

**Asthma Burden Among Children in Hidalgo County, Public Health Region 11,
and Texas, 2005-2011**

Data Requested by

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February 22nd, 2013

Table 1. Current Asthma Prevalence Among Children (0-17 years), Public Health Region 11, Texas, BRFSS 2011

Characteristics	Public Health Region 11		Texas	
	Sample Size	Prevalence (95% CI)	Sample Size	Prevalence (95% CI)
Total	308	11.4 (6.1, 16.6)	3,695	8.0 (6.7, 9.3)
Gender				
Boy	172	14.5 (7.0, 22.0)	1,915	8.6 (6.8, 10.4)
Girl	135	7.0 (0.0, 13.9)	1,744	7.4 (5.6, 9.3)
Race/Ethnicity				
White Non-Hispanic	27	--	1,619	8.2 (6.3, 10.1)
Black Non-Hispanic	--	--	321	11.5 (7.1, 15.8)
Hispanic	273	11.7 (6.0, 17.5)	1,530	6.6 (4.8, 8.5)
Other Non-Hispanic	--	--	179	7.1 (2.0, 12.1)
Age Group (years)				
0-4	56	-	787	5.3 (3.1, 7.6)
5-9	76	-	878	10.3 (7.3, 13.3)
10-14	94	10.8 (2.7, 18.8)	958	8.6 (6.2, 11.1)
15-17	55	-	697	9.4 (6.3, 12.6)

Data Source: Texas Behavioral Risk Factor Surveillance System (BRFSS), 2011.

- Estimate is be unreliable because confidence interval half-width is > 10

-- Estimate suppressed for small sample size (if numerator is < 5 or denominator is < 50).

Note: Data for children are based on information provided by an adult respondent about a child living in the home.

Survey question: "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.

Interpretation for Table 1:

- According to the 2011 Texas Behavioral Risk Factors Surveillance System (BRFSS), 11.4 percent (95% Confidence Interval (CI): 6.1-16.6) of children age 0-17 years in Public Health Region (PHR) 11 had current asthma. The prevalence in PHR 11 was higher than the prevalence among children in Texas (8.0; 95% CI: 6.7-9.3), although not statistically significantly higher.
- Among children in PHR 11, an estimated 14.5 percent (95% CI: 7.0-22.0) of boys and 7.0 percent (95% CI: 0.0-13.9) of girls had current asthma.
- In PHR 11, an estimated 11.7 percent of Hispanic children had current asthma, which was not statistically significantly higher than the in all of Texas (6.6 percent).
- Among children in Texas, the prevalence of current asthma was highest among black non-Hispanics (11.5 percent), although this difference was not statistically significant.
- In PHR 11, an estimated 10.8 percent (95% CI: 2.7-18.8) of children age 10-14 years had current asthma.
- Among children in Texas, children age 5-9 years had the highest prevalence of current asthma (10.3 percent), although not statistically significantly higher than other age groups.

Table 2. Crude and Age-Adjusted Hospitalization Rates per 10,000 for Asthma* Among Children (0-17 years), Hidalgo County and Public Health Region 11, Texas, 2010

Characteristics	Hidalgo County						Public Health Region 11					
	Admissions	Population Size	Crude Rate	AAHR†	95% CI		Admissions	Population Size	Crude Rate	AAHR†	95% CI	
					Lower Limit	Upper Limit					Lower Limit	Upper Limit
Total	460	268,484	17.1	16.8	15.3	18.4	1,175	671,080	17.5	17.3	16.3	18.3
Sex												
Boy	274	136,398	20.1	19.7	17.4	22.1	733	342,147	21.4	21.2	19.7	22.8
Girl	186	132,086	14.1	13.8	11.9	15.8	442	328,933	13.4	13.3	12.0	14.5
Race/Ethnicity												
White Non-Hispanic	--	9,684	--	--	--	--	67	55,137	12.2	12.3	9.4	15.3
Black Non-Hispanic	--	790	--	--	--	--	29	5,574	52.0	52.8	33.5	72.0
Hispanic	442	255,690	17.3	17.0	15.4	18.5	1,037	604,515	17.2	16.9	15.9	17.9
Other Non-Hispanic	--	2,320	--	--	--	--	34	5,854	58.1	60.9	40.4	81.4
Age Group (years)												
0-4	232	74,538	31.1		30.1	32.2	615	184,145	33.4		32.7	34.1
5-9	143	77,266	18.5		17.7	19.4	351	190,545	18.4		17.9	19.0
10-14	65	73,809	8.8		8.2	9.4	160	185,775	8.6		8.2	9.0
15-17	20	42,871	4.7		4.3	5.0	49	110,615	4.4		4.2	4.6

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.

AAHR = Age-Adjusted Hospitalization Rate.

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

† Hospitalization rates by age group cannot be age-adjusted.

'--' Cell suppressed if number of admissions is less than 12.

Note: Total hospitalization rates, and rates by sex and race/ethnicity age-adjusted to the 2000 U.S. Census population.

Table 3. Crude and Age-Adjusted Hospitalization Rates per 10,000 for Asthma* Among Children (0-17 years), Texas, 2010

Characteristics	Admissions	Population Size	Crude Rate	AAHR†	95% CI	
					Lower Limit	Upper Limit
Total	9,307	6,865,824	13.6	13.4	13.1	13.6
Sex						
Boy	5,865	3,510,249	16.7	16.5	16.1	16.9
Girl	3,442	3,355,575	10.3	10.1	9.8	10.5
Race/Ethnicity						
White Non-Hispanic	2,302	2,398,086	9.6	9.7	9.3	10.1
Black Non-Hispanic	2,370	864,858	27.4	27.6	26.5	28.7
Hispanic	3,977	3,317,777	12.0	11.5	11.2	11.9
Other Non-Hispanic	589	285,103	20.7	20.1	18.5	21.7
Age Group (years)						
0-4	4,326	1,928,473	22.4		22.3	22.6
5-9	3,182	1,928,234	16.5		16.3	16.7
10-14	1,419	1,881,883	7.5		7.4	7.7
15-17	380	1,127,234	3.4		3.3	3.4

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.

AAHR = Age-Adjusted Hospitalization Rate.

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

† Hospitalization rates by age group cannot be age-adjusted.

'--' Cell suppressed if number of admissions is less than 12.

Note: Total hospitalization rates, and rates by sex and race/ethnicity age-adjusted to the 2000 U.S. Census population.

Interpretation for Table 2 and Table 3:

- According to 2010 Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data, the age-adjusted hospitalization rate (AAHR) for asthma among children 0-17 years in Hidalgo County was 17.1 per 10,000 persons (95% CI: 15.3-18.4), accounting for 460 hospitalizations. The AAHR for asthma in Hidalgo County was statistically significantly higher than the AAHR for asthma in all of Texas (13.4 per 10,000 persons; 95% CI: 13.1-13.6).
- The AAHR for asthma in Hidalgo County, PHR 11, and Texas was significantly higher among boys compared to girls.
- Among children in Hidalgo County the AAHR for asthma among boys was 19.7 per 10,000 persons (95% CI: 17.4-22.1) and among girls was 13.8 per 10,000 persons (11.9-15.8). The AAHR for asthma was statistically significantly higher for both boys and girls in Hidalgo County compared to Texas (Boys: 16.5 per 10,000 persons; 95% CI: 16.1-16.9; Girls: 10.1 per 10,000 persons; 95% CI: 9.8-10.5).
- Among Hispanic children, the AAHR for asthma in Hidalgo County was 17.0 per 10,000 persons (95% CI: 15.4-18.5) and was significantly higher than the AAHR for all of Texas at 11.5 per 10,000 persons (95% CI: 11.2-11.9), but not statistically significantly higher than the AAHR for PHR 11 (16.9 per 10,000 persons).
- The crude asthma hospitalization rate was highest among children age 0-4 years in Hidalgo County, PHR 11, and all of Texas.
- Among children in Hidalgo County, the crude asthma hospitalization rate was significantly higher among children age 0-4 years (31.1 per 10,000; 95% CI: 30.1-32.2) compared to all other age groups, with the lowest asthma hospitalization rate occurring among children age 15-17 years (4.7 per 10,000; 95% CI: 4.3-5.0). Among children age 0-4 years, the crude asthma hospitalization rate was significantly higher among children in Hidalgo County compared to all of Texas (22.4 per 10,000; 95% CI: 22.3-22.6).

Table 4. Crude Mortality Rates Among Children (0-17 years) per 100,000 for

Asthma*, Texas, 2005-2010

Characteristics	Number of Deaths	Crude Mortality Rate	95% CI for Crude Rate	
			Lower Limit	Upper Limit
Total	94	0.2	0.2	0.3
Sex				
Boy	66	0.3	0.2	0.4
Girl	28	0.1	0.1	0.2
Race/Ethnicity				
White Non-Hispanic	21	0.1	0.1	0.2
Black Non-Hispanic	47	0.8	0.6	1.1
Hispanic	21	0.1	0.1	0.1
Other Non-Hispanic	--	--	--	--
Age Group (years)				
0-4	29	0.2	0.1	0.3
5-9	29	0.2	0.2	0.3
10-14	--	--	--	--
15-17	--	--	--	--

Data source: Vital Statistics Unit, Center for Health Statistics, 2010, Texas Department of State Health Services.

* 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

(<http://soupfin.tdh.state.tx.us/icd10.htm>).

'--' Cell suppressed if number of deaths is less than 20.

Interpretation for Table 4:

- From 2005-2010, 94 deaths occurred in Texas among children age 0-17 years in which the underlying cause of death was asthma.
- The overall mortality rate for asthma among children was 0.2 per 100,000 persons (95% CI: 0.2-0.3).
- From 2005-2010, more deaths occurred among black non-Hispanic children (47) than among white non-Hispanics (21) or Hispanics (21).
- The asthma mortality rate was significantly higher among black non-Hispanic children (0.8 per 100,000; 95% CI: 0.6-1.1) compared to white non-Hispanics (0.1 per 100,000; 95% CI: 0.1-0.2) and Hispanics (0.1 per 100,000; 95% CI: 0.1-0.1).
- There was no significant difference in asthma mortality rates between children age 0-4 years and 5-9 years (0.2 per 100,000). In both age groups, 29 asthma deaths occurred among children in Texas from 2005-2010.

Limitations of the data used in this report

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 for a single year from BRFSS are not available for Hidalgo County due to small sample size.
- Prevalence estimates for PHR 11 for white non-Hispanics, black non-Hispanics, and other non-Hispanics are suppressed due to small sample size.
- Prevalence estimates for PHR 11 for children age 0-4 years, 5-9 years, and 15-17 years are unreliable because the 95% confidence interval half-widths are greater than 10 and are therefore suppressed.
- 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 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.

Hospitalization Data

- Fewer than 12 asthma hospitalizations occurred among white non-Hispanics, black non-Hispanics, and other non-Hispanics in Hidalgo County, therefore asthma hospitalization rates cannot be reported for those race/ethnic categories.
- 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 and rate 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.

Mortality Data

- From 2005-2010, mortality rates for children in Hidalgo County, PHR 11, other non-Hispanics in Texas, and children age 10-14 and 15-17 in Texas are not reportable due to fewer than 20 asthma deaths occurring for those demographic groups.
- 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. The coding of asthma and other respiratory deaths in the elderly is problematic due to difficulties in diagnosis and the presence of other co-morbid conditions that can lead to coding inaccuracies.