

Asthma Burden Among Children in Central Texas 2011 & 2012

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Table 1. Lifetime and Current Asthma Prevalence Among Children (0-17 years), Public Health Region 7, Texas, 2011

| Characteristics | Lifetime Asthma | | | Current Asthma | | |
|--------------------|-----------------|---------------------------|---------------------|----------------|---------------------------|---------------------|
| | Sample Size | Estimated Number of Cases | Prevalence (95% CI) | Sample Size | Estimated Number of Cases | Prevalence (95% CI) |
| Total | 443 | 90,804 | 10.7 (6.2, 15.2) | 442 | 36,504 | 4.4 (1.8, 6.9) |
| Gender | | | | | | |
| Boy | 227 | 53,634 | 12.3 (5.7, 19.0) | 227 | -- | -- |
| Girl | 209 | -- | -- | 208 | -- | -- |
| Race/Ethnicity | | | | | | |
| White Non-Hispanic | 251 | 10,687 | 12.1 (6.4, 17.8) | 251 | -- | -- |
| Black Non-Hispanic | 33 | -- | -- | 32 | -- | -- |
| Hispanic | 125 | -- | -- | 125 | -- | -- |
| Other Non-Hispanic | 30 | -- | -- | 30 | -- | -- |
| Age Group (years) | | | | | | |
| 0-4 | 103 | -- | -- | 103 | -- | -- |
| 5-9 | 113 | -- | -- | 113 | -- | -- |
| 10-14 | 105 | -- | -- | 105 | -- | -- |
| 15-17 | 78 | -- | -- | 77 | -- | -- |

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

* Estimate is unreliable because the relative standard error is > 30%, calculated as standard error divided by the mean.

- Estimate is 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 questions

Lifetime asthma: “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.

Current asthma: “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 BRFSS, 10.7 percent (95% Confidence Interval (CI): 6.2-15.2) of children in Public Health Region 7 (PHR 7) had ever been diagnosed with asthma, representing approximately 90,804 children.
- In PHR 7, an estimated 4.4 percent (95% CI: 1.8-6.9) of children currently had asthma, representing approximately 36,504 children.
- Lifetime asthma prevalence for boys in PHR 7 was 12.3 percent (95% CI: 5.7-19.0).
- Lifetime asthma prevalence for non-Hispanic white children in PHR 7 was 12.1 percent (95% CI: 6.7-17.8).

Table 2. Lifetime and Current Asthma Prevalence Among Children (0-17 years), Public Health Region 7, Texas, 2012

| Characteristics | Lifetime Asthma | | | Current Asthma | | |
|--------------------|-----------------|---------------------------|---------------------|----------------|---------------------------|---------------------|
| | Sample Size | Estimated Number of Cases | Prevalence (95% CI) | Sample Size | Estimated Number of Cases | Prevalence (95% CI) |
| Total | 470 | 119,722 | 14.4 (9.9, 19.0) | 468 | 81,476 | 9.8 (5.8, 13.9) |
| Gender | | | | | | |
| Boy | 238 | 51,913 | 13.4 (7.6, 19.1) | 237 | 27,550 | 7.1 (2.9, 11.2) |
| Girl | 228 | 67,809 | 15.6 (8.7, 22.5) | 227 | 53,926 | 12.4 (5.8, 19.0) |
| Race/Ethnicity | | | | | | |
| White Non-Hispanic | 260 | 53,722 | 15.2 (3.3, 21.2) | 258 | 31,713 | 9.0 (4.0, 14.0) |
| Black Non-Hispanic | 41 | -- | -- | 41 | -- | -- |
| Hispanic | 139 | -- | -- | 139 | -- | -- |
| Other Non-Hispanic | 22 | -- | -- | 22 | -- | -- |
| Age Group (years) | | | | | | |
| 0-4 | 94 | -- | -- | 94 | -- | -- |
| 5-9 | 120 | -- | -- | 120 | -- | -- |
| 10-14 | 119 | 42,871 | 20.6 (10.0, 31.2) | 117 | -- | -- |
| 15-17 | 83 | 22,560 | 18.4 (8.4, 28.4) | 83 | -- | -- |

Data Source: Texas Behavioral Risk Factor Surveillance System (BRFSS), 2012.

-- Estimate suppressed for small sample size (if numerator is < 5 or denominator is < 50) or is unreliable because the relative standard error is > 30%, calculated as standard error divided by the mean.

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

Survey questions

Lifetime asthma: “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.

Current asthma: “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 2:

- According to the 2012 Texas BRFSS, 14.4 percent (95% CI: 9.9-19.0) of children in PHR 7 had ever been diagnosed with asthma, representing approximately 119,722 children.
- In PHR 7, an estimated 9.8 percent (95% CI: 5.8-13.9) of children currently had asthma, representing approximately 81,476 children.
- Lifetime and current asthma prevalence among children were not significantly different by sex.
- Lifetime asthma prevalence for non-Hispanic white children in PHR 7 was 15.2 percent.
- Current asthma prevalence for non-Hispanic white children in PHR 7 was 9.0 percent.
- There was not a statistically significant difference in lifetime asthma prevalence between children ages 10-14 years (20.6 percent) and ages 15-17 years (18.4 percent).

Table 3. Crude and Age-Adjusted Asthma* Hospital Discharge Rates per 10,000 Texas Residents Among Children (0-17 years), Public Health Region 7, Texas, 2011

| Characteristics | Discharges | Population | Crude Rate | Age-adjusted discharge rate† | 95% CI | |
|---------------------|------------|------------|------------|------------------------------|-------------|-------------|
| | | | | | Lower Limit | Upper Limit |
| Total | 2,286 | 1,822,868 | 12.5 | 12.3 | 11.8 | 12.8 |
| Sex | | | | | | |
| Boy | 1,497 | 928,014 | 16.1 | 15.8 | 15.0 | 16.6 |
| Girl | 789 | 894,854 | 8.8 | 8.7 | 8.0 | 9.3 |
| Race/Ethnicity | | | | | | |
| White Non-Hispanic | 616 | 798,480 | 7.7 | 7.7 | 7.1 | 8.3 |
| Hispanic | 535 | 673,436 | 7.9 | 7.6 | 6.9 | 8.2 |
| Black Non-Hispanic | 992 | 255,119 | 38.9 | 39.4 | 37.0 | 41.9 |
| Other Non-Hispanic | 141 | 95,833 | 14.7 | 14.2 | 11.8 | 16.5 |
| Age Group (years) | | | | | | |
| 0-4 | 929 | 534,932 | 17.4 | . | 17.1 | 17.7 |
| 5-9 | 900 | 508,738 | 17.7 | . | 17.4 | 18.0 |
| 10-14 | 369 | 479,818 | 7.7 | . | 7.5 | 7.9 |
| 15-17 | 88 | 299,380 | 2.9 | . | 2.8 | 3.0 |
| County of Residence | | | | | | |
| Bastrop | 32 | 20,172 | 15.9 | 16.0 | 10.4 | 21.6 |
| Bell | 245 | 83,087 | 29.5 | 26.7 | 23.3 | 30.0 |
| Blanco | -- | 2,232 | -- | -- | -- | -- |
| Bosque | -- | 4,161 | -- | -- | -- | -- |
| Brazos | 45 | 38,287 | 11.8 | 11.1 | 7.9 | 14.4 |
| Burleson | -- | 4,591 | -- | -- | -- | -- |
| Burnet | 20 | 9,853 | 20.3 | 20.8 | 11.7 | 30.0 |
| Caldwell | -- | 10,198 | -- | -- | -- | -- |
| Coryell | 28 | 18,291 | 15.3 | 16.3 | 10.2 | 22.3 |
| Falls | -- | 4,281 | -- | -- | -- | -- |
| Fayette | -- | 5,455 | -- | -- | -- | -- |
| Freestone | -- | 4,715 | -- | -- | -- | -- |
| Grimes | -- | 6,213 | -- | -- | -- | -- |
| Hamilton | -- | 1,927 | -- | -- | -- | -- |
| Hays | 58 | 34,231 | 16.9 | 16.3 | 12.1 | 20.5 |
| Hill | -- | 9,364 | -- | -- | -- | -- |
| Lampasas | -- | 5,182 | -- | -- | -- | -- |
| Lee | -- | 4,350 | -- | -- | -- | -- |
| Leon | -- | 3,557 | -- | -- | -- | -- |
| Limestone | -- | 5,590 | -- | -- | -- | -- |
| Llano | -- | 3,066 | -- | -- | -- | -- |

| | | | | | | |
|------------|-----|---------|------|------|------|------|
| McLennan | 139 | 60,002 | 23.2 | 21.9 | 18.3 | 25.6 |
| Madison | -- | 3,046 | -- | -- | -- | -- |
| Milam | -- | 6,940 | -- | -- | -- | -- |
| Mills | -- | 1,200 | -- | -- | -- | -- |
| Robertson | -- | 4,460 | -- | -- | -- | -- |
| San Saba | -- | 1,382 | -- | -- | -- | -- |
| Travis | 387 | 235,554 | 16.4 | 15.2 | 13.7 | 16.7 |
| Washington | -- | 7,431 | -- | -- | -- | -- |
| Williamson | 160 | 108,861 | 14.7 | 16.1 | 13.6 | 18.6 |

Data Source: Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data File, 2011.

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

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

† Total rates, and rates by sex and race/ethnicity are age-adjusted to the 2000 U.S. Census population. Discharge rates by age group cannot be age-adjusted.

'--' Value suppressed if number of discharges is less than 12.

Interpretation for Table 3:

- According to the 2011 Texas Health Care Information Collection, Inpatient Discharge Public Use Data File, there were 2,286 asthma hospital discharges among children age 17 years and younger in PHR 7. The crude hospital discharge rate was 12.5 per 10,000 and the age-adjusted hospital discharge rate was 12.3 per 10,000 (95% Confidence Interval (CI): 11.8-12.8).
- Among children, the age-adjusted hospital discharge rate for asthma was significantly higher for boys (15.8 per 10,000; 95% CI: 15.0-16.6) than for girls (9.7 per 10,000; 95% CI: 8.0-9.3).
- Among children, the age-adjusted hospital discharge rate for asthma was significantly higher among black non-Hispanics (39.4 per 10,000; 95% CI: 37.0-41.9) compared to all other race/ethnicity groups. The lowest age-adjusted hospital discharge rates among children in PHR 7 were reported among white non-Hispanics (7.7 per 10,000) and Hispanics (7.6 per 10,000).
- Among children, the hospital discharge rate for asthma was significantly highest among the younger age groups (0-4 years: 17.4 per 10,000; 5-9 years: 17.7 per 10,000) and was lowest among the oldest age group (15-17 years: 2.9 per 10,000).
- Among the 30 counties in PHR 7, 9 counties reported 12 or more asthma hospitalizations among children in 2011. The highest age-adjusted hospital discharge rate for asthma occurred among residence of Bell County (26.7 per 10,000) and McLennan County (21.9 per 10,000). Travis County reported the highest number of child asthma hospitalizations.

Limitations of the data used in this report:

BRFSS Prevalence Data

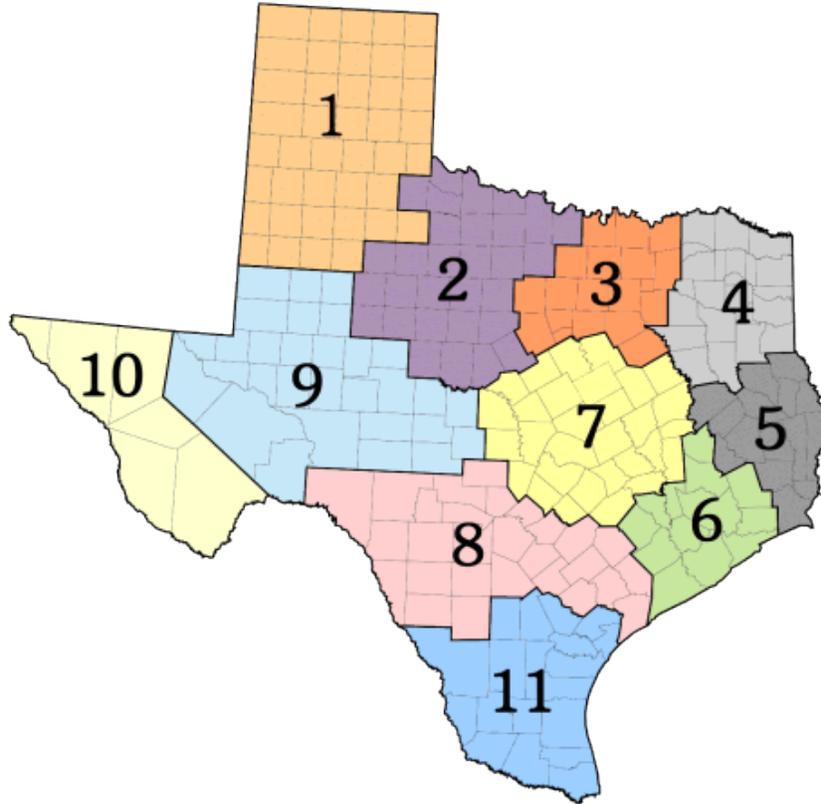
- 2011 and 2012 child asthma prevalence estimates for PHR 7 by most demographic variables were unreliable due to small sample size or large relative standard error and therefore cannot be reported.
- Prevalence estimates from BRFSS may underestimate the true prevalence of asthma among Texas children because the survey does not identify undiagnosed cases of asthma.
- Due to the improvements in BRFSS sampling methodology and a change in weighting procedures used for the survey data, 2011 and 2012 BRFSS data cannot be compared to survey data prior to 2011, such as combined 2007-2010 BRFSS, in order to assess trends. Shifts in prevalence estimates beginning in 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 were reported in 2011 among children (0-17 years) in 21 of 30 counties in Public Health Region 7, therefore the number and rate of asthma hospitalizations cannot be reported in those specific counties.
- Hospitalization data are based on inpatient hospitalizations 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.
- Health care provider criteria for exemptions from reporting data to THCIC can be found here: <http://www.dshs.state.tx.us/THCIC/OutpatientFacilities/ExemptionCriteria.shtm>.
- 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.
- The Texas Hospital Inpatient Discharge Public Use Data results do not include HIV and drug/alcohol use patients.

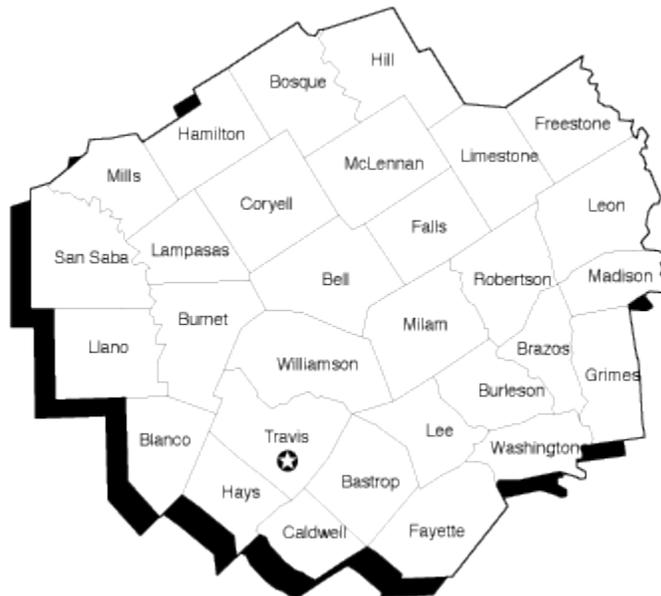
Appendix

Figure 1: Map of Public Health Regions, Texas



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

Figure 2: Map of Counties in Public Health Region 7, Texas



http://www.dfps.state.tx.us/PCS/Regional_Contracts/07.asp