

Asthma Burden Among School-Age Children (5-17 years) for Ten Selected Counties in Public Health Region 4, Texas, 2003-2011

Data Requested by

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Table 1. Number of Asthma Hospitalizations¹ Among School-Age Children (5-17 years) for Ten Selected Counties, Texas, 2010

Geographic Location	Asthma Hospitalizations	Population	Asthma Hospitalization Rate per 10,000 persons
County			
Anderson	17	8,340	20.4
Cherokee	*	9,546	*
Gregg	18	21,940	8.2
Henderson	*	13,174	*
Rains	*	1,789	*
Rusk	*	8,945	*
Smith	37	38,842	9.5
Upshur	*	7,189	*
Van Zandt	*	9,504	*
Wood	*	6,331	*
Sum of ten selected counties	103	125,600	8.2

Hospitalization Data Source: Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data File, 2010.

Population Data Source: Center for Health Statistics, Texas Department of State Health Services, 2010.

¹Hospital records listing ICD-9 codes 493.0-493.9 as the principal diagnosis.

* Cell suppressed if number of asthma discharges is less than 12.

Interpretation for Table 1:

- According to 2010 Texas Health Care Information Collection (THCIC) Inpatient Hospital Public Use Data, a total of 103 asthma hospitalizations occurred among children age 5-17 years from the ten selected counties.
- In 2010, the asthma hospitalization rate among children age 5-17 years in the 10 select counties was 8.2 per 10,000 persons per year.
- In 2010, among the ten selected counties, the population of children age 5-17 years was 125,600 persons.

- Among the ten selected counties, the highest number of asthma hospitalizations among children age 5-17 years occurred in Smith County, with 37 asthma hospitalizations. The population of children age 5-17 years in Smith County in 2010 was the highest compared to the other nine counties, at 38,842 persons.
- The asthma hospitalization rate among children age 5-17 years was highest in Anderson County at 20.4 asthma hospitalizations per 10,000 persons per year.
- Among the ten selected counties, twelve or more asthma hospitalizations occurred among children age 5-17 years in 3 counties: Anderson County, Cherokee County, and Smith County.

Table 2. Prevalence of Current and Lifetime Asthma Among School-Age Children (5-17 years) for Selected Geographic Locations, Texas, 2007-2010¹

Geographic Location	Current Asthma 95% Confidence Interval			Estimated Number with asthma	Lifetime Asthma 95% Confidence Interval			Estimated Number with asthma
	Average Prevalence (%)	Upper Limit	Lower Limit		Average Prevalence (%)	Upper Limit	Lower Limit	
Public Health Region 4	8.5	4.6	12.4	16,050	13.8	9.3	18.3	26,117
Nine Counties ²	5.1	2.7	7.6	5,398	11.0	7.4	14.6	11,614
Gregg County	9.0	1.7	7.6	1,658	15.9	6.6	25.3	2,924
Smith County	3.9	1.6	6.2	1,157	9.6	5.8	13.3	2,872

Data Source: Texas Behavioral Risk Factor Surveillance System (BRFSS), 2007-2010, Center for Health Statistics, Texas Department of State Health Services.

¹Due to methodological changes in BRFSS, 2007-2010 BRFSS data and 2011 BRFSS data cannot be directly compared. Details available in the section “Limitations of the data used in this report” located at the end of the report.

²Data were available for nine counties (Anderson, Cherokee, Gregg, Henderson, Rusk, Smith, Upshur, Van Zandt, Wood).

Current Asthma

Survey questions: “Has a doctor, nurse or other health professional ever said that the child has asthma?” and “Does the child still have asthma?”

Numerator: Respondents who answered “Yes” to the previous survey questions.

Denominator: All respondents excluding refusals and unknowns.

Lifetime Asthma

Survey questions: “Has a doctor, nurse or other health professional ever said that the child has asthma?”

Numerator: Respondents who answered “Yes” to the previous survey question.

Denominator: All respondents excluding refusals and unknowns.

Table 3. Prevalence of Current and Lifetime Asthma Among School-Age Children (5-17 years) for Public Health Region 4, Texas, 2011¹

Geographic Location	Current Asthma				Lifetime Asthma			
	Prevalence (%) ²	95% Confidence Interval		Estimated Number with asthma	Prevalence (%) ²	95% Confidence Interval		Estimated Number with asthma
	Upper Limit	Lower Limit			Upper Limit	Lower Limit		
Public Health Region 4	6.0	2.6	9.4	11,135	17.4	9.4	25.4	32,482

Data Source: Texas Behavioral Risk Factor Surveillance System (BRFSS), 2011, Center for Health Statistics, Texas Department of State Health Services.

¹Due to methodological changes in BRFSS, 2007-2010 BRFSS data and 2011 BRFSS data cannot be directly compared. Details available in the section “Limitations of the data used in this report” located at the end of the report.

Current Asthma

Survey questions: “Has a doctor, nurse or other health professional ever said that the child has asthma?” and “Does the child still have asthma?”

Numerator: Respondents who answered “Yes” to the previous survey questions.

Denominator: All respondents excluding refusals and unknowns.

Lifetime Asthma

Survey questions: “Has a doctor, nurse or other health professional ever said that the child has asthma?”

Numerator: Respondents who answered “Yes” to the previous survey question.

Denominator: All respondents excluding refusals and unknowns.

Interpretation for Table 2 and Table 3:

- In Public Health Region (PHR) 4 from 2007-2010 and among children age 5-17 years the prevalence of current asthma was 8.5 percent (95% CI: 4.6-12.4) and an estimated average of 16,050 children had current asthma. In PHR 4 from 2007-2010, an estimated average of 11,614 children age 5-17 years had ever been diagnosed with asthma.
- According to the 2007-2010 Texas Behavioral Risk Factor Surveillance System (BRFSS), among children age 5-17 years the prevalence of current asthma was 5.1 percent (95% CI: 2.7-7.6) in the nine counties in which data were available (Anderson, Cherokee, Gregg,

Henderson, Rusk, Smith, Upshur, Van Zandt, and Wood Counties). In the nine counties from 2007-2010, an estimated average of 5,398 children age 5-17 years had current asthma.

- In the nine counties from 2007-2010 and among children age 5-17 years, the prevalence of lifetime asthma was 11.0 percent (95% CI: 7.4-14.6). In the nine counties from 2007-2010, an estimated average of 11,614 children age 5-17 years had ever been diagnosed with asthma.
- In Gregg County from 2007-2010 and among children age 5-17 years the prevalence of current asthma was 9.0 percent (95% CI: 1.7-7.6). In Gregg County from 2007-2010, an estimated average of 1,658 children age 5-17 years had current asthma and 2,924 children age 5-17 had ever been diagnosed with asthma.
- In Smith County from 2007-2010 and among children age 5-17 years the prevalence of current asthma was 3.9 percent (95% CI: 1.6-6.2). In Smith County from 2007-2010, an estimated average of 1,157 children age 5-17 years had current asthma and 2,872 children age 5-17 had ever been diagnosed with asthma.
- According to 2011 Texas BRFSS data, in PHR 4 and among children age 5-17 years, current asthma prevalence was 6.0 percent (95% CI: 2.6-9.4) and an estimated 11,135 children had current asthma.
- In 2011 in PHR 4 and among children age 5-17 years, lifetime asthma prevalence was 17.4 percent (95% CI: 9.4-25.4) and an estimated 32,482 children had ever been diagnosed with asthma.

Table 4. Median Household Income and Prevalence of Persons Below Poverty Level for Selected Counties, Texas, 2007-2011

Place of Residence	Median household income (\$)¹	Persons below poverty level (%)²
Texas	50,920	17.0
County		
Anderson	40,577	18.8
Cherokee	37,758	22.3
Gregg	44,608	16.6
Henderson	41,242	16.0
Rains	45,168	11.8
Rusk	46,438	13.5
Smith	46,615	15.5
Upshur	46,734	13.0
Van Zandt	42,359	15.9
Wood	41,260	14.8

Data Source: U. S. Census Bureau, American Community Survey, 5-Year Estimates, 2007-2011, available at <http://quickfacts.census.gov/qfd/states/48000.html>

¹Definitions and methodology available at http://quickfacts.census.gov/qfd/meta/long_INC110211.htm

²Definitions and methodology available at http://quickfacts.census.gov/qfd/meta/long_PVY020211.htm

Interpretation of Table 4:

- According to the U.S. Census Bureau, American Community Survey, 5-year estimates from 2007-2011, the median household income in Texas was \$50,920 and 17.0 percent of persons were below the poverty level.
- From 2007-2011 the median household income was lower in each of the ten selected counties compared to Texas.
- Among the ten selected counties the median household income was highest in Upshur County (\$46,734), Smith County (\$46,615), and Rusk County (\$46,438), and lowest in Cherokee County (\$37,758).
- From 2007-2011 the prevalence of persons below the poverty level was higher in two counties, Anderson County (18.8%) and Cherokee County (22.3%), compared to Texas.
- Among the ten selected counties, the prevalence of persons below the poverty level was lowest in Rains County (11.8%).

Mortality Data and Interpretation:

- The coding system used for establishing underlying cause of death is the ICD-10. The ICD-10 codes for asthma as defined by Vital Statistics are J45-J46.
- Asthma mortality rates or the number of asthma deaths cannot be reported for geographic areas and populations in which fewer than 20 asthma deaths occurred.
- According to the Vital Statistics Unit, Center for Health Statistics, 2010, Texas Department of State Health Services, from 2003 and 2010 asthma was the underlying cause of death for fewer than 20 deaths among residence age 5-17 in each of the following ten counties: Anderson, Cherokee, Gregg, Henderson, Rains, Rusk, Smith, Upshur, Van Zandt, and Wood.
- Within the ten selected counties, fewer than 20 total asthma deaths occurred from 2003-2010 among children age 5-17 years.

Limitations of the data used in this report

Hospitalization Data

- Fewer than 12 asthma hospitalizations were reported in 2010 among school-age children (5-17 years) in Cherokee, Henderson, Rains, Rusk, Upshur, Van Zandt, and Wood counties, therefore the number of asthma hospitalizations cannot be reported for those geographic locations.
- The Texas Hospital Inpatient Discharge Public Use Data results do not include HIV and drug/alcohol use patients.
- Hospitalization data are based on inpatient hospitalization and do not include emergency department (ED) visits which did not result in hospital admission. By not including these ED asthma visits, the burden of serious asthma episodes is not fully captured.
- The Texas Hospital Inpatient Discharge Public Use Data represent the number of inpatient hospitalizations. Since the data have been de-identified and an individual can be hospitalized more than once for the same condition during the data collection period, multiple hospitalizations for the same individual and the same diagnosis cannot be distinguished.
- Texas Hospital Inpatient Discharge Public Use Data is not a complete source of information on asthma-related discharges because some hospitals in Texas are exempt from reporting requirements. This may result in an underestimation of the number of related discharges.
- Incidence rates and patterns of newly diagnosed asthma cases are not captured by the data in this report. Using hospitalization data, we cannot determine if a hospitalization serves as an initial diagnosis of asthma.

BRFSS Prevalence Data

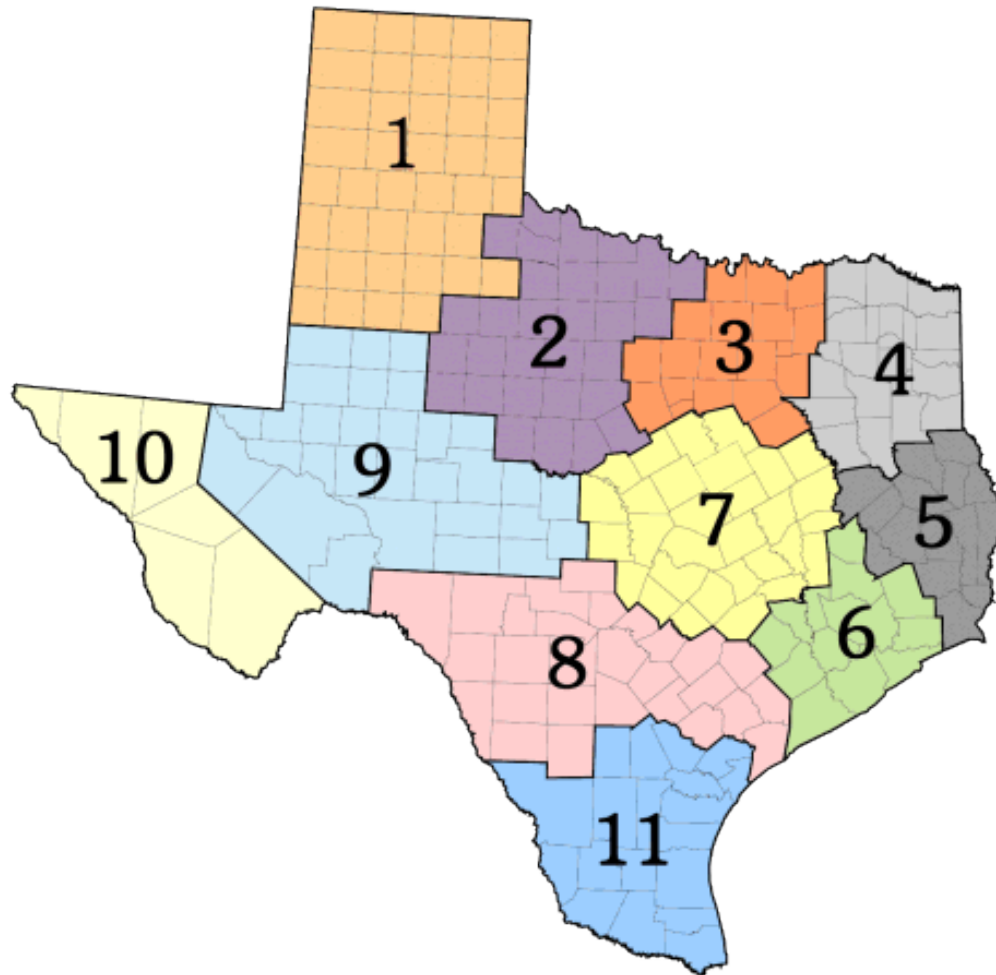
- Prevalence estimates from BRFSS may underestimate the true prevalence of asthma among Texas children because the survey does not identify undiagnosed cases of asthma.
- Prevalence estimates from 2011 BRFSS are not available for individual counties or groups of counties less than Public Health Region 4 due to small sample size.
- Due to the improvements in BRFSS sampling methodology and a change in weighting procedures used for the survey data, 2011 BRFSS data cannot be compared to survey data from previous years, such as combined 2007-2010 BRFSS, in order to assess trends. Shifts in prevalence estimates for 2011 might not represent trends in prevalence in the population but instead merely reflect improved methods of measuring disease and risk factors.

Mortality Data

- From 2003-2010, mortality rates for school-age children (age 5-17 years) in Anderson, Cherokee, Gregg, Henderson, Rains, Rusk, Smith, Upshur, Van Zandt, and Wood counties are not reportable due to fewer than 20 asthma deaths occurring in those geographic locations and among the specified age group.
- Asthma mortality rates based on underlying cause of death data obtained from death certificates may underestimate actual asthma-based or asthma-related mortality.
- Asthma mortality rates may be inaccurate due to coding errors.

Appendix

Figure 1A. Map of Public Health Regions, Texas



http://www.hhs.state.tx.us/aboutHHS/HHS_Regions.shtml#01

Appendix

Figure 2A. Map of Counties in Public Health Region 4, Texas



<http://www.healthyeasttx.org/index.php?page=region-maps>