

# Pediatric Asthma in San Antonio, Texas and Surrounding Areas: A Look at Population-Level Data

Children's Hospital of San Antonio  
Center for Children and Families  
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- **Introduction**
- **Asthma prevalence, 2011**
  - Behavioral Risk Factor Surveillance System (BRFSS)
- **Asthma hospitalizations, 2011**
- **BRFSS Child Asthma Call-Back Survey data, 2006-2010**
- **Summary**

- **Asthma prevalence<sup>1</sup> among children in Texas, 2011:**
  - An estimated **992,826** children (14.3%) had lifetime asthma (Ever been told by a doctor or other health professional that they have asthma)
  - An estimated **556,773** children (8.0%) had current asthma (Ever been told by a doctor or other health professional that they have asthma and still have asthma)
- **Among children age 0-17 years, **9,280** asthma-related hospitalizations were reported in 2011<sup>2</sup>**
  - **45%** of child asthma hospitalizations occurred among children age 0-4 years.

<sup>1</sup> Texas Behavioral Risk Factor Surveillance System, 2011

<sup>2</sup> Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data File, 2011.

- **Total charges for pediatric asthma hospitalizations, 2011<sup>2</sup>:**
  - Texas: \$172.9 million
  - Public Health Region 8 (PHR 8): \$22.3 million
  - Bexar County: **\$18.0 million**
  
- **Mortality rates per 100,000 for asthma among children, 2006-2011<sup>3</sup>:**
  - Texas: 0.23 (95% CI: 0.18-0.27); 89 deaths
  - PHR 8: 4 asthma deaths
  - Bexar County: **1 asthma death**

<sup>2</sup> Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data File, 2011.

<sup>3</sup> Vital Statistics Unit, Center for Health Statistics, 2011, Texas Department of State Health Services.

# **Asthma Prevalence**

## **TEXAS, 2011**

- **The Texas Behavioral Risk Factor Surveillance System (BRFSS)**, initiated in 1987, is a federally funded telephone survey conducted on a monthly basis of randomly selected adult Texans to collect data on lifestyle risk factors contributing to the leading causes of death and chronic diseases.
- **Data on children are obtained through information provided by the adult survey respondent about the child (or one randomly selected child if there is more than one) living in the home.**
- **As a primary source for comprehensive statewide data on preventive health practices and health risk behaviors, BRFSS is an important tool for decision-making throughout DSHS and the public health community.**

**Due to 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 compared to previous years might not represent trends in prevalence in the Texas population but instead merely reflect improved methods of measuring disease and risk factors.**

## **“Lifetime” asthma**

Answer yes to the survey question:

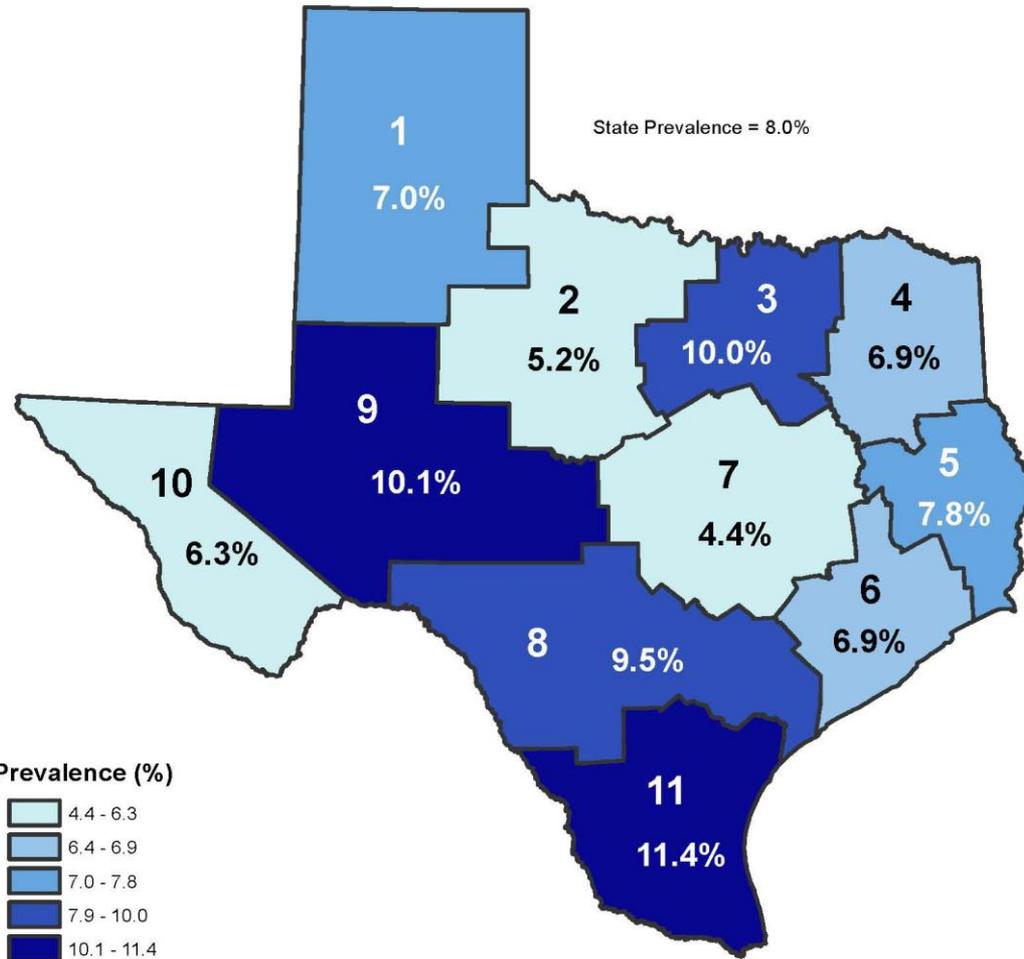
- 1) 'Has a doctor, nurse or other health professional ever said that the child has asthma?'

## **“Current” asthma**

Answer yes to the both of the survey questions:

- 1) 'Has a doctor, nurse or other health professional ever said that the child has asthma?'
- 2) 'Does the child still have asthma?'

# Childhood Current Asthma Prevalence by Public Health Region, Texas, 2011

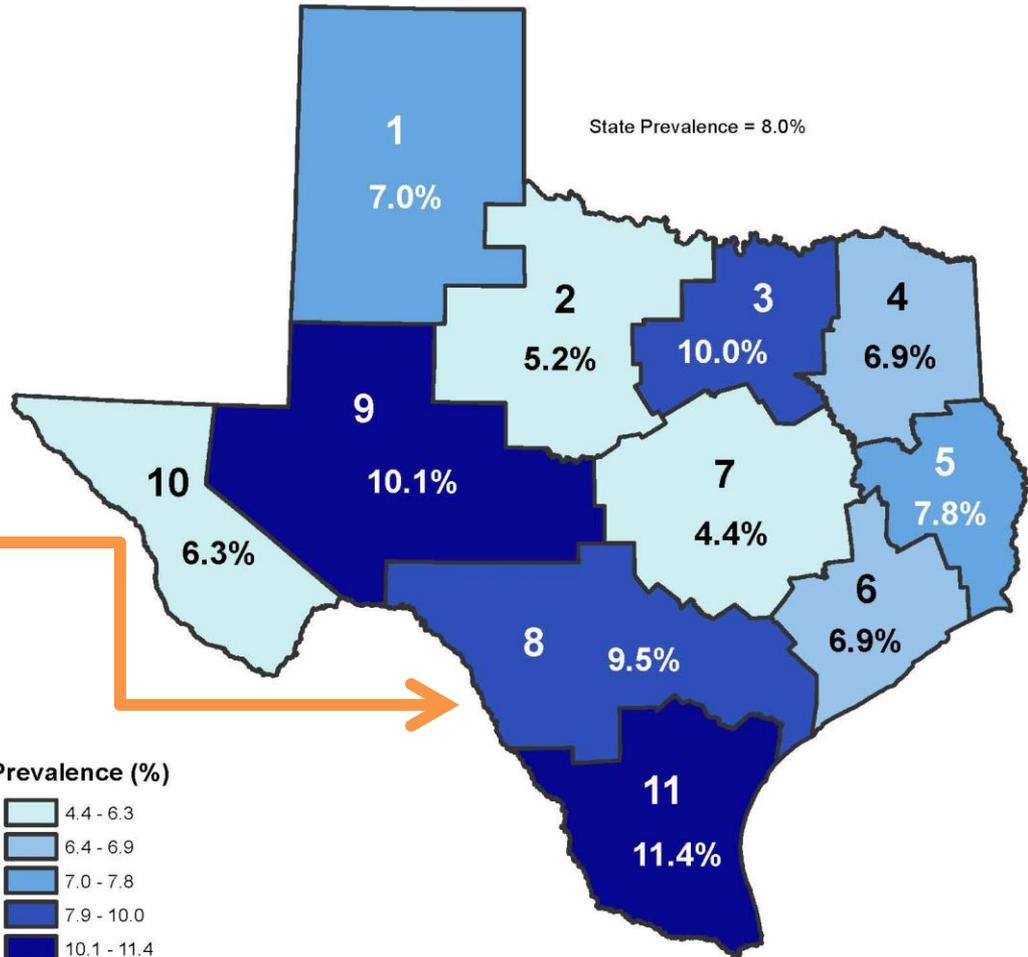


Data Source: Texas Behavioral Risk Factor Surveillance System (BRFSS), 2011.  
Center for Health Statistics, DSHS.

Date: 4/11/2013



# Childhood Current Asthma Prevalence by Public Health Region, Texas, 2011



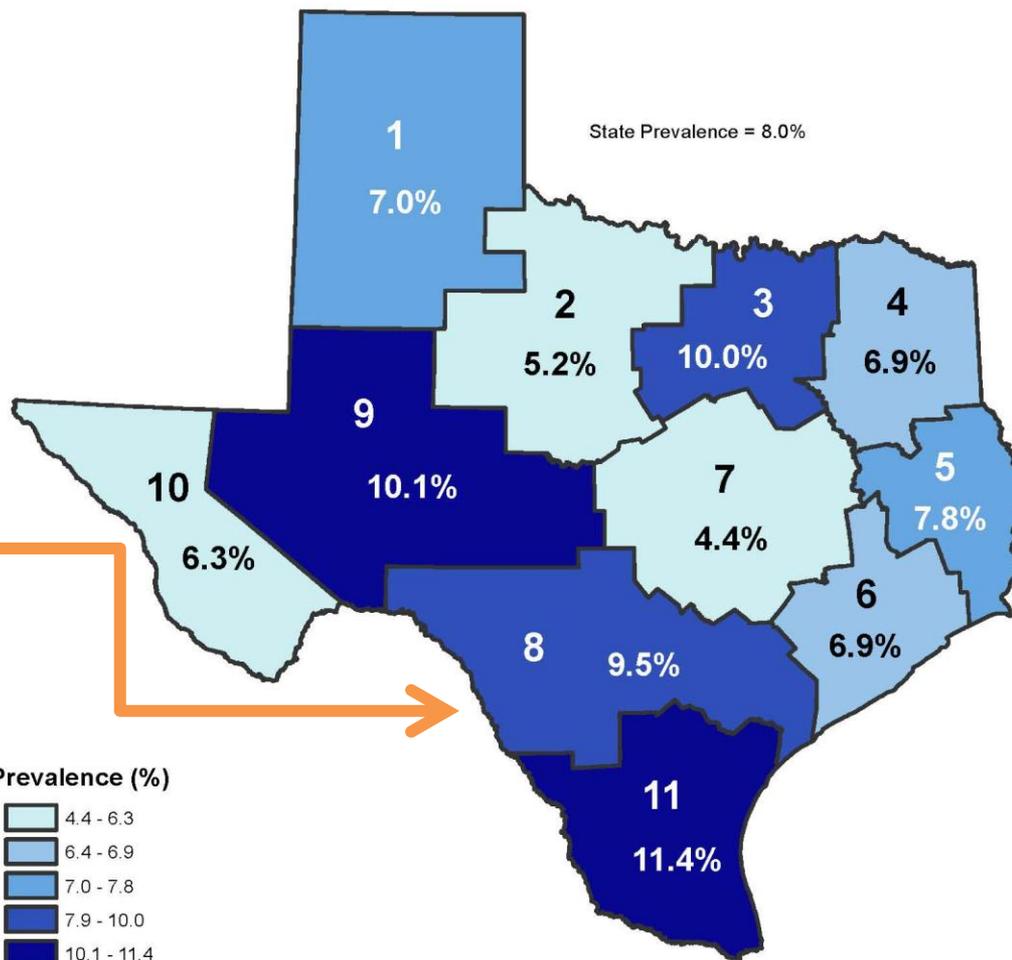
An estimated 63,962 children have current asthma in PHR 8.

Data Source: Texas Behavioral Risk Factor Surveillance System (BRFSS), 2011. Center for Health Statistics, DSHS.

Date: 4/11/2013



# Childhood Current Asthma Prevalence by Public Health Region, Texas, 2011

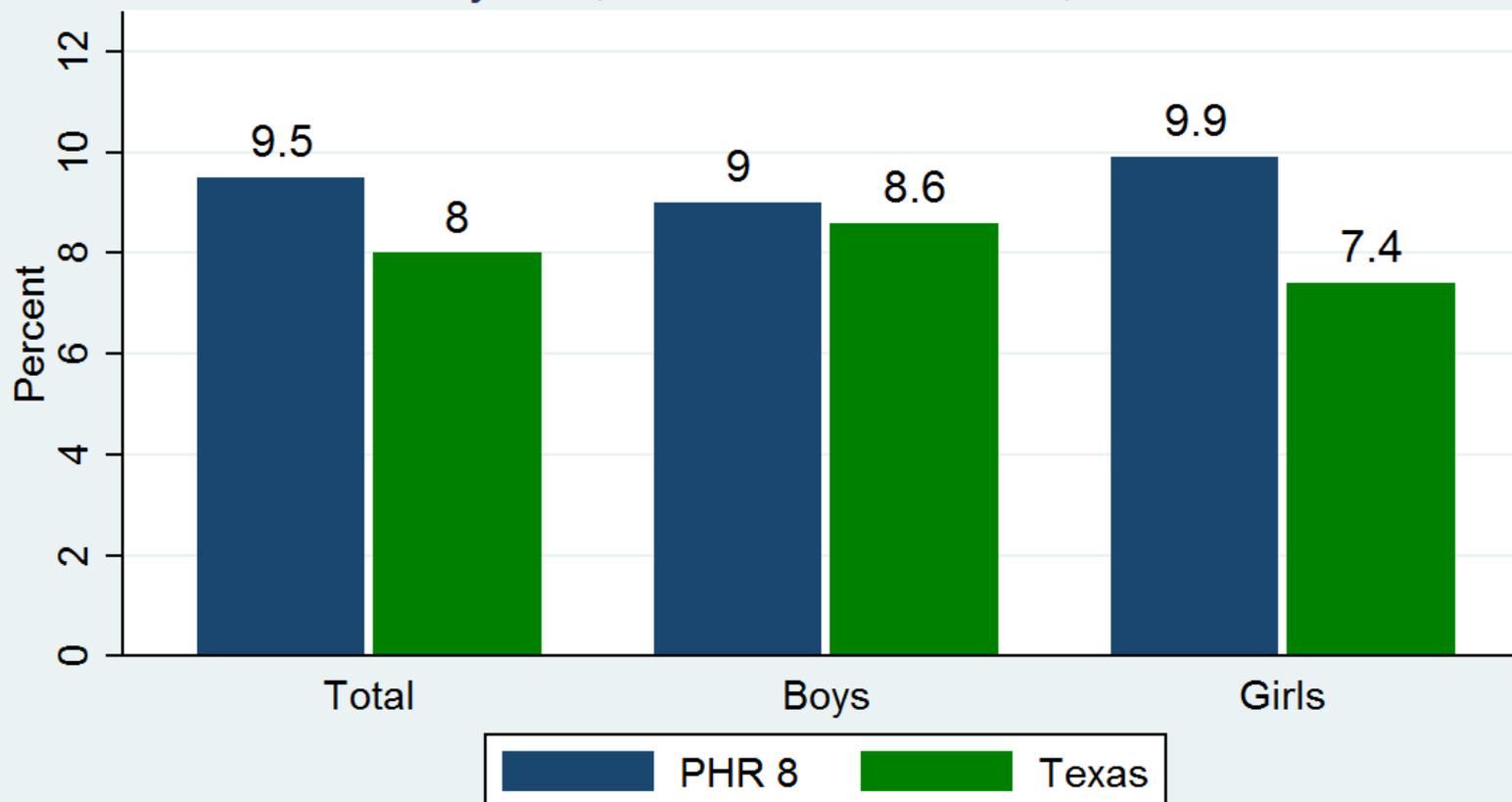


Lifetime asthma prevalence among children in PHR 8: **16.6%**, representing an estimated **112,891** children.

Data Source: Texas Behavioral Risk Factor Surveillance System (BRFSS), 2011.  
Center for Health Statistics, DSHS.

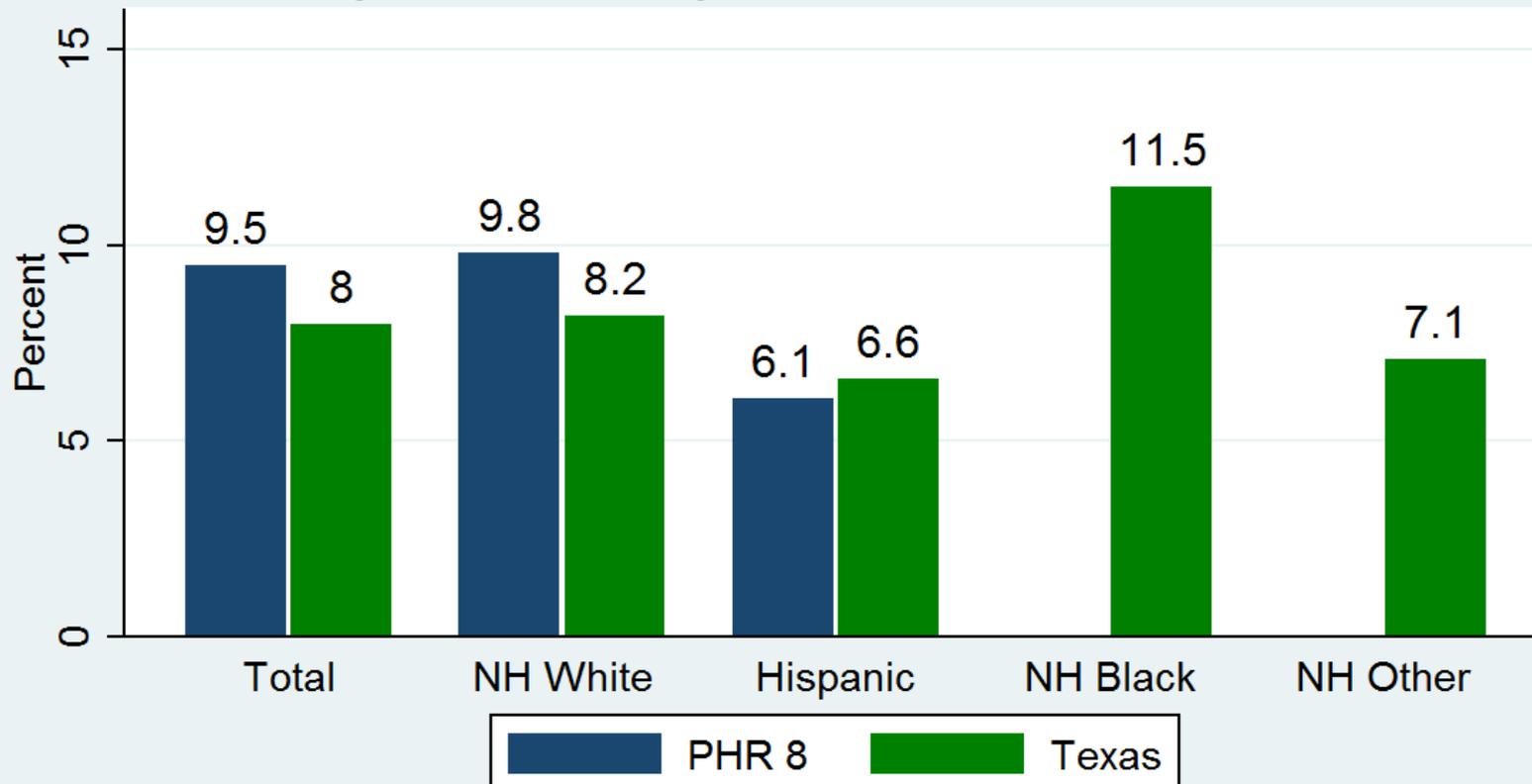
Date: 4/11/2013

## Prevalence of current asthma among children by sex, PHR 8 and Texas, 2011



Data Source: Texas Behavioral Risk Factor Surveillance System (BRFSS), 2011.  
Data for children are based on information provided by an adult respondent about a child living in the home.  
Survey questions: 'Has a doctor, nurse or other health professional ever said that the child has asthma?'  
and 'Does the child still have asthma?'

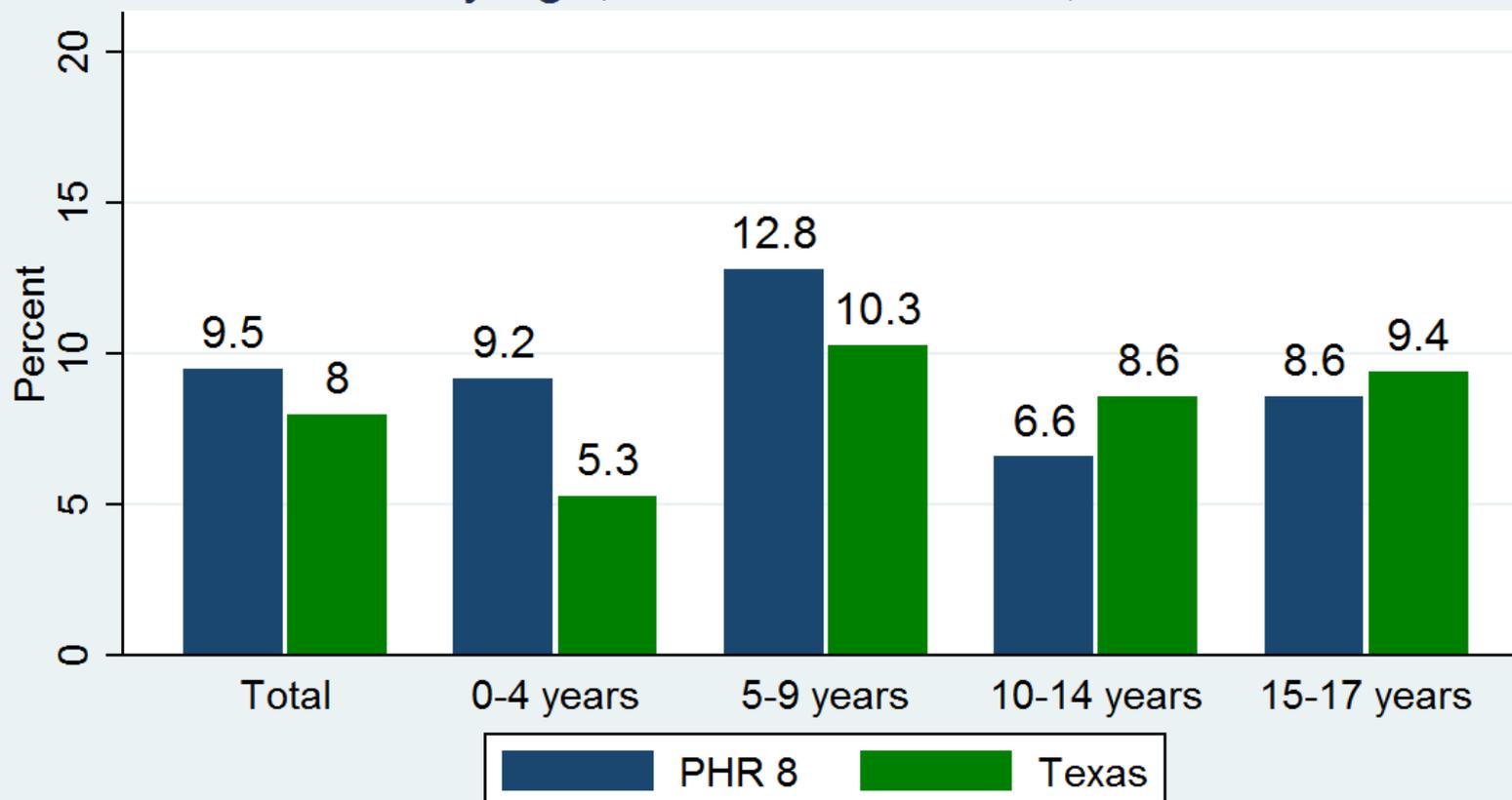
## Prevalence of current asthma among children by race/ethnicity, PHR 8 and Texas, 2011



Data Source: Texas Behavioral Risk Factor Surveillance System (BRFSS), 2011.  
Data for children are based on information provided by an adult respondent about a child living in the home.  
Survey questions: 'Has a doctor, nurse or other health professional ever said that the child has asthma?'  
and 'Does the child still have asthma?'  
Prevalence estimates are suppressed for small sample size (if numerator is < 5 or denominator is < 50).

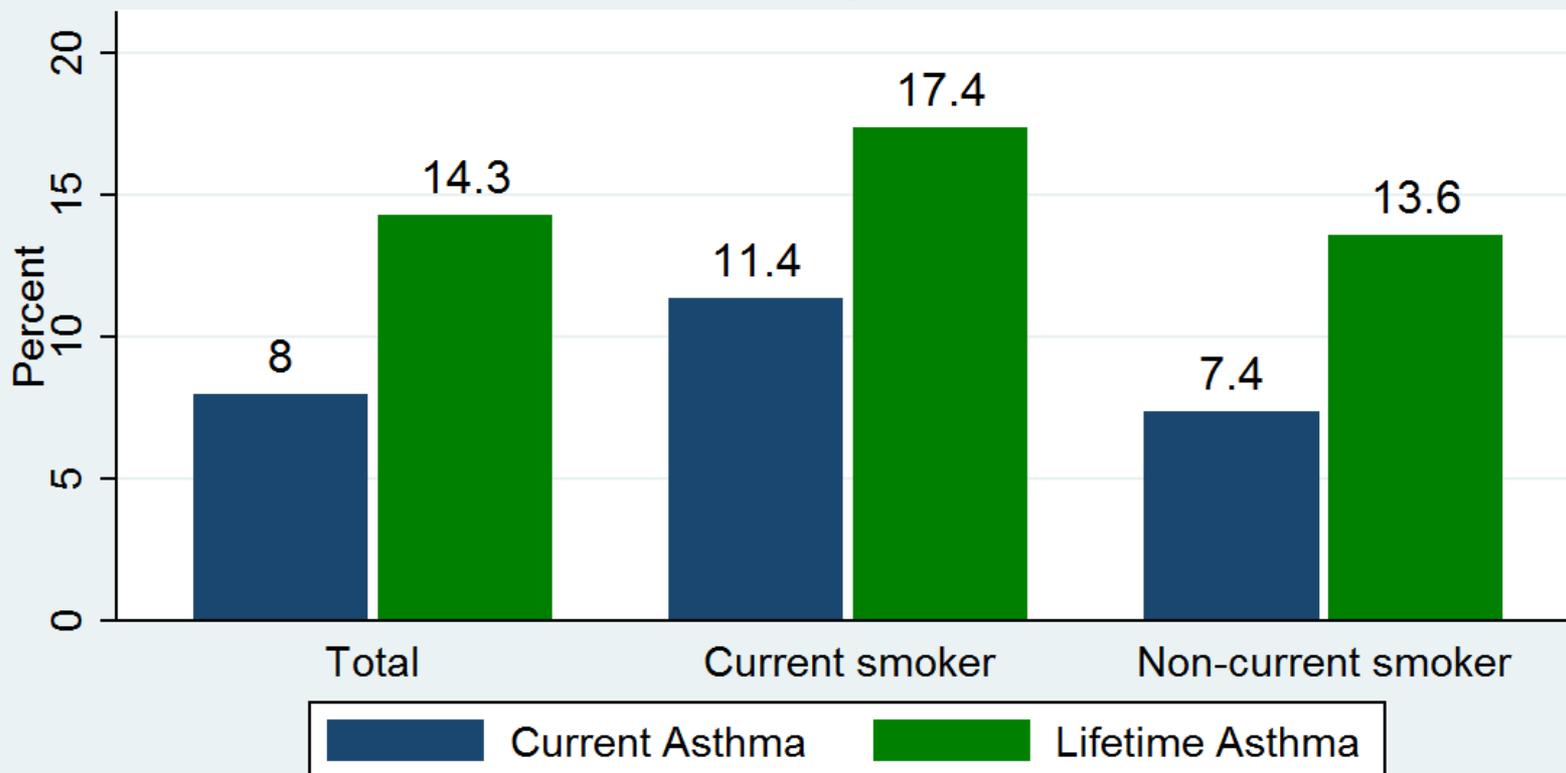
# Asthma Prevalence

## Prevalence of current asthma among children by age, PHR 8 and Texas, 2011



Data Source: Texas Behavioral Risk Factor Surveillance System (BRFSS), 2011.  
Data for children are based on information provided by an adult respondent about a child living in the home.  
Survey questions: 'Has a doctor, nurse or other health professional ever said that the child has asthma?'  
and 'Does the child still have asthma?'

## Prevalence of current and lifetime asthma among children by adult respondent's current smoking status, Texas, 2011



Data Source: Texas Behavioral Risk Factor Surveillance System (BRFSS), 2011.  
Data for children are based on information provided by an adult respondent about a child living in the home.  
Survey questions: 'Has a doctor, nurse or other health professional ever said that the child has asthma?'  
and 'Does the child still have asthma?'

- **In PHR 8, 9.5% of children currently had asthma and 16.6% had ever been diagnosed with asthma in 2011**
- **Asthma prevalence in PHR 8 may be higher than in PHR 7 (4.4%) but may be lower than in PHR 11 (11.4%)**
- **Asthma prevalence among children in PHR 8 may be higher for girls and non-Hispanic whites.**
- **Throughout Texas, current and lifetime asthma prevalence may be higher among children living with a survey respondent who is a current smoker**
- **2011 asthma prevalence data should not be compared directly with data from previous years to assess trends over time**

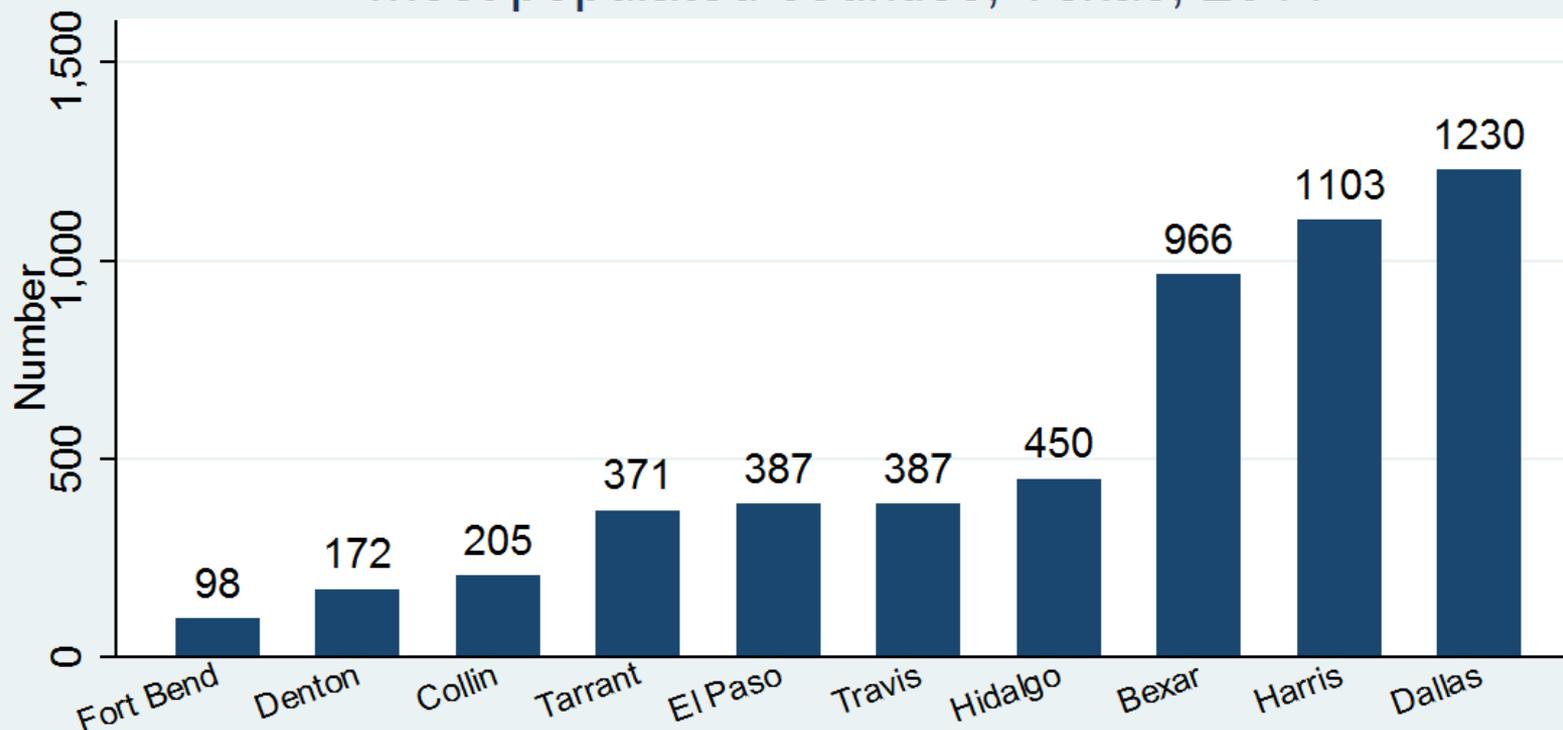
# **Asthma Hospitalizations**

## **TEXAS, 2011**

- **Data source: Texas Health Care Information Collection, Inpatient Discharge Public Use Data File, 2011**
- **Some hospitals are exempt from reporting requirements, therefore the number or rate of hospitalizations reported here is likely an under estimation of the actual number or rate**
  - **Ex: Rural providers located in a county with a population less than 35,000 or county has not more than 100 licensed beds**
- **Public Health Region or County is based on patient residence, not hospital location**

# Number of Hospital Discharges

## Asthma\* hospital discharges among children, by county of residence, among the ten most populated counties, Texas, 2011



NOTE: In 2011, the number of asthma hospital discharges among children in Public Health Region 8 was 1,232 and in Texas was 9,280.

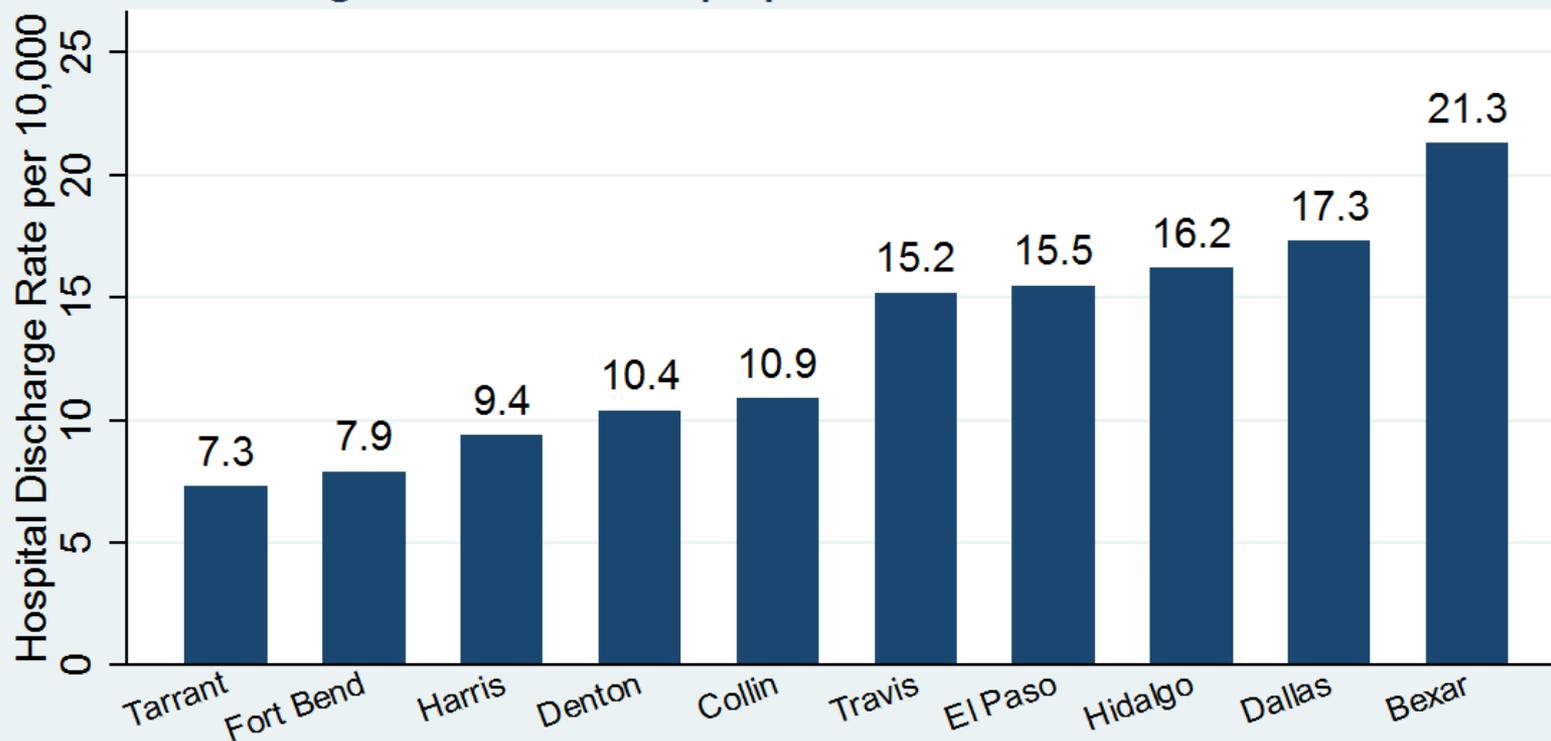
Data Source: Texas Health Care Information Collection (THCIC), Inpatient Hospital Discharge Public Use Data File, 2011.

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

Number of discharges are suppressed for counties in which fewer than 12 asthma hospital discharges were reported among children. Results do not include HIV and drug/alcohol use patients.

# Hospital Discharge Rates

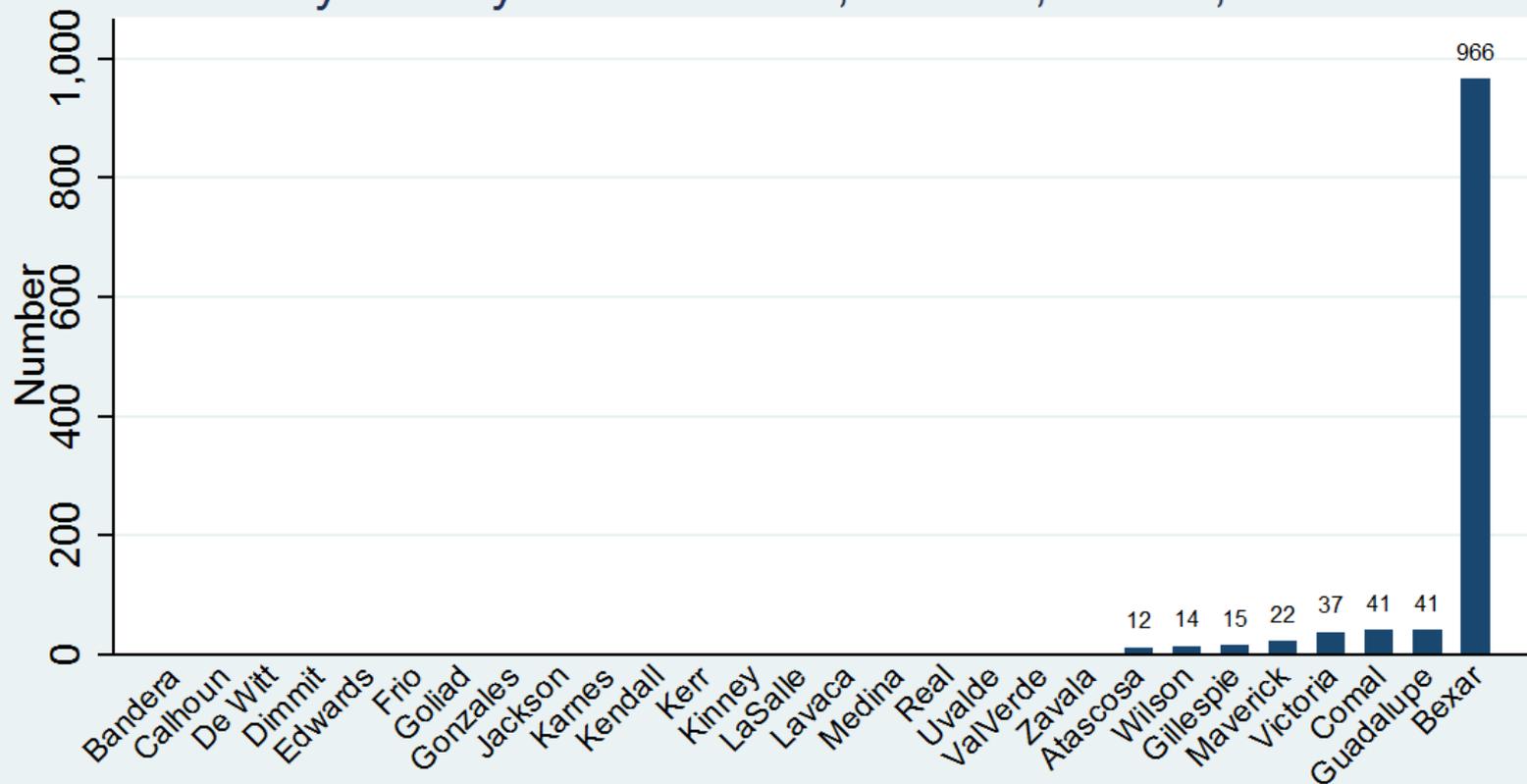
Age-adjusted asthma\* hospital discharge rates per 10,000 among children by county of residence, among the ten most populated counties, Texas, 2011



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.  
Rates are suppressed for counties in which fewer than 12 asthma hospital discharges were reported among children.  
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# Number of Hospital Discharges

## Number of asthma\* hospital discharges among children by county of residence, PHR 8, Texas, 2011



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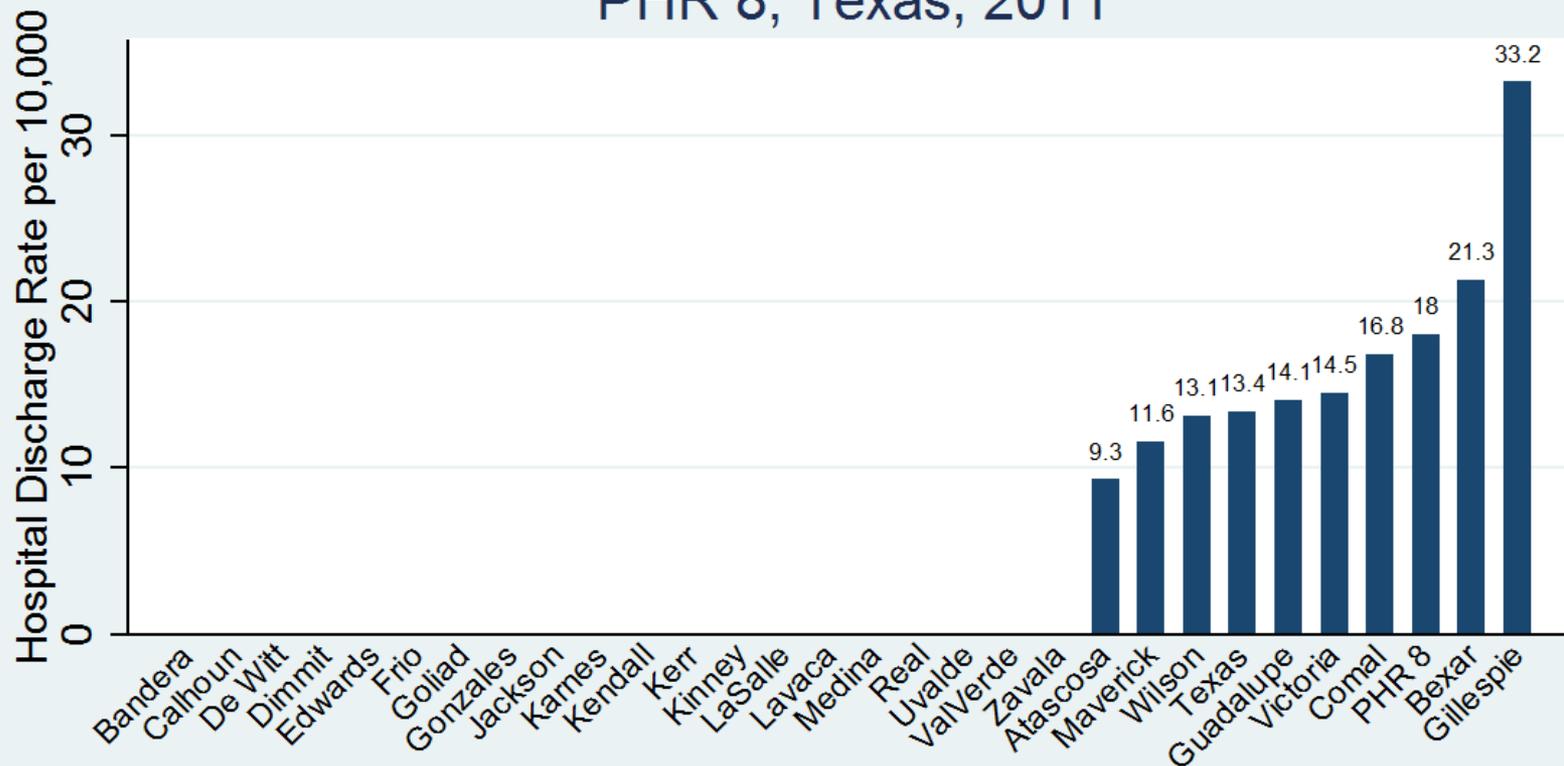
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# Hospital Discharge Rates

## Age-adjusted asthma\* hospital discharge rates per 10,000 among children by county of residence, PHR 8, Texas, 2011



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.

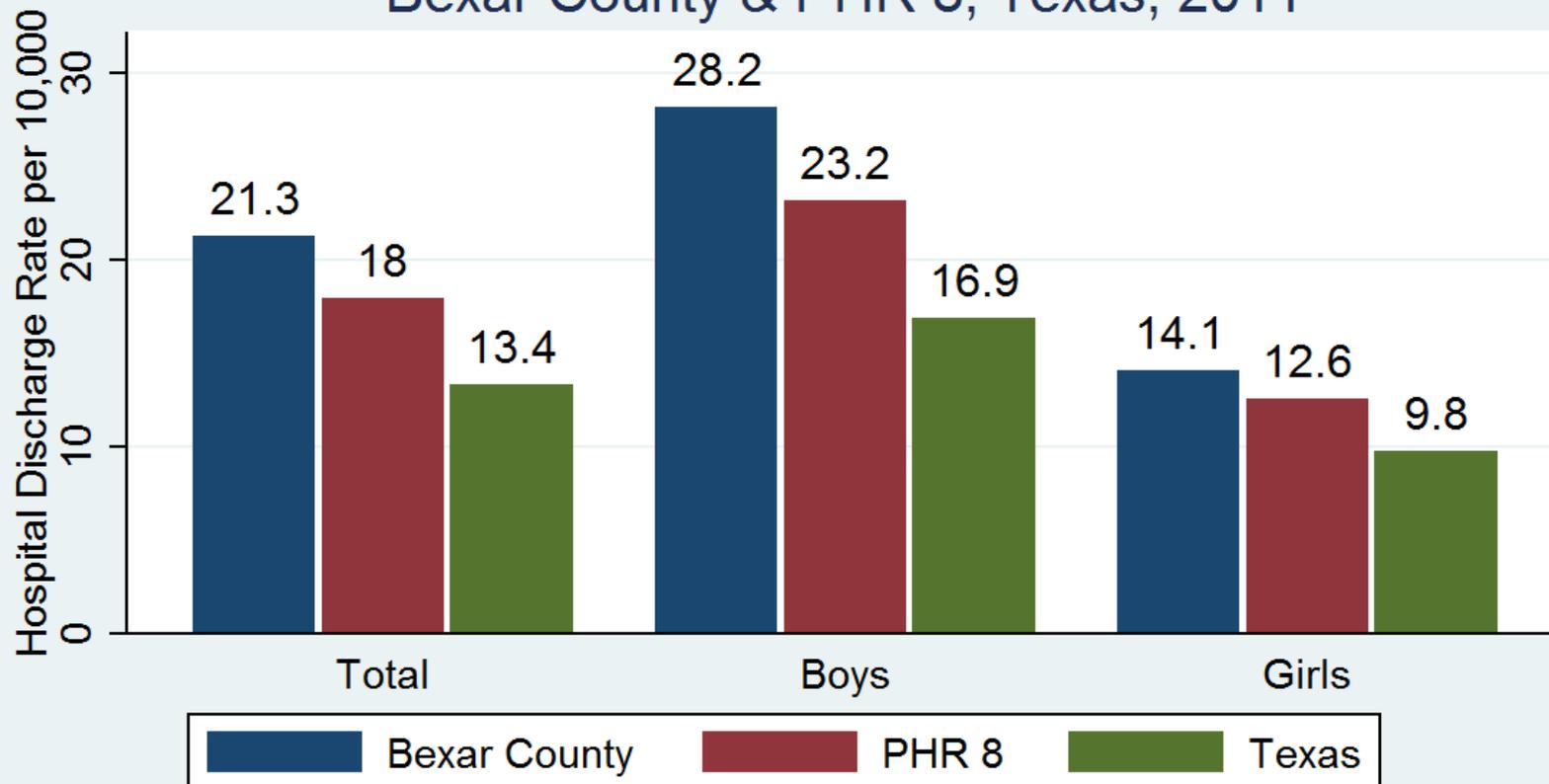
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# Hospital Discharge Rates

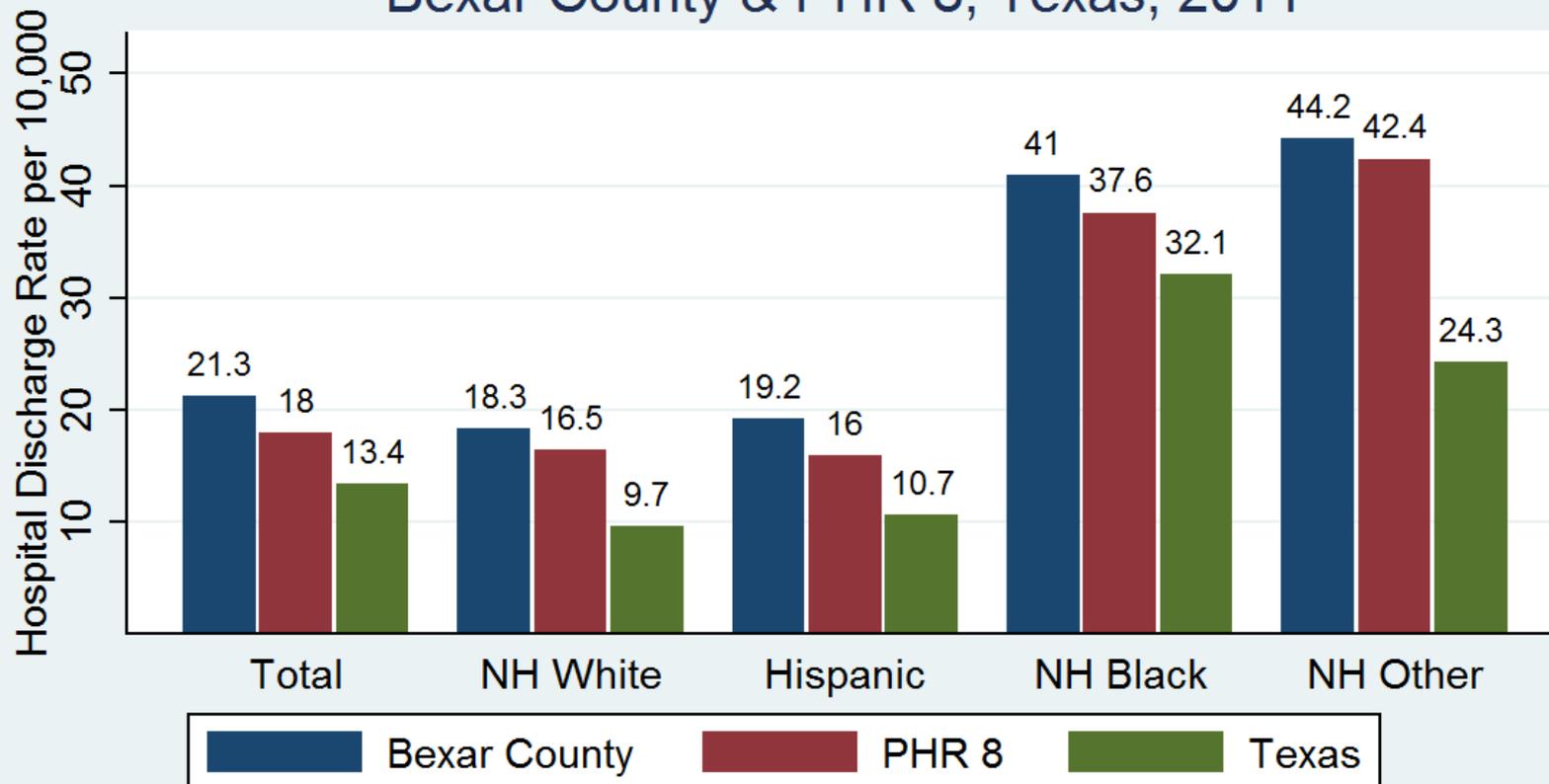
## Age-adjusted asthma\* hospital discharge rates per 10,000 among children by sex, Bexar County & PHR 8, Texas, 2011



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.  
Results do not include HIV and drug/alcohol use patients.

# Hospital Discharge Rates

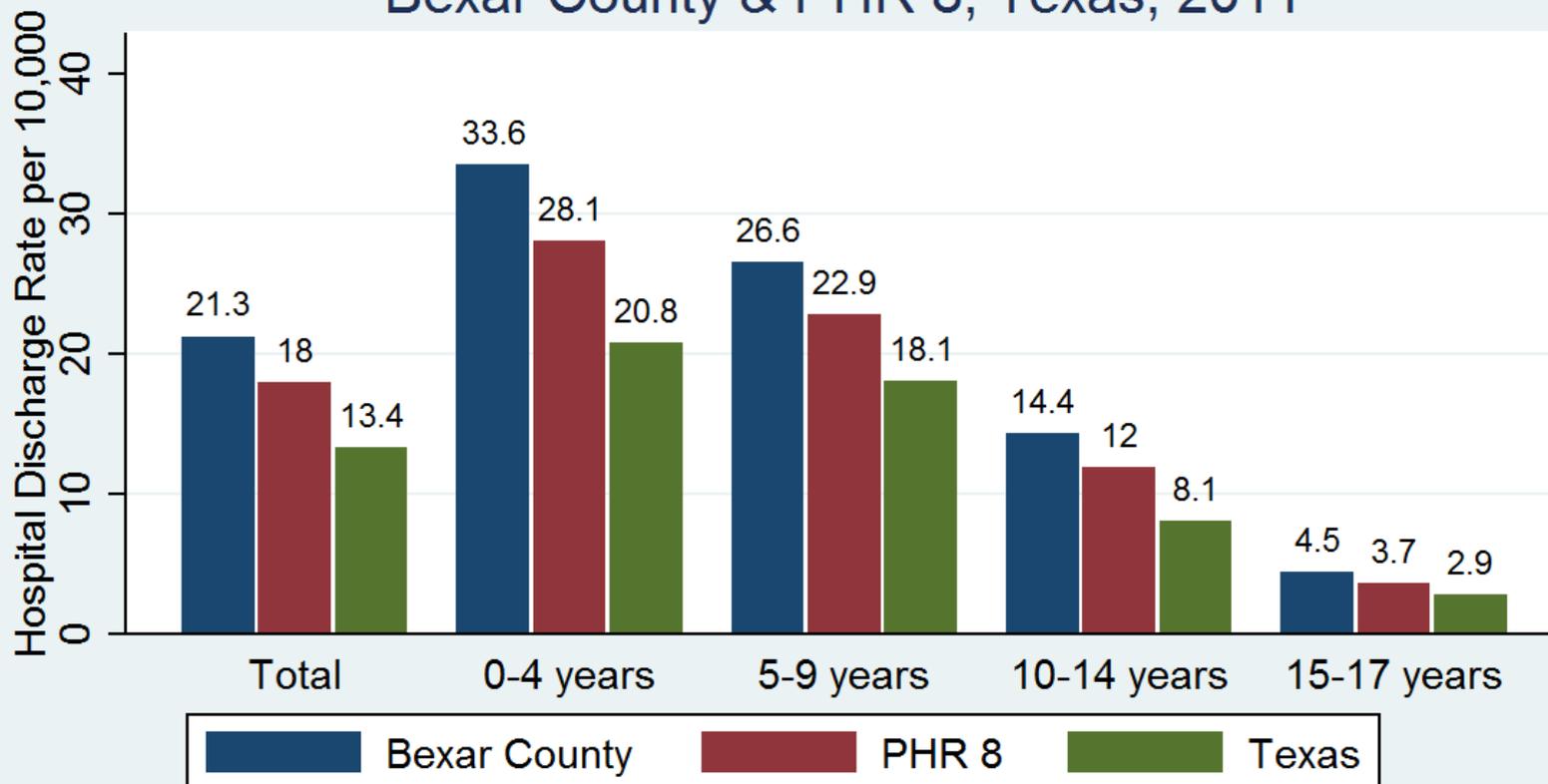
## Age-adjusted asthma\* hospital discharge rates per 10,000 among children by race/ethnicity, Bexar County & PHR 8, Texas, 2011



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.  
Results do not include HIV and drug/alcohol use patients.

# Hospital Discharge Rates

## Asthma\* hospital discharge rates per 10,000 among children by age, Bexar County & PHR 8, Texas, 2011



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.  
Results do not include HIV and drug/alcohol use patients.

- **Among the 10 most populated counties in Texas, Bexar County had the third highest number and the highest rate of child asthma hospitalizations**
- **In PHR 8, Bexar County residents had the second highest child hospitalization rate for asthma, behind Gillespie County**
- **Child asthma hospitalization rates were higher among boys than among girls**
- **Asthma hospitalization rates were highest among the youngest age group and lowest among the oldest age group**
- **Asthma hospitalization rates among non-Hispanic black children were significantly higher than among non-Hispanic white and Hispanic children in Bexar County, and compared to non-Hispanic Black children in Texas**

# **BRFSS Child Asthma Call-Back Survey**

## **TEXAS, 2006-2010**

- **After completing the main BRFSS survey, adult respondents living with a child who has ever been diagnosed with asthma are called a few weeks later to answer specific questions about the child's asthma**
- **Survey results are representative of children in Texas who have ever been diagnosed with asthma**
- **Due to small sample size (even after combining 5 years of data), results cannot be analyzed at the county or region level**

# Child Asthma Call-Back Survey Demographics

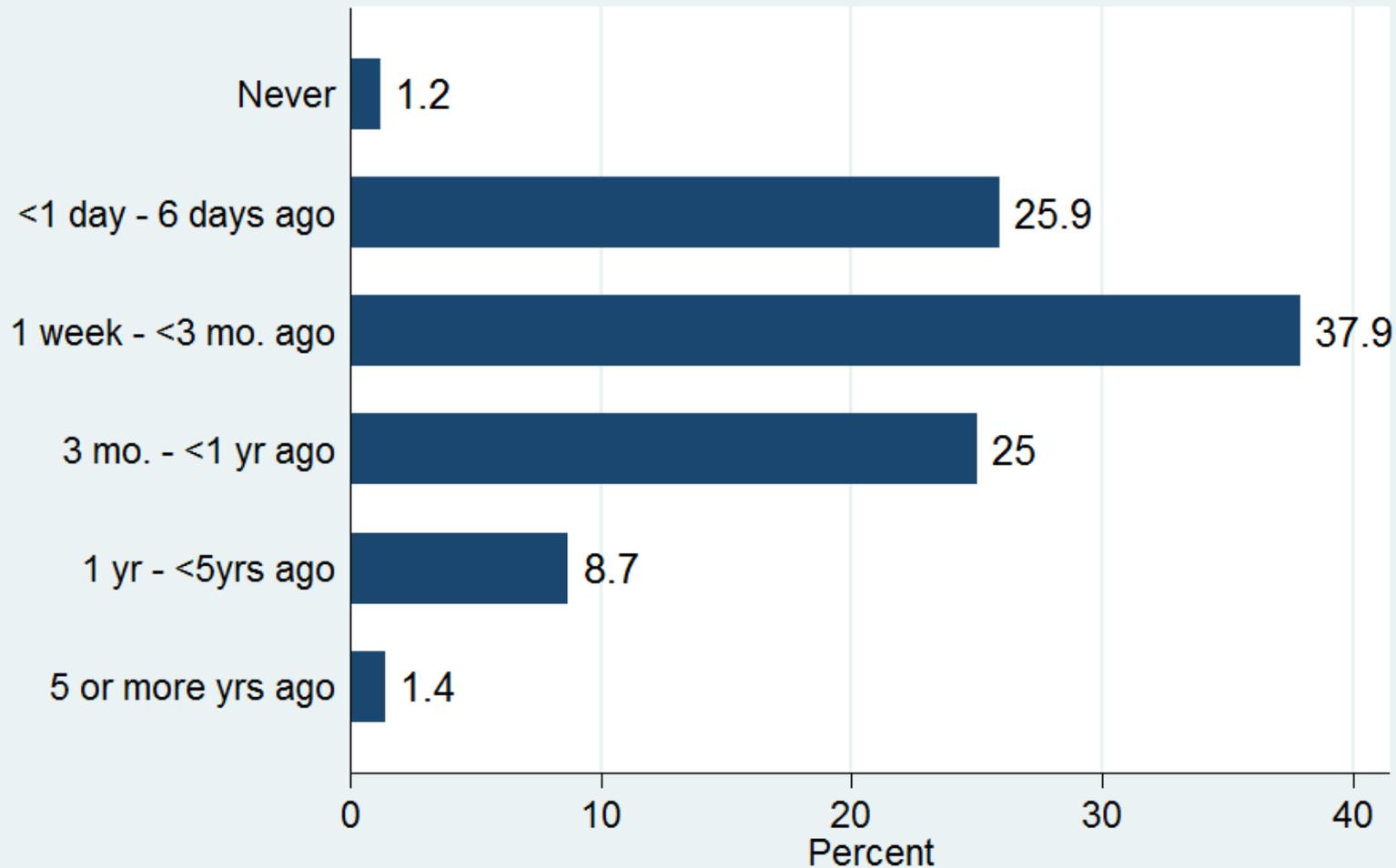


Demographics of children and adult respondents of the Texas BRFSS Child Asthma Call-Back Survey, 2006-2010

<b>Child characteristics</b>	<b>Weighted percent (%)</b>
Age (years)	
0-4	35.9
5-11	36.4
12-17	27.7
Boy	60.4
Race/Ethnicity	
Non-Hispanic white	43.6
Non-Hispanic black	15.3
Hispanic	38.5
Other	2.6
Household Income	
<\$25,000	29.1
\$25,000-49,000	21.0
50,000 or more	42.2
Unknown	7.7
Insurance (yes)	90.8
Current flu vaccine	45.7
Someone smokes inside home	9.0
Current asthma	62.8
Active asthma	73.8
<b>Adult respondent characteristics</b>	
Education	
≤ HS graduate	39.8
Some college	26.9
College graduate	33.3
Current smoker	20.5

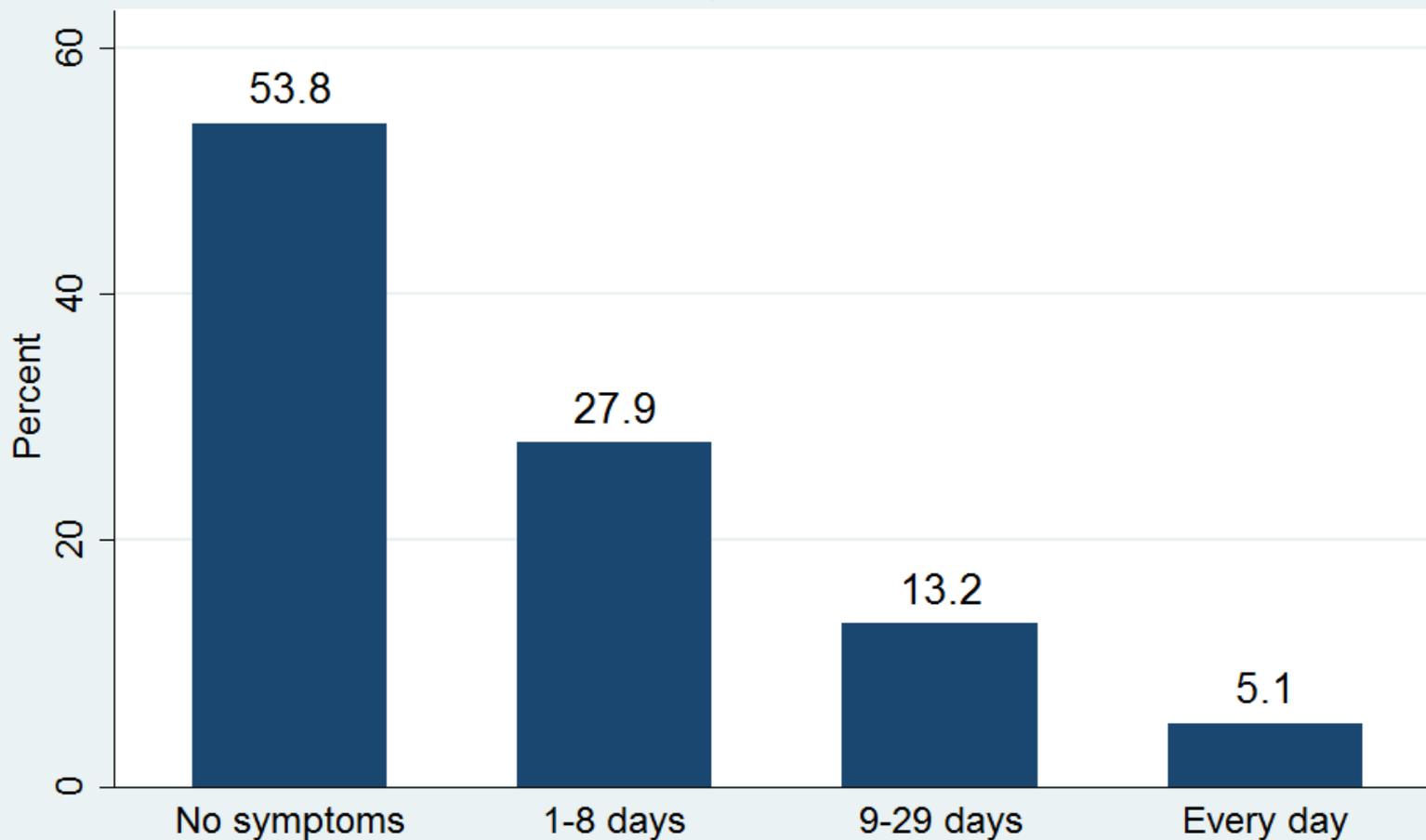
# Asthma Symptoms

## Last time had symptoms among children with current asthma, Texas, 2006-2010



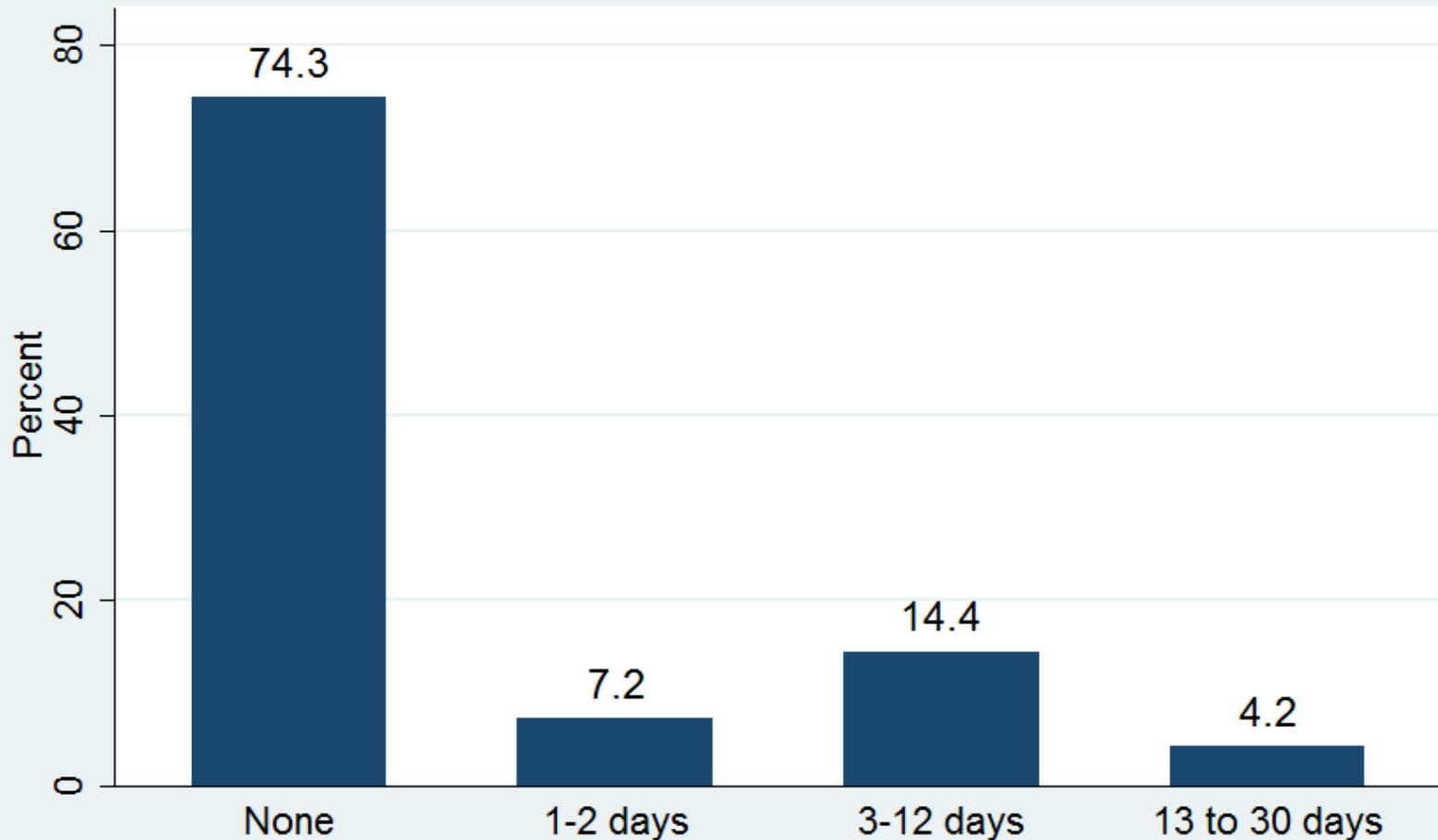
# Asthma Symptoms

Number of days asthma symptoms experienced in past 30 days among children with current asthma, Texas, 2006-2010



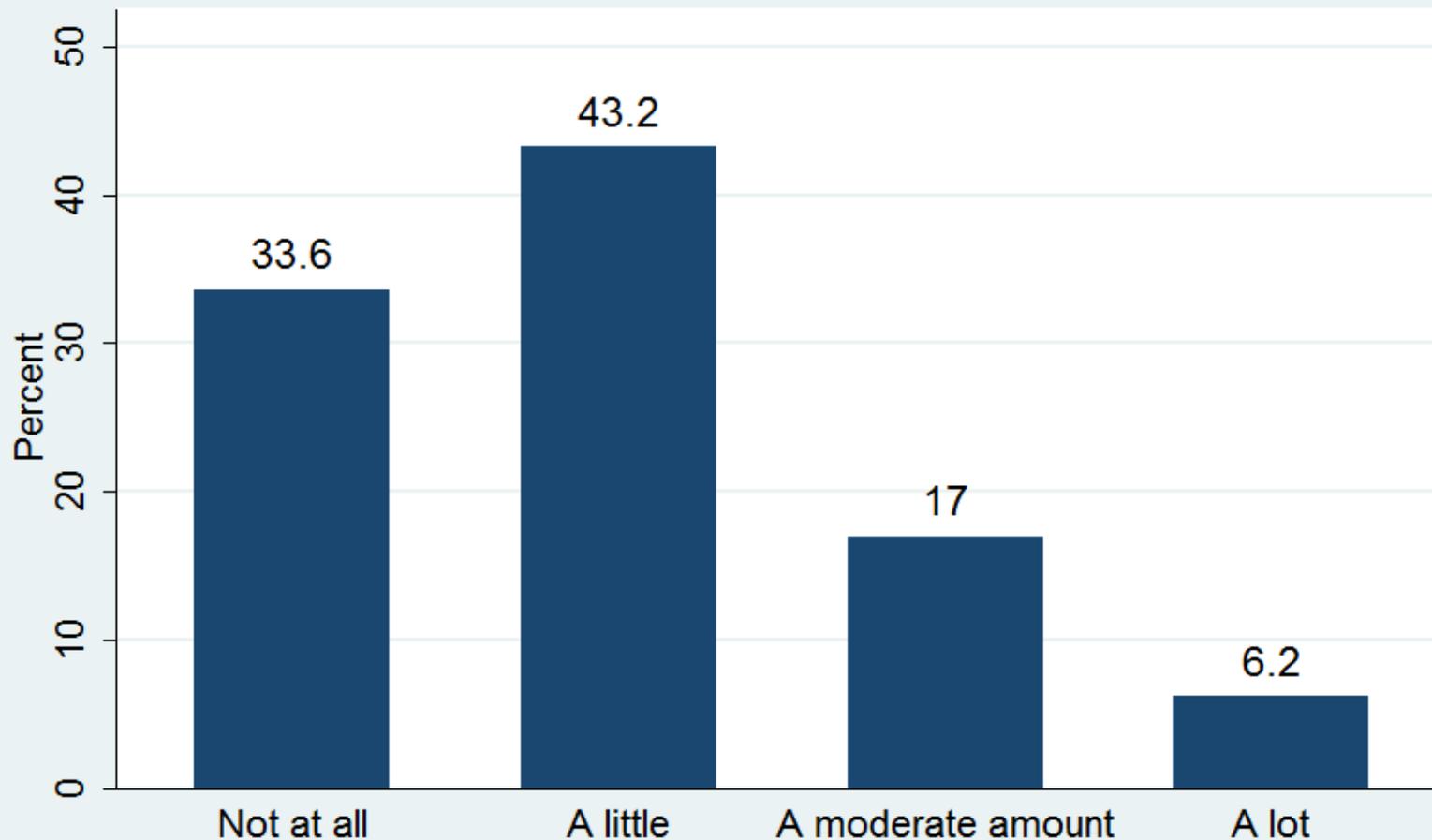
# Asthma Symptoms

Nights asthma symptoms made it difficult to stay asleep in the past 30 days among children with current asthma, Texas 2006-2010

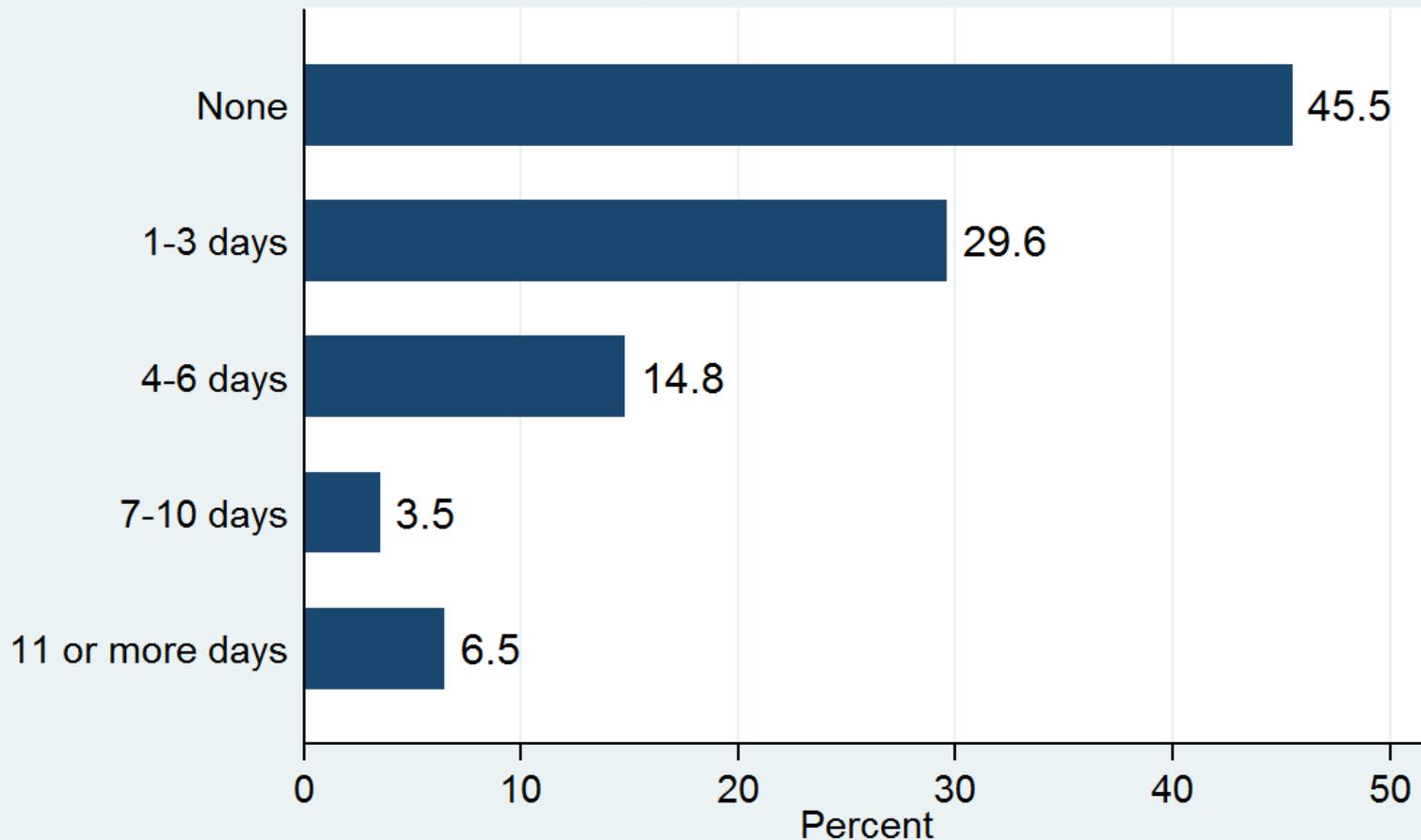


# Asthma Symptoms

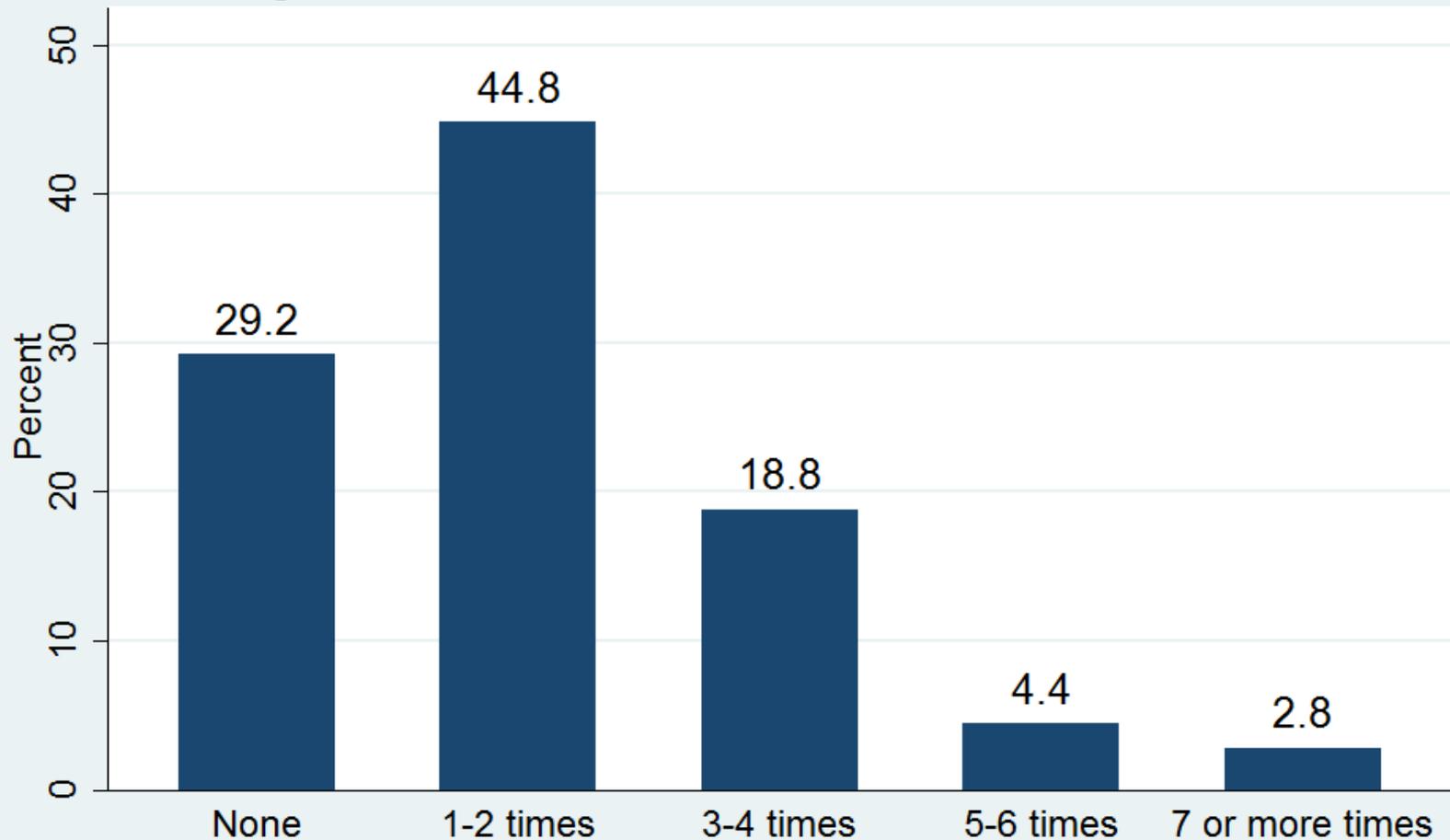
Prevalence of activity limitations due to asthma in past 12 months among children with current asthma, Texas, 2006-2010



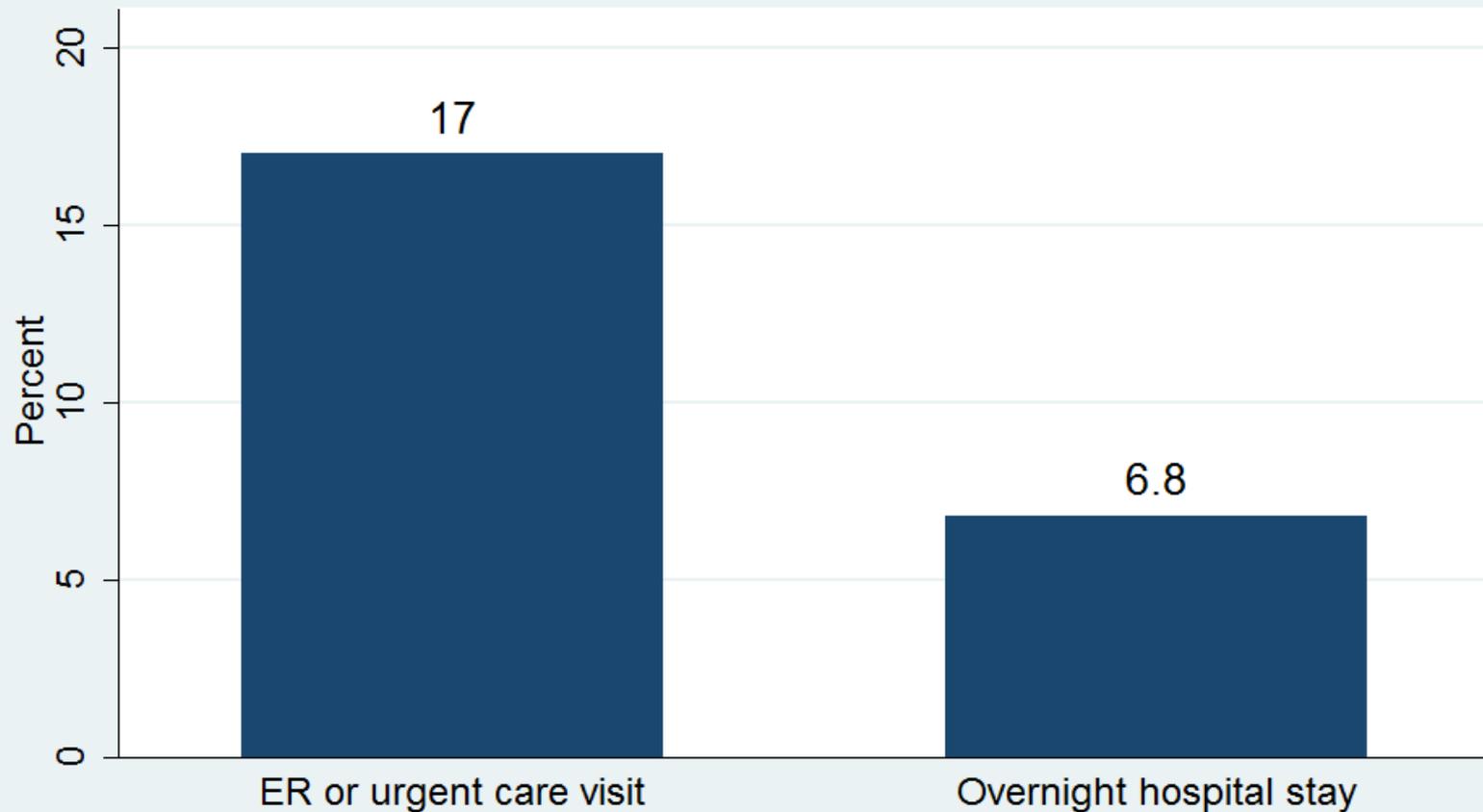
## Number of days unable to attend school in past 12 months due to asthma among children with current asthma, Texas, 2006-2010



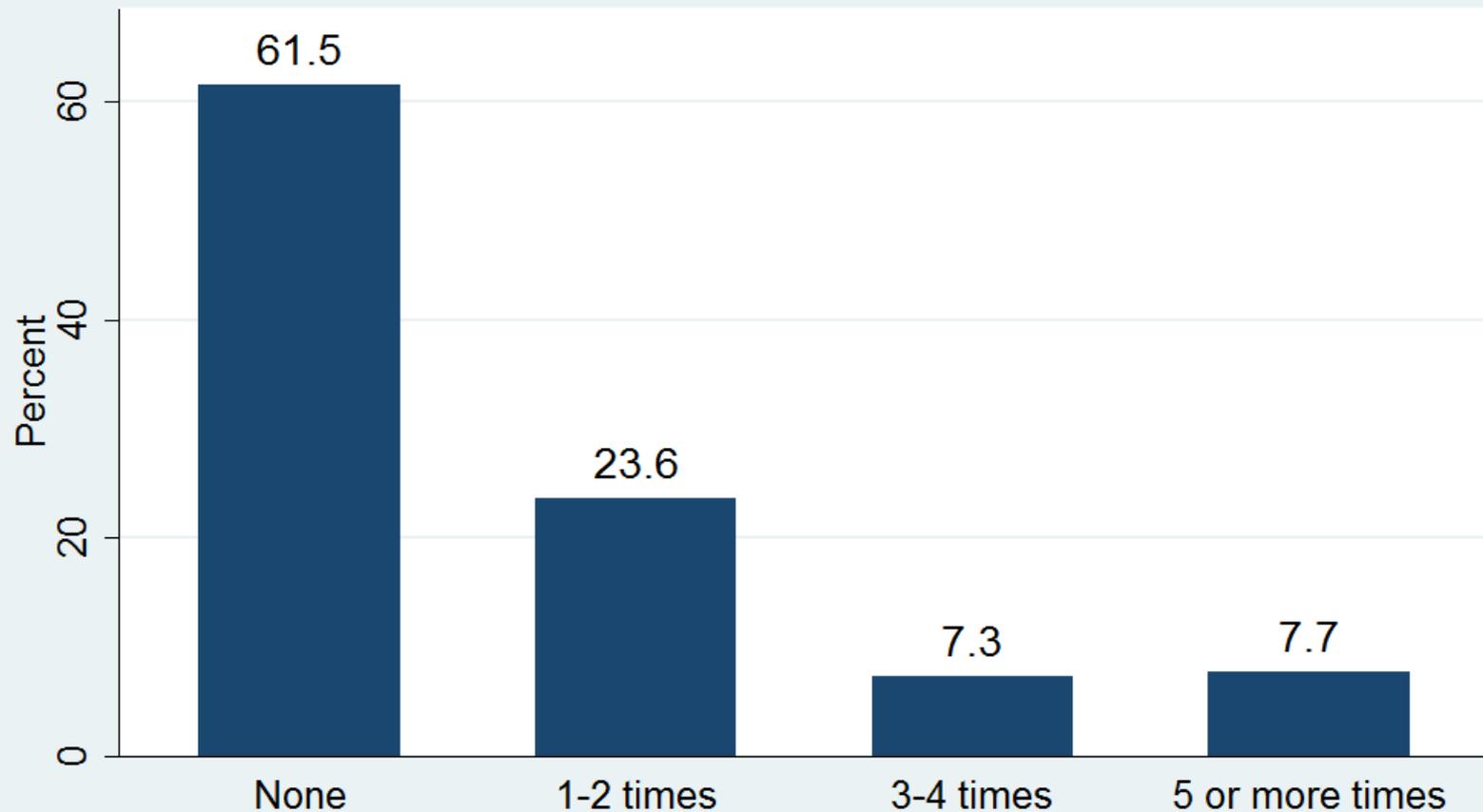
## Prevalence of visiting a doctor or other health professional for routine checkup for asthma in the past 12 months among children with current asthma, Texas, 2006-2010



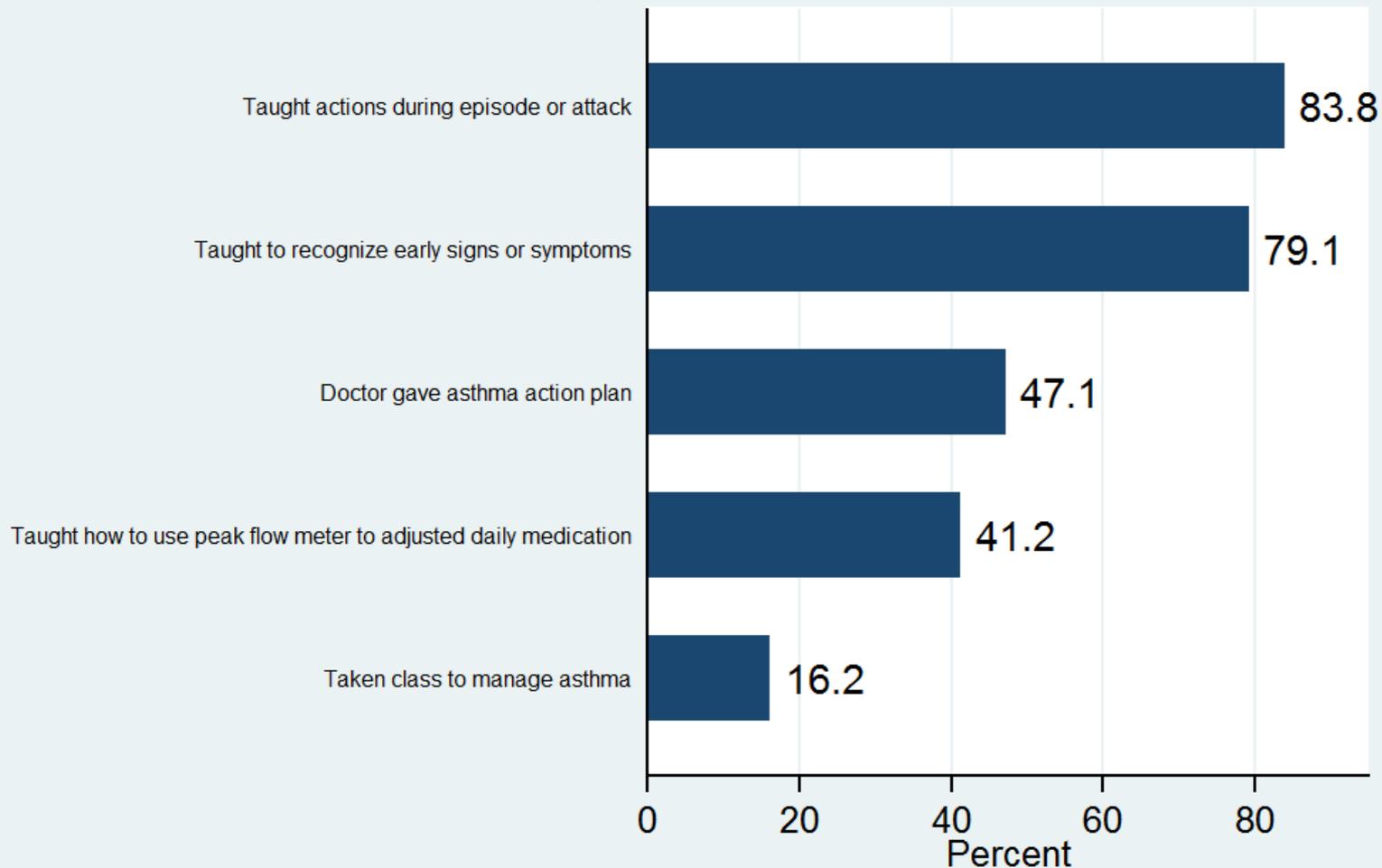
Prevalence of visiting the ER or an urgent care center, or an overnight hospital stay because of asthma in past 12 months among children with current asthma, Texas, 2006-2010



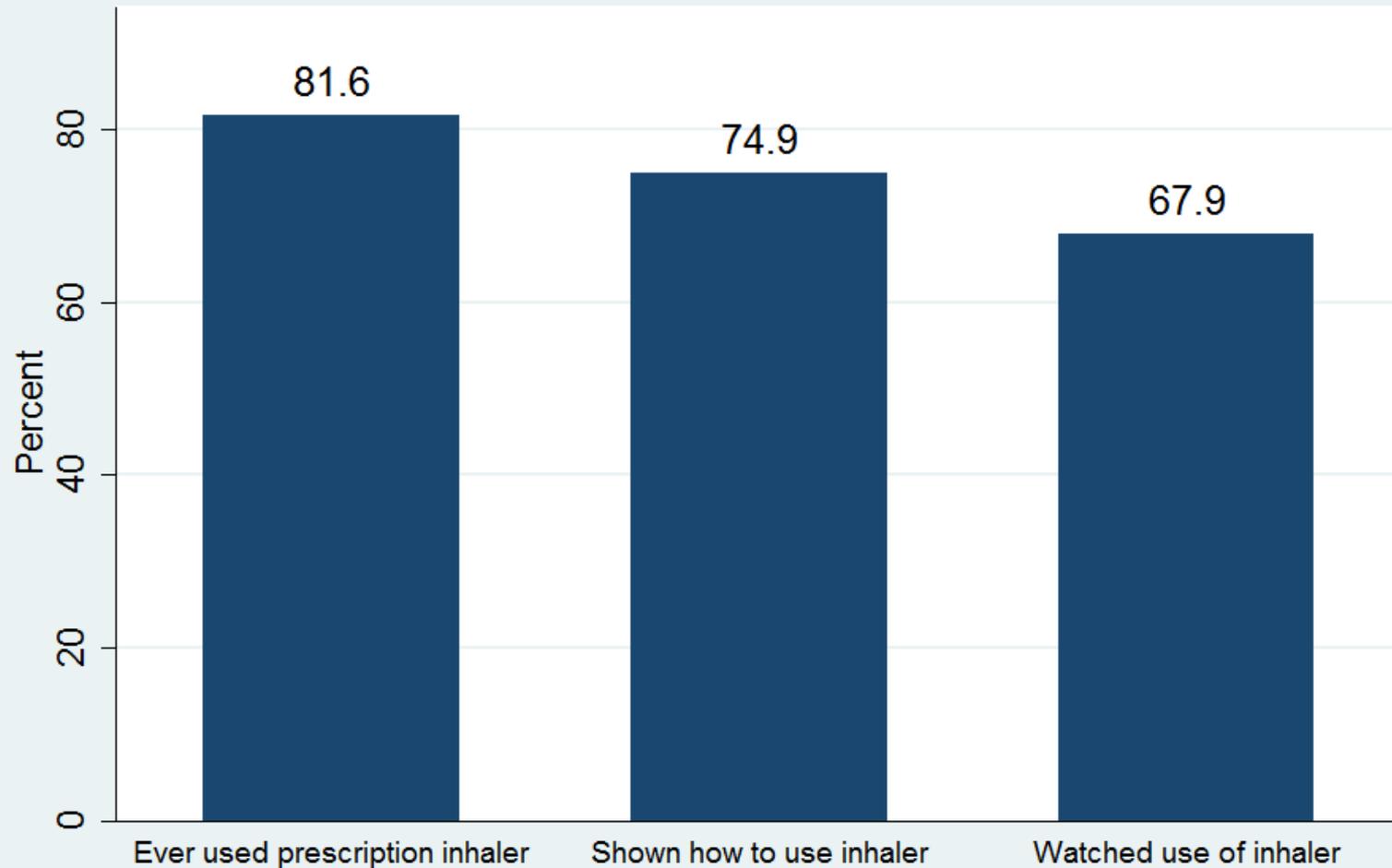
Prevalence of seeking urgent treatment for worsening asthma symptoms or an asthma episode or attack in past 12 months among children with current asthma, Texas, 2006-2010



## Asthma education among children with current asthma, Texas, 2006-2010

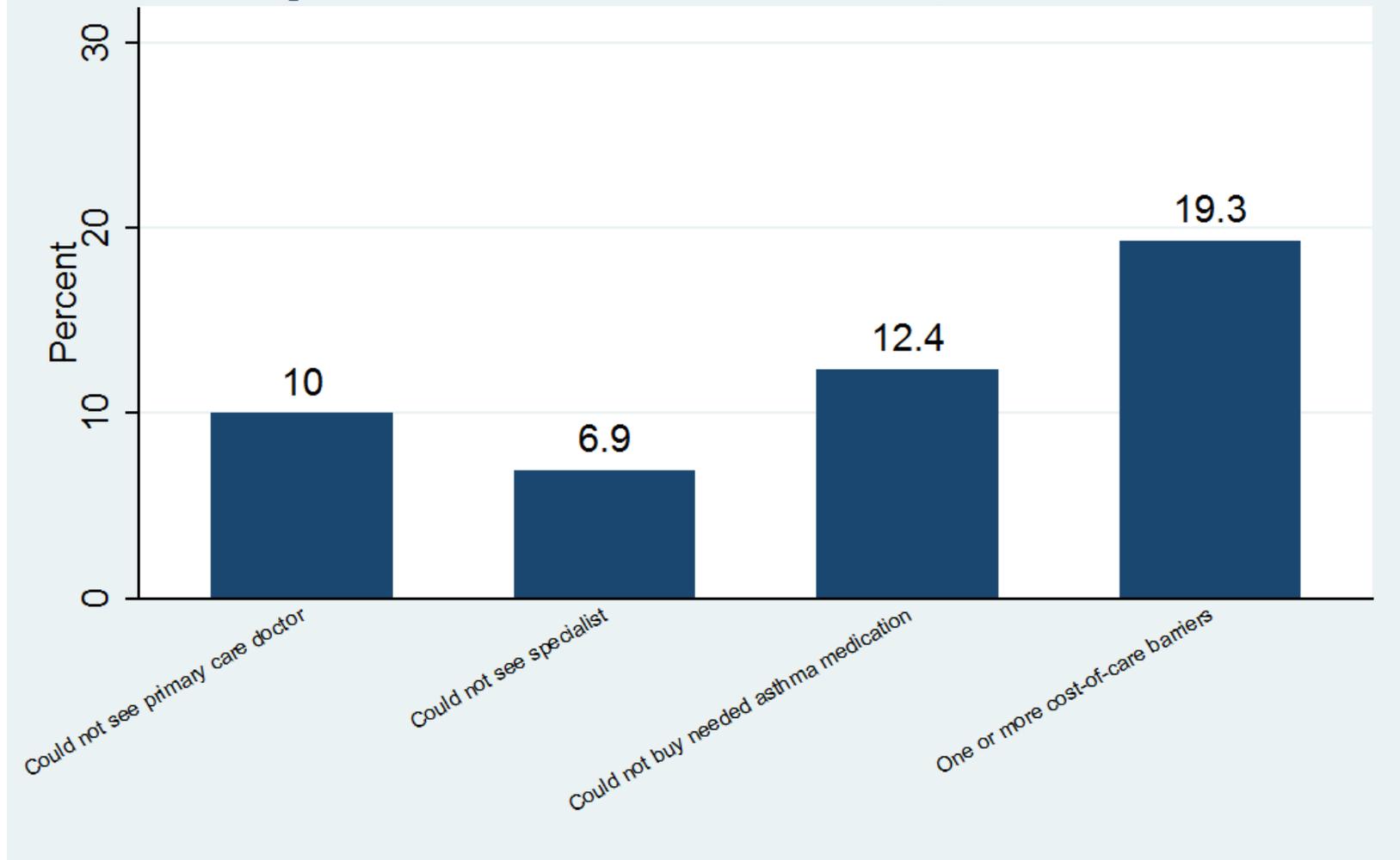


Inhaler use and education among children with current asthma, Texas, 2006-2010



# Cost Barriers to Asthma Care

Prevalence of cost-of-care barriers in the past 12 months among children with current asthma, Texas, 2006-2010



## **Among children with current asthma:**

- 89% experienced symptoms within the past 12 months
- 66% experienced some activity limitations
- 55% missed at least one school day in the past 12 months because of their asthma
- 29% had not visited a doctor for a routine checkup in the past 12 months
- 17% visited the emergency room or an urgent care center in the past 12 months because of their asthma

## **Among children with current asthma:**

- 41% had been shown how to use a peak flow meter to adjust daily medication
- 47% had ever been given an asthma action plan by a doctor
- 82% have used a prescription inhaler, of whom, 93% have been shown how to use the inhaler
- 19% were unable to see a primary care doctor, see a referred asthma specialist, or buy needed asthma medication

- Among children in PHR 8, current asthma prevalence was 9.5% and lifetime asthma prevalence was 16.6% in 2011
- Among the 10 most populated counties in Texas, the child asthma hospitalization rate in Bexar County was the highest
- Asthma hospitalization rates were twice as high among non-Hispanic black children in Bexar County compared to non-Hispanic white or Hispanic children
- Most children with asthma have missed school because of their asthma
- 17% of children with asthma visited an ED or urgent care center for their asthma in the previous year
- Less than half of children with asthma had been given an asthma action plan by their doctor

# Thank You.

Please contact me at:

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(512) 776-3519

Texas Asthma Control Program website:

<http://www.dshs.state.tx.us/asthma/default.shtm>