

**Prevalence Estimates of Childhood Asthma in Texas:
Children Living Near Selected Superfund Sites
Compared to Texas Children**

Prepared by:

Dr. Paul Ruggiere, University of North Texas, Survey Research Center
Dr. David Sterling, University of North Texas Health Science Center, School of Public Health
Dr. Chetan Tiwari, University of North Texas, Department of Geography

November 13, 2014

Acknowledgments

No project this size is complete without the collaborative efforts of many individuals. The authors wish to give special thanks to Texas Department of State Health Services (DSHS) and Texas Commission on Environmental Quality (TCEQ) staff that participated in the study, as well as the following individuals:

- Veronica Kronvall, SRC's fielding director, for managing the interviewing staff, their supervisors, and staff who transcribed and coded open-end comments;
- Sam Dick-Onuoha, Graduate Research Assistant at UNTHSC, for data file design, compilation, analysis, and report writing;
- Tyamesheia Young, SRC Research Coordinator, for assistance in report writing and management of the grant;
- Cristian Urgarte, Student Research Assistant at UNT, for Spanish translation and instrument programming;
- Student Research Assistants at UNTHSC, Rebekah Hahn for report writing, and Mufadda Mamawala and Farzin Ahmed for data analysis assistance; and,
- SRC's team of phone center employees, who collected all telephone data in this report.

Table of Contents

Acknowledgments.....	ii
Table of Contents.....	iii
List of Figures.....	v
List of Tables.....	vi
List of Maps.....	viii
Executive Summary.....	1
1 Introduction.....	3
1.1 Overview.....	3
1.2 Purpose and Research Questions.....	3
1.3 Background on Asthma as Related to this Study.....	4
2 Methodology.....	8
2.1 Sampling Design.....	8
2.2 Sampling Frames.....	12
2.3 Questionnaire.....	14
2.4 Data Collection.....	15
2.5 Sample Results.....	17
2.6 Weighting Procedures.....	20
2.7 Analysis Approach.....	23
2.8 Study Limitations.....	23
3 Sample Demographics.....	25
3.1 Demographics of Children in the Sample.....	25
3.2 Demographics of Households in the Sample.....	27
4 Asthma Prevalence.....	32
4.1 Asthma Prevalence in Children Living Near Superfund Sites and in Texas...	32
4.2 Asthma Prevalence by DSHS Health Service Region.....	38
5 Asthma Experiences.....	42
6 Health Care Access.....	52
7 Asthma Allergens and Irritants.....	57
8 Key Findings.....	61

Appendix 1: References 63
Appendix 2: Superfund Site Maps 66
Appendix 3: Questionnaires..... 70

List of Figures

Figure 1: Prevalence of Asthma in Lifetime by Survey Year, Texas and Nationwide, for Children, BRFSS (2006-2010).....	5
Figure 2: Prevalence of Current Asthma by Survey Year, Texas and Nationwide, for Children, BRFSS (2006-2010).....	6
Figure 3: Percentage of Children Ever Diagnosed with Asthma.....	32
Figure 4: Percentage of Children with Current Asthma.....	35
Figure 5: Asthma Status of Selected Child Living in Texas (n=1,717).....	42
Figure 6: Number of Days Child with Current Asthma had Asthma Symptoms in Past 30 Days (n=219).....	43
Figure 7: Number of Days Asthma Symptoms Made it Difficult for Child with Current Asthma to Sleep in Past 30 Days (n=141).....	44
Figure 8: Child With Current Asthma Had Wheezing in the Chest During Exercise in Past 12 Months (n=212).....	44
Figure 9: Amount Child with Current Asthma Limited Usual Activities Due to Wheezing in the Chest in Past 12 Months (n=216).....	45
Figure 10: Days of School or Work Child Missed Due to Illness in Past 12 Months (n=1,449)....	46
Figure 11: Days of Work Parent/Guardian Missed Due to Child’s Illness in Past 12 Months (n=1,360).....	47
Figure 12: Days of School or Work Child Missed Due to Wheezing or Whistling in the Chest in Past 12 Months (n=199).....	48
Figure 13: Days of Work Parent/Guardian Missed Due to Child’s Asthma in Past 12 Months (n=174).....	49
Figure 14: Times Child Visited an Urgent Care Center for Asthma in Past 12 Months (n=219)..	49
Figure 15: Child Has Health Care Coverage (n=1,700).....	52
Figure 16: Percentage of Health Care Coverage by Type (n=1,462).....	53
Figure 17: Child Did Not Have Health Care Coverage in Past 12 Months (n=288).....	54
Figure 18: Number of Times Child with Current Asthma Needed to See a Doctor for Routine Asthma Checkup in Past 12 Months (n=226).....	55
Figure 19: Frequency of Diesel Trucks Passing Through the Street on Weekdays (n=292).....	60

List of Tables

Table 1: Description and Contaminants at Selected Superfund Sites in Texas	9
Table 2: Household Counts for Sampled Superfund Sites	11
Table 3: Sampling Frames Used for Each Strata	12
Table 4: Selection Criteria for Follow-Up Questions.....	15
Table 5: Results of the ABS Sample for Superfund Sites	17
Table 6: ABS Results for DSHS Health Service Regions	19
Table 7: ABS Results for DSHS Health Service Regions	20
Table 8: Household Counts by Strata.....	21
Table 9: Child Counts by Strata	21
Table 10: Unweighted and Weighted Household Counts by Strata	22
Table 11: Unweighted and Weighted Child Counts by Strata	23
Table 12: Child-Based Demographics for Texas.....	26
Table 13: Child-Based Demographics between Children Living Near Superfund Sites and the rest of Texas	27
Table 14: Texas Household-Based Demographics	28
Table 15: Household-Based Demographics between those located near Superfund Sites and the rest of Texas	30
Table 16: Percentage of Children Ever Diagnosed with Asthma by Selected Demographics	34
Table 17: Age at Asthma Diagnosis.....	35
Table 18: Percentage of Texas Children who Currently have Asthma by Selected Demographics	37
Table 19: Age at Asthma Diagnosis by DSHS Health Service Region	39
Table 20: Years Since Asthma Diagnosis by DSHS Health Service Region	40
Table 21: Number of Days of School/Work Child Missed Due to Illness in Past 12 Months by Asthma Status	46
Table 22: Number of Days of Work Parent Missed Due to Child’s Illness in Past 12 Months.....	47
Table 23: Type of Medication Used to Control Child’s Asthma Symptoms.....	50
Table 24: Child Able to Carry and Use Medication at School	51
Table 25: Child Could Not Receive Needed Medical Care in Past 12 Months Because of Cost ..	54
Table 26: Doctor has Taught Parent or Child with Current Asthma in Asthma Care Techniques	56

Table 27: Animal Allergens	57
Table 28: Household Irritants	58
Table 29: Preventative Strategies	59

List of Maps

Map 1: Selected Texas Superfund Sites	8
Map 2: Half-Mile Buffers Surrounding Superfund Sites	10
Map 3: DSHS Health Service Regions.....	12
Map 4: Qualified and Non-Qualified Respondents.....	18
Map 5: Sample Results by DSHS Health Service Region	19
Map 6: Percentage of Children Ever Diagnosed with Asthma.....	38
Map 7: Percentage of Children who Currently Have Asthma.....	41
Map 8: Half-Mile Bands Surrounding Superfund Sites (All Sites)	66
Map 9: Qualified and Non-Qualified Respondents (All Sites).....	68

Executive Summary

This report presents the results of the study, “Prevalence Estimates of Childhood Asthma in Texas: Children Living Near Selected Superfund Sites Compared to Texas Children”. Along with birth defects and cancers, asthma is one of the major concerns that citizens often have about their health in relation to Superfund sites in Texas. Prior research has also raised the question of a potential relationship between living near hazardous waste sites and increases in asthma rates in children. The primary goals of this study were to determine the prevalence of both lifetime and current asthma in children living near selected Superfund sites in Texas compared to statewide childhood asthma prevalence rates, and to determine the geographic distribution of childhood asthma prevalences by calculating prevalence estimates for each of the Texas Department of State Health Services (DSHS) Health Service Regions.

This study utilized a multimodal data collection methodology that included landline, cell phone, web, and mail methodologies for obtaining self-reported measures of current and lifetime prevalence of childhood asthma and additional demographic information. For households with children with asthma, additional questions were asked concerning access to health care and exposure to allergens and irritants. In order to ensure an adequate sample for reliable prevalence estimates, completion targets of 200 households were set for each of the eight DSHS Health Service Regions and all selected Superfund sites combined. Sampling was performed from April 23, 2011, through May 8, 2012. The final sample included 361 households within Superfund site areas and 1,759 households comprising the rest of Texas, for a total of 2,120 households. Within these households were 685 children living in households near Superfund sites and 3,437 children living in other Texas households. To account for sample distributions among the DSHS Health Service Regions, weighting methods were used for analysis and are described in the report.

Study results showed that within the selected combined Superfund sites, the prevalence of childhood asthma was similar among those not living near the Superfund sites for both lifetime and current asthma status. Overall prevalence rates for children living near Superfund sites for lifetime and current asthma were 13.1% and 8.9%, respectively, and for the rest of Texas were 11.7% and 9.1%, respectively. These results were similar to other studies, such as the 2010 Behavioral Risk Factor Surveillance System (BRFSS), that reported national lifetime and current childhood asthma prevalences of 11.6% and 8.4%, respectively. In this study, the lifetime prevalence estimate ranged from 9.7% in region 6/5S to 15.8% in region 8 and the current prevalence estimates ranged from 7.4% in region 6/5S to 12.7% in region 8.

In this study, a number of indicators of asthma impact were measured. Those associated with quality of life included having asthma symptoms in the past 30 days and difficulty sleeping due to asthma. In this study, 60% of children with current asthma experienced one or more days of asthma symptoms in the past 30 days, and 63.4% of children with current asthma had difficulty staying asleep due to asthma symptoms one or more days during the past 30 days.

Children with asthma and their parents are also at greater risk of missing school and work than are children without asthma. Nearly 60% of children with current asthma missed one or more days of school or work in the past 12 months due to illness, with 51.9% of these children missing at least one day of school or work specifically due to asthma symptoms. Also, 54% of children with current asthma missed three or more days of school in the past 12 months, while only 32% of children without asthma missed

three or more days of school. This is an issue of concern, because school absenteeism has been found to be a significant predictor of lower academic achievement and not finishing high school. Additionally, 33.5% of parents missed at least one day of work in the past 12 months due to their child's asthma, with 21.9% having missed three or more days and 14.9% missing six or more days.

Health care utilization findings were both negative and positive. Negative results included that 27.6% of children with current asthma had at least one visit to an emergency room or urgent care clinic for asthma symptoms in the past 12 months and 15.5% of children with current asthma had two or more visits to an emergency room or urgent care center during this timeframe due to their asthma. Additionally, only 50.8% of children with current asthma had a prescription inhaler for long-term prevention, and of the 72.0% that have a quick relief inhaler, 69.0% relied on its use within the past three months. Positive findings included that an estimated 87.6% of children have health care coverage of some type, and 83.7% of children had at least one routine checkup for their asthma in the past year.

This study indicates the prevalence of both lifetime and current childhood asthma in Texas has overall remained similar to prevalences reported by others over the past four years. Asthma has a major impact on the health of the population. Monitoring trends in asthma among Texans is important for increasing the level of knowledge about this prevalent condition. Data help public health officials focus their efforts to address asthma by targeting those most in need for intervention. Data also help raise awareness about the effects of asthma on the health of the community.

1 Introduction

1.1 Overview

This report presents the results of the study, “Prevalence Estimates of Childhood Asthma in Texas: Children Living Near Selected Superfund Sites Compared to Texas Children.” The study was conducted based on citizen concerns as well as prior research that suggests a potential relationship between living near hazardous waste sites and increases in asthma rates in children. The study was funded by the Texas Environmental Health Institute (TEHI), a joint venture of the Texas Department of State Health Services (DSHS) and the Texas Commission on Environmental Quality (TCEQ). The University of North Texas (UNT) was contracted to conduct the study. The UNT research team is a collaborative effort of the UNT Survey Research Center (SRC), the UNT Health Science Center School of Public Health, and the UNT Department of Geography.

The SRC collected and evaluated all data used in the study. The study used multiple data collection modes to obtain data on childhood asthma in Texas from April 2011 to May 2012. A total of 2,120 households with children comprised the final data set used for the analysis.

1.2 Purpose and Research Questions

The primary purpose of this study was to determine the prevalence of asthma in children living near selected Superfund sites in Texas^a compared to statewide childhood asthma prevalence rates. The research was designed to:

1. Determine whether the prevalence^b of lifetime^c and current^d asthma in children living near selected Texas Superfund sites differed from the prevalence among children living in the rest of Texas;
2. Determine the relative asthma prevalence (both lifetime and current diagnosis) for children living in households located within each of the Texas DSHS Health Service Regions; and
3. Collect information regarding asthma experiences, including access to health care and exposure to allergens.

The study utilized a multimodal data collection methodology that included landline, cell phone, web, and mail methodologies.

^a For the purpose of this report, Superfund sites include sites on the Environmental Protection Agency’s National Priorities List as well as those in the Texas Commission on Environmental Quality’s State Superfund Program.

^b Prevalence is the proportion of a population found to have a certain condition. For childhood asthma, this is the proportion (or percentage) of children within a certain population who are thought to have asthma. Because this study used survey data, prevalence estimates were weighted to produce estimates that are representative of the population from which the samples/surveys were taken.

^c Childhood lifetime asthma is defined as a parental affirmative (yes) response to the question “Has your child ever been told by a doctor or other health professional that he/she has asthma?”.

^d Childhood current asthma is defined as a parental affirmative (yes) response to the lifetime asthma question followed by an affirmative response to the subsequent question “Does your child still have asthma?”.

1.3 Background on Asthma as Related to this Study

This section provides an overview on asthma prevalence trends in the United States (U.S.) and Texas. This presentation is followed by a brief examination of the costs of asthma and the relation between asthma and living near hazardous waste sites.

1.3.1 Asthma Prevalence Trends in the U.S. and Texas

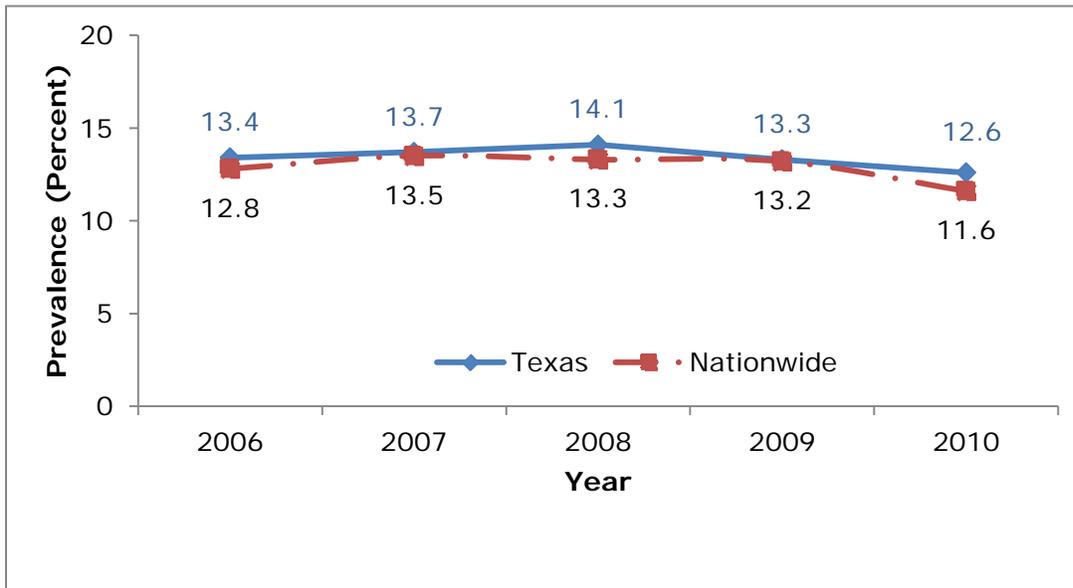
Childhood asthma prevalence has continuously increased in the U.S. since 1980, although the increase has slowed during the last decade. From 2001 to 2010, the National Health Interview Survey (NHIS)^e reported that the estimated number of children with asthma in their lifetime in the U.S. increased from 9.2 million to 10.1 million (representing a change from 12.7% to 13.6%), and the number of children who currently had asthma showed similar increases. This estimate increased to 14.0%, or 10.4 million children, in 2011.¹ During this period, the prevalence of childhood and adult asthma differed by race and ethnicity, gender and family income; however, in all groups, the prevalence was consistently higher among children aged 0-17 years than among adults 18 years of age and older.^{2,27,28}

The NHIS only collects national level statistics; however, the Behavioral Risk Factor Surveillance System^f (BRFSS) collects state-based data and combines all state-based data to produce national level statistics. Data derived from the NHIS and the BRFSS are comparable, but estimates vary due to sampling design. The BRFSS lifetime and current asthma prevalence among Texas children younger than 18 years of age appear very similar to nationally representative BRFSS samples (Figures 1 and 2).^{2,3,4} In 2010, approximately 7.5 million children in the U.S. (11.6%) reported a diagnosis of asthma in their lifetime. During the same year, close to 800,000 children aged 0-17 in Texas (12.6%) reported a diagnosis of asthma in their lifetime (see Figure 1).

^e The National Health Interview Survey (NHIS) is a multi-purpose health survey conducted annually by the National Center for Health Statistics, Centers for Disease Control and Prevention (CDC). It is the principal source of information on the health of the civilian, noninstitutionalized, household population of the U.S.

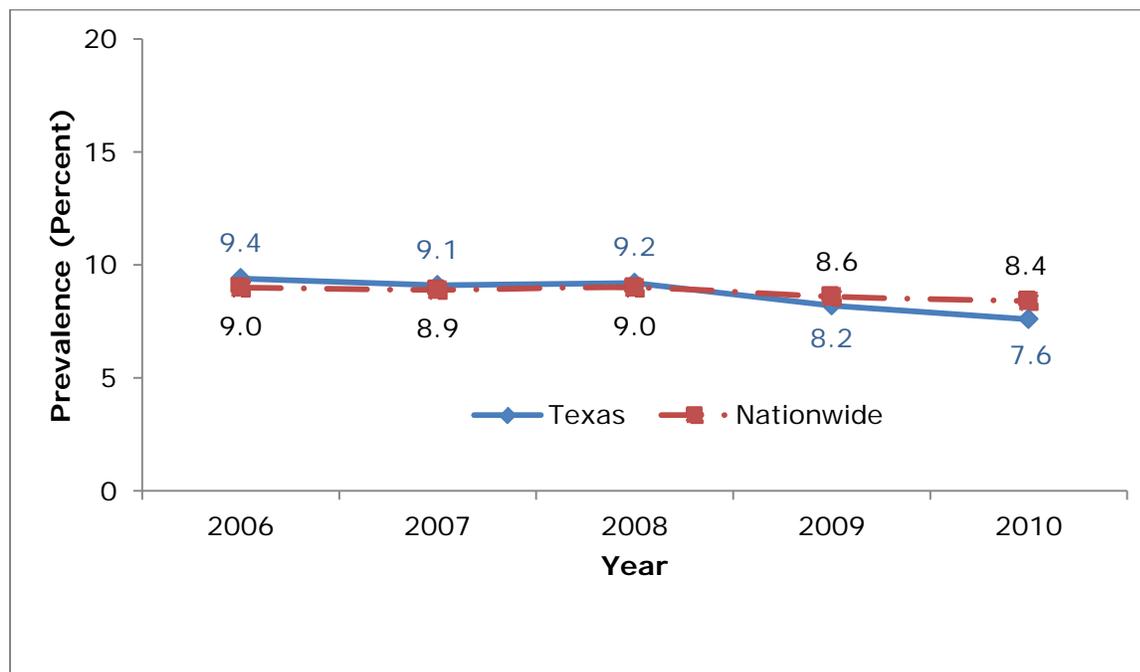
^f The Behavioral Risk Factor Surveillance System (BRFSS) is a state-based random digit-dialed telephone survey of the noninstitutionalized U.S. adult population (age 18 years and older). On a yearly basis, thousands of randomly selected adults are interviewed by telephone using standardized methods and questionnaires set by the CDC. Since 1999, the Texas BRFSS has included two questions for assessing lifetime and current prevalence of asthma among adults. Childhood asthma questions have been included since 2001, but comparing estimates from before 2005 is not recommended as different sampling methods were used. Not every state includes this module.

Figure 1: Prevalence of Asthma in Lifetime by Survey Year, Texas and Nationwide, for Children, BRFSS (2006-2010)



Approximately 5 million children in the U.S. in 2010 (8.4%) reported currently having asthma. During the same year, slightly more than 500,000 Texas children reported having current asthma, representing an asthma prevalence of 7.6% (see Figure 2).³

Figure 2: Prevalence of Current Asthma by Survey Year, Texas and Nationwide, for Children, BRFSS (2006-2010)



1.3.2 Asthma Care Burden

Despite efforts to improve early diagnosis and development of effective asthma control and management strategies, the burden of asthma remains a concern among all risk groups and in all areas of the U.S., particularly among children younger than 18 years of age. In contrast to 2.52 million visits in 1996, U.S. children 0-17 years old with asthma made 7.5 million visits to physician offices and hospital outpatient departments for ambulatory asthma care in 2007. Close to 1 million of these visits represented admissions for urgent care at hospital emergency departments and hospitalizations for asthma.^{2,5} During the years 2001-2010, the rates of routine child asthma visits in the U.S. declined slightly in primary healthcare settings, but emergency room visits and hospitalizations for urgent care remained consistently elevated.²

The health and economic burdens of asthma remain significant, and the economic burden of asthma has been increasing over time. Asthma impacts the productivity of the child, family, and society through impairments of physical health and disruptions to daily activities as a result of chronic and recurring symptoms. These may include wheezing, cough, shortness of breath, and tightness of chest muscles. Among U.S. school-age children, ages 5- 17 years old, who reported at least one symptomatic attack in the previous 12 months, asthma was responsible for 14.5 million missed school days in 1996.⁵ In 2002, children in this age group with asthma missed 14.7 million school days, while adults and parents involved with the care of these children missed nearly 12 million days of work.⁶ In 2008, the numbers reported were 10.5 million and 14 million daily absences for school and work, respectively, for U.S. children and adult care takers.⁴

Increased use of healthcare services for routine and emergency asthma care comprises both direct and indirect economic costs, which impact health system resources as well as the quality of life of patients, especially those with uncontrolled or poorly controlled asthma.^{5,7-9}

Some researchers predict that the growing economic cost of asthma will become a predominant consideration in asthma control and treatment in the next 20-30 years.⁸ For example, in 1996, the direct and indirect economic costs of asthma in the U.S. amounted to approximately 2 billion dollars, including costs for prescribed medications, ambulatory hospital care, doctor office visits, emergency room admissions, and hospital stays.⁵ In 2002, the total costs for all categories of asthma care in the U.S. were estimated at 14 billion dollars.⁶

1.3.3 Asthma and Living Near Hazardous Waste Sites

Some existing research points to a relationship between living near hazardous waste sites and increases in asthma rates among children, especially in areas with large concentrations of emission sources. One study showed statistically significant elevations in the rates of hospital diagnosis for asthma in children younger than 10 years who lived near hazardous waste sites in the state of New York. The relationship was somewhat stronger at sites containing persistent organic pollutants.¹⁰ Results from similar studies also suggest a relationship, especially when controlling for various confounding factors.^{11,12} Over 300 substances (including metals, diisocyanates, cleaning agents, and pesticides) have been identified as potential environmental constituents of concern and occupational risk factors for asthma.^{13,14,15} It is possible that these same agents existing at Superfund sites could contribute to an increase in the prevalence of childhood asthma, especially because children may be more susceptible to toxic environmental exposures.^{13,16-18}

2 Methodology

2.1 Sampling Design

The sampling design for this study consisted of three geographic strata. These were (1) Superfund sites, (2) DSHS Health Service Regions, and (3) the State of Texas. The following discussion explains how these strata were defined.

2.1.1 Superfund Sites

As of 2013, the State of Texas has 98 Superfund sites.¹⁹ These sites demonstrate differing sources of contamination and exist in varying stages of clean-up. Sites with the potential to emit volatile organic compounds (VOCs) into the environment and that are within proximity to residential areas were selected to be included in this study. TCEQ provided the research team with a list of 10 sites meeting these selection criteria. The locations of the selected sites are shown in blue on Map 1. The gray areas on the figure represent city boundaries throughout the state. A description of each site, including primary contaminants, is presented in Table 1.

Map 1: Selected Texas Superfund Sites

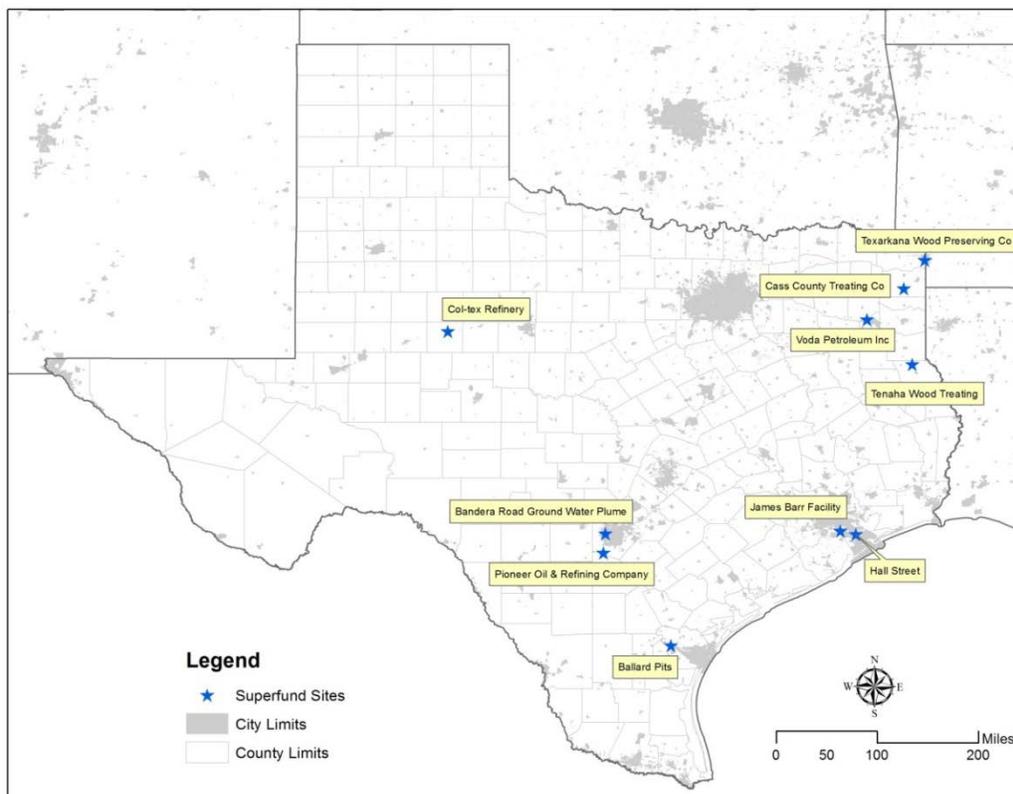


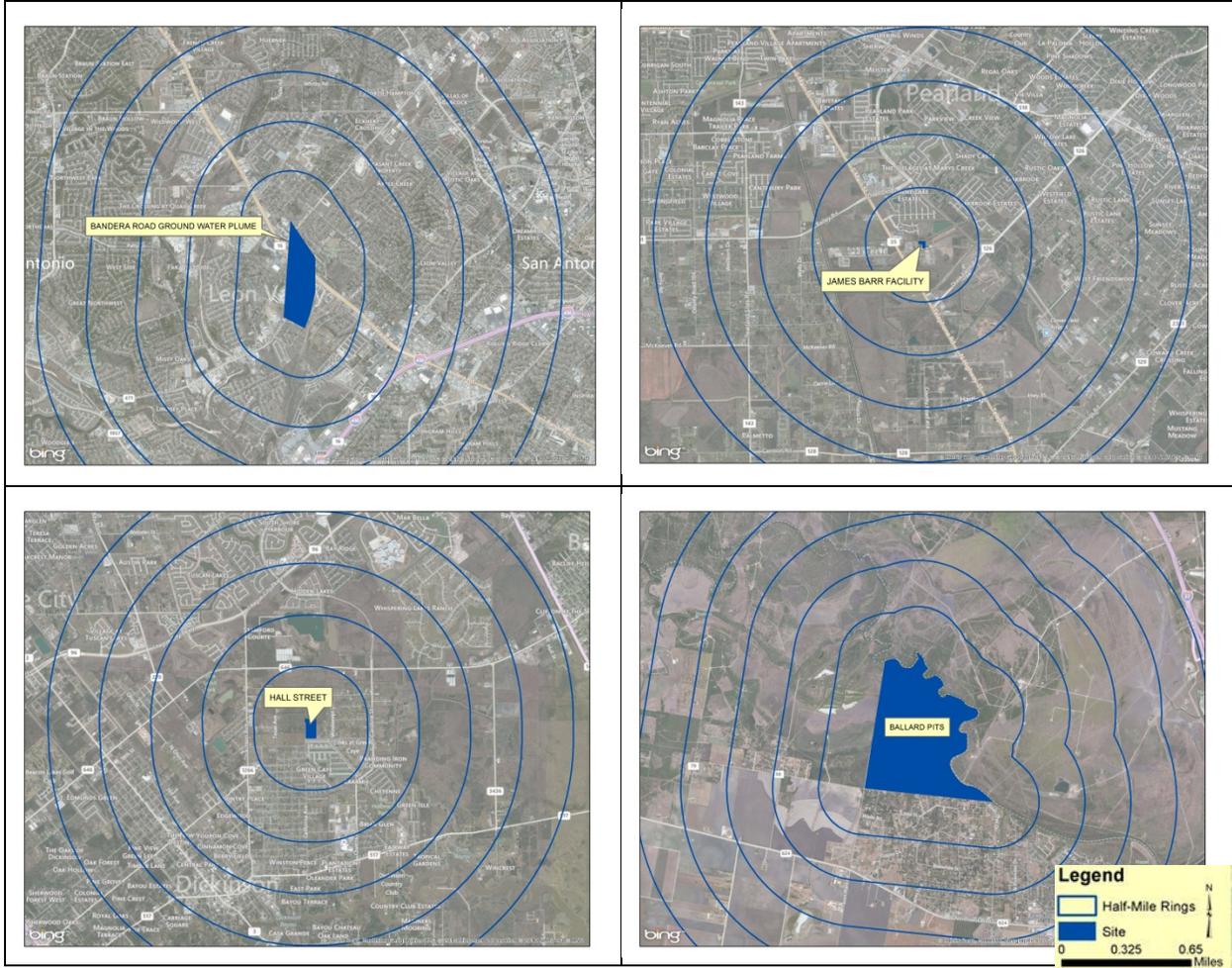
Table 1: Description and Contaminants at Selected Superfund Sites in Texas

Site	County	Description	Primary Contaminants
TEXARKANA WOOD PRESERVING CO	Bowie	Abandoned wood treatment facility with after-treatment wastewater runoff. The nearest drinking water well is 2,400 feet east of the site. Contaminated soils and groundwater present human health hazard.	Creosote and Pentachlorophenol
CASS COUNTY TREATING CO	Cass	Wood treatment facility bordered by residential and undeveloped wooded areas. Wood preservation chemicals contaminated groundwater, soil, and sediment.	Cadmium, Chromium, Creosote constituents, Dieldrin, Endrin, Lead, Mercury, Naphthalene, and Pentachlorophenol
VODA PETROLEUM INC	Gregg	Waste oil recycling facility located in a residential neighborhood. Contaminants have been found in soil and groundwater of residential property and a nearby creek.	Heavy Metals and Volatile Organic Compounds
COL-TEX REFINERY	Mitchell	Tank farm and refinery. Leftover tanks were source of contamination found at adjacent river, affecting the groundwater, soil, and river sediment.	Benzene, Toluene, and Xylenes
TENAHA WOOD TREATING	Shelby	Wood treatment facility bordered by rural areas. Soil and sediment affected by the chemicals used for wood treatment at this facility.	Arsenic, Chromium, Copper, Dioxins, and Pentachlorophenol
PIONEER OIL & REFINING COMPANY	Bexar	Abandoned oil refinery, which has been inoperative since 1948. A tar-like hydrocarbon substance remains at the site and has affected groundwater, soil, and surface water.	Hydrocarbons, Benzene, Benzo(a)pyrene, Naphthalene, and Toluene
BANDERA ROAD GROUNDWATER PLUME	Bexar	This site is centered in a business area with some homes nearby. Residents whose wells are contaminated have been provided access to public water supplies.	Tetrachloroethene and Trichloroethene
JAMES BARR FACILITY	Brazoria	Former vacuum truck waste storage facility bordered by commercial and industrial businesses, including an adult care center. A hazardous spill in 1997 caused contaminants to leak into the ground.	Benzene, 1,2-Dichloroethane, Metals, and Organics
HALL STREET	Galveston	Waste disposal/landfill site in a rural neighborhood used for unpermitted disposal of waste materials in the 1960s. Drums containing waste were buried in ditches. Waste materials were disposed of in shallow pits or on the ground. Waste has contaminated groundwater and soil.	Chlorobenzene, Styrene Tars, Arsenic, and Dibenzo(a, h) anthracene
BALLARD PITS	Nueces	Sand and gravel pit site used in the 1960s for storage and disposal of waste material. In 2002, a river overflow led to contamination in nearby residential yards and water wells. Soil, sediment, and groundwater have been contaminated.	Metals, Polychlorinated Biphenyls, Volatile Organic Compounds, and Semivolatile Organic Compounds

Polygon buffers with designated half-mile increments were created around each Superfund site boundary. The buffers conform to the boundary shapes of each Superfund site. Example maps are provided for the Bandera Road Groundwater Plume, James Barr Facility, Hall Street, and Ballard Pits

Superfund sites and shown in Map 2. Polygon shapes for the other six Superfund sites were also unique and are presented in Appendix 2.

Map 2: Half-Mile Buffers Surrounding Superfund Sites



At the time of study design, it was unknown how many completed interviews would result from the Superfund site stratum to achieve a goal of at least 200 responses. Therefore, the research team first chose to sample all households within Census blocks that were either fully contained or at least touched the first ½-mile increment buffer surrounding a Superfund site. Due to the unique shapes of the Superfund sites and Census blocks, along with the varying population densities, there was a great deal of variation in the proximity and locations of sampled households and a number of households were included that were outside the ½- mile buffer. Therefore, it was determined that a distance of 1.5 miles was necessary to obtain a sufficient sample size and be considered as ‘near’ the Superfund site.

After combining data collected from all 10 Superfund sites, 9,116 households were identified within 1.5 miles of the selected sites and were included in the Superfund site sample (see Table 2). Approximately 38% of these households (3,446) were expected to have children under the age of 18 years. These sites were all combined and treated as one area in the study. The selection criteria of households that would

ultimately represent Superfund sites for analysis were finalized after responses were received and sample counts were evaluated and are shown in Section 2.5.

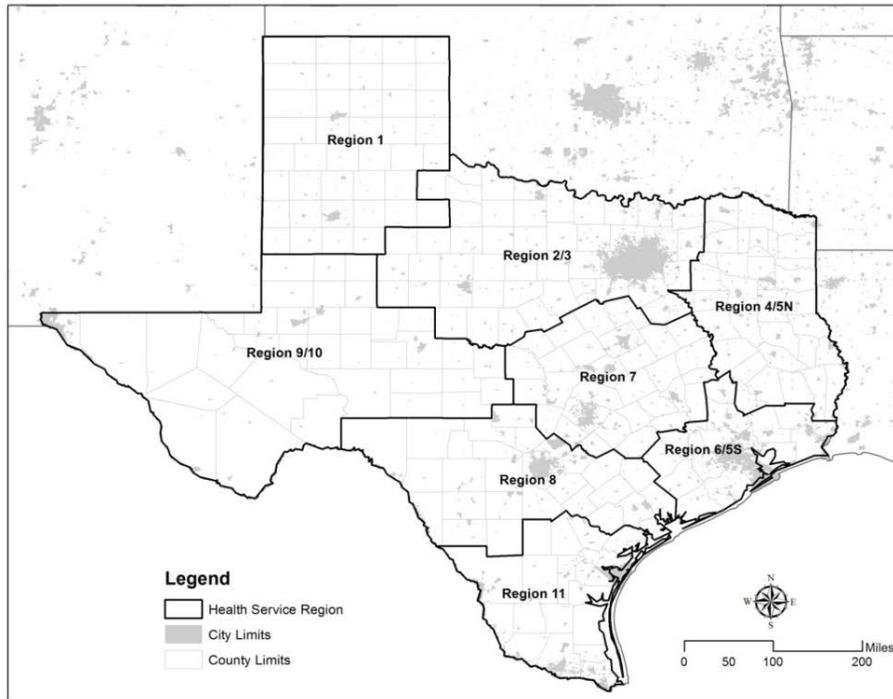
Table 2: Household Counts for Sampled Superfund Sites

Superfund Site	Number of Identified Households	Estimated Households with Children Under 18 years of age
Ballard Pits	656	248
Bandera Road Groundwater Plume	4,486	1,696
Cass County Treating Co.	133	50
Col-Tex Refinery	348	131
Hall Street	1,766	668
James Barr Facility	885	334
Pioneer Oil & Refining Co.	185	70
Tenaha Wood Treating.	248	94
Texarkana Wood Preserving Co.	174	66
Voda Petroleum Inc.	235	89
Total	9,116	3,446

2.1.2 DSHS Health Service Regions

DSHS Health Service Regions are organized into eight regions across the state. Each region is comprised of groups of counties (see Map 3). These eight regions were used as geographic strata for sample selection. Completion targets of 200 households were set for each region, in order to ensure an adequate sample size to obtain reliable prevalence estimates for each DSHS Health Service Region.

Map 3: DSHS Health Service Regions



2.1.3 State of Texas

Estimates for the State of Texas were obtained by combining the results of each of the DSHS Health Service Regions and weighting for population proportions and other factors, which will be discussed in Section 2.6, Weighting Procedures.

2.2 Sampling Frames

Three sampling frames were used for the project. These were (1) address-based, (2) landline, and (3) cell-phone sampling frames. An address-based sample (ABS) was initially used for the study. Because the proportion of households with children was less than expected in the DSHS Health Service Regions, the ABS was augmented with a landline and cell phone sampling frame. The impact of obtaining representative samples using ABS or land-lines alone has been recognized, and in 2011 the BRFSS included the addition of cell phones to the sampling frame for similar reasons. Table 3 shows which sampling frames were utilized for each stratum. A discussion of each sampling frame follows.

Table 3: Sampling Frames Used for Each Strata

Strata	Type of Sampling Frame Used		
	Address-Based	Landline	Cell phone
Superfund Sites	✓	-	-
DSHS Health Service Regions	✓	✓	✓

2.2.1 Address-Based Sample

An ABS uses the U.S. Postal Service's Delivery Sequence File (DSF) for the identification of address units. The DSF provides a nearly universal listing of residential and mail delivery locations. Another advantage of the DSF is a level of geographic precision not offered by random digit dialing (RDD) and cell phone sampling methods. The ABS method allows for plotting of household locations. The plotting precision offered by the ABS was a critical consideration for the use of this frame for the Superfund site stratum. An ABS was used to identify households within 1.5 miles of the selected Superfund sites. The DSHS Health Service Regions also incorporated households from an ABS.

For each of the DSHS Health Service Regions, 2,000 household units were drawn for a total of 16,000 household units. For the Superfund site stratum, 9,116 household units were drawn. Together, 25,116 household units were selected for the ABS data collection.

2.2.2 Landline Sample

The landline sample was selected to represent all households with landlines in each DSHS Health Service Region. Three-digit area codes and associated three-digit telephone exchanges in use in Texas were selected. The last four numbers were generated at random in quantities that reflected the proportions of area code/telephone exchange ratios among listed telephone numbers. This approach is referred to as a list-assisted RDD frame. One advantage to this approach is that it reasonably covers all potential landline users including those with unlisted telephone numbers or those using Voice-Over Internet Protocols (VOIP).

After the ABS data collection efforts had ended, a RDD landline sample was drawn so that half of the remaining interviews in each DSHS Health Service Region would be completed with landline telephone interviews.

2.2.3 Cell Phone Sample

The cell phone sample was selected from cell phone switches physically existing throughout Texas. Area codes and telephone exchanges for cell phones, similarly to the landline sample, were selected and the last four digits were randomly generated. This approach includes a probability of selecting any cell phone holders who purchased their phone within Texas. It does not include people who purchased a phone in another state and then moved to Texas while maintaining the same out-of-state phone number. People who kept their Texas phone numbers were screened from the sample based on their response to a screening question. According to estimates published from a study conducted in 2009, 5.6% to 13.9% of cell phone only households in Texas possess area codes from a different state. These households are considered "an under-coverage" of the cell phone only population in our sample. According to the same study, under-covered households are more likely to be young, non-Hispanic, white only, and college graduates. More relevant to this study, they are less likely to have children in the household.²⁰ A recent study of BRFSS data collected in 2011 shows that 8% of cell phone calls reach individuals living outside of the sampled state. There can be differences in health indicators among respondents who are in the expected sampled state and those who have left.²¹ It is unknown if these differences are also reflected in the health indicators of children living in those same households.

2.3 Questionnaire

The questionnaire was designed to measure the current and lifetime prevalence of childhood asthma and additional demographic information. For households with children with asthma, additional questions were asked concerning access to health care and exposure to allergens and irritants. In designing the instrument for this survey, questionnaires from several other established and validated asthma surveys and surveillance systems were reviewed, including: the State and Local Area Integrated Telephone Survey (SLAITS) National Asthma Survey, the International Study of Asthma and Allergies in Childhood (ISAAC), the 2008 and 2009 BRFSS child asthma call-back surveys, the National Health Interview Survey (NHIS) child core questions, and the National Survey of Children's Health. Questions in the survey instrument were primarily adapted from these questionnaires, and a limited number were independently developed as needed. On average, the questionnaire took 12 minutes to administer by telephone. The same questionnaire was provided for web users who were selected as part of the ABS.

In addition, a scaled-down, one-page version of the questionnaire that included only the most critical measures to directly address the objectives was developed for a mail survey. This questionnaire was mailed to all non-respondents of the ABS after the phone and web surveys were ended. This was performed based on experience that shorter questionnaires improve response rates. TEHI staff reviewed both versions of the survey instrument, and their feedback was incorporated in the design. Upon their approval, the questionnaires were translated into Spanish and all versions were submitted to the UNT Institutional Review Boards (IRB).⁶ After reviews were completed, the full versions of the questionnaire were programmed as a telephone script and Internet survey (attached in Appendix 3).

The telephone and Internet versions of the questionnaire stated in the introduction that the purpose of the questionnaire was to study "health issues in Texas." No mention of children or asthma was made in the introduction. The first questions asked about the composition of the household and those who had children living in the household were considered "qualified" for the study. Those without children in the household were politely thanked and the survey was terminated. The mail questionnaire also made no mention of children or asthma. Because this was a prevalence study, a conscious effort was made to design the screening criteria so that potential respondents would not decline participation because they did not have children with asthma.

The questionnaire was designed to get a count of all people in the household, a listing of the age and gender of all children, and the asthma status of all children. Respondents were asked if they or their child had ever been told by a doctor or health care professional that the child has asthma. If they answered "yes," they were asked if the child had asthma symptoms within the past 12 months. Based on responses to the questions, each child was classified as "current asthma," "asthma in lifetime," or "no asthma" (see Table 4). These classifications allowed prevalence rates to be calculated for all children in the sample for whom data were provided. These data were used to estimate prevalence rates for children living near Superfund sites, within the DSHS Health Service Regions, and in Texas.

⁶ A complete listing of UNT IRB procedures are detailed at the following Web site: <http://research.unt.edu/faculty-resources/research-integrity-and-compliance/use-of-humans-in-research>. A complete listing of UNT Health Science Center IRB procedures are detailed at the following Web site: <http://web.unthsc.edu/ophs-irb>.

Table 4: Selection Criteria for Follow-Up Questions

Classification	Ever Been Told by Health Professional that the Child has Asthma	Had Asthma Symptoms within the past 12 mo.	Questionnaire Scope
Current Asthma	YES	YES	All questions asked
Asthma in Lifetime	YES	NO	Subset of asthma questions, health care access, and demographic questions asked
No Asthma	NO	NO	Only absenteeism, health care access, and demographic questions asked

After the data needed to calculate prevalence rates were collected, one child within each household was selected for follow-up questions. The selection criteria placed a priority on any child in the household with current asthma. If no child currently had asthma, a child with asthma in lifetime was selected. If no child had asthma in their lifetime, a child without asthma was selected for follow-up questions. If two or more children in the same household had the same priority of selection, then one child of the two or more within the preferred selection criterion was randomly selected. If a child without asthma was selected, only a few follow-up questions were asked (Table 4).

2.4 Data Collection

Data collection was conducted using two primary processes. The first was data collection associated with the ABS. The second was the telephone interviewing of the landline and cellphone sampling frames. Each data collection process is discussed below. In all processes, and in accordance with approved IRB, all responders were informed that participation was voluntary, and they could choose to not answer any or all questions. Due to not all questions being answered, there may be differences in the sample sizes (n) reported in the analysis.

2.4.1 Address-Based Sample Data Collection

The ABS was matched with a database of listed telephone numbers. Households with matching phone numbers comprised 36% of the sample (9,053 households) and households without matching phone numbers comprised 64% (16,070 households) of the sample. Households with matching phone numbers were actively contacted using mail and telephone. Households without matching phone numbers were contacted using mail only.

Households with a matching phone number were sent a letter on April 19, 2011, inviting them to participate in the survey by the SRC. The letter told potential respondents that a staff member of the SRC would be calling them, and when that time came, to please accept the call. It offered a toll-free number and Web site that the respondent could use if they wanted to complete the survey at a time convenient to them. Respondents could log-on to the Web site using a login code that was included in the letter. Use of this code allowed for tracking of the location of the respondent and was used to remove that respondent from the calling roster.

Calls began on April 23, 2011, using a 15 call-attempt protocol modeled after BRFSS scheduling protocols. Calls were attempted on weekdays, weekday evenings, and weekends. A reminder letter was sent to all non-respondents from this group on June 1, 2011, which asked the potential respondent to answer the call, to call the toll-free number, or complete the survey at SRC's Web site. On July 6, 2011, all non-respondents were mailed a 1-page questionnaire that included only the most critical measures, including household demographics and asthma status of anyone in the household. The mailing package included a business reply envelope. Data received from mail questionnaires were entered and merged with data collected by phone and Internet.

A similar protocol was followed for the ABS group that did not have a phone number match. SRC sent a letter on June 6, 2011, inviting these households to participate in the survey. Since SRC did not have a phone number to call these households, the letter also informed this group of potential respondents that the questionnaire would take three minutes to complete, and if selected they may be offered a longer questionnaire. People selected for the longer questionnaire would be given a 10 dollar gift card to complete the questionnaire. Only respondents in the households without matching phone numbers were offered a gift card in the ABS frame.

Whether an incentive was offered or not, no respondents were informed that the study only applied to households with children. This information was expressed only after the screening interview had been conducted to determine if the household included children. In the case of the paid-incentive group, only households with children were offered the incentive.

A reminder letter was mailed on July 18, 2011, asking the recipient to call the toll-free number or complete the survey at the Web site. On August 15, 2011, all non-respondents received the 1-page critical measures questionnaire by mail.

When the ABS sample data collection had been completed and results were tabulated, the research team and TEHI staff concluded that the number of responding households was insufficient for the study's objectives. Among the households that responded, a smaller percentage had children than was expected. These results could be attributable to the fact that approximately 40% of the responses had been obtained using the listed telephone portion of the sample. The heads of households with listed landline phones tended to be older and without children, while heads of households with children tended to be younger.

For the remaining non-responders of the Superfund site addresses in the ABS, the short-form survey was sent on April 9, 2012.

2.4.2 Landline and Cell Phone Frame Data Collection

A telephone methodology was selected to fulfill the remaining sampling quotas in the DSHS Health Service Regions. At this broader geographic level, landline and cell phone surveys can be implemented with an adequate degree of geographic assignment although not to the level of precision provided by the ABS methodology. The use of this dual phone sampling frame did offer the advantage of including cell phones in the sampling mix, which resulted in a higher percentage of households with children being contacted. Although three methods of sampling were used, households were only sampled once.

The call attempts on the landline sample began on September 2, 2011, and call attempts on the cell phone sample began September 8, 2011. Telephone data collection ended on May 8, 2012.

2.5 Sample Results

In this section, survey responses are broken down by sampling frame for Superfund sites and for DSHS Health Service Regions. A total of 2,120 households were included in the final sample. Of these responses, 315 (14.9%) were completed in Spanish.

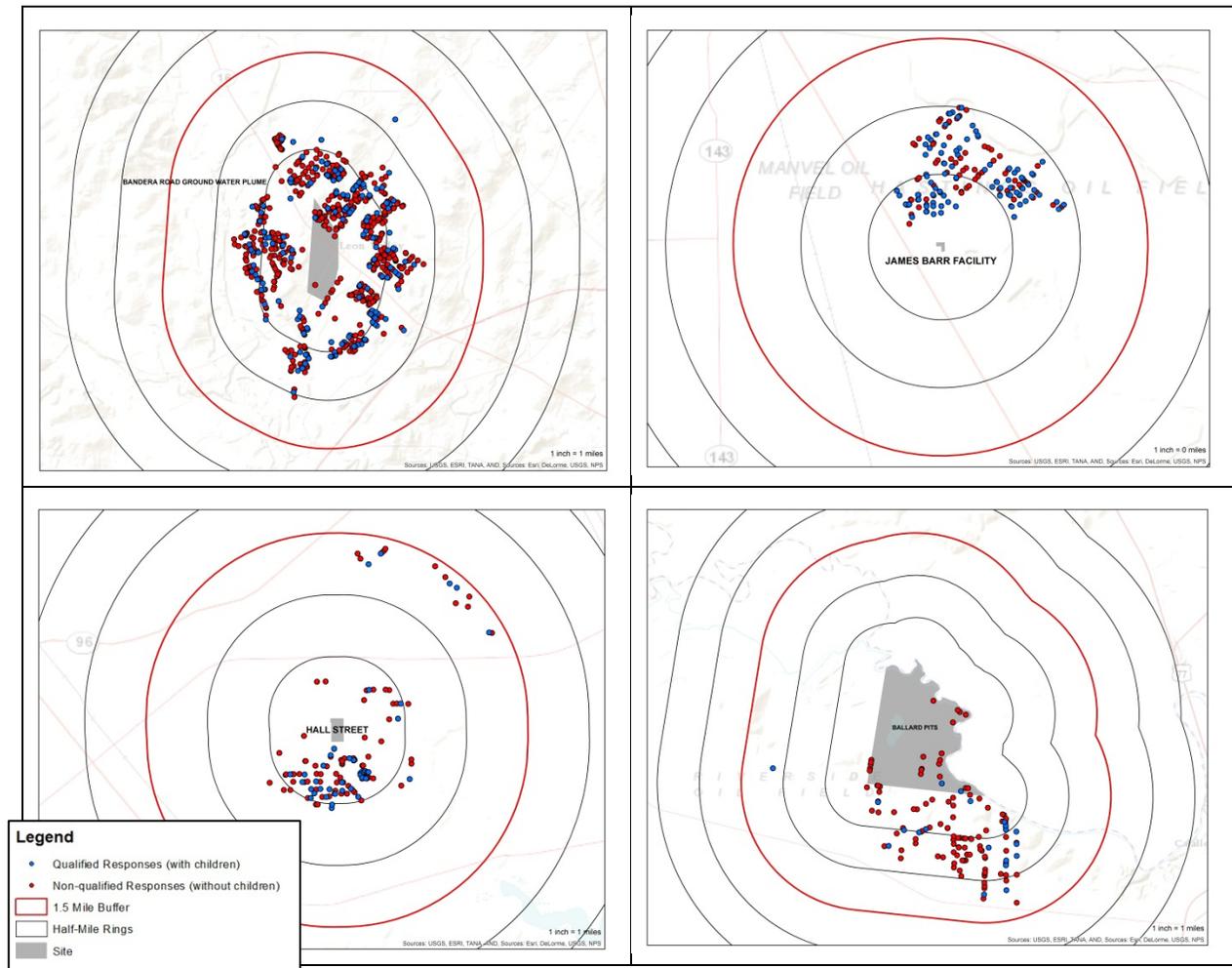
As shown in Table 5, a total of 1,715 households near Superfund sites responded using phone, mail, or the Internet. Of those, only 431 (25.1%) had children. These 431 cases were further reduced by excluding those that were outside the 1.5-mile buffer. After all adjustments were made, the total resulting Superfund site sample totaled 361 respondents.

Table 5: Results of the ABS Sample for Superfund Sites

Site	Households Selected for the Superfund site sample	Qualified Responses	Non-Qualified Responses	Qualified within the 1.5-mile buffer
Ballard Pits	656	20	115	20
Bandera Road Groundwater Plume	4,486	164	691	164
Cass County Treating Co.	133	11	31	11
Col-Tex Refinery.	348	9	44	9
Hall Street	1,766	102	167	45
James Barr Facility	885	88	108	87
Pioneer Oil & Refining Co.	185	7	19	7
Tenaha Wood Treating.	248	14	42	2
Texarkana Wood Preserving Co.	174	4	32	4
Voda Petroleum Inc.	235	12	35	12
Total	9,116	431	1,284	361

As shown in Map 4, which displays the same Superfund sites as Map 3, the resulting distribution of responding households surrounding each Superfund site generally followed population clusters. Maps for all 10 sites are presented in Appendix 2. The red points represent households that responded, but did not have children. The blue points represent households that had children and, therefore, were qualified to respond to the remainder of the survey.

Map 4: Qualified and Non-Qualified Respondents



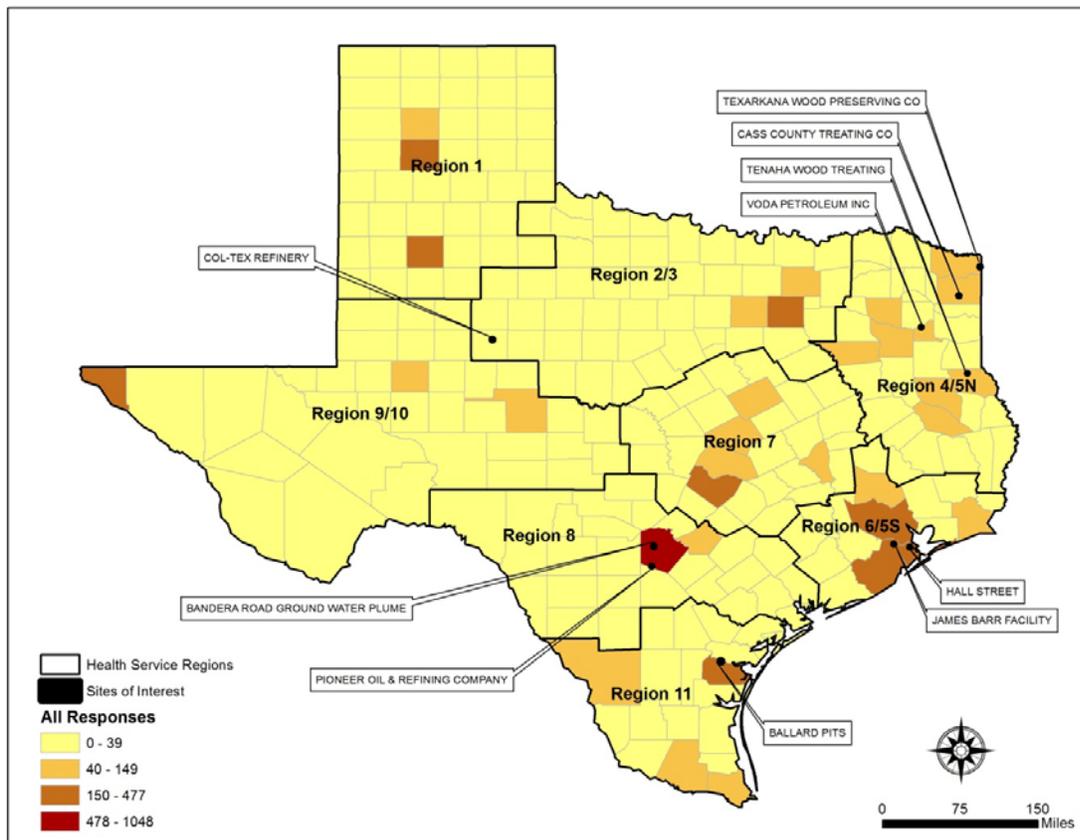
The quotas for DSHS Health Service Regions were set to have approximately 200 completed qualified responses in each region. After the ABS of 2,000 households per region had been frequently contacted using multiple methods, an appropriate number of telephone interviews in each region were completed to bring the quotas to 200 or greater. Table 6 shows the results of each sampling frame by DSHS Health Service Region. In all, 6,457 households were screened to obtain 1,759 completed questionnaires.

As shown in Map 5, the most responses from each region were obtained from areas with larger populations. This map includes all responses—both qualified and not qualified – from both DSHS Health Service Regions and Superfund sites. The Bandera Road Groundwater Plume site was the Superfund site with the most households. Because this site is located in a populated county along with another Superfund site, Bexar County demonstrated the highest number of responses.

Table 6: ABS Results for DSHS Health Service Regions

	Addressed-Based Sample		Random Digit Dialing Sample		Final Qualified Sample Household Counts
	Qualified Responses	Non-Qualified Responses	Qualified Responses	Non-Qualified Responses	
Region 1	78	290	124	483	202
Region 2/3	88	256	151	241	239
Region 4/5N	83	340	129	476	212
Region 6/5S	114	215	170	347	284
Region 7	74	315	131	333	205
Region 8	77	244	124	391	201
Region 9/10	99	220	102	204	201
Region 11	105	178	110	165	215
Total	718	2,058	1,041	2,640	1,759

Map 5: Sample Results by DSHS Health Service Region



The total sample used for analysis included 361 Superfund site households and 1,759 households comprising the rest of Texas, for a total of 2,120 households. Within these households were 685 children

living in households near Superfund sites and 3,437 children living in other Texas households. As shown in Table 7, a total of 4,122 children comprised the final sample.

Table 7: ABS Results for DSHS Health Service Regions

Sample Strata	Number of Children in Sample
Region 1	406
Region 2/3	462
Region 4/5N	426
Region 6/5S	545
Region 7	374
Region 8	389
Region 9/10	404
Region 11	431
Superfund Sites	685
Total	4,122

2.6 Weighting Procedures

Survey data are weighted before they can be used to produce reliable estimates of population parameters. While reflecting the selection probabilities of sampled units, weighting also attempts to compensate for practical limitations of a sample survey, such as differential nonresponse and undercoverage. Two sets of weights were created for this survey: one to produce estimates at the household level and a second to produce estimates for children under the age of 18 years. Computation steps for these two sets of weights are detailed next.

Typically, survey weights are computed in two main steps. For this survey, the first step consisted of computation of base weights to reflect selection probabilities, while in the second step, base weights were adjusted so that the resulting final weights aggregate to reported totals for the target population in each stratum. The needed population totals for the second step were obtained using the process outlined below:

1. Superfund site areas were identified based on the 2000 Census definitions of blocks. Since the 2000 and 2010 Census blocks are different, the numbering schemes and their physical boundaries have changed in parts of the state. To account for these changes, the following steps were taken to obtain the needed counts:
 - a. Utilizing a land-area allocation scheme that shows where each 2000 block falls in relation to the 2010 block boundaries, the 2010 Census figures were distributed to each of the 2000 blocks.
 - b. Blocks that were used to identify Superfund site areas were then removed from the 8 county-defined regions, so that the entire state was partitioned into 9 mutually exclusive geographic strata.
2. Using the Census 2010 Summary File 1 (SF1), counts of households as well as those with children under the age of 18 years were obtained for each stratum. The resulting counts are summarized in Table 8.

Table 8: Household Counts by Strata

Sample Strata	With Children	Household Counts Without Children	Total
Region 1	110,174	199,073	309,247
Region 2/3	1,022,772	1,623,736	2,646,508
Region 4/5N	186,405	371,527	557,932
Region 6/5S	910,162	1,352,659	2,262,821
Region 7	381,862	723,423	1,105,285
Region 8	349,076	573,092	922,168
Region 9/10	199,822	273,279	473,101
Region 11	305,716	331,196	636,912
Superfund sites	3,430	5,529	8,959
Total	3,469,419	5,453,514	8,922,933

- Limiting the SF1 to the 3,469,419 eligible households, counts of children under 18 years of age were then obtained for each region. These counts, which are provided for several age categories, are summarized in Table 9.

Table 9: Child Counts by Strata

DSHS Health Service Region	Under 3 years	3 to 4 years	5 years	6 to 11 years	12 to 13 years	14 years	15 to 17 years	Total
1	38,549	25,447	12,783	73,429	23,352	11,525	34,737	219,822
2/3	329,780	226,535	113,165	672,814	216,369	107,298	319,084	1,985,045
4/5N	58,086	40,247	19,828	120,001	39,893	20,093	60,965	359,113
6/5S	304,024	201,721	100,099	594,804	192,951	95,399	291,680	1,780,678
7	130,145	86,538	42,480	247,864	77,508	38,041	112,924	735,500
8	112,269	76,713	38,339	232,706	77,031	38,170	116,117	691,345
9/10	66,450	44,309	22,086	131,664	43,646	22,241	67,286	397,682
11	109,744	74,160	37,982	227,931	72,938	36,765	109,072	668,592
Superfund sites	1,022	763	360	2,212	709	346	1,034	6,446
Total	1,150,069	776,433	387,122	2,303,425	744,397	369,878	1,112,899	6,844,223

For the second step of weighting, both household and child level weights were calculated using the method of *Iterative Proportional Fitting* – commonly referred to as *Raking*. Specifically, design weights were simultaneously adjusted along raking dimensions using the *WgtAdjust* procedure of SUDAAN, a statistical software package. It should be noted that survey data for a number of demographic questions included missing values. All such missing values were first imputed using a hot-deck procedure before construction of the survey weights. As such, respondent counts reflected in the following tables

correspond to the post-imputation step and are based on their DSHS Health Service Region of residence (or Superfund site).

2.6.1 Household Level Weights

Final household level weights were computed to ensure that weighted totals aggregate to the number of eligible households in each stratum. Moreover, these weights were adjusted so that they would aggregate to the number of households in different income categories for eligible households across the entire state. The unweighted and weighted household counts for the sample are shown in Table 10.

Table 10: Unweighted and Weighted Household Counts by Strata

Strata	Unweighted	Weighted^h
Region 1	202	67
Region 2/3	239	625
Region 4/5N	212	114
Region 6/5S	284	556
Region 7	205	233
Region 8	201	213
Region 9/10	201	122
Region 11	215	187
Superfund sites	361	2
Total	2,120	2,120

2.6.2 Child-Level Weights

Final child level weights were computed in two steps. In the first step, final household level weights were multiplied by the number of children in each household to create base weights. Next, the resulting weights were adjusted to the number of children in each region. All imputed missing values comprised less than 1% of the data. The weighted and unweighted child counts for the sample are shown in Table 11.

^h Weighted values are rounded to the nearest whole number.

Table 11: Unweighted and Weighted Child Counts by Strata

Strata	Unweighted	Weighted^h
Region 1	406	132
Region 2/3	462	1196
Region 4/5N	426	216
Region 6/5S	545	1072
Region 7	374	443
Region 8	389	416
Region 9/10	404	240
Region 11	431	403
Superfund sites	685	4
Total	4,122	4,122

2.7 Analysis Approach

Unless indicated otherwise, analysis of asthma prevalence and demographic information was performed on the weighted sample counts. The weighted data more closely resemble expected parameters for the Texas population. Analyses included frequency distributions and cross-tabulations to determine counts and percentages, and analysis of variance and chi-square tests for statistical comparisons. Analyses were performed using SPSS statistical software.

2.8 Study Limitations

This was a cross-sectional study, which utilized a multimodal, self-report methodology for data collection. As such, for the first goal of the study population selection and analysis did not include exposure assessment. The interest was to address citizens' concerns about asthma in relation to Superfund sites, in determining whether there was an association between living near a Superfund site and increased prevalence of childhood asthma. Associations found must be interpreted with the consideration of a number of other factors, including other nearby industrial exposure sources and wind direction. Additionally, differences in other known risk factors for asthma, such as smoking in household, indoor air pollutants, allergens, and socio-economic status, between those living near the selected Superfund sites and those living farther away should be considered. These potential confounding factors were not controlled for in the analyses. Therefore, the potential for location bias may exist differentially for those living near a Superfund site than for those not living near a Superfund site. A further limitation was that residential location at the time of asthma diagnosis was not collected for each child, so it is possible that a child was not living at their current location when asthma was diagnosed.

Although Superfund sites identified as having the potential to emit VOCs into the environment were selected for investigation, it is unknown whether there was any human exposure to VOCs from these site(s). Furthermore, all selected Superfund sites had to be combined and treated as one larger site due to small sample sizes at each individual site. In this study, a large percentage of respondents in the Superfund site stratum were obtained from the Bandera Road and Hall Street Superfund sites, which may bias overall results based on conditions at those locations. There is the potential that one or more specific contaminants or one or more sites may be of greater impact than others, or a geographic

location which impacts temperature, humidity, other air pollutants, and allergens may be an important variable that has been excluded. However, as the controls are treated similarly and come from all geographic and metropolitan regions as well, the randomness of selection may decrease location bias issues as well as the impact of the other variables that might influence the analysis results.

The original study design utilized only ABS, which resulted in contacting populations with fewer or older children. Additional selection bias may arise from the use of landlines and cell phone methods introduced for the DSHS Health Service Regions, but not the Superfund sites.

Ultimately, all the data collected are based on self-reported information and do not include verification from health care professionals. Such self-reports are susceptible to recall bias, which may impact prevalence estimates. Furthermore, undiagnosed cases of asthma may result in underreporting of asthma prevalence.

3 Sample Demographics

The demographic characteristics of the sample are presented in this section. The first two tables present demographics of children in the sample. The second pair of tables present demographics based on households. Where information is presented for ‘Texas’, it includes all samples combined from the Superfund sites and each DSHS Health Service Region. Where information is presented for ‘the rest of Texas’, it includes only the combined DSHS Health Service Region samples, excluding households near Superfund sites. Where information is presented for ‘Superfund sites’, it includes samples combined from all Superfund site locations.

3.1 Demographics of Children in the Sample

The demographic characteristics of all children from the sample are shown in Table 12. The data are shown with both “raw” results – meaning data that has not been weighted – and weighted results. Because the weighted data more closely resemble expected parameters for the Texas population, unless otherwise indicated, the weighted data are used throughout the analysis, and weighted percentages are reported. The sample size (n) reported is based on the non-weighted sample.

Table 12: Child-Based Demographics for Texas

	Raw	Weighted
Gender (n=4,085)		
Male	52.6%	53.1%
Female	47.4%	46.9%
Age (n=4,077)		
0-4	25.7%	26.7%
5-9	27.1%	26.2%
10-14	29.1%	27.2%
15-17	18.1%	19.9%
Raceⁱ (n=4,093)		
White Non-Hispanic	41.9%	44.9%
Hispanic/Latino	42.9%	38.3%
Black/African American	10.3%	12.4%
Asian/Pacific Islander	2.8%	3.3%
Other	2.1%	1.1%
Body Mass Index (BMI)^j (n=1,204)		
Male Average BMI	21.71	21.72
Female Average BMI	20.29	20.53

- As shown in Table 12, 53.1% of the children in the sample were male and 46.9% were female.
- Approximately three-fourths of the children in the sample were between the ages of 5 and 17 years.
- The majority of the children in the sample were either White (44.9%) or Hispanic/Latino (38.3%).
- The average body mass index (BMI) for children in the sample was 21.72 for males and 20.53 for females.

The demographic characteristics for sample children living near Superfund sites and for children living in the rest of Texas are shown in Table 13. Superfund site percentages for childhood demographic characteristics were mostly similar to the rest of Texas, although there were a larger percentage of White and ‘other’ respondents in the Superfund sites.

ⁱ For the phone and web versions of the questionnaire, race/ethnicity was asked only for the child who was selected for follow-up questions. For the mail questionnaire, race/ethnicity was asked for the household. All children in the household were assigned the race/ethnicity indicated by the respondent. This may result in some level of miscoding for households that have several children of different races

^j BMI-An individual’s body weight divided by the square of their height, expressed in kg/m². Height and weight used to calculate BMI were only obtained for the child who was selected for follow-up questions. These measures were not obtained from mail respondents. Furthermore, a sizable number of respondents failed to include height and/or weight for the calculation. These factors resulted in BMI calculations for a selected child in 1,204 of 2,120 participating households.

Table 13: Child-Based Demographics between Children Living Near Superfund Sites and the rest of Texas

	Superfund Sites	Rest of Texas
Gender (n=4,085)		
Male	51.0%	53.2%
Female	49.0%	46.8%
Age in Years (n=4,077)		
0-4	27.9%	26.7%
5-9	28.0%	26.2%
10-14	28.9%	27.2%
15-17	15.3%	19.9%
Race (n=4,093)		
White Non-Hispanic	52.5%	44.9%
Hispanic/Latino	29.3%	38.3%
Black/African American	7.1%	12.4%
Asian/Pacific Islander	4.1%	3.3%
Other	7.1%	1.1%
BMI (n=1,204)		
Male Average BMI	20.69	21.72
Female Average BMI	20.06	20.53

- The majority of the children in both the Superfund sites sample and the rest of Texas sample were either White or Hispanic/Latino. Over half of all children living near the selected Superfund sites were White (52.5%), compared to 44.9% of children living in the rest of Texas.
- The average BMI for children in the rest of Texas sample was 21.72 for males and 20.53 for females.

3.2 Demographics of Households in the Sample

Household-level demographic characteristics for sample children living in all of Texas are shown in Table 14. These responses are based on the number of households responding to the survey. Responses shown are only for households that included children less than 18 years of age.

Table 14: Texas Household-Based Demographics

	Raw	Weighted
Household Size (n=2,115)		
2 People	6.5%	5.4%
3 People	25.7%	27.2%
4 People	33.1%	32.0%
5 People	20.7%	21.5%
6+ People	14.0%	14.0%
Number of Children in Household (n=2,120)		
1	42.2%	43.9%
2	32.7%	32.2%
3	16.8%	15.3%
4	6.2%	6.5%
5	1.3%	1.2%
6 or more	0.8%	0.9%
Length of Residence (n=2,113)		
0-4 years	45.9%	47.2%
5-9 years	24.9%	23.5%
10-14 years	13.2%	14.0%
15-19 years	7.2%	6.4%
20+ years	8.8%	9.0%
Education Level (n=2,092)		
No High School Diploma	15.0%	14.3%
Graduated High School	17.7%	16.4%
Some Post-High School, no Degree	25.1%	25.4%
College Graduate – Bachelor’s Degree	25.9%	27.5%
Some Graduate/Professional School	16.3%	16.3%
Income (n=1,936)		
Less than \$10,000	8.3%	7.1%
Between \$10,000 and \$15,000	6.9%	4.3%
Between \$15,000 and \$20,000	9.5%	5.1%
Between \$20,000 and \$30,000	10.5%	12.1%
Between \$30,000 and \$40,000	8.8%	10.3%
Between \$40,000 and \$50,000	9.0%	9.9%
More than \$50,000	47.0%	51.2%

- As shown in Table 14, 32.0% of respondents have 4 people living in the household.
- Forty-four percent of respondents had one child living in the household.
- Forty-seven percent of respondents had lived at their current residence for 0 to 4 years.
- Over two-thirds of respondents (69.2%) had some post-high school education or greater.

- More than half of respondents had an annual household income greater than \$50,000.

The demographic characteristics of households living near Superfund sites compared to those living in the rest of Texas are shown in Table 15. For the most part, Superfund site percentages for household demographic characteristics were similar to the rest of Texas. However, there was a larger percentage of adult respondents who had graduated college and who had completed some graduate school among households near selected Superfund sites, compared to households in the rest of Texas. Also, households near the selected Superfund sites had slightly higher household income levels compared to households in the rest of Texas.

Table 15: Household-Based Demographics between those located near Superfund Sites and the rest of Texas

	Superfund Sites	Rest of Texas
Household Size (n=2,115)		
2 People	6.6%	5.3%
3 People	27.5%	27.2%
4 People	37.6%	32.0%
5 People	17.0%	21.5%
6+ People	11.3%	14.0%
Number of Children in Household (n=2,120)		
1	43.7%	43.9%
2	33.9%	32.2%
3	13.9%	15.3%
4	7.5%	6.5%
5	0.1%	1.2%
6 or more	0.9%	0.9%
Length of Residence (n=2,113)		
0-4 years	43.9%	47.2%
5-9 years	29.1%	23.5%
10-14 years	12.7%	14.0%
15-19 years	9.1%	6.3%
20+ years	5.2%	9.0%
Education Level (n=2,092)		
No High School Diploma	2.8%	14.3%
Graduated High School	14.0%	16.4%
Some Post-High School, no Degree	25.5%	25.4%
College Graduate – Bachelor’s Degree	34.1%	27.5%
Some Graduate/Professional School	23.6%	16.3%
Income (n=1,936)		
Less than \$10,000	5.3%	7.1%
Between \$10,000 and \$15,000	1.3%	4.3%
Between \$15,000 and \$20,000	4.4%	5.1%
Between \$20,000 and \$30,000	7.3%	12.1%
Between \$30,000 and \$40,000	16.9%	10.3%
Between \$40,000 and \$50,000	7.1%	9.9%
More than \$50,000	57.8%	51.2%

- Approximately 44% of responding households had one child living in the household; this was the case both for households near Superfund sites and for households in the rest of Texas.
- Forty-seven percent of Texas respondents have lived at their current residence for less than 5 years.

- Over two-thirds of respondents in the rest of Texas (69.2%) had some post-high school education or greater, while over three-quarters of respondents living near a Superfund site (83.2%) had some post-high school education or greater.
- More than half of both the Texas respondents and respondents living near a Superfund site had an annual household income greater than \$50,000.

4 Asthma Prevalence

This section is structured to address two of the primary research goals:

1. to compare the overall asthma prevalence for children living near (within 1.5 miles of) the selected Superfund sites to those living in the rest of Texas; and
2. to determine the relative asthma prevalence for children within each of the DSHS Health Service Regions of Texas.

All data used for this section were based on the total number of children represented in the sample. After children were identified for each household, respondents were asked to indicate each child's age, gender, and whether or not they had ever been told by a medical professional that the child has asthma. A follow-up question was asked for children who had a report of asthma during their lifetime. The respondent was asked if the child had any asthma symptoms in the past 12 months. These questions comprise the data presented in this section.

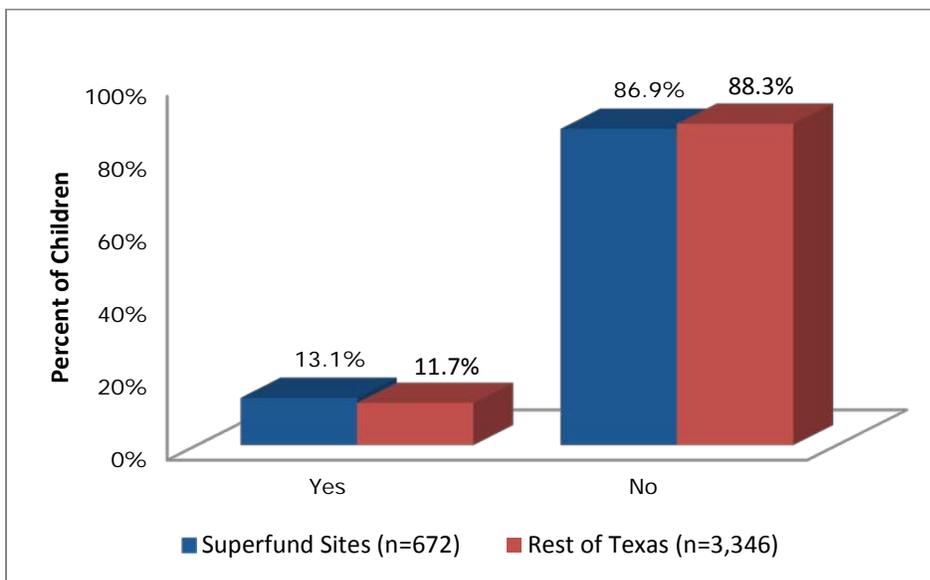
4.1 Asthma Prevalence in Children Living Near Superfund Sites and in Texas

The first goal of the project was to compare asthma prevalence for children living near selected Texas Superfund sites to asthma prevalence for children in the rest of Texas. This was accomplished through the examination of both lifetime and current asthma rates among children, both for those living near the selected Superfund sites and for those living in the rest of Texas.

4.1.1 Lifetime Prevalence of Asthma

As shown in Figure 3, the lifetime prevalence of asthma for children living near a Superfund site was 13.1% compared to 11.7% for children in the rest of Texas. This difference in estimates was not statistically significant.

Figure 3: Percentage of Children Ever Diagnosed with Asthma



The effect of various demographic characteristics on lifetime asthma prevalence for all children sampled in Texas was also examined (see Table 16). As has been seen in other studies,^{22,1} gender, race, and age all demonstrated statistically significant differences in the lifetime prevalence of asthma. Boys were more likely to have been diagnosed with asthma than girls (14.6% versus 9.7%, respectively), and asthma prevalence generally decreased with increasing household size.

Table 16: Percentage of Children Ever Diagnosed with Asthma by Selected Demographics

	Yes	No
Gender (n=3,988)***		
Male	14.6%	85.4%
Female	9.7%	90.3%
Age (n=3,980)***		
0-4	5.8%	94.2%
5-9	14.3%	85.7%
10-14	15.5%	84.5%
15-17	13.2%	86.8%
Race (n=3,990)***		
White Non-Hispanic	13.8%	86.2%
Hispanic/Latino	9.5%	90.5%
Black/African American	17.0%	83%
Asian/Pacific Islander	9.1%	90.9%
Other	19.0%	81.0%
Parental Education (n=3,955)		
No High School Diploma	11.8%	88.2%
Graduated High School	12.0%	88.0%
Some Post-High School, no Degree	13.6%	86.4%
College Graduate-Bachelor's Degree	11.5%	88.5%
Some Graduate/Professional School	12.2%	87.8%
Household Income (n=3,673)		
Less than \$10,000	12.7%	87.3%
Between \$10,000 and \$15,000	9.4%	90.6%
Between \$15,000 and \$20,000	12.4%	87.6%
Between \$20,000 and \$30,000	15.2%	84.8%
Between \$30,000 and \$40,000	11.1%	88.9%
Between \$40,000 and \$50,000	12.9%	87.1%
More than \$50,000	12.4%	87.6%
Household Size (n=3,537)**		
1 – 3 people	16.4%	83.6%
4 people	13.1%	86.9%
5 people	10.9%	89.1%
6+ people	11.4%	88.6%
Years in Current Residence (n=4,018)*		
0 – 4 years	10.6%	89.4%
5 – 9 years	13.5%	86.5%
10 – 14 years	12.3%	87.7%
15 – 19 years	15.0%	85.0%
20+ years	15.7%	84.3%

* $p < .05$ ** $p < .01$ *** $p < .001$

Lifetime prevalence of asthma also appeared to be greater among older children. Although the number of years the child has lived in the current residence was associated with asthma, this is also linked to age of onset of asthma. Blacks/African Americans and those of mixed race were more likely to have been diagnosed with asthma compared to other race/ethnicity groups.

As seen in Table 17, living near a Superfund site was not associated with the age of onset of asthma. In both groups, age of onset was typically between 0 and 4 years of age, and as age increased, asthma was less likely to be diagnosed.

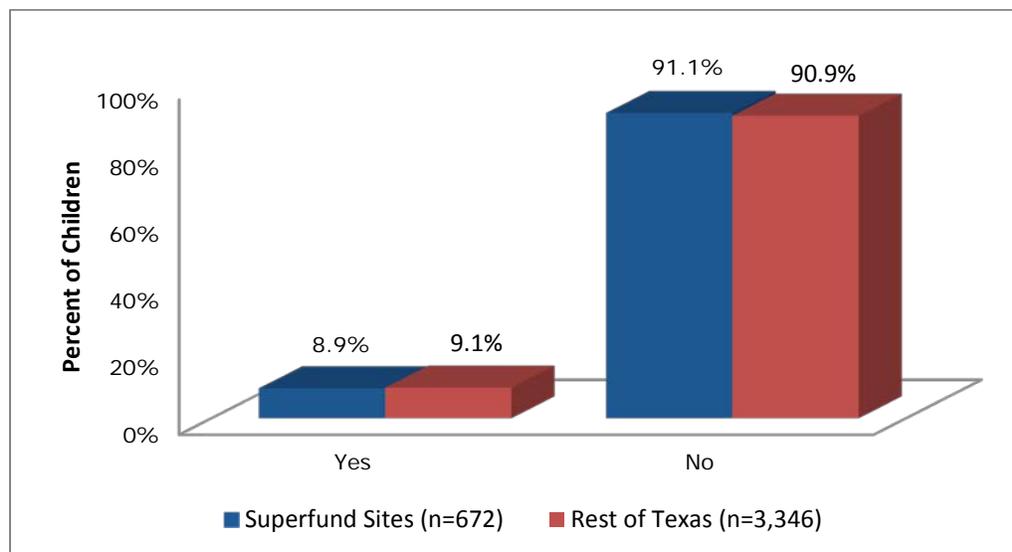
Table 17: Age at Asthma Diagnosis

Years	Superfund Sites (n=39)	Rest of Texas (n=319)
0-4	68.6%	61.6%
5-9	22.9%	32.9%
10-14	6.6%	4.2%
15-17	2.0%	1.3%

4.1.2 Current Asthma Prevalence

In addition to looking at lifetime prevalence of asthma in relation to Superfund sites, current asthma prevalence was examined. As can be seen in Figure 4, the current asthma prevalence among children living near a Superfund site (8.9%) was similar to the prevalence of current asthma for children in the rest of Texas (9.1%).

Figure 4: Percentage of Children with Current Asthma



The effect of various demographic characteristics on current asthma prevalence in Texas was also investigated (see Table 18). As presented in other studies,^{22,1} prevalence of asthma varied by gender, race, and age. Boys were more likely to have asthma than girls – 10.4% versus 7.7%, respectively. Similar to trends reported in the literature for U.S. and Texas populations overall,^{2,22} this study's results show that current asthma prevalence peaks between 5 and 9 years of age and then tends to decrease with age. African Americans and those of mixed race were more likely to have asthma compared with other racial/ethnic groups. Income was associated with current childhood asthma prevalence. This association has also been seen in other studies.^{1,25} It is likely that families with higher income have increased access to healthcare for proper asthma diagnosis and management.^{1,25} Although years in current residence were associated with current asthma, this is also linked to age of onset of asthma. Household size was also associated with current childhood asthma prevalence. This finding is consistent with another study whose results show some evidence that larger households have a protective effect against asthma.²⁶

Level of parental education was not significantly associated with either lifetime or current asthma prevalence; this is consistent with what is found in the literature.^{23,24}

Table 18: Percentage of Texas Children who Currently have Asthma by Selected Demographics

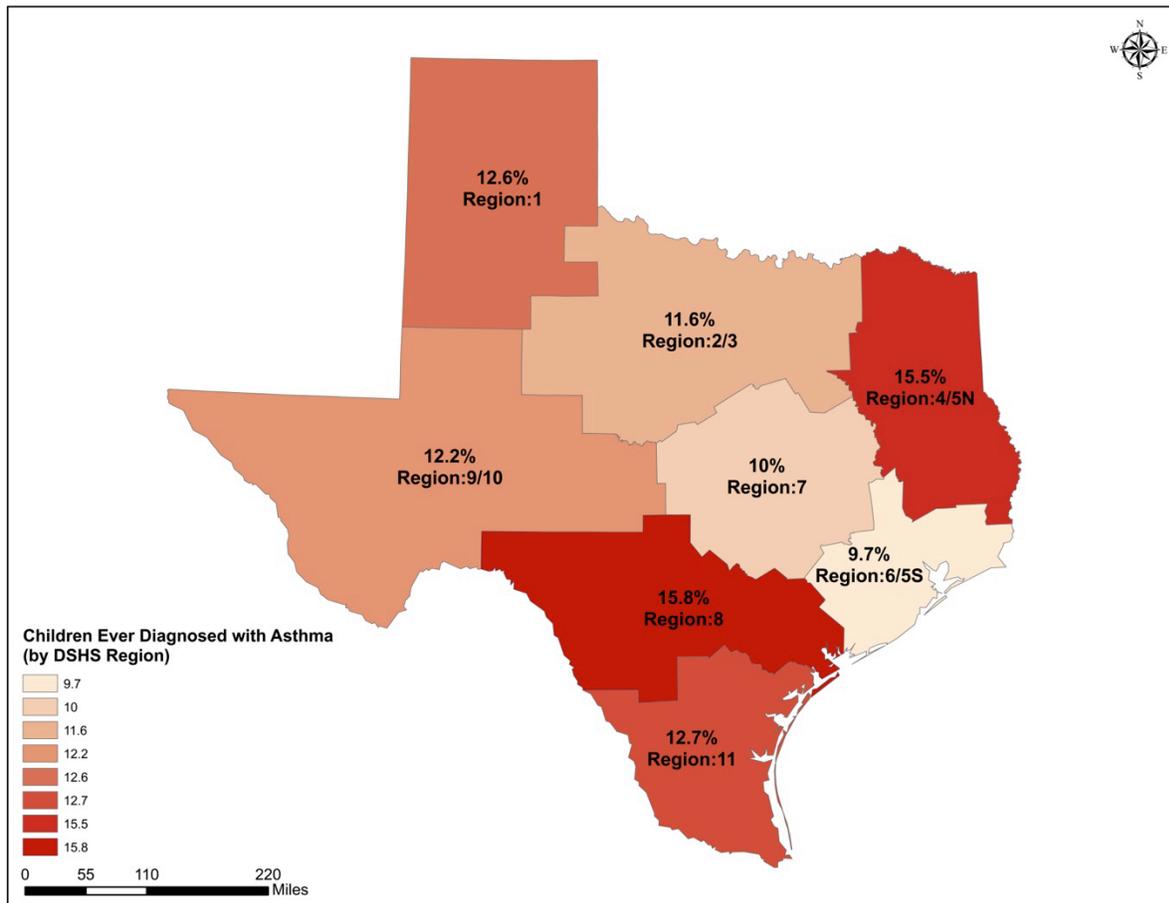
	Yes	No
Gender (n=4,006)***		
Male	10.4%	89.6%
Female	7.7%	92.3%
Age (n=3,993)***		
0-4	6.3%	93.7%
5-9	10.8%	89.2%
10-14	10.3%	89.7%
15-17	9.2%	90.8%
Race (n=3,999)***		
White Non-Hispanic	10.0%	90.0%
Hispanic/Latino	7.6%	92.4%
Black/African American	12.5%	87.5%
Asian/Pacific Islander	1.5%	98.5%
Other	15.4%	84.6%
Parental Education (n=3,959)		
No High School Diploma	8.6%	91.4%
Graduated High School	9.6%	90.4%
Some Post-High School, no Degree	8.9%	91.1%
College Graduate-Bachelor's Degree	8.5%	91.5%
Some Graduate/Professional School	11.4%	88.6%
Household Income (n=3,643)*		
Less than \$10,000	10.8%	89.2%
Between \$10,000 and \$15,000	5.0%	95.0%
Between \$15,000 and \$20,000	13.1%	86.9%
Between \$20,000 and \$30,000	11.7%	88.3%
Between \$30,000 and \$40,000	11.9%	88.1%
Between \$40,000 and \$50,000	7.9%	92.1%
More than \$50,000	8.7%	91.3%
Household Size (n=3,597)*		
1 – 3 people	11.9%	88.1%
4 people	8.9%	91.1%
5 people	8.3%	91.7%
6+ people	10.2%	89.8%
Years in Current Residence (n=4,030)*		
0 – 4 years	8.2%	91.8%
5 – 9 years	8.5%	91.5%
10 – 14 years	10.4%	89.6%
15 – 19 years	10.7%	89.3%
20+ years	13.0%	87.0%

* $p < .05$ ** $p < .01$ *** $p < .001$

4.2 Asthma Prevalence by DSHS Health Service Region

The second goal of the project was to determine relative asthma prevalence for children in households located within each of the DSHS Health Service Regions of Texas. As demonstrated in prior studies, asthma is not evenly distributed across Texas. According to the 2010 Texas Asthma Burden Report, in Texas as a whole, the lifetime prevalence of childhood asthma in 2009 was 13.3%. However, the prevalence in each DSHS Public Health Region varied. For example, in 2009, the lifetime childhood asthma prevalence ranged from 5.7% in Public Health Region 1 to 28.1% in Public Health Region 9.²² In the current study, the asthma prevalence (see Map 6 and the accompanying table data) ranged from 9.7% in Health Service Region 6/5S to 15.8% in Health Service Region 8. It should be noted that this report's regional estimates are not directly comparable to estimates from the 2010 Texas Asthma Burden Report, since the two reports used different regional boundaries; health service region boundaries were used in this report, whereas public health region boundaries were used in the 2010 Texas Asthma Burden Report.

Map 6: Percentage of Children Ever Diagnosed with Asthma



DSHS Health Service Region	n	Yes	No
Region 1	389	12.6%	87.4%
Region 2/3	454	11.6%	88.4%
Region 4/5N	416	15.5%	84.5%
Region 6/5S	534	9.7%	90.3%
Region 7	354	10.0%	90.0%
Region 8	373	15.8%	84.2%
Region 9/10	400	12.2%	87.8%
Region 11	426	12.7%	87.3%
Total	3,346	11.7%	88.3%

As seen in Table 19, the health service regions appear to follow the general trend that most children with asthma are first diagnosed between the ages of 0 to 4 years, with less children being diagnosed with increasing age. Observed differences in age at asthma diagnosis by health service region were not statistically significant.

Table 19: Age at Asthma Diagnosis by DSHS Health Service Region

DSHS Health Service Region	n	0 – 4	5 – 9	10 – 14	15 – 17
Region 1	37	66.7%	33.3%	0.0%	0.0%
Region 2/3	46	52.1%	45.4%	0.0%	2.5%
Region 4/5N	47	69.2%	26.9%	3.8%	0.0%
Region 6/5S	41	71.4%	22.1%	6.5%	0.0%
Region 7	29	55.9%	35.3%	8.8%	0.0%
Region 8	45	68.6%	25.5%	5.9%	0.0%
Region 9/10	32	66.7%	23.8%	9.5%	0.0%
Region 11	42	57.5%	32.5%	5.0%	5.0%
Total	319	61.6%	32.9%	4.2%	1.3%

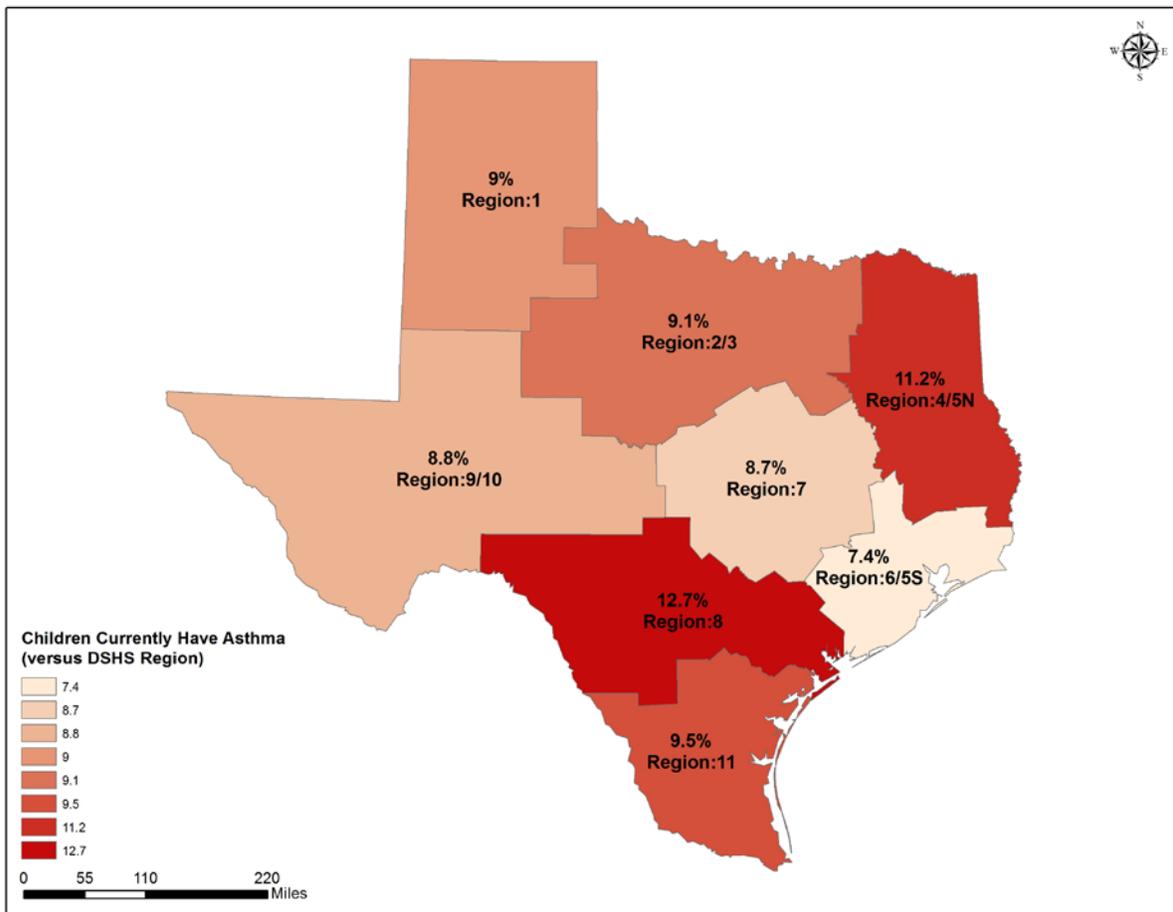
Most children with asthma appear to have been diagnosed greater than 5 years ago (see Table 20), and observed differences in years since asthma diagnosis between health service regions are not statistically significant.

Table 20: Years Since Asthma Diagnosis by DSHS Health Service Region

DSHS Health Service Region	n	< 1 year	1-5 years	5+ years
Region 1	38	0.0%	30.8%	69.2%
Region 2/3	47	9.8%	29.5%	60.7%
Region 4/5N	49	7.4%	18.5%	74.1%
Region 6/5S	41	14.3%	39.0%	46.8%
Region 7	30	11.4%	40.0%	48.6%
Region 8	48	7.4%	38.9%	53.7%
Region 9/10	33	9.5%	33.3%	57.1%
Region 11	44	7.3%	43.9%	48.8%
Total	330	9.7%	34.6%	55.6%

According to the 2010 Texas Asthma Burden Report, in the entire state, the current childhood prevalence of asthma in 2009 was 8.2%. However, the prevalence in each DSHS Public Health Region varied. For example, in 2009, the current childhood asthma prevalence by region ranged from 3.5% in Public Health Region 1 to 25% in Public Health Region 9.²² In the current study, no statistically significant differences in current childhood asthma prevalence amongst health service regions were observed (see Map 7 and accompanying data); however, current asthma prevalence estimates ranged from 7.4% in Health Service Region 6/5S to 12.7% in Health Service Region 8. Again, it should be noted that this report's regional estimates are not directly comparable to 2009 BRFSS estimates from the 2010 Texas Asthma Burden Report, since the two reports used different regional boundaries.

Map 7: Percentage of Children who Currently Have Asthma



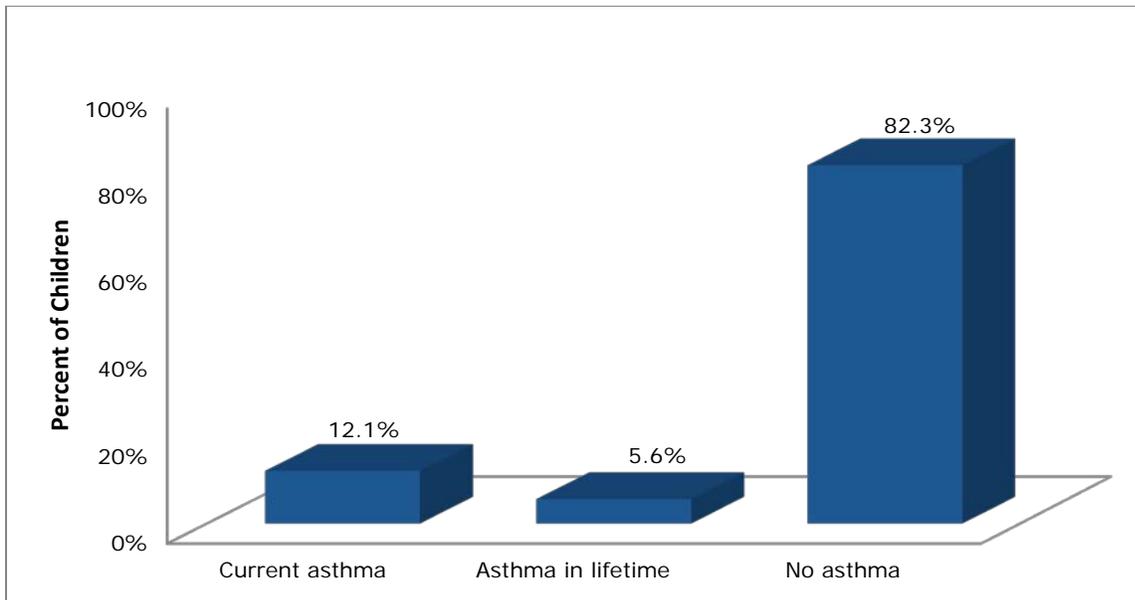
DSHS Health Service Region	n	Yes	No
Region 1	389	9.0%	91.0%
Region 2/3	454	9.1%	90.9%
Region 4/5N	416	11.2%	88.8%
Region 6/5S	534	7.4%	92.6%
Region 7	354	8.7%	91.3%
Region 8	373	12.7%	87.3%
Region 9/10	400	8.8%	91.2%
Region 11	426	9.5%	90.5%
Total	3,346	9.1%	90.9%

5 Asthma Experiences

This section presents data for one child with lifetime or current asthma selected from each household. These questions were only asked of respondents to the phone and web survey—mail questionnaires omitted the questions in this section.

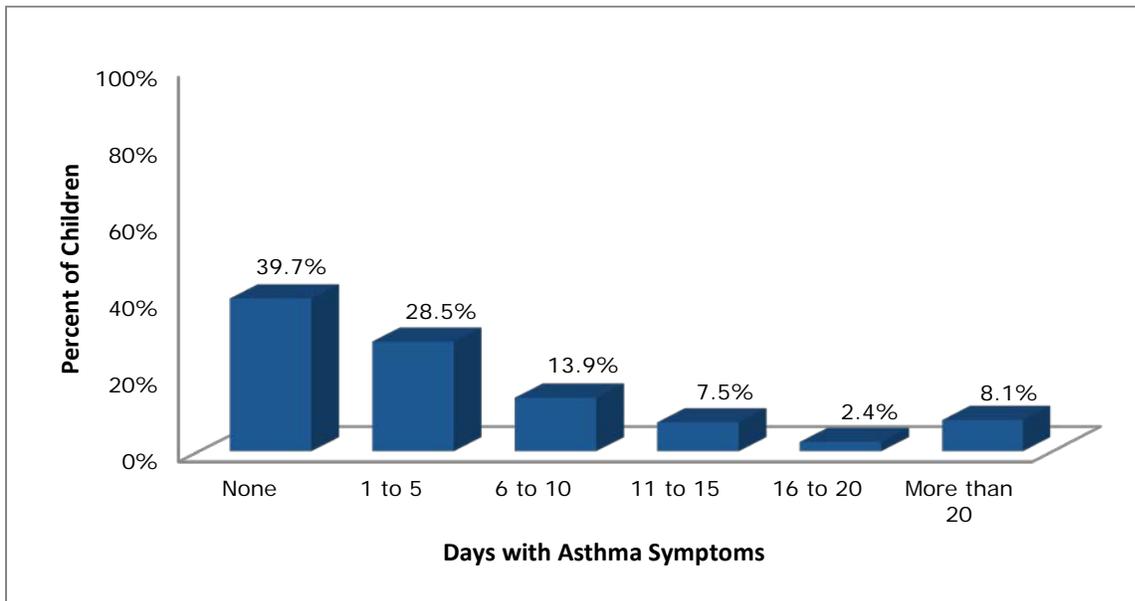
As shown in Figure 5, 12.1% of selected children currently had asthma, and an additional 5.6% had been diagnosed with asthma during their lifetimes.

Figure 5: Asthma Status of Selected Child Living in Texas (n=1,717)



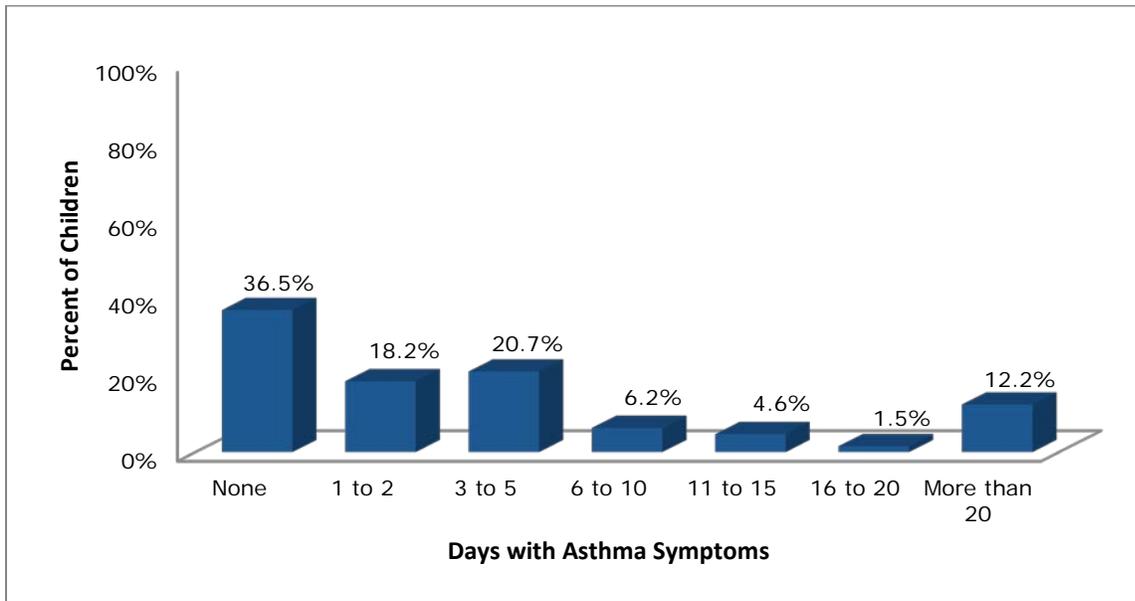
The remaining findings in this section are based on the subset of children with current asthma or asthma in lifetime. For selected children who currently have asthma, respondents were asked how many days the selected child had exhibited asthma symptoms in the past 30 days (n=219). Sixty percent of children with current asthma experienced one or more days of asthma symptoms in the past 30 days (see Figure 6). This percentage is higher than the 2006-2009 BRFSS Asthma Call-Back Survey estimates in the 2010 Texas Asthma Burden Report (38.8%). Eleven percent of the children with current asthma experienced symptoms for more than half of the past 30 days.

Figure 6: Number of Days Child with Current Asthma had Asthma Symptoms in Past 30 Days (n=219)



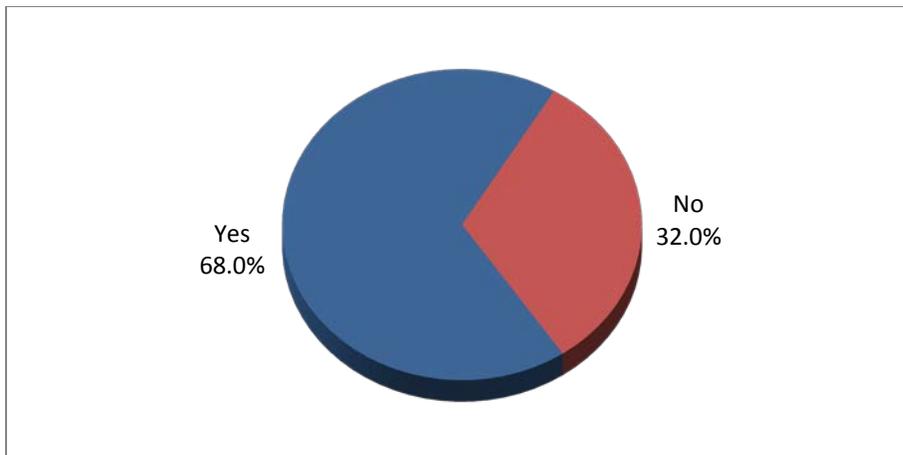
For those selected children with current asthma who had experienced at least one symptomatic day in the past 30 days, more than half (63.5%) had difficulty sleeping due to asthma symptoms during one or more days in the past 30 days (n=141). Twelve percent of these children had difficulty sleeping during more than 20 of the days within the past 30 days (see Figure 7). These results are higher than the 2006-2009 BRFSS Asthma Call-Back Survey results reported in the 2010 Texas Asthma Burden Report, which indicated that 25.9% of children with asthma had difficulty staying asleep on one or more days in the past 30 days.

Figure 7: Number of Days Asthma Symptoms Made it Difficult for Child with Current Asthma to Sleep in Past 30 Days (n=141)



For selected children who currently have asthma, respondents were asked if the selected child had wheezing in the chest during or after physical activity within the past 12 months (n=212). As shown in Figure 8, 68.0% of these selected children had wheezing in the chest during or after physical activity.

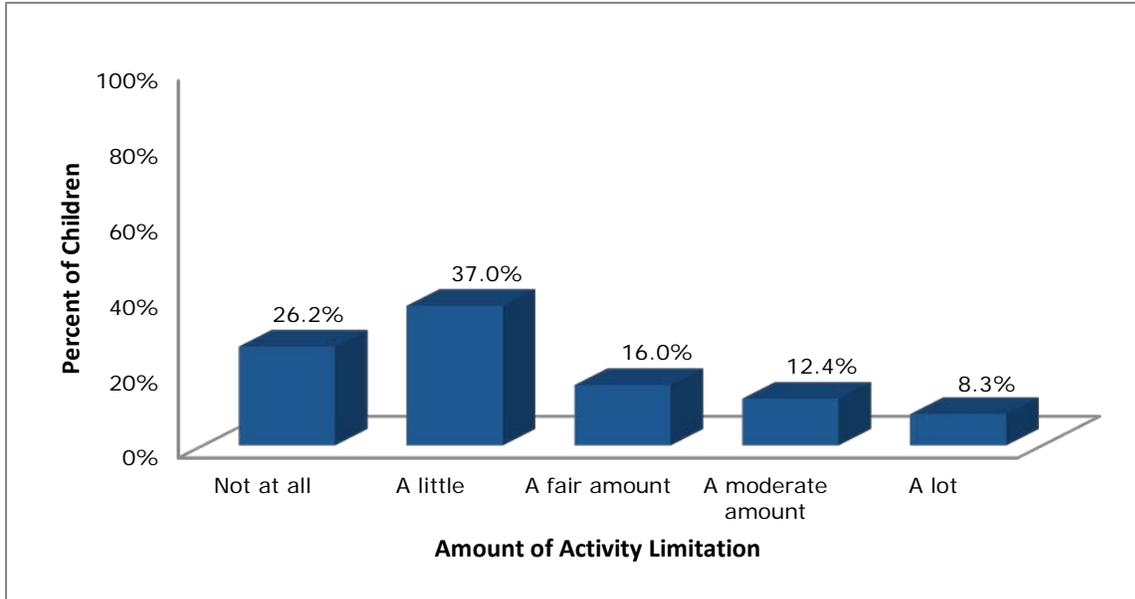
Figure 8: Child With Current Asthma Had Wheezing in the Chest During Exercise in Past 12 Months (n=212)



For those selected children who currently have asthma, respondents were asked how much the selected child limited their usual activities due to wheezing or whistling in the chest in the past 12 months (n=216). As shown in Figure 9, 73.8% of selected children with current asthma limited their usual activities to some extent due to wheezing or whistling in the chest in the past 12 months. Approximately

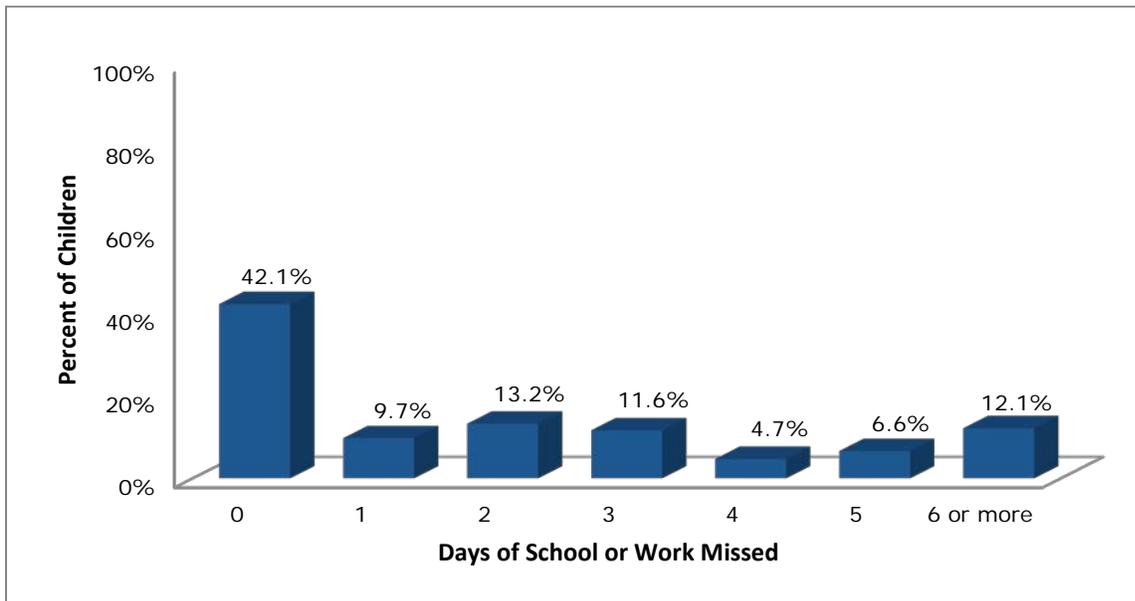
21% of selected children limited their activities either a moderate amount (12.4%) or a significant amount (8.3%).

Figure 9: Amount Child with Current Asthma Limited Usual Activities Due to Wheezing in the Chest in Past 12 Months (n=216)



For all selected children who participated in school or work, regardless of asthma status, respondents were asked how many days of school or work the selected child missed due to any illness in the past 12 months (n=1,449). As shown in Figure 10, 57.9% of the all children missed at least one day of school or work in the past 12 months due to illness. Twelve percent of selected children missed six or more days of school or work due to illness.

Figure 10: Days of School or Work Child Missed Due to Illness in Past 12 Months (n=1,449)



The average number of days of school or work missed was 3 (for all selected children, regardless of asthma status). The percentage of selected children with current asthma who had missed six or more days of school or work in the past 12 months was nearly three times greater (27%) than the percentage of children without asthma who had missed six or more days (9.8%). Selected children who had asthma at some time during their life but did not currently have asthma were also more likely (12.9%) to have missed six or more days of school/work compared to children without asthma (9.8%) (see Table 21).

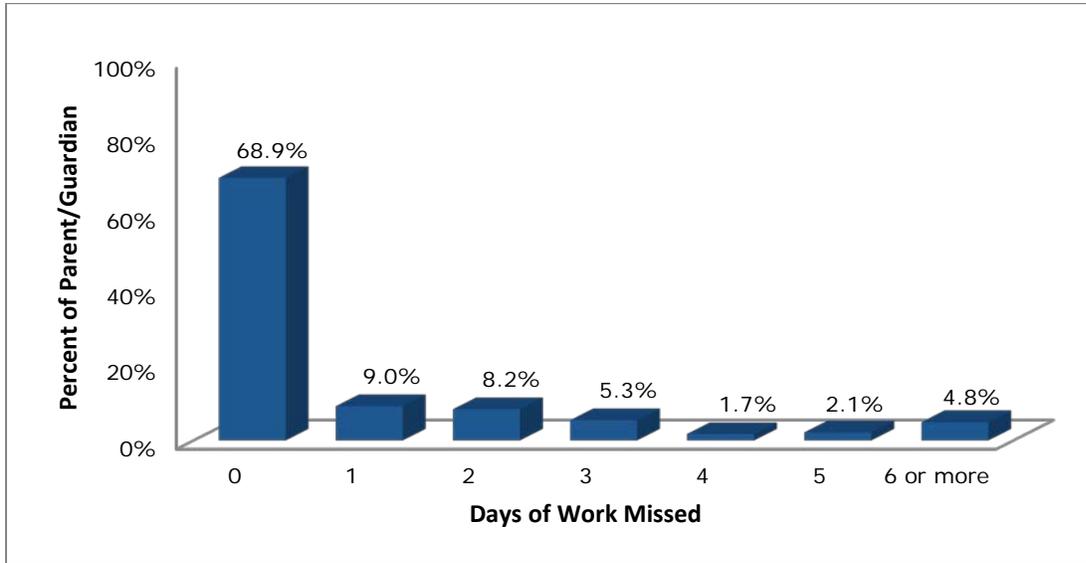
Table 21: Number of Days of School/Work Child Missed Due to Illness in Past 12 Months by Asthma Status

	Current asthma (n=196)	Asthma in lifetime, not current (n=93)	No asthma (n=1,265)
Mean	5.3 days	3.2 days	2.4 days
0	30.1%	45.2%	43.9%
1	5.1%	6.5%	10.7%
2	10.7%	15.1%	13.4%
3	10.2%	8.6%	12.0%
4	7.1%	6.5%	4.1%
5	9.7%	5.4%	6.1%
6 or more	27.0%	12.9%	9.8%

For all selected children, regardless of asthma status respondents who stated they were currently employed were asked how many days of work they missed due to the selected child's illness in the past

12 months (n=1,360). As shown in Figure 11, 31.1% of respondents missed at least one day of work in the past 12 months due to their child’s illness.

Figure 11: Days of Work Parent/Guardian Missed Due to Child’s Illness in Past 12 Months (n=1,360)



The average number of days of work missed by parents was 1.4 (regardless of the asthma status of the selected child). A greater percentage of parents whose selected child had current asthma missed six or more days of work in the past 12 months due to the child’s illness (16.1%) than did parents whose selected child did not have asthma (2.7%). Parents of selected children who had lifetime but not current asthma were also more likely to miss six or more days of work (12.9%) compared to parents of selected children without asthma (2.7%) (Table 22).

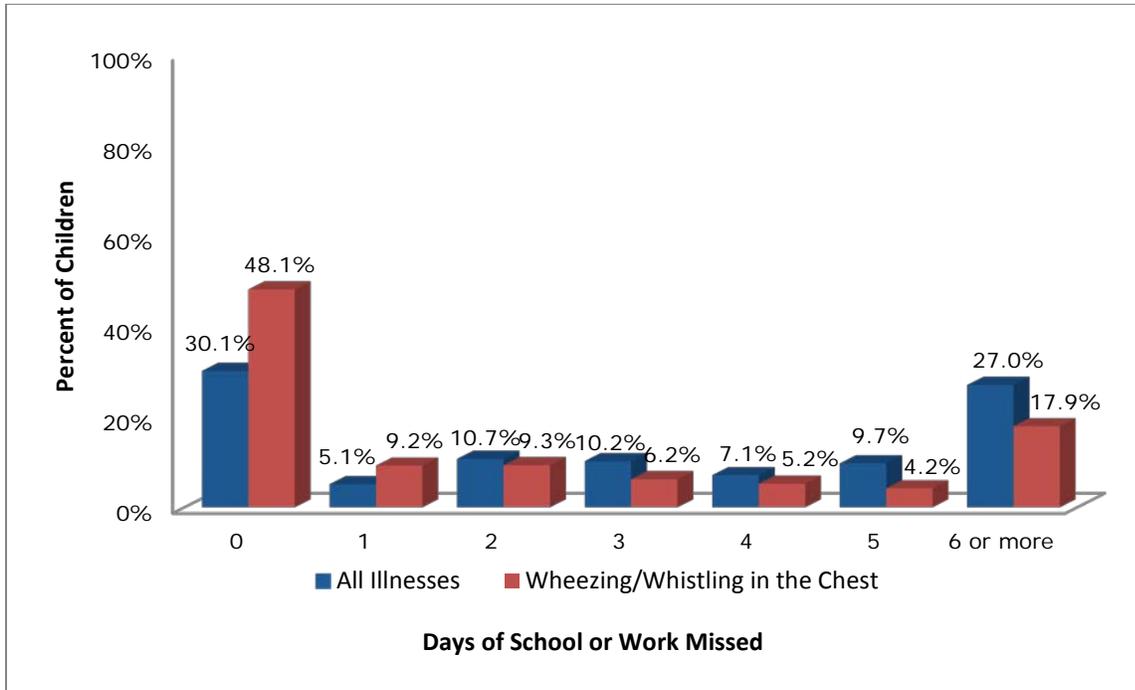
Table 22: Number of Days of Work Parent Missed Due to Child’s Illness in Past 12 Months

	Current asthma (n=174)	Asthma in lifetime, not current (n=85)	No asthma (n=1,236)
Mean	4.3 days	2.2 days	1.0 days
0	53.4%	64.7%	71.3%
1	7.5%	3.5%	9.5%
2	8.6%	15.3%	7.7%
3	6.9%	2.4%	5.3%
4	2.9%	0.0%	1.7%
5	4.6%	1.2%	1.8%
6 or more	16.1%	12.9%	2.7%

For selected children who currently have asthma and participate in school or work, respondents were asked how many days of school or work the child missed due to wheezing or whistling in the chest in the

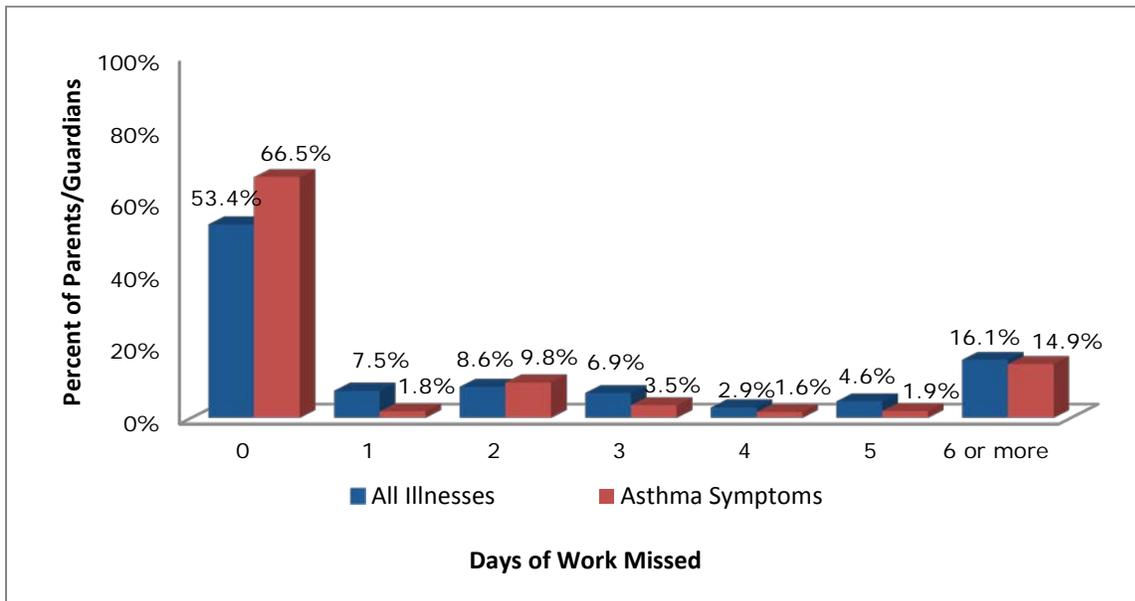
past 12 months (n=199). In Figure 12, this response is compared to the number of days missed for all illnesses among children with current asthma. As shown in Figure 12, 51.9% of the selected children missed at least one day of school or work in the past 12 months due to whistling or wheezing in the chest, compared to 69.9% who missed one or more days due to all illnesses. Nearly 18% of selected children missed six or more days of school due to wheezing or whistling in the chest. The average number of days of school missed due to asthma symptoms was 4 compared to 5.3 for all illnesses among children with current asthma.

Figure 12: Days of School or Work Child Missed Due to Wheezing or Whistling in the Chest in Past 12 Months (n=199)



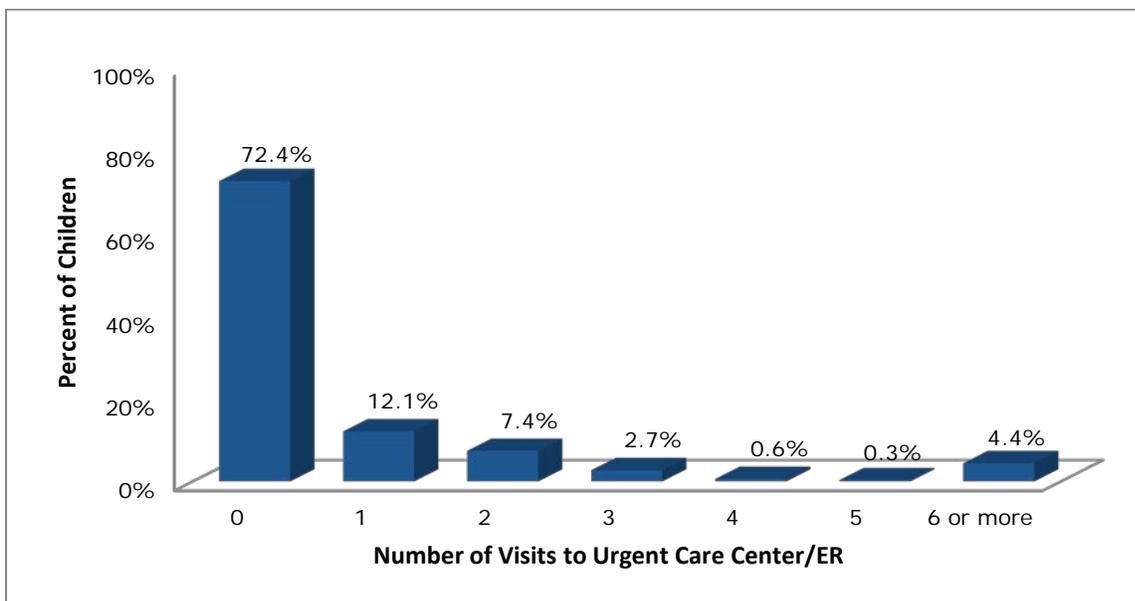
Respondents who were currently employed and had a child with current asthma were asked how many days of work they missed due to their child's asthma symptoms in the past 12 months (n=174). In Figure 13, this response is compared to the number of days of work parents of children with current asthma missed for all illnesses. As shown in Figure 13, 33.5% of parents/guardians missed at least one day of work in the past 12 months due to the selected child's asthma symptoms, compared to 46.6% who missed one or more work days due to all illnesses of the selected child. Fifteen percent of respondents missed six or more days of work due to the selected child's asthma symptoms. Respondents missed an average of 3 days of work due to the selected child's asthma symptoms, compared to an average of 4.3 days of work due to any illness for the selected child.

Figure 13: Days of Work Parent/Guardian Missed Due to Child's Asthma in Past 12 Months (n=174)



For selected children who currently have asthma, respondents were asked how many times their child visited an emergency room or urgent care center because of their asthma in the past 12 months (n=219). As shown in Figure 14, 27.6% of selected children visited an emergency room or urgent care center for their asthma in the past 12 months. Moreover, 27.6% of selected children had one or more visits to an emergency room or urgent care center in the past 12 months due to their asthma. This estimate is higher than the 2006-2009 BRFSS Asthma Call-Back Survey results seen in the 2010 Texas Asthma Burden Report, where 12.7% of children with current asthma had visited an emergency room or urgent care center for their asthma at least once in the prior 12 months.

Figure 14: Times Child Visited an Urgent Care Center for Asthma in Past 12 Months (n=219)



The following questions were asked for selected children who currently have asthma as well as for selected children who have had asthma in their lifetime. Respondents were asked about several types of medication the selected child may use for their asthma. If the child was prescribed a certain medication, they were also asked if the child had used this medication in the past three months. A prescription inhaler intended for quick relief of asthma symptoms was the most commonly prescribed and a prescription inhaler for long-term prevention was most commonly used (Table 23).

Table 23: Type of Medication Used to Control Child’s Asthma Symptoms

	Has medication		Has used medication in past 3 months	
	Yes	No	Yes	No
Prescription inhaler for quick relief (n=299; 218)	72.0%	28.0%	69.0%	31.0%
Prescription inhaler for long-term prevention (n=299; 146)	50.8%	49.2%	77.4%	22.6%
Prescription in pill form (n=308; 96)	28.2%	71.8%	75.6%	24.4%
Over-the-counter medication (n=318)	28.0%	72.0%	-	-
Prescription in syrup form (n=306; 47)	14.4%	85.6%	62.4%	37.6%

Prescription inhaler for quick relief

- Respondents were asked if their child had an inhaler (medication that can be breathed in through the mouth) that gives quick relief from asthma symptoms. Seventy-two percent of selected children had an inhaler that gives quick relief from asthma symptoms.
- If the respondent stated that the selected child had an inhaler for quick relief, they were asked if the child had used the inhaler during the past three months. Sixty-nine percent of selected children who had a quick relief inhaler had used it in the past 3 months.

Prescription inhaler for long-term prevention

- Respondents were asked if their child had an inhaler that protects lungs and prevents symptoms over the long-term. Fifty-one percent of selected children had an inhaler for long-term protection and prevention of asthma symptoms.
- If the respondent stated that the selected child had an inhaler for long-term prevention of asthma symptoms, they were asked if the child had used the inhaler during the past three months. Seventy-seven percent of selected children who had a long-term inhaler had used that inhaler in the past 3 months.

Prescription in pill form

- Respondents were asked if their child had prescription medicine in pill form for their asthma. Twenty-eight percent of selected children had prescription medicine in pill form for their asthma.

- If the respondent stated that the selected child had prescription medicine in pill form, they were asked if the child had taken any of that medicine for their asthma during the past three months. Seventy-six percent of selected children who had prescription medicine in pill form for their asthma had taken it in the past 3 months.

Over-the-counter medication

- Respondents were reminded that over-the-counter medication can be bought without a doctor’s order. They were then asked if their child had ever used over-the-counter medication for their asthma. Twenty-eight percent of selected children had used over-the-counter medication for their asthma. Respondents were not asked if the child had used the medicine in the past three months.

Prescription medication in syrup form

- Respondents were asked if their child had prescription medicine in syrup form for asthma. Fourteen percent of selected children had prescription medicine in syrup form for asthma.
- If the respondent stated that the selected child had prescription medicine in syrup form, they were asked if the child had taken any of that medicine for their asthma during the past three months. Sixty-two percent of selected children who had prescription medicine in syrup form for their asthma had taken this medicine in the past 3 months.

If a respondent stated that the selected child had any medication for asthma, they were then asked if the child is able to carry the medicine at school and use it whenever needed. As shown in Table 24, 47.3% of selected children who had medication for asthma were able to carry their medicine with them and use it whenever they needed it, which is similar to the 2006-2009 BRFSS Asthma Call-Back Survey estimate reported in the 2010 Texas Asthma Burden Report (46.3%).

If respondents stated that the selected child was able to carry the medicine at school, they were also asked if the child was able to use the medication at school without help or permission. Forty-eight percent of selected children, who had asthma medication and were able to bring their medication to school, were able to use the medication at school without help or permission.

Table 24: Child Able to Carry and Use Medication at School

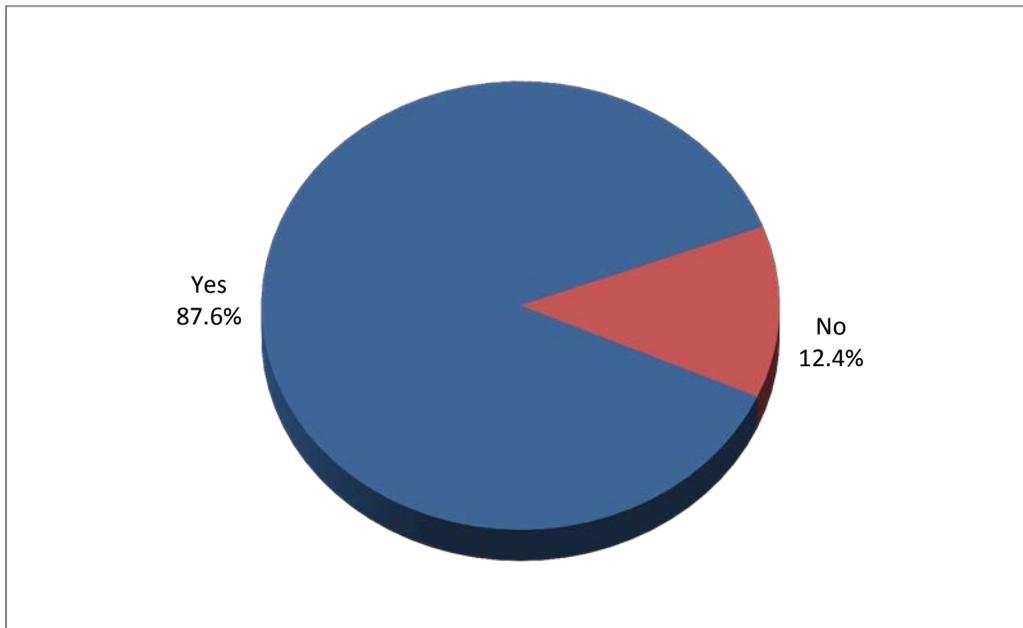
	Yes	No
Child is able to carry the medication at school and use it whenever needed (n=289)	47.3%	52.7%
Child is allowed to use medication at school without help or permission (n=132)	48.3%	51.7%

6 Health Care Access

The following section includes the responses of all selected children regardless of asthma status, unless otherwise noted. Health care access is an issue that affects all children in Texas. Children without asthma provide a group to which children with asthma can be compared. These questions were only asked of respondents to the phone and web survey—mail questionnaires omitted the questions in this section.

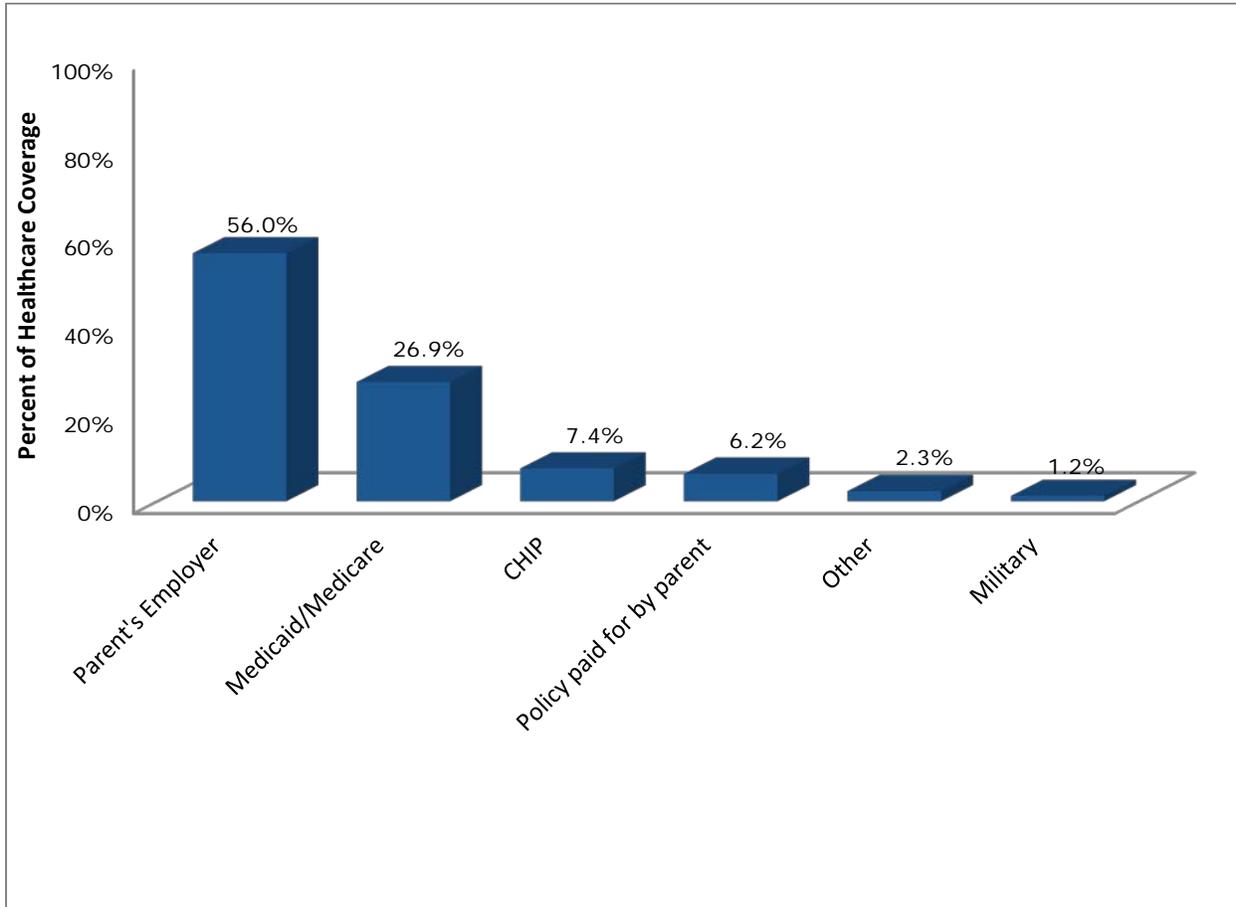
Respondents were first asked if the selected child had any kind of health care coverage (n=1,700). As shown in Figure 15, 87.6% of selected children have some type of health care coverage.

Figure 15: Child Has Health Care Coverage (n=1,700)



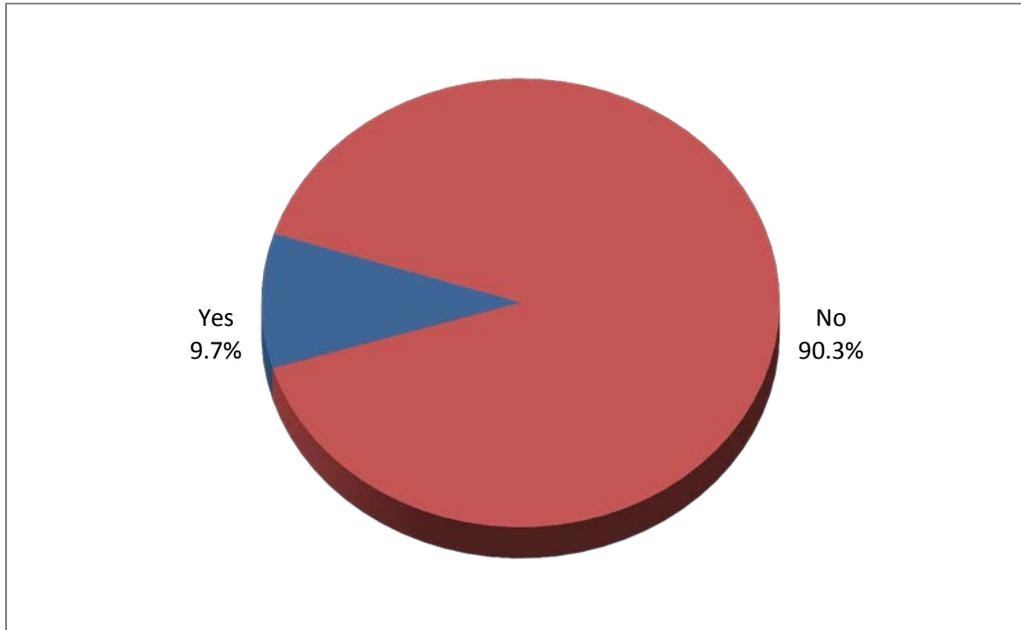
Respondents who stated that the selected child has health care coverage were asked what kind of health care coverage the child had (n=1,462). As shown in Figure 16, the most common health care coverage was through the parent's employer (56.0%), followed by Medicaid/Medicare (26.9%).

Figure 16: Percentage of Health Care Coverage by Type (n=1,462)



Respondents with an insured selected child with either current or lifetime asthma were asked if there was any time during the past 12 months that the child did not have any kind of health insurance or coverage (n=288). As shown in Figure 17, 9.7% of selected children with either current or lifetime asthma had no health care coverage at some point during the past 12 months.

Figure 17: Child Did Not Have Health Care Coverage in Past 12 Months (n=288)



The following questions were asked only for selected children who currently have asthma and for selected children who have had asthma in their lifetime.

Table 25: Child Could Not Receive Needed Medical Care in Past 12 Months Because of Cost

	Yes	No
Child needed medication for asthma but could not buy it because of the cost (n=309)	10.7%	89.3%
Child needed to see primary care doctor for asthma but could not because of the cost (n=309)	6.5%	93.5%
Child was referred to specialist for asthma but could not go because of the cost (n=307)	5.8%	94.2%

Needed medication for asthma

- Respondents were asked if there was a time in the past 12 months when their child needed medication for their asthma, but could not buy it because of the cost. As shown in Table 25, 10.7% of respondents stated there was a time in the past 12 months when they couldn't buy medication for their selected child's asthma because of the cost. This is similar to the 2006-2009 BRFSS Asthma Call-Back Survey estimate reported in the 2010 Texas Asthma Burden Report, which indicated that 12.6% were unable to afford medication.

Needed to see primary care doctor for asthma

- Respondents were asked if there was a time in the past 12 months when their child needed to see their primary care doctor for their asthma, but could not because of the cost. Seven percent

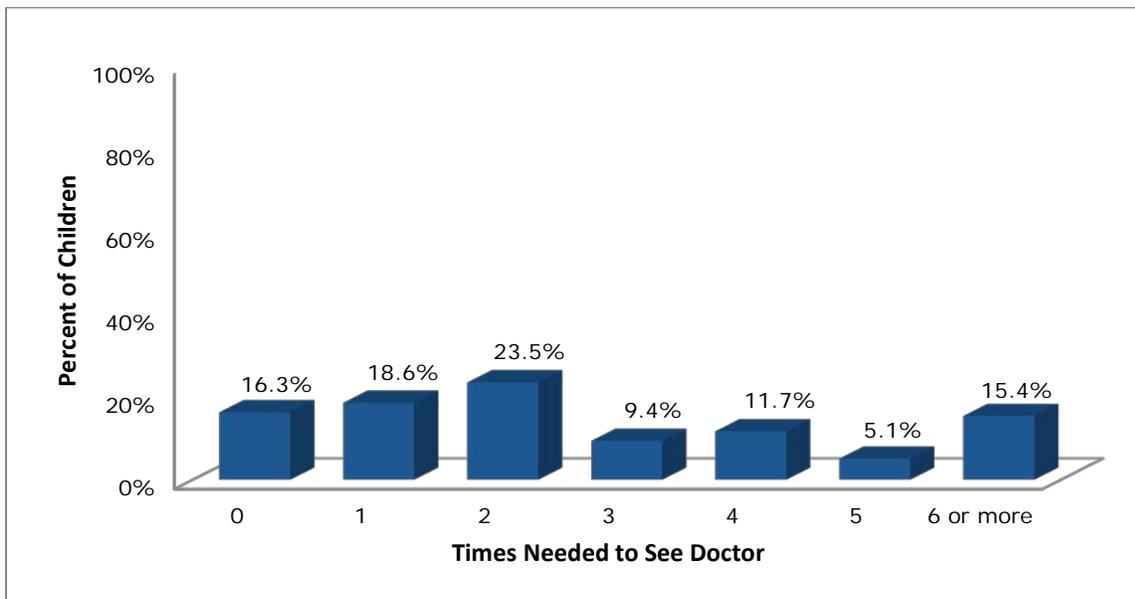
of respondents stated there was a time in the past 12 months when they couldn't see their selected child's primary care doctor for asthma because of cost. This is slightly lower than the 2006-2009 BRFSS Asthma Call-Back Survey percentage reported in the 2010 Texas Asthma Burden Report, where an estimated 11.4% were unable to see a primary care doctor because of cost.

Needed to see specialist for asthma

- Respondents were asked if there was a time in the past 12 months when they were referred to a specialist for their child's asthma care, but could not go because of the cost. Six percent of respondents stated there was a time in the past 12 months when they could not see a specialist for their selected child's asthma care because of the cost. This is similar to the 2006-2009 BRFSS Asthma Call-Back Survey estimate in the 2010 Texas Asthma Burden Report, where it was reported that 8.2% were unable to see a specialist because of cost.

For selected children with current asthma, respondents were asked how many times their child saw a doctor, or other health professional, for a routine checkup for their asthma in the past 12 months (n=226). As shown in Figure 18, 85.9% of selected children with current asthma saw a doctor at least once for their asthma in the past 12 months. Forty-three percent of selected children had three or more visits to the doctor in the past 12 months for a routine check-up for their asthma.

Figure 18: Number of Times Child with Current Asthma Needed to See a Doctor for Routine Asthma Checkup in Past 12 Months (n=226)



The following questions were asked only for selected children who currently have asthma.

Table 26: Doctor has Taught Parent or Child with Current Asthma in Asthma Care Techniques

	Yes	No
Doctor has given parent or child an asthma action plan (n=226)	53.9%	46.1%
Doctor has taught parent or child how to use a peak-flow meter (n=206)	54.8%	45.2%
Doctor has taught parent or child what to do during asthma episode or attack (n=233)	77.4%	22.6%

Asthma action plan

- Respondents were told “an asthma action plan, or asthma management plan, is a form with instructions about when to change the amount or type of medicine, when to call the doctor for advice, and when to go to the emergency room.” They were then asked if a doctor or other health professional has ever given an asthma action plan to the respondent or the selected child. As shown in Table 26, 53.9% of respondents or their selected children with current asthma had been given an asthma action plan. This is greater than the 2006-2009 BRFSS Asthma Call-Back Survey percentage shown in the 2010 Texas Asthma Burden Report, where an estimated 44.5% had been supplied with an asthma action plan.

Peak-flow meter

- Respondents were asked if a doctor, or other health professional, has ever taught the respondent, or the selected child, how to use a peak-flow meter. Fifty-five percent of respondents, or their selected children with asthma, have been taught how to use a peak-flow meter. This is greater than the 2006-2009 BRFSS Asthma Call-Back Survey estimate in the 2010 Texas Asthma Burden Report, where 44.1% indicated being taught.

Asthmatic episode or attack

- Respondents were asked if a doctor or other health professional has ever taught the respondent or the selected child what to do during an asthmatic episode or attack. Seventy-seven percent of respondents, or their selected children with asthma, had been taught what to do during an asthmatic episode or attack. This is similar to the 2006-2009 BRFSS Asthma Call-Back Survey estimate in the 2010 Texas Asthma Burden Report, where 81.5% indicated being taught.

7 Asthma Allergens and Irritants

Households where the selected child had either current or lifetime asthma were asked a number of questions about allergens and asthma triggers that might exist in the household. The main topics have been categorized as animal allergens, household irritants, and preventative strategies in the child's bedroom. The frequency with which diesel trucks pass through the street was also asked in this section.

Table 27: Animal Allergens

	Yes	No
Home has feathered or furry pets that spend time indoors (n=297)	51.6%	48.4%
Pets indoors <i>and</i> allowed in child's bedroom (n=297)	30.9%	69.1%
Roaches seen inside the home in past 30 days (n=309)	24.3%	75.7%
Mice and rats seen inside the home in past 30 days (n=308)	6.8%	93.2%

Feathered or furry pets indoors

- Respondents were asked if pets, such as dogs, cats, hamsters, birds, or other feathered or furry animals, were present in the home and spend time indoors. As shown in Table 27, 51.6% of respondents have feathered or furry pets that spend time indoors.

Pets allowed in child's bedroom

- Respondents who indicated pets were allowed indoors, were asked if pets were allowed in the child's bedroom. Thirty-one percent of selected children were allowed to have pets in their bedroom.

Roaches seen in the home

- Respondents were asked if anyone had seen roaches inside the home in the past 30 days. Twenty-four percent of respondents reported seeing roaches in the home in the past 30 days.

Mice and rats seen in the home

- Respondents were asked if anyone had seen mice or rats, excluding those kept as pets, inside the home in the past 30 days. Seven percent of respondents reported seeing mice or rats in the home in the past 30 days.

A comparison with the 2006-2009 BRFSS Asthma Call-Back Survey data reported in the 2010 Texas Asthma Burden Report found similarities to the results found in this study. In the 2010 Texas Asthma Burden Report, 46.4% of respondents allowed pets indoors, 24.5% reported cockroaches inside the home, and 3.5% reported seeing mice or rats in the home. However, in this report, only 30.9% of

respondents allowed pets in the child’s bedroom, whereas the 2010 Texas Asthma Burden Report indicated that 65.6% of respondents allowed pets in their child’s bedroom.

Table 28: Household Irritants

	Yes	No
Home has exhaust fan that vents to the outside when cooking in the kitchen (n=288)	67.7%	32.3%
Gas stove used for cooking at home (n=297)	44.7%	55.3%
Wood-burning fireplace or stove used at home (n=297)	19.3%	80.7%
Seen or smelled mold or musty odor inside the home (n=305)	8.2%	91.8%
Smoked inside the home in past week (n=309)	7.8%	92.2%
Unvented gas logs or fireplaces used at home (n=295)	7.5%	92.5%

Exhaust fans

- Respondents were asked if an exhaust fan that vents to the outside was used when cooking in the home. As shown in Table 28, 67.7% of respondents used an exhaust fan that vents to the outside while cooking.

Gas stove

- Respondents were asked if a gas stove used for cooking was present in the home. Forty-five percent of respondents reported they have a gas stove at home.

Wood-burning fireplace or stove

- Respondents were asked if a wood-burning fireplace or stove was present in the home. Nineteen percent of respondents reported they have a wood-burning fireplace or stove at home.

Mold or musty odor

- Respondents were asked if anyone had seen or smelled mold, excluding mold on food, or smelled a musty odor in the home in the past 30 days. Eight percent of respondents had seen or smelled mold or smelled a musty odor in the home in the past 30 days.

Smoked cigarettes

- Respondents were asked if anyone had smoked inside the home in the past week. Eight percent of respondents stated that someone had smoked inside the home in the past week.

Unvented gas logs/fireplaces

- Respondents were asked if unvented gas logs or unvented gas fireplaces that are used were present in the home. Eight percent of respondents have unvented gas logs/fireplaces at home.

Table 29: Preventative Strategies

	Yes	No
Child's bedroom has carpeting or rugs that cannot be laundered (n=308)	56.0%	44.0%
Child uses mattress cover made for controlling dust mites (n=302)	48.4%	51.6%
Child's bathroom has exhaust fan that vents outside (n=300)	43.4%	56.6%
Child uses pillow cover to control dust mites (n=306)	36.7%	63.3%
Child's bedroom has an air cleaner or purifier that is regularly used (n=309)	25.8%	74.2%
Child's bedroom has a dehumidifier for reducing moisture that is regularly used (n=309)	21.6%	78.4%

Carpets/rugs

- Respondents were asked if there is carpeting or rugs in their child's bedroom that could not be laundered. As shown in Table 29, 56.0% of selected children have carpeting or rugs in their bedroom that cannot be laundered.

Mattress cover for controlling dust mites

- Respondents were asked if their child uses a mattress cover on their bed made especially for controlling dust mites. Forty-eight percent of selected children use a mattress cover on their bed especially made for controlling dust mites.

Exhaust fans

- Respondents were asked if there is an exhaust fan in their child's bathroom that vents to the outside. Forty-three percent of the respondents stated that the selected child has an exhaust fan in the bathroom that vents to the outside.

Pillow cover for controlling dust mites

- Respondents were asked if their child uses a pillow cover made to control dust mites. Thirty-seven percent of selected children use a pillow cover made for controlling dust mites.

Air cleaner or purifier

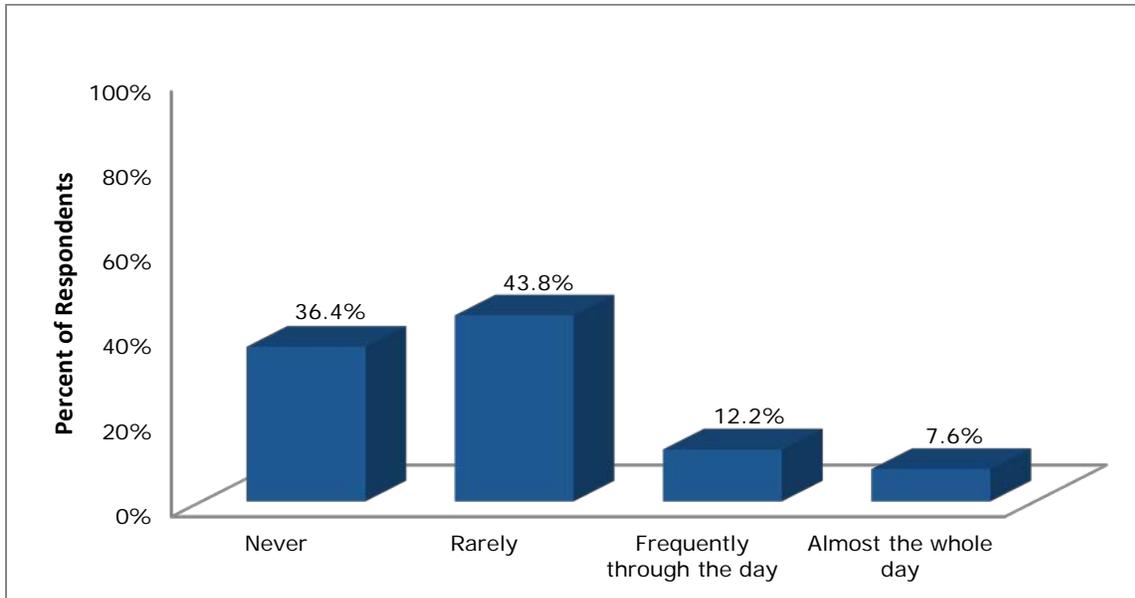
- Respondents were asked if an air cleaner or air purifier, excluding a furnace filter, is used regularly in the child's bedroom. Twenty-six percent of selected children have an air cleaner or air purifier in their bedroom that is regularly used.

Dehumidifier

- Respondents were asked if a dehumidifier for reducing moisture is used in the child’s bedroom regularly. Twenty-two percent of selected children regularly use a dehumidifier in their room.

Respondents were asked how often diesel trucks pass through the street on which they live during weekdays (n=292). As shown in Figure 19, 80.2% said that diesel trucks pass through their street either rarely (43.8%) or never (36.4%). Conversely, 19.8% reported that diesel trucks pass through their street frequently (12.2%) or almost the whole day (7.6%).

Figure 19: Frequency of Diesel Trucks Passing Through the Street on Weekdays (n=292)



8 Key Findings

This survey determined the prevalence of childhood asthma in children living near selected Superfund sites in Texas compared to statewide childhood asthma prevalence. Within the selected combined Superfund sites, lifetime and current asthma prevalence among children was similar (no statistically significant differences) to those living in the rest of Texas. Overall prevalence rates for children living near Superfund sites for lifetime and current asthma were 13.1% and 8.9%, respectively, and for children living in the rest of Texas were 11.7% and 9.1%, respectively. These results are also similar to the 2010 BRFSS national lifetime and current childhood asthma prevalence estimates of 11.6% and 8.4%, respectively.

This report's lifetime childhood asthma prevalence estimate (11.7%) is slightly lower than the 2009 BRFSS estimate of 13.3% reported in the 2010 Texas Asthma Burden Report. Our current childhood asthma estimate (9.1%) is similar to the 2010 Texas Asthma Burden Report's current asthma estimate (8.2%, based on 2009 BRFSS data). Males had a significantly higher prevalence rate than females for both lifetime childhood asthma (14.6% and 9.7%, respectively) and current childhood asthma (10.4% and 7.7%, respectively). The disparities of asthma prevalence observed by race/ethnicity have not narrowed, with Whites having lower prevalences of lifetime and current asthma (13.8% and 10.0%, respectively) than African Americans (17.0% and 12.5%, respectively) and those of other or mixed races (19.0% and 15.4%, respectively). Lifetime asthma prevalence was lowest for 0-4 year olds (5.8%) and highest for children ages 10 – 14 (15.5%), similar in trend to 2006-2009 BRFSS estimates reported in the 2010 Texas Asthma Burden Report. In this study, current asthma prevalence was lowest for 0-4 year olds (6.3%) and highest for 5-9 year olds (10.8%).

The range of asthma prevalence estimates for both lifetime and current asthma amongst DSHS Health Service Regions is found to be less extreme than were the 2009 BRFSS estimates in the 2010 Texas Asthma Burden Report, with the highest prevalence reported much lower. In the 2010 Texas Asthma Burden Report, the lifetime childhood asthma prevalence by region ranged from 5.7% in Public Health Region 1 to 28.1% in Public Health Region 9. In our sample the range was from 9.7% in Health Service Region 6/5S to 15.8% in Health Service Region 8. In the 2010 Texas Asthma Burden report, the distribution of current asthma prevalence by region ranged from 3.5% in Public Health Region 1 to 25% in Public Health Region 9. In our sample they ranged from 7.4% in Health Service Region 6/5S to 12.7% in Health Service Region 8. However, it should be noted that this report's regional estimates are not directly comparable to estimates from the 2010 Texas Asthma Burden Report, since the two reports used different regional boundaries. Although there are a large number of asthma triggers, including VOC emissions, in Health Service Region 6/5S (which includes Houston and Beaumont), both our results and the 2010 Texas Asthma Burden Report show lower asthma prevalence estimates in this area than in other areas of the state.

In this survey, a number of indicators of asthma impact were measured. Those associated with quality of life included having asthma symptoms in the past 30 days and difficulty sleeping due to asthma. These results differ greatly from the 2006-2009 BRFSS Asthma Call-Back Survey data reported in the 2010 Texas Asthma Burden Report. In this report, 60.3% of children with current asthma experienced one or more days of asthma symptoms in the past 30 days, whereas only 39% of children with current asthma reported experiencing one or more days of asthma symptoms in the 2010 Texas Asthma Burden Report. In this report, more than half of children with current asthma (63.5%) had difficulty staying asleep due

to asthma symptoms one or more days in the past 30 days, whereas in the 2010 Texas Asthma Burden Report, this value was estimated to be 26%.

Children with asthma and their parents are at greater risk of missing school and work than are children without asthma. Over 69.9% of children with current asthma reported missing 1 or more days of school or work in the past 12 months due to illness, with 51.9% of these children missing at least one day of school or work specifically due to asthma symptoms. This is similar to the estimated percentage of children who missed school due to their asthma in the 2010 Texas Asthma Burden Report (53.8%, based on 2006-2009 BRFSS Asthma Call-Back Survey data). In this report, 54% of children with current asthma missed 3 or more days of school in the past 12 months, while only 32% of children without asthma missed 3 or more days of school. This is an issue of concern, because school absenteeism has been found to be a significant predictor of lower academic achievement and not finishing high school. Additionally, 33.5% of parents missed at least 1 day of work in the past 12 months due to their child's asthma symptoms, with 21.9% having missed 3 or more days and 14.9% missing 6 or more days. Only 11.5% of parents of children without asthma missed 3 or more days of work due to their child's illness, and only 2.7% missed 6 or more days.

Health care utilization findings were both positive and negative. Negative results included that 27.6% of children with current asthma had at least one visit to an urgent care clinic or ER for asthma symptoms in the past 12 months. This estimate was over twice that reported in the 2010 Texas Asthma Burden Report (12.7%, based on 2006-2009 BRFSS Asthma Call-Back Survey data). This study found that only 50.8% of children with current asthma have a prescription inhaler for long-term prevention, and of the 72.0% that have a quick relief inhaler, 69.0% relied on its use within the past 3 months. Positive findings included that an estimated 87.6% of children have health care coverage of some type, and 83.7% of children had at least one routine checkup for their asthma in the past year. The estimated percentages of children who could not afford to purchase medication (10.7%), to see a physician (6.5%), or to see a specialist (5.8%) for their asthma in this report were all less than corresponding 2006-2009 BRFSS Asthma Call-Back Survey estimates in the 2010 Texas Asthma Burden Report. Nearly 50% of children with current asthma were able to carry and use asthma medication at school. The percentage of physicians providing an asthma action plan (53.9%), teaching how to use a peak flow meter (54.8%), or teaching children or parents how to respond to an asthma episode (77.4%) are similar to corresponding 2006-2009 BRFSS Asthma Call-Back Survey estimates in the 2010 Texas Asthma Burden Report.

With the population growth in Texas and financial burdens on health care and other social services, this survey indicates that the prevalence of both lifetime and current childhood asthma in Texas has overall remained similar to prevalences reported in the past four years through the 2006-2009 BRFSS survey and the corresponding 2010 Texas Asthma Burden Report.

Asthma has a major impact of the health of the population. Monitoring trends in asthma among Texans is important for increasing the level of knowledge about this prevalent condition. Data help public health officials focus their efforts to address asthma by targeting those most in need for intervention. Data also help raise awareness about the effects of asthma on the health of the community.

Appendix 1: References

1. CDC. National health interview survey (NHIS) data: 2001-2011 lifetime and current asthma. Retrieved July 13, 2013. Retrieved from <http://www.cdc.gov/asthma/nhis/default.htm>.
2. Akinbami LJ, Moorman JE, Bailey C, et al. Trends in asthma prevalence, health care use, and mortality in the U.S., 2001-2010. *NCHS Data Brief*. 2012;(94)(94):1-8.
3. CDC. BRFSS [behavioral risk factor surveillance system] annual survey data, 2006-2010. Retrieved July 13, 2013. Retrieved from <http://www.cdc.gov/asthma/brfss/default.htm>.
4. Akinbami LJ, Moorman JE, Liu X. Asthma prevalence, healthcare use, and mortality: U.S., 2005-2009. 2011;32(09/17).
5. Wang LY, Zhong Y, Wheeler L. Direct and indirect costs of asthma in school-age children. *Prev Chronic Dis*. 2005;2(1):A11.
6. Gelfand EW. The impact of asthma on the patient, the family, and society. *John Hopkins Advanced Studies in Medicine*. 2008;8(3):57-63.
7. Godard P, Chanez P, Siraudin L, Nicoloyannis N, Duru G. Costs of asthma are correlated with severity: A 1-yr prospective study. *Eur Respir J*. 2002;19(1):61-67.
8. Bousquet J, Bousquet PJ, Godard P, Daures JP. The public health implications of asthma. *Bull World Health Organ*. 2005;83(7):548-554.
9. Bahadori K, Doyle-Waters MM, Marra C, et al. Economic burden of asthma: A systematic review. *BMC Pulm Med*. 2009;9:24.
10. Ma J, Kouznetsova M, Lessner L, Carpenter DO. Asthma and infectious respiratory disease in children--correlation to residence near hazardous waste sites. *Paediatr Respir Rev*. 2007;8(4):292-298.
11. Carpenter DO, Ma J, Lessner L. Asthma and infectious respiratory disease in relation to residence near hazardous waste sites. *Ann N Y Acad Sci*. 2008;1140:201-208.
12. Wigle DT, Arbuckle TE, Walker M, Wade MG, Liu S, Krewski D. Environmental hazards: Evidence for effects on child health. *J Toxicol Environ Health B Crit Rev*. 2007;10(1-2):3-39.
13. Larsen G. Environmental air toxics: Role in asthma occurrence? *Environ Health Perspect*. 2002;110(Suppl. 4):501-504.

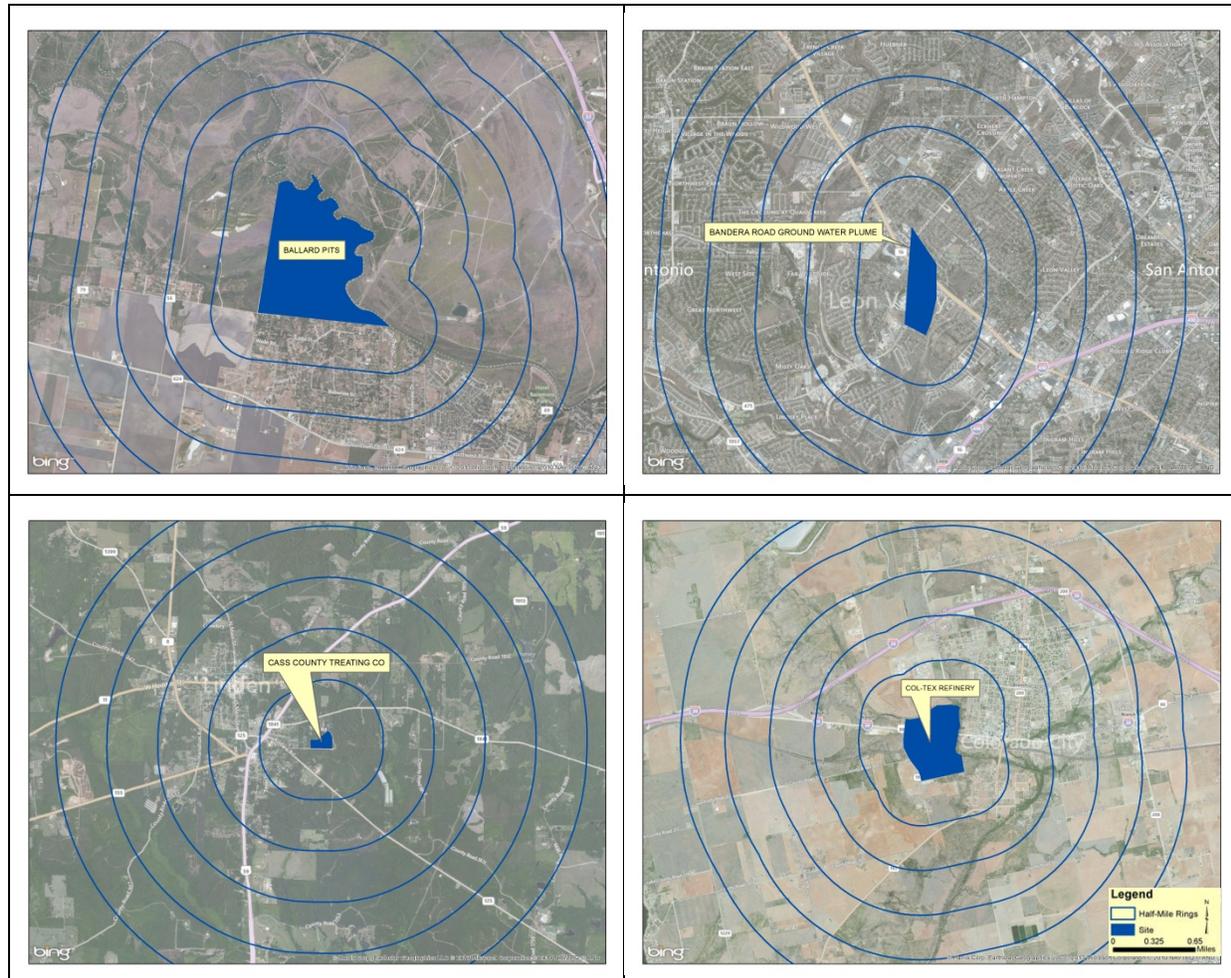
14. Malo JL, Chan-Yeung M. Asthma in the workplace: A Canadian contribution and perspective. *Can Respir J*. 2007;14(7):407-413.
15. Malo JL, Chan-Yeung M. Agents causing occupational asthma. *J Allergy Clin Immunol*. 2009;123(3):545-550.
16. White MC, Berger-Frank SA, Middleton DC, Falk H. Addressing community concerns about asthma and air toxics. *Environ Health Perspect*. 2002;110 Suppl 4:561-564.
17. Ela WP, Sedlak DL, Barlaz MA, et al. Toward identifying the next generation of superfund and hazardous waste site contaminants. *Environ Health Perspect*. 2011;119(1):6-10.
18. Zota AR, Schaidler LA, Ettinger AS, Wright RO, Shine JP, Spengler JD. Metal sources and exposures in the homes of young children living near a mining-impacted superfund site. *J Expo Sci Environ Epidemiol*. 2011.
19. Texas Commission on Environmental Quality. (n.d). *Alphabetical Index of Superfund Sites in Texas*. Retrieved February 6, 2013. Retrieved from <http://www.tceq.texas.gov/remediation/superfund/sites/byname.html>
20. Skalland, B. and Khare, M. (2013). Geographic inaccuracy of cell phone samples and the effect on telephone survey bias, variance and cost. Paper presented at the American Association for Public Opinion Research 68th Annual Conference, Boston, May 16-19, 2013 Conference Abstracts (pp. 23-24).
21. Pierannunzi, C. et. al. (2013). Movers and shakers: discrepancies between cell phone area codes and respondent area code locations in RDD samples. Paper presented at the American Association for Public Opinion Research 68th Annual Conference, Boston, May 16-19, 2013, Conference Abstracts (pp. 211-212).
22. Harrison, Whitney. 2010 Texas Asthma Burden Report. *Texas Department of State Health Services*. 2011.6-23.
23. De Meer, Gea, et al. Wheeze in children: the impact of parental education on atopic and non-atopic symptoms. *Pediatric Allergy and Immunology*.2009.21; 5:823-830.
24. Hancox, RJ, et al. Relationship between socioeconomic status and asthma: a longitudinal cohort study. *Thorax*.2004; 59:376-380.
25. Simon A. Paul, et al. Prevalence of childhood asthma and associated morbidity in Los Angeles County: Impacts of race/ethnicity and income. *Journal of Asthma*.2003.40; 5:535-543.

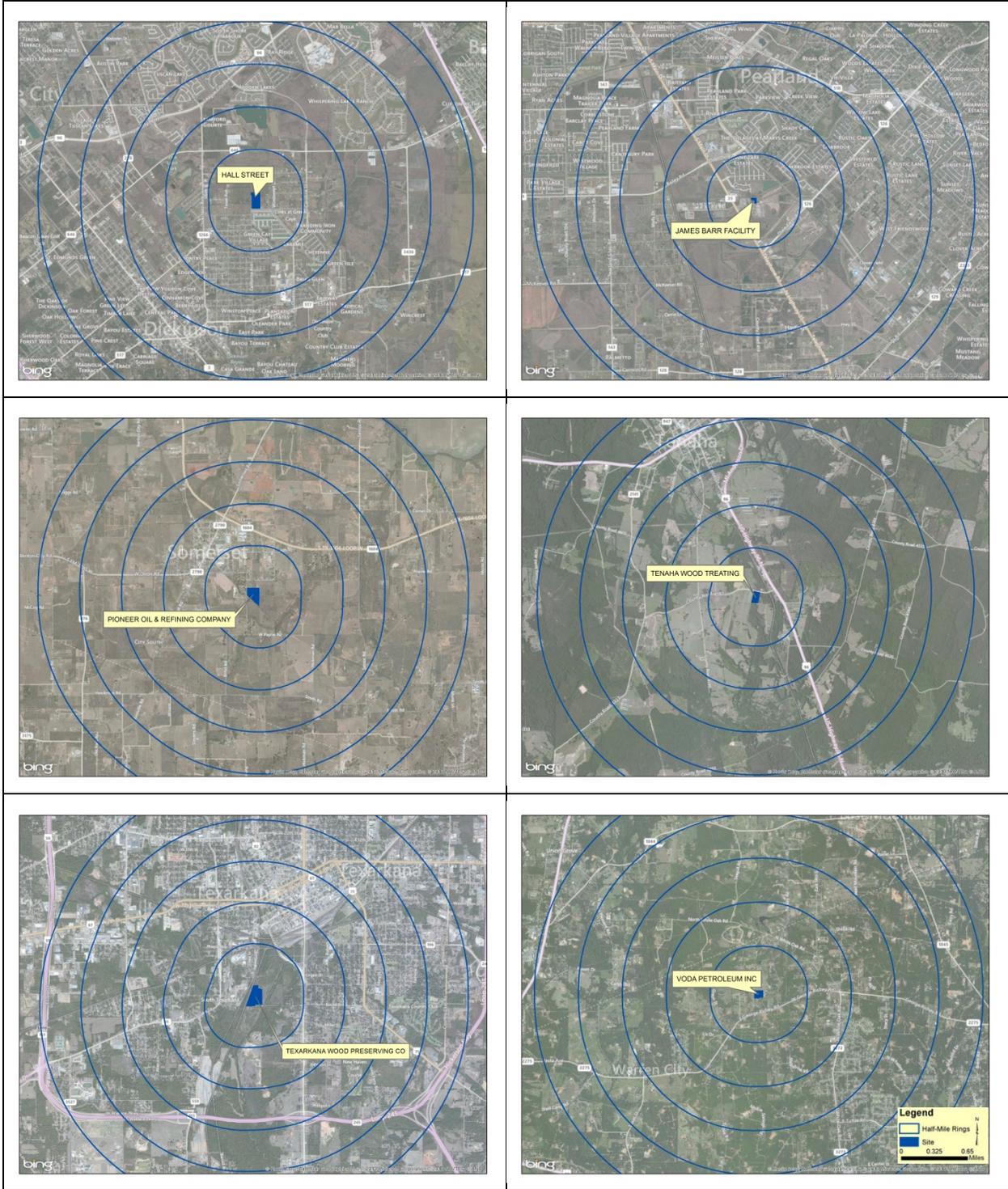
26. Ponsonby, Anne-Louise, et al. Relationship between early life respiratory illness, family size over time, and the development of asthma and hay fever: a seven year follow-up study. *Thorax*.1999; 54:664-669.
27. National Health Interview Survey Data: <http://www.cdc.gov/Asthma/nhis/default.htm>.
28. Trends in Asthma Morbidity and Mortality, American Lung Association, September 2012; retrieved from <http://www.lung.org/finding-cures/our-research/trend-reports/asthma-trend-report.pdf>.

Appendix 2: Superfund Site Maps

Each Superfund site has a different shape. Polygons were created to incorporate the boundaries of each Superfund site and then half-mile increments were mapped in a similar shape. A map of each Superfund site is shown from left to right: Ballard Pitts, Bandera Road Ground Water Plume, Cass County Treating Company, Col-Tex Refinery, Hall Street, James Barr Facility, Pioneer Oil and Refining Company, Tenaha Wood Treating, Texarkana Wood Preserving Company, and Voda Petroleum Inc.

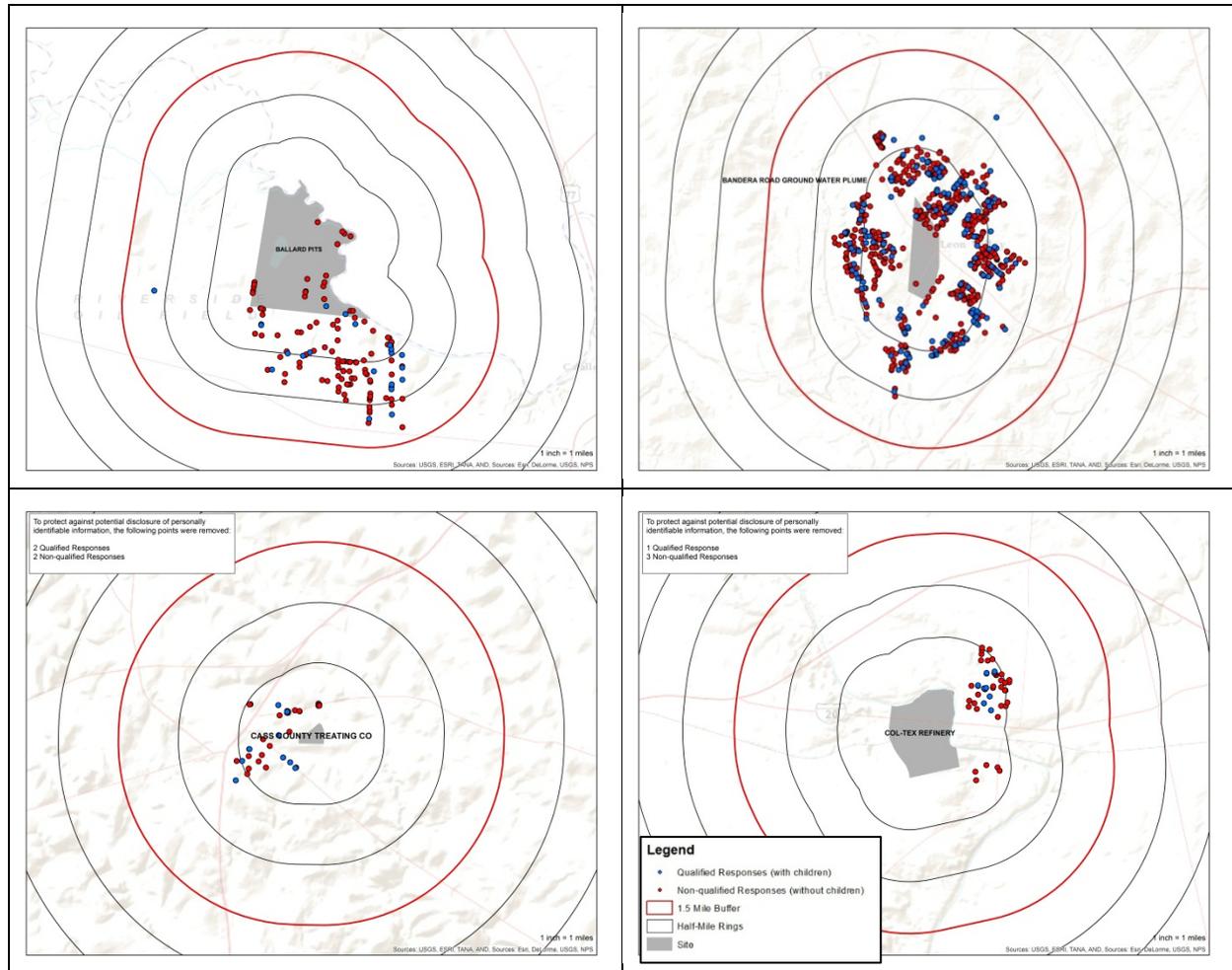
Map 8: Half-Mile Bands Surrounding Superfund Sites (All Sites)

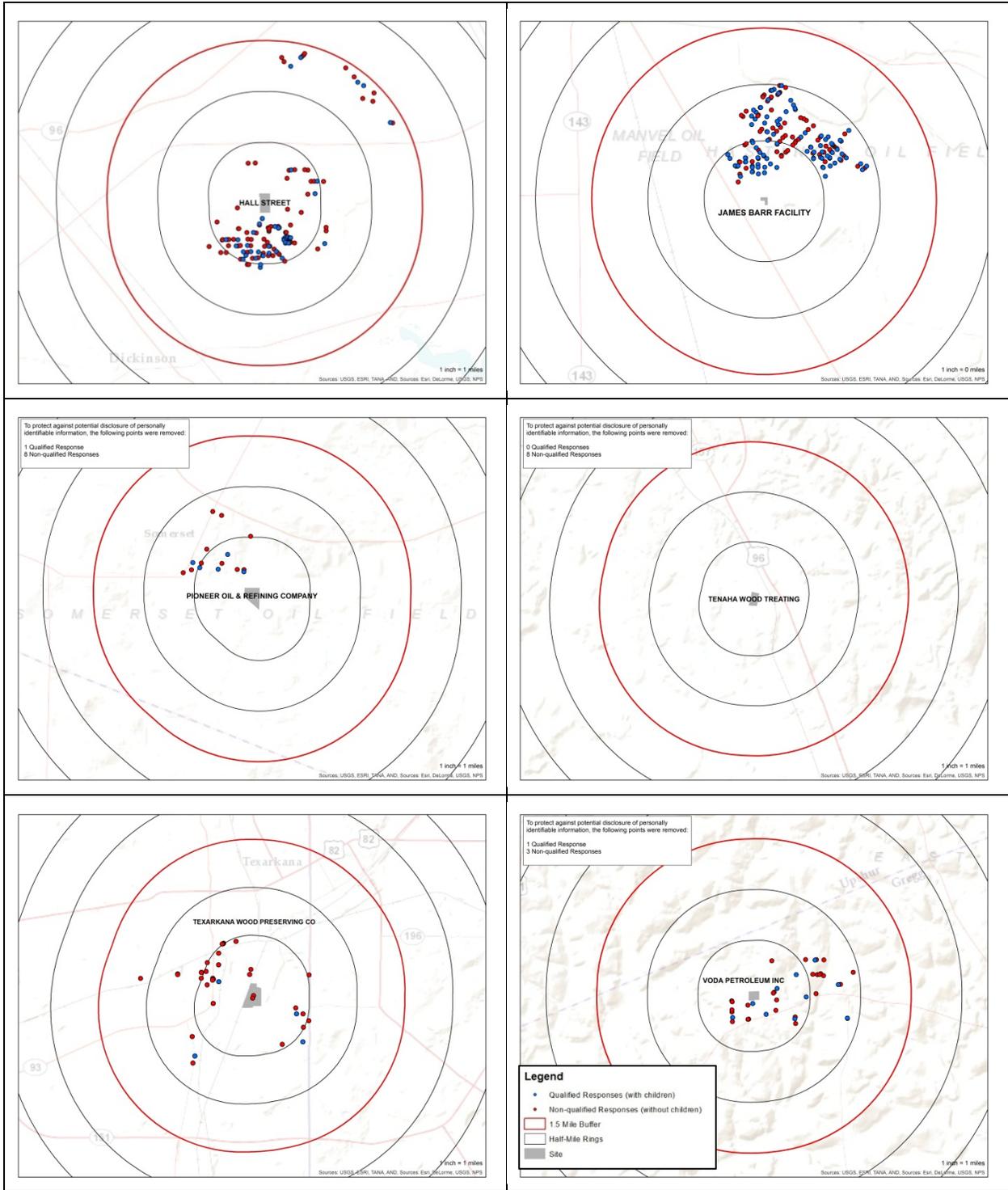




The distribution of responding households surrounding each Superfund site generally followed population clusters. The red points represent households that responded but did not have children. The blue points represent households that had children and were therefore qualified to respond to the remainder of the survey. A map of each Superfund site is shown from left to right: Ballard Pitts, Bandera Road Ground Water Plume, Cass County Treating Company, Col-Tex Refinery, Hall Street, James Barr Facility, Pioneer Oil and Refining Company, Tenaha Wood Treating, Texarkana Wood Preserving Company, and Voda Petroleum Inc.

Map 9: Qualified and Non-Qualified Respondents (All Sites)





Appendix 3: Questionnaires

Phone/Web Instrument

PREVALENCE ESTIMATES OF ASTHMA IN TEXAS

CHILDREN LIVING NEAR SUPERFUND SITES COMPARED TO OTHER PARTS OF TEXAS

A. Introduction (Blue text is asked for RDD Cellphone frames only)

Hello, my name is [INTERVIEWER NAME]. I'm calling from the University of North Texas Survey Research Center on behalf of the Texas Department of State Health Services and the Texas Commission on Environmental Quality. We are conducting a survey regarding health issues. Your telephone number has been selected at random to be included in this important study.

I'd like you to know that taking part in this research is voluntary. You may choose not to answer any questions you don't wish to answer, or end the interview at any time. We are required by law to develop and follow strict procedures to protect your information and use your answers only for statistical research. The interview will be 10 to 20 minutes.

This study has been reviewed and approved by the University of North Texas Institutional Review Board. If you have any questions, you can call 1-800-687-7055.

C2. Are we speaking with you on a cellular telephone?

1. YES
2. NO
9. DK/NR

C3. Please tell me the setting that you are in right now, at home, a public place, in a car or someplace else?

1. In home
2. In public place
3. In car
4. Other (SPECIFY)
9. NR/DK

C4. Are you currently operating a car, truck or other motor vehicle? (INTERVIEWER: IF YES SCHEDULE CALLBACK)

1. YES
2. NO
9. DK/NR

Q1. (ADULT PARENT/GUARDIAN)

Am I speaking to someone who lives in this household, who is over 17 years old?

- (1) YES, I AM THAT PERSON
- (2) THIS IS A BUSINESS [TERMINATE]
- (3) NEW PERSON COMES TO PHONE [SKIP BACK TO INTRODUCTION]
- (777) REFUSED [TERMINATE]
- (888) DOESN'T LIVE IN HOUSEHOLD [SCHEDULE APPOINTMENT]
- (999) NO PERSON AT HOME WHO IS OVER 17 [SCHEDULE APPOINTMENT]

HELP SCREEN: IF RESPONDENT SAYS 'GROUP QUARTERS', e.g., BARRACKS, DORMITORIES, HOSPITALS, SCHOOLS RESPONSE SHOULD BE CODED AS "DOES NOT LIVE IN HOUSEHOLD"

Q2.(HOUSEHOLD ROSTER) We need to begin by asking you a few questions about your household.
Please tell me how many people including yourself live in your household.

ENTER NUMBER ____

- (777) DON'T KNOW/Not Sure
- (999) REFUSED

SCREENING HELP: EACH PERSON IN THE HOUSEHOLD MUST BE A CURRENT RESIDENT OF THE HOUSEHOLD. A CURRENT RESIDENCE IS DEFINED AS A PLACE WHERE THE PERSON IS STAYING FOR MORE THAN TWO MONTHS AT THE TIME OF THE SURVEY CONTACT. IF A PERSON HAS NO PLACE, WHERE HE OR SHE USUALLY STAYS, THEY SHOULD BE CONSIDERED A CURRENT RESIDENT REGARDLESS OF THE LENGTH OF THE CURRENT STAY.

PERSONS AWAY FROM THEIR RESIDENCE FOR TWO MONTHS OR LESS, WHETHER TRAVELING OR IN THE HOSPITAL, ARE CONSIDERED "IN RESIDENCE."

PERSONS AWAY FROM THEIR RESIDENCE FOR MORE THAN TWO MONTHS ARE CONSIDERED "NOT IN RESIDENCE" UNLESS THEY ARE AWAY AT SCHOOL (I.E., BOARDING SCHOOL, MILITARY ACADEMY, OR PREP SCHOOL, ETC.).

CHILDREN WHO ONLY LIVE PART-TIME IN THE HOUSEHOLD BECAUSE OF CUSTODY ISSUES SHOULD BE INCLUDED IF THEY ARE STAYING THERE WHEN CONTACT WITH THE HOUSEHOLD IS MADE.

Q3a. Do you have any children living in the household under the age of 18?

- 1. YES
- 2. NO (TERMINATE INTERVIEW)
- 9. DK/NR (TERMINATE INTERVIEW)

Q3b. Can you tell me the age and gender of each child starting from oldest to youngest?

IF REFUSED, TERMINATE INTERVIEW

Q3c. (ASTHMA SCREEN)Have any of those children had asthma during their lifetime?

Q3d. Can you tell me the ages of the children with asthma? Code below

IF REFUSED, TERMINATE INTERVIEW

	Male	Female	Age	Q3d Has Asthma
Person 1	1	2		Yes No
Person 2	1	2		Yes No
Person 3	1	2		Yes No
Person 4	1	2		Yes No
Person 5	1	2		Yes No
Person 6	1	2		Yes No
Person 7	1	2		Yes No
Person 8	1	2		Yes No

IF NO CHILDREN WITH ASTHMA *The system will randomly select one child from this point forward to ask NON ASTHMA QUALIFIED questions: Q15A, Q15B, Q20, Q21, Q50-Q61 .*

Q4. (MOST KNOWLEDGEABLE PERSON) Are you the parent or guardian in the household who knows the most about your child(ren)'s asthma?

- (1) Yes
- (2) No (GO TO **ALTERNATIVE Named Person**)
- (777) Don't know/Not Sure (GO TO **ALTERNATIVE Named Person**)
- (888) Not a convenient time (Go TO **SCHEDULING**)
- (999) Refused (GO TO **ALTERNATIVE Named Person, OR SCHEDULING**)

B. RECENT HISTORY

REPEAT Q5-Q10 FOR EACH CHILD WITH ASTHMA IN Q3

I have a few questions to ask you about your ____ year-old child's asthma history.

Q5. (ASTHMA HISTORY) Have you or has the {__ year-old child} ever been told by a doctor or other health professional that he/she has asthma?

- (1) YES
- (2) NO (SKIP TO RANDOMIZER OR NEXT CHILD)
- (777) DON'T KNOW/Not Sure (SKIP TO RANDOMIZER OR NEXT CHILD)
- (999) REFUSED (SKIP TO RANDOMIZER OR NEXT CHILD)

SCREENING HELP: RESPONDENT SHOULD ONLY ANSWER "YES" IF THE CHILD HAS BEEN DIAGNOSED WITH ASTHMA BY A HEALTH CARE PROVIDER (EXERCISE INDUCED ASTHMA COUNTS AS HAVING ASTHMA).

HEALTH PROFESSIONAL INCLUDES DOCTORS, NURSES, PHYSICIAN ASSISTANTS, NURSE PRACTITIONERS, AND HEALTH EDUCATORS. A HEALTH CARE PROFESSIONAL DOES NOT INCLUDE A SCHOOL NURSE; GENERALLY A DOCTOR, HEALTH CARE PROFESSIONAL IN A DOCTOR'S OFFICE OR EMERGENCY ROOM. THIS IS NOT AN OPINION-BASED QUESTION. IF THE RESPONDENT OR PARENT/GUARDIAN THINKS THE CHILD HAS ASTHMA, BUT HE/SHE HAS NEVER BEEN TOLD SO SPECIFICALLY FROM A HEALTH CARE PROVIDER, THE QUESTION SHOULD BE CODED AS 'NO'.

Q6. (AGE ASTHMA FIRST DIAGNOSED) How old was the {__ year-old child} when a doctor or other health professional first said {he/she} had asthma?

Enter age in years: _____ [SKIP TO Q8]

[RANGE CHECK IS: 1-17, 777,999]

- (777) Don't Know/Not Sure [ASK Q7]
- (999) Refused

Q7. (AGE PROMPT) How long ago was that? (To prompt, READ CATEGORIES)

Was it...

- (1) Within the past 12 months
- (2) 1-5 years ago
- (3) More than 5 years ago
- (777) Don't Know/Not sure
- (999) Refused

Q8. (CURRENT ASTHMA) Does your {____ year old child} still have asthma?

- (1) YES
- (2) NO (777) Don't Know/Not sure
- (999) Refused

Q9. (ASTHMA CHECK) How long has it been since [the parent/ guardian of the __ year old child] last talked to a doctor or other health professional about {his/her} asthma? This could have been in a doctor's office, the hospital, an emergency room or urgent care center. [INTERVIEWER: READ RESPONSE OPTIONS IF NECESSARY]

- (0) Never
- (1) Within The Past Year
- (2) 1 Year To Less Than 3 Years Ago
- (3) 3 Years To 5 Years Ago
- (4) More Than 5 Years Ago
- (777) Don't Know/Not Sure
- (999) Refused

C. HISTORY OF ASTHMA

INTRODUCTION FOR LAST ASTHMA SYMPTOMS:

INTERVIEWER READS: Symptoms of asthma include coughing, wheezing, shortness of breath, chest tightness or phlegm production when your child **did not** have a cold or respiratory infection.

Q10. (LAST ASTHMA SYMPTOMS) How long has it been since your child last had any symptoms of asthma?

[INTERVIEWER: READ RESPONSE OPTIONS IF NECESSARY]

- (0) Never
- (1) Less Than One Day Ago
- (2) 1-6 Days Ago
- (3) 1 Week To Less Than 3 Months Ago
- (4) 3 Months To Less Than 1 Year Ago
- (5) 1 Year To Less Than 3 Years Ago
- (6) 3 Years To 5 Years Ago
- (7) More Than 5 Years Ago
- (777) Don't Know/Not Sure

(999) Refused

Q5-Q10 IS ASKED FOR EACH CHILD WITH ASTHMA

The system will randomly select one child from this point forward for the remainder of the questionnaire.

Category	Label	Classification	Action
1	If Q5=1 and Q10 ≤ 1 year	Asthma Qualified, preferred	Enter into randomizer
2	If Q5=1 and Q10 > 1 year	Asthma Qualified	Enter into randomizer if category 1 is not available
3	Q5=2	Non-Asthma Qualified	Enter into randomizer if neither category 1 or 2 is available.

(IF MORE THAN ONE CHILD, READ STATEMENT BELOW)

The remainder of this survey will focus on the status of one of your children that the computer selects at random. That would be the ___ year-old child in the household. (If Category 1 or 2: “and that child has been diagnosed with asthma in their lifetime, correct?”)

If Category 1 is selected to be randomized, ask all questions.

If Category 2 is selected to be randomized, ask questions: Q15A, Q15B, Q20-Q23, Q27-Q61

If Category 3 is selected to be randomized, ask questions: Q15A, Q15B, Q20, Q21, Q50-Q61

Q11. (SYMPTOMS IN LAST 30 DAYS) During the past 30 days, on how many days did your { ___ year old child} have any symptoms of asthma?

___ DAYS

[RANGE CHECK: (01-30, 777, 888, 999)]

(888) NO SYMPTOMS IN THE PAST 30 DAYS

(30) EVERY DAY

(777) DON'T KNOW

(999) REFUSED

Q12. (SLEEP ASTHMA) During the past 30 days, on how many days did symptoms of asthma make it difficult for your {____ year old child} to stay asleep?

__ __ DAYS/NIGHTS

[RANGE CHECK: (01-30, 777, 888, 999)]

(888) None

(30) Every Day

(777) Don't Know

(999) Refused

EPISODE1. (ASTHMA EPISODES) During the past 30 days, how many asthma episodes or attacks has your {____ year old child} had?

__ __ **[RANGE CHECK: (01-100, 777, 888, 999)]**

(888) None

(777) Don't Know

(999) Refused

[CHECK: IF RESPONSE = 77, 88, 99 VERIFY THAT 777, 888 AND 999 WERE NOT THE INTENT]

EPISODE2. (ASTHMA SEVERITY) How long did your {____ year old child's} MOST RECENT asthma episode or attack last?

(1) Episode lasted for Minutes

(2) Episode lasted for Hours

(3) Episode lasted for Days

(4) Episode lasted for Weeks

(9) NR/DK

Q13. (ASTHMA EXERCISE) During the past 12 months, did your {____ year old child} have wheezing in the chest during or after exercise or physical activity?

(1) Yes

(2) No

(777) Don't Know/Not Sure

(999) Refused

Q14. (LIMITED ACTIVITY) During the past 12 months, how much did your child *limit the usual activities due to wheezing or whistling in the chest?* Would you say: not at all, a little, a fair amount, a moderate amount, or a lot?

(0) Not at all

(1) A little

(2) A fair Amount

(3) A moderate Amount

(4) A lot

(777) Don't Know/Not Sure

(999) Refused

Q15A. During the past 12 months, how many days of work or school did your {____ year old child} miss due to illness? _____

Q15B. (MISSED SCHOOL/WORK) During the past 12 months, how many days of work have YOU missed due to your {____ year old child's} illness?

____ DAYS (ENTER 0 FOR NONE)

777 DON'T WORK

999 REFUSED

Q16A. (MISSED SCHOOL/WORK) During the past 12 months, how many days of work/school did your {____ year old child} miss due to wheezing or whistling in the chest? _____

Q16B. (MISSED SCHOOL/WORK) During the past 12 months, how many days of work have YOU missed due to your {____ year old child's} asthma symptoms?

____ DAYS (ENTER 0 FOR NONE)

777 DON'T WORK

999 REFUSED

Q19. (SYMPTOM-FREE DAYS) During the past two weeks, on how many days was this child completely symptom-free, that is no coughing, wheezing, or other symptoms of asthma?

____ Number of days [RANGE CHECK: (01-14, 777, 888, 999)]

(888) None

(777) Don't Know/Not Sure

(999) Refused

D. Health Care Utilization

Q20. (HEALTH INSURANCE) Does your {____ year old child} have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare or Medicaid?

(1) Yes

(2) No

(777) Don't Know/Not Sure

(999) Refused

Q21. (INSURANCE TYPE) What kind of health care coverage does {he/she} have? Is it paid for through the parent's employer, or is it Medicaid, Medicare, Children's Health Insurance Program (CHIP), or some other type of insurance?

- (1) Parent's Employer
- (2) Medicaid/Medicare
- (3) Chip
- (4) Policy paid for by parent
- (5) OTHER (SPECIFY) _____
- (777) Don't Know/Not Sure
- (999) Refused

Q22. (INSURANCE COVERAGE) During the past 12 months was there any time that {he/she} did not have any health insurance or coverage?

- (1) Yes
- (2) No
- (777) Don't Know/Not Sure
- (999) Refused

Q23. (DOCTOR VISIT) During the past 12 months, how many times did {he/she} see a doctor or other health professional for a routine checkup for {his/her} asthma?

___ ___ Enter Number

[Range Check: (001-365, 777, 888, 999)] [Verify Any Value >50]

[Check: If Response = 77, 88, 99 Verify That 777, 888, And 999 Were Not The Intent]

- (888) None
- (777) Don't Know/Not Sure
- (999) Refused

Q24. (ER VISIT) An urgent care center treats people with illnesses or injuries that must be addressed immediately and cannot wait for a regular medical appointment. During the past 12 months, has your {___ year old child} had to visit an emergency room or urgent care center because of {his/her} asthma?

- (1) Yes
- (2) No (SKIP TO Q26)
- (777) Don't Know/Not Sure (SKIP TO Q26)
- (999) Refused (SKIP TO Q26)

Q24a. (ER TIMES) During the past 12 months, how many times did { he/she } visit an emergency room or urgent care center because of {his/her} asthma?

__ __ __ ENTER NUMBER

[RANGE CHECK: (001-365, 777, 999)] [Verify any entry >50]

(888) None

(777) Don't Know

(999) Refused

[CHECK: IF RESPONSE = 77, 99 VERIFY THAT 777 AND 999 WERE NOT THE INTENT]

Knowledge of Asthma/Management Plan

Health professional includes doctors, nurses, physician assistants, nurse practitioners, and health educators.

Q25. (MANAGEMENT PLAN) An asthma action plan, or asthma management plan, is a form with instructions about when to change the amount or type of medicine, when to call the doctor for advice, and when to go to the emergency room. Has a doctor or other health professional EVER given you or your {____ year old child} an asthma action plan?

(1) Yes

(2) No

(777) Don't Know/Not Sure

(999) Refused

26a. Has a doctor or other health professional taught you or your {____ year old child} how to use a peak-flow meter?

(1) Yes

(2) No

(777) Don't Know/Not Sure

(999) Refused

26b. (RESPONSE DURING ASTHMA EPISODE) Has a doctor or other health professional ever taught you or your {____ year old child} what to do during an asthma episode or attack?

(1) Yes

(2) No

(777) Don't Know/Not Sure

(999) Refused

E. Environmental Sources/Modifications

Interviewer Reads: The following questions are about **your {___ year old child's}** household and living environment. I will be asking about various things that may be related to experiencing symptoms of asthma. As I read each, please tell me yes or no, whether this condition exists in the child's home.

	YES	NO	DK/NR
Q27. In the past 30 days, has anyone seen or smelled mold or a musty odor inside the home? Do not include mold on food.	1	2	9
Q28. In the past 30 days, has anyone seen mice or rats inside the home? Do not include mice or rats kept as pets.	1	2	9
Q29. In the past 30 days, has anyone seen roaches inside the home?	1	2	9
Q30. In the past week, has anyone smoked inside the home?	1	2	9

Are any of the following items present in the home?

	YES	NO	DK/NR
Q31. Wood burning fireplace or wood burning stove that are used	1	2	9
Q32. Unvented gas logs or unvented gas fire places that are used.	1	2	9
Q33. Gas stove used for cooking	1	2	9
Q34. An exhaust fan that vents to the outside when cooking in the kitchen	1	2	9
Q35. pets such as dogs, cats, hamsters, birds or other feathered or furry pets that spend time indoors?	1	2	9
Q36. Is the pet allowed in child's bedroom?	1	2	9

Are any of the following items used in the child's bedroom?

	YES	NO	DK/NR
Q37. Carpeting or rugs that cannot be laundered?	1	2	9
Q38. An Air cleaner or air purifier that is regularly used, this does not include the furnace filter?	1	2	9
Q39. A dehumidifier for reducing moisture that is regularly used?	1	2	9
Q40. A mattress cover made especially for controlling dust mites that is used on the child's bed?	1	2	9
Q41. A pillow cover made especially for controlling dust mites that is used on the child's pillow?	1	2	9

Q42. (BATHROOM FAN) In your {___ year old child} bathroom, does {he/she} regularly use an exhaust fan that vents to the outside?

(1) Yes

(2) No or “No Fan”

(777) Don’t Know/Not Sure

(999) Refused

HELP : IF RESPONDENT INDICATES THEY HAVE MORE THAN ONE BATHROOM, THIS QUESTION REFERS TO THE BATHROOM THE CHILD USES MOST FREQUENTLY FOR SHOWERING AND BATHING.

Q43. (TRAFFIC) How often do diesel trucks pass through the street where you live, on weekdays? Never, rarely, frequently through the day, or almost the whole day

(0) Never

(1) Rarely

(2) Frequently through the day

(3) Almost the whole day

(777) Don’t Know/Not Sure

(999) Refused

F. Medications

Q44. (OCT DRUGS) Over-the-counter medication can be bought without a doctor’s order. Has your {___ year old child} ever used over-the-counter medication for {his/her} asthma?

(1) Yes

(2) No

(777) Don’t Know/Not Sure

(999) Refused

Q45. (PRESCRIPTION INHALER) Has {he/she} ever used a prescription inhaler?

(1) Yes

(2) No (SKIP TO PILLS1)

(777) Don’t Know/Not Sure (SKIP TO PILLS1)

(999) Refused (SKIP TO PILLS1)

Q45a

There are two types of prescription inhalers. One is for quick relief. The other does not give quick relief but protects your lungs AND PREVENTS SYMPTOMS OVER THE LONG TERM.

Does your ___ year old child have a PRESCRIPTION inhaler THAT {he/she} BREATHES IN THROUGH {his/her} MOUTH, that gives QUICK relief from asthma symptoms?

- (1) Yes
- (2) No (SKIP Q45b)
- (7) Refused (SKIP Q45b)
- (9) Don't know (SKIP Q45b)

DURING THE PAST 3 MONTHS, has {he/she} used that inhaler?

- (1) Yes
- (2) No
- (7) Refused
- (9) Don't know

Q45b.

Does your ___ year old child have a PRESCRIPTION inhaler THAT {he/she} BREATHES IN THROUGH {his/her} MOUTH, that protects (his/her) lungs AND PREVENTS SYMPTOMS OVER THE LONG TERM?

- (1) Yes
- (2) No (SKIP TO PILLS1)
- (7) Refused (SKIP TO PILLS1)
- (9) Don't know (SKIP TO PILLS1)

45c. DURING THE PAST 3 MONTHS, has {he/she} used that inhaler?

- (1) Yes
- (2) No
- (7) Refused
- (9) Don't know

ACN.

PILLS1 (8.20)

Does your ___ year old child have PRESCRIPTION medicine in pill form for his/her asthma?

- (1) YES
- (2) NO [SKIP TO SYRUP1]
- (7) DON'T KNOW [SKIP TO SYRUP1]
- (9) REFUSED [SKIP TO SYRUP1]

PILLS2

In the past 3 months, has {he/she} taken any of that PRESCRIPTION medicine in pill form for his/her asthma?

- (1) YES
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

SYRUP1

Does your ___ year old child have PRESCRIPTION medicine in a syrup form for his/her asthma?

- (1) YES
- (2) NO [SKIP TO Q47a]
- (7) DON'T KNOW [SKIP TO Q47a]
- (9) REFUSED [SKIP TO Q47a]

SYRUP2

In the past 3 months, has {he/she} taken any of that PRESCRIPTION medicine in syrup form for his/her asthma?

- (1) YES
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

47a. (IF Q44=NO and Q45=NO and SYRUP1=NO and PILLS1=NO, SKIP TO Q48a) At school, is the child able to carry the medicine with them and use it whenever they think they need it?

- (1) Yes
- (2) No (SKIP Q48a)
- (777) Don't Know/Not Sure (SKIP Q48a)
- (888) Child is home schooled
- (999) Refused (SKIP Q48a)

47b. Is the child allowed to use medication at school without help or permission?

- (1) Yes
- (2) No
- (777) Don't Know/Not Sure
- (999) Refused

G. Cost of Care

Q48a. (ASTHMA COST) Was there a time in the past 12 months when your {____ year old child} needed to see his/her primary care doctor for asthma but could not because of the cost?

- (1) Yes
- (2) No
- (777) Don't Know/Not Sure
- (999) Refused

Q48b. (ASTHMA SPECIALIST CARE) Was there a time in the past 12 months when you were referred to a specialist for {his/her} asthma care but could not go because of the cost?

- (1) Yes
- (2) No
- (777) Don't Know/Not Sure
- (999) Refused

Q49. (ASTHMA PRESCRIPTIONS COST) Was there a time in the past 12 months when {he/she} needed medication for his/her asthma but you could not buy it because of the cost?

- (1) Yes
- (2) No
- (777) Don't Know/Not Sure
- (999) Refused

H. Additional Child Demographics

I have just a few more questions used for classification purposes.

Q50. (HEIGHT) How tall is your {____ year old child} ? [if needed: Ask the respondent to give their best guess.]

____ = Height (ft/inches)

(777) Don't know/Not sure

(999) Refused

Q51. (WEIGHT) How much does {he/she} weigh? [if needed: Ask the respondent to give their best guess.]

____ Weight (pounds/kilograms)

(777) Don't know / Not sure

(999) Refused

Q52. (ETHNICITY) Please select from the following the ethnic group that your {____ year old child} is identified with

(1) White Non-Hispanic

(2) Black/African American

(3) Hispanic/Latino

(4) Asian/Pacific Islander

(5) Other (Specify)

(777) Don't know / Not sure

(999) Refused

Q53. (EDUCATION) The next questions are about **your education level. What is the highest level of school that you have completed?**

____ Enter Highest Grade Completed (1-12)

(13) Graduated High School

(14) Some Post-High School, But Not Bachelor's Degree (B.A.)

(15) College Graduate – Bachelor's Degree Or B.A.

(16) Some Graduate Or Professional School (With Or Without Degree)

(777) Don't Know/Not Sure

(999) Refused

Q54. (INCOME) Would you say that the total combined income of your household in [FILL LAST CALENDAR YEAR], was...?

- (1) Less than \$10,000
- (2) Between \$10,000 and \$15,000
- (3) Between \$15,000 and \$20,000
- (4) Between \$20,000 and \$30,000
- (5) Between \$30,000 and \$40,000
- (6) Between \$40,000 and \$50,000
- (7) More than \$50,000
- (777) Don't Know/ Not Sure
- (999) Refused

Q55. How long have you lived at your current residence?

YEARS _____

IF LESS THAN 1 YEAR, ENTER 0

IF ANSWER > 0 SKIP Q55a

Q55a. How many months have you lived at your current residence?

MONTHS _____

IF LISTED LANDLINE CALL, SKIP TO Q59. IF CALL-IN, ASK Q56:

(IF LISTED = 1, SKIP TO Q58)

Q56. Are we speaking with you on a cellular telephone?

- 1. YES
- 2. NO (SKIP TO Q58)

Q57. Do you have phone service in your household from your local telephone company in addition to any other cellular phone plans you may have?

INTERVIEWER: "YES" WILL INCLUDE VOICE-OVER INTERNET PROTOCOL (VOIP) AVAILABLE FROM CABLE COMPANIES.

- 1. YES
- 2. NO (SKIP TO CLOSING)

Q58. [We refer to that type of service as a "landline phone."] Is the phone number for your [landline] phone listed or unlisted?

- 1. LISTED [SKIP TO Q60]
- 2. UNLISTED [SKIP TO Q60]

Q59. In addition to your landline phone service do you also have a cellular telephone service that you personally use?

1. YES
2. NO

Q60. [ASK IF RESPONDENT HAS BOTH LL AND CELLULAR PHONE] Comparing how you use your cell phone and your landline phone, would you say that your calls are cell phone only, cell phone mostly, landline mostly, landline only or are they evenly split between cell phone and landline.

1. Cell phone only
2. Cell phone mostly
3. Evenly split
4. Landline mostly
5. Landline only
8. DON'T KNOW
9. REFUSED

Q61. Do you often, sometimes, rarely or never use Facebook?

1. Often
2. Sometimes
3. Rarely
4. Never
9. DK/NR

Q61a. Did you use Facebook within the past 24 hours?

1. YES (SKIP TO Q61c)
2. NO
9. DK/NR

Q61b. Did you use Facebook within the past week?

1. YES
2. NO (SKIP TO Q62)
9. DK/NR (SKIP TO Q62)

Q61c. How much time did you spend using Facebook in the past week? Would you say. . .

1. None
2. Less than 2 hours
3. 2 to under 5 hours
4. 5 to 10 hours
5. More than 10 hours
9. DK/NR

The following questions were asked of the RDD and Cellphone sampling frames only. LL questions asked of the landline frame and C questions asked of the Cellphone frame.

LL1 Is this phone service in your household from your local telephone company or is it a cellular phone service?

INTERVIEWER: "YES" WILL INCLUDE VOICE-OVER INTERNET PROTOCOL (VOIP) AVAILABLE FROM CABLE COMPANIES.

1. LANDLINE
2. CELLULAR PHONE
9. DK/NR

LL1B How many landline phone numbers do you have in your home not including any dedicated fax lines? ____

LL2 In addition to your landline phone service do you also have a cellular telephone service that you personally use?

1. YES
2. NO
9. DK/NR

LL3 Is that cell phone answered mostly or always by you or is it also answered by other members of your household?

1. Respondent only
2. Respondent and other members
9. DK/NR

LL3B How many adults? ____

LL4 Do you have other cell phone numbers that you answer that we could have reached you on?

1. YES
2. NO
9. DK/NR

LL4B How many others? ____

LL5 If we had called you on your cell phone instead of your landline, could we have reached you at this time?

1. YES
2. NO
9. DK/NR

LL6 Comparing how you use your cell phone and your landline phone, would you say that your calls are cell phone only, cell phone mostly, landline mostly, landline only, or are they evenly split between cell phone and landline.

1. Cell phone only
2. Cell phone mostly
3. Evenly split
4. Landline mostly
5. Landline only
8. DON'T KONW
9. REFUSED

LL11 In what county do you live? _____

LL12 Can you give me your five-digit zip code? _____

LL13 IF ZIP CODE CONTAINS A SUPERFUND SITE, ASK: Can you tell me your street name?

Can you give me your one-hundred block?

INTERVIEWER IF YOU NEED TO EXPLAIN:

"For example if your address is 9512, that would be the ninety-five hundred block" (9500)

C5. Is this cell phone answered mostly or always by you or is it also answered by other members of your household?

1. Respondent only
2. Respondent and other members
9. DK/NR

C5B. How many adults other than you? ___

C6. Do you have other cell phone numbers that you answer that we could have reached you on?

1. YES
2. NO
9. DK/NR

C6B. How many? __

(INTERVIEWER: ENTER 99 FOR NR/DK)

C7. Do you have phone service in your household from your local telephone company in addition to cellular phones?

INTERVIEWER: "YES" WILL INCLUDE VOICE-OVER INTERNET PROTOCOL (VOIP) AVAILABLE FROM CABLE COMPANIES.

1. YES
2. NO
9. DK/NR

C8. We refer to that type of service as a "landline phone." If we had called you on your landline telephone at this time, could you have answered it?

1. YES
2. NO
9. DK/NR

C9

How many landline phone numbers do you have in your home not including any dedicated fax lines?

(INTERVIEWER: ENTER 99 FOR NR/DK)

C10 Comparing how you use your cell phone and your landline phone, would you say that your calls are cell phone only, cell phone mostly, landline mostly, landline only or are they evenly split between cell phone and landline.

1. Cell phone only
2. Cell phone mostly
3. Evenly split
4. Landline mostly
5. Landline only
8. DON'T KNOW
9. REFUSED

C11. In what county do you live?

C11B. What city do you live in?

C12 Can you give me your five-digit zip code?

(INTERVIEWER: ENTER 99999 FOR NR/DK).

C13 (ASK IF ZIP CODE CONTAINS A SUPERFUND SITE)

Can you tell me your street name?

C14 Can you give me your one-hundred block?

INTERVIEWER IF YOU NEED TO EXPLAIN:

"For example if your address is 9512, that would be the ninety-five hundred block" (9500)

Q62. For our last question, we had asked a number of questions about your __ year-old child. Can you tell me the child's month and year of birth? __ mo __ year.

Card

That concludes our questions. We can send you a gift card to Amazon.com or to Walmart.

The Amazon gift card is for online shopping at Amazon.com only and we can send it to your e-mail address in the next few days.

Or we could mail it to your physical address in about two weeks.

The Walmart gift card is for online shopping at Walmart.com or at a Walmart store. To receive this gift card we will need your physical address and you will receive it in the mail in about two weeks.

Would you prefer the Amazon Card or the Walmart Card?

Amazon

Walmart

Prefer not to receive a gift card

AMAZON1

Would you prefer to have the card sent as an email or to your physical address?

E-mail

Physical address

NAME

Please give your first and last name.

ADDR1

What is your mailing street address?

CITY

What is your city?

ZPCODE

What is your zip code?

QTHANK1

THANK YOU VERY MUCH FOR YOUR TIME AND COOPERATION.

(INTERVIEWER KEY GENDER)

Female

Male

Spanish Questionnaire

Hola, mi nombre es, [SU NOMBRE]. Estoy llamando del Centro de Investigación de Encuestas en la Universidad del Norte de Texas. Estamos realizando un estudio al respeto de salud en el estado de Texas. Su número telefónico ha sido elegido al azar para ser incluido en este estudio importante.

Su participación en esta Investigación es voluntaria, usted puede elegir no contestar cualquier pregunta que usted no quiera contestar, o dar por terminar la encuesta a cualquier momento. La ley requiere que implementemos y sigamos procedimientos terminales para proteger su información y usar sus respuestas solamente como porcentajes. Esta entrevista solamente tomara 10 a 20 minutos.

Este estudio ha sido aprobado y revisado por el Comité Examinador Institucional de la Universidad del Norte de Texas y el Centro de Salud y las Cencías de la Universidad del Norte de Texas. Si tiene alguna pregunta, puede llamar a 1-800-687-7055

Q1. (ADULTO PADRE/GURARDIAN)

¿Estoy hablando con alguien quien vive en el hogar mayor de 17 años?

- (1) SI, YO SOY ESA PERSONA.
- (2) ESTO ES UN NEGOCIO. **[TERMINATE]**
- (3) NUEVA PERSONA EN EL TELEPHONO. **[SKIP BACK TO INTRO]**
- (777) REFUSED. **[TERMINATE]**
- (888) NO VIVE EN EL HOGAR. **[SCHEDULE APPOINTMENT]**
- (999) NADIE MAYOR DE 17 EN EL HOGAR. **[SCHEDULE APPOINTMENT]**

Q2. (HOUSEHOLD ROSTER) Necesitamos comenzar haciéndole algunas preguntas acerca de su hogar. **Por favor dígame cuantas personas, incluyéndose a usted, viven en su hogar.**

Ingrese el número total _____

- (777) Don't Know/Not Sure
- (999) REFUSED.

Q3a. Hay niños que viven en su hogar menores de 18 años?

- 1. SI
- 2. NO
- 9. DK/NR (TERMINATE INTERVIEW)

Q3b. Me puede decir la edad y el género de cada niño, del mayor al menor?

IF REFUSED TERMINATE INTERVIEW

Q3c. (ASMA SCREEN) Alguno de esos niños ha tenido Asma en el curso de sus vidas?

Q4. ¿Es usted el guardián legal en el hogar que tenga más conocimiento de las criaturas con asma?

B. RECENT HISTORY

REPEAT Q5-Q10 FOR EACH CHILD WITH ASMA IN Q3

Tengo unas preguntas sobre la historia de Asma de su criatura de años.

Q5. (ASMA HISTORY) ¿En alguna ocasión, algún médico u otro profesional de la salud le informó que la criatura tenía asma?

(1) SI

(2) NO

(777) DK/NS

(999) REFUSED

Q6. ¿Qué edad tenía la criatura de años cuando un médico u otro profesional de la salud le informó por primera vez que la criatura tenía asma?

__ __ __ (Ingrese la edad en años)

(777) DON'T KNOW

(888) Menos un año de edad

(999) REFUSED

Q7. ¿Hace cuánto tiempo tiene de eso?

(4) DURANTE LOS ÚLTIMOS 12 MESES

(5) DESDE HACE 1-5 AÑOS

(6) HACE MAS DE 5 AÑOS

[Do not read]

(8) DON'T KNOW

(9) REFUSED

Q8. ¿Todavía tiene criatura de años asma?

(1) SI

(2) NO

(7) DON'T KNOW

(9) REFUSED

Q9. ¿Cuánto tiempo tiene desde la última vez que usted habló con un médico u otro profesional de la salud acerca del asma de la criatura? Esto pudo haber sido en un consultorio de un doctor, hospital, sala de emergencia o centro de urgencias.

- (88) NUNCA
- (04) DURANTE EL AÑO PASADO
- (05) HACE UN AÑO Á MENOS DE 3 AÑOS
- (06) HACE 3 AÑOS - 5 AÑOS
- (07) HACE MÁS DE 5 AÑOS

[Do not read]

- (77) DON'T KNOW
- (99) REFUSED

Q10. Los síntomas de asma incluyen tos, resollar, falta de aire, opresión en el pecho y producción de flemas cuando la criatura no-tenía un resfriado ni una infección respiratoria.

¿Cuánto tiempo tiene desde que la criatura tuvo algún síntoma de asma?

- 88) NUNCA
- (01) HACE MENOS DE UN DÍA
- (02) DE 1 A 6 DÍAS
- (03) HACE UNA SEMANA A MENOS DE UN AÑO
- (04) HACE 3 MESES A MENOS DE 1 AÑO
- (05) HACE 1 AÑO Á MENOS DE 3 AÑOS
- (06) HACE 3 AÑOS Á 5 AÑOS
- (07) HACE MÁS DE 5 AÑOS

Q11. ¿En cuántos de los últimos 30 días tuvo la criatura de años algún síntoma de asma?

- ___ Días
- (88) NO síntomas en los últimos 30 días
 - (30) Todos Los Días
 - (77) DON'T KNOW
 - (99) REFUSED

Q12. Durante los últimos 30 días, ¿en cuántos días causaron los síntomas de asma dificultades para que la criatura de años permaneciera dormido(a)?

- ___ Días/Noches
- (88) Ninguna
 - (30) Todos los Días
 - (77) DON'T KNOW
 - (99) REFUSED

Episode1. Durante los últimos 3 meses, ¿cuántos episodios de asma o ataques ha tenido la criatura de años?

— —
(888) Ningunos
(777) DON'T KNOW
(999) REFUSED

Episode2. ¿Cuánto duró el más reciente episodio o ataque de asma de la criatura de años?

1 Episodio duro Minutos
2 Episodio duro Horas
3 Episodio duro DIAS
4 Episodio duro Semanas
(555) Nunca
(777) DON'T KNOW / NOT SURE
(999) REFUSED

Q13. (ASMA EXERCISE) ¿Durante los últimos 12 meses, su criatura de años comenzó a toser pesadamente durante o después de ejercicio o de actividad física?

(1) Si
(2) No
(777) DK/NS
(999) REFUSED

Q14. (LIMITED ACTIVITY) Durante los últimos 12 meses, cuanto fue limitado su criatura de actividades usuales por congestión de pecho o tosiendo pesadamente? Diría usted: Nunca, Un poco, una cantidad justa, una cantidad moderada, o muy a menudo?

(0) Nunca.
(1) Un Poco.
(2) Una Cantidad Justa.
(3) Una Cantidad Moderada.

Q15a. Durante los últimos 12 meses, cuantos días de trabajo o escuela perdió su criatura de años debido a la enfermedad?

_____ Días (INTRODUZCA 0 PARA NINGUNO)

(777) DON'T WORK

(999) REFUSED

Q15b. (MISSED SCHOOL/WORK) Durante los últimos 12 meses, cuantos días de trabajo ha perdido USTED debido a la enfermedad de su criatura de años?

_____ Días (INTRODUZCA 0 PARA NINGUNO)

(777) DON'T WORK

(999) REFUSED

Q16a. (MISSED SCHOOL/WORK) . Durante los últimos 12 meses, cuantos días de trabajo o escuela perdió la criatura de años debido a la Tos Pesada o el congestionamiento del pecho?

_____ Días (INTRODUZCA 0 PARA NINGUNO)

(777) DON'T WORK

(999) REFUSED

Q16b. (MISSED SCHOOL/WORK) Durante los últimos 12 meses, cuantos días de trabajo ha perdido USTED debido a los síntomas de la criatura de años?

_____ Días (INTRODUZCA 0 PARA NINGUNO)

(777) DON'T WORK

(999) REFUSED

Q19. Durante las últimas dos semanas, ¿en cuantos días estuvo la criatura completamente libre de síntomas, esto es decir, sin toser, resollar u otros síntomas de asma?

___ Numero de Dias

(88) NONE

(77) DON'T KNOW

(99) REFUSED

D. HEALTH CARE

Q20 ¿Tiene la criatura de años alguna cobertura de salud? Incluyendo seguro de salud, planes pre-pagados tales como los de HMO o planes del gobierno como Medicare, Medicaid.

Q21.¿Que clase de cobertura de salud (seguro médico) tiene la criatura? Se paga a través del empleador de los padres, o es Medicaid, Medicare, Programa de Seguro de Salud para Niños (CHIP), u otra clase de seguro?

- (1) PARENT'S EMPLOYER
- (2) MEDICAID/ MEDICARE
- (3) CHIP
- (4) OTHER
- (7) DON'T KNOW
- (9) REFUSED

Q22. Durante los últimos 12 meses, ¿hubo alguna ocasión cuando la criatura no tuvo algún seguro de salud o cobertura de salud (seguro médico)?

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q23. Durante los últimos 12 meses, ¿cuántas veces vio la criatura a un médico u otro profesional de la salud, para un examen de rutina para su asma?

- ___ ___ ___ Ingrese Numero
- (888) NONE
 - (777) DON'T KNOW
 - (999) REFUSED

Q24. Un centro (sala) de urgencias, trata a gente con enfermedades o heridas que tienen que ser atendidas inmediatamente y no pueden esperar para una cita médica usual. Durante los últimos 12 meses, ¿ha tenido la criatura de años que visitar una sala de emergencia o centro de urgencias por causa de su asma?

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q24A. Durante los últimos 12 meses, ¿cuántas veces visitó la criatura una sala de emergencia o centro de urgencias por causa de su asma?

- ___ ___ ___ Ingrese Numero
- (888) NONE
 - (777) DON'T KNOW
 - (999) REFUSED

Q25. Un plan de acción para el asma o plan para el control del asma, es un formulario con instrucciones para cambiar la cantidad o clase de medicina, cuando llamar al médico para un consejo y cuando ir a la sala de emergencia. ¿ALGUNA VEZ, algún médico u otro profesional de la salud, le ha dado á usted o á la criatura de años, un plan de acción para el asma?

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q26A. ¿Alguna vez le ha enseñado un médico u otro profesional de la salud, á usted o á la criatura de años como usar un medidor de flujo máximo para ajustar sus medicamentos diarios?

- 1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q26B. ¿Alguna vez le ha enseñado un médico u otro profesional de la salud, á usted o á la criatura de años que hacer durante un episodio o ataque de asma?

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

E. EL MEDIO AMBIENTE

Las próximas preguntas son acerca del hogar de la criatura de años y su medio ambiente. Le preguntaré sobre varias cosas que pueden ser relacionadas a que usted sienta los síntomas de asma. Un limpiador de aire o purificador de aire, puede filtrar la contaminación como polvo, polen, moho y químicos. Se le puede poner al calentador o puede ser un aparato aparte. Sin embargo, no es lo mismo que un filtro normal de un calentador.

Q27. ¿En los últimos 30 días, ha visto u olido alguien moho o humedad adentro del hogar de la criatura? No incluya el moho en la comida.

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q28. En los últimos 30 días, ¿ha visto alguien ratones o ratas adentro del hogar de la criatura? No incluya ratones o ratas que tiene como mascotas.

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q29. ¿En los últimos 30 días ¿ha visto alguien cucarachas adentro del hogar de la criatura?

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q30. Durante la semana pasada, ¿ha fumado alguien adentro del hogar de la criatura?

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q31. ¿Se usa una chimenea de leña o una estufa de leña en el hogar de la criatura?

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q32. ¿Se usan los troncos de gas sin ventilación o chimeneas sin ventilación, o estufas de gas sin ventilación en el hogar de la criatura?

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q33. ¿Se usa gas para cocinar en el hogar de la criatura?

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q34. ¿Se usa un extractor regularmente que ventila hacia fuera, cuando se cocina en el hogar de la criatura?

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q35. ¿Tiene el hogar de la criatura mascotas tales como perros, gatos, hámsteres, pájaros u otras mascotas de plumas o peludos que pasan tiempo adentro de la casa?

- (1) SI
- (2) NO (SKIP TO 7.8)
- (7) DON'T KNOW (SKIP TO 7.8)
- (9) REFUSED

Q36. ¿Se permiten las mascotas en la recamara de la criatura?

- (1) SI
- (2) NO
- (3) SOME ARE/SOME AREN'T
- (7) DON'T KNOW
- (9) REFUSED

Q37. Alfombra o tapetes que no puedan ser lavados?

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q38. ¿Se usa regularmente un limpiador o purificador de aire adentro en el hogar de la criatura? Sin embargo, no es lo mismo que un filtro normal de un calentador.

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q39. ¿Se usa regularmente un deshumidificador para reducir la humedad á dentro en el hogar de la criatura?

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q40. ¿Usa su criatura, una cubierta para su colchón de cama, hecha especialmente para controlar los parásitos (ácaros) de polvo?

Esto no incluye las cubiertas normales de colchones que se usan para colchonar o higiene (humedecimiento) en la cama de la criatura. Estas cubiertas son para el propósito de controlar los alérgenos (como parásitos de polvo) de habitar en el colchón. Están hechas de una tela especial, completamente cubren el colchón y tienen sierres.

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q41. ¿Usa la criatura una cubierta para su almohada, hecha especialmente para controlar los parásitos (ácaros) de polvo?

Esto no incluye las fundas (cubiertas) normales de almohada (cojín) que se usan para proteger. Estas fundas (cubiertas) son para el propósito de controlar los alérgenos (como parásitos de polvo) de habitar en la almohada (el cojín). Están hechas de una tela especial, completamente cubren la almohada y tienen sierres.

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q42. En el baño de su criatura de años, ¿se usa regularmente un extractor de aire que ventila hacia fuera?

- (1) SI
- (2) NO OR "NO FAN"
- (7) DON'T KNOW
- (9) REFUSED

Q43. (TRAFFIC) ¿Cuántas veces pasan Camiones de diesel por la calle donde usted vive durante la semana? Nunca, Raramente, con frecuencia a través del día, o Casi todo el día.

- (0) Nunca.
- (1) Raramente.
- (2) Con Frecuencia a través del día.
- (3) Casi todo el día.
- (777) DK/NR
- (999) REFUSED

Q44. Uno puede comprar medicamentos sin la receta de un doctor. ¿Alguna vez ha usado su criatura de años un medicamento para su asma, sin una receta de un doctor?

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q45. ¿Alguna vez su criatura ha usado un inhalador recetado por un doctor?

- (1) SI
- (2) NO
- (7) DON'T KNOW
- (9) REFUSED

Q45a.

Hay dos tipos de inhaladores de prescripción. Uno es para relevación rápida. El otro no es para relevación rápida pero protege los pulmones Y PREVIENE LOS SINTOMAS A LARGO PLAZO.

¿Tiene su criatura de años un inhalador de RECETA por el cual {él/ella} respira adentro a través de su boca, que le ofrece relevación rápida de los síntomas de Asma?

- (1) SI
- (2) NO
- (7) REFUSED
- (9) DON'T KNOW

¿DURANTE LOS ULTIMOS 3 MESES, {él/ella} ha usado ese inhalador?

- (1) SI
- (2) NO
- (7) REFUSED
- (9) DON'T KNOW

Q45b. ¿Tiene su criatura de años un inhalador de RECETA por el cual él/ella respira adentro a través de su boca, que protege los pulmones Y PREVIENE LOS SINTOMAS A LARGO PLAZO?

- (1) SI
- (2) NO
- (7) REFUSED
- (9) DON'T KNOW

45c. ¿DURANTE LOS ULTIMOS 3 MESES, su criatura ha usado ese inhalador?

- (1) SI
- (2) NO (ACN.100.080)
- (7) REFUSED (ACN.100.080)
- (9) No sabe (ACN.100.080)

PILLS1

¿Tiene su criatura de años una RECETA medica en la forma de píldoras para el tratamiento de Asma?

- (1) SI
- (2) NO [SKIP TO SYRUP]
- (7)DK/NR [SKIP TO SYRUP]
- (9) REFUSED [SKIP TO SYRUP]

PILLS2

En los últimos 3 meses, su criatura ha tomado alguna de esa RECETA médica en la forma de píldoras para el tratamiento de Asma?

- (1) SI
- (2) NO
- (7)DK/NR
- (9) REFUSED

SYRUP1

Tiene su criatura de años una RECETA medica en la forma de Jarabe para el tratamiento de asma?

- (1) SI
- (2) NO [SKIP TO SYRUP]
- (7)DK/NR [SKIP TO SYRUP]
- (9) REFUSED [SKIP TO SYRUP]

SYRUP2

¿En los últimos 3 meses, la criatura ha tomado alguna de esa RECETA médica en la forma de Jarabe para el tratamiento de Asma?

- (1) SI
- (2) NO
- (7)DK/NR
- (9) REFUSED

47a. En la escuela, la criatura es permitida llevar la medicina con él/ella y utilizarla cuando la necesite?

(1) Si

(2) No

(777) DK/NR

(888) ENSEÑAN AL NIÑO EN LA CASA

(999) REFUSED

47b. Es el niño(a) autorizado a usar la medicación en la escuela sin ayuda o permiso?

(1) Si

(2) No

(777) DK/NR

(999) REFUSED

Q48A. ¿Hubo alguna ocasión en los últimos 12 meses, cuando {de anos} necesitó ver a su medico encargado de su salud, para su asma, pero no pudo debido al costo? Año

(1) SI

(2) NO

(7) DON'T KNOW

Q48B. ¿Hubo alguna ocasión en los últimos 12 meses cuando refirieron con un especialista para el cuidado del asma, pero no pudo ir debido al costo?

(1) SI

(2) NO

(7) DON'T KNOW

Q49. ¿Hubo alguna ocasión en los últimos 12 meses, cuando necesitó medicamentos para su asma, pero usted no los pudo comprar debido al costo?

(1) SI

(2) NO

(7) DON'T KNOW

(9) REFUSED

H. DEMOGRAFICOS ADICIONALES DEL NIÑO

Solamente tengo unas preguntas más usadas para propósitos de clasificación.

Q50. ¿Cuánto pesa {child's name}?

___ ___ LIBRAS O ___ ___ KILOGRAMAS

(997) DON'T KNOW

(999) REFUSED

Q51. How tall is {child's name}?

¿Cuánto mide de estatura {child's name}?

__ PIEZ __ __ PULGADASo __ __ __ CENTRIMITOS

97) Don't Know

99) REFUSED

Q52. (ETHNICITY) Por favor seleccione uno de los siguientes grupos étnicos con el que su {niño(a) de __ años} se identifique.

(1) Blanco No-Hispano

(2) Afro-Americano

(3) Hispano/Latino

(4) Asiano/Isleño Pacifico

(5) Otro (Especifique)

(777) DK/NS

(999) REFUSED

Q53. (EDUCATION) La siguiente pregunte es con respecto a **SU nivel de educación. Cuál es el nivel de educación más alto que usted ha completado?**

_____ Incorpore el grado más alto terminado [1-12]

(13) Graduado(a) de Bachillerato. [Escuela Secundaria]

(14) Un poco de escuela después de Bachillerato. [Not a B.A.]

(15) Graduado de la Universidad.

(16) Un poco Poste-Universitario, o escuela Profesional. [With or without degree]

(777) DK/NS

(999) REFUSED

Q54. (INCOME) Diría usted que el combinado ingreso anual en su hogar del año 2011, fue...?

(1) Menos de \$10,000

(2) Entre \$10,000 y \$15,000

(3) Entre \$15,000 y \$20,000

(4) Entre \$20,000 y \$30,000

(5) Entre \$30,000 y \$40,000

(6) Entre \$40,000 y \$50,000

(7) Más de \$50,000

(777) DK/NS

(999) REFUSED

Q55. Cuanto tiempo ha vivido usted en su residencia actual?

_____ Años.

IF LESS THAN 1 YEAR, ENTER 0

IF ANSWER > 0 SKIP Q55a

Q55a. Cuantos meses ha vivido usted en su residencia actual?

_____ Meses.

Q56. Estamos hablando con usted en un teléfono celular?

1. SI

2. NO (**SKIP TO Q58**)

Q57. Tiene usted servicio telefónico en su hogar de parte de su compañía telefónica local además de un plan de servicio celular?

INTERVIEWER: "SI" WIL INCLUDE VOICE-OVER INTERNET PROTOCOL (VOIP) AVAILABLE FROM CABLE COMPANIES.

1. SI

2. NO (**SKIP TO CLOSING**)

Q58. Referimos a ese tipo de servicio como "Línea fija." Es el número telefónico de su Línea Fija publicado o privado?

1. Publicado [**SKIP TO Q60**]

2. Privado [**SKIP TO Q60**]

Q59. En adición de su servicio telefónico línea fija tiene usted también servicio telefónico celular que usa personalmente?

1. SI

2. NO

Q60. [ASK IF RESPONDENT HAS BOTH LL AND CELLULAR PHONE] Comparando como utiliza su línea fija y so servicio celular, usted diría que sus llamadas son, solamente por celular, mayoría por celular, mayoría por línea fija, solamente por línea fija o son divididas uniformemente por celular y línea fija.

1. Solamente por celular.

2. Mayoría por celular.

3. Mayoría por línea fija.

4. Solamente por línea fija.

5. Divididas uniformemente por celular y línea fija.

8. DK/NR

9. REFUSED

Q61A. ¿Usted accedió a la página de Facebook en las últimas 24 horas?

1. SI (**SKIP TO Q61c**)

2. NO

9. DON'T KNOW/NO RESPONSE

Q61B ¿Usted accedió a la página de Facebook en la última semana?

1. SI

2. NO (SKIP TO Q62)

9. DON'T KNOW/NO RESPONSE (SKIP TO Q62)

Q61C. ¿Cuánto tiempo dedico accediendo Facebook la semana pasada?

1. NADA

2. MENOS DE 2 HORAS

3. 2 HORAS PERO MENOS DE 5 HORAS

4. 5 HORAS A 10 HORAS

5. MAS DE 10 HORAS

6. DON'T KNOW/NO RESPONSE

CLOSING: Esto concluye todas nuestras preguntas, Muchas Gracias por su tiempo, cooperación y ayuda en este proyecto.

SQ62 [444] Para nuestra última pregunta, hemos preguntado cantidades de preguntas de la criatura de años.

¿Nos podrá decir el mes y el año que nació la criatura?

SCARD [445] Hemos concluido con las preguntas. Podemos mandarle una tarjeta pre-pagada de Amazon.com o Wal-Mart.

La tarjeta pre-pagada de Amazon puede ser utilizada únicamente a través el internet y se la podemos hacer llegar en solo unos días por medio de su correo electrónico. O si prefiere, la puede recibir por el correo a su domicilio en un par de semanas.

La tarjeta pre-pagada de Wal-Mart puede ser utilizada en compras en la internet o en la tienda. Al elegir esta tarjeta necesitaremos el domicilio de su casa y se la haremos llegar entre dos semanas.

¿Prefiere Usted la tarjeta de Amazon o de Wal-Mart?

Amazon

Walmart

Prefer not to receive a gift card

SAMAZON1 ¿Prefiere recibir la tarjeta vía su correo electrónico o a su domicilio en donde vive?

Correo Electrónico

Domicilio

SNAME3 Por favor deme su primer nombre y su apellido.

SEMAIL1 ¿Cuál es su correo electrónico?

SNAME Por favor deme su primer nombre y su apellido.

SADDR1 ¿Cuál es el número y calle de su casa?

SCITY ¿Cuál es la ciudad donde vive?

SZPCODE ¿Cuál es su código postal?

SQTHANK1 MUCHAS GRACIAS POR SU TIEMPO Y COOPERACIÓN.

(INTERVIEWER KEY GENDER)

Femenino

Masculino

STHANK2 Gracias por tomar nuestra llamada, pero este estudio únicamente es para hogares con menores de 18 años. Tenga un buen día.

STHANK3 Gracias por tomar nuestra llamada, pero este estudio únicamente es para hogares con menores de 18 años. Tenga un buen día.

STHANK4 MUNCHAS GRACIAS POR TOMAR NUESTRA LLAMADA, TENGA UN BUEN DÍA.

STHANK5 Gracias por tomar nuestra llamada, pero este estudio únicamente es para hogares con menores de 18 años. Tenga un buen día.

Short Form Mail Survey

State of Texas Health Status and Needs Survey (Short Form)

This is our third mail attempt requesting your participation in this survey. We know your time is valuable and have reduced the questionnaire length to one page. Please take time to answer the questions and return the questionnaire in the postage paid envelope. If you prefer to fill out the comprehensive version of the survey, you can access it at www.UNTSurvey.com, using the login information at the bottom of this page. This study has been reviewed and approved by the University of North Texas Institutional Review Board. Your participation is voluntary. If you have any questions, you can call 1-800-687-7055.

1. Start by providing the age and gender of each household member in the table below beginning with you.

Household Member Label (Use for questions 2 and 3)	Age (Write each person's age)	Gender (Circle your answer)	
— A —		M	F
— B —		M	F
— C —		M	F
— D —		M	F
— E —		M	F
— F —		M	F
— G —		M	F
— H —		M	F

2. Have any of the people in Question 1 ever told by a doctor or other health professional that he/she has asthma? Circle the letter of just these people below.

A	B	C	D	E	F	G	H
---	---	---	---	---	---	---	---

3. Do any of the people in the table above **still have asthma**? Circle the letter below of the people who have asthma.

A	B	C	D	E	F	G	H
---	---	---	---	---	---	---	---

4. Circle the letter of any persons who had any asthma symptoms in the last 12 months.

A	B	C	D	E	F	G	H
---	---	---	---	---	---	---	---

5. Race/ethnicity

- White non-Hispanic African American Hispanic/Latino
 Asian Other _____

6. How long have you lived at your current residence?

YEARS	MONTHS

7. Which of the following phone services do you have? (Check all that apply)

- Cellular phone service ➡ The number of cell phone numbers YOU ANSWER: _____
 Home phone service ➡ The number of non-cellular, home phone numbers YOU ANSWER: _____

8. Income

- Less than \$10,000 Between \$10,001 and \$15,000
 Between \$15,001 and \$20,000 Between \$20,001 and \$30,000
 Between \$30,001 and \$40,000 Between \$40,001 and \$50,000 More than \$50,001

9. Highest education level of anyone in the household

- High school or less Some college/technical school College graduate
 Some graduate school without completing graduate degree Master's degree/Ph.D.

For Comprehensive Survey:
www.UNTSurvey.com
 Login: 1222 Password: 3333

Return survey to:
 UNT Survey Research Center
 1155 Union Circle #310637, Denton, TX 76203

Letters

Notification Letter

April 19, 2011

«SRCID»

RESIDENT

<ADDRESS1> <apt>

«CITY» «STATE» «ZIP»-<zip4>

Within the next few weeks, you will receive a phone call to participate in an important research project being conducted for the State of Texas. The project is designed to understand the health status and needs of people in Texas.

I am writing in advance of the call because we have found that many people like to know ahead of time that they will be contacted. Your household was selected as part of a random sample of households throughout the state and in selected neighborhoods.

Results of the survey will be used by the Texas Department of State Health Services and the Texas Commission on Environmental Quality to understand the health of people in relation to their environment in various regions of Texas. The survey is being conducted by the University of North Texas Survey Research Center.

Your participation is very important to the success of the project. Participation is voluntary and you do not need to answer any question you don't want to answer. Three screening questions at the beginning of the call determine if you are qualified to participate. If qualified, the survey will take between 10 to 15 minutes to complete depending on your answers.

Your answers are completely confidential and will be released only as summaries in which no one's answers can be identified. Identifying household information such as your address and phone number will be separated from the responses you provide.

One of our interviewers will call you soon to ask you to take part in the interview. We hope you will accept our call.

Our records show that your phone number is («AC») «prefix»-«M_4digits». If this number is not correct and you wish to participate or if you have any questions, **please call the Survey Research Center at 1-800-687-7055** to answer the survey or to give us your correct phone number so we can contact you. All calls to this number are free. We would also be glad to answer any questions you might have about the study.

The survey is also available at www.UNTSurvey.com if you would prefer to answer online. Your login code is <login> and your password is <password>.

This project has been reviewed and approved by the UNT Institutional Review Board. Thanks in advance for your help!

Sincerely,



Paul Ruggiere, Ph.D.

Director

Survey Research Center

19 De abril de 2011

«SRCID»
RESIDENTE
«ADDRESS1» <apt>
«city» «state» «zip»

Dentro de las próximas semanas, recibirá una llamada telefónica para participar en un proyecto de investigación importante que está llevándose a cabo por el estado de Texas. El proyecto está diseñado para comprender el estado de salud y necesidades de las personas en Texas.

Le escribo con anticipación a la llamada porque hemos encontrado que mucha gente desea saber de antemano que los contactará. Su casa fue seleccionada como parte de una muestra aleatoria de hogares en todo el Estado y en barrios seleccionados.

Los resultados del estudio serán utilizados por el departamento de servicios y salud del Estado de Texas y por la Comisión de Texas sobre calidad ambiental para comprender la salud de las personas en relación con su entorno en diversas regiones de Texas. La encuesta está siendo realizada por el centro de investigación de estudio de la Universidad del norte de Texas.

Su participación es muy importante para el éxito del proyecto. La participación es voluntaria y no es necesario responder a cualquier pregunta que no desea responder. Tres preguntas de proyección al principio del cuestionario determinan si estás cualificado para participar. Si calificado, la encuesta será de entre 10 y 15 minutos para completar dependiendo de sus respuestas.

Sus respuestas son completamente confidenciales y serán utilizadas sólo como resúmenes en el cual ninguna respuesta pueda ser identificada. La información identificadora domestica tales como su dirección y número de teléfono serán separadas de las respuestas que usted proporcione.

Uno de los entrevistadores le llamará pronto para pedirle que tome parte en la entrevista. Esperamos que acepte nuestra llamada.

Nuestros registros indican que su número de teléfono es («AC») «prefix»-«m_4digits». Si este número no es correcto y si desea participar o si tiene alguna pregunta, **por favor llame al centro de investigación de encuesta al 1-800-687-7055** para responder a la encuesta o para darnos su número de teléfono correcto para poderlo contactar. Todas las llamadas a este número son gratuitas. También estaremos encantados de responder a cualquier pregunta que tenga sobre el estudio.

La encuesta también está disponible en www.UNTsurvey.com si desea responder en el internet. El código de inicio de sesión es <login> y la contraseña es <password>.

Este proyecto ha sido revisado y aprobado por la Junta de revisión institucional de UNT. Gracias de antemano por su ayuda.

Atentamente,



Paul Ruggiere, Ph.d.

Director

Centro de investigación de encuestas.

Reminder Letter

June 1, 2011

«SRCID»
RESIDENT
«ADDRESS» «APT2»
«CITY» «STATE» «ZipPostal_Code»

Within the last few weeks, we have tried to reach you by telephone to participate in an important research project being conducted for the State of Texas. The project is designed to understand the health status and needs of people in Texas. Your household was selected as part of a random sample of households throughout the state and in selected neighborhoods.

Results of the survey will be used by the Texas Department of State Health Services and the Texas Commission on Environmental Quality to understand the health of people in relation to their environment in various regions of Texas. The survey is being conducted by the University of North Texas Survey Research Center.

Your participation is very important to the success of the project. Participation is voluntary and you do not need to answer any question you don't want to answer. Your answers are completely confidential and will be released only as summaries in which no one's answers can be identified. Identifying household information such as your address and phone number will be separated from the responses you provide.

One of our interviewers will call you soon to ask you to take part in the interview. We hope you will accept our call. Our records show that your phone number is («AREACODE») «PREFIX»-«TELEPHONE». If this number is not correct and you wish to participate or if you have any questions, **please call the Survey Research Center at 1-800-687-7055** to answer the survey or to give us your correct phone number so we can contact you. All calls to this number are free. We would also be glad to answer any questions you might have about the study.

If you have already completed the survey, please accept our thanks for your participation.

The survey is also available online if you would prefer to answer using the Internet.

Location: www.UNTSurvey.com

Click on "State of Texas Health Status and Needs Survey"

Your Login is: «RespNo» Your Password is: «Password»

This project has been reviewed and approved by the UNT Institutional Review Board. Thanks for your help!

Sincerely,



Paul Ruggiere, Ph.D.

Director, Survey Research Center

1 de Junio de 2011

«SRCID»
RESIDENTE
«ADDRESS» «APT2»
«CITY» «STATE» «ZipPostal_Code»

En las últimas semanas, hemos intentado de comunicarnos con usted por teléfono para que participe en un proyecto de investigación importante llevando a cabo por el estado de Texas. El proyecto está diseñado para comprender el estado de salud y necesidades de las personas en Texas. Su casa fue seleccionada como parte de una muestra aleatoria de hogares en todo el Estado y en barrios seleccionados.

Los resultados de la encuesta será utilizada por el Departamento de Servicios de Salud del Estado de Texas y por la Comisión de Calidad Ambiental del Estado De Texas para entender la salud de las personas en relación con su ambiente en diversas regiones de Texas. La encuesta se está realizando a través del el Centro de investigación y estudio de la Universidad Del Norte de Texas.

Su participación es muy importante para el éxito de este proyecto. Su participación es voluntaria y no es necesario responder a cualquier pregunta que no desea responder. Sus respuestas son completamente confidenciales y serán lanzadas sólo como resúmenes en cual así nadie podrá ser identificado. La información identificadora domestica tales como su dirección y número de teléfono serán separadas de las respuestas que usted proporcione.

Uno de los entrevistadores le llamará pronto para pedirle que tome parte en la entrevista. Esperamos que acepte nuestra llamada. Nuestros registros indican que su número de teléfono es («AREACODE») «PREFIX»– «TELEPHONE». Si este número no es correcto y si desea participar o si tiene alguna pregunta, **por favor llame al centro de investigación de encuesta al 1-800-687-7055** para responder a la encuesta o para darnos su número de teléfono correcto para poderlo contactar. Todas las llamadas a este número son gratuitas. También estaremos encantados de responder a cualquier pregunta que tenga sobre el estudio.

Si usted ya ha completado esta encuesta, por favor acepte nuestras gracias por su participación.

La encuesta también está disponible en la red si es que prefiere accederlo vía la internet.

Locación: www.UNTSurvey.com

Haga Clic en “State of Texas Health Status and Needs Survey”

Su Usuario es: «RespNo» Su contraseña es: «Password»

Este proyecto ha sido revisado y aprobado por la Junta de revisión institucional de UNT. Gracias de antemano por su ayuda.

Atentamente,



Paul Ruggiere, Ph.D.

Director, Centro de investigación de encuestas.

June 6, 2011

«SRCID»

RESIDENT

«ADDRESS» «ADD2»

«CITY» «STATE» «ZipPostal_Code»

I am writing you to ask your help in a study of Texas households being conducted for the State of Texas. The project is designed to understand the health status and needs of people in Texas.

Your household was selected as part of a random sample of households throughout the state and within selected neighborhoods.

Results of the study will be used by the Texas Department of State Health Services and the Texas Commission on Environmental Quality to understand the health of people in relation to their environment in various regions of Texas. The survey is being conducted by the University of North Texas Survey Research Center.

Your participation is very important to the success of the project. Participation is voluntary and you do not need to answer any question you don't want to answer. Three screening questions at the beginning of the questionnaire determine if you are qualified to participate. If qualified, the survey will take between 10 to 15 minutes to complete depending on your answers.

Your answers are completely confidential and will be released only as summaries in which no one's answers can be identified. Identifying household information such as your address and phone number will be separated from the responses you provide.

We did not have your phone number in our records. If you are willing to participate, **please call the Survey Research Center at 1-800-687-7055** to answer the survey or to give us your correct phone number so we can contact you. All calls to this number are free. We would also be glad to answer any questions you might have about the study.

The survey is also available at www.UNTsurvey.com if you would prefer to answer online. Your login code is «RespNo» and your password is «Password» for the State of Texas Health Status and Needs Survey.

If you answer the screening questions and are qualified to answer the remainder of the questionnaire, we will send you a \$10 Walmart or Amazon.com gift card as a small token of our appreciation for your participation.

This project has been reviewed and approved by the UNT Institutional Review Board. Thanks in advance for your help!

Sincerely,



Paul Ruggiere, Ph.D.

Director

Survey Research Center

6 De junio de 2011

«SRCID»

RESIDENTE

«ADDRESS» «ADD2»

«CITY» «STATE» «ZipPostal_Code»

Le escribo para pedir su ayuda en un estudio de hogares en Texas que está siendo conducido por el estado de Texas. El proyecto está diseñado para comprender el estado de salud y necesidades de las personas en Texas. Su casa fue seleccionada al azar de una muestra de hogares en todo el Estado y en vecindarios seleccionados. Los resultados del estudio serán utilizados por el departamento de servicios y salud del Estado de Texas y por la Comisión de Texas sobre calidad ambiental para comprender la salud de las personas en relación con su entorno en diversas regiones de Texas. La encuesta está siendo realizada por el centro de investigación de estudio de la Universidad del norte de Texas.

Su participación es muy importante para el éxito del proyecto. La participación es voluntaria y no es necesario responder a cualquier pregunta que no desea responder. Tres preguntas de proyección al principio del cuestionario determinan si estás cualificado para participar. Si calificado, la encuesta será de entre 10 y 15 minutos para completar dependiendo de sus respuestas.

Sus respuestas son completamente confidenciales y serán utilizadas sólo como resúmenes en el cual ninguna respuesta pueda ser identificada. La información identificadora domestica tales como su dirección y número de teléfono serán separadas de las respuestas que usted proporcione.

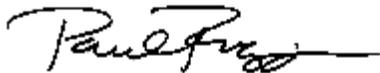
No teníamos tu número de teléfono en nuestros registros. Si usted está dispuesto a participar, **por favor llame al centro de investigación de encuesta al 1-800-687-7055** para responder a la encuesta o para darnos su número de teléfono correcto para contactarlo. Todas las llamadas a este número son gratuitas. También estaremos encantados de responder cualquier pregunta que tenga sobre el estudio.

La encuesta también está disponible en www.UNTsurvey.com si desea responder mediante el internet. El código de inicio de sesión es «RespNo» y la contraseña es «Password» para el estudio de estatus y necesidades de salud del estado de Texas.

Si responde a las preguntas de proyección y está calificado para responder el resto del cuestionario, le enviaremos una tarjeta de regalo de \$10 para Wal-Mart o Amazon.com como una pequeña muestra de nuestro agradecimiento por su participación.

Este proyecto ha sido revisado y aprobado por la Junta de revisión institucional de UNT. Gracias de antemano por su ayuda.

Atentamente,



Paul Ruggiere, Ph.D.

Director, Centro de investigación de encuestas.

(Date)

«RESPNO»

RESIDENT

«ADDRESS» «APT2»

«CITY» «STATE» «ZipPostal_Code»

Within the last few weeks, we have tried to reach you by telephone to participate in an important research project being conducted for the State of Texas. We understand that your time is valuable and for this reason we have reduced the questionnaire length to one page. Please take time to answer the questions and return the questionnaire in the postage-paid envelope.

If you would prefer to fill out the comprehensive survey, it is available online or by phone. Please use the login code and password that have been provided at the bottom of the one-page questionnaire included with this letter.

Location: www.UNTSurvey.com

Click on "State of Texas Health Status and Needs Survey"

This project is designed to understand the health status and needs of people in Texas. Your household was selected as part of a random sample of households throughout the state and in selected neighborhoods. Results of the survey will be used by the Texas Department of State Health Services and the Texas Commission on Environmental Quality to understand the health of people in relation to their environment in various regions of Texas. The survey is being conducted by the University of North Texas Survey Research Center.

Your participation is very important to the success of the project. Participation is voluntary and you do not need to answer any question you don't want to answer. Your answers are completely confidential and will be released only as summaries in which no one's answers can be identified. Information such as your address and phone number will be separated from the responses you provide.

If you would like to take the comprehensive survey over the phone, **please call the Survey Research Center at 1-800-687-7055**. All calls to this number are free. We are open Monday through Friday from 1pm to 9pm and we would also be glad to answer any questions you might have about the study. This project has been reviewed and approved by the UNT Institutional Review Board.

If you have already completed the survey, please accept our thanks for your participation. Thanks for your help!

Sincerely,



Paul Ruggiere, Ph.D.

Director, Survey Research Center

(Date)

«RESPNO»

RESIDENT

«ADDRESS» «APT2»

«CITY» «STATE» «ZipPostal_Code»

En las últimas semanas, le hemos enviado invitaciones por correo para que participe en un proyecto de investigación importante llevando a cabo por el estado de Texas. Sabemos que su tiempo es valioso y se ha reducido la encuesta a solo una página de largo. Por favor tome tiempo para responder a las preguntas y enviar el cuestionario en el sobre pre-pagado.

Si es que prefiere llenar la versión detallada de la encuesta, puede acceder lo electrónicamente en la red usando la información de acceso al fondo de la encuesta incluida en esta carta.

Sitio: www.UNTSurvey.com

Seleccione: "State of Texas Health Status and Needs Survey"

El proyecto está diseñado para comprender el estado de salud y necesidades de las personas en Texas. Su casa fue seleccionada como parte de una muestra aleatoria de hogares en todo el Estado y en barrios seleccionados. Los resultados del estudio serán utilizados por el departamento de servicios y salud del Estado de Texas y por la Comisión de Texas sobre calidad ambiental para comprender la salud de las personas en relación con su entorno en diversas regiones de Texas. La encuesta está siendo realizada por el centro de investigación de estudio de la Universidad del norte de Texas.

Su participación es muy importante para el éxito del proyecto. La participación es voluntaria y no es necesario responder a cualquier pregunta que no desea responder. Sus respuestas son completamente confidenciales y serán utilizadas sólo como resúmenes en el cual ninguna respuesta pueda ser identificada. La información identificadora domestica tales como su dirección y número de teléfono serán separadas de las respuestas que usted proporcione.

Si es que prefiere llenar la versión detallada de la encuesta, puede llamar al Centro de Investigaciones y Encuestas al 1-800-687-7055 entre la 1:00 pm a 9:00 pm, donde lo atenderá un representante en vivo. Todas las llamadas a este número son gratuitas. También estaremos encantados de responder a cualquier pregunta que tenga sobre el estudio. Este proyecto ha sido revisado y aprobado por la Junta de revisión institucional de UNT.

Si Usted ya lleno este cuestionario, acepte nuestras gracias por su participacion. Muchas gracias por su ayuda!

Sincerely,



Paul Ruggiere, Ph.D.

Director, Survey Research Center