



San Diego Regional Asthma Coalition

ASTHMA REPORT CARD

2003

The San Diego Regional Asthma Coalition is a collaborative of diverse agencies and individuals committed to providing leadership in identifying, developing, mobilizing and coordinating resources to prevent asthma and positively impact the lives of people affected by asthma. For more information contact Coalition Coordinator Joni T. Low at 619-297-3901 or joni@lungsandiego.org.

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The San Diego Regional Asthma Coalition

The San Diego Regional Asthma Coalition is a collaborative of diverse agencies and individuals. Staffed by the American Lung Association, the Coalition is comprised of over 50 participating agencies, including the County of San Diego Health and Human Services Agency, health care providers, health plans, hospitals, community clinics, school districts, researchers/educators, community collaboratives, community based organizations, social service organizations, environmental advocates, local businesses, and asthma patients. The Coalition's mission is to provide leadership in identifying, developing, mobilizing and coordinating resources to prevent asthma and positively impact the lives of people affected by asthma. Funding for the Coalition and development of this Report Card was provided by The California Endowment. San Diego County Supervisor Ron Roberts provided funding for printing costs. For more information on SDRAC activities contact Coalition Coordinator Joni T. Low at 619-297-3901 or joni@lungsandiego.org.



The San Diego County Asthma Report Card

The San Diego Regional Asthma Coalition (SDRAC) is pleased to present the first annual *San Diego County Asthma Report Card*. Its primary purpose is to summarize and document key data on asthma and asthma-related issues. By compiling data from several sources, we have gained a better understanding of asthma in San Diego County and the areas and populations most in need of asthma-related services. Currently there is no comprehensive asthma surveillance system in place, making it difficult to accurately track and measure the social, human, and economic impact of asthma. Nonetheless, the data presented in this Report Card provides useful information regarding trends and disparities in the San Diego Region.

Major Findings and Recommendations

- 1. In order to efficiently and effectively target asthma treatment and prevention in the county, better surveillance of asthma symptoms and health care usage is needed.** Specifically, data from schools and emergency departments is needed to better target the areas that are most in need of asthma treatment and prevention services.
- 2. The burden of asthma in San Diego County falls most heavily on those least able to cope with it effectively: children, the poor, and minority groups. Asthma treatment and prevention efforts for these groups need to be sustained and expanded.** Broad-based support for better treatment from government, the insurance industry, and healthcare organizations is necessary to prevent future increases in human suffering and healthcare costs due to asthma.
- 3. Current efforts to control asthma are showing success. They should be continued and intensified to minimize the effects of asthma on all people in San Diego County.** Overall hospitalization rates, deaths due to asthma, and 911 calls for asthma have declined gradually over the past several years. Air quality in San Diego County has also improved steadily over the same time. However, these gains have not been shared equally by all areas and populations in San Diego County. Areas where disparities exist need to be targeted and reduced.

This report highlights the areas where better, more systematic data collection and asthma surveillance would allow services to be delivered more efficiently. Data are presented at both the county and sub-region level with particular attention given to the sub-regions with the greatest needs. Finally, racial/ethnic and geographic health disparities in prevalence, access to care, and control of asthma are presented when data are available. We hope this reference will be a useful resource for all San Diego communities and organizations that are involved in helping people with asthma to live healthy, active lives.

INTRODUCTION

What is Asthma?

Asthma is a chronic inflammatory lung disease. Common symptoms include recurrent wheezing and coughing, difficulty breathing, and tightness of the chest. These symptoms result from an intense immune response in the lungs to allergens or irritants in the environment. Pet dander, dust mites, pollen, mold, tobacco smoke and chemical fumes are capable of triggering asthma symptoms and attacks. In addition to these environmental triggers, respiratory infections, exercise, and changes in weather can also produce asthma symptoms. While asthma episodes can range from mild to life-threatening, most can be prevented with appropriate clinical management and a healthy physical environment.

Why is Asthma Important?

During the past several decades, asthma prevalence has been rising. Asthma is currently one of the leading chronic health conditions in the United States. While there is no known cure for asthma, respiratory health can be dramatically improved and costs can be reduced through better prevention, detection, treatment and educational efforts. **Healthy People 2010**¹ challenges individuals, communities, and professionals to take specific steps to ensure long, healthy lives and to eliminate health disparities among specific segments of the population. Specific asthma-related objectives include:

- Reduce asthma deaths
- Reduce asthma hospitalizations
- Reduce asthma-related hospital emergency visits
- Reduce activity limitations among persons with asthma
- Reduce the number of school or work days missed by persons with asthma due to asthma
- Increase the proportion of persons with asthma who receive formal patient education, including information about community and self-help resources, as an essential part of their condition
- Increase the proportion of persons with asthma who receive appropriate asthma care according to the National Asthma Education and Prevention Program NAEPF Guidelines
- Establish in at least 15 states a surveillance system for tracking asthma death, illness, disability, impact of occupational and environmental factors on asthma, access to medical care, and asthma management

Asthma is the leading cause of serious chronic illness and hospitalizations among children in San Diego County.

¹A program of the Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services <http://www.healthypeople.gov>

Socioeconomic factors play an important role in mediating the effects of asthma because of their influence on access to care and disease education. Housing stock and availability impacts the community burden of asthma because older houses tend to harbor allergen-producing pests and mold that can exacerbate asthma symptoms. Renters also tend to have less control over asthma triggers in their living environment than do homeowners. High numbers of vehicles and long commute times are detrimental for asthmatics because of increased pollution exposure.

Socio-Economic Characteristics³

- During the last several years, the County's unemployment rate has decreased steadily from 6.4% in 1995 to 3.0% in 2000.
- The County's median household income in 2000 was \$47,067 and was slightly lower \$45,733 for the City of San Diego.
- The percentage of children and youth living in poverty has also decreased from 22.7% in 1995 to 16.5% in 1999.

Housing Stock³

- In 2000, approximately 97% of San Diego County's housing stock was occupied with an average of 2.73 persons per household.
- Approximately 55% of the housing stock was owner occupied.
- The residential density housing units per residential acre was 4.6.
- 64% of the County's housing stock was built prior to 1979

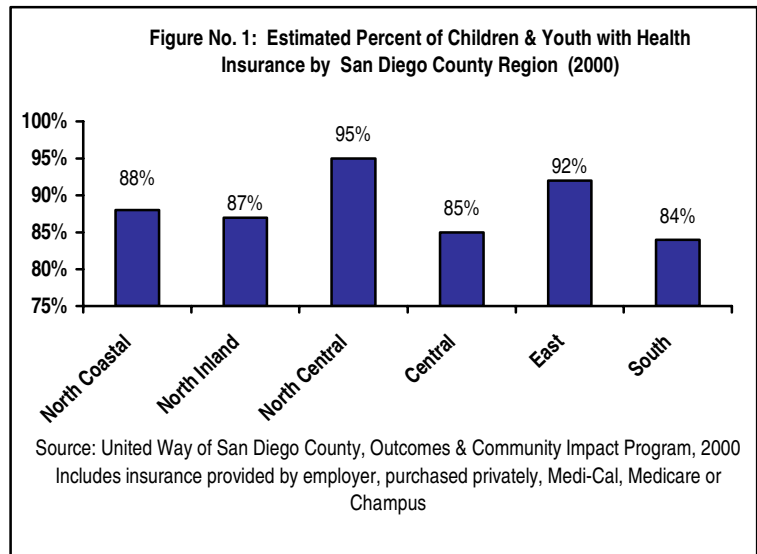
Transportation⁴

- 39% of the County's households have 2 vehicles and 18% of households have 3 or more.
- In 2000, the average commute time in the County was 27 minutes, close to the national average of approximately 26 minutes.

Rates of Medical Insurance

Health insurance can be an important predictor of access to medical care. In 2000, the United Way of San Diego estimated that 89% of the County's households had insured children. Outcomes Community Impact Program, 2000. Hispanics had the lowest rate of health insurance 76%, followed by White 93%, Asian/Other 93% and Black 96%.

- Figure 1 illustrates estimated rates of children and youth with insurance by San Diego region. The South and Central regions of San Diego County had the lowest rates of health insurance.

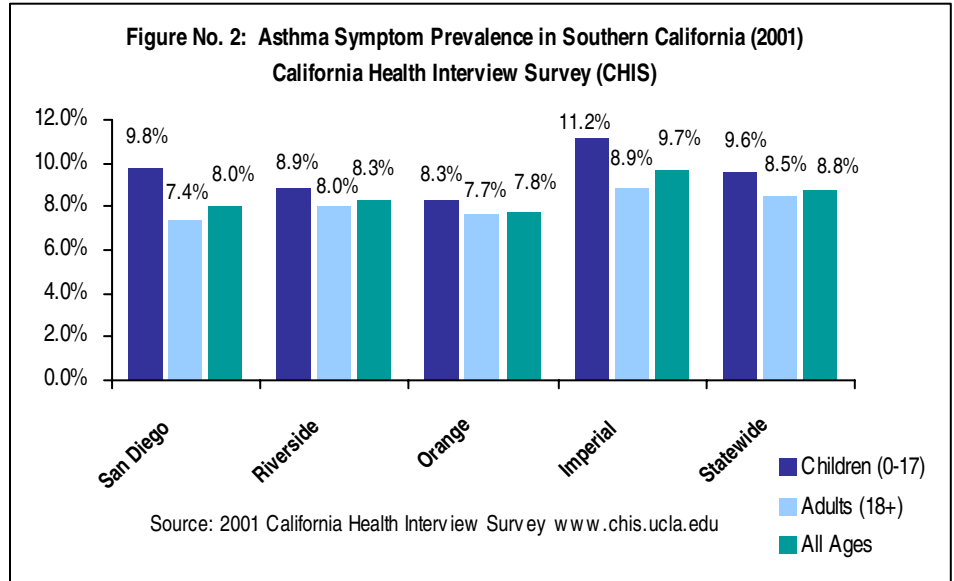


³ SANDAG Data Warehouse www.sandag.org, (Census 2000)

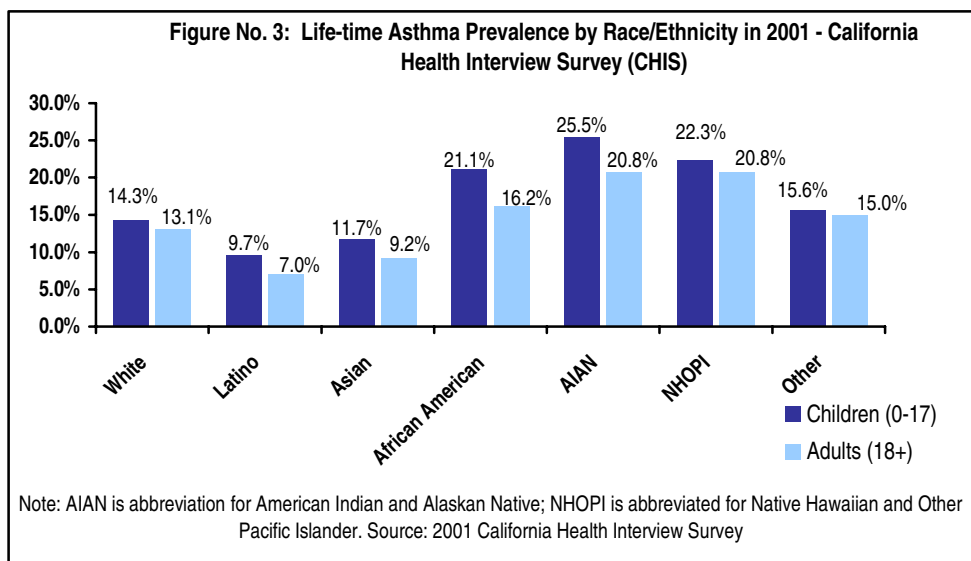
⁴ SANDAG Data Warehouse www.sandag.org and U.S. Census Bureau (www.census.gov)

ASTHMA INDICATORS ♦ PREVALENCE

As previously mentioned, asthma disproportionately affects San Diego's children and young adults. According to the California Health Interview Survey, 14.7% of San Diego County children ages 1-17 have been diagnosed with asthma, compared to a 10.8% rate among adults.⁵ With the exception of Imperial County, San Diego children suffer the highest prevalence rates in Southern California and are higher than the state average of 13.6%.



As part of the United Way of San Diego's Outcomes and Community Impact Survey, 3,600 randomly selected households are surveyed annually to measure resident's perceptions of need and services. In 2002, 10.7% of the respondents reported being diagnosed with asthma by a health care professional. Of those, 26% said they were unable to perform normal daily activities at least one day in the past 12 months as the result of asthma.



Race/Ethnic Disparities

The burden of asthma is particularly heavy among low-income populations, minorities, and children living in urban area cities. Statewide, the racial/ethnic groups that are proportionately most affected include American Indian/Alaskan Natives, Native Hawaiian and Pacific Islanders, and African Americans.

⁵ These figures represent the "point estimate" in a 90% confidence interval, which is a range that provides a more reliable prevalence estimate of persons in the population who fit that category www.chis.ucla.edu.

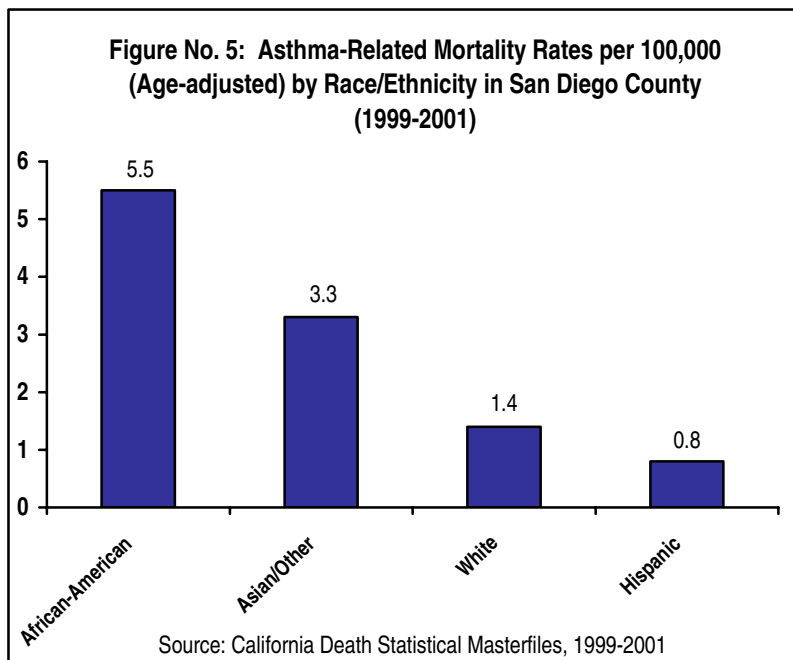
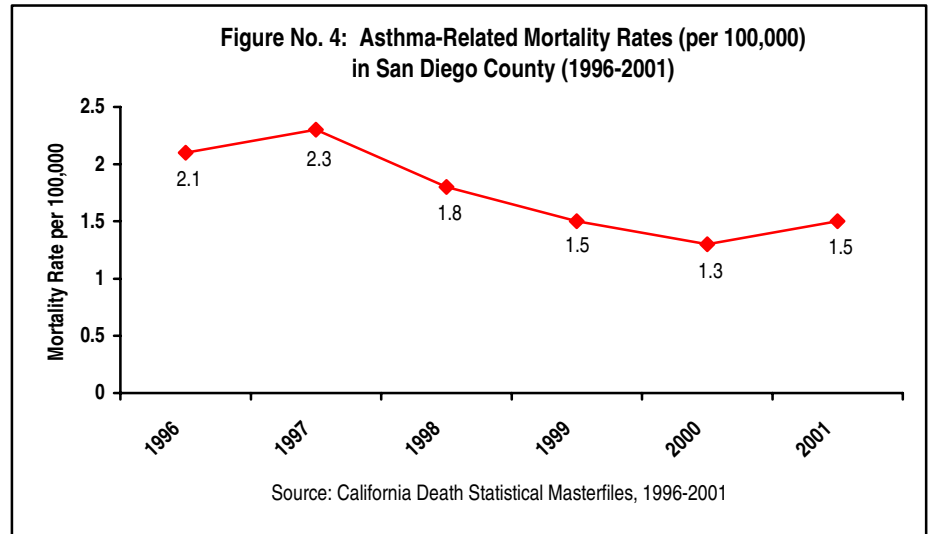
ASTHMA INDICATORS ♦ MORBIDITY MORTALITY

During the last two decades asthma morbidity and mortality rates have been rising throughout the U.S., particularly in low-income urban and rural areas. In San Diego County, asthma-related deaths have been steadily declining.

According to the California Department of Health Services 120 people died from asthma-related causes in San Diego County between 1999 and 2001.

- The overall death rate between 1999 and 2001 was 2.1 deaths per 100,000*.

Though asthma affects more males than females, the mortality rate for females 1.8 per 100,000 was nearly 40% higher than for males 1.1 per 100,000*.



Race/Ethnic and Geographic Disparities

While overall asthma mortality rates have been declining, Asian/Other and African Americans have experienced substantially higher rates than Whites and Hispanics.

The highest asthma-related mortality rates between 1999-2001 were in the Central region of San Diego 3.4, followed by the South Bay region 2.1, East County and North Coastal both 1.3, and with North Inland and North Central experiencing the lowest rates with 1.1 and 1.0 deaths per 100,000*.

* Rates adjusted for age.

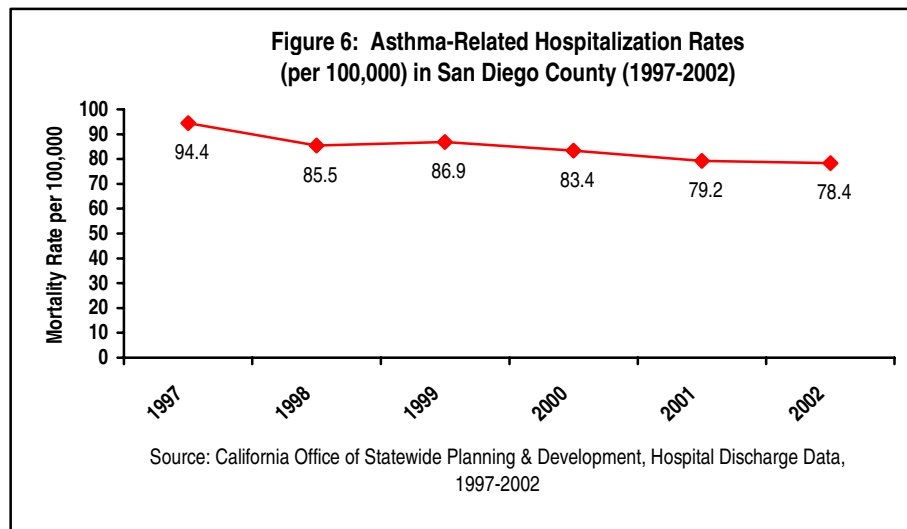
ASTHMA INDICATORS ♦ HEALTHCARE USAGE

Hospitalization Rates

Despite increases in asthma prevalence, asthma hospitalization rates have been declining in California since 1983 Von Behren, et al 1999 .

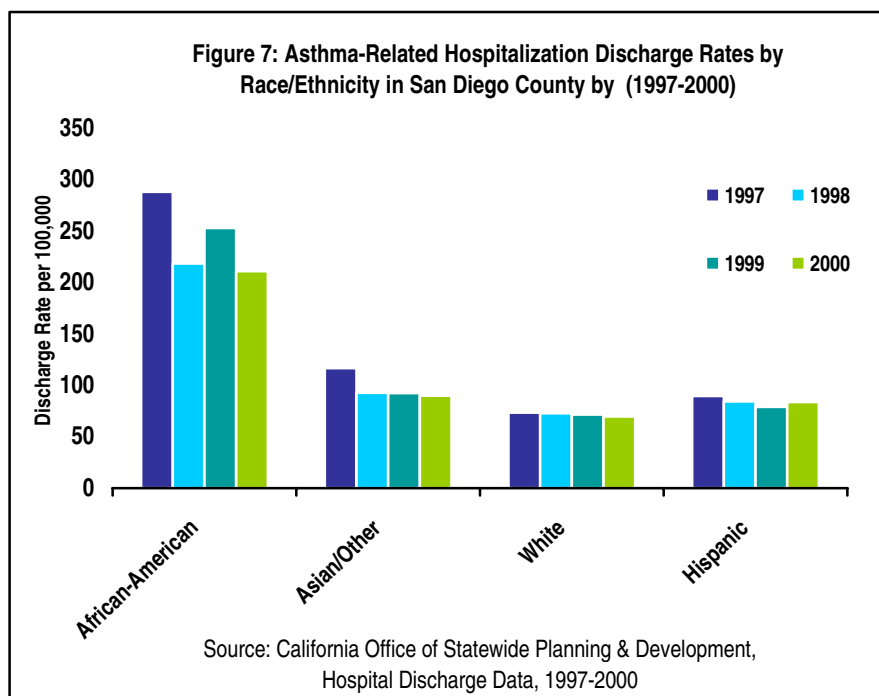
The hospital discharge rates per 100,000 are illustrated in figure 6 for patients whose primary discharge diagnosis was asthma.

During the last several years, asthma-related hospitalizations in San Diego County have continued to decline.



Race/Ethnic Disparities

As illustrated in figure 7, the asthma-related hospitalization rates in San Diego County continue to be substantially higher for African Americans. More current data is not available at this time.



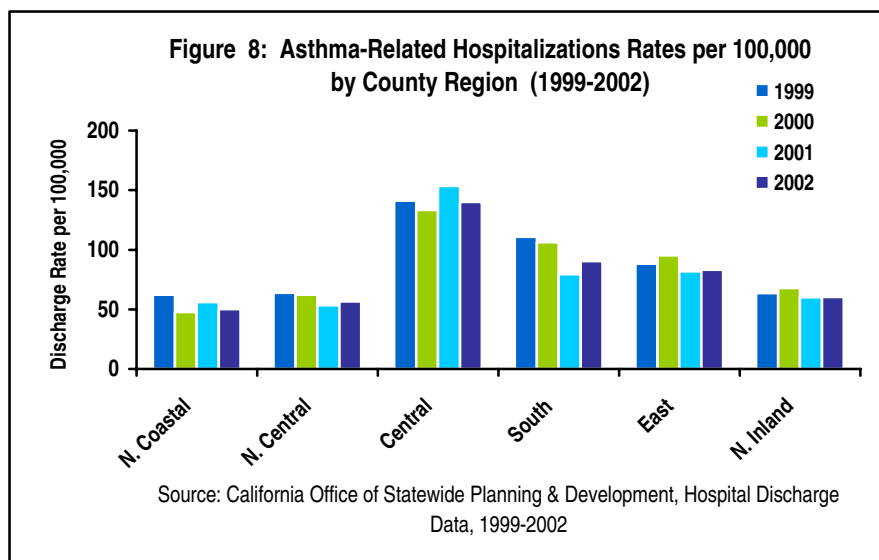
- In 2000, African Americans had a hospitalization rate of 210.8 per 100,000* compared to the overall County rate of 83.4.
- Asian/Other also have consistently higher rates of hospitalization, while Whites and Hispanics typically fall below the total County rate.

* Rates adjusted for age

Geographic Disparities

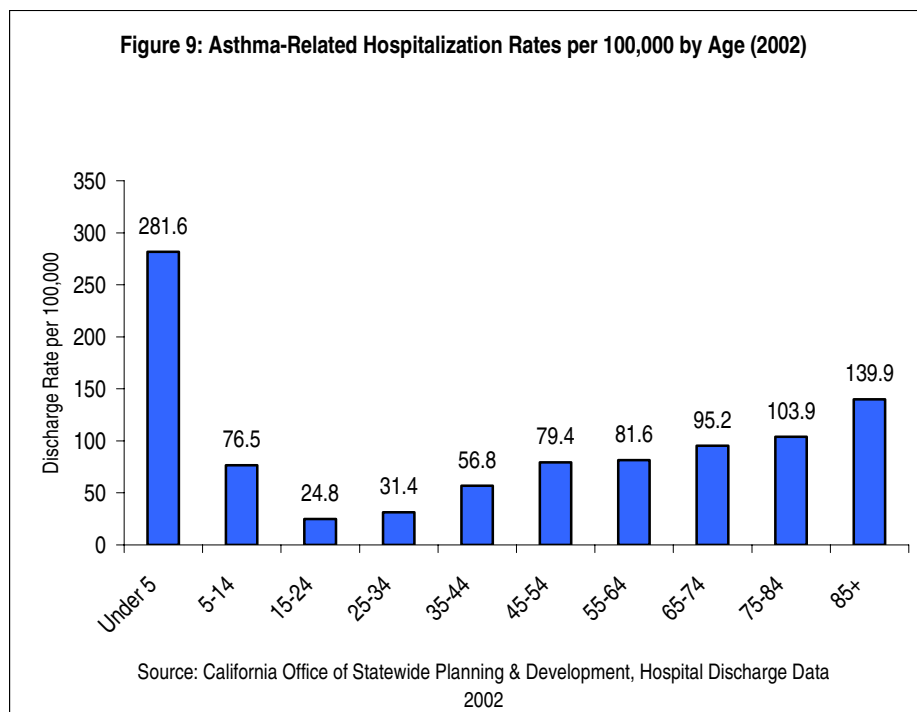
There is also substantial variance from one region of San Diego to another. The Central Region has consistently recorded the highest rates in the County.

- In 2002, Central San Diego had an estimated asthma hospitalization rate of 140.1 per 100,000 compared to the County rate of 78.4.
- The Southern region of San Diego followed with a rate of 90.5.
- The lowest rates were found in the North County Coastal 50.2 and North County Central 56.7 regions⁶.



Age Disparities

Young children are most susceptible to asthma because their lungs are small and still developing.



- In 2002, the hospitalization rate for children under five 281.6 was over twice the rate of any other age group.

In general, lung capacity decreases with age for everyone. For people with asthma, this decrease contributes to an increased risk of hospitalization with age. Asthma may also develop later in life, though it usually appears in childhood.

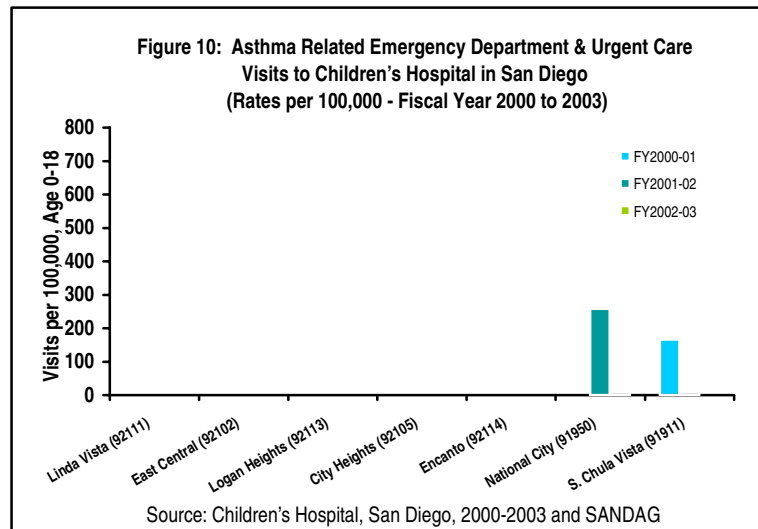
⁶ Rates calculated using SANDAG January 1, 2002 population estimates. Prepared by Community Epidemiology.

Emergency Department Urgent Care Visits Children's Hospital

San Diego County does not currently have a comprehensive system for tracking emergency department and urgent care visits to area hospitals. However, data is available from Children's Hospital that provides useful indications of surrounding areas with higher healthcare usage.

Geographic Disparities

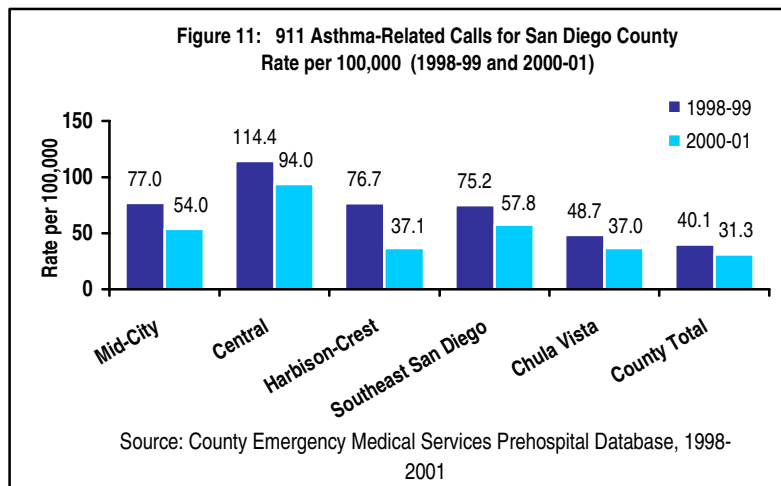
- Linda Vista 92111) and East Central 92102 both experienced some of the highest rates of emergency and urgent care visits, followed by Logan Heights 92113 and City Heights 92105 .
- Encanto 92114 and South Chula Vista 91911 both show strong increasing trends over the last three years.
- In most areas, emergency visits were increasing or relatively stable between 2000 and 2003.



In addition to the data from Children's Hospital, the 2002 United Way survey of 3,600 randomly selected households revealed that of the 10.7% who had been diagnosed with asthma, 18.1% reported going to the emergency room at least once in the previous 12 months.

911 Asthma-Related Calls

In the fiscal year 2000-01, the total asthma-related 911 calls in San Diego County declined from 40.06 per thousand (1998-99) to 31.34 per thousand.⁷ Figure 10 reveals the communities of San Diego County with the highest number of asthma-related 911 calls per 100,000.



Geographic Disparities

- Central San Diego consistently experiences the highest asthma-related 911 calls in the County, with 114.35 per 100,000 in 1998-99 and 93.98 per thousand in 2000-01.
- Mid-City, Southeast San Diego, Chula Vista and Harbison-Crest experienced a decline in 911 asthma calls in 2000-01, but continued to have more calls than the county average.

⁷ The 911 data is entered into the Pre-Hospital Database along with the chief complaint at the time the 911 call is made. It is important to note that a diagnosis established by the emergency department or hospital may differ from the chief complaint at the time of the 911 call.

AIR QUALITY ENVIRONMENTAL TRIGGERS

Poor outdoor and indoor air quality can pose a serious health threat and is known to significantly increase the risk of asthma attacks. According to the Healthy People 2000 report⁸, each year in the United States:

- The health costs of human exposure to outdoor air pollutants range from \$40 to \$50 billion.
- An estimated 50,000 to 120,000 premature deaths are associated with exposure to air pollutants.
- People with asthma experience more than 100 million days of restricted activity, costs for asthma exceed \$4 billion, and about 4,000 people die of asthma

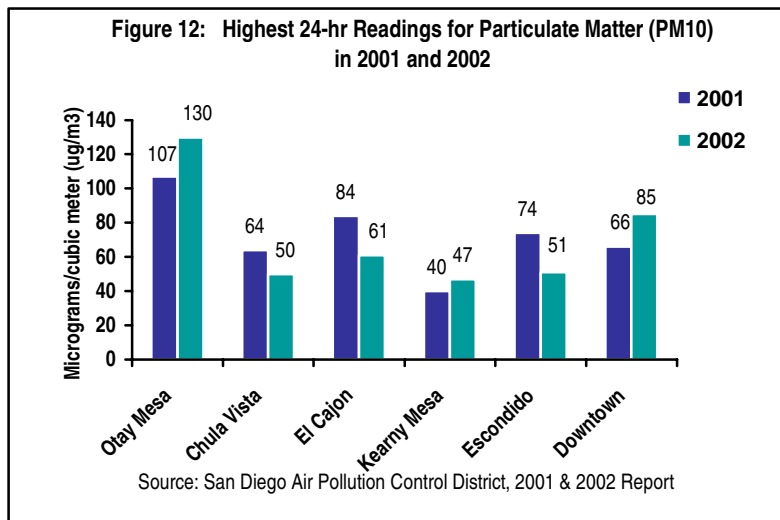
What is Particulate Matter?

Particulate matter is found in both indoor and outdoor air. It includes very small particles and aerosols from combustion sources such as motor vehicles, industrial processes, tobacco smoke, cooking, and wood burning activities. Particulate pollutants also include biological components such as pollen, mold spores, dust mites, cockroach allergens, soil particles and fine fibers such as asbestos.

San Diego County has made important strides towards cleaner air and reached a major milestone in 2002 when it attained the federal one-hour clean air standard for ozone. Nonetheless, there are several areas where the County has not met more stringent air quality standards for the State of California. Particulate matter PM10 and PM2.5 and Ozone continue to be two areas of major concern.

Particulate Matter

Particulate Matter PM10 is composed of small particles that stay suspended in the air and are small enough to be inhaled into the lungs. The State 24-hour standard for this air pollutant is 50 micrograms per cubic meter. San Diego County did not meet the State 24-hour standard for particulate matter



PM10. Based on data from the San Diego Air Pollution Control District's Annual Report, figure 11 highlights the highest 24-hr measurements in various areas of San Diego where air monitors are located during 2001 and 2002.

Particulate Matter 2.5 is smaller fine particles that can be inhaled deeper into the lungs causing irritation. It contributes to asthma and other lung conditions, heart disease and studies have shown it can even contribute to premature mortality. The State Particulate Matter 2.5 standard annual

average is 12 ug/m³. San Diego Air Pollution Control District indicates that San Diego exceeded this standard in 2002. For example, Chula Vista's annual average was 13.89 ug/m³, El Cajon – 15.34 ug/m³, Kearny Mesa – 12.85 ug/m³, Escondido 16.13 ug/m³ and Downtown 15.54 ug/m³.

⁸ <http://www.cdc.gov/nceh/airpollution/airpollution.htm>

Toxic Air Pollution

Toxic air pollutants are poisonous substances in the air that come from natural or man-made sources such as motor vehicles, industrial processes factories , and consumer products. There are thousands of chemicals in the air that can pose serious threats to health including respiratory problems, adverse reproductive effects, and cancer. An example is benzene, which is contained in gasoline. Particulate matter from diesel-fueled engines is estimated to be responsible for more than 70% of the total ambient air toxic risks known today. Since 1990, the Air Pollution Control District of San Diego County has operated toxic sampling monitors in El Cajon and Chula Vista. According to sampling collected at these two sites, the calculated incremental cancer risk per million has decreased by more than half since 1990.⁹ However in 2001, 24,130,533 pounds of toxic air pollutants were emitted into San Diego's air from industrial, mobile, area and natural sources.¹⁰

Indoor Air Quality

There are many sources of indoor air pollution in the home, school and workplace including combustion sources such as gas, kerosene and wood, tobacco products, building materials, wet or damp carpet mold spores , household cleaning and maintenance supplies, central heating and cooling systems, and pesticides. While there is little data available to measure the overall impact of indoor air quality, controlling and/or eliminating environmental triggers both indoor and outdoor can significantly reduce asthma attacks¹¹. Common indoor environmental triggers include:

- Second hand smoke
- Dust mites
- Mold
- Cockroaches
- Pet dander

⁹ "Air Quality in 2002", 2002 Annual Report, Air Pollution Control District, County of San Diego.

¹⁰ 2001 Air Toxic "Hot Spots" Program Report for San Diego County, Air Pollution Control District, County of San Diego

¹¹ <http://www.epa.gov/asthma/triggers/index.html>

ECONOMIC SOCIAL COSTS OF ASTHMA

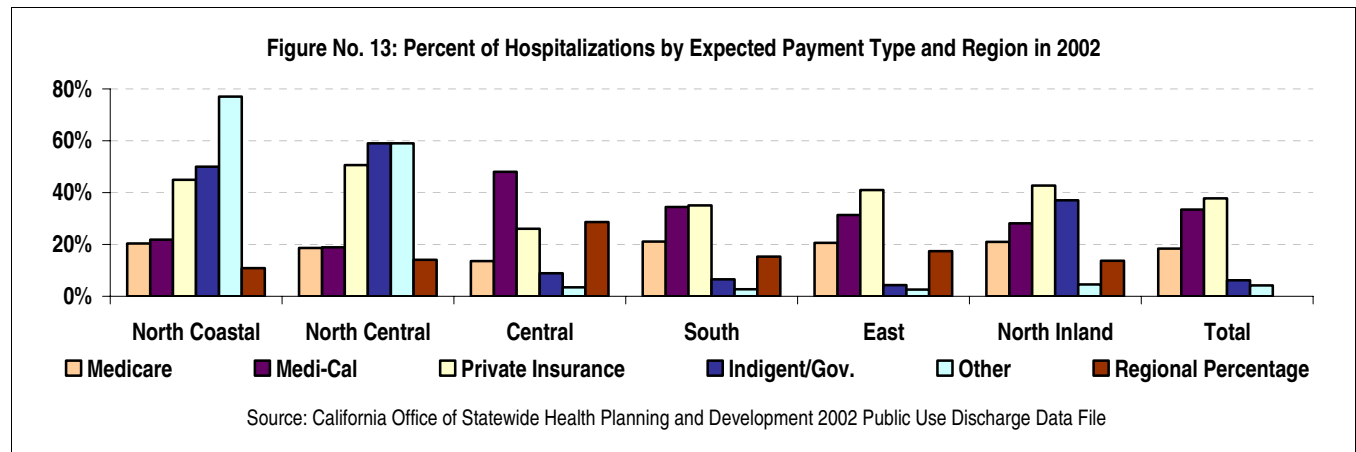
In addition to the human costs of morbidity and mortality, asthma also places a significant burden on the community in terms of financial costs and reduced productivity. While they can be difficult to track, estimates of these costs are important to obtain because of their ability to show the impact of asthma in terms of dollars and cents. They may also serve as leading indicators for asthma morbidity and mortality that can be used to initiate efforts to prevent more serious human costs when they are most effective. Last sentence is confusing

DIRECT INDIRECT MEDICAL EXPENDITURES

In 2002 the total charges for asthma hospitalizations¹² in San Diego County were nearly \$28.5 million not including Kaiser Permanente patients¹³. Despite the declining asthma hospitalizations rates and length of stay in 2002, this represented a slight increase in costs over 2001.

Direct Medical Costs in San Diego County due to Asthma	2001	2002
Total Number of Hospitalizations	2,418	2,416
Mean Charge per Stay	\$11,331	\$11,790
Average Length of Stay	3.40 days	2.98 days
Total Charges for Hospitalization (not including Kaiser patients)	\$27.4 mil	\$28.5 mil

Types of payments varied considerably by region. The Central region had both the highest percentage of the regional total 33% and the highest percentage of Medi-Cal payments 48%.



ASTHMA IN SCHOOLS

Since data collection methods vary considerably between and within school districts, it is difficult to accurately assess the impact of asthma on school absenteeism in San Diego County. However, national figures indicate¹⁴:

- Asthma accounts for 14 million lost days of school annually in the United States.
- Asthma is the third most common cause of hospitalization among children under age 15.
- The estimated cost of treating asthma among children 18 years and younger is \$3.2 billion per year.

¹² Where asthma was the principal diagnosis

¹³ California Office of Statewide Health Planning and Development OSHPD 2002 Public Use Discharge Data File and Community Epidemiology, San Diego County Health Human Services Agency.

¹⁴ www.cdc.gov/nceh/airpollution/asthma/children.htm

SUMMARY

How are we doing in San Diego County?

As previously mentioned, a comprehensive asthma surveillance system is not currently in place, making it difficult to accurately track and measure the social, human, and economic impact of asthma throughout the region. Nonetheless, the data presented in this report provides useful information regarding trends and disparities in San Diego County. In summary, the data suggests:

- **Children and Minorities are Disproportionately Represented:** The data clearly suggest that children, rural populations, certain racial/ethnic minorities and low-income populations have higher prevalence rates and less favorable health outcomes.
- **Decrease in Asthma Related Deaths:** Since 1994 the number of asthma related deaths in San Diego County have been steadily declining.
- **Slight Decrease in Asthma Hospitalizations:** San Diego County has experienced modest decreases in hospitalization rates since 1999. Nonetheless, hospitalization rates among African Americans continue to remain high, as does hospitalization rates in certain sub-regions of San Diego County most notably Central, South and East San Diego .
- **Emergency Department and Urgent Care Visits:** Given the lack of systematic data collection, emergency and urgent care visits are difficult to assess. However data from Children's Hospital suggest that visits in certain sub-regions are on the rise while other areas of the County continue to experience a higher than average number of visits. The region of most concern continues to be City Heights 92105 .
- **Decrease in 911 Asthma-Related Emergency Calls:** The County Emergency Medical Services has experienced a decline in areas that typically generated the largest volume of asthma-related 911 calls. The area that continues to experience the highest number is the Central region, followed by Mid-City.
- **Air Quality in San Diego:** The County has made considerable progress towards improving air quality, but does not yet meet the more stringent state standards for particulate matter and ozone.
- **Rise in Direct Medical Costs of Asthma:** Despite the overall decrease in asthma hospitalizations rates, the direct medical costs in San Diego County continue to rise.

Based on these data we put forth the following recommendations for policy leaders, community groups, and everyone with an interest in reducing the human and financial costs of asthma in San Diego County:

1. **In order to efficiently and effectively target asthma treatment and prevention in the county, better surveillance of asthma symptoms and health care usage is needed.**
2. **The burden of asthma in San Diego County falls most heavily on those least able to cope with it effectively: children, the poor, and minority groups. Asthma treatment and prevention efforts for these groups need to be sustained and expanded.**
3. **Current efforts to control asthma are showing success. They should be continued and intensified to minimize the effects of asthma on all people in San Diego County.**

WHAT YOU CAN DO

There are many ways that we can act as individuals and as a community to minimize the negative effects of asthma. The factors that have led to the rapid rise in the incidence of asthma and the consequences of uncontrolled asthma affect not just people with asthma but also the San Diego County community as a whole. The following list suggests some ways that you or your organization can help in the fight against asthma.

What you can do at home

- If you or someone in your household has asthma, learn what you can do to prevent asthma symptoms at www.lungusa.org/asthma/ or call 1-800-LUNG-USA
- Do not allow smoking in your home, especially if someone with asthma lives there
- Reduce air pollution by conserving energy – purchase energy efficient appliances, turn off lights and appliances when not in use, and make sure your home is well insulated

What you can do on the road

- Walk, bike, or take public transit when ever possible
- Minimize the number of trips you take in your car
- Buy fuel-efficient, low-emission vehicles and lawn equipment

What you can do at school

- If you are a parent, contact your district or local school nurse and ask them about:
 - Their indoor air quality policies and procedures
 - Student access to asthma medications while at school
 - Emission controls and alternative fuels for school buses
- If you are a teacher or work at a school, ask them to provide training on asthma
- If you are a school principal or administrator, contact the San Diego Regional Asthma Coalition coordinator joni@lungsandiego.org for help with asthma education for your students and staff, or for help with establishing a tracking system for missed days due to asthma
- If you are a healthcare provider, communicate with your school district about asthma management plans for your patients and permission to carry asthma medication at school

What you can do as a citizen

- Support the development of clean electricity supplies such as wind, geothermal and solar
- Oppose the weakening of air quality standards or short-circuiting environmental review processes in order to speed up the construction of power plants
- Support reduced emissions through cleaner fuel requirements
- Call, fax, or email your local representative and let them know that asthma is an issue of concern

What you can do as a business

- Limit the use of diesel generators to emergency situations
- Reduce the use of diesel fuel and consider natural gas alternatives for fleet vehicles
- Promote telecommuting and other efforts to conserve energy and reduce pollution
- Keep your workplace free of asthma triggers such as mold, smoke, dust, and pests

What you can do as a government agency

- Support efforts to track asthma within your agency and between agencies
- Be aware of asthma risk factors/triggers and work to minimize them in your workplace
- Contact the San Diego Regional Asthma Coalition to find out how your organization can work with other groups and businesses to help control asthma in San Diego County

ACKNOWLEDGEMENTS

This report card was supported by a grant from **The California Endowment** as part of the state-wide *Community Action to Fight Asthma* CAFA Initiative. Funding for printing the report card was provided by **San Diego County Supervisor Ron Roberts**. Many individuals and organizations contributed to this report by helping to identify, gather, organize and analyze the data and asthma indicators. The San Diego Regional Asthma Coalition SDRAC would like to acknowledge the following individuals for their contributions:

San Diego Regional Asthma Coalition Data Research Workgroup: Members of Coalition's data and research workgroup provided invaluable leadership, time, and energy in compiling and analyzing data, defining content, and editing the first San Diego County Asthma Report Card. The members include:

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Additionally, we would like to thank the following individuals for providing data, maps, suggestions, and valuable feedback for this report:

Jan Cortez American Lung Association of San Diego and Imperial Counties , **Dr. Edward Castillo** Epidemiologist, County of San Diego Health and Human Services Agency , **Dr. Gerardo Gonzalez** National Latino Research Center , **David Lindsay** Senior GIS Analyst, County of San Diego Health and Human Services Agency , **Konane Martinez** Center for U.S. – Mexican Studies, University of California San Diego , **Mike Moder** Moder Marketing Research , **Dr. Eric Roberts** CAFA Data Environmental Resource Coordinator and California Department of Health Services , and **Dr. Robert Yamashita** National Latino Research Center .

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