

MIAMI-DADE COUNTY HEALTH SNAPSHOT

ASTHMA

Scope Of The Problem and Best Practice Models

Who has asthma?

6.2% of all Floridians and 4.6% of Miami-Dade County adults reported having asthma (2007).¹ In Miami-Dade County 14.9% of middle school students and 17.1% of high school students report having asthma (2008).² There are currently 23 million people in the US with asthma, nearly 7 million of whom are under the age of 18.³

People with asthma experience well over 100 million days of restricted activity annually, and the total annual costs of the disease are estimated at \$20 billion nationally.^{4,7}

Asthma accounts for approximately 13 million lost school days every year and persists as the most common serious chronic disease in children.^{4,7}

How many people die from asthma?

Approximately 5,000 asthma-related deaths occur in the US each year.⁵ Miami-Dade County's death rate from asthma is slightly below that of the state (2008) (Table 1).⁶

Table 1: Deaths from Asthma: Florida and Miami-Dade County

	Average Number of Deaths			Age-Adjusted 3-Year Death Rate (per 100,000 persons)		
	2004-06	2005-06	2006-08	2004-06	2005-07	2006-08
Florida	193	191	175	0.9	0.9	0.8
Miami-Dade	21	21	18	0.8	0.8	0.7

Asthma is one of the most common reasons for hospital admission and emergency room care.⁷

Asthma Disparities

Asthma rates differ by gender and age

- The prevalence of asthma in adult females is 23% greater than the rate in males in the US.³
- In Miami-Dade however prevalence rates for both men and women is 4.6 per 100,000.¹
- In Miami-Dade County, 70.8% of asthma hospital admissions were female.⁸
- In the US the rate of hospital admissions is highest for children aged 1-5.³
- The median age of adults admitted to hospitals for asthma in Miami-Dade was 59.⁸

Asthma rates and outcomes differ by race and ethnicity and economic status

- 7% of non-Hispanic black adults in Miami-Dade County currently have asthma, up from 3.6% in 2002.¹
- 6.3% of non-Hispanic white adults in the county currently have asthma and the rate is much lower for Hispanics at 3.6%.¹
- Nationally asthma prevalence was 20.1% higher in African Americans than in whites in 2006.³
- Whites account for the majority of hospital admissions (62.3%) in the county.⁸
- Blacks account for the majority of asthma related deaths in the county.⁶
- The prevalence of asthma is greater in families with lower incomes in the nation.⁷

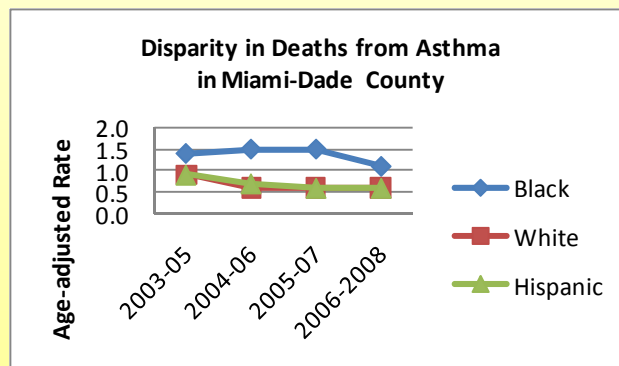


Figure 1

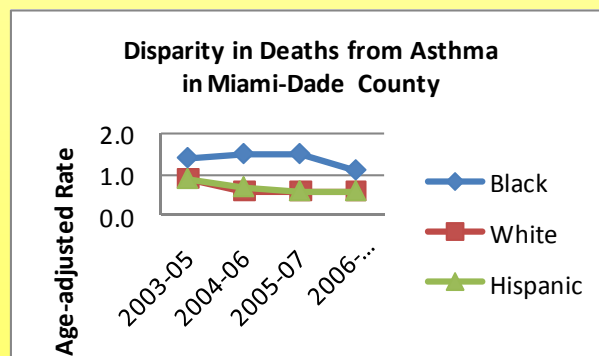


Figure 2

Asthma Admission Rates in Miami-Dade County

The adult asthma admission rate was among the worse performing indicators reported in the 2007 Miami-Dade County Community Health Report Card⁹. The adult asthma admission rate is one of 14 Prevention Quality Indicators (PQIs) developed by the Agency for Healthcare Research and Quality.¹⁰

Extent of the Problem and the Cost to Miami-Dade County⁸

- The rate of adult asthma admissions per 100,000 adults rose in 2008 after a 7.7% fall in 2007 and remains above pre-2003 levels.
- 3,229 adults were admitted to a hospital with a principal diagnosis of asthma (2008).
- The cost of these admissions was \$90,898,051 for services rendered by hospitals. These services averaged \$28,150 per admission, excluding associated professional fees and personal convenience items.
- The principal payer of these charges was Medicare (45%), with total gross charges of \$41 million. Medicaid and Commercial Insurance followed with 20% (\$18. million) each. Self-pay/Under-insured (no 3rd party coverage or less than 30% estimated insurance coverage) accounted for 10.% (\$9 million) of charges, and charity 4% (\$4 million).
- The three year rate of hospital admissions for children with asthma aged 1-5 was 1,071.3 in 2008 and is one of the least favorable indicators in the Florida Department of Health's Pregnancy and Young Child Profile for Miami-Dade County.¹⁰
- The three year rate of pediatric asthma admissions for ages 5-11 declined from 502.6 (per 100,000) in 2007 to 488.4 in 2008 while the rate for ages 12-18 increased from 316.4 to 343.0 per 100,000 population.²
- Implementation of asthma control practice guidelines in prescribing treatments and Asthma Self-Management Education can reduce both adult and pediatric asthma hospitalizations.

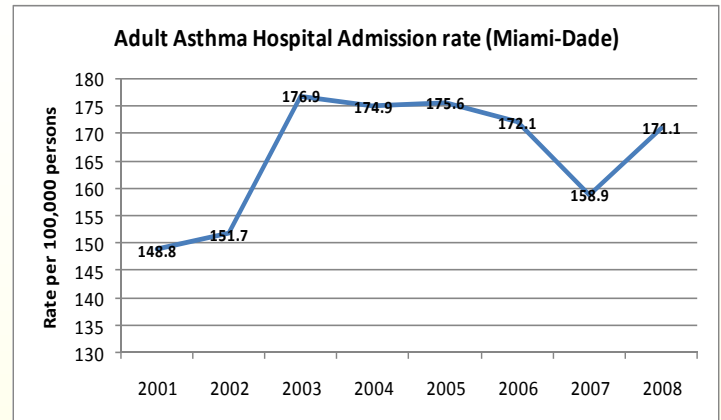


Figure 3

Geographic Distribution of Adult Asthma Admissions in Miami-Dade County

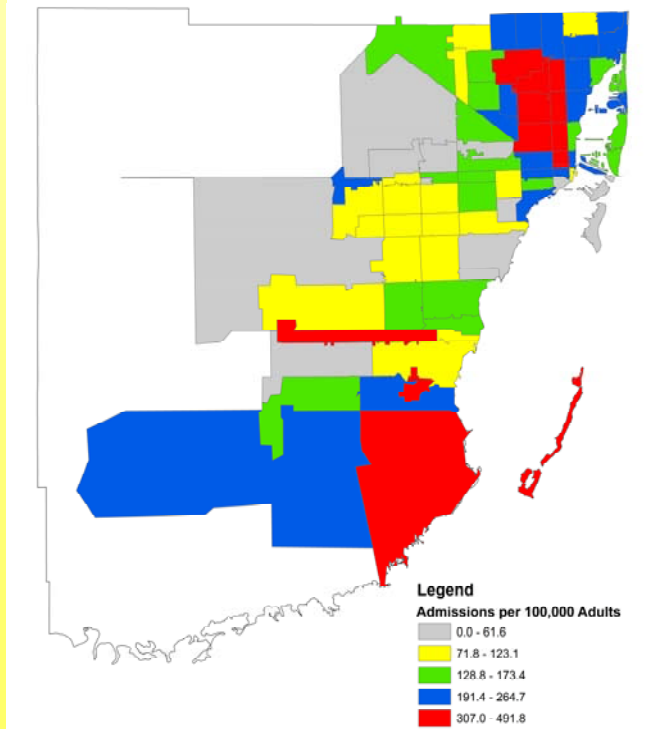


Figure 4

The Hospitals⁸

Twelve hospitals accounted for 67.4% of adult asthma admissions in 2008. North Shore Medical Center, a private for profit hospital accounted for more adult asthma admissions than any other hospital (9.3%). Miami-Dade County's public hospital, Jackson Health System's (JHS) three campuses accounted for 15.0% of all admissions in 2007.

Hospital	Admissions	
	Number	Percent
Total Admissions	3,229	100.0%
Jackson Health System	483	15.0%
Jackson Memorial Hospital	176	5.5%
Jackson North Medical Center	198	6.1%
Jackson South Community Hospital	109	3.4%
North Shore Medical Center	299	9.3%
Mount Sinai Medical Center	235	7.3%
Aventura Hospital and Medical Center	227	7.0%
University of Miami Hospital	197	6.1%
Baptist Hospital of Miami	196	6.1%
Hialeah Hospital	194	6.0%
Mercy Hospital	172	5.3%
Homestead Hospital	158	4.9%
Palmetto General Hospital	150	4.6%
Kendall Medical Center	130	4.0%
Palm Springs General Hospital	116	3.6%
Doctors Hospital	101	3.1%

Table 4

Lifestyle Changes for Prevention

- Controlling or eliminating exposure to second and third-hand smoke, pet dander (from animals with fur or feathers), indoor mold, cockroach and other pests (parts, secretions and droppings), dust mites, combustion byproducts (smoke, car fumes, fuel-burning appliance fumes), strong odors (perfume, aerosols, sprays, talcum powder) and outdoor allergens/irritants (pollen, mold, extreme/changing weather) reduces the frequency and severity of asthma attacks.
- Monitoring of lung function for assessment and treatment, implementing environmental control measures to reduce triggers, putting in place comprehensive pharmacological therapy and patient education result in effective asthma management.¹¹

The US Environmental Protection Agency's (EPA), Asthma Program provides recommendations and a sample action plan to help guide asthmatics in preventing attacks at www.epa.gov/asthma/about.html.

Guidelines for Improving Health Outcomes in People with Asthma

Controlling asthma reduces days of missed work/school, emergency room visits and hospital admissions and improves quality of life. Good asthma control can be achieved using a community-based team approach that focuses on preventative care and utilizes proven strategies to assist patients to better manage their care.

Since compliance and self-care management are patient directed, the goal of any asthma control program is to provide patients with the knowledge and skills that enable behaviors needed to cope and live with asthma on a daily basis. This can be accomplished by:

- Using evidence-based guidelines for asthma control such following the four components of care in the National Asthma Education and Prevention Program's "[Guidelines for the Diagnosis and Management of Asthma](#)"
- Having as a primary goal the enabling of patients to live without the symptoms of asthma
- Tailoring programs in response to individual needs, particularly with regard to sensitivity and exposure to environmental triggers.
- Designing programs to meet the needs of the community and that maintain close ties to the individuals and communities involved (parents, schools, other community supports).
- Providing patients with written action plans.

TEAM

Advisors helping to develop and individualized self management plan:

- Doctor
- Care manager (nurse , pharmacist, respiratory therapist
- Asthma educator
- Other multi-specialty health care providers

A Self Management Plan includes:

Monitoring:	Symptoms (frequency and severity of attacks) and/or Peak Expiratory Flow (PEF)
Understanding:	Indoor and outdoor environmental triggers and measures to eliminate/respond to exposure
Establishing:	medical regimens, partnerships between patient, family and clinicians.
Identifying & treating:	Worsening asthma symptoms and self-adjustment of medications

Preventing asthma symptoms Treatment Goals

- Reducing impairment (chronic symptoms)
- Reducing risk of :
 - exacerbations
 - reduced lung growth in children
 - loss of lung function
 - hospital visits
 - death

Know Your Numbers – Monitoring for asthma severity and symptom prevention

Levels of Control

[\(Discovery Health NexProfiler Treatment Options Tools for Asthma by Nexcura\)](#)

Complete Control	Partial Control	Poor Control
<ul style="list-style-type: none">Daytime asthma symptoms twice a week or lessRescue bronchodilator use twice a week or lessNo night-time or early morning awakening due to symptomsNo limitations of exercise, work, or schoolNormal or personal best lung air flow (PEF or FEV1)No more than one acute exacerbation in the last yearComplete control by family and physician assessment	<ul style="list-style-type: none">Daytime symptoms more than twice a weekRescue bronchodilator use more than twice a weekAny night-time or early morning awakening due to symptomsAny limitation of exercise, work, or schoolPEF or FEV1 less than 80% of predicted or of personal bestTwo or more acute exacerbations in the last yearPartial control by family and physician assessment	<ul style="list-style-type: none">Three or more features of partial control in any one weekAn acute exacerbation in any weekPoor control by family and physician assessment

Evidence-based practices in Asthma Care - Programs with Promising or Best Practice Outcomes

The EPA funded Asthma Health Outcomes Project (AHOP) study determined that programs that address environmental triggers work best to improve health outcomes such as reduced emergency room visits, improved quality of life, and fewer missed days of school or work when they build strong connections with front-line health care providers and local communities. The AHOP created the [US EPA National Asthma Forum](http://www.epaasthmaforum.com/), Communities in Action for Asthma Friendly Environments, [2008 Change Package](http://www.epaasthmaforum.com/2008/ChangePackage/) for Communities to create asthma friendly environment. The *Change Package* puts forward a System for Delivering High Quality Health Care with five tested strategies for improving health outcomes: 1. *Committed Leaders and Champions*; 2. *Strong Community Ties*; 3. *High-Performing Collaborations and Partnerships*; 4. *Integrated Health Care Services*; 5. *Tailored Environmental Interventions*.

Program	Interventions	Outcome Measures
<p>Boston Public Health Commission's Asthma Program (Public health department)</p> <p>https://www.epaasthmaforum.com/Documents/Resources2009/Tailored_Environmental_Interventions.pdf</p> <p>https://www.epaasthmaforum.com/Documents/Resources2008/Forum_snapshot.pdf</p>	<p>A tailored environmental intervention involving the health commission advocacy groups, medical centers, public housing authorities and inspection services. The program's focus is on addressing the environmental factors in homes and communities. Program features:</p> <ul style="list-style-type: none"> Created a city-wide environmental network (Engaging non-traditional partners) Education and empowerment of clinical staff Use of information technology to manage city-wide environmental interventions Home assessment, education, and mitigation –at home visits featuring in-house education, healthy home inspection and provision of low cost cleaning supplies to assist with maintaining a pest-free environment Preventive measures in public housing Involvement of housing code enforcement <p>(The Commission uses self reported data to identify hot spots where individual family interventions are not enough to reduce environmental factors and to target structural housing and policy level actions to improve the environment.)</p>	<ul style="list-style-type: none"> Asthma related ER visits and hospitalizations (reduced) Patients receiving preventive care (increased) Pest complaints in public housing (decreased) Patient self-reporting: symptom days, missed school days.
<p>Priority Health Asthma Management Program (Non-profit Health Plan)</p> <p>https://www.epaasthmaforum.com/Documents/Resources2008/Forum_snapshot.pdf</p> <p>https://www.epaasthmaforum.com/Documents/Resources2008/Forum_snapshot.pdf</p>	<p>Priority Health recognized the need for home-based asthma care that includes environmental trigger management. To deliver effective home-based care, Priority Health formed a first-of-its-kind partnership with the Asthma Network of West Michigan (ANWM). Priority Health uses ANWM's case managers and social workers to increase its ability to effectively assess and educate its members. All of the plan's members with high asthma risk receive intensive case management in a program that integrates patient education, home-based environmental interventions, and evidence-based clinical care. In addition the program:</p> <ul style="list-style-type: none"> Works with social workers who provided social service referrals for members Works with providers, pharmacists, case managers, employers, schools, and day care centers to offer comprehensive asthma management for members with asthma Offers incentives to physicians to implement the Planned Care Model for asthma Utilizes an interactive Patient Profile tool to monitor patient progress 	<ul style="list-style-type: none"> Emergency room visits and hospitalizations (reduced) Return on plan's investment (gain) Medical costs incurred by members with asthma (decreased) Provider Physician Incentive Program scores (increased)
<p>Project AIR (Hill Health Center, New Have Connecticut)</p> <p>http://www.improvingchroniccare.org/downloads/act_report_may_2002_curing_the_system.pdf</p> <p>http://www.hillhealthcenter.com/services/other/air.shtm</p>	<p>A pediatric asthma program initiated at a school-based health center with:</p> <ul style="list-style-type: none"> Services provided by a <i>proactive team</i> comprised of a nurse practitioner, social worker health educator A patient registry identifying all patients Delivery system allowing physicians to rely on community health workers and registered nurses to assist with some of the key functions of providing comprehensive care Actions plans developed with patients to support their self-management needs. Community resources harnessed to reduce patient exposure to environmental triggers, including working with school nurses to develop comprehensive asthma plans for schools as well as working with the Visiting Nurses Association and the local public Community Action Agency 	<ul style="list-style-type: none"> Controller medication use (with mild to moderate asthma) School Absenteeism (due to asthma less than one day per two weeks) Emergency room visits Peak Flow Rate Performance (increased) Asthma Action plan n (given to patients) Symptom-free days
<p>Out-patient Program (Bellevue Hospital, New York, New York)</p> <p>http://www.annals.org/cgi/content/abstract/112/11/864</p> <p>http://www.med.nyu.edu/medicine/pulmonary/research/current/asthma.html</p>	<p>An outpatient program designed to reduce readmissions for asthma exacerbations among adults with asthma, who had previously required multiple hospitalizations for asthma attacks.</p> <ul style="list-style-type: none"> Patients in the intensive outpatient treatment program were treated with a vigorous medical regimen and educational program Emphasis was placed on teaching patients aggressive self-management strategies in case of marked asthma exacerbation The study concluded that through using a vigorous medical regimen and intensive educational program, decrease hospital use among a group of adult asthmatics who had previously required repeated readmissions for acute asthma exacerbations was possible 	<ul style="list-style-type: none"> Hospital readmission rate (decreased) Hospital days used (decreased) Symptom days (reduced)

Resources/Websites:

- Communities in Action for Asthma Friendly environments: <http://www.asthmacommunitynetwork.org/>
- Predict Online.com, Asthma: <http://www.predictonline.com/azma1.htm>
- National Heart Lung and Blood Institute, National Asthma Prevention and Education Program: http://www.nhlbi.nih.gov/about/naepp/naep_pd.htm
- National Heart Lung and Blood Institute, Guidelines of Diagnosis and Management of Asthma: <http://www.nhlbi.nih.gov/guidelines/asthma/index.htm>
- US Environmental Protection Agency (US EPA) Asthma Program: <http://www.epa.gov/asthma/programs.html>
- US EPA National Asthma Forum: <http://www.epaasthmaforum.com>
- Centers for Disease Control and Prevention, Healthy Youth, Asthma, <http://www.cdc.gov/HealthyYouth/Asthma/>

¹Sources:

- Florida Department of Health, Florida CHARTS, Behavior Risk Factor Surveillance System (BRFSS) Data, Retrieved from <http://www.floridacharts.com/charts/brfss.aspx>
- Florida Department of Health, Florida CHARTS, School-aged Child and Adolescent Profile for Miami-Dade County, Retrieved from <http://www.floridacharts.com/charts/SpecReport.aspx?RepID=7245>
- American Lung Association, <http://www.lungusa.org/lung-disease/asthma/>
- National Heart, Lung and Blood Institute Retrieved from http://www.nhlbi.nih.gov/about/naepp/naep_pd.htm
- National Heart Lung and Blood Institute Retrieved from http://www.nhlbi.nih.gov/health/dci/Diseases/Asthma/Asthma_Whats.html
- Florida Department of Health, Florida CHARTS, Chronic Diseases, C.L.R.D., Retrieved from <http://www.floridacharts.com/charts/Domain2.aspx?Domain=02>
- Environmental Protection Agency, Asthma Facts, Retrieved from http://www.epa.gov/asthma/pdfs/asthma_fact_sheet_en.pdf
- 2001-2008 Hospital Inpatient Data Files, Florida Agency for Health Care Administration
- Health Council of South Florida, 2007 Miami-Dade County Community Health Report Card, Retrieved from http://www.healthcouncil.org/publications/Report_Card_2007.pdf
- Florida Department of Health, Florida CHARTS, Pregnancy and Young Child Profile, Retrieved from <http://www.floridacharts.com/charts/SpecReport.aspx?RepID=1013450>
- National Heart, Lung and Blood Institute, Retrieved from <http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm>