



MISSISSIPPI STATE DEPARTMENT OF HEALTH

Asthma Surveillance Summary

Asthma Emergency Department (ED) Visits – Mississippi, 2008

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

In 2008, the prevalence of self-reported asthma was 10.2% in Mississippi children ages 0 to 17 years and 7% in Mississippi adults with current asthma. Male children (13.2%) had a higher prevalence than female children (7.2%), but male adults (5.5%) had a lower prevalence than female adults (8.5%). A difference in prevalence between whites and blacks existed for children (7.1% vs. 13.5%), but not for adults (6.3% vs. 8.3%). Asthma was more prevalent among persons who did not graduate from high school than among persons who did graduate from high school (8.5% vs. 4.8%) and among persons with household income of less than \$25,000 (11.1%) than among persons with household income between \$25,000 and \$50,000 (6.7%) or income greater than \$50,000 (3.4%).¹

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 events. Despite the controllable nature of the disease, there were approximately 11,368 ED discharges with asthma listed as the primary diagnosis in Mississippi in 2008. In addition, asthma ED visit rates in Mississippi (calculated per 10,000 population) vary by race, gender, age, and geographic region.

Methods: Asthma ED discharge data was obtained from the Mississippi Asthma Surveillance System (MASS) for 2008. The MASS solicits asthma ED visits data from acute-care hospitals located in the State of Mississippi with asthma listed as the first (or primary) discharge diagnosis (ICD-9 493.xx). During this period, 20 hospitals (located in 7 counties) in Mississippi did not report asthma data to the Mississippi State Department of Health (MSDH). State population data were adjusted to account for non-reporting hospitals and counties without acute care hospital(s) using the proportion of hospital beds accounted for in the reported data. In 2008, hospitals reporting asthma ED visit data to the MSDH accounted for 82.1% of total hospital beds statewide. State population was therefore adjusted by 82.1% excluding counties without acute care hospital(s) 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 2008 United States Census population estimate data. Race-specific rates were calculated for blacks and whites 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 adjusted to the United States 2000 standard population. Counties with non-reporting hospitals were excluded from district-level analysis. Statewide rates are presented for individual years (2006, 2007, and 2008). District and county rates are presented for the year 2008.

Results: Statewide asthma ED visit rates in 2006 were (44 per 10,000), increased in 2007 (48 per 10,000) and decreased in 2008 (43 per 10,000). The 2006-2008 combined statewide asthma ED visit rate was an estimated 45 per 10,000. Black Mississippians had a higher asthma ED visit rate (73 per 10,000) than white Mississippians (18 per 10,000). Females (46 per 10,000) had a higher asthma ED visit rate than males (39 per 10,000). Asthma ED visit rates (102 per 10,000) were highest among 0 to 4 year olds and lowest among persons ages 65 and older (15 per 10,000). ED visit rates at the county level ranged from 2 per 10,000 in Pearl River County to 156 per 10,000 in Clarke County. Asthma ED visit rates were higher among blacks compared to whites in 65 of the 68 Mississippi counties with available data.²

¹ Comparisons of asthma prevalence are based on statistical significance

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

Limitations: Statewide asthma ED rates are based on estimated population data due to non-reporting hospitals and counties without acute care hospital(s). Rates were calculated for individual counties with non-reporting hospitals therefore underestimating the rates, and county rates may be underestimated or overestimated due to travel across county lines for asthma care. The population of the 7 counties with non-reporting hospitals is comprised of approximately 3% blacks and 8% whites. 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 discharge diagnosis of asthma are not captured by the MASS.

FIGURE 1. Estimated number of emergency department visits with asthma listed as the first (or primary) discharge diagnosis per 10,000 population – Mississippi, 2006-2008

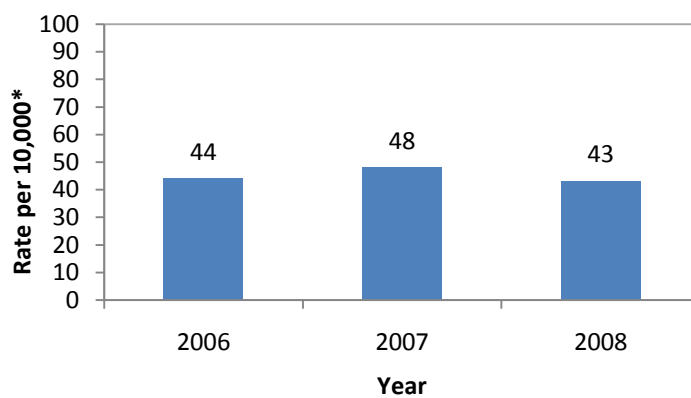
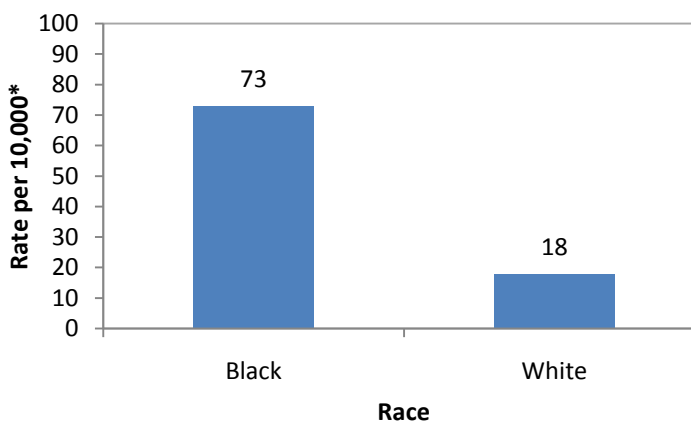


FIGURE 2. Estimated number of emergency department visits with asthma listed as the first (or primary) discharge diagnosis per 10,000 population, by race – Mississippi, 2008



*Rates are age-adjusted to US 2000 standard population

FIGURE 3. Estimated number of emergency department visits with asthma listed as the first (or primary) discharge diagnosis per 10,000 population, by sex – Mississippi, 2008

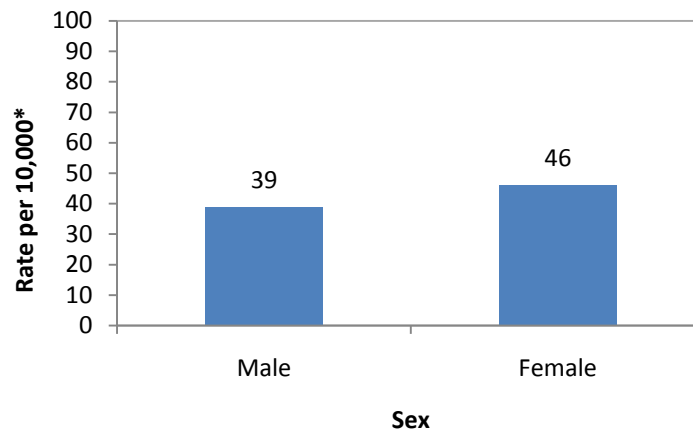


FIGURE 4. Estimated number of emergency department visits with asthma listed as the first (or primary) discharge diagnosis per 10,000 population, by age – Mississippi, 2008

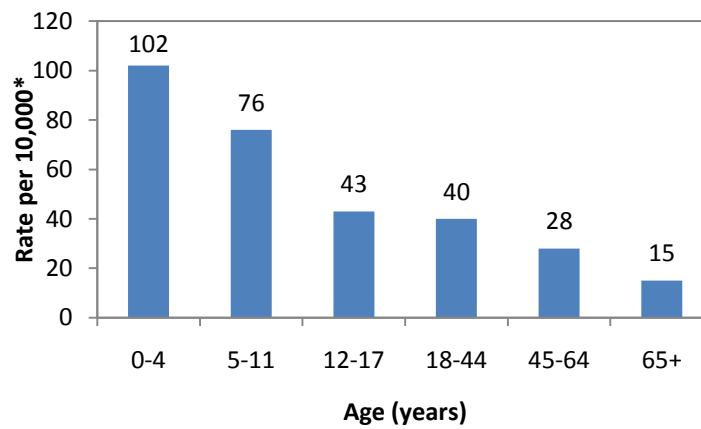
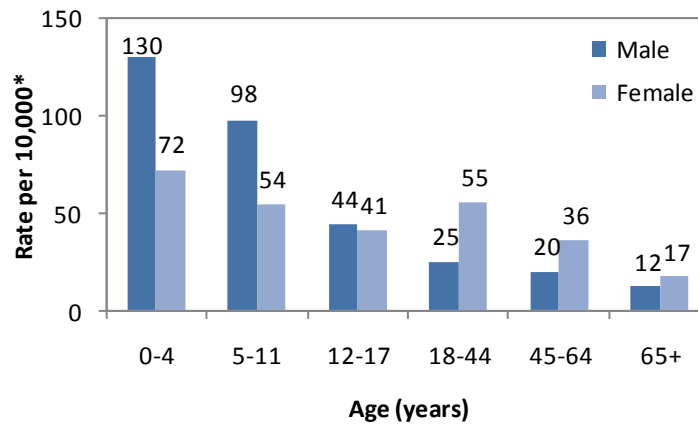
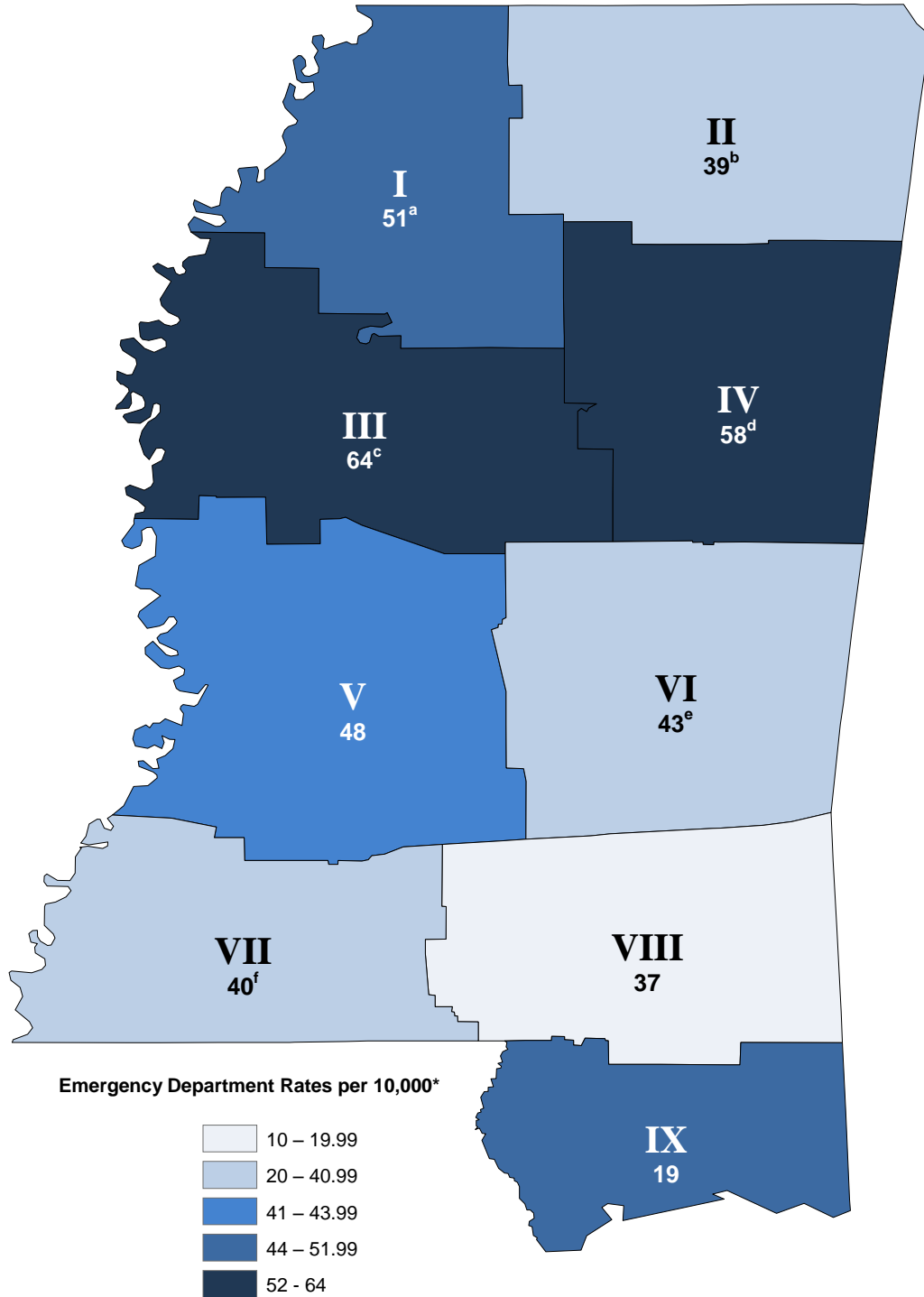


FIGURE 5. Estimated number of emergency department visits with asthma listed as the first (or primary) discharge diagnosis per 10,000 population, by age and sex – Mississippi, 2008



*Rates are age-adjusted to US 2000 standard population

MAP 1. Estimated number of emergency department visits with asthma listed as the first (or primary) discharge diagnosis per 10,000 population, by Public Health District – Mississippi, 2008*



* Rates are age-adjusted to US 2000 standard population

^a DeSoto, Tunica, and Tallahatchie Counties were excluded from District I rate calculations due to non-reporting hospitals

^b Lafayette, Prentiss and Union Counties were excluded from District II rate calculations due to non-reporting hospitals. Benton and Itawamba counties without acute care hospital(s)

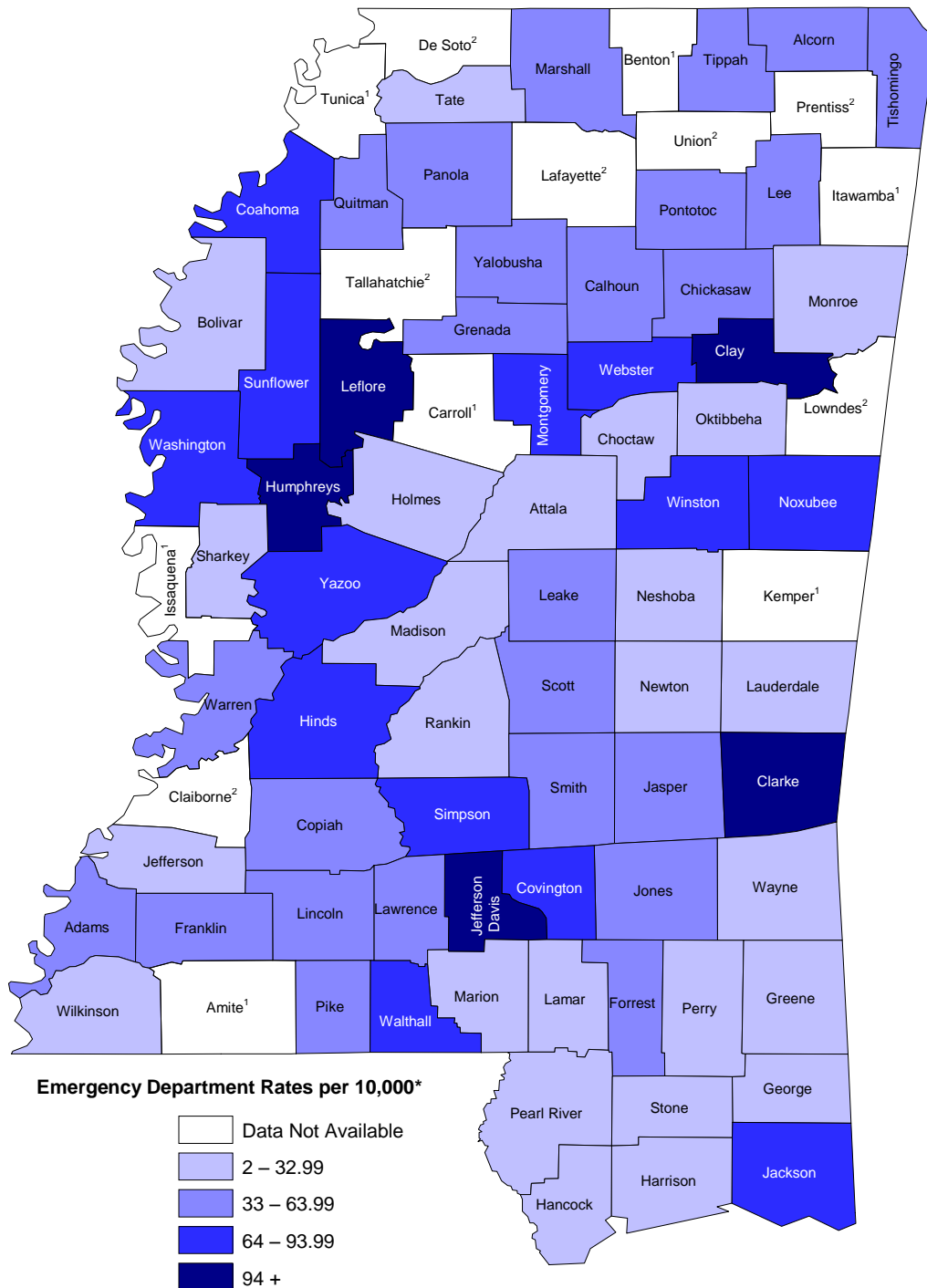
^c Carroll County was excluded from District III rate calculations due to no acute care hospital within the county

^d Lowndes County was excluded from District IV rate calculations due to a non-reporting hospital.

^e Kemper County was excluded from District VI rate calculations due to no acute care hospital within the county

^f Amite County was excluded from District VII rate calculations due to no acute care hospital within the county

MAP 2. Estimated number of emergency department visits with asthma listed as the first (or primary) discharge diagnosis per 10,000 population, by county of residence – Mississippi, 2008



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

¹ Counties in Mississippi with no acute care hospital(s)

² Data not available due to non-reporting hospitals located within the county. Rates may be underestimated or overestimated due to travel across county lines for emergency asthma care

Table 1. Estimated number of emergency department visits with asthma listed as the first (or primary) discharge diagnosis per 10,000 population, by county, race, sex, and age – Mississippi, 2008

County	Total**	White*	Black*	Male*	Female*	Ages 0-4	Ages 5-11	Ages 12-17	Ages 18-44	Ages 45-64	Ages 65+
Public Health District I											
Coahoma	81	17	102	71	87	134	129	54	70	84	57
DeSoto	Data not available due to non-reporting hospital(s)										
Grenada	58	30	100	49	63	80	72	53	70	39	33
Panola	57	36	75	49	64	143	75	81	59	32	15
Quitman	41	9	58	43	46	121	11	11	13	74	62
Tallahatchie	Data not available due to non-reporting hospital(s)										
Tate	26	10	57	26	25	73	45	26	24	15	6
Tunica	County with no acute care hospital(s)										
Yalobusha	44	40	51	35	52	19	25	60	45	30	82
Public Health District II											
Alcorn	42	30	126	38	60	62	65	46	53	24	10
Benton	County with no acute care hospital(s)										
Itawamba	County with no acute care hospital(s)										
Lafayette	Data not available due to non-reporting hospital(s)										
Lee	40	18	93	33	45	81	66	44	35	36	11
Marshall	48	7	61	45	26	68	45	69	56	34	22
Pontotoc	39	32	70	30	49	31	67	39	47	32	10
Prentiss	Data not available due to non-reporting hospital(s)										
Tippah	36	31	59	23	48	25	93	30	31	17	44
Tishomingo	33	31	31	32	33	60	70	20	34	22	11
Union	Data not available due to non-reporting hospital(s)										
Public Health District III											
Attala	7	4	12	5	9	27	6	12	7	2	3
Bolivar	5	2	7	5	5	6	11	0	8	2	0
Carroll	County with no acute care hospital(s)										
Holmes	20	14	22	21	17	57	44	20	22	7	0
Humphreys	128	41	153	90	159	366	212	54	120	81	87
Leflore	115	52	136	125	105	317	278	167	85	63	22
Montgomery	65	12	118	63	65	76	135	43	58	75	15
Sunflower	90	20	110	70	114	192	130	77	82	76	59
Washington	87	32	109	73	96	162	161	60	93	66	24
Public Health District IV											
Calhoun	43	26	68	34	52	110	23	73	36	49	16
Chickasaw	51	16	94	42	60	127	91	65	40	28	40

County	Total**	White*	Black*	Male*	Female*	Ages 0-4	Ages 5-11	Ages 12-17	Ages 18-44	Ages 45-64	Ages 65+
Choctaw	20	11	88	33	54	51	6	17	27	10	10
Clay	127	41	180	135	116	180	212	159	156	62	26
Lowndes	Data not available due to non-reporting hospital(s)										
Monroe	32	17	61	27	35	42	52	34	29	33	14
Noxubee	93	19	126	128	59	220	318	28	32	114	44
Oktibbeha	12	4	23	9	15	20	20	19	10	7	9
Webster	76	38	207	67	85	159	110	63	72	78	18
Winston	72	20	128	51	95	175	65	37	76	51	72
Public Health District V											
Claiborne	County with no acute care hospital(s)										
Copiah	35	22	44	27	30	56	72	12	42	19	13
Hinds	74	19	98	68	66	57	44	20	22	7	0
Issaquena	County with no acute care hospital(s)										
Madison	21	7	40	20	17	64	41	14	17	11	14
Rankin	30	22	60	24	34	44	50	28	29	26	19
Sharkey	19	12	22	30	8	1	37	72	12	6	27
Simpson	71	54	89	59	81	166	71	73	80	47	31
Warren	60	32	88	64	55	82	137	73	60	29	29
Yazoo	81	17	129	82	77	230	92	97	80	38	60
Public Health District VI											
Clarke	156	31	362	162	144	226	266	201	192	72	29
Jasper	40	11	60	30	48	85	66	12	42	32	18
Kemper	County with no acute care hospital(s)										
Lauderdale	22	8	41	17	26	28	24	32	19	24	11
Leake	38	15	76	20	54	87	37	19	21	68	21
Neshoba	20	14	47	11	28	27	28	11	26	18	3
Newton	4	3	6	2	5	0	18	5	3	0	3
Scott	34	20	53	28	39	93	39	19	31	28	24
Smith	33	15	88	25	40	77	28	50	32	30	13
Public Health District VII											
Adams	36	12	50	36	35	59	57	23	41	30	9
Amite	County with no acute care hospital(s)										
Franklin	35	17	63	23	39	70	80	80	14	41	8
Jefferson	15	6	15	16	14	17	37	14	14	13	0
Lawrence	59	33	106	55	60	89	117	51	52	40	55
Lincoln	38	24	67	12	13	76	72	51	27	39	13
Pike	63	32	91	56	68	132	80	88	65	50	8
Walthall	67	33	101	53	76	81	209	80	33	51	65

County	Total**	White*	Black*	Male*	Female*	Ages 0-4	Ages 5-11	Ages 12-17	Ages 18-44	Ages 45-64	Ages 65+
Wilkinson	8	0	10	11	2	30	12	0	10	4	0
Public Health District VIII											
Covington	80	45	129	49	108	91	111	95	93	55	39
Forrest	44	24	73	46	40	92	88	45	33	33	28
Greene	9	4	16	7	10	52	9	29	0	3	7
Jefferson Davis	101	31	143	82	114	321	184	124	51	92	66
Jones	46	16	115	37	54	83	72	48	46	38	14
Lamar	10	7	24	8	11	15	19	9	9	7	4
Marion	12	9	16	10	13	24	32	8	8	9	5
Perry	31	29	32	23	40	103	83	17	13	26	26
Wayne	3	4	3	4	3	26	0	0	3	2	0
Public Health District IX											
George	20	10	129	16	23	5	20	5	31	18	12
Hancock	2	2	4	2	1	4	0	6	1	0	2
Harrison	17	12	31	13	20	21	22	11	18	19	7
Jackson	65	39	138	64	65	138	106	41	74	36	26
Pearl River	2	2	2	2	1	12	0	0	0	0	3
Stone	11	10	16	9	13	18	19	30	11	3	0

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

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