

Asthma in Iowa

Adult and Child Inpatient Hospitalizations from Asthma

Iowa State Inpatient Database (SID): 1995-2006

Iowa Department of Public Health
2008

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How Inpatient Data are Presented

In this report, asthma hospitalization rates and counts for the Iowa population and the differences between those rates and counts are presented by age, gender, race, county and year.

All data are taken from the Iowa State Inpatient Database (SID), which is described in more detail at the end of this report. The SID contains selected data elements for each inpatient discharged from non-Federal acute care Iowa hospitals. Long-term care mental health facilities are excluded. The SID does not include discharges of Iowans who are treated solely in out-of-state hospitals for their asthma, an estimated 4% to 8% of all hospitalizations. Counties near Omaha, Mayo Clinics in Rochester, Minnesota, Rock Island/Moline and Sioux Falls, South Dakota have rates of hospitalization that are underestimated. The SID and outpatient data sets also lack several basic demographic variables (income, education and ethnicity) and are missing data from the race field in about 20 percent of all admissions.

Another drawback to using the SID is that it contains few personal identifiers. Without personal identifiers, readmission of a person with asthma at either the same or a different hospital becomes hard to identify. As a result, estimating counts of people with asthma who were hospitalized, as opposed to counts of admissions for asthma, becomes difficult. Thus, those parts of the report describing hospitalizations are not measures of asthma prevalence but of overall inpatient services usage.

Between 1995 and 2006, the SID lists one *admitting* diagnosis and up to nine discharge diagnoses for each inpatient admission. Except where explicitly noted, all discharges counts and rates in this report are of discharges with a primary discharge diagnosis of asthma.

Why Asthma?

At the international, national and state levels asthma is recognized as a priority public health problem. Why?

- Asthma has doubled in prevalence since 1980. Nationally, nearly 20 million Americans now have asthma. Almost 200,000 Iowans have diagnosed asthma, including approximately 45,000 children. Twice that number of children may have undiagnosed asthma. It is one of the most common chronic conditions of childhood, one of the most common causes of activity limitations among children and youth and one of the most common causes of hospitalization in children less than 5 years of age. (Health, United States, 2007, Healthy People 2010)
- Asthma is expensive. The Asthma and Allergy Foundation of America (AAFA) estimates annual direct and indirect asthma costs at about \$900 per person, meaning asthma costs Iowans \$174,000,000 per year. About 30% (\$52 million) of these costs are attributable to pediatric asthma, and 40% of that \$52 million is attributable to direct health care costs to treat asthma in children. (AAFA, 2007)
- Poorly managed asthma is a leading cause of lost school days for children and lost work days for adults--and compose much of the indirect costs of asthma.

- The average child with asthma in the U.S. misses four days of school every year due to his/her asthma. The average parent misses two to three days of work every year due to their child's asthma. Almost 40% of parents of children with asthma miss a least one day of work each year due to their child's asthma. (Asthma in America, 2007)
- Nearly two-thirds (62%) of children with asthma are limited by their asthma in participating in organized sports, outdoor activities, having pets, sleeping through the night, doing things with their family, doing well in school and participating in school activities. (Children and Asthma in America, 2007)
- Asthma hospitalizations are considered 'ambulatory care-sensitive'. As much as 40% of inpatient hospitalizations for asthma as well as a sizeable proportion of emergency room visits for asthma could be avoided with proper self and medical management in the physician's office setting. (Flores, 2003; Healthy Iowans 2010)
- Disparities exist in asthma prevalence and care. Minority children and children of low socioeconomic status are at increased risk of having asthma. National data show that children of low socioeconomic status with asthma are more likely to visit hospital inpatient and emergency departments than are children with asthma of higher socioeconomic status. (Healthy People 2010)
- For these reasons, a number of national and state plans have set goals to reduce asthma related-hospitalizations in children and youth. (Iowa Asthma Control Program Work Plan, 2006-2008, Healthy Iowans 2010, Iowa Asthma Coalition Strategic Plan, Healthy People 2010. Please visit the Iowa Asthma Control Program or the Iowa Asthma Coalition web site for more details. Web site addresses are given at the end of this report.)

Discussion of Inpatient Hospitalizations from Asthma, Asthma Prevalence and Asthma-Related Deaths in Iowa

Reports and factsheets detailing asthma prevalence and deaths from asthma in Iowa have been published and are posted on the Iowa Asthma Control Program web site (<http://www.idph.state.ia.us/hpcdp/asthma.asp>). Comparison of the findings from these publications, the current report and other national reports reveals:

- Unlike the decline seen in overall hospitalization rates from asthma in Iowa since 1999 (rates dropped from 9.5/10,000 in 2000 to 7.9/10,000 in 2006), overall current asthma *prevalence* rates in Iowa appear to have remained steady (Iowa rate ranged from 6.3% to 7.2% between 1999 and 2007).
- National data from the Behavioral Risk Factor Surveillance System (BRFSS) indicate that national current asthma prevalence rates continued to increase slightly between 2000 and 2006, rising from 7.3% in 2000 to 8.5% in 2006. (In contrast, National Health Interview Survey data show national asthma prevalence rates to have held steady between 2001 and 2004 (rates ranged from 6.9% to 7.3%). Between 2000 and 2006, BRFSS-derived Iowa current asthma prevalence rates consistently remained below national rates. (Iowa rates ranged from 6.4% to 7.2%.)
- Comparisons of Iowa and national hospitalization rates from asthma using the same data set are not possible. However, national rates from the National Hospital Discharge Survey (NHDS) are much higher than Iowa rates of hospitalization from asthma derived from the State Inpatient Database. Between 2000 and 2004, NHDS age-adjusted hospitalization rates from asthma ranged from 16.4/10,000 to 19.9/10,000 with no clear trend upward or downward. During this same time, Iowa State Inpatient Data show Iowa age-adjusted inpatient hospitalization rates from asthma varied from 10.1/10,000 to 7.9/10,000, with rates generally trending downward.
- Overall death rates from asthma have steadily declined both in Iowa and nationwide since the mid-1990s, when rates peaked at 2.4/100,000 in Iowa and 2.2/100,000 population nationwide. In 2005, Iowa age-adjusted rates of hospitalizations from asthma was 1.2/100,000 while the national rate was 1.3/100,000 population. In 2006, there were 35 deaths and 2,084 hospitalizations from asthma in Iowa.

Looking at state prevalence and hospitalization rates by sex, race and age:

- As for overall the rate of current asthma prevalence, the overall rate of hospitalization from asthma is higher for females than for males. However, as for prevalence rates, rates of hospitalization from asthma are higher for boys than girls but lower for men than for women. For all ages of men and women (those 18 years of age and older), prevalence and hospitalization rates for females exceed those of males.
- As for overall the rate of current asthma prevalence, the overall rate of hospitalization from asthma is higher for African-Americans than for Caucasians. However, as for prevalence rates, rates of hospitalization from asthma are higher for African-American boys than girls and lower for African-American men than for African-American women.

Summary of Findings: Inpatient Hospitalizations from Asthma in Iowa and Iowa Counties

- Hospitalization rates from asthma (asthma was the primary discharge diagnosis) trended downward for all age groups between 1995 and 2006 and declined the most for children and youth. The latter had their rates of hospitalization from asthma cut in half during those 12 years. (All rates and counts in this report are of discharges from asthma unless explicitly noted otherwise.)
- Asthma was the 41st leading cause of hospitalization in Iowa in 2006.
- About one percent of hospitalizations listed asthma as the primary discharge diagnosis while five percent of discharges in Iowa listed asthma as a primary or as secondary diagnosis.
- Asthma was among the top five leading causes of hospitalization for Iowans 1-4, 5-9 and 10-14 years of age in 2006. Among children and youth, exclusive of newborn admissions, asthma accounted for 3%-4% of primary discharge diagnoses while asthma was a primary or secondary diagnosis for 8%-9% of all inpatient discharges among Iowans 1-17 years of age.
- Overall, hospitalization rates from asthma in Iowa were higher among females than males, but rates varied greatly by gender, race and age. Overall rates for females were higher than males for all years 1995-2006 and two times that of males in 2006.
- Rates of hospitalization from asthma declined 41% for males and 29% for females between 1995 and 2006.
- Overall African-Americans in Iowa have a rate of hospitalization rate from asthma that is six times that of Caucasians. (Note: about 18% of discharges failed to identify race.)
- Overall, the elderly in Iowa currently have the highest age-specific rate of hospitalization from asthma with children and youth having the next highest rate.

Looking at sex/age/race specific state hospitalization rates:

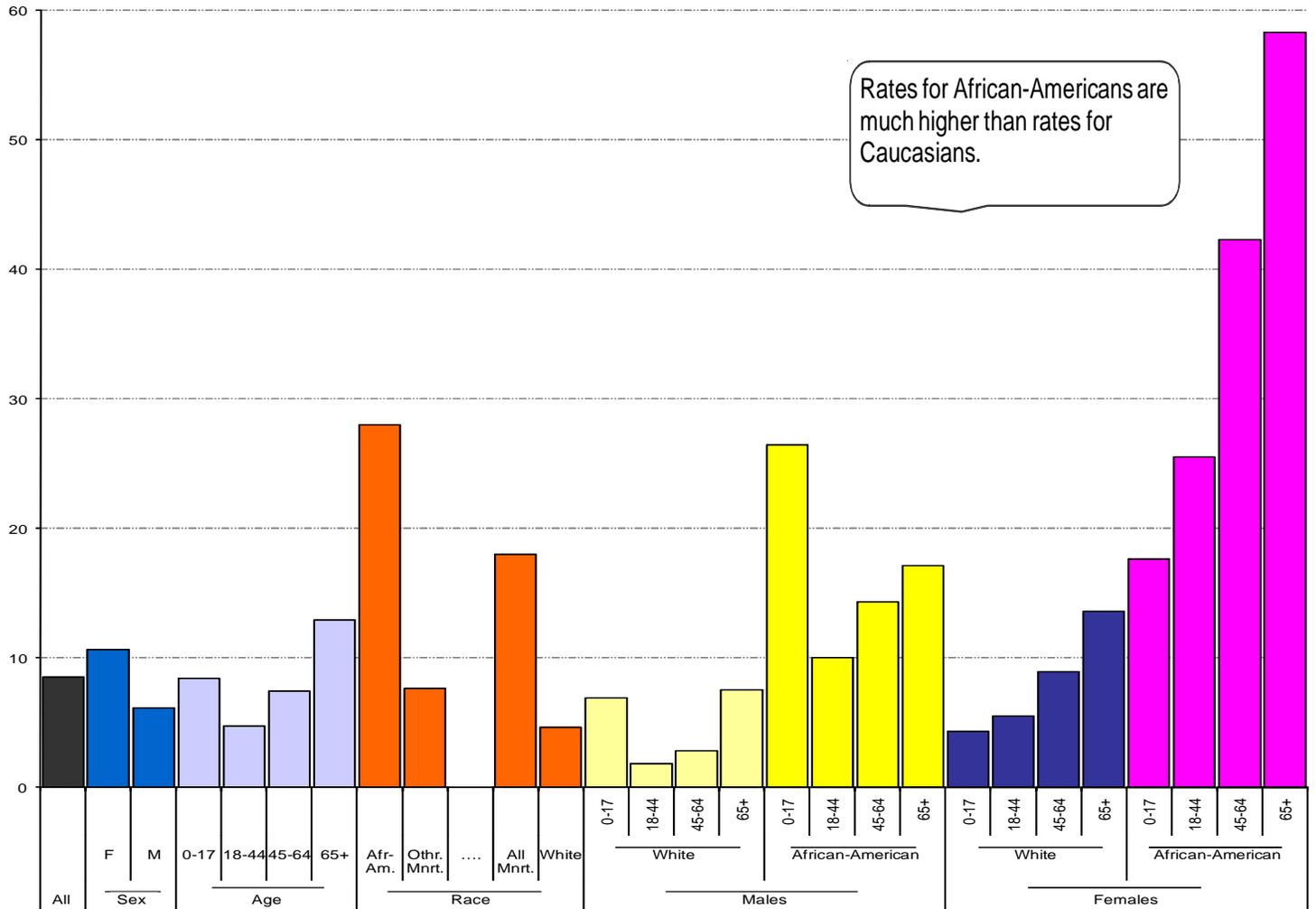
- For both Caucasian and African-American females, hospitalization rates increased steadily with age. The increase in rates with age was especially dramatic for African American females.
- African-American and Caucasian males broke this pattern, with rates being much higher among male children and youth than among middle-aged and young adults. As for females, rates among Caucasian and African-American men increased with age. Among men of both racial groups, rates were highest among the elderly and lowest in young adults.
- Rates of hospitalization among African-American male children and youth was very high compared to all other race/gender rates for children and youth.
- Asthma hospitalization rates for African-American females for all age groups exceeded the rates of all other race/gender groups except African-American male children.
- For all age groups, African-American males had higher rates of hospitalization from asthma than did Caucasian males. African-American males had rates 2-5 times that of same-age Caucasian males.

Looking at state hospitalization charges, counts of admissions and patient days:

- Total asthma inpatient charges approached \$19,000,000 in 2006, a 33% increase over total charges in 1995. During those 12 years, the average charge per hospitalization from asthma doubled rising from \$4,528 to \$8,949. The average number of days that patients with asthma were hospitalized per admission (average length of stay) remained steady at just more than 3 days throughout the 12 year period.
- Total number of inpatient days due to asthma dropped almost 40% between 1995 and 2006, declining from 11,1166 to 6,944.

Chart 1

Summary of Rates of Hospitalization from Asthma by Age, Sex, Race and Race/Sex/Age, Rate per 10,000 Iowa, 2004-2006.



All Adults	Females	Males	0-17	18-34	45-64	65+	African-Amer.	Other Minority	All Minority	Caucasian	0-17	18-34	45-64	65+	0-17	18-34	45-64	65+	0-17	18-34	45-64	65+				
8.5	10.6	6.1	8.4	4.7	7.4	12.9	28.0	7.6	18.0	4.6	6.9	1.8	2.8	7.5	26.4	10.0	14.3	17.1	4.3	5.5	8.9	13.6	17.6	25.5	42.3	58.3

Average Annual Rate of Hospitalization from asthma per 10,000 population, Iowa, 2004-2006 (All rates are age-adjusted except age-specific and age/race specific rates.)

2,221	1,427	794	596	511	552	562	178	16	194	1635	234	91	100	132	43	18	9	3	140	274	323	341	27	39	25	14
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Average Annual Count of Hospitalizations from asthma, 2004-2006 (Race is missing for 393 (18%) of all discharges.)

Looking at county-level hospitalization rates from asthma:

- Twenty counties have hospitalization rates that may indicate further examination of residents care and management is warranted.

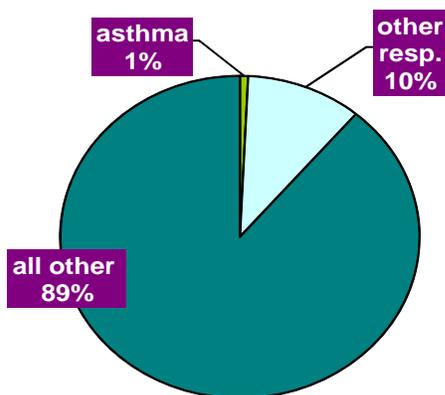
Those counties are:

Adair, Adams, Black Hawk, Calhoun, Des Moines, Emmet, Floyd, Hamilton, Hardin, Jefferson, Lee, Marion, Marshall, Mills, Monroe, Montgomery, Page, Pocahontas, Union and Webster.

(Note: Rates of hospitalizations are understated for counties that border neighboring states with nearby regional medical centers, since the Iowa State Inpatient Database does not currently include hospitalizations of Iowa residents discharged from out-of-state hospitals. An estimated 4%-7% of Iowa resident discharges each year are estimated to be from hospitals outside the state.)

Chart 2

Percent Distribution of All Inpatient Discharges by Primary Diagnosis: Asthma and Other Diagnoses, 2004-06, Iowa Residents



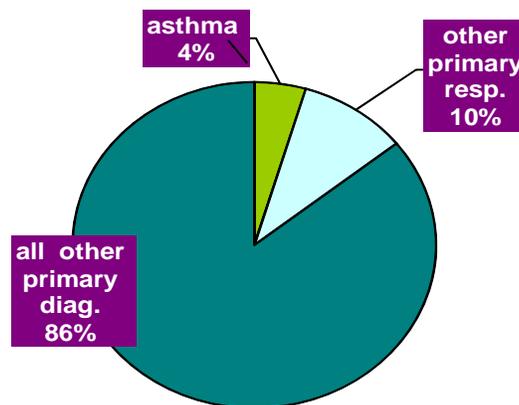
Average annual count/percent of hospitalizations by primary diagnosis, Iowa residents, 2004-06

Primary discharge diag.	count	% of discharges
asthma	2,221	1%
other respiratory	31,714	10%
all other	269,435	89%
total	303,371	100%

Note: Data exclude newborns.

Chart 3

Percent Distribution of Asthma-Related Discharges (where Asthma was a Primary or a Secondary Diagnosis) and Other Primary Discharge Diagnosis, 2004-06, Iowa Residents



Average annual count and percent of hospitalizations asthma as a primary or secondary diagnosis Iowa residents, 2004-06

Discharge diagnosis	count	%
asthma (primary or secondary)	13,843	5%
other primary respiratory	29,523	10%
all other primary diagnosis	260,005	86%
total	303,371	100%

Overall, asthma accounted for 1% of all primary discharge diagnoses and was a primary or a secondary diagnosis for 5% of all discharges.

Asthma was the primary discharge diagnosis for 3% of all discharges for 0-4 year olds, and for 4% of all 5-17 year olds. For older populations, who accounted for a greater proportion of discharges overall, asthma accounted for about 1% of all primary discharge diagnoses.

Asthma was the primary or a secondary diagnosis for 9% of all discharges of 0-4 year olds, and 8% of all 5-17 year olds. Asthma was a primary or secondary diagnosis for 5% of all 18-44 year olds, 7% of all 45-64 year olds, and 3% of all Iowans 65 years and older.

(See Table 2 at end of this report for more details about the ranking of asthma among leading causes of hospitalizations in Iowa. Counts of total discharges above and in Table 1 exclude newborns since newborns represent a unique class of admissions and skew counts for children, accounting for about 70% of all discharges of Iowans 0-17 years of age. If newborns were included, total average annual county of discharges during 2004-06 would be 340,229. Newborns excluded had Clinical Classification Software code 218 or ICD9 code V3-V39.)

Table 1
 By Age, Average Annual Percent Distribution of Inpatient Discharges by Diagnosis: Asthma Primary and Asthma Primary or Secondary Diagnosis
 Iowa, 2004-2006.

Age	Discharge Diagnosis	Primary Diagnosis (Dx)		Primary or Secondary Dx		Primary Diagnosis rate/10,000
		count	%	count	%	
0-4 years						
	asthma	308	3%	790	9%	16.2
	other respiratory diagnosis	3,028	34%		33%	159.1
	all other diagnoses	5,556	62%		58%	291.9
	total	8,893	100%		100%	467.3
5-17 years						
	asthma	288	4%	748	8%	5.5
	other respiratory diagnosis	769	11%			14.8
	all other diagnoses	6,093	85%			117.1
	total	7,151	100%		100%	137.5
18-44 years						
	asthma	510	1%	3,342	5%	4.7
	other respiratory diagnosis	2,051	3%		2%	19.1
	all other diagnoses	69,690	96%		93%	647.3
	total	72,252	100%		100%	671.1
45 - 64 years						
	asthma	552	1%	3,800	7%	7.4
	other respiratory diagnosis	5,684	9%		7%	76.3
	all other diagnoses	58,569	90%		86%	785.9
	total	64,805	100%		100%	869.5
65+ years						
	asthma	561	<1%	5,163	3%	12.9
	other respiratory diagnosis	20,182	13%		13%	464.2
	all other diagnoses	129,526	86%		84%	2,979.1
	total	150,270	100%		100%	3,456.2
All ages (unadjusted rate)		303,371		13,843		1,022.5

Data exclude newborns. Number of discharges for newborns = 36,859.

Chart 4

Percent Distribution of All Inpatient Charges by Primary Diagnosis: Asthma and Other Diagnoses, 2004-06, Iowa Residents

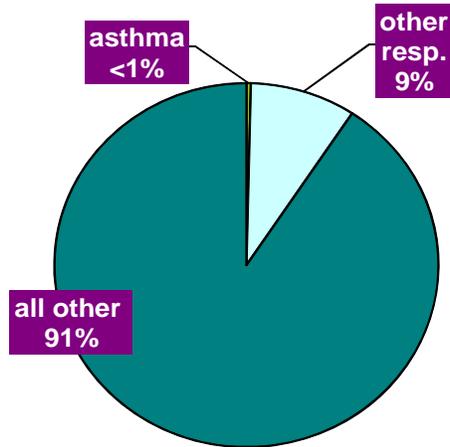
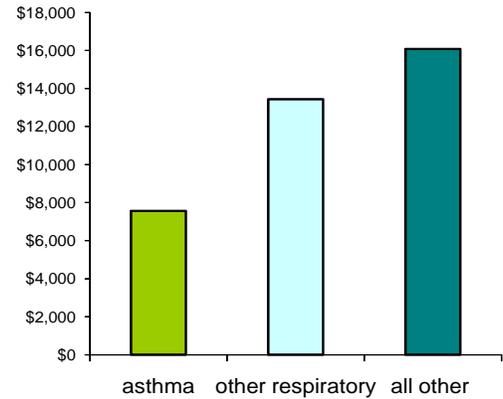


Chart 5

Average Annual Charge per Inpatient Stay, by Primary Discharge Diagnosis, Asthma and Other Diagnoses, 2004-06, Iowa Residents



Average annual *total* charges and average charge per hospital stay, Iowa residents, 2004-06

primary diagnosis	charge per stay	total charges
asthma	\$7,560	\$17,450,000
other respiratory	\$13,429	\$425,886,000
all other	\$16,077	\$4,331,877,000
total	\$15,740	\$4,775,621,000

Data exclude newborns.

Number of discharges for newborns = 36,859/year.

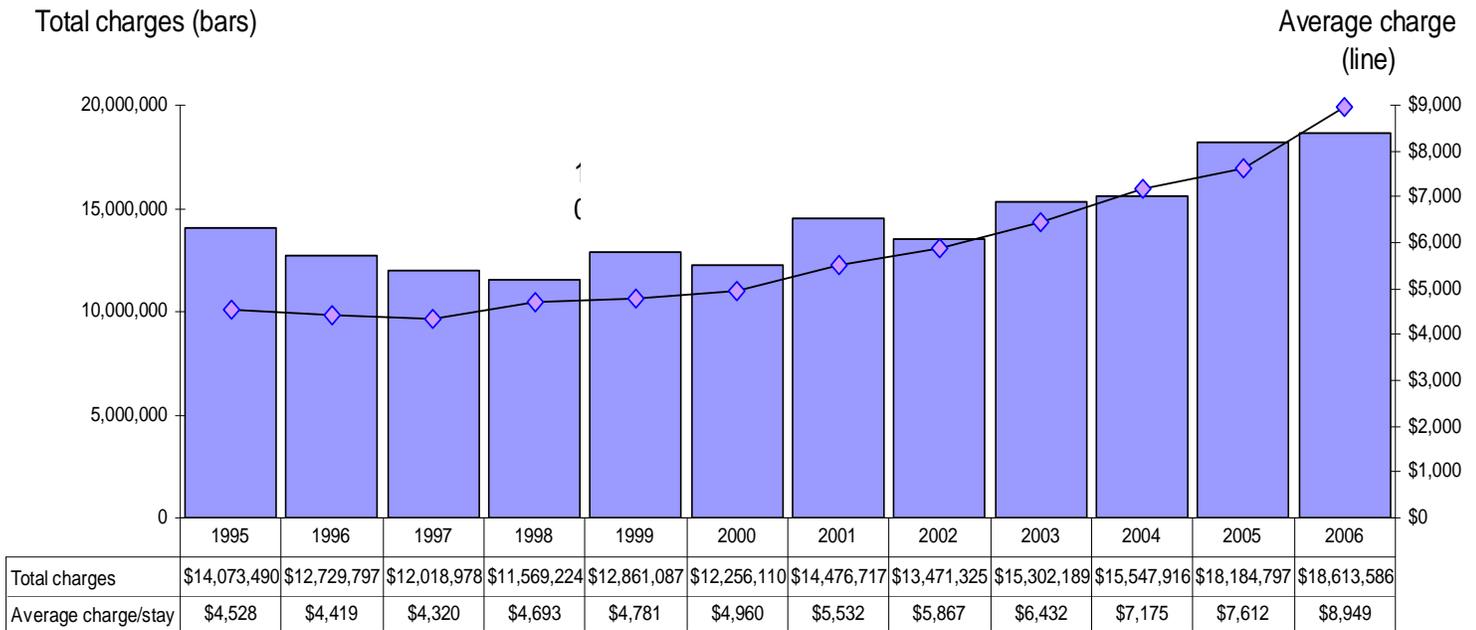
Total inpatient charges for newborns excluded= \$225,796,000

Overall, discharges for which asthma was the primary discharge diagnosis accounted for 1% of all inpatient charges (2004-06 average charge).

Between 2004-06, the average annual charge per discharge from asthma (primary diagnosis was asthma) was \$7,600. This average charge for a hospitalization from asthma was only 56% of the average charge (\$13,400) for a hospitalization from other respiratory conditions and less than half of the average charge (\$16,100) for non-respiratory discharges.

Chart 6

Average Annual Charge per Inpatient Stay for Asthma, and Total Charges for All Asthma Stays, Stays with Asthma as the Primary Diagnosis, Iowa Residents
Iowa Residents, 1995-2006.



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total # of inpatient days	11,166	9,577	8,931	8,024	8,447	7,455	8,229	7,356	7,560	6,984	7,712	6,944
Aver. # days/stay	3.6	3.3	3.2	3.3	3.1	3.0	3.1	3.2	3.2	3.2	3.2	3.3
Count of discharges	3,113	2,884	2,782	2,468	2,691	2,472	2,619	2,297	2,382	2,173	2,406	2,084

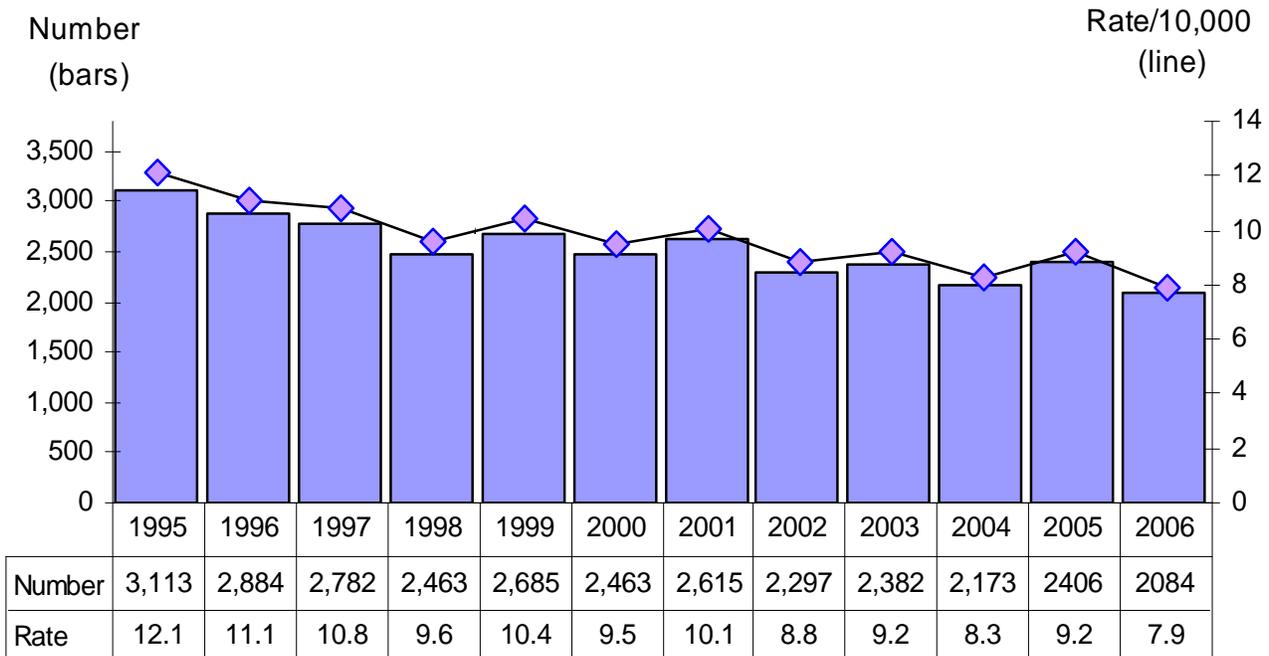
In 2006 the average inpatient charge for a patient with asthma as the primary diagnosis was \$8,950, more than double the average charge of \$4,500 in 1995.

Inpatient charges for discharges for which asthma was the primary diagnosis totaled \$18,600,000 in 2006. Total charges for all discharges for which asthma was the primary discharge diagnosis increased by about one-third between 1995 and 2006.

The total count of discharges from asthma (asthma was the primary diagnosis) dropped 21% between 1995 and 2006, falling from 3,113 to 2,084. The average length of stay remained steady during the 12 years shown, and stood at 3.3 days per stay in 2006.

Chart 7

Number and Age-Adjusted Rate of Hospitalization from Asthma
Iowa Residents, 1995-2006.

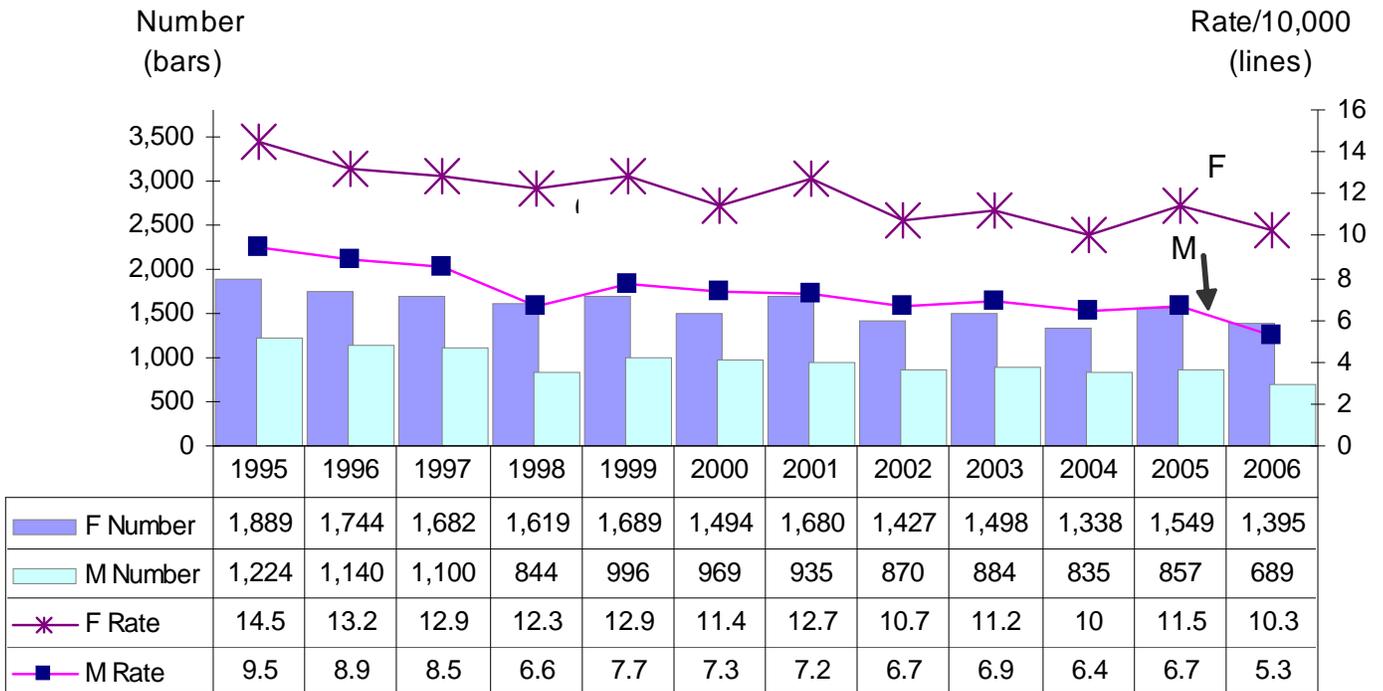


NOTE: Hospitalizations were counted as ‘from asthma’ if they were of Iowa residents admitted to an Iowa hospital and the primary discharge diagnosis was asthma (ICD-9 code 49300-49399). (Also see Table 1.)

Between 1995 and 2006, the overall rate of inpatient hospitalization from asthma in Iowa declined by 35% from an average annual age-adjusted rate 12.1/10,000 (1995) to 7.9/10,000. The average annual *number* of hospitalizations from asthma declined 33% from 3,113 to 2,084 between 1995 and 2006. A discharge *from asthma* means asthma was primary discharge diagnosis.

Chart 8

By Sex
 Number and Age-Adjusted Rate of Hospitalization from Asthma
 Iowa Residents, 1995-2006.



In Iowa for both males and females between 1995 and 2006, the frequency and the rate of inpatient hospitalizations from asthma steadily declined.

For males the rate of hospitalization from asthma declined by 41% from an average annual age-adjusted rate of 9.5/10,000 (1995) to 5.3/10,000 (2006). During this time, the average annual number of hospitalizations from asthma among males declined 44% dropping from 1,224 to 689.

For females the rate of hospitalization from asthma declined by 29% from an average annual age-adjusted rate of 13.5/10,000 (1995-97) to 10.6 /10,000 (2004-06) while the average annual number of hospitalizations from asthma among females declined 26% dropping from 1,889 to 1,395.

While the overall gender-specific rate of hospitalization from asthma was between 35% and 50% higher in females than in males for each year 1995-2006, these higher rates of hospitalization for females do not hold true across all age/gender groups. (See later charts).

Chart 9

By Age
Number of Hospitalizations from Asthma
Iowa Residents, 1995-2006.

(females and males combined)

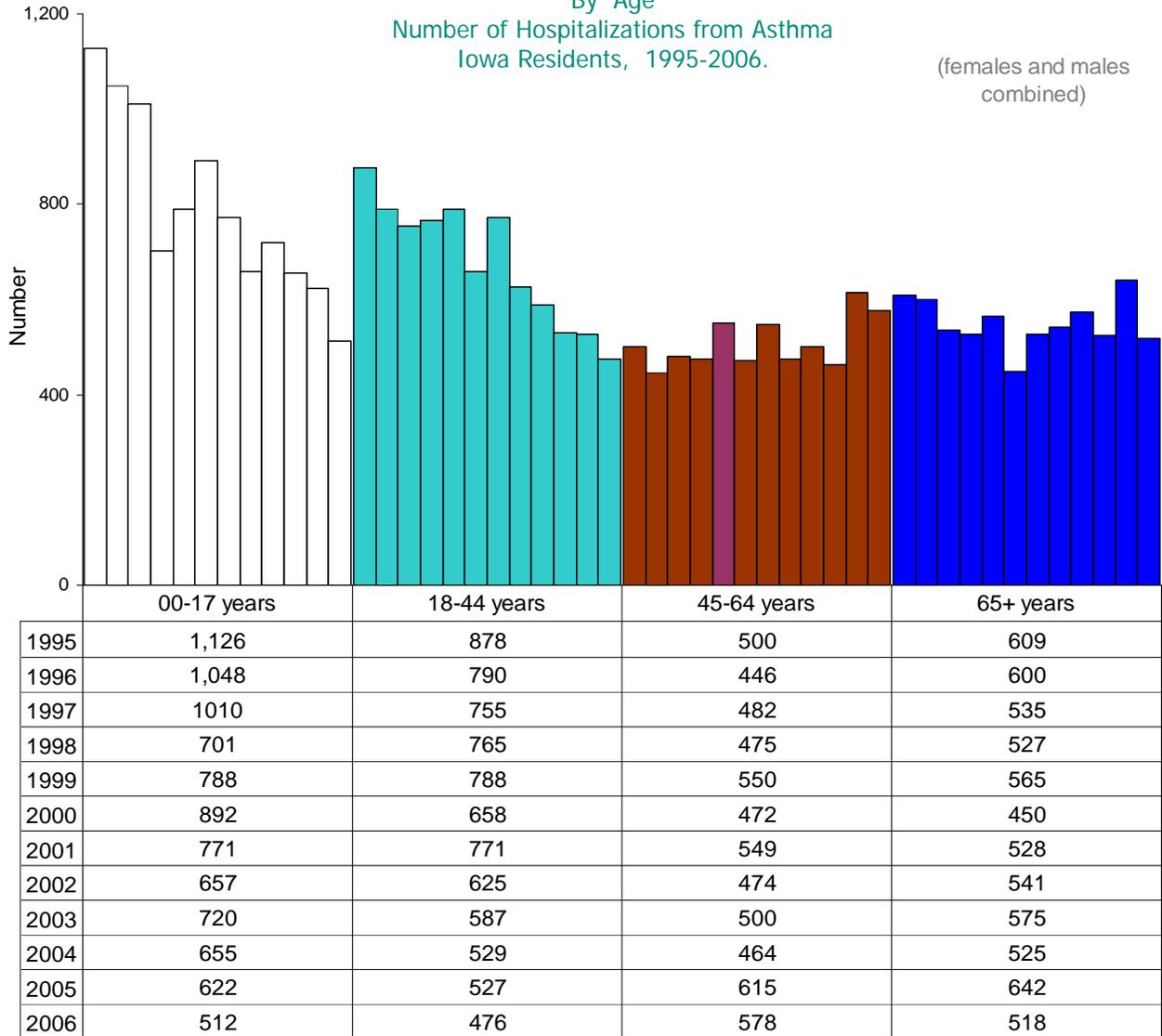


Chart 10

By Age, Rate and Number of Hospitalizations from Asthma
Iowa Residents, (rate/10,000) 1995-2006

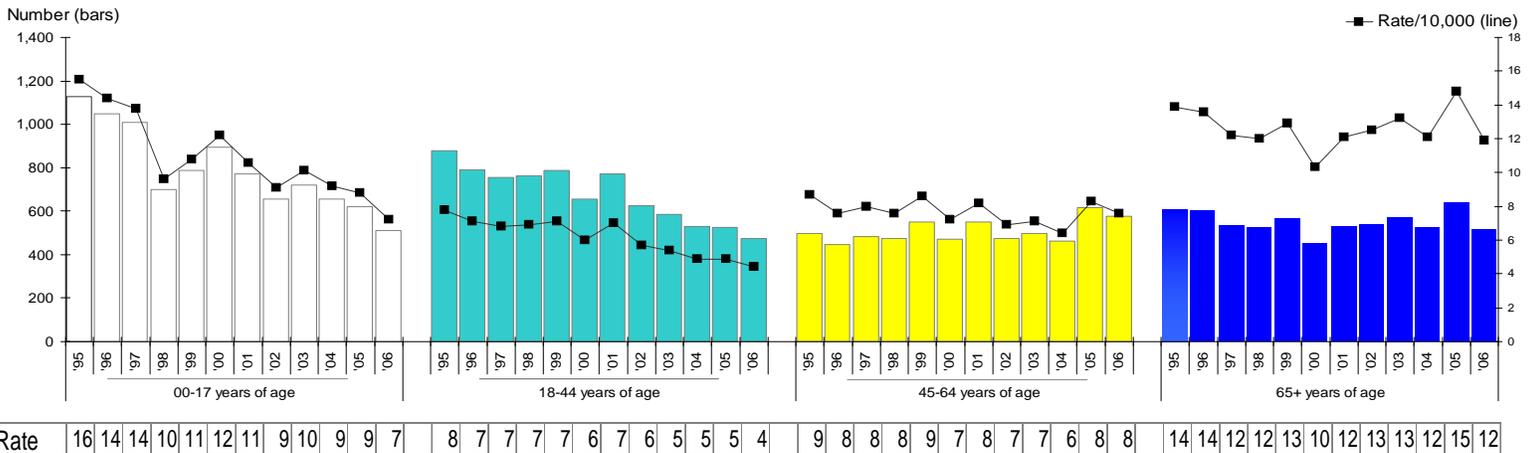
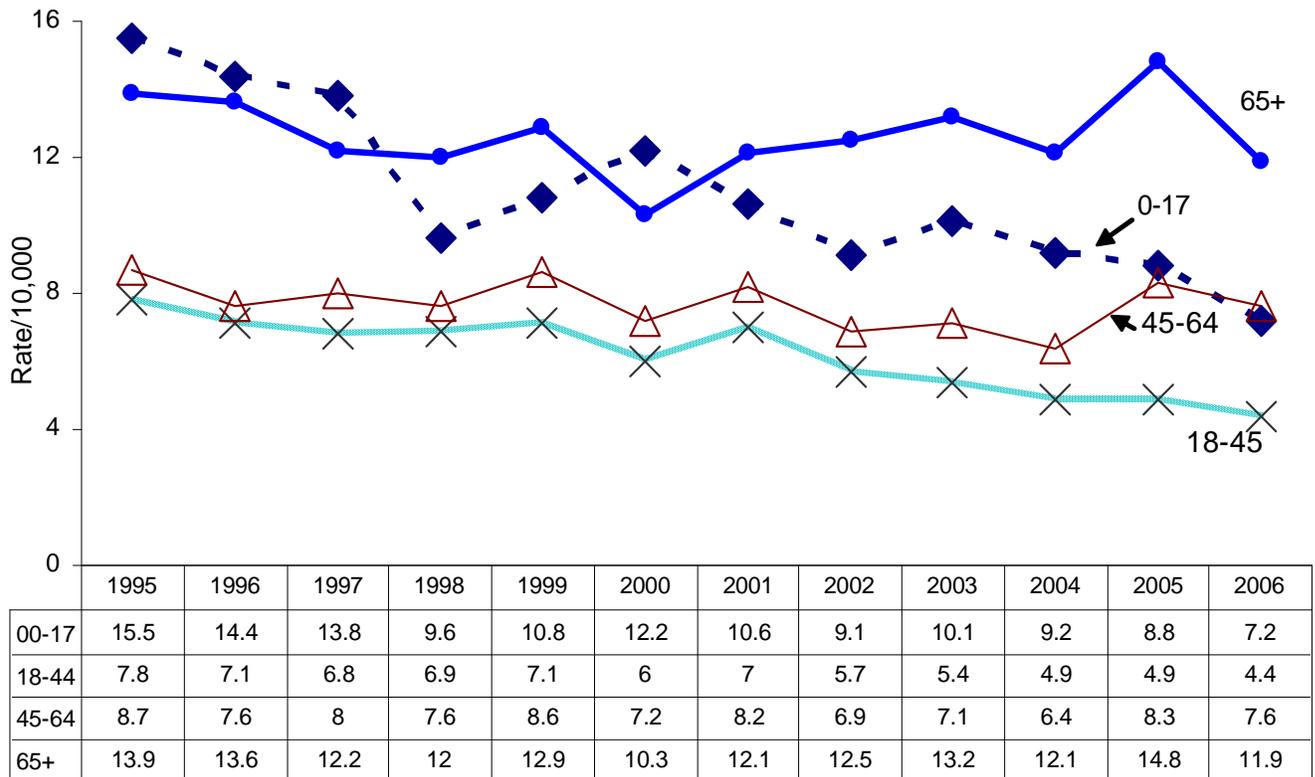


Chart 11
By Year and Age
Rate of Hospitalization from Asthma
Iowa Residents, 1995-2006.



Between 1995 and 2006, the frequency and rate of inpatient hospitalizations from asthma for Iowans less than 45 years of age declined significantly; while for Iowans age 45 and older, the decline in the frequency and rate of hospitalizations was modest or nonexistent.

For 0-17 year olds and 18-44 year olds, the rate of hospitalization from asthma declined about 52% from 12.6/10,000 for 0-17 years olds in 1995 to 5.9/10,000 in 2006. Among 18-44 year olds rates declined 43% from 11.7/10,000 to 6.7/10,000.

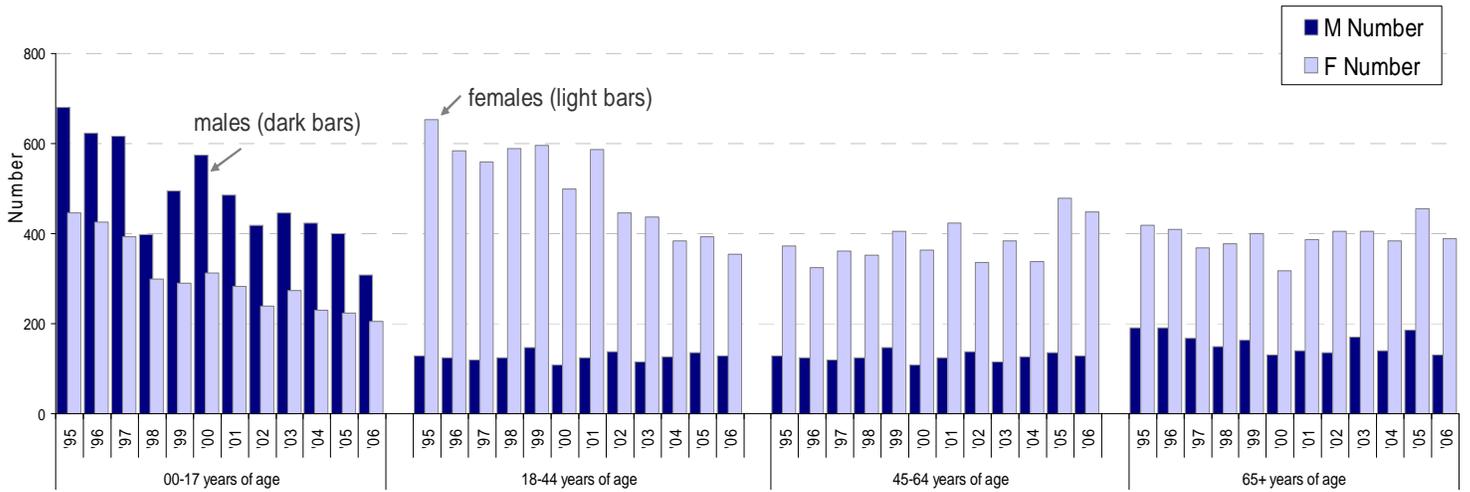
Among the middle-aged (45-64 years) there was no decline in the number of hospitalizations. Among the elderly there was no consistent trend of increase or decrease in the rate of hospitalization.

Hospitalization rates in the past few years have been highest in the elderly (11.9/10,000 in 2006) and lowest among those 18-44 years of age (4.4/10,000 in 2006).

A discharge is counted as *from asthma* if asthma was listed as the primary discharge diagnosis.

Chart 12

By Year, Sex and Age, Rate of Hospitalization from Asthma
Iowa Residents, 1995-2006.



		00-17 years of age											
		'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06
M		681	622	616	397	494	574	484	418	447	424	400	307
F		445	426	394	300	289	312	283	239	273	231	222	205

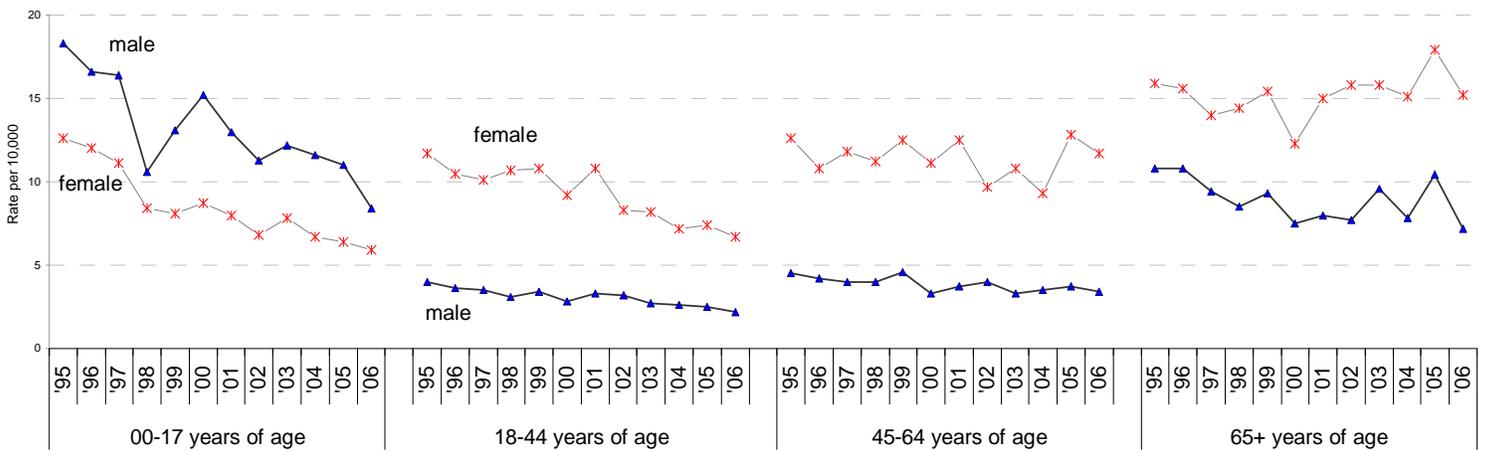
		18-44 years of age											
		'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06
M		128	123	120	123	146	108	125	138	116	126	136	129
F		653	585	558	589	595	500	586	447	436	384	392	353

		45-64 years of age											
		'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06
M		128	123	120	123	146	108	125	138	116	126	136	129
F		372	323	362	352	404	364	424	336	384	338	479	449

		65+ years of age											
		'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06
M		190	190	167	149	164	132	141	136	170	140	186	130
F		419	410	368	378	401	318	387	405	405	385	456	388

Chart 13

By Year, Sex and Age, Rate of Hospitalization from Asthma
Iowa Residents, 1995-2006.



		00-17 years of age											
		'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06
M Rate		18.3	16.6	16.4	10.6	13.1	15.2	13	11.3	12.2	11.6	11	8.4
F Rate		12.6	12	11.1	8.4	8.1	8.7	8	6.8	7.8	6.7	6.4	5.9

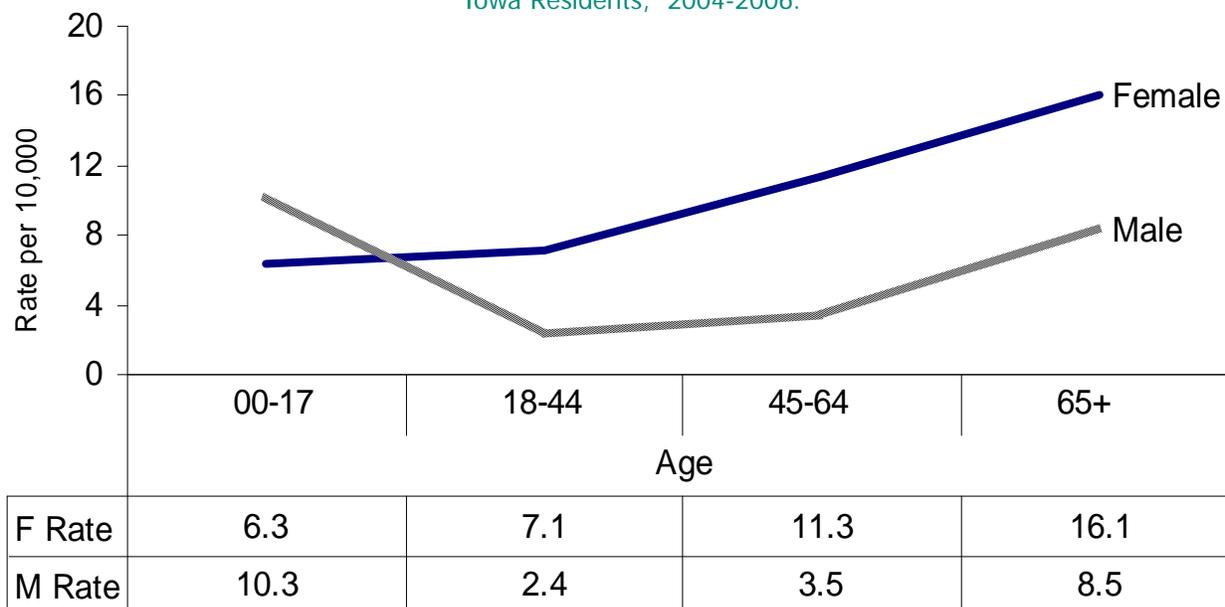
		18-44 years of age											
		'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06
M Rate		4	3.6	3.5	3.1	3.4	2.8	3.3	3.2	2.7	2.6	2.5	2.2
F Rate		11.7	10.5	10.1	10.7	10.8	9.2	10.8	8.3	8.2	7.2	7.4	6.7

		45-64 years of age											
		'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06
M Rate		4.5	4.2	4	4	4.6	3.3	3.7	4	3.3	3.5	3.7	3.4
F Rate		12.6	10.8	11.8	11.2	12.5	11.1	12.5	9.7	10.8	9.3	12.8	11.7

		65+ years of age											
		'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06
M Rate		10.8	10.8	9.4	8.5	9.3	7.5	8	7.7	9.6	7.8	10.4	7.2
F Rate		15.9	15.6	14	14.4	15.4	12.3	15	15.8	15.8	15.1	17.9	15.2

Chart 14

By Sex and Age, Average Annual Rate of Hospitalization from Asthma per 10,000 Population Iowa Residents, 2004-2006.



Between 1995 and 2006, the overall decline in the frequency of inpatient hospitalizations from asthma for both males and females was primarily attributable to significant declines in the number of hospitalizations among those 0-17 and 18-44 years of age.

For women and men ages 45 and older, frequencies either increased slightly (women 44 and older), remained stable (men 45-64 years of age) or declined more modestly (men 65 years and older).

Except among children and youth, the average annual rate of inpatient admissions from asthma among females exceeded that rate for men across all years.

Among females, children and youth 17 years and younger account for fewer cases (15% of all 1,395 admissions) than any other age group, while among male children and youth account for almost half of all male asthma admissions (44% of all 689 admissions) in 2004-06.

Chart 15

By Year, Sex and Age, Number of Hospitalizations from Asthma
Iowa Residents, 1995-2006.

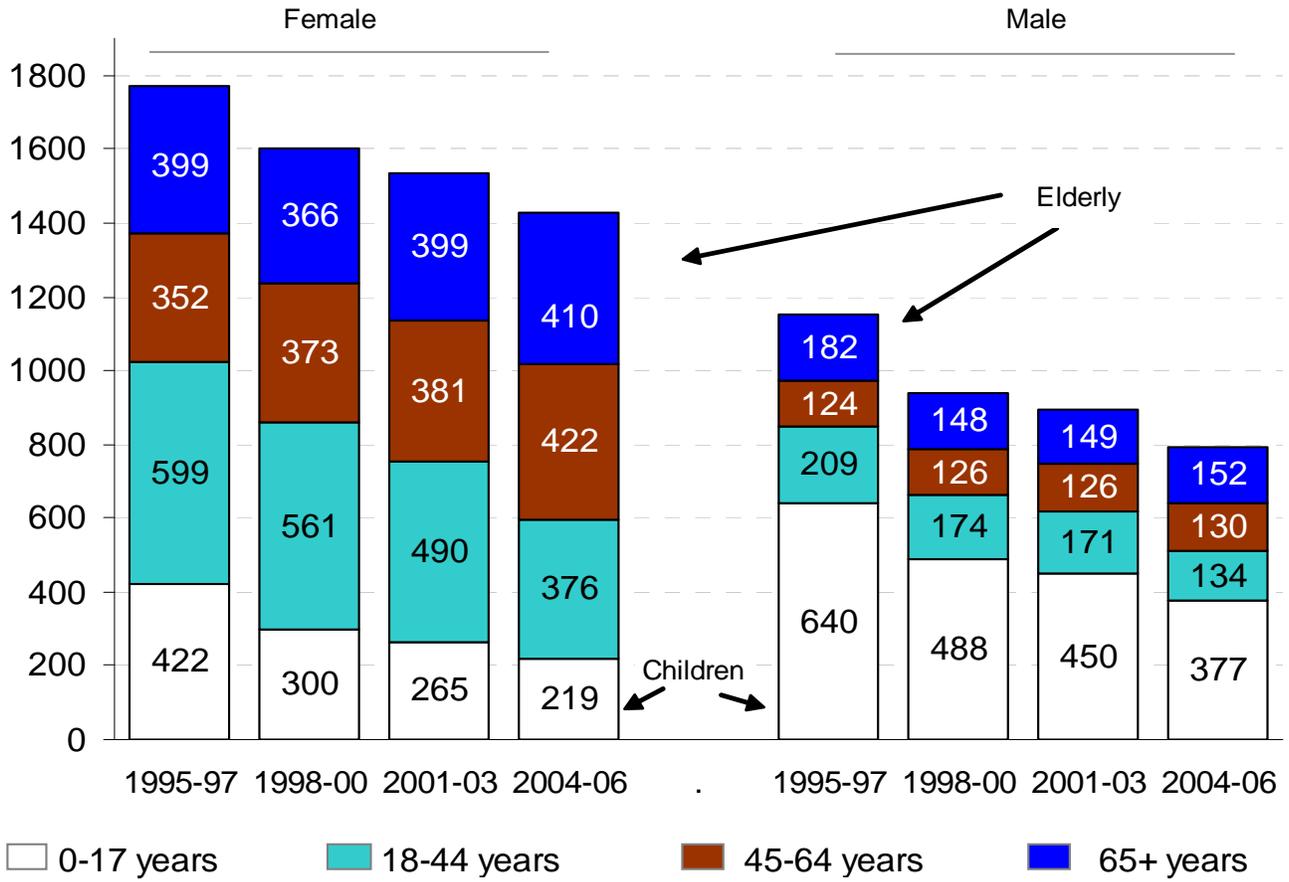
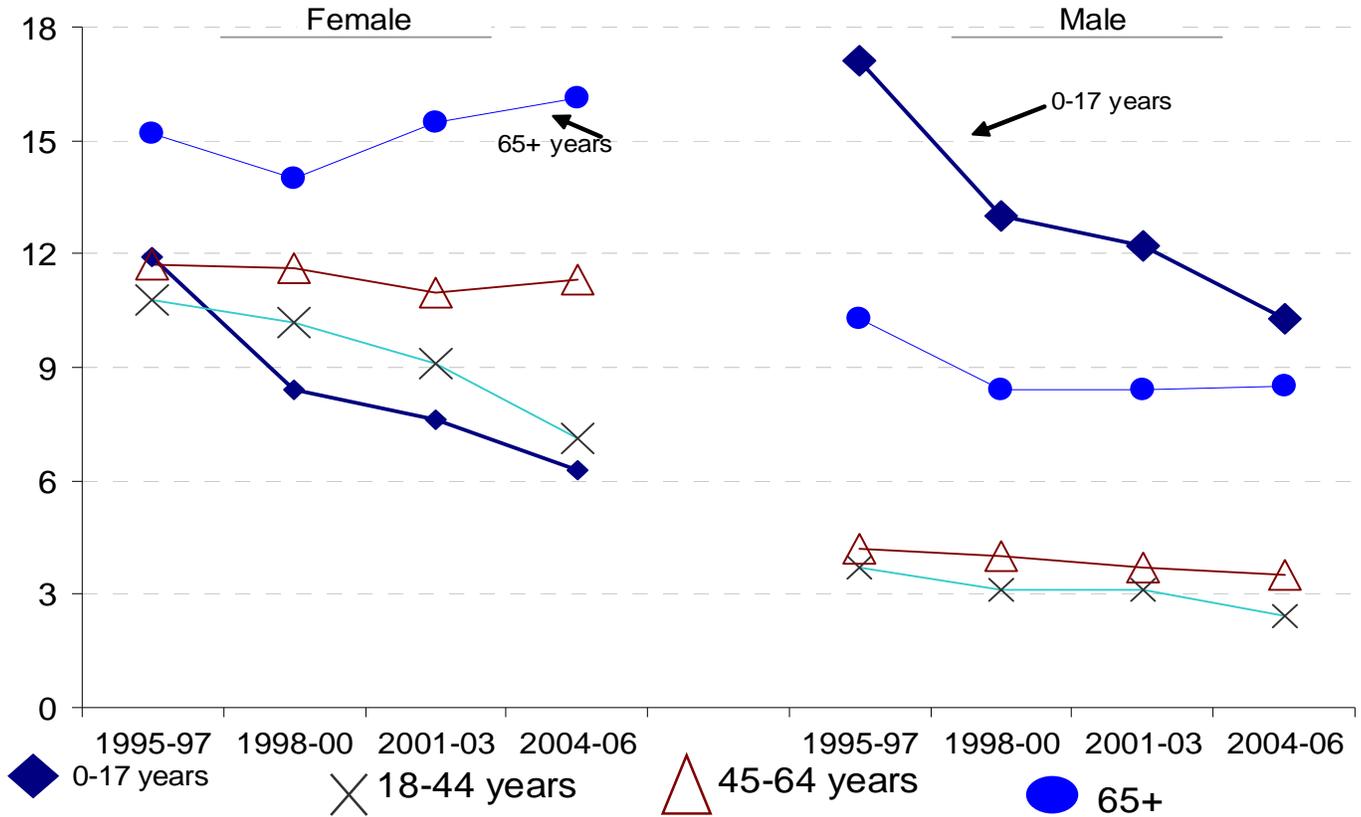


Chart 16

By Year, Sex and Age, Average Annual Rate of Hospitalization from Asthma per 10,000 Population Iowa Residents, 1995--2006.

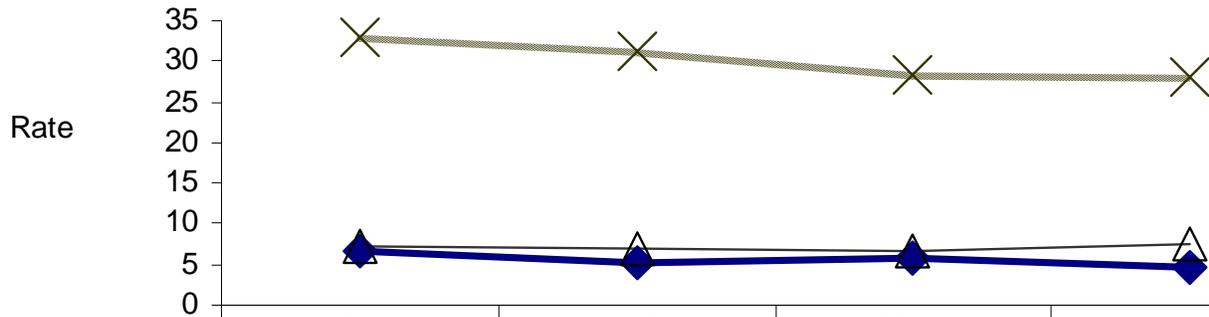


Age	Female				Male			
	1995-97	1998-00	2001-03	2004-06	1995-97	1998-00	2001-03	2004-06
00_17	11.9	8.4	7.6	6.3	17.1	13	12.2	10.3
18_44	10.8	10.2	9.1	7.1	3.7	3.1	3.1	2.4
45_64	11.7	11.6	11	11.3	4.2	4	3.7	3.5
65 plus	15.2	14	15.5	16.1	10.3	8.4	8.4	8.5

Between 1995-97 and 2004-06, declines in the rates of hospitalization from asthma were seen for all age/sex groups except for females 65 and older. The greatest decline in rates for both females and males was among children and youth and those 18-44 years of age. Females 65 and older now have the highest rate of hospitalization from asthma, followed by females 45-64 years of age and males 0-17 years of age.

Chart 17

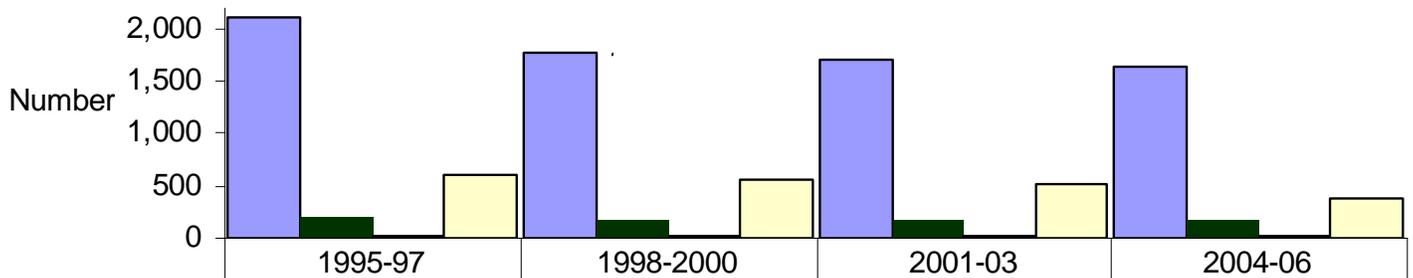
By Year and Race
Rate of Hospitalization from Asthma
Iowa Residents, 1995-2006.



	1995-97	1998-2000	2001-03	2004-06
◆ Caucasian	6.7	5.2	5.9	4.6
× African-Amer	32.9	31.2	28.4	28.0
△ Other Minor.	7.1	6.9	6.5	7.6

Chart 18

By Year and Race
Number of Hospitalizations from Asthma
Iowa Residents, 1995-2006.



	1995-97	1998-2000	2001-03	2004-06
■ Caucasian	2,120	1,772	1,714	1,635
■ African-Amer	192	189	188	178
■ Other Minor.	16	12	18	16
■ Unkn	598	571	513	393

Between 1995 and 2006, the rate of inpatient hospitalization from asthma for Caucasian Iowans declined 31% and for African-Americans 15%. For the group of Other Minorities, the rate of hospitalization failed to trend up or down.

While the rate of hospitalization from asthma decreased 15% for African-Americans between 1995-97 and 2004-06, their rates of hospitalization remained much higher than the rate of hospitalization from asthma of both Caucasians and Other Minorities. During 2004-06, the rate of 28/10,000 for African-Americans was 5 times that of 4.6/10,000 for Caucasians and more than 2.5 times the rate of 7.6/10,000 for Other Minorities.

For the four time periods shown, the race of the patient was unknown for between 18% and 22% of all hospitalizations from asthma.

Between 1995 and 2006, the frequency of inpatient hospitalizations from asthma for Caucasian Iowans declined 23% dropping from 2,120 during 1995-97 to 1,635 during 2004-06. For African-Americans, the hospitalization rate from asthma declined just 7% dropping from 192 between 1995-97 to 178 between 2004-06. For the group of Other Minorities, the frequency of hospitalization failed to trend up or down (and numbers were very small--only 12-18 hospitalizations per year (annualized over 3 years).

Among those discharges for which race was known, in 2004-06, 89% of discharges were of Caucasians, and 10% were of African-Americans.

Chart 19

For Females, by Year and Race
Rate of Hospitalization from Asthma
Iowa Residents, 1995-2006.

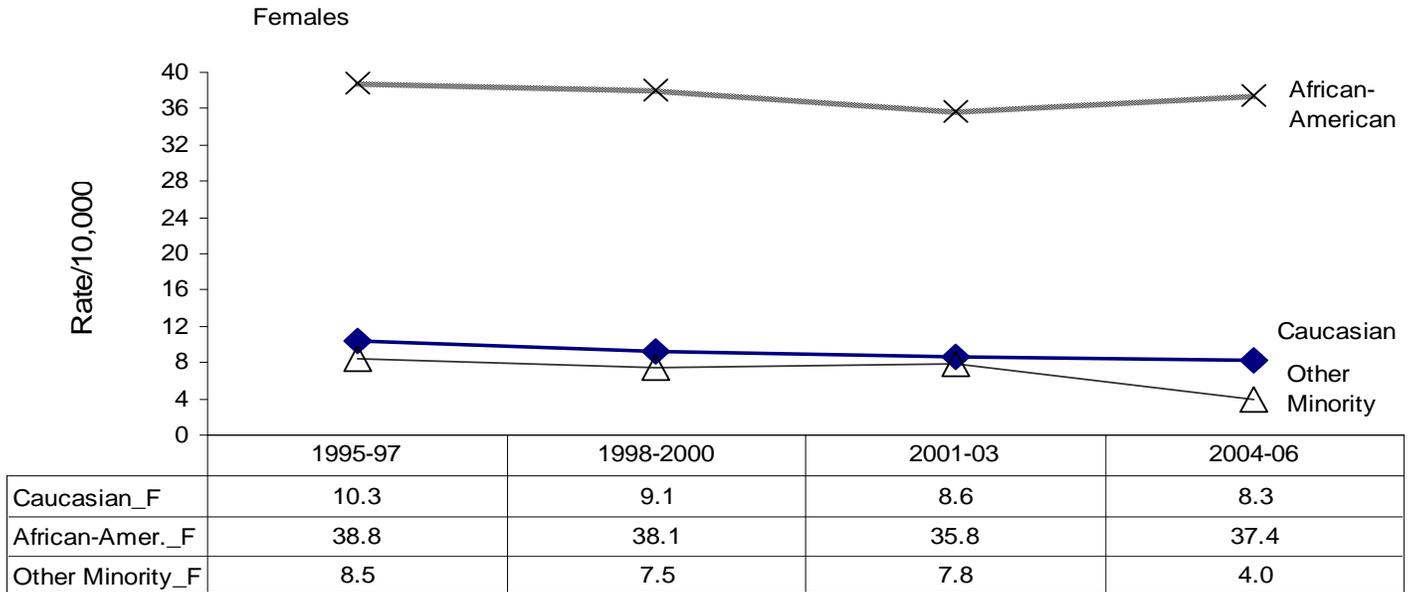
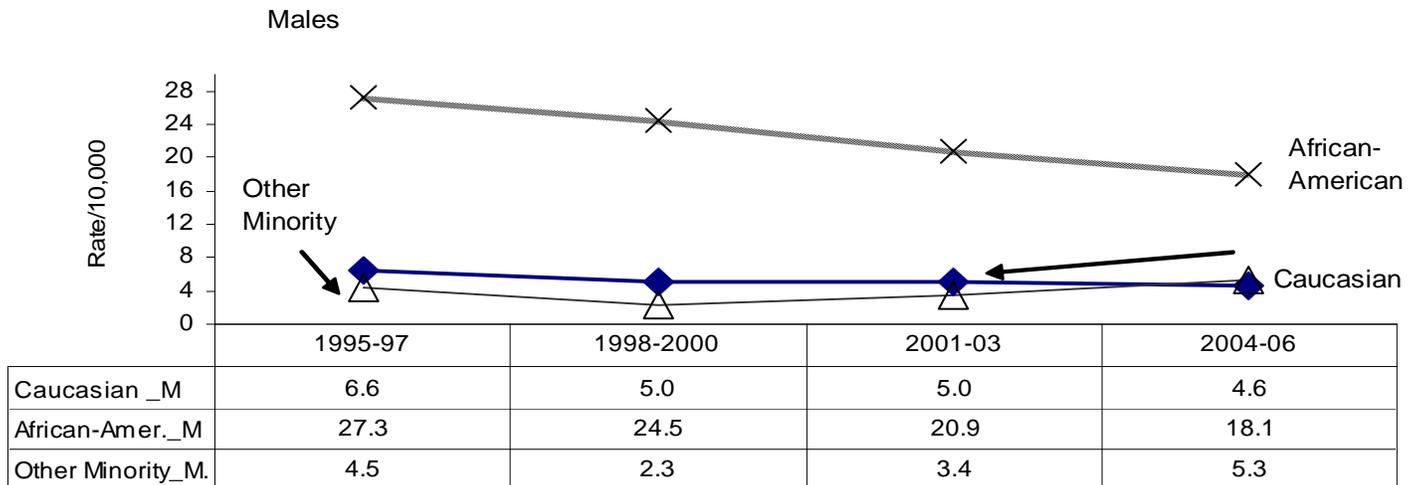


Chart 20

For Males, by Year and Race
Rate of Hospitalization from Asthma
Iowa Residents, 1995-2006.



Between 1995 and 2006, the rate of inpatient hospitalizations from asthma for Caucasian females declined 19% and for African-American females 4%. For the group of Other Minorities, the rate of hospitalization dropped by more than half (but the average annual count was only about 10 hospitalizations).

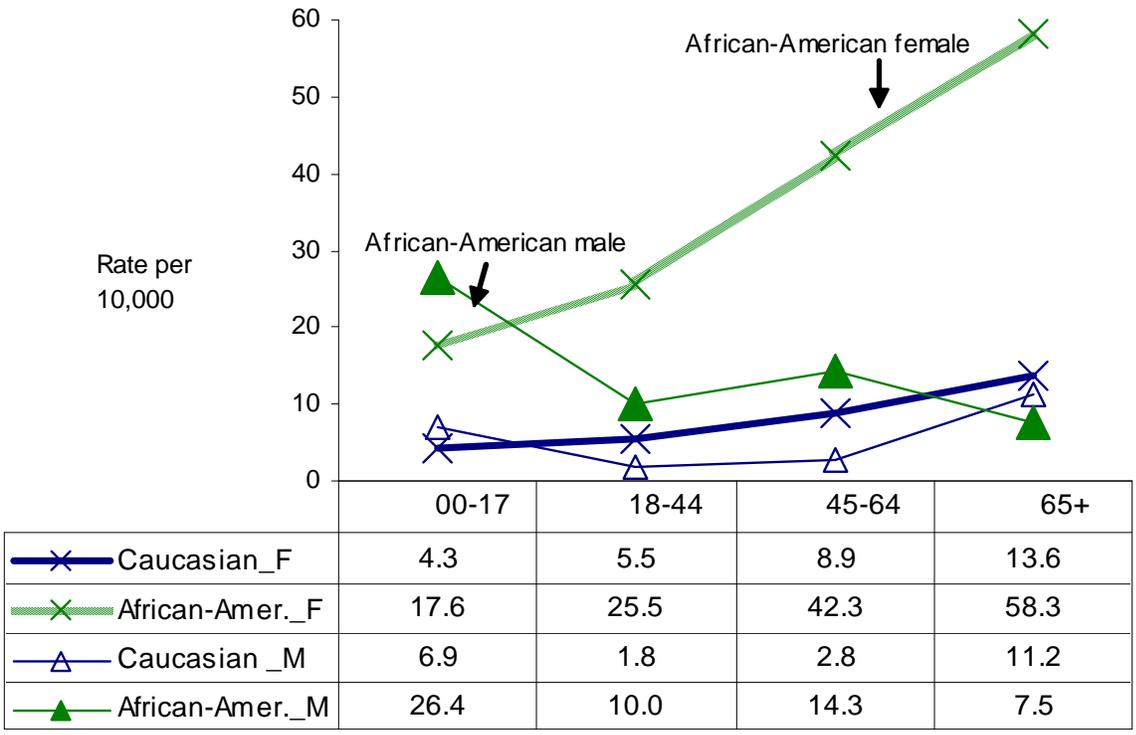
While rates decreased 7% for African-American females, this rate of decline was much less than for Caucasian females and the rate of hospitalization from asthma in African-American females was 3.5 times that of Caucasian females in 2004-06.

Between 1995 and 2006, the rate of inpatient hospitalization from asthma for Caucasian males declined 30% and for African-Americans males 34%. For the group of Other Minorities, the rate of hospitalization did not trend up or down.

While the rate decreased 34% for African-American males, this rate of hospitalization from asthma in African-American males was four times that of Caucasian males in 2004-06.

Chart 21

By Year, Race, Gender, and Age
 Rate of Hospitalization from Asthma
 Iowa Residents, 2004-06 Average Annual Rate per 10,000



African-American and Caucasian Males:

Among children and youth ages 17 years and younger, African-American males have rates higher than all other gender-race groups shown. Among children and youth, African-American males have rates of hospitalization from asthma 3-4 times that of Caucasian males (26.4/10,000 vs. 6.9/10,000) and 6 times that rate (4.3/10,000) of Caucasian females and 1.5 times that of African-American female children and youth (17.6/10,000).

Hospitalization rates from asthma among African-American males, as for Caucasian males, drop significantly during early adulthood and middle age vis-a-vis their rates during childhood. While African-American males have rates of hospitalization from asthma higher than all other gender-race groups in childhood, their rates are lower than all other race gender groups among those 65 years and older. Because of the precipitous upward climb in rates for African-American women as they age, rates in African-American males 65 years and older is only about one-eighth of the rate of African-American women ages 65 years and older (7.5/10,000 vs. 58.3/10,000).

Among Caucasian males, rates peak twice, during childhood (6.9/10,000) and old age (11.2/10,000), with rates among young adults (1.8/10,000) and middle-aged adults (2.8/10,000) being about 2-4 times lower than those of children and the elderly .

African-American and Caucasian Females:

Among children and youth, African-American females had hospitalization rates more than four times that of Caucasian females (17.5/10,000 vs. 4.3/10,000) and more than double that of Caucasian male children and youth. The rate of hospitalization in African-American male youth, higher than any other race/gender group was 1.5 times greater than the rate among female African-American children and youth.

Among both African-American and Caucasian females, rates increased with age with rates being about 3-fold greater in same-race women age 65 and older as they were among children and youth of the same race. For African-American women, this 3-fold increase meant that rates rose from 17.6/10,000 among children and youth to 58.3/10,000 among those 65 years of age and older. The average annual hospitalization rate from asthma among Caucasian women ages 65 and older was only 13.6/10,000 during 2004-06.

**Table 2, Leading Causes of Hospitalization
Ranked by Age and Count
Iowa, 2006**

Rank	<1 year		1-17		18-44		45-64		65-84		85+		All Ages	
1	Liveborn	39,968	Pneumonia (except by TB and sexually trans. disease)	1,176	Trauma to perineum and vulva	9,021	Coronary atherosclerosis	4,185	Rehabilitation care, fitting of prostheses, etc.	7,906	Pneumonia (except by TB and sexually trans. disease)	3,746	Liveborn	39,968
2	Acute bronchitis	872	Fluid and electrolyte disorders	645	Other complications of birth affecting mother	6,179	Osteoarthritis	4,123	Pneumonia (except by TB and sexually trans. disease)	6,735	Rehabilitation care, fitting of prostheses, etc.	3,368	Pneumonia (except by TB and sexually trans. disease)	15,628
3	Other perinatal conditions	655	Appendicitis and other appendiceal conditions	582	Previous C-section	4,630	Pneumonia (except by TB and sexually trans. disease)	2,518	Osteoarthritis	6,625	Congestive heart failure, non-hypertensive	3,255	Rehabilitation care, fitting of prostheses, etc.	13,753
4	Pneumonia (except by TB and sexually trans. disease)	569	Asthma	491	Other complications of pregnancy	3,551	Nonspecific chest pain	2,455	Coronary atherosclerosis	6,436	Fracture of neck of femur (hip)	1,847	Coronary atherosclerosis	11,770
5	Hemolytic jaundice/perinatal jaundice	364	Intestinal infection	395	Normal pregnancy and/or delivery	3,245	Acute myocardial infarction	2,300	Congestive heart failure, non-hypertensive	5,202	Cardiac dysrhythmias	1,355	Osteoarthritis	11,558
6	Fluid and electrolyte disorders	231	Acute bronchitis	322	Umbilical cord complication	2,326	Spondylosis, intervertebral disc disorders, back problems	1,980	Cardiac dysrhythmias	4,221	Acute cerebrovascular disease	1,348	Congestive heart failure, non-hypertensive	10,200
7	Intestinal infection	193	Epilepsy, convulsions	299	Fetal distress and abnormal forces of labor	2,107	Rehabilitation care, fitting of prostheses, etc.	1,931	Chronic Obstructive Pulmonary Disease	3,610	Urinary tract infections	1,288	Trauma to perineum and vulva	9,263
8	Digestive congenital anomalies	152	Skin and subcutaneous tissue infect'ns	295	Prolonged pregnancy	1,884	Cardiac dysrhythmias	1,728	Acute myocardial infarction	2,963	Acute myocardial infarction	1,140	Cardiac dysrhythmias	7,708
9	Short gestation, low birth weight, fetal growth retardation	152	Urinary tract infections	278	Hypertension complicating pregnancy, childbirth	1,689	Chronic Obstructive Pulmonary Disease	1,536	Acute cerebrovascular disease	2,656	Fluid and electrolyte disorders	1,138	Acute myocardial infarction	6,784
10	Respiratory distress syndrome	132	Maintenance chemo-therapy radiotherapy	268	Malposition, malpresentation	1,625	Skin and subcutaneous tissue infect'ns	1,532	Spondylosis, intervertebral disc disorders, back problems	2,481	Other aftercare	1,112	Other complications of birth affecting mother	6,437
11	Viral infections	129	Other complications of birth affecting mother	249	Early or threatened labor	1,624	Complication of device, implant or graft	1,502	Septicemia (except in labor)	2,478	Gastro-intestinal hemorrhage	962	Spondylosis, intervertebral disc disorders, back problems	6,095
12	Cardiac and circulatory congenital anomalies	125	Fracture of lower limb	247	Spondylosis, intervertebral disc disorders, back problems	1,167	Complications of surgical procedures or medical care	1,468	Complication of device, implant or graft	2,351	Septicemia (except in labor)	935	Chronic Obstructive Pulmonary Disease	6,062
13	Fever of unknown origin	125	Trauma to perineum and vulva	237	Biliary tract disease	1,147	Congestive heart failure, non-hypertensive	1,458	Fluid and electrolyte disorders	2,231	Other fractures	766	Nonspecific chest pain	5,769
14	Other upper respiratory infections	108	Noninfectious gastro-enteritis	205	Polyhydramnios and other problems of amniotic cavity	1,116	Diabetes mellitus with complications	1,241	Other aftercare	2,212	Coronary atherosclerosis	756	Fluid and electrolyte disorders	5,666
15	Septicemia (except in labor)	90	Poisoning by other medications and drugs	193	Skin and subcutaneous tissue infections	1,059	Septicemia (except in labor)	1,224	Nonspecific chest pain	2,072	Chronic Obstructive Pulmonary Disease	720	Acute cerebrovascular disease	5,241
27	Asthma 38													
34							Asthma 599							
35					Asthma 502									
41													Asthma 2,173	
61									Asthma 413					
64											Asthma 129			
83					COPD 154									
90			COPD 29											
All Discharges-HCUP.net		45,195 *			12,155	78,040		72,430		117,455		41,368		366,662
All Discharges-IDPH SID		43,065			11,439	73,773		67,376		109,695		39,724		345,072
% Iowa SID of national SID		95%			94%	95%		93%		93%		96%		94%

Using the clinical classification software coding scheme of the Agency for Healthcare Quality and Research (AHRQ) and that agency's online database, in 2006 for Iowa residents, asthma was found to be: the 27th leading cause of hospitalization for infants, the 4th leading cause for 1-17 year olds, the 35th leading cause for 18-44 year olds, the 34th leading cause for 45-64 years olds, the 61st leading cause for 65-84 year olds and the 64th leading cause of hospitalization for those Iowans 85 years of age and older.

When 1-17 years olds were further broken out, asthma ranked last the fifth leading cause of hospitalization for 1-4 years olds, the second leading cause for 5-9 year olds, the 4th leading cause for 10-15 year olds and the 23rd leading cause for 15-17 year olds.

Overall asthma was the 41st leading cause of hospitalization among Iowans in 2006.

Note:

Developed by the Agency for Healthcare Research and Quality (AHRQ), the Clinical Classifications Software (CCS) is the coding system used to categorizes inpatient discharges in Table 2. CCS is a tool for clustering patient diagnoses and procedures into a manageable number of clinically meaningful categories. CCS offers the ability to group conditions and procedures without having to sort through thousands of codes making it easier to quickly understand patterns of diagnoses so that health plans, policy makers, and researchers can analyze costs, utilization, and outcomes associated with particular illnesses and procedures.

CCS collapses diagnosis and procedure codes from the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM), which contains more than 13,600 diagnosis codes and 3,700 procedure codes. Without the CCS tool, the large number of ICD-9-CM codes makes statistical analysis and reporting difficult and time-consuming. (Source of description of CCS: AHRQ web site)

Used in Table 2, AHRQ's State Inpatient Database for Iowa residents has overall 4-6% more records each year of Iowa resident discharges than does the State Inpatient Database used by the Iowa Department of Public Health as the source for most of the tables and charts in this report. (The AHRQ inpatient database had 4% more total discharges from asthma among Iowa residents for 2006 than did the inpatient database available to the IDPH (2,084 vs. 2,173 asthma discharges). This is believed to be largely because AHRQ has access to data of Iowa residents hospitalized outside of Iowa, since it collects inpatient sets from other states and these out-of-state datasets have records of Iowans admitted in those states.) However, the AHRQ online database has limited ability to combine years and age groups and has no county-level data, making it less than ideal for use in most of this report.

Table 3

**Rate and Number of Hospitalizations from Asthma
by Race, Gender and Age
Iowa, 1995-2006**

Trends	Compared to Subgroup	Sub-Group	Age-Adjusted Rate/10,000		Number of Inpatient Stays		Percent of Stays		Crude (Unadjusted) Rate		Adjusted Rate --Trends			
			1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-97	1998-00	2001-03	2004-06
		All Iowans	10.8	9.2	2,788	2,389	100%	100%	9.6	8.1	11.3	9.8	9.4	8.5
Race														
↓	🔍	Caucasian	8.1	6.8	2,005	1,680	72%	70%	7.2	6.0	6.7	5.2	5.9	4.6
↓	🔍	All Minorities**	21.9**	18.7**	201	204	7%	9%	19.2**	15.8**	22.7**	20.7**	18.8**	18.0**
		Race Unkn			582	504	21%	21%						
							100%	100%						
Specific Minorities														
↓	🔍	African-Amer.**	32.3	27.9**	187	186	7%	8%	30.5**	25**	32.9**	31.2**	28.4**	28.0**
↓	🔍	All Other Minor.	6.1	5.9	14	18	0%	1%	3.2	3.3	7.1	6.9	6.5	7.6
Gender														
↓	🔍	Male	8.2	6.9	1,061	899	38%	38%	7.5	6.2	8.9	7.2	6.9	6.1
↓	🔍	Female*	13.1	11.2*	1,725	1,488	62%	62%	11.7*	10*	13.5*	12.5*	11.6*	10.6*
							100%	100%						
Age in Years (None of age-specific rates are age-adjusted) (Unadjusted age-specific rate)														
↓	🔍	0-17			935	739	34%	31%	12.8	10.2	14.6	10.8	9.9	8.4
↓	🔍	18-44			795	634	29%	27%	7.1	5.8	7.2	6.6	6.1	4.7
↕	🔍	45-64			491	492	18%	21%	8.1	7.1	8	7.8	7.4	7.4
↕	🔍	65 +			567	524	20%	22%	12.9	12.1	13.2	11.8	12.6	12.9
							100%	100%						
Gender-Age (Age-gender specific rates are not age-adjusted) (Unadjusted age-specific rate)														
Males														
↓	🔍	0-17			562	469	53%	52%	15	12.7	17.1	13	12.2	10.3
↓	🔍	18-44			199	163	19%	18%	3.5	2.9	3.7	3.1	3.1	2.4
↕	🔍	45-64			128	123	12%	14%	4.3	3.6	4.2	4	3.7	3.5
↕	🔍	65 +			172	144	16%	16%	9.7	8.1	10.3	8.4	8.4	8.5
							100%	100%						
Females														
↓	🔍	0-17			371	268	22%	18%	10.4	7.6	11.9	8.4	7.6	6.3
↓	🔍	18-44			596	471	35%	32%	10.8	8.7	10.8	10.2	9.1	7.1
↕	🔍	45-64			363	369	21%	25%	11.8	10.6	11.7	11.6	11	11.3
↕	🔍	65 +			395	380	23%	26%	15.1	14.8	15.2	14	15.5	16.1
							100%	100%						

African-Americans are consistently hospitalized at rates 4-6x greater than are Caucasians.

Females have rates more than 1.5x that of males.

Rates have declined most substantially for persons <44 years of age. Rates are now highest in the elderly.

Boys <17 years of age have rates higher than any other age-gender group, except middle-aged and older women.

Rates in females older than 17 are consistently higher than rates in same-age males.

**Subgroups with rates more than double the rate of other(s) in their subgroup.

* Subgroups with rates that are between 1.5 and 2 times the rate of other(s) in their subgroup.

Notes:

Discharges are of Iowa residents seen in Iowa hospitals who had asthma listed as their primary discharge diagnosis (a hospitalization from asthma). Adjusted rates are computed by weighting age-specific rates to the distribution of the US population then summing those weighted rates. The age distribution chosen (0-17,18-44, 45-64,65+ was one used in Healthy People 2010 to adjust National Hospital Discharge Survey data. (See HP2010 Statistical Notes, Number 20, 1/2001--age distribution #20) Age-adjustment eliminates differences in rates due solely to one subgroup being older or younger than another. e.g, (Caucasians being older overall than African-Americans).

Crude (not age-adjusted) rates and are computed by simply summing discharges in a subgroup and dividing by the state population in that subgroup.

Data Sources: Iowa State Inpatient Database, Iowa Department of Public Health, Center for Health Statistics
US Bureau of the Census, Intracensus estimates for 1995-2006, published 2007.

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Table 4

Identification of Counties that Have at Least One Hospitalization Rate from Asthma that is Two Times or More the State Rate, (State Age-Specific and Overall Age-Adjusted Rate per 10,000)
Iowa, 1995-99, 2000-04

	County of Residence**	Quartile that rate falls in (<i>H</i> =highest, <i>L</i> =lowest blank=middle two quartiles)										Average # of inpatient visits -- all ages			
		1995-99					2000-04					Trend	1995-99	2000-04	
		0-17	18-44	45-64	65+	All Ages	0-17	18-44	45-64	65+	All Ages				
	Adair			<i>H*</i>	<i>H*</i>	<i>H</i>			<i>H</i>			↓	15	6	
	Adams		<i>H</i>		<i>H</i>	<i>H</i>	<i>H</i>	<i>L</i>	<i>H*</i>	<i>H</i>	<i>H</i>	↔	5	6	
	Black Hawk	<i>H</i>	<i>H</i>	<i>H</i>	<i>H*</i>	<i>H</i>	<i>H</i>	<i>H</i>	<i>H</i>	<i>H</i>	<i>H</i>	↓	177	150	
	Calhoun	<i>H</i>	<i>H*</i>		<i>H</i>	<i>H</i>	<i>H</i>	<i>H</i>	<i>L</i>			↓	20	8	
	Des Moines	<i>H</i>	<i>H*</i>	<i>H</i>		<i>H</i>	<i>H</i>	<i>H</i>	<i>H</i>		<i>H</i>	↓	71	51	
	Emmet			<i>H</i>						<i>H*</i>	<i>H</i>	↔	9	11	
	Black Hawk	<i>H</i>	<i>H</i>	<i>H</i>	<i>H*</i>	<i>H</i>	<i>H</i>	<i>H</i>	<i>H</i>	<i>H</i>	<i>H</i>	↓	177	150	
	Floyd		<i>H</i>		<i>H</i>	<i>H</i>	<i>H</i>	<i>H*</i>	<i>H*</i>	<i>H</i>	<i>H</i>	↑	19	27	
	Hamilton	<i>H</i>	<i>H*</i>	↓	43	36									
	Hardin									<i>H*</i>	<i>H</i>	↑	14	20	
	Jefferson	<i>L</i>		<i>L</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>H*</i>	<i>L</i>	<i>L</i>		↔	9	10	
	Lee	<i>H*</i>	<i>H*</i>	<i>H*</i>	<i>H*</i>	<i>H*</i>	<i>H*</i>	<i>H</i>	<i>H</i>	<i>H*</i>	<i>H*</i>	↓	86	64	
	Marion		<i>H</i>	<i>H*</i>	<i>H</i>	<i>H</i>			<i>H</i>	<i>H</i>		↓	41	28	
	Marshall		<i>L</i>	<i>L</i>				<i>H*</i>			<i>H</i>	↑	24	42	
	Mills	<i>L</i>		<i>L</i>	<i>H*</i>		<i>H</i>	<i>H</i>			<i>H</i>	↑	9	13	
	Monroe	<i>L</i>		<i>H</i>	<i>H*</i>	<i>H</i>	<i>L</i>				<i>H</i>	↓	9	5	
	Montgomery		<i>H*</i>	<i>H*</i>	<i>H*</i>	<i>H</i>	<i>L</i>	<i>H*</i>	<i>H*</i>	<i>H*</i>	<i>H*</i>	↔	23	23	
	Page		<i>H</i>	<i>H*</i>	<i>H*</i>	<i>H</i>	<i>H</i>				<i>H</i>	<i>H</i>	↓	32	17
	Pocahontas	<i>H</i>	<i>L</i>	<i>H*</i>	<i>H*</i>	<i>H</i>					<i>H</i>		↓	16	7
	Union		<i>H</i>						<i>H*</i>		<i>H</i>	↑	12	18	
	Webster	<i>H*</i>	<i>H</i>	<i>H</i>		<i>H</i>	<i>H*</i>	<i>H</i>	<i>H</i>	<i>H</i>	<i>H</i>	↔	62	64	

H = county year/age group rate is in the top 25% of the distribution of county rates for this year/age group.

*H** = county year/age group rate is in the top 25% of county rates and two or more times the state rate for that year/age group.



** At least one rate for this county is not favorable relative to other counties and the state. All counties in this table have at least one rate that is two or more times the state rate for that year/age group.

Table 6

**By County, Age and Year, Average Annual Age-Specific Rate of Hospitalization
from Asthma and Quartile Rank of County Rates, Iowa, 1995-2004**

County of Residence**	Rate/10,000 population by age (* = rate more than 2X state rate)										Quartile into which rate falls (H=rate in highest quartile, L=rate in lowest quartile blank cell = rate falls in middle two quartiles)										Average number of inpatient visits -- all ages	
	0-17		18-44		45-64		65+		All Ages		0-17		18-44		45-64		65+		All Ages		1995-99	2000-04
	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04				
Adair	7	6.6	4.5	4.8	15.4*	8.2	51.4*	9	17	7.6				H		H		L			15	6
Adams	9.4	11.8	11.3	3	7.6	31.3*	18.2	14.8	12.4	16.1			H		H			H	H		5	6
Allamakee	5.4	6.1	2.9	3.8	1.8	5	5.8	6.1	4.1	5.6	L		L		L		L				6	7
Appanoose	3.6	7.7	5.2	6.8	12.5	10.8	11.5	19.2	8.8	11.2	L				H		H				11	14
Audubon	12.4	9.8	3	2.2	19.5	3.7	7.3	9.2	11.5	6.1		L	L		H			L			7	4
Benton	7.1	9.6	4.2	5.7	8	4.8	14.6	8.2	8.4	7.6											18	18
Black Hawk	22.2	18.6	6.9	7.5	9.8	8.6	26.9*	18.6	16	13.6	H	H				H			H		177	150
Boone	13.1	9.5	7	7.3	8.1	8.4	7.7	9.5	10	9.5									H		23	22
Bremer	7	4.8	4.6	3.6	7.2	5.5	18.8	12.7	9	6.5		L							H		19	14
Buchanan	6.2	10	5.9	8.4	8.5	9.3	9	13	8.1	11											15	20
Buena Vista	5.9	9.8	4.4	3.3	2.5	3.6	15.7	12.8	6.7	7.1	L			L							13	13
Butler	7.8	5.1	6	2.1	6.9	5.1	14.6	18	9	6.8				L							13	10
Calhoun	14.3	11	26.6*	8.3	7.1	2.2	19.5	9.2	19.9	8.5			H		L						20	8
Carroll	6.4	3	4.1	1.7	4.6	3.3	13.3	4.5	7	3.2		L		L		L					14	6
Cass	7.8	12.1	10.4	4	10.2	6	23	12.6	13.2	8.7						H					18	12
Cedar	10.8	7.7	4.4	5.4	9	4.8	11.3	16.4	9.2	8.4									H		15	14
Cerro Gordo	14.5	12.1	7.1	6.3	7.6	5.3	11.9	10.2	10.9	9											46	37
Cherokee	3.6	8.7	2.4	4.2	9.1	7.9	5.2	11.5	5.5	8.3	L		L			L					6	10
Chickasaw	11.9	12.3	5.4	5.3	4.1	8.8	10.2	13.9	8.2	10.3								L			10	12
Clarke	9.7	10.1	6.1	3.2	7.5	0.9	9.9	7.8	8.9	5.5				L							7	5
Clay	7.6	3.4	4.1	7.9	5.9	9.6	6.4	11.6	6.5	9		L				L					10	14
Clayton	2.8	4.5	3.2	0.7	1.9	3.4	6.9	11.1	3.8	4.3	L	L	L	L	L	L					7	8
Clinton	13.9	13.9	9.7	9.7	7.7	9.3	12	8	11.9	11.7				H							54	52
Crawford	5.3	9.1	2.5	4.6	1.1	3	4.6	11.2	3.5	7	L		L		L	L	L				6	11
Dallas	8.2	5.3	6.1	2.2	8.7	2.8	11.3	7.9	9.1	4.4			L		L						29	17
Davis	7	2.6	1.4	6.4	4.3	1	7.9	6.8	5	4.7		L	L		L		L				4	4
Decatur	8.1	9.4	5	1.2	5.8	2.1	6.3	6.6	6.9	4.7				L	L	L	L				5	4
Delaware	3.3	4.8	2.8	1.6	1.6	9.4	3.6	6.4	3.1	5.8	L	L	L	L	L		L	L	L		5	9
Des Moines	23.2	20.3	16.2*	9	13.4	9.4	11.9	11.8	18.6	13.7	H	H	H	H	H				H		71	51
Dickinson	5.6	6.9	7.9	4	7.5	5.3	11.4	7.6	8.8	6.3	L						L		H		13	9
Dubuque	6	5.8	3.2	2.4	4.4	5	8.3	17.3	5.5	6.9			L	L				L			44	55
Emmet	8	5.5	5.1	6.6	12.3	6.2	8.2	27*	9.2	10.6								H			9	11
Fayette	12.8	9.3	5.3	6.7	6.7	4.7	15.6	7.7	10.1	7.8							L	L			21	15
Floyd	12.1	15.8	8.1	12.3*	8.7	19.2*	16.7	18.7	11.8	18		H		H		H		H		H	19	27
Franklin	3	4.8	1.7	3.6	2.4	7.4	9.8	14.1	3.9	7.3	L	L	L		L						4	7
Fremont	3.9	4.2	4.8	8.6	9.7	6.9	23.2	12.8	9.8	8.8	L	L		H			H				8	6
Greene	12.3	8	6.8	3.9	12.5	9.9	6.9	8.2	10.9	8						L		L			10	7
Grundy	2.6	7.4	4	2.1	5.7	0.6	8.3	6	5.4	4	L			L		L		H			6	5
Guthrie	13.4	10	7.8	6.7	7.4	2.7	16.1	5.3	11.6	7				L		L					12	7
Hamilton	23.1	15.4	22.8*	16.4*	23.7*	25.4*	40.1*	37.4*	29.1*	24.6*	H		H	43	36							
Hancock	6.2	7.4	3	2.7	2.3	6.6	5.4	10.2	4.4	6.7			L	L	L		L				5	7
Hardin	10.2	10	4.2	4.5	3.9	5.4	13.4	29*	7.8	10.9								H	L		14	20
Harrison	2.5	3	6.8	5.3	2.4	4.3	5.7	8.8	5.1	5.7	L	L			L		L		H		7	8
Henry	12.9	5	6.3	7	9.5	6.2	14.4	12.2	11.2	8.1		L									20	14
Howard	3.8	0	0.6	0	2	1.8	1.9	0	2.1	0.5	L	L	L	L	L	L	L	L			2	0
Humboldt	18.4	15	7.8	5.1	3.5	8	16.1	8.5	11.7	9.7	H				L						12	9
Ida	1	1.1	1.6	4.5	1.2	4.3	3.5	7.2	1.8	4.6	L	L	L		L		L	L	L		1	3
Iowa	8	7.4	7.8	3.7	5.5	6.4	12.6	7.4	9	6.6							L	L			13	9
Jackson	8.2	6.7	4.3	2.4	4.9	3.6	4.1	7.9	6	5.1				L		L					11	10
Jasper	14.8	9.5	7.2	5.2	9.6	6.8	11.1	11.4	11.5	8.5								L			37	29
Jefferson	4.4	3.8	7.2	14.2*	3.8	2	5.1	2.7	6.1	7.8	L	L		H	L	L	L	L			9	10
Johnson	17.2	8.9	4.7	3.1	5.1	5.6	15.2	12.1	10.5	7.3	H										86	62
Jones	10.1	7.7	6.9	8.5	6.3	12.2	10.6	7.5	9.1	10.4					H		L				17	18
Keokuk	12.9	6.4	8.4	3.3	3.4	5.3	10.4	11.7	9.5	6.5				L		L					10	7
Kossuth	4.3	5.9	2.5	2.4	4.1	2.3	4.6	7	4.1	4.4	L		L	L	L	L	L				7	7

State Inpatient Database Discharges from Asthma

County of Residence**	Rate/10,000 population by age (* = rate more than 2X state rate)										Quartile into which rate falls (H=rate in highest quartile, L=rate in lowest quartile blank cell = rate falls in middle two quartiles)										Average number of inpatient visits -- all ages	
	0-17		18-44		45-64		65+		All Ages		0-17		18-44		45-64		65+		All Ages		1995-99	2000-04
	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04
Lee	31.1*	25.2*	16.6*	8.2	15.5*	13.9	30.5*	29.8*	24.6*	19.1*	H	H	H		H	H	H	H	L	H	86	64
Linn	15	12.5	8	6.8	10	6.5	15.5	8.7	12.8	9.4											206	164
Louisa	11.5	9.1	7.6	5.5	13.4	3.6	11.4	5.8	12	6.6				H			L	L			13	7
Lucas	9.4	18.6	11.2	5.2	1.9	1.8	4.3	5.6	8.3	8.4		H	H		L	L	L	L	L		7	7
Lyon	1.8	2.5	1	1.6	1.7	0.8	1.8	15	1.7	4.1	L	L	L	L	L	L	L				2	5
Madison	8.6	2.6	5.9	3.6	1.3	3.4	14.9	7.8	7.5	4.5				L	L						10	6
Mahaska	8.7	4.7	6.6	3.7	4.4	3.5	12.4	7.9	8.3	5.1											17	10
Marion	10.5	9.3	12.6	3.4	15.8*	9.8	15.3	17.5	15.1	9.7				H					L		41	28
Marshall	8.7	24*	3.5	4.2	3.1	6.4	11.2	9.7	6.5	11.5		H	L		L					H	24	42
Mills	4.7	11.4	6.6	7	3	8.1	17.3*	10.9	7.8	10.1	L				L				L		9	13
Mitchell	4.2	12.8	1.2	1.9	3.5	2.4	3.3	9.6	3.2	6.4	L		L	L	L	L	L				3	7
Monona	11	9.1	4	6.9	3.5	3.3	4.1	17.3	6.2	9.1					L	L	L				6	9
Monroe	4.8	2.1	4.5	4	11.1	5.3	30.5*	17.2	11.6	6.6	L	L					H				9	5
Montgomery	11.5	4.3	15.5*	12.5*	22.9*	32.9*	31.9*	34.3*	21.5	21.8*		L		H	H	H	H	H		H	23	23
Muscatine	10.7	7.4	8.2	4.2	4.5	4.7	8.9	8.2	8.9	6.4											34	24
O'Brien	7.1	10.8	4	2.2	5.5	5.2	9.2	11.3	6.7	7.1				L					L		10	10
Osceola	3.2	4.6	10.9	1.8	5.4	4.9	1.5	1.5	7.1	3.7	L	L		H	L		L	L	L		4	2
Page	9.9	13.9	11.5	6.2	20.5*	8	39.4*	15.1	20	11				H		H		H			32	17
Palo Alto	7.9	4.4	2.4	3.7	1.8	2.6	3.7	9.4	4.2	5		L	L		L	L	L		L		4	5
Plymouth	6.6	6.5	1.2	6.3	5.1	7.4	7.9	9.2	5	8				L							11	18
Pocahontas	22.8	5.9	0.8	4.3	26.2*	4.6	27.5*	19.3	18.7	8	H				H		H	H			16	7
Polk	18.8	12.2	10.6	7	11.4	8.2	13.5	11.9	14.9	10.5	H										477	353
Pottawattamie	8.3	5.9	6.3	4.5	7.6	5.9	10.3	6.8	8.7	6.3							L				66	49
Poweshiek	13.8	17.9	5.9	6.8	6.5	9.9	19	19.2	11.1	13.6		H						H		H	19	23
Ringgold	10.9	9.6	3.8	1.3	6.5	1.5	7.5	4.8	7.6	4.3				L		L	L				4	2
Sac	10.9	7.7	6.5	5.5	8.5	2.9	16.4	11.8	10.8	7.1					L				H		12	8
Scott	17.6	11.5	7.9	8.5	7.7	10.5	10.6	13.3	11.9	11.8	H					H					170	165
Shelby	5.7	4.3	6.7	10.7	4.9	13.5	8.8	9.8	7.1	11.2	L	L			H		H				9	12
Sioux	4.3	6.7	1.5	1.9	3.8	3.1	7.6	9.6	4.1	5.1	L		L	L		L					11	15
Story	6.4	6.8	3.3	2	5	5.1	10.8	7.1	6.3	5.3				L	L		L				38	32
Tama	8	15.7	3.1	2.5	4.6	4.7	13.4	14.5	7	8.9		H	L	L					L		12	16
Taylor	7.1	6.2	4.6	7.7	1.3	3.6	6.2	13.4	5.1	8.1					L		L		L		3	5
Union	10.1	11	10.2	24.1*	7.3	7.2	9.3	12.4	10.5	16.9				H						H	12	18
Van Buren	8.3	9.7	6.5	5.7	8.9	6.1	7.9	16.2	8.8	9.4									L		6	7
Wapello	14.2	4.1	9.6	7.3	10.8	9.8	14.8	18.4	13.3	10.1		L									43	33
Warren	10.7	8.2	4.8	3.2	7.2	6.9	8.7	8	8.3	6.8											29	25
Washington	12.8	5.9	8.4	5.6	6.6	4.9	13.4	9.3	11	6.8											21	13
Wayne	8.7	16.8	5.8	4.1	11.9	5	11.9	15.5	10.2	10.1					H						6	7
Webster	32.3*	25*	10.2	12.2*	9.9	10.5	9.6	18.6	17.1	17.7	H	H		H		H		H		H	62	64
Winnebago	4.9	8.1	1.5	2.1	0.8	3.4	3.5	7.4	2.7	5.3	L		L	L	L	L	L				3	6
Winneshiek	9.9	3	6.4	0.7	2	1.7	13.8	11.4	8.1	3.5		L		L	L						16	7
Woodbury	13.5	8.2	6.3	8.5	9.5	8.9	7.1	10.2	10.1	10									L		93	90
Worth	11.4	4.4	1.5	2.4	9	1	17.6	4	9.2	3.1		L	L	L		L	L				7	2
Wright	11.8	8.4	6.1	7.5	5.6	5.2	5	7.6	8	8						L	L	L			10	10
State of Iowa																					2,788	2,389
rate (mean)	12.8	10.2	7.1	5.8	8.1	7.1	12.9	12.1	10.8	9.2												
median rate	8.7	8	5.9	4.6	6.6	5.3	10.7	10.2	8.1	7.8												
range of rates	(1 - 32.3)	(0 - 25.2)	(0.6 - 26.6)	(0 - 24.1)	(0.8 - 26.2)	(0.6 - 32.9)	(1.5 - 51.4)	(0 - 37.4)	(1.7 - 29.1)	(0.5 - 24.6)												

* = county year/age group rate is two or more times the state rate for that year/age group.

**A county's line is highlighted if at least one of its year/age group rates is two or more times greater than the state rate for that year/age group.

Table 7

**Counties Ranked by Rate of Hospitalization from Asthma
Age-Adjusted and Crude Rates per 10,000 Population
and Number of Hospitalizations from Asthma**

All Ages, Iowa, 1995-99, 2000-04

Age-Adjusted Asthma Inpatient Hospitalization Rate												Crude Rate/10,000		Number of Inpatient Stays		
2000-04 Quartile (risk classification)	County of Residence	Rate Rank (1=highest, 99=lowest rate)		Quartile (1=highest rate)		Rate/10,000		Crude Rate/10,000		Number of Inpatient Stays						
		1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	% of all 2000-04 asthma stays ¹				
Highest Rates	Hamilton	9	1	1	1	29.1*	24.6*	26.2	22.1	43	36	2%				
	Montgomery	16	2	1	1	21.5	21.8*	19.5	19.9	23	23	1%				
	Lee	90	3	1	1	24.6*	19.1*	22.2	17.3	86	64	3%				
	Floyd	51	4	1	1	11.8	18	10.9	16.1	19	27	1%				
	Webster	24	5	1	1	17.1	17.7	15.6	16	62	64	3%				
	Union	54	6	2	1	10.5	16.9	9.4	14.7	12	18	1%				
	Adams	10	7	1	1	12.4	16.1	11.5	14.6	5	6	0%				
	Des Moines	37	8	1	1	18.6	13.7	16.6	12.3	71	51	2%				
	Poweshiek	45	9	2	1	11.1	13.6	10.2	12.2	19	23	1%				
	Black Hawk	60	10	1	1	16	13.6	13.9	11.9	177	150	6%				
	Scott	71	11	1	1	11.9	11.8	10.8	10.3	170	165	7%				
	Clinton	46	12	1	1	11.9	11.7	10.7	10.4	54	52	2%				
	Marshall	5	13	3	1	6.5	11.5	6	10.6	24	42	2%				
	Appanoose	69	14	3	1	8.8	11.2	7.7	10.4	11	14	1%				
	Shelby	14	15	3	1	7.1	11.2	6.5	9.6	9	12	1%				
	Page	42	16	1	1	20	11	18.7	10.1	32	17	1%				
	Buchanan	29	17	3	1	8.1	11	7	9.7	15	20	1%				
	Hardin	80	18	3	1	7.8	10.9	7.6	11.1	14	20	1%				
	Emmet	58	19	2	1	9.2	10.6	8	10.2	9	11	0%				
	Polk	49	20	1	1	14.9	10.5	13.2	9.2	477	353	15%				
Jones	73	21	2	1	9.1	10.4	8.1	9.1	17	18	1%					
Chickasaw	92	22	3	1	8.2	10.3	7.7	9.5	10	12	1%					
Wayne	18	23	2	1	10.2	10.1	9.3	9.9	6	7	0%					
Mills	93	24	3	1	7.8	10.1	6.7	9	9	13	1%					
Higher than Median Rate	Wapello	43	25	1	2	13.3	10.1	11.9	9.1	43	33	1%				
	Woodbury	85	26	2	2	10.1	10	9	8.7	93	90	4%				
	Humboldt	70	27	1	2	11.7	9.7	11.3	8.8	12	9	0%				
	Marion	95	28	1	2	15.1	9.7	13.2	8.6	41	28	1%				
	Boone	7	29	2	2	10	9.5	8.9	8.5	23	22	1%				
	Linn	50	30	1	2	12.8	9.4	11.1	8.4	206	164	7%				
	Van Buren	79	31	3	2	8.8	9.4	7.8	8.8	6	7	0%				
	Monona	41	32	4	2	6.2	9.1	5.6	9	6	9	0%				
	Cerro Gordo	35	33	2	2	10.9	9	9.8	8.1	46	37	2%				
	Clay	20	34	3	2	6.5	9	5.8	7.9	10	14	1%				
	Tama	91	35	3	2	7	8.9	6.7	8.7	12	16	1%				
	Fremont	38	36	2	2	9.8	8.8	9.4	7.9	8	6	0%				
	Cass	30	37	1	2	13.2	8.7	12.4	8.2	18	12	0%				
	Jasper	81	38	2	2	11.5	8.5	10.3	7.6	37	29	1%				
	Calhoun	22	39	1	2	19.9	8.5	17.8	7.6	20	8	0%				
	Cedar	1	40	2	2	9.2	8.4	8.2	7.6	15	14	1%				
	Lucas	86	41	3	2	8.3	8.4	7.3	7.8	7	7	0%				
	Cherokee	62	42	4	2	5.5	8.3	4.8	7.7	6	10	0%				
	Taylor	83	43	4	2	5.1	8.1	4.8	7.6	3	5	0%				
	Henry	26	44	2	2	11.2	8.1	9.8	7.1	20	14	1%				
Wright	97	45	3	2	8	8	7.1	7.2	10	10	0%					
Plymouth	21	46	4	2	5	8	4.6	7.1	11	18	1%					
Greene	98	47	2	2	10.9	8	9.5	7.3	10	7	0%					
Pocahontas	47	48	1	2	18.7	8	18.1	8.1	16	7	0%					
Fayette	78	49	2	2	10.1	7.8	9.5	7	21	15	1%					

*Counties with rates more than double the state adjusted rate of 9.2 (2000-04) and 10.8 (1995-99). ¹0% = less than 1%

Rates are age-adjusted using the US 2000 population and age distribution #20 used in Healthy People 2010 to age-adjust National Hospital Discharge Survey data. (HP2010 Statistical Notes, Number 20, 1/2001) Age-adjustment eliminates differences in rates due solely to one county's population being older or younger than another county.

State Inpatient Database Discharges from Asthma

Age-Adjusted Asthma Inpatient Hospitalization Rate												
2000-04 Quartile (risk classification)	County of Residence	Rate Rank (1=highest, 99=lowest rate)		Quartile (1=highest rate)		Rate/10,000		Crude Rate/10,000		Number of Inpatient Stays		
		1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	1995-99	2000-04	% of all 2000-04 asthma stays ¹
		Lower than Median Rate	Jefferson	25	50	4	3	6.1	7.8	5.3	6.4	9
Adair	77		51	1	3	17	7.6	18	7	15	6	0%
Benton	33		52	3	3	8.4	7.6	7.4	6.9	18	18	1%
Franklin	44		53	4	3	3.9	7.3	3.8	6.9	4	7	0%
Johnson	39		54	2	3	10.5	7.3	8.1	5.4	86	62	3%
O'Brien	88		55	3	3	6.7	7.1	6.2	6.9	10	10	0%
Sac	2		56	2	3	10.8	7.1	10.3	6.8	12	8	0%
Buena Vista	15		57	3	3	6.7	7.1	6.5	6.5	13	13	1%
Crawford	17		58	4	3	3.5	7	3.3	6.5	6	11	0%
Guthrie	57		59	1	3	11.6	7	10.8	6.1	12	7	0%
Dubuque	99		60	4	3	5.5	6.9	4.9	6.1	44	55	2%
Washington	65		61	2	3	11	6.8	10.1	6.2	21	13	1%
Warren	55		62	3	3	8.3	6.8	7.4	6	29	25	1%
Butler	11		63	2	3	9	6.8	8.4	6.8	13	10	0%
Hancock	74		64	4	3	4.4	6.7	4.1	6.2	5	7	0%
Monroe	63		65	1	3	11.6	6.6	11.1	6.3	9	5	0%
Louisa	94		66	1	3	12	6.6	10.4	6.1	13	7	0%
Iowa	76		67	2	3	9	6.6	8.2	5.9	13	9	0%
Keokuk	23		68	2	3	9.5	6.5	8.9	6.2	10	7	0%
Bremer	3		69	2	3	9	6.5	8.1	5.8	19	14	1%
Muscatine	48	70	2	3	8.9	6.4	8.2	5.7	34	24	1%	
Mitchell	72	71	4	3	3.2	6.4	2.9	6.4	3	7	0%	
Pottawattamie	67	72	3	3	8.7	6.3	7.7	5.5	66	49	2%	
Dickinson	4	73	3	3	8.8	6.3	8	5.7	13	9	0%	
Audubon	87	74	1	3	11.5	6.1	10.1	6.1	7	4	0%	
Lowest Rates	Delaware	84	75	4	4	3.1	5.8	2.8	5	5	9	0%
	Harrison	6	76	4	4	5.1	5.7	4.5	5.1	7	8	0%
	Allamakee	12	77	4	4	4.1	5.6	3.9	5.1	6	7	0%
	Clarke	53	78	2	4	8.9	5.5	8	5.2	7	5	0%
	Story	27	79	4	4	6.3	5.3	4.9	4	38	32	1%
	Winnebago	64	80	4	4	2.7	5.3	2.5	4.9	3	6	0%
	Jackson	31	81	4	4	6	5.1	5.4	4.7	11	10	0%
	Mahaska	19	82	3	4	8.3	5.1	7.7	4.6	17	10	0%
	Sioux	66	83	4	4	4.1	5.1	3.6	4.6	11	15	1%
	Palo Alto	89	84	4	4	4.2	5	3.9	4.8	4	5	0%
	Davis	75	85	4	4	5	4.7	4.7	4.2	4	4	0%
	Decatur	68	86	3	4	6.9	4.7	6.1	4.2	5	4	0%
	Ida	82	87	4	4	1.8	4.6	1.7	4.2	1	3	0%
	Madison	32	88	3	4	7.5	4.5	7.1	3.9	10	6	0%
	Dallas	52	89	2	4	9.1	4.4	7.9	3.7	29	17	1%
	Kossuth	13	90	4	4	4.1	4.4	3.8	4.2	7	7	0%
	Clayton	56	91	4	4	3.8	4.3	3.5	4.2	7	8	0%
	Ringgold	28	92	3	4	7.6	4.3	7	4.1	4	2	0%
	Lyon	34	93	4	4	1.7	4.1	1.5	4.1	2	5	0%
	Grundy	8	94	4	4	5.4	4	4.9	3.7	6	5	0%
Osceola	96	95	3	4	7.1	3.7	5.9	3.2	4	2	0%	
Winneshiek	59	96	3	4	8.1	3.5	7.6	3.1	16	7	0%	
Carroll	36	97	3	4	7	3.2	6.6	2.9	14	6	0%	
Worth	40	98	2	4	9.2	3.1	8.8	2.8	7	2	0%	
Howard	61	99	4	4	2.1	0.5	2	0.4	2	0.4	0%	
	County unkn									2	0	
	State of Iowa					10.8	9.2	9.6	8.1	2,788	2,389	100%
	State median					8.1	7.8	7.4	6.7			
	Range of rates					(1.7-29.1)	(0.5 - 24.6)	(1.5- 26.2)	(0.4-22.1)			

Median=rate above and below which half of all rates fall. Mean=state crude rate=the sum of all counties' discharges/# of counties (99)
 Denominators for all rates rely on bridged-race Census estimates for the years 1995-2006 (2007
 Discharges from asthma = asthma was the primary discharged diagnosis (ICD-9 Code = 49300-49399).
 Data Sources: IA State Inpatient Database, IA Dpt. of Public Health, Intracensus population estimates, US Census, 2007.

About the Iowa State Inpatient Database

Under *Iowa Administrative Code*, hospitals are specifically required to report *inpatient, outpatient and ambulatory care* information to the Iowa Hospital Association which in turn is to provide these data to the Iowa Department of Public Health (IDPH). The IDPH has received data from the IHA from its State Inpatient Database (SID) since 1994.

The SID contains selected data elements for each inpatient discharged from non-Federal acute care Iowa hospitals. Long-term care mental health facilities are excluded. The SID does not include discharges of Iowans who are treated solely in out-of-state hospitals for their asthma, an estimated 4% to 8% of all hospitalizations. Counties near Omaha, Mayo Clinics in Rochester, Minnesota, Rock Island/Moline and Sioux Falls, South Dakota have rates of hospitalization that are underestimated. The SID and outpatient data sets also lack several basic demographic variables (income, education and ethnicity) and are missing data from the race field in about 20 percent of all admissions.

Another drawback to using the SID is that it contains few personal identifiers. Without personal identifiers, readmission of a person with asthma at either the same or a different hospital becomes hard to identify. As a result, estimating counts of people with asthma who were hospitalized, as opposed to counts of admissions for asthma, becomes difficult. Thus, those parts of the report describing hospitalizations are not measures of asthma prevalence but of overall inpatient services usage.

Between 1995 and 2006, the SID lists one *admitting* diagnosis and up to nine discharge diagnoses for each inpatient admission. Except where explicitly noted, all discharges counts and rates in this report are of discharges with a primary discharge diagnosis of asthma.

About the Iowa Asthma Control Program

The Iowa Asthma Control Program (IACP), administered by the Iowa Department of Public Health (IDPH) receives about \$400,000 in CDC funding each year to plan for and administer asthma control programming across the state. This report is produced by the IDPH's Center for Health Statistics using IACP funding. Other current efforts of the IACP include: child care provider training, school health staff training, monitoring of local open burning ordinances, and staffing of the statewide Iowa Asthma Coalition. Reports on the prevalence of asthma in Iowa adults and children as well as on asthma-related deaths are posted on the IACP web site.

Iowa asthma surveillance committee members include:

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Simeon Geletta, Ph.D, Des Moines University
Alan Sisson, M.D,
Andrea Hoffman, Iowa Asthma Control Program, IDPH
Kathy Leinenkugel, Occupational Epidemiology, IDPH
Tobacco Control Program, IDPH

For more information about the burden of asthma in Iowa or to review the full Asthma In Iowa report, its updates or newsletters published by the IACP, contact us at the IACP :

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