

Asthma in Minnesota

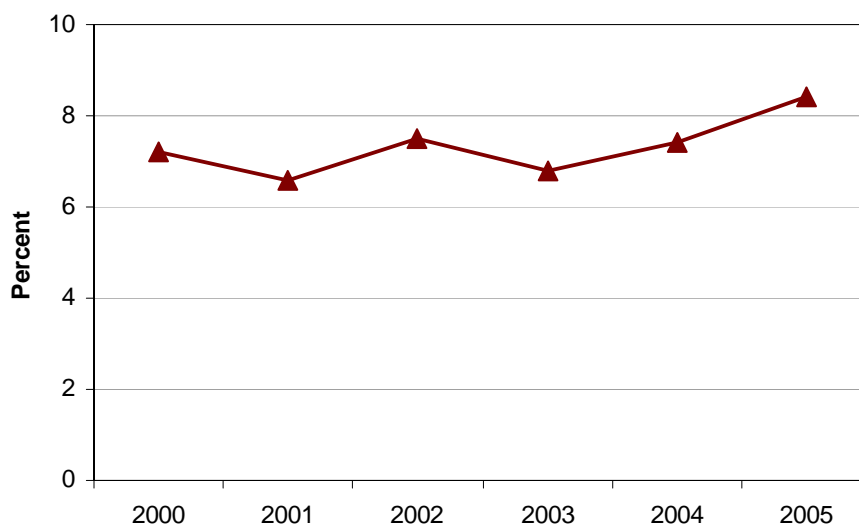
Epidemiology

As part of the CDC grant, the MDH has been collecting and analyzing available asthma data for the past seven years. Although the picture of asthma remains incomplete, much has been learned from this effort. A complete report, “Asthma in Minnesota,” was distributed in late 2005 and can be found at <http://www.health.state.mn.us/asthma/Research.html>. This section summarizes the most recent data regarding the burden of asthma in Minnesota.

Adults with Asthma

- An estimated 11.8% of Minnesotans age 18 and older report having ever been told by a doctor they had asthma. Approximately 8.4% of Minnesotans currently suffer from the disease. That translates to an estimated 460,000 Minnesota adults who have a history of asthma and an estimated 320,000 who currently have asthma¹
- The percentage of Minnesota adults with asthma (8.4%) is slightly higher than the national average (8.0%)¹
- The percentage of adults reporting that they currently have asthma has been increasing over the few years, ranging from a low of 6.6% in 2001 to a high of 8.4% in 2005.¹ See Figure 1. Increasing prevalence could be due to greater awareness leading to increased diagnosis, as well as the development of new cases.
- More than half (54%) of adults with asthma report having an asthma attack in the past year.¹ Asthma attacks or episodes are an indication of lack of asthma control
- Women are more likely than men to report having asthma (10.6% versus 6.1%)¹
- Adults living in the Twin Cities metropolitan area are more likely to report having asthma than adults in Greater Minnesota (10.3% vs. 6.6%)¹

Figure 1. Percentage of Minnesota Adults with Current Asthma, 2000-2005



Source: Minnesota Behavioral Risk Factor Surveillance System

Children with Asthma

- An estimated 6.6% of Minnesota children ages 0-17 are reported to have asthma, which is equivalent to 1 out of every 15 children, or 80,000 children statewide¹
- Asthma prevalence among children in Minnesota (6.6%) is lower than the national average (8.1%)¹
- 3.6% of all Minnesota children (45,000) have had an asthma attack or episode in the past year¹
- Asthma prevalence is higher among students in Minneapolis public schools than in St. Paul public schools¹
- Two surveys of students in Greater Minnesota show that many Minnesota children are wheezing but have not been diagnosed with asthma¹²

Quality of Life

- 20.8% of Minnesota adults with asthma reported one or more days in the past year in which their activities were limited due to asthma¹
- 19.5% of families with children who have asthma reported being greatly or moderately affected by their child's health condition²

Asthma Management

- 56.6% of Minnesota adults with asthma report having had at least one routine checkup for asthma in the past year¹
- People with asthma are more likely than those without asthma to receive an annual flu shot (41.5% vs. 19.1%)¹
- People with asthma are also more likely than those without asthma to have ever received the pneumonia vaccine (46.9% vs. 31.4%)¹

Obesity and Asthma

- Adults with asthma are more likely than those without asthma to be obese (30.6% vs. 22.3%)¹

Smoking and Asthma

- Adults with asthma are more likely to be current smokers than those without asthma (24.3% vs. 19.8%).¹ Smoking can trigger asthma symptoms and secondhand smoke is known to exacerbate asthma and can cause asthma symptoms to develop in young children¹
- In a study of rural high school students in Minnesota, those with asthma were significantly more likely than those who did not have asthma to report living in a household where someone smokes (37% versus 31%)⁵

Asthma Hospitalizations

- Asthma hospitalization rates are highest in boys under age 5. Rates are higher for boys than girls until the late teenage years at which point the rates reverse and are higher for women than men¹
- Asthma hospitalization rates are highest among residents of the Twin Cities metropolitan area and northeastern Minnesota, with the central region close behind⁷

- Overall, asthma hospitalization rates decreased between 1998 and 2005, with the greatest decreases among school children and young adults⁷
- Between 1998 and 2005, there were significant decreases in asthma hospitalization rates among residents of Minneapolis and St. Paul, most notably among children⁷

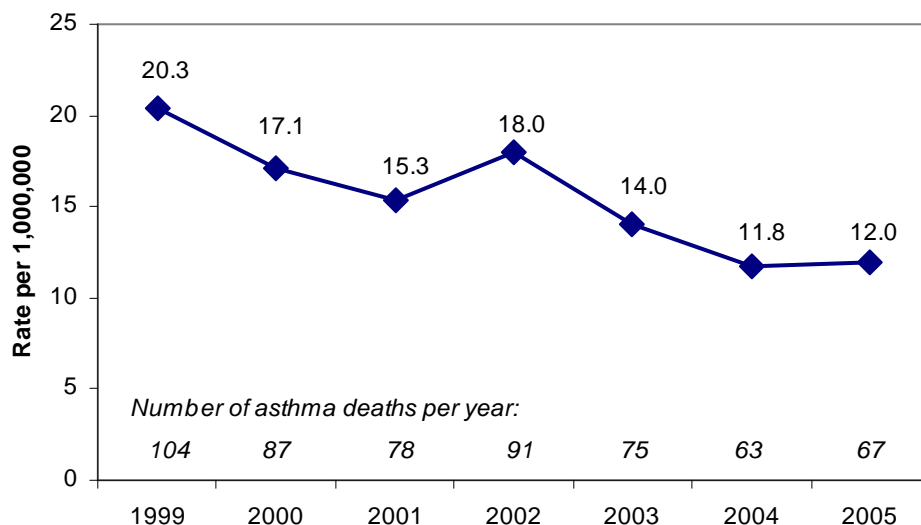
Asthma Emergency Department Visits

- 11% of Minnesota adults with asthma visited an emergency department or urgent care at least once in the past year because of their asthma¹
- Across Minnesota, there were more than 16,000 emergency department visits for asthma in 2005⁷
- Rates of asthma-related emergency department visits are higher among boys up until the teenage years, after which rates are consistently higher among women⁷

Asthma Mortality

- In 2005 there were 67 deaths from asthma in Minnesota (compared with 104 in 1999); 66% occurred among persons aged 65 and older; of these, 86% were in women.¹ See Figure 2.
- Deaths from asthma are rare among young people in Minnesota. Between 1999 and 2005, there were 23 asthma deaths among those under age 20⁸
- The highest asthma mortality rates are in the northeast region of Minnesota⁸
- Preliminary findings from a study of asthma deaths among older Minnesotans indicate that many deaths for which asthma was listed as the underlying cause of death may actually be due to other causes, often chronic obstructive pulmonary disease.
- Asthma mortality rates have decreased dramatically since 1999, with the greatest decreases in the 65 and older age group.⁸ It is unclear the extent to which changes in coding asthma deaths on death certificates could be contributing to this decline.

Figure 2. Asthma Mortality Rates, Minnesota, 1999-2005



Source: Minnesota Center for Health Statistics

Missed School Days Due to Asthma

Of the 9.2% of rural Minnesota high school students with asthma, 6.5% reported missing two or more days of school and 8.0% reported missing two or more days of organized sports in the past month due to asthma.⁵ Of the 8.4% of Minnesota middle school students with asthma, 24% reported missing one or more days of school in the past year and 36% reported ever missing recess, sports or after school activities due to asthma symptoms.⁴

Asthma Costs

The total cost of asthma hospitalizations in Minnesota in 2004 was \$4.8 million for children and \$12.0 million for adults. The average cost of an asthma hospitalization for children was \$2,788 and for adults was \$4,677. It has been estimated that in Minnesota asthma cost \$208.6 million in hospitalizations, emergency department visits, office visits and medication and \$155 million in indirect costs of lost school and work days in 2003.

Progress Toward Healthy People 2010 Goals

The following tables show Minnesota's current status on the Healthy People 2010 goals related to asthma.

Table 1. Asthma Mortality Rates* for Minnesota and U.S. and Healthy People 2010 Goals

Age Group	Minnesota, 2003-2005		U.S. 1999	Healthy People
	Number	Rate*	Baseline	2010 Goal*
0 to 4	2	2.0 [#]	1.7	1.0
5 to 14	3	1.5 [#]	3.1	1.0
15 to 34	13	3.0 [#]	5.6	2.0
35 to 64	43	7.0	15.5	9.0
≥ 65	144	77.9	69.5	60.0

*Rate per 1,000,000

[#]Rates based on fewer than 20 deaths per age group

Source: Minnesota Center for Health Statistics, National Vital Statistics System-Mortality (NVSS-M), CDC, NCHS

Table 2. Asthma Hospitalizations Rates* for Minnesota and U.S. and Healthy People 2010 Goals

Age Group	Minnesota, 1999	Minnesota, 2005	U.S. baseline, 1998	U.S., 2002	Healthy People 2010 Goal
0 to 4	28.0	24.5	45.6	59.0	25.0
5 to 64	7.5 [†]	6.2 [†]	12.5 [†]	12.4 [†]	7.7 [†]
≤65	14.3 [†]	16.0 [†]	17.7 [†]	22.4 [†]	11.0 [†]

*Rate per 10,000 residents

[†]Age-adjusted to the year 2000 standard population

Sources: Minnesota Hospital Association, National Hospital Discharge Survey (NHDS), CDC, NCHS

Table 3. Asthma Hospitalizations Rates* for Minneapolis, St. Paul, Twin Cities Metro Area and Greater Minnesota, and Healthy People 2010 Goals

Age Group	Minneapolis, 2005	St. Paul, 2005	Twin Cities Metro, 2005	Greater Minnesota, 2005	Healthy People 2010 Goal
0 to 4	61.3	39.1	27.5	24.5	25.0
5 to 64	16.5	11.7	7.2	6.2	7.7 [†]
≤65	34.3	22.4	15.8	14.8	11.0 [†]

*Rate per 10,000 residents

[†]Age-adjusted to the year 2000 standard population

Sources: Minnesota Hospital Association, National Hospital Discharge Survey (NHDS), CDC, NCHS

Summary

Overall, Minnesota’s asthma rates are generally lower than national rates; however, within certain subgroups of the population, there are areas of concern. More than half of Minnesotans with asthma report having had an asthma attack in the past year—an indication that their asthma is not completely under control. Asthma prevalence among adults is higher in the Minneapolis-St. Paul metropolitan area than the rest of the state. Rates of asthma hospitalizations and ED visits are also high in the Twin Cities metropolitan area, with the highest rates among boys under 5. The good news is that since the late 1990s asthma hospitalization rates in Minneapolis and St. Paul have been decreasing, especially among children. Asthma mortality rates have declined dramatically between 1999 and 2005, with the greatest decreases in the 65 and older population.

¹ Minnesota Behavioral Risk Factor Surveillance System

² National Survey of Children’s Health

³ Minneapolis Public Schools, St. Paul Public Schools

⁴ Minnesota Middle School Asthma Survey

⁵ MDH, Rural High School Survey

⁶ Institute of Medicine. Clearing the Air: Asthma and Indoor Exposures, 2000

⁷ Minnesota Hospital Association

⁸ Minnesota Center for Health Statistics

Current Efforts to Address Asthma in Minnesota

Minnesota has many committed individuals, agencies, and organizations working on helping individuals and families to gain the knowledge and skills necessary to control and manage their asthma on a daily basis. Many of these efforts and initiatives include state government activities, the Minnesota Asthma Coalition (9 regional coalitions), school districts, local public health departments, hospitals and managed care organizations, community-based clinics, academic institutions, and non-profit health organizations, including the American Lung Association of Minnesota. Listed below are some of the activities or programs that have occurred since 2002 or are currently underway.

Table 4. Minnesota Asthma Milestones since 2002

Foundations of Asthma Activities	Environment	Self-Management Resources and Access to Care	Community Action	Health Professionals
Federal funding obtained to support asthma activities; state program staffed	School walkthrough protocol developed and utilized in 17 school districts	IAAP developed both to aid providers and to encourage written asthma action plans for people with asthma	Statewide smoke-free initiative approved by Legislature and signed by Governor (May 2007)	Setting the PACE in Minnesota trainings created and implemented by ALAMN
Surveillance system expands to capture data on asthma prevalence, asthma control, mortality, emergency department visits, and hospitalizations	EPA funded Pediatric Environmental Intervention project that significantly reduces missed school days, urgent care visits, oral corticosteroid use, and improved the quality of life	ALA MN sponsored summer camp experiences for over 200 children with asthma each year at Camp Super kids and Camp Super tots	Controlling Asthma in American Cities Project (CAACP) undertakes several initiatives including education in EDs, development of child care curriculum, trainings with clinics and parent forums in Minneapolis and St. Paul	“Managing Asthma in MN Schools” developed by MDH and presented at more than 30 trainings to over 900 school personnel throughout MN
Number of regional coalitions in MN Asthma Coalition (MAC) expands to 9 with all staffed; MAC website created; membership reaches over 1,000	Work-related asthma advisory group, convened by MDH, prepares report with 11 recommendations	HCMC developed video “ED Asthma Education Program” in 3 languages for ED viewing with take-home asthma information packet at HCMC and Minneapolis Children’s	Healthy Learners Asthma Initiative (HLAI) program in Minneapolis and St. Paul public schools as part of CAACP and St. Francis Public Schools in collaboration with ALAMN and Metro MAC	Coaches Asthma Clipboard “Winning with Asthma” developed by MDH in collaboration with Utah Dept. of Health and MN Steps
Asthma Clearinghouse developed at ALAMN	17 communities and counties adopt smoke-free ordinances; statewide smoke-free bill is adopted	Video "Breathing a Word: Indian Stories of Asthma" developed with Indian youth, families, graduate learners and faculty in CUPES	ECHO asthma pieces produced in 6 languages and aired on programs directed especially at communities of color	Preparatory course for certified asthma educators (AE-C) exam offered twice a year for 5 years by ALAMN

Asthma mortality in older residents reviewed; middle and high school prevalence surveys administered by MDH	Advisory group developing action advisories for high outdoor air quality readings	MDH Asthma Website created with extensive self-management information and resource links	Day care curriculum is developed by CAACP with many providers trained throughout Minnesota by MAC	Minnesota has 108 AE-Cs, the most per capita of any state in the country
Beta-tested EPA/CDC software for linking air quality data with asthma morbidity data	Collaboration with MN OSHA on sprayed truck bed liners to reduce isocyanates exposure (known asthmagen)	Web-based and CD program developed for Head Start providers and parents	MDH presentation of basic asthma management to paraprofessionals at Annual Paraprofessional Conference	MDH presentation on asthma management to Dept. of Corrections health staff
“Breathing Space” (respiratory disease newsletter) started by MDH as vehicle to share asthma news	895 school personnel and others signed up to receive electronic notices of an Air Quality Alert	“Catching Our Breath” initiative in Washington Co. organized by public health agency	Asthma awareness walks held in non-metro communities and Minneapolis	Asthma rotation created for pharmacy students at University of MN