, which began in the 1940s, with women over the age of forty being the fastest-growing segment of the population developing this irreversible disease; and

WHEREAS, the United States department of health and human services has launched a "Healthy People 2020" initiative that includes chronic obstructive pulmonary disease prevention objectives that incorporate prevention and treatment strategies to reduce emergency department admissions, hospitalizations and deaths and that also focus on earlier diagnosis;

NOW, THEREFORE, BE IT RESOLVED BY THE SENATE OF THE STATE OF NEW MEXICO that the secretary of health be requested to convene a working group composed of representatives of the department of health, the human services department, the Indian affairs department, the university of New Mexico health sciences center, the American

lung association, the New Mexico thoracic society, the Lovelace respiratory research institute and public and private third-party payors to study the causes and incidence of chronic obstructive pulmonary disease in New Mexico; and

BE IT FURTHER RESOLVED that the working group be requested to make recommendations with respect to prevention programs and best practices for early diagnosis and management of the disease to reduce costly emergency department admissions and hospitalizations and to investigate sources of funding for related initiatives and research; and

BE IT FURTHER RESOLVED that the working group be requested to consider ways to increase public awareness of the causes of chronic obstructive pulmonary disease and of the importance of early diagnosis; and

BE IT FURTHER RESOLVED that the working group be requested to report its findings and recommendations to the legislative health and human services committee by November 1, 2012;

and

BE IT FURTHER RESOLVED that a copy of this memorial be transmitted to the secretary of health.

Appendix B

Average annual COPD deaths per 100,000 population, age-adjusted to the 2000 U.S. population, by county, New Mexico, 2007-2011						
County	Deaths	Population (person-years)	Deaths Per 100,000	95% CI LL	95%CI UL	Statistical Stability
Total	459	10,179,364	4.3	3.9	4.7	
Bernalillo	125	3,263,271	3.8	3.1	4.5	
Chaves	31	326,477	8.3	5.4	11.3	
Cibola	10	135,458	7.4	2.7	12.0	† Warning
Colfax	16	69,016	15.3	7.8	22.9	
Curry	12	240,806	5.6	2.4	8.8	
Dona Ana	80	1,030,906	8.0	6.3	9.8	
Eddy	11	268,609	3.6	1.5	5.7	† Warning
Grant	9	148,428	4.1	1.4	6.9	† Warning
Guadalupe	1	23,434	3.1	0.0	9.2	‡ Warning
Lea	12	319,708	4.0	1.7	6.4	
Lincoln	5	102,063	3.4	0.3	6.5	† Warning
Los Alamos	2	90,279	1.9	0.0	4.5	‡ Warning
Luna	7	125,622	3.7	0.9	6.4	† Warning
McKinley	8	361,715	2.8	0.8	4.8	† Warning
Mora	1	24,551	2.1	0.0	6.3	‡ Warning
Otero	9	319,017	2.5	0.9	4.2	† Warning
Quay	1	45,819	1.6	0.0	4.6	‡ Warning
Rio Arriba	4	201,935	1.8	0.0	3.6	‡ Warning
Roosevelt	10	98,883	10.8	4.1	17.6	† Warning
Sandoval	12	637,522	1.9	0.8	3.0	
San Juan	33	639,236	6.0	3.9	8.1	
San Miguel	2	147,461	1.2	0.0	2.8	‡ Warning
Santa Fe	24	713,943	3.0	1.8	4.2	
Sierra	5	60,676	3.6	0.4	6.8	† Warning
Socorro	4	89,564	4.2	0.0	8.4	‡ Warning
Taos	8	163,340	3.8	1.1	6.4	† Warning
Torrance	4	82,247	4.5	0.0	9.2	‡ Warning
Union	2	22,537	5.7	0.0	13.6	‡ Warning
Valencia	11	369,499	3.0	1.2	4.8	† Warning
Catron			0.0			
De Baca			0.0			
Harding			0.0			
Hidalgo			0.0			

† This count or rate is statistically unstable (RSE >0.30), and may fluctuate widely across time periods due to random variation (chance).

‡ This count or rate is extremely unstable (RSE >0.50) and should not be used to infer population risk.

Data Source: Bureau of Business and Economic Research (BBER) Population Estimates, University of New Mexico. <http://www.unm.edu/~bber/>. Bureau of Vital Records and Health Statistics (BVRHS), New Mexico Department of Health. U.S. Centers for Disease Control and Prevention, National Center for Health Statistics. <http://www.cdc.gov/nchs/>.

Appendix C

Emergency department visits with COPD listed as the primary diagnosis, number and visitation rate per 100,000 population, New Mexico, 2010

	Number	Rate per 100,000	95% CI LL	95%CI UL
Total¹	5,148	246.1	239.2	253
Gender¹				
Male	2,271	228.3	218.5	238
Female	2,877	264.3	254.4	274.2
Age				
0-14 years	566	136.6	125.4	147.9
15-44 years	1,183	135	127.3	142.7
45-64 years	1,573	293.2	278.7	307.7
65+ years	1,814	669	638.4	699.7
County^{1, 2}				
Bernalillo	1,555	233.1	221.2	244.9
Catron ³	10	227	61	393.1
Chaves	218	337.3	292	382.6
Cibola	92	326.6	254.9	398.4
Colfax	47	369.3	258.5	480
Curry	247	542.3	472.8	611.8
De Baca ³	8	191.6	55.5	327.6
Dona Ana	130	68.7	56.1	81.2
Eddy	298	511.4	452.4	570.3
Grant	129	339	278.3	399.8
Guadalupe ³	5	92.1	10.9	173.4
Hidalgo	16	233	117.5	348.6
Lea	401	669.1	602.4	735.9
Lincoln	102	432.9	341.5	524.2
Luna	188	565.1	479.6	650.6
McKinley	210	355.1	300.5	409.6
Mora	16	311.8	141.8	481.9
Otero	169	253	212.8	293.2
Quay	69	522.6	389.9	655.4
Rio Arriba	226	549.6	474.6	624.6
Roosevelt	56	306.4	225	387.7
Sandoval	163	135	113.4	156.5
San Juan	88	72.5	56.7	88.4
San Miguel	121	380	309.4	450.5
Santa Fe	191	132.7	112.9	152.5
Sierra	96	687.9	535.9	839.9
Socorro	96	586.9	463.4	710.3
Taos	48	146.4	101	191.7
Torrance	31	213.3	132.5	294.1
Union	20	433	232.9	633
Valencia	89	124.2	97.8	150.6

Please note that ED data are submitted by individual hospital emergency departments which have varied databases, capacities to extract data and file formats that are produced, coding within the dataset may not be uniform, and data submitted have been examined for internal consistency and to determine

whether they have conformed to the NMDOH request guidelines.

¹Directly age-adjusted to the 2000 U.S. Population

²Rates for Harding and Los Alamos were suppressed because of small numbers

³Rate has an RSE >0.30 and may fluctuate widely across time periods due to random variation (chance).

Data Source: Retrieved September 6, 2012 from New Mexico Department of Health, Indicator-Based Information System for Public Health Web site: <http://ibis.health.state.nm.us>

whether they have conformed to the WHO's request and that they are not a threat to the world's population. The WHO's request was to provide a list of all countries that have an RSI and may indicate which are in a high-risk situation (China). The WHO's request was to provide a list of all countries that have an RSI and may indicate which are in a high-risk situation (China). The WHO's request was to provide a list of all countries that have an RSI and may indicate which are in a high-risk situation (China).