



MISSISSIPPI STATE DEPARTMENT OF HEALTH

Asthma Surveillance Summary

Asthma Emergency Department (ED) Visits, Mississippi, 2003-2005

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Introduction: Asthma is a chronic inflammatory disorder of the airways characterized by episodic and reversible airway obstruction and responsiveness. Clinical manifestations of asthma include wheezing, coughing, and shortness of breath.

In 2006, 10.2% of Mississippi children ages 0 to 17 and 6.9% of Mississippi adults had current asthma. Male children (11.9%) had a higher prevalence than female children (8.5%), but male adults (5.4%) had a lower prevalence than female adults (8.3%). A difference in prevalence between whites and all other races existed for children (7.1% vs. 13.8%) but not for adults (7.0 vs. 6.8). Asthma was more prevalent among persons who did not graduate from high school than among persons who did graduate from high school (9.5% versus 6.4%) and among persons with household income of less than \$25,000 (10.4%) than among persons with household income between \$25,000 and \$50,000 (5.7%) or income greater than \$50,000 (4.5%).

Severe or poorly controlled asthma can lead to acute asthma exacerbations requiring emergency care. Emergency Department (ED) visits for asthma result in considerable cost to the healthcare system but are largely preventable. With appropriate pharmacologic, behavioral, and environmental interventions, asthma is a controllable disease that should neither limit daily activities nor lead to life-threatening exacerbations. Despite the controllable nature of the disease, there were approximately 34,100 ED discharges with asthma listed as the primary diagnosis in Mississippi from 2003 to 2005. In addition, asthma ED visit rates in Mississippi (calculated per 10,000 population) vary by race, gender, age, and geographic region¹.

Methods: Asthma ED discharge data for the three year period from 2003 to 2005 was obtained from the Mississippi Asthma Surveillance System (MASS). During this period, 20 hospitals (located in 18 counties) in Mississippi did not report asthma data to the Mississippi State Department of Health (MSDH). Three-year (2003-2005) summed state population data was adjusted to account for non-reporting hospitals using the proportion of hospital beds accounted for in the reported data. From 2003 to 2005, hospitals reporting asthma ED visit data to the MSDH accounted for 87.1% of total hospital beds statewide. State population was therefore adjusted by 87.1% in order to estimate statewide asthma ED visit rates. Statewide estimates of asthma ED visit rates were obtained by dividing the number of ED discharges with asthma listed as the primary diagnosis (ICD-9 493.xx) by the adjusted statewide population. All rates were calculated per 10,000 population. Asthma ED visit rates by race, gender, age, public health district, and county of residence were calculated using summed 2003-2005 census population estimate data. Race-specific rates were calculated for blacks and whites only due to the small number of asthma ED discharges among persons of other races/ethnicities in Mississippi. Age-specific rates were calculated as crude rates and all other rates were age-adjusted to the United States 2000 standard population. Counties with non-reporting hospitals were excluded from county-level analysis. Statewide rates are presented for individual years (2003, 2004, and 2005) and for the combined three year period (2003-2005). District and county rates are presented for the combined three year period only.

Results: Statewide asthma ED visit rates were similar in 2003 (39 per 10,000) and 2004 (38 per 10,000) and increased slightly in 2005 (43 per 10,000). The 2003-2005 combined statewide asthma ED visit rate was an estimated 40 per 10,000. Black Mississippians (77 per 10,000) had a higher asthma ED visit rate than white Mississippians (18 per 10,000). Females (46 per 10,000) had a higher asthma ED visit rate than males (36 per 10,000). Asthma ED visit rates were highest among 0-4 year olds (95 per 10,000) and lowest among persons ages 65 and older (16 per 10,000). ED visit rates at the county level ranged from 2 per 10,000 in Lowndes County to 125 per 10,000 in Humphreys County. Asthma ED visit rates were higher among blacks than among whites in 63 of the 64 Mississippi counties with available data².

Limitations: Statewide asthma hospitalization rates are based on estimated population data due to non-reporting hospitals. Rates were not calculated for counties with non-reporting hospitals, and county rates may be underestimated due to travel across county lines for asthma care. The population of the 18 counties with non-reporting hospitals is comprised of approximately 31% blacks and 63% whites, indicating that statewide ED rates among whites may be underestimated. In addition, the MASS captures only asthma ED discharges from Mississippi hospitals. Mississippi residents discharged from an ED in a bordering state with a primary diagnosis of asthma are not captured by the MASS.

¹ Comparisons of asthma prevalence are based on statistical significance.

² Comparisons of asthma ED and hospitalization rates are not based on statistical significance.

Figure 1. Estimated number of emergency department visits with asthma as the first listed diagnosis per 10,000 population, by year, Mississippi, 2003-2005

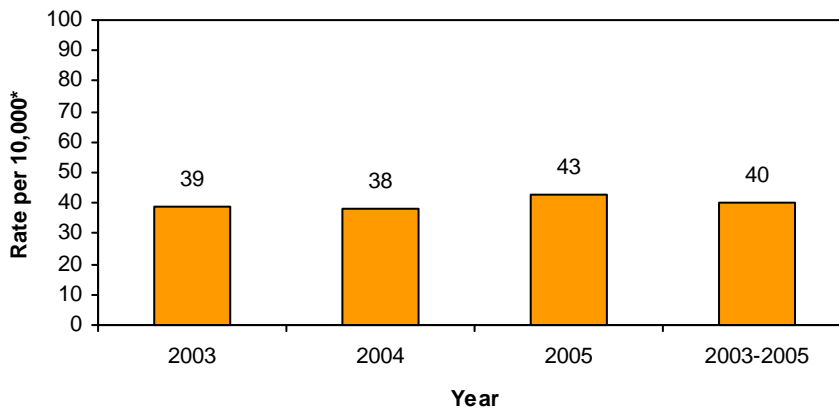


Figure 2. Estimated number of emergency department visits with asthma as the first listed diagnosis per 10,000 population, by race, Mississippi, 2003-2005

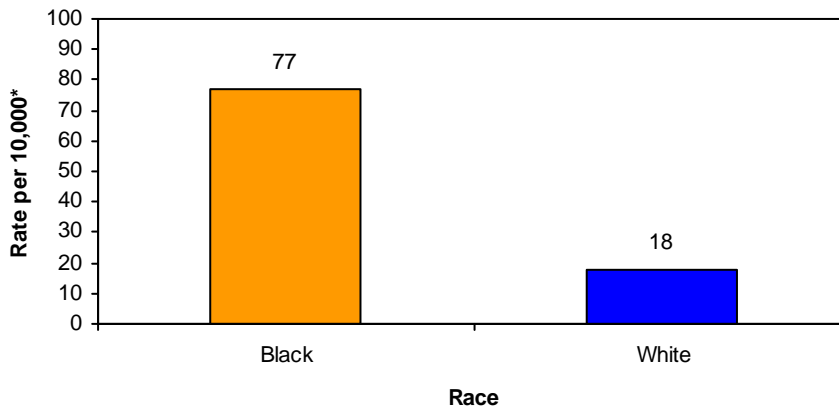
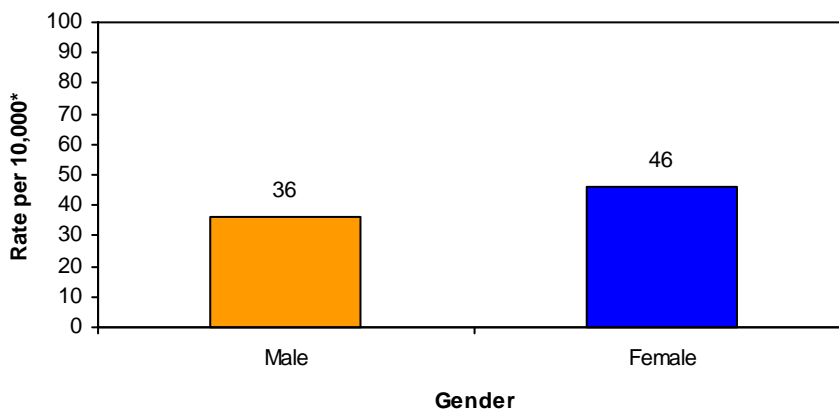


Figure 3. Estimated number of emergency department visits with asthma as the first listed diagnosis per 10,000 population, by gender, Mississippi, 2003-2005



*Rates are age-adjusted to the US 2000 standard population

Figure 4. Estimated number of emergency department visits with asthma as the first listed diagnosis per 10,000 population, by age, Mississippi, 2003-2005

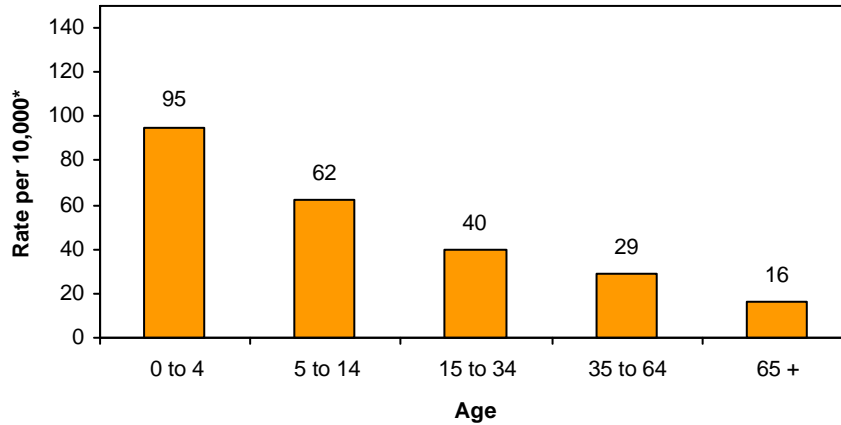


Figure 5. Estimated number of emergency department visits with asthma as the first listed diagnosis per 10,000 population, by age and gender, Mississippi, 2003-2005

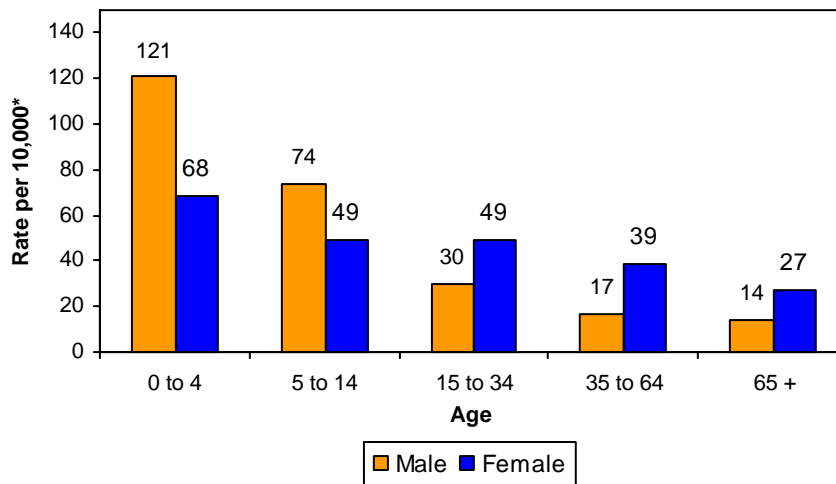
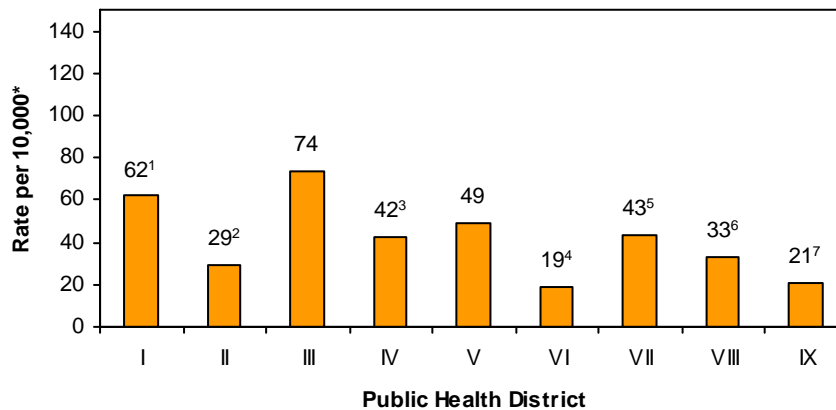


Figure 6. Estimated number of emergency department visits with asthma as the first listed diagnosis per 10,000 population, by Public Health District, Mississippi, 2003-2005



¹DeSoto, Panola, Quitman, Tate, Tunica, and Tallahatchie Counties were excluded from District I rate calculations due to non-reporting hospitals.

²Prentiss and Union Counties were excluded from District II rate calculations due to non-reporting hospitals.

³Choctaw County was excluded from District IV rate calculations due to a non-reporting hospital.

⁴Clarke, Lauderdale, Leake, and Scott Counties were excluded from District VI rate calculations due to non-reporting hospitals.

⁵Adams and Wilkinson Counties were excluded from District VII rate calculations due to non-reporting hospitals.

⁶Jefferson Davis and Perry Counties were excluded from District VIII rate calculations due to non-reporting hospitals.

⁷Harrison County was excluded from District IX rate calculations due to non-reporting hospitals.

*Rates are age adjusted to the US 2000 standard population

Table 1. Estimated number of emergency department visits with asthma as the first listed diagnosis per 10,000 population, by county, race, gender, and age, Mississippi, 2003-2005

County	Total*†	White*	Black*	Male*	Female*	Ages 0-4	Ages 5-14	Ages 15-34	Ages 35-64	Ages 65+
Public Health District I										
Coahoma	71	20	91	81	63	106	106	76	64	31
DeSoto	Data not available due to non-reporting hospital(s)									
Grenada	51	17	243	52	48	125	104	42	36	12
Panola	Data not available due to non-reporting hospital(s)									
Quitman	Data not available due to non-reporting hospital(s)									
Tallahatchie	Data not available due to non-reporting hospital(s)									
Tate	Data not available due to non-reporting hospital(s)									
Tunica	Data not available due to non-reporting hospital(s)									
Yalobusha	72	57	98	56	87	190	68	70	57	22
Public Health District II										
Alcorn	45	28	151	42	47	106	88	50	24	6
Benton	15	10	24	17	14	35	9	16	18	0
Itawamba	25	19	102	20	30	94	39	22	13	11
Lafayette	30	15	65	30	29	48	49	25	27	14
Lee	30	14	68	25	34	62	54	31	21	6
Marshall	18	5	30	21	16	57	37	16	12	10
Pontotoc	21	16	46	15	27	37	39	18	17	9
Prentiss	Data not available due to non-reporting hospital(s)									
Tippah	30	27	44	24	35	32	58	27	24	16
Tishomingo	35	34	57	36	34	109	61	26	25	10
Union	Data not available due to non-reporting hospital(s)									
Public Health District III										
Attala	11	6	17	11	11	23	15	12	6	4
Bolivar	32	17	40	30	32	46	39	31	29	21
Carroll	45	23	83	42	49	130	94	39	27	24
Holmes	45	22	50	49	39	146	83	36	26	19
Humphreys	125	36	155	106	142	338	157	139	96	41
Leflore	112	45	137	99	123	240	220	113	70	40
Montgomery	82	47	117	78	83	250	147	66	50	23
Sunflower	87	23	114	76	96	182	123	64	78	65
Washington	115	60	141	94	130	226	284	121	106	42
Public Health District IV										
Calhoun	38	19	75	32	44	95	50	37	32	22
Chickasaw	45	22	72	42	46	97	68	57	26	20
Choctaw	Data not available due to non-reporting hospital(s)									

County	Total*+	White*	Black*	Male*	Female*	Ages 0-4	Ages 5-14	Ages 15-34	Ages 35-64	Ages 65+
Clay	66	32	89	63	67	153	85	70	49	42
Lowndes	2	1	4	1	3	0	4	4	1	0
Monroe	59	42	92	54	64	168	67	58	49	17
Noxubee	8	2	10	6	10	21	14	8	4	8
Oktibbeha	40	11	76	37	42	97	85	21	29	23
Webster	69	42	160	57	82	140	81	100	47	18
Winston	85	36	137	64	104	208	109	84	63	34
Public Health District V										
Claiborne	16	3	19	17	14	43	39	9	13	6
Copiah	56	27	78	54	57	158	101	50	32	22
Hinds	65	15	88	61	67	174	104	65	44	19
Issaquena	15	9	20	6	26	78	13	6	13	0
Madison	28	9	56	24	31	74	47	30	14	16
Rankin	22	17	40	17	25	71	24	23	16	5
Sharkey	8	8	8	4	11	20	22	4	5	0
Simpson	62	46	92	67	57	133	72	41	68	20
Warren	64	36	94	56	70	122	99	71	43	30
Yazoo	33	12	48	30	36	110	61	27	20	10
Public Health District VI										
Clarke	Data not available due to non-reporting hospitals(s)									
Jasper	8	2	11	6	10	41	14	5	4	3
Kemper	17	8	23	15	19	30	12	17	20	9
Lauderdale	Data not available due to non-reporting hospital(s)									
Leake	Data not available due to non-reporting hospital(s)									
Neshoba	21	16	42	16	25	34	25	28	17	8
Newton	23	17	30	24	22	101	35	18	11	15
Scott	Data not available due to non-reporting hospital(s)									
Smith	25	15	51	21	29	49	48	28	14	9
Public Health District VII										
Adams	Data not available due to non-reporting hospital(s)									
Amite	27	16	40	20	33	74	45	23	18	5
Franklin	55	32	90	54	53	201	109	44	27	21
Jefferson	9	3	9	4	14	35	2	14	6	0
Lawrence	40	28	73	31	49	86	45	35	32	38
Lincoln	33	22	56	28	37	47	44	37	28	18
Pike	61	31	90	47	73	96	92	84	40	19
Walthall	70	37	108	54	85	180	127	68	40	40
Wilkinson	Data not available due to non-reporting hospital(s)									

County	Total**	White*	Black*	Male*	Female*	Ages 0-4	Ages 5-14	Ages 15-34	Ages 35-64	Ages 65+
Public Health District VIII										
Covington	40	26	62	33	46	100	64	48	22	12
Forrest	53	32	91	43	61	116	79	42	42	38
Greene	21	15	52	20	24	88	41	8	11	22
Jefferson Davis	Data not available due to non-reporting hospital(s)									
Jones	11	8	18	9	13	22	14	11	9	3
Lamar	17	13	39	14	20	27	21	18	12	16
Marion	58	44	84	55	59	134	109	39	47	27
Perry	Data not available due to non-reporting hospital(s)									
Wayne	42	25	64	40	44	137	72	36	27	19
Public Health District IX										
George	61	53	147	55	68	176	72	56	51	25
Hancock	17	16	30	15	19	29	30	26	9	1
Harrison	Data not available due to non-reporting hospital(s)									
Jackson	9	6	17	10	8	15	15	11	6	1
Pearl River	37	24	75	30	43	54	50	52	23	16
Stone	46	36	83	38	54	146	83	37	26	25

*Rates are age-adjusted to the US 2000 standard population

+ Total includes 'other' and 'unknown' races