COMPdata Monthly Monitor - Montana
June 2005
Chronic Obstructive Pulmonary Disease

INTRODUCTION

Chronic Obstructive Pulmonary Diseases (COPD) is the fourth leading cause of death in the U.S. and is projected to be the third leading cause by the year 2020. COPD is preventable with the major cause of COPD being smoking. The Centers for Medicare and Medicaid Services are focusing reimbursement strategies on how hospitals can aid in the prevention and cessation of smoking through smoking cessation counseling. Additionally, there are a number of initiatives occurring throughout the United States to prevent smoking in all public places.

Refer to the Appendix for many more details about the COPD as a disease and resources for additional information for both hospitals and patients.

COPD INPATIENTS IN MONTANA HOSPITALS

(Note: All of the following inpatient statistics exclude newborns and obstetric cases – Major Diagnostic Categories 14 and 15.)

Tables 1-4 that follow provide 2001 and 2004 utilization statistics for all Montana, COPD, chronic bronchitis, and emphysema inpatients. A few key findings in these tables are:

- While the number of total Montana discharges increased only 0.4% from 2001 to 2004 (Table 1), the number of patients with any COPD diagnosis increased 1.3% (Table 2). And the number of patients with COPD as a secondary diagnosis increased 4.2% (Table 2).
- The number of patients with chronic bronchitis as either a principal or secondary diagnosis decreased from 2001 to 2004 (Table 3).
- In 2004 there were 1,185 patients with a principal diagnosis of chronic bronchitis, but there were only 30 patients with a principal diagnosis of emphysema (Table 4).

Table 1 - Total Montana Inpatients

Excludes MDCs 14&15

	2001	2004	
	Discharges	**Discharges**	**% Change 2001 to 2004**
Total Montana Patients	81,510	81,839	0.4

Table 2 - All COPD Inpatients

ICD-9 diagnosis codes 490-4928, 494-4941, 496 (Excludes MDCs 14&15)

	2001		2004		
	Discharges	**% of All Discharges**	**Discharges**	**% of All Discharges**	**% Change 2001 to 2004**
All Diagnoses	10,787	13.2	10,925	13.3	1.3
Principal Diagnosis	1,646	2.0	1,391	1.7	-15.5
Other Diagnoses	9,184	11.3	9,567	11.7	4.2

Table 3 - All Chronic Bronchitis Inpatients

ICD-9 diagnosis codes 491-4919 (Excludes MDCs 14&15)

	2001		2004		
	Discharges	**% of All Discharges**	**Discharges**	**% of All Discharges**	**% Change 2001 to 2004**
All Diagnoses	2,974	3.6	2,613	3.2	-12.1
Principal Diagnosis	1,390	1.7	1,185	1.4	-14.7
Other Diagnoses	1,585	1.9	1,431	1.7	-9.7

Table 4 - All Emphysema Inpatients

ICD-9 diagnosis codes 492-4928 (Excludes MDCs 14&15)

	2001		2004		
	Discharges	**% of All Discharges**	**Discharges**	**% of All Discharges**	**% Change 2001 to 2004**
All Diagnoses	683	0.8	692	0.8	1.3
Principal Diagnosis	28	0.03	30	0.04	4.3
Other Diagnoses	665	0.8	662	0.8	1.1

Table 5 provides statistics that explore in more detail the characteristics of those patients who were discharged in 2004 and had any type of COPD as a principal diagnosis and those who had chronic bronchitis as a principal diagnosis. The number of emphysema patients was too small to analyze in detail. Some highlights found in Table 5 are:

- Nearly two-thirds of these patients were admitted through the emergency room.
- Approximately three-fourths of COPD and chronic bronchitis patients were discharged to home, while about 15% were discharged to a skilled nursing facility or to home health care.
- More than twice as many COPD inpatients received care in rural hospitals than in urban hospitals.
- More women than men (55% to 45%) were COPD inpatients. This may be due to the combination of a longer life expectancy for women in general and the fact that COPD is a chronic disease that can take many years to run its course.

Table 5 - Patients with a Principal Diagnosis of COPD or Chronic Bronchitis

2004 Inpatient Discharges - (Excludes MDCs 14&15)

Table 5 – Part I **Admission and Discharge Patterns**		**All COPD** Total N = 1,391 (%)	**Chronic Bronchitis** Total N = 1,185 (%)
Admission Source	Emergency Room	65.8	67.9
	Physician Referral	29.1	27.3
	Other	5.1	4.8
Admission Type	Emergency	46.9	47.6
	Urgent	40.0	39.4
	Elective	13.1	13.0
	Other	0	0
Discharge Status	Routine to Home	74.1	76.0
	To Skilled Nursing	10.0	9.4
	To Home Health	5.7	5.9
	Expired	3.1	2.8
	Other	0	0
Hospital Location	Other Urban	31.6	31.4
	Rural	67.9	68.4

Table 5 – Part II Patient Characteristics		All COPD Total N = 1,391 (%)	Chronic Bronchitis Total N = 1,185 (%)
Gender	Female	55.4	56.0
	Male	44.6	44.0
Primary Payer	Medicare	72.2	72.0
	Commercial Ins	10.8	10.7
	Medicaid	5.6	5.9
	Other	11.4	11.4
Age	65 Years or Older	72.8	72.8
	45 to 64 Years	25.4	26.2
	Other	1.8	1.0
	Average Age	71.2	71.5
Avg Length of Stay		4.2	4.2
Avg Total Charge		$8,848	$8,831

MONTANA STATISTICS FROM COMPdata

All of the Montana patient statistics were derived from MHA's COMPdata. We encourage you to use COMPdata to examine your hospital community area(s) regarding COPD patients so that you might better understand the impact of these patients on your care and treatment of your patient population and the resources needed to diagnose, treat, and manage the COPD population.

The COMPdata graphing feature can be utilized to examine in a pictorial fashion trends in your state and hospital community area(s) regarding COPD. Click here to obtain a graph that illustrates the trend in COPD as a principal diagnosis by gender: http://www.ihatoday.org/compdata/mtcopdgraph.pdf.

ADDITIONAL INFORMATION

If you would like to develop the COMPdata reports that will provide similar statistics for your hospital or community, a training tool is available to guide you through the process. The training tool may be requested by e-mailing compdata@ihastaff.org. For additional assistance on using the COMPdata system, contact the COMPdata Hotline at compdata@ihastaff.org.

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APPENDIX

Defining Chronic Obstructive Pulmonary Disease (COPD)

COPD is a slowly progressive disease characterized by obstruction to airflow. COPD includes emphysema and chronic bronchitis, which often occur simultaneously. Emphysema is the result of the destruction of the fine architecture of the lung, leading to large holes in the lung, obstruction of the airways, trapping of air and difficulty exchanging oxygen because of reduced elasticity of the lungs. Chronic bronchitis is an inflammatory disease that begins in the smaller airways with the lungs and gradually advances to larger airways. It increases mucus in the airways and increases bacterial infections that block the bronchial tubes. The damage caused by COPD is irreversible.

Both emphysema and chronic bronchitis decrease the lungs' ability to take in oxygen and remove carbon dioxide. The most common symptoms of COPD include shortness of breath, chronic coughing, chest tightness, greater effort to breathe, increased mucus production and frequent clearing of the throat.

In some instances, asthma is included in the definition of COPD. Asthma is not included in the information presented in this report.

COPD Patients

The following facts describe the attributes of persons with COPD.

- COPD is the fourth leading cause of death in the U.S. and is projected to be the third leading cause by the year 2020. More than 120,000 adults aged 25 or older died from COPD in 2002.[1] In Montana, chronic lower respiratory disease accounted for 576 deaths or 6.8% of all deaths and was the fourth leading cause in 2002. ("Chronic lower respiratory disease" is the terminology from the ICD-10 coding system used in the National Vital Statistics System and closely corresponds to COPD in the ICD-9 coding system.)

In 2003, among Americans aged 18 and older it was estimated that: [2]

- 8,560,342 had chronic bronchitis or 4.0% of the adult population.
- 3,114,666 had emphysema or 1.5% of the adult population.
- The rate of chronic bronchitis was much higher for females, 5.3% than for males, 2.7%.
- The rate of emphysema was higher for males, 1.7% then for females, 1.3%.
- From 1997 to 2003 the rate of both chronic bronchitis and emphysema declined. For chronic bronchitis the rate declined from 5.0% to 4.0% and for emphysema from 1.6% to 1.5%.
- It is believed the COPD is severely under-diagnosed, as many as 25 million adults may have COPD.
- Between 1992 and 2002 the overall hospital discharge rate for persons with COPD increased by 39.1% from 16.9 per 10,000 population to 23.5 per 10,000 population.[2]

COPD Causes, Diagnosis, Treatment, and Prevention

Causes of COPD

By far the most prevalent risk factor for COPD is smoking. In the Surgeon General's 2004 report, "The Health Consequences of Smoking," it was noted that 90% of the 118,000 deaths from COPD in 2001 were attributed to smoking.[3] Other causes of COPD include repeated exposure over a long period of time to fumes, dusts, certain chemicals, and air pollution.[4]

Diagnosis of COPD

The most common test for patients presenting with symptoms of COPD is spirometry. A four-level classification system is used: At Risk, Mild, Moderate, or Severe. Other tests that may be used for a differential diagnosis include:

- Bronchodilator Reversibility Testing
- Diffusion capacity
- Chest X-ray
- Arterial Blood Gas

Treatment for COPD [4]

Since COPD cannot be cured, treatments are focused on relieving symptoms and slowing the progress of the disease. The number one thing that patients are advised to do is to quit smoking if they have not done so already. Other treatments are tailored to the specific needs of the patient. There are generally four classes of treatment: medications, pulmonary rehabilitation, oxygen, and surgery. With each of these treatment modalities a very key component is patient education. A survey conducted by the American Lung Association found a majority of patients and doctors agree that there is a strong need for better education about COPD.

Two common types of medications aimed at improving breathing for COPD patients are bronchodilators and inhaled glucocorticosteriods. Bronchodilators can be short- or long-acting and work by relaxing the muscles around airways. Flu shots and pneumococcal vaccines are recommended to help prevent two serious problems that can occur in COPD patients.

Pulmonary rehabilitation, a coordinated program of exercise, disease management training, and counseling, can help the patient maintain a more active lifestyle and continue many day-to-day activities.

For serious COPD patients, oxygen treatment is often prescribed. This therapy helps relieve low levels of oxygen in the blood and helps patients with shortness of breath. Patients may need oxygen for short periods of time or all day in very severe cases.

Three types of surgery may be considered in the treatment of severe COPD. A bullectomy removes giant bullae in the lungs, which may be compressing the good lung. This surgery is indicated in few patients. A lung transplant may be considered in patients with very severe COPD. The third type of surgery is lung volume reduction surgery (LVRS). LVRS is usually restricted to non-high risk severe emphysema patients, who meet specific qualifying criteria.[5]

Prevention

Without a doubt the most important way to prevent COPD is to avoid tobacco smoke. Other lung irritants should also be avoided including home and workplace air pollutants, such as dust and chemicals. The opportunity for hospitals to have an impact in preventing COPD is

tremendous. Educational and reach-out programs, especially smoking cessation efforts, provide a valuable service to communities.

RESOURCES FOR ADDITIONAL INFORMATION

For Hospitals

Among the many resources provided at the web site of the American Lung Association are treatment decision tools for both patients and healthcare professionals. Go to http://www.lungusa.org and click on "Treatment" at the top.

One of the services of the National Guideline Clearinghouse (NGC) of the Agency for Healthcare Research and Quality (AHRQ) is the dissemination of guideline syntheses. Two syntheses on COPD were published recently, one focusing on the diagnosis and management of stable COPD and the other on the diagnosis and management of acute exacerbations of COPD. To find these, go to http://www.guideline.gov and click on "Guideline Syntheses" under "Compare" on the left side of the home page.

Also from AHRQ on their Quality Tools web site is an evidence-based guide for nurses to use in helping patients quit smoking. Published in March, 2005, the title of the guide is "Helping Smokers Quit: A Guide for Nurses." It can be found at http://www.ahrq.gov/about/nursing/hlpsmksqt.htm.

Two additional web sites with valuable information are from the National Lung Health Education Program (http://www.nlhep.org/resources.html) and the "Global Initiative for Chronic Obstructive Lung Disease," also known as GOLD, (http://www.goldcopd.com).

For Patients and the Community

A good and comprehensive overview of COPD is provided by the National Heart, Lung, and Blood Institute of the National Institutes of Health at http://www.nhlbi.nih.gov/health/dci/Diseases/Copd/Copd_All.html. In addition to describing how the lungs work, other valuable items are presented such as the causes of COPD, its signs and symptoms, how it is diagnosed and treated, and tips on living with COPD.

The American Lung Association web site (http://www.lungusa.org) is full of many valuable resources for patients and others. On the left side of the home page is the "COPD Center" which provides several useful links to more information and resources.

The National Lung Health Education Program has many items of interest to patients and others when they click on "Your Lungs" on the home page (http://www.nlhep.org).

The GOLD website (http://www.goldcopd.com) includes a pocket guide on COPD for patients and families. It is found under "GOLD Documents & Resources on the left side of the home page.

Maintaining a healthy body weight is often a problem for persons with COPD. The Cleveland Clinic has developed "Nutritional Guidelines for People With COPD,." Which are found at http://www.clevelandclinc.org. Click on "Health Information Center" on the left side of the home page and then entering "COPD" in the search box. The nutrition guide is listed along with several other resources on COPD.

The National Library of Medicine's Medline Plus web site on COPD is found at http://www.nlm.nih.gov/medlineplus/healthtopics.html. Search for COPD under the letter "C."

CURRENT AND FUTURE ACTIVITIES

Hospitals

Among the many topics of the Disease Management Project of the Cleveland Clinic is COPD. A description of their approach can be found at http://www.clevelandclinicmeded.com/diseasemanagement/pulmonary/copd/copd1.htm.

A description of "How to Start a Community Screening Project" for COPD is provided by Hanover Hospital in Hanover, PA. The program information can be found at http://www.nlhep.org/resources/Hanovertips.htm.

Other Organizations

A NHLBI workshop summary on COPD can be found at http://www.nhlbi.nih.gov/meetings/workshops/copd_clinical.htm. There are sections on the Medical and Surgical Management of COPD, the Potential for Novel Therapies, and fourteen Important Clinical Questions in COPD.

Another NHLBI workshop summary focuses on the Future Research Directions in COPD. It is found at Http://www.nhlbi.nih.gov/meetings/workshops/copd_wksp.htm. Its topics include the Enigma of COPD Pathogenesis; New Results, Concepts, and Opportunities in COPD Research; and Recommendations for Future Research.

Information on the National Emphysema Treatment Trial, the first multi-center clinical trial designed to determine the role, safety, and effectiveness of bilateral lung volume reduction surgery in the treatment of emphysema, is found at http://www.nhlbi.nih.gov/health/prof/lung/nett/lvrsweb.htm.

REFERENCES

[1] National Heart, Lung, and Blood Institute. *Chronic Obstructive Pulmonary Disease-Data Fact Sheet.* NIH Publication No. 03-5229. March 2003.

[2] American Lung Association. Epidemiology & Statistics Unit, Research and Program Services. *Trends in Chronic Bronchitis and Emphysema: Morbidity and* Mortality. May 2005.

[3] Centers for Disease Control and Prevention. *The Health Consequences of Smoking: A Report of the Surgeon General-2004.* http://www.cdc.gov/tobacco/sgr/sgr_2004/Factsheets/4.htm. Date accessed: 6/19/2005.

[4] National Heart, Lung, and Blood Institute. *COPD.* http://www.nhlbi.nih.gov/health/dci/Diseases/Copd/Copd_All.html. Date accessed: 6/15/2005.

[5] American Lung Association. *Chronic Obstructive Pulmonary Disease Fact Sheet.* November 2004. http://www.lungusa.org. Date accessed: 6/27/2005.