



# Asthma Surveillance Summary

## Asthma Hospitalizations, Mississippi, 2003-2005

### Contents

Introduction.....	1
Methods.....	1
Results.....	1
Limitations.....	1
Figure 1.....	2
<i>Hospitalizations by year</i>	
Figure 2.....	2
<i>Hospitalizations by race</i>	
Figure 3.....	2
<i>Hospitalizations by gender</i>	
Figure 4.....	3
<i>Hospitalizations by age</i>	
Figure 5.....	3
<i>Hospitalizations by age and gender</i>	
Figure 6.....	3
<i>Hospitalizations by public health district</i>	
Map 1.....	4
<i>Hospitalizations by county of residence</i>	
Table 1.....	5-7
<i>Hospitalizations by county, race, gender, and age</i>	

**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%)<sup>1</sup>.

Severe or poorly controlled asthma can lead to acute asthma exacerbations resulting in hospitalizations. Hospitalizations for asthma place considerable burden on 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 16,000 hospital discharges with asthma listed as the primary diagnosis in Mississippi from 2003 to 2005. In addition, asthma hospitalization rates in Mississippi (calculated per 10,000 population) vary by race, gender, age, and geographic region.

**Methods:** Asthma hospitalization 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) did not report asthma data to the Mississippi State Department of Health (MSDH). Three-year (2003-2005) summed 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 hospitalization 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 hospitalization rates. Statewide estimates of asthma hospitalization rates were obtained by dividing the number of hospital 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 hospitalization 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 hospital 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.

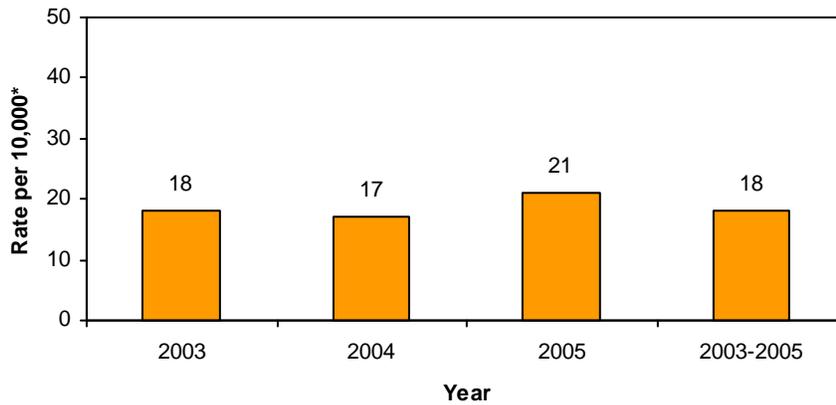
**Results:** Statewide asthma hospitalization rates were similar in 2003 (18 per 10,000) and 2004 (17 per 10,000) and increased slightly in 2005 (21 per 10,000). The 2003-2005 combined statewide asthma hospitalization rate was an estimated 18 per 10,000. Black Mississippians (31 per 10,000) had a higher asthma hospitalization rate than white Mississippians (12 per 10,000). Females (28 per 10,000) had a higher asthma hospitalization rate than males (15 per 10,000). Asthma hospitalization rates were highest among 0-4 year olds (52 per 10,000) and persons ages 65 and older (28 per 10,000) and lowest among 15-34 year olds (8 per 10,000). Asthma hospitalization rates ranged from 5 per 10,000 in Benton County to 51 per 10,000 in Sunflower County. Asthma hospitalization rates were higher among blacks than among whites in 58 of the 64 Mississippi counties with available data<sup>2</sup>.

**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 hospitalization rates among whites may be underestimated. In addition, the MASS captures only asthma hospital discharges from Mississippi hospitals. Mississippi residents discharged from a hospital in a bordering state with a primary diagnosis of asthma are not captured by the MASS.

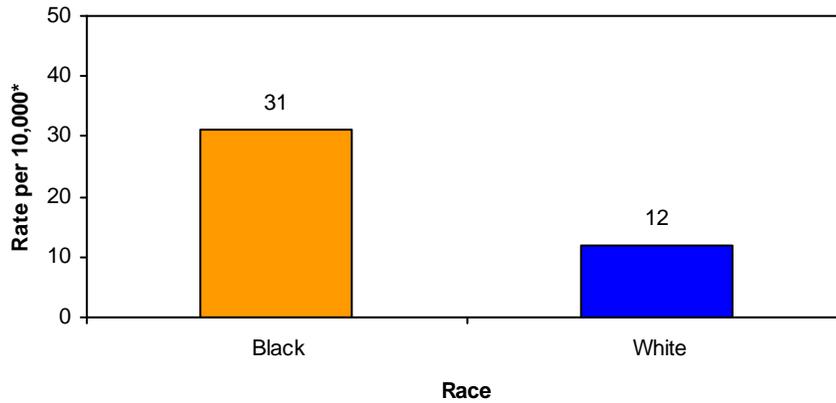
<sup>1</sup> Comparisons of asthma prevalence are based on statistical significance.

<sup>2</sup> Comparisons of asthma ED and hospitalization rates are not based on statistical significance.

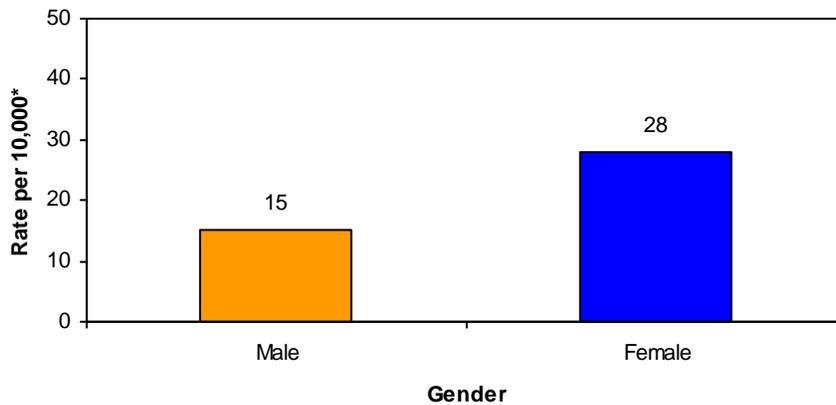
**Figure 1. Estimated number of hospital discharges with asthma as the first listed diagnosis per 10,000 population, by year, Mississippi, 2003-2005**



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

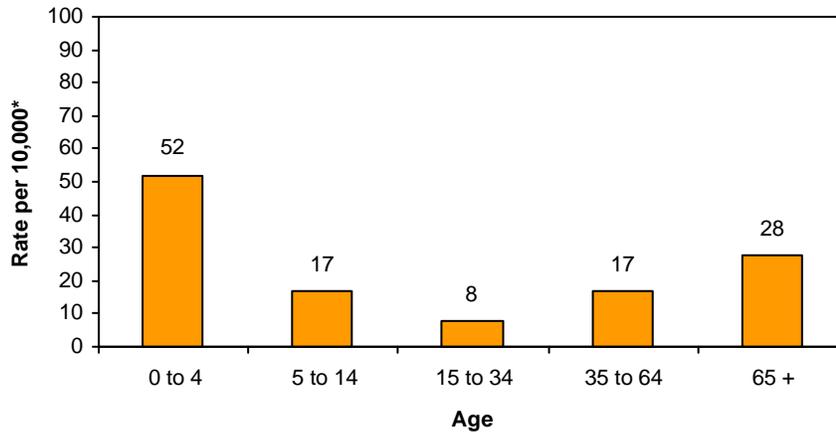


**Figure 3. Estimated number of hospital discharges with asthma as the first listed diagnosis per 10,000 population, by gender, Mississippi, 2003-2005**

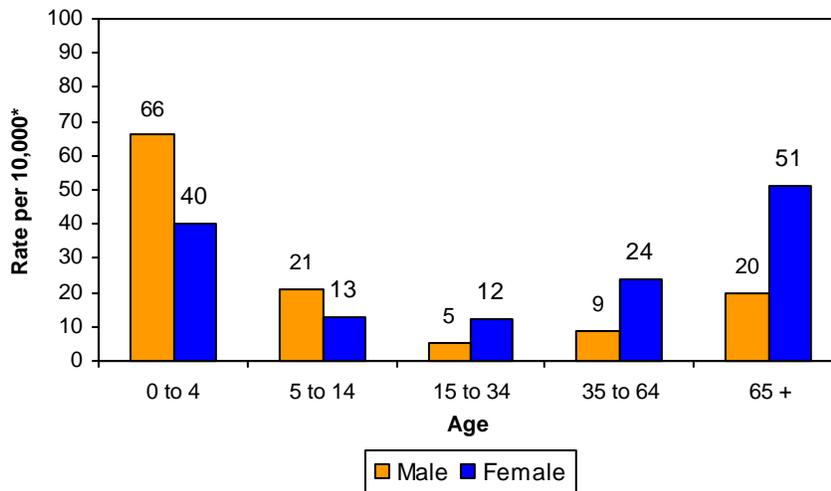


\*Rates are age-adjusted to the US 2000 standard population

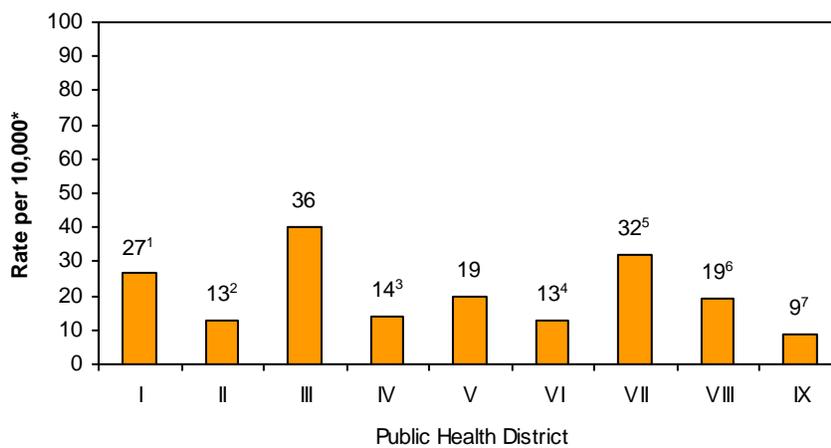
**Figure 4. Estimated number of hospital discharges with asthma as the first listed diagnosis per 10,000 population, by age, Mississippi, 2003-2005**



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



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



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

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

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

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

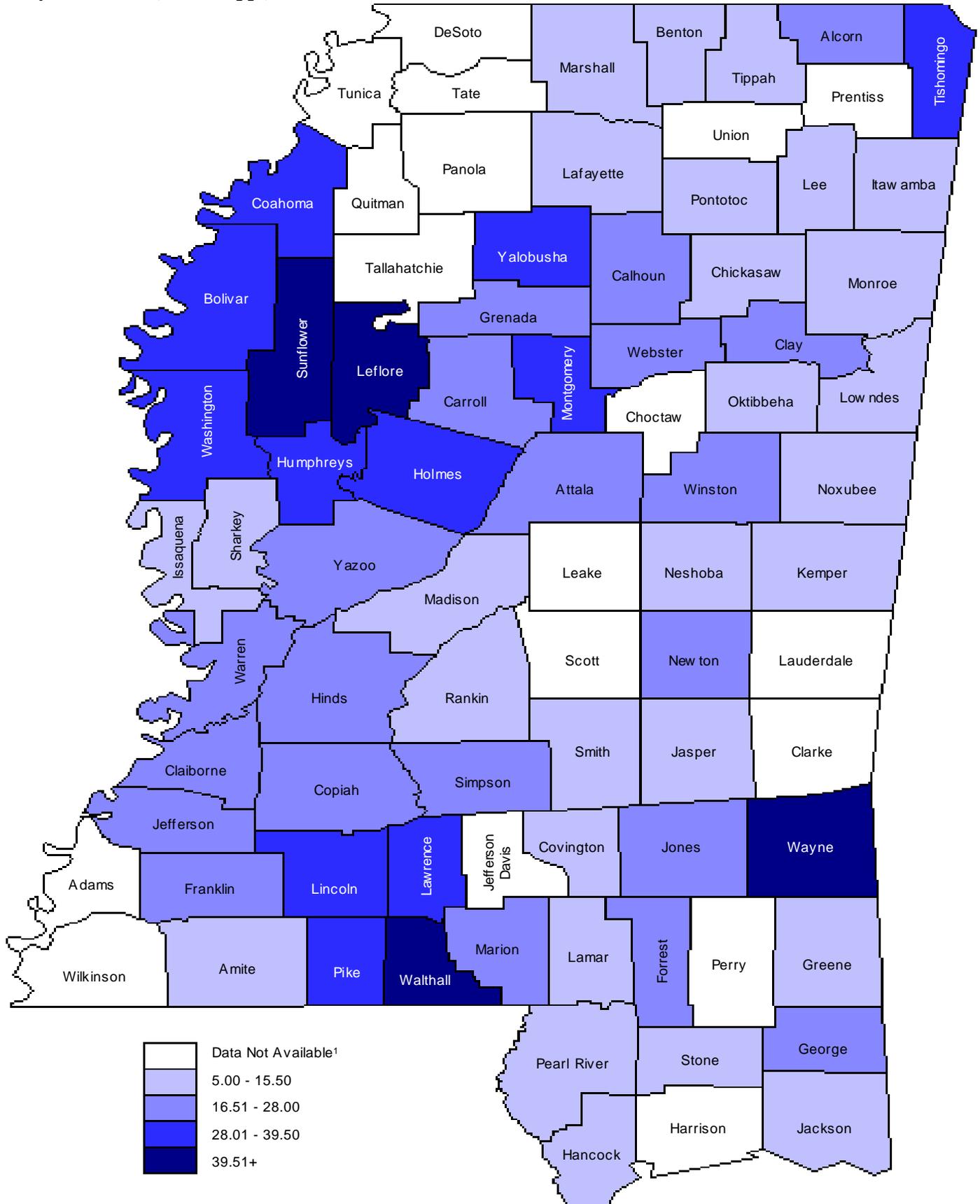
<sup>5</sup>Adams and Wilkinson Counties were excluded from District VII rate calculations due to non-reporting hospitals.

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

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

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

**Map 1. Estimated number of hospital discharges with asthma as the first listed diagnosis per 10,000 population, by county of residence, Mississippi, 2003-2005\***



<sup>1</sup>Data not available due to non-reporting hospitals located within the county. Rates may be underestimated in counties bordering non-reporting counties due to travel across county lines for emergency asthma care.

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

**Table 1. Estimated number of hospital discharges 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+
<b>Public Health District I</b>										
Coahoma	33	16	39	29	36	96	37	25	32	20
DeSoto	Data not available due to non-reporting hospital(s)									
Grenada	17	10	61	11	23	17	14	7	20	35
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	37	38	32	32	41	125	15	13	36	67
<b>Public Health District II</b>										
Alcorn	19	15	41	13	23	34	29	10	20	14
Benton	5	2	8	5	4	12	0	2	6	8
Itawamba	12	11	25	11	13	51	9	3	11	18
Lafayette	9	4	19	7	9	52	10	1	6	6
Lee	12	8	21	11	14	44	9	6	12	14
Marshall	5	3	8	7	6	9	5	2	7	6
Pontotoc	9	16	10	5	12	20	6	4	8	17
Prentiss	Data not available due to non-reporting hospital(s)									
Tippah	12	12	9	9	15	11	5	5	9	47
Tishomingo	38	38	29	26	47	47	17	18	47	81
Union	Data not available due to non-reporting hospital(s)									
<b>Public Health District III</b>										
Attala	20	11	34	18	22	80	11	13	13	38
Bolivar	30	26	33	26	34	43	33	20	32	30
Carroll	24	15	38	22	24	124	18	10	18	24
Holmes	37	21	41	31	37	154	42	18	28	34
Humphreys	38	14	51	21	52	125	11	36	30	61
Leflore	44	29	50	46	43	223	70	18	25	32
Montgomery	35	18	53	27	41	76	57	10	33	50
Sunflower	51	32	62	41	59	61	34	12	53	136
Washington	35	27	40	26	39	84	18	17	33	74
<b>Public Health District IV</b>										
Calhoun	22	19	27	9	33	41	10	11	17	48
Chickasaw	15	8	23	11	17	34	12	11	16	14
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	23	17	27	18	25	75	16	5	22	40
Lowndes	8	5	14	13	9	36	14	5	3	11
Monroe	16	12	24	15	16	70	15	6	12	24
Noxubee	6	2	8	7	5	28	8	5	4	2
Oktibbeha	8	5	13	8	8	38	10	1	7	8
Webster	17	15	22	15	19	15	10	12	16	42
Winston	18	14	23	11	23	33	17	12	18	18
<b>Public Health District V</b>										
Claiborne	19	9	21	21	16	21	50	3	7	50
Copiah	19	14	24	14	22	55	21	11	13	32
Hinds	23	10	31	18	26	56	25	13	22	26
Issaquena	5	9	10	9	10	39	0	0	4	14
Madison	11	7	17	8	13	24	8	6	9	21
Rankin	13	12	17	10	15	29	14	7	12	17
Sharkey	11	4	14	17	6	40	19	8	3	19
Simpson	24	17	35	24	24	88	13	11	25	28
Warren	26	19	37	15	34	35	12	12	27	58
Yazoo	22	20	21	23	22	31	8	14	10	83
<b>Public Health District VI</b>										
Clarke	Data not available due to non-reporting hospitals(s)									
Jasper	13	8	15	12	13	86	7	3	9	14
Kemper	12	10	13	11	13	20	5	0	20	20
Lauderdale	Data not available due to non-reporting hospital(s)									
Leake	Data not available due to non-reporting hospital(s)									
Neshoba	12	8	21	7	16	30	5	7	10	24
Newton	18	11	33	14	22	95	27	9	10	10
Scott	Data not available due to non-reporting hospital(s)									
Smith	14	11	20	15	14	58	13	5	8	32
<b>Public Health District VII</b>										
Adams	Data not available due to non-reporting hospital(s)									
Amite	9	9	11	7	11	12	6	5	11	16
Franklin	18	17	23	15	20	56	21	11	12	32
Jefferson	27	7	30	20	35	119	41	15	18	14
Lawrence	37	37	37	25	46	119	10	8	30	106
Lincoln	38	28	58	28	46	90	73	20	30	32
Pike	36	21	52	23	47	21	21	28	51	37
Walthall	42	29	58	28	54	75	40	19	38	89
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+
<b>Public Health District VIII</b>										
Covington	14	12	16	10	16	42	23	7	12	9
Forrest	19	15	26	16	21	50	14	6	18	36
Greene	14	10	37	11	18	57	4	2	12	37
Jefferson Davis	Data not available due to non-reporting hospital(s)									
Jones	22	13	44	17	26	86	18	10	21	24
Lamar	9	7	21	6	11	20	9	2	7	19
Marion	21	19	23	18	24	49	15	3	19	61
Perry	Data not available due to non-reporting hospital(s)									
Wayne	40	30	50	24	52	141	20	10	32	98
<b>Public Health District IX</b>										
George	20	53	34	14	26	45	12	7	24	37
Hancock	7	6	9	5	8	15	5	6	5	9
Harrison	Data not available due to non-reporting hospital(s)									
Jackson	8	6	14	8	8	41	10	3	6	8
Pearl River	8	6	14	6	10	25	10	5	7	3
Stone	8	8	10	3	12	17	7	1	11	6

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

\*\*Total includes 'other' and 'unknown' races