



Respiratory Diseases

Asthma: The National Challenge*

Asthma is a serious and growing health problem. An estimated 14.9 million persons in the United States have asthma. The number of people with asthma increased by 102 percent between 1979–80 and 1993–94.

Asthma is responsible for about 500,000 hospitalizations, 5,000 deaths, and 134 million days of restricted activity a year. Yet most of the problems caused by asthma could be averted if persons with asthma and their health care providers managed the disease according to established guidelines. Effective management of asthma comprises four major components: controlling exposure to factors that trigger asthma episodes, adequately managing asthma with medicine, monitoring the disease by using objective measures of lung function, and educating asthma patients to become partners in their own care. Such prevention efforts

are essential to interrupt the progression from disease to functional limitation and disability and to improve the quality of life for persons with asthma.

In 1996, asthma was the 10th most common principal diagnosis in emergency department (ED) visits. Among diseases commonly seen in outpatient departments, asthma was the ninth most frequent diagnosis in 1996. In 1995, some 9 million physician office visits were made for asthma. From 1990 to 1992, persons with asthma spent an estimated 64 million days in bed because of asthma, ranking asthma as the fourth highest chronic health condition. The proportion of people with asthma who are limited in activity increased slightly from 19.4 percent in 1986–88 to 19.6 percent in 1994–96.

Direct medical expenditures for asthma amounted to \$3.64 billion in 1990, and indirect economic losses accounted for an additional \$2.6 billion. Of direct medical care costs, approximately 57 percent was spent on hospitalizations (\$1.6 billion), outpatient hospital visits (\$190 million), and ED visits (\$295 million). Physician-related services accounted for 14 percent of the total expenditures, including \$347 million for outpatient services. Prescription medications represented 30 percent of direct medical costs. Such facts highlight the significant cost of hospital care for asthma, compared to the more frequently used and less costly outpatient and pharmaceutical services.

Indirect costs—nonmedical economic losses such as days missed from work or school, caregiver costs, travel and

Chronic Obstructive Pulmonary Disease: The National Challenge*

COPD includes chronic bronchitis and emphysema—both of which are characterized by irreversible airflow obstruction and often exist together. Similar to asthma, COPD may be accompanied by an airway hyperresponsiveness. Most patients with COPD have a history of cigarette smoking. COPD worsens over time with continued exposure to a causative agent—usually tobacco smoke or sometimes a substance in the workplace or environment.

COPD occurs most often in older people. As much as 10 percent of the population aged 65 years and older is estimated to have COPD. COPD has a major impact on health care, illness, disability, and death in the older population, and the magnitude of the problem is growing. Since 1980, the prevalence and age-adjusted death rate for COPD increased more than 30 percent. Most of the increase occurred in people over age 65 years. Taking into account the expected aging of the U.S. population over the next 10 to 30 years as well as the improved management of other smoking-related diseases, any decline in the proportion of persons with COPD is unlikely without substantial changes in risk factors, mainly reductions in cigarette smoking. This is important for both men and women, given the modest decline

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*From Healthy People 2010, U.S. Department of Health and Human Services

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Jacksonville Respiratory Disease Report Card

2010 Respiratory Disease Objectives

Obj #	Objective	U.S. (1998)	FL (2001)	Duval (2001)	2010 Target
24-1*+	Reduce asthma deaths. (Per 1,000,000)	20.3 ¹	12.8 ²⁺	21.6 ²⁺	
24-1a	Children under age 5	2.1	DSU ²⁺	DSU ²⁺	1.0
24-1b	Children aged 5 to 14 years	3.3	DSU ²⁺	DSU ²⁺	1.0
24-1c	Adolescents and adults aged 15 to 34 years	5.0	3.9 ²⁺	DSU ²⁺	2.0
24-1d	Adults aged 35 to 64 years	17.8	8.2 ²⁺	DSU ²⁺	9.0
24-1e	Adults aged 65 years and older	86.3	44.9 ²⁺	DSU ²⁺	60.0
24-2	Reduce hospitalizations for asthma. (Per 10,000)		151.0 ³	150.6 ³	
24-2a	Children under age 5 years	45.6	57.1 ³	33.9 ³	25.0
24-2b	Children aged 5 to 64 years	12.5	11.7 ³	13.3 ³	7.7
24-2c	Adults aged 65 years and older	17.7	16.4 ³	18.0 ³	11.0
24-10	Reduce the deaths from Chronic Obstructive Pulmonary Disease (COPD) among adults. 45 years and older. (Per 100,000)	119.4	114.8 ²	165.5 ²	60.0
24-10a*	Reduce the deaths from Chronic Obstructive Pulmonary Disease (COPD) for all ages. (Per 100,000)	42.0 ¹	40.4 ²	59.6 ²	
24-13*	Reduce the deaths from Influenza & Pneumonia. (Per 100,00)	34.6 ¹	14.4 ⁴	24.4 ⁴	
24-14*	Reduce the hospitalization from Influenza & Pneumonia. (Per 100,000)		150.0 ³	149.6 ³	
24-15*	Reduce the reported cases from Tuberculosis. (Per 100,000)	5.2 ^{??}	7.28 ⁴⁻	13.67 ⁴⁻	

¹ US DHHS, CDC, NCHS, OAE, 1998 Compressed Mortality File

² Florida Department of Health, Office of Vital Statistics

³ Agency for Health Care Administration

⁴ Florida Department of Health, Office of Planning, Evaluation and Data Analysis

* Not a Healthy People 2010 Objective

+ 2000-2001 Combined two year Rates

- 2000 Rates

DSU- Data Statistically Unreliable (n < 20)

Respiratory diseases such as asthma, emphysema and tuberculosis are major contributors to a reduced quality of life in the United States. To see the impact of respiratory disease, an analysis of state and local data was conducted. Mortality and hospitalization data were readily available, however analysis for mortality was limited

due to the low number of cases. This was especially true for asthma mortality rates by age group.

When comparing local respiratory disease rates with the nation, Duval County fairs quite evenly. For example, overall asthma death rates are similar. Duval had a 21.6 rate while the U.S. had a 20.3 rate per 100,000.

They were also similar for asthma hospitalizations with adults 65 and older (18.0 and 17.7).

When comparing Duval with the state, Florida had lower rates of overall asthma, COPD and influenza and pneumonia mortality rates. Florida also had a much lower rate of reported tuberculosis (7.28 to 13.67 per 100,000).

Duval County has much to improve to reach the Healthy People 2010 objectives. These objectives will be addressed by state and local agencies including the Duval County Health Department, Healthy Jacksonville's Coalitions and other partners.

Tuberculosis: A National, State and Local Perspective

Dr. Jeffrey Lauer, M.D., BCCC Program

During 2002, a total of 15,078 tuberculosis cases were reported to CDC, representing a 5.7% decline from 2001, a 43.5% decline from the 1992 peak of the TB resurgence, and the lowest recorded TB rate in the United States since reporting began in 1953. Declines have occurred since 1992 in all age groups, racial/ethnic populations, and regions of the United States. Despite this progress, the 2002 rate of 5.2 per 100,000 population remained higher than the 2000 interim goal of 3.5 set as part of the national strategic plan for TB elimination (<1 case per 1,000,000 by 2010).

In Florida, tuberculosis cases decreased by 5%, from 1,145 cases counted in 2001 to 1,086 in 2002. Consequently, the TB incidence rate declined for the eighth consecutive year from 7.0 per 100,000 to 6.5 per 100,000 (Figure 1).

For the past 10 years, Florida has ranked 4th in the Nation for TB cases. In 2002, only California (3,169 cases), Texas (1,550) and New York (1,435) reported more cases than Florida. According to provisional data from the CDC, Florida's TB rate declined 48.8% from 1992-2002 placing Florida 20th for percent of change according to TB rate. During the same period, New York's ranked 1st with a 70% decline in TB rate; Texas 16th (50% decline) and California ranked 22nd (48.3% decline).

In 2002, Duval County ranked 5th for Tuberculosis morbidity in Florida. Duval County reported seventy-three

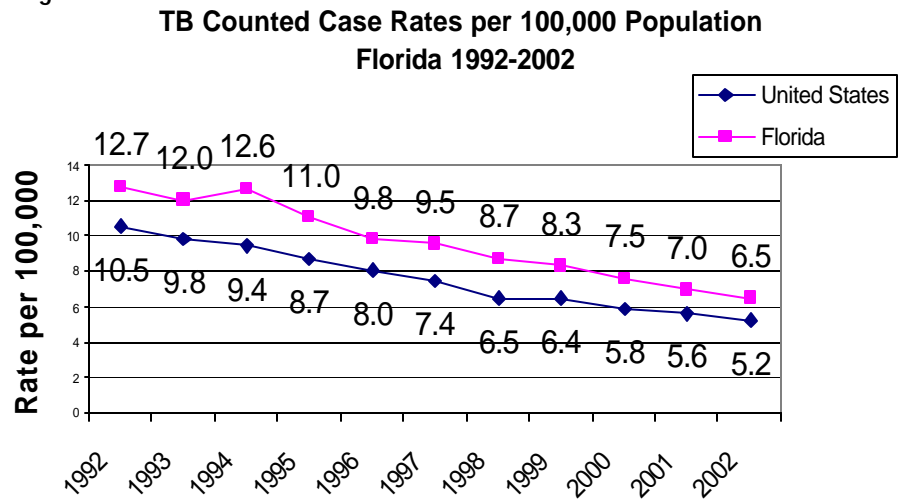
(73) of Florida's 1,086 TB cases (See Figure 2). This accounts for 6.7% of Florida cases. In 2001, Duval County had a total of 93 TB cases which was twenty (20) more cases than 2002.

Although the TB trend for the U.S., Florida and Duval County are all

showing a downward trend, TB remains a threat to us all.

The Duval County Health Department provides a number of services related to tuberculosis. For more information, please call 630-3336.

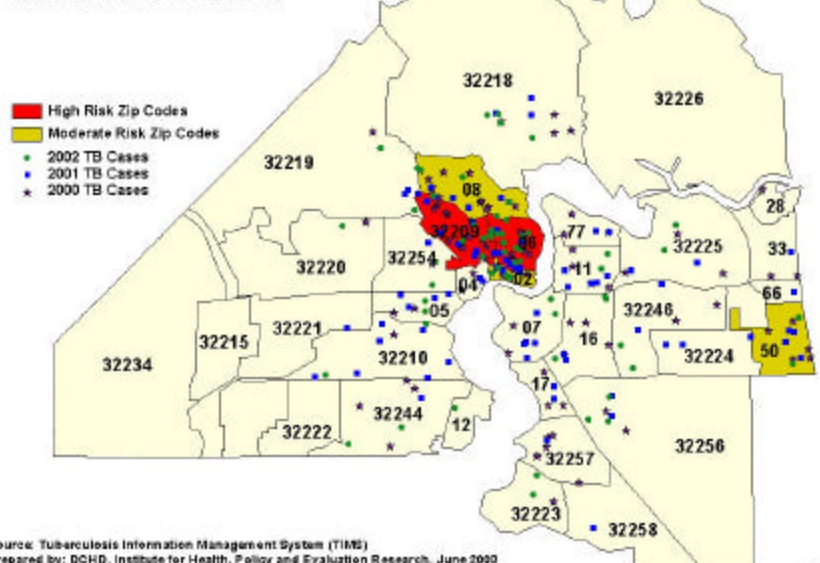
Figure 1



Source: FDOH/Bureau of TB & Refugee Health
Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, June 2003

Figure 2

Tuberculosis Cases, Duval 2000-2002



Source: Tuberculosis Information Management System (TIMS)
Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, June 2003
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Tobacco and Respiratory Disease

Pam Jeralds, Senior Health Educator, Tobacco Prevention

Lung cancer, emphysema and chronic bronchitis are the major respiratory diseases that result from tobacco usage. Also, asthma can be triggered by tobacco smoke—both by smoking and by breathing second hand smoke--and may be caused by it.

Lung cancer occurs when cells in the lung start to grow rapidly in an uncontrolled manner. It is the leading cause of cancer deaths in both men and women. Smoking tobacco causes 87% of lung cancers. Cigarette smoke contains over 4000 chemicals-- fifty are carcinogens that damage the cells in the lungs. There were estimated 156,900 deaths from lung cancer in the U.S. in 2000. Four hundred fifty-one of those occurred in Duval County.

Chronic bronchitis and emphysema are characterized by a permanent and progressive obstruction of the flow of air through the airways and out of the lungs. Emphysema and chronic bronchitis are the primary components of Chronic Obstructive Pulmonary Disease (COPD). There are 14 million patients with COPD, an increase of 40% since 1982. Mortality has increased by 71% since 1982. In Duval County, there were 356 deaths from COPD in 2000. It is the fourth leading cause of death by diagnosis in this country. Smoking is responsible for 90% of COPD in the United States. The total cost for COPD in 1993 was \$25 billion, including \$15 billion in direct medical costs.

Asthma also is a pulmonary disease that results from an obstruction to the flow of air out of the lungs. The obstruction in asthma usually is reversible. Between episodes of asthma the flow of air through the airways usually is good. Tobacco smoke is a powerful asthma trigger. Seventeen million Americans are affected by asthma. More adults have asthma than children but the disease rate

is rising more rapidly among children than in any other group. In Duval County, every year there are more than 800 new asthma cases among school age children. According to the 2002 Florida County Behavioral Risk Factor Surveillance System, Duval County has an “ever had asthma” prevalence of 11.5%, while Florida has 10.7%.

Exposure to secondhand smoke kills an estimated 3,000 nonsmokers yearly from lung cancer. It is responsible for 150,000-300,000 lower respiratory tract infections in children under 18 months old. Respiratory conditions can be triggered or worsened by secondhand smoke. Studies show that children of smokers are more likely to suffer asthma attacks. Sudden Infant Death Syndrome has also been linked to maternal smoking—both before and after the child’s birth. A mother smoking 10 or more cigarettes per day seems to raise the risk of SIDS by 70%. If the mother is anemic and smokes, the risk is increased by 300%.

Smoking by youth can hamper the rate of lung growth and the level of maximum lung function. Regular smoking is responsible for cough and increased frequency and severity of respiratory illnesses among them. All smokers suffer from more and more severe respiratory infections than nonsmokers. Pneumonia is more common and more likely to be fatal among smokers.

Smoking is the most preventable cause of death in the U.S. It is responsible for 434,000 deaths and \$50 billion worth of medical costs per year. Lung cancer accounts for 124,813 of those deaths and chronic lung disease for 82,431 deaths.

Many respiratory-related deaths are related to tobacco. Table 3 depicts the number of Duval respiratory-related deaths. These account for over 15% of all deaths in the county.

In order to reduce respiratory-related deaths such as lung cancer, pneumonia and emphysema, a major focus must be on reducing tobacco use, and exposure to second-hand smoke.

Table 3

Respiratory-Related Mortality, Duval County, 2001

Respiratory-Related Disease Mortality	Number	Percent
Trachea, Bronchus, Lung Cancer	478	45.7
Pneumonia	167	16.0
Bronchitis/Emphysema	42	4.0
Other	359	34.2
TOTAL	1046	100.0

Source: FDOH, Office of Vital Statistics
Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, May 2003

Respiratory Disease: Health Disparities at the Local Level

Respiratory diseases affect different sub-populations within a community; in many cases disproportionately. This is especially apparent in asthma, chronic obstructive pulmonary disease (COPD) and tuberculosis (TB).

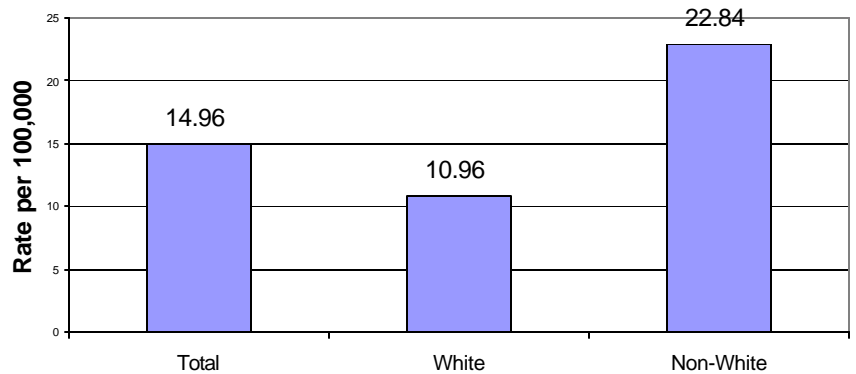
For asthma, non-whites have a higher hospitalization rate than whites, 22.8 to 11.0 respectively (See Graph 1). Looking at Figure 3, we can see the highest asthma hospitalization rate (326.9 per 100,000) is in Health Zone 1 the Urban Core. The next closest is Health Zone 5 with 162.5 per 100,000. This supports the high asthma rates for non-whites since the Urban Core is predominately non-white, while the other Health Zones (HZ) are mostly white.

We also see disparities for chronic obstructive pulmonary disease. However they are dissimilar than asthma. Whites have a higher COPD mortality rate than non-whites, 64.9 and 39.8. Differences exist in gender rates with males having a higher COPD mortality (68.9 per 100,000) than females (59.6 per 100,000) (see Graph 2). Looking at Figure 4 (back cover), we see that HZ 4 has the highest COPD mortality rate with 74.9 followed by HZ 1 with 62.7.

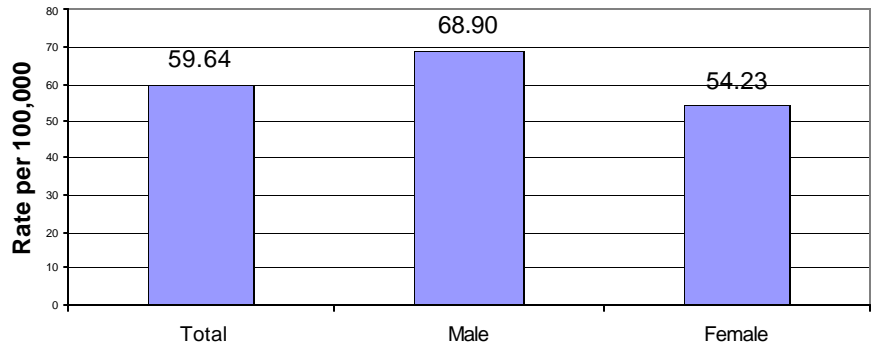
Disparities are evident in TB as well. TB is a social disease with medical implications. It has always occurred disproportionately among disadvantaged populations such as the homeless, malnourished, and overcrowded. Within the past decade it also has become clear that the spread of HIV infection and the immigration of persons from areas of high incidence have resulted in increased numbers of tuberculosis cases. See TB article on page 3 for more information.

Asthma, COPD and TB epitomize the opportunistic nature of disease. Certain demographic groups and/or geographic regions are more likely to develop particular diseases. Understanding this illuminates the need to target at risk groups to reduce or eliminate disparities.

Graph 1 **Asthma Hospitalization Rates by Race, Duval County 2001**

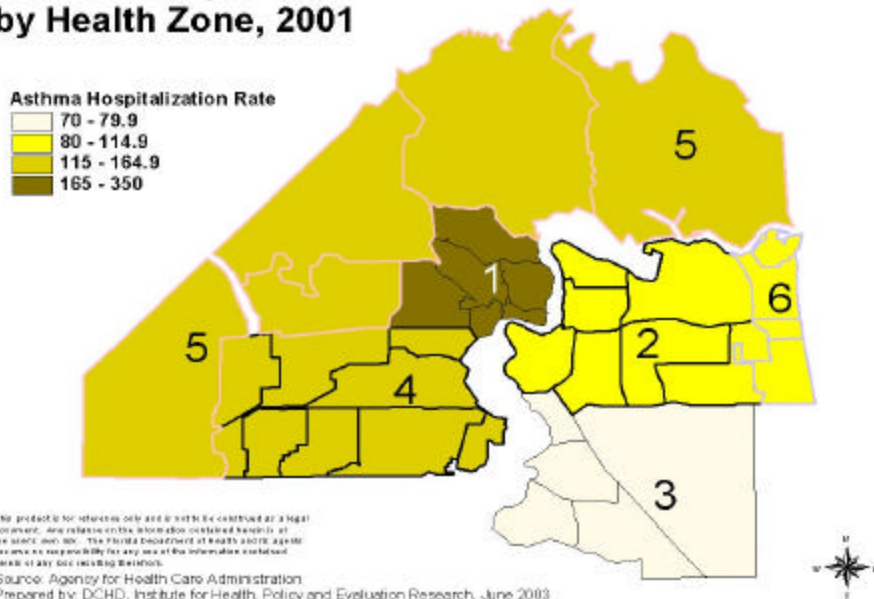


Graph 2 **COPD Mortality Rates by Gender, Duval County 2001**



Source: Department of Health, Office of Planning, Evaluation and Data Analysis
Prepared by: Center for Health Statistics, Duval County Health Department, April 2003

Figure 3 **Asthma Hospitalization Rates by Health Zone, 2001**



Influenza and Pneumonia: Still a Major Health Issue

Christine Cook, MS, BSN, RN, Epidemiology

At the turn of the 20th century, influenza and pneumonia were one of the leading causes of death in the United States. In the 21st century chronic diseases such as heart disease and cancer are the leading causes of death. Although chronic diseases dominate much of the focus on health, influenza and pneumonia still rank as the 7th leading cause of death in the United States and should not be taken lightly. (Table 1)

A pandemic is a worldwide epidemic of a disease. During the last 100 years, there have been three influenza pandemics:

- In 1918-19, the Spanish flu led to more than 500,000 deaths in the United States, and an estimated 20-50 million deaths worldwide. Almost half of all deaths from the Spanish flu occurred in young, healthy adults. This was the most deadly flu in history.
- In 1957-58, the Asian flu led to approximately 70,000 deaths in the United States.
- In 1968-69, the Hong Kong flu led to approximately 34,000 deaths in the United States.

In 2003, the Netherlands began reporting outbreaks of a highly pathogenic avian influenza A (H7N7) in poultry, pigs, and humans. Because influenza H7N7 viruses do not usually infect humans, there is little or no antibody protection against these viruses in the human population. If an animal influenza virus, such as H7N7 began to infect many people, causing human illness, while spreading efficiently from person to person, another influenza pandemic could begin.

Although anyone may become ill with the flu, certain individuals are at higher risk for complications. Individuals at higher risk for complications include: people age 65 years and older, people of any age with chronic medical conditions, and very young children. Pneumonia,

bronchitis or sinus and ear infections are possible complications arising from influenza infection. The flu may also worsen the symptoms of chronic health problems.

Each year, experts try to predict what type(s) of influenza will be circulating the following year. The strains of circulating flu virus may change a small amount of time (antigenic drift) or abruptly (antigenic shift). When abrupt changes occur, most people have little or no protection against the new virus. This may lead to a pandemic outbreak of influenza.

Pneumonia is a serious infection or inflammation of your lungs. The air sacs in the lungs fill with pus and other liquid. Oxygen has trouble reaching your blood. If there is too little oxygen in your blood, your body cells can't work properly. Because of this and spreading infection through the body, pneumonia can cause death.

Until 1936, pneumonia was the number one cause of death in the U.S. Since

then, the use of antibiotics brought it under control. In 2001, in both Florida and Duval, influenza and pneumonia are the eighth leading cause of death (See Table 1) and the ninth leading cause of hospitalization.

In today's environment of express international travel, we need to remain alert to the prevention and control of infectious disease. Influenza and pneumonia infection seriously impacts the United States each year. A pandemic flu outbreak could immobilize our community, making daily functioning extremely difficult. The impact of a flu pandemic also relates to the public health and safety resources affected. If millions of people get sick at the same time, major social consequences will occur. If medical care providers become sick, it will be difficult to care for others who are sick. If the majority of local law enforcement officers are sick, the safety of the community might be at risk. If air traffic controllers are all sick at once, air travel could stop, interrupting not only business and personal travel, but also the transport of vaccines or anti-viral drugs.

Table 1

**10 Leading Causes of Death,
U.S., Florida and Duval County, 2001**

Disease	U.S.	Florida	Duval
Heart Disease	1	1	1
Cancer	2	2	2
Stroke	3	3	3
Chronic Lower Res. Disease	4	4	4
Unintentional Injuries	5	5	5
Diabetes	6	6	6
Alzheimer's Disease	8	7	7
Influenza & Pneumonia	7	8	8
Suicide	11	9	9
Nephritis	9	10	10

Source: FDOH, Office of Vital Statistics

Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, May 2003

Community Asthma Partnership (CAP)

Asthma is a growing public health concern with significant negative impacts on the quality of life of the sufferers. Despite advances in medical treatment, asthma prevalence in the U.S. has increased significantly in persons of all ages. From 1980 through 1994, prevalence increased by 75% for the entire population. The highest increase was 160% in the age group less than 4 years of age.

Asthma has emerged as the most common chronic illness of childhood, and the leading cause of hospitalization and school absenteeism in children. It negatively impacts business and industry as parents stay home to care for their children. Asthma seems to affect certain segments of the population, such as children, blacks, the poor and inner city dwellers more than others. The hardest hit are the medically underprivileged who seek their care episodically in emergency rooms and hospitals, thereby stretching the community's healthcare delivery system.

Jacksonville has not escaped this rise in asthma and our hospitalization rate exceeds the Florida average. The highest concentration is clustered around the North and West areas of our community. It is estimated that in excess of 60,000 persons with asthma live in the greater Jacksonville area, 10,000 among who are uninsured. The uninsured account for 27% of ER visits for asthma, pointing to utilization of the emergency room as the main, if not the only facility for the care of their emergent asthma. This is unfortunate since with present knowledge it is possible to control asthma almost entirely while allowing the individual to enjoy a normal life.

CAP's mission is to facilitate Jacksonville in becoming a model cooperative community effort to enhance asthma education and care. It's goal is to improve the quality of life of persons affected by asthma by improving asthma awareness, education, access and standard of care in the community. If you would like any additional information about asthma, the CAP and its initiatives, or are able to help us in any way please contact: Jeanne Torbett, CMP at 904-765-7938.

Asthma: The National Challenge* (continued from p.1)

waiting time, early retirement due to disability, and premature death—account for slightly less than 50 percent of the total costs of asthma. Data suggest that the uneven distribution of costs of asthma relate to nonscheduled acute or emergency care, indicating poor asthma management and suboptimal outcomes.

Environmental and occupational factors contribute to illness and disability from asthma. Decreases in lung function and a worsening of asthma have been associated with exposure to allergens, indoor pollutants (for example, tobacco smoke), and ambient air pollutants (for example, ozone, sulfur dioxide, nitrogen dioxide, acid aerosols, and particulate matter). Approximately 25 percent of children in the United States live in areas that exceed the Federal Government's standard for ozone. Occupational factors cause or trigger asthma episodes in 5 to 30 percent of adults with the disease. Environmental factors are associated with upper respiratory infections that contribute to illness and disability in children and adults.

With the prevalence and the medical cost associated with asthma rising, effective management is essential. Effective asthma management reduces the need for hospitalizations and urgent care visits and enables patients to enjoy normal activities.

COPD: The National Challenge* (continued from p.1)

in cigarette smoking rates from 1990 to 1995.

Between 80 and 90 percent of COPD is attributable to cigarette smoking. However, not all smokers develop COPD, and not all patients with COPD are smokers or have smoked in the past. Individual susceptibility to the adverse health effects of cigarette smoke on the lung appears to vary within the general population. Some 10 to 15 percent of smokers show a rate of decline in lung function that will result in COPD with severe disability. Smoking cessation is the only treatment that slows the decline. Susceptible smokers who stop smoking do not regain lost lung function, but the rate of loss will return to what is normal for a nonsmoker.

Population studies have shown that chronic exposure to air pollution has an independent adverse effect on lung function. A multiyear study of the respiratory effects of long-term exposure to environmental tobacco smoke and air pollution found that both long-term ozone and childhood exposure to maternal tobacco smoke were associated with diminished lung function in college students.

The direct costs of health care services and indirect costs through loss of productivity related to COPD amounted to \$26 billion in 1998. About 14 million persons in the United States have COPD, about 12.5 million have chronic bronchitis and 1.9 million have emphysema. Emphysema has not increased, but since 1980, cases of chronic bronchitis increased 75 percent.

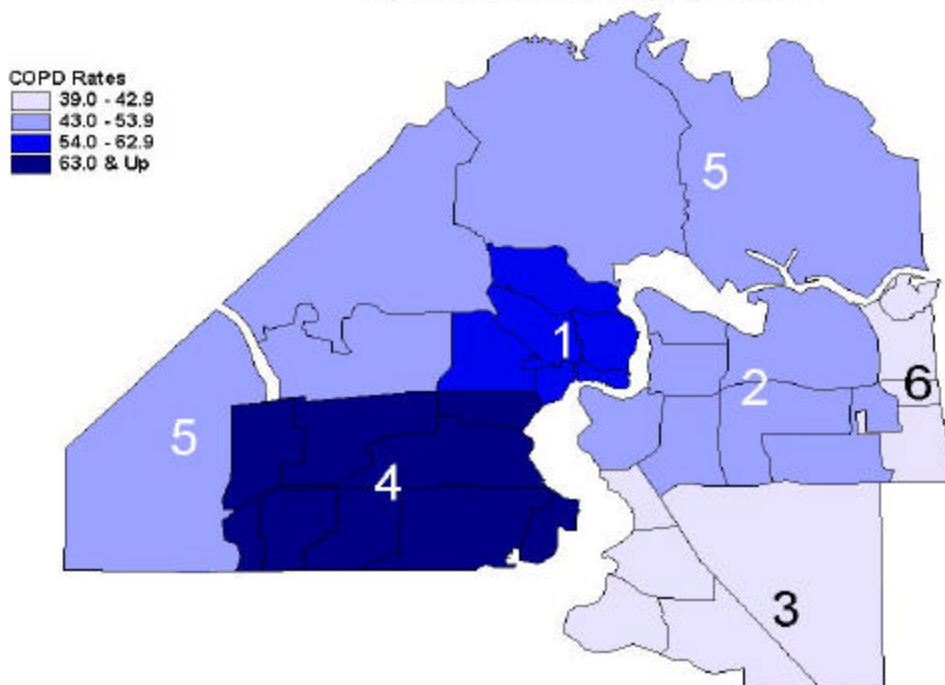
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COPD Age-Adjusted Mortality Rates by Health Zone, Duval County, 2001



Source: FDOH, Office of Vital Statistics, Population Estimates: Census based on 2000 U.S. Census Bureau
Prepared by: DCHD, Institute for Health, Policy and Evaluation Research, June 2003
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