

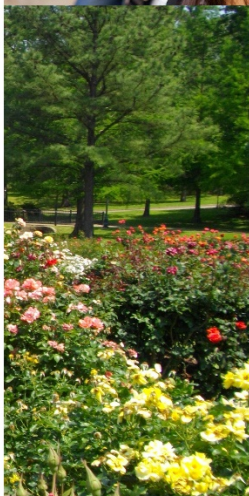


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The University of Texas  
Health Science Center at Tyler

**UTHEALTH**  
NORTHEAST



# The Health Status of Northeast Texas 2016





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## Table of Contents

<b>Table of Figures</b> .....	<b>i</b>
<b>Table of Tables</b> .....	<b>v</b>
<b>Executive Summary</b> .....	<b>1</b>
Introduction.....	1
Population Description .....	2
Geographic Health Disparities.....	3
Health Disparities within Northeast Texas.....	4
Determinants of Geographic Health Disparities facing Northeast Texas .....	4
Conclusion .....	5
<b>Overview</b> .....	<b>7</b>
Geographic, Demographic, and Socioeconomic Characteristics .....	7
All-Cause Mortality Rates and Leading Causes of Death .....	10
Composite County Health Rankings.....	13
Self-Rated Health .....	14
Access to Health Services .....	14
<b>Leading Causes of Death in Northeast Texas</b> .....	<b>16</b>
1. Heart Disease.....	16
Coronary Heart Disease .....	16
2. Cancer .....	18
Site-Specific Cancers.....	20
3. Chronic Lower Respiratory Disease.....	26
Chronic Obstructive Pulmonary Disease .....	26
Asthma .....	27
4. Stroke.....	29
5. Unintentional Injury .....	31
<b>Other Chronic Diseases and Conditions</b> .....	<b>34</b>
Diabetes .....	34
Kidney Disease.....	36
Alzheimer’s Disease.....	37

<b>Infectious Disease.....</b>	<b>38</b>
HIV and AIDS .....	38
Tuberculosis .....	40
Vaccine-Preventable Infectious Diseases .....	41
<b>Mental/Behavioral Health.....</b>	<b>43</b>
Suicide .....	43
Alcohol and Drug Abuse.....	44
<b>Maternal and Infant Health.....</b>	<b>45</b>
Infant Mortality .....	45
Preterm Birth .....	47
Prenatal Risk Factors .....	48
Smoking during Pregnancy.....	48
Maternal Obesity.....	49
Prenatal Care Access .....	50
<b>Leading Modifiable Health Risk Factors for Northeast Texas .....</b>	<b>51</b>
Cigarette Smoking .....	51
Smoking Ordinances.....	51
Physical Inactivity .....	53
Overweight and Obesity.....	54
<b>Appendix</b>	
Data Tables.....	A1
Healthy People 2020 Objectives.....	A24
Definitions .....	A27
Abbreviations .....	A31
Data Sources .....	A32
Bibliography .....	A34

## Table of Figures

Figure 1. Health Service Regions in Texas, Highlighting Northeast Texas .....	2
Figure 2. Racial/Ethnic Composition of Northeast Texas and Texas (2013) .....	7
Figure 3. Population Distribution by Gender: Northeast Texas and Texas (2000 & 2010).....	8
Figure 4. Age-Adjusted All-Cause Mortality Rates: Northeast Texas, Texas, and U.S. (2005-2014) .....	10
Figure 5. Age-Adjusted All-Cause Mortality Rates by Gender: Northeast Texas, Texas and U.S. (2014).....	10
Figure 6. Age-Adjusted All-Cause Mortality Rates by Race/Ethnicity: Northeast Texas, Texas and U.S. (2014) .....	10
Figure 7. All-Cause Mortality Rates by Age Group: Northeast Texas, Texas and U.S. (2014).....	11
Figure 8. Age-Adjusted Mortality Rates for Top 15 Causes of Death: Northeast Texas, Texas and U.S. (2014) .	12
Figure 9. County Health Outcome Rankings: Texas Highlighting Northeast Texas.....	13
Figure 10. County Health Factors County Rankings: Texas Highlighting Northeast Texas .....	13
Figure 11. Age-Adjusted Prevalence of Adults Reporting $\geq 14$ Days in the Previous Month of Poor Physical Health: Northeast Texas and Texas (2014).....	14
Figure 12. Age-Adjusted Prevalence of Adults Perceiving Health in General as Fair or Poor: Northeast Texas and Texas (2014) .....	14
Figure 13. Percent of Population with Health Insurance Coverage by Age Group: Northeast Texas, Texas and U.S. (2010-2014) .....	14
Figure 14. Age-Adjusted Prevalence of Adults who Report Not Visiting a Doctor in Past Year Because of Medical Cost: Northeast Texas and Texas (2014) .....	15
Figure 15. People per Primary Care Physician in Texas Counties (2015) .....	15
Figure 16. Age-Adjusted Heart Disease Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014) .....	16
Figure 17. Age-Adjusted Coronary Heart Disease Mortality Rates: Northeast Texas, Texas and U.S. (2005- 2014).....	16
Figure 18. Heart Disease Prevalence: Northeast Texas and Texas (2014).....	17
Figure 19. Age-Adjusted Coronary Heart Disease Mortality Rates by Gender: Northeast Texas, Texas and U.S. (2014).....	17
Figure 20. Age-Adjusted Coronary Heart Disease Mortality Rates by Race/Ethnicity: Northeast Texas, Texas and U.S. (2014) .....	17
Figure 21. Age-Adjusted Cancer Incidence Rates: Northeast Texas, Texas and U.S. (2003-2012).....	18
Figure 22. Age-Adjusted Cancer Mortality Rates: Northeast Texas, Texas and U.S. (2003-2012).....	18
Figure 23. Age-Adjusted Cancer Mortality Rates by Gender: Northeast Texas, Texas and U.S. (2012).....	19
Figure 24. Age-Adjusted Cancer Incidence and Mortality Rates by Gender: Northeast Texas (2003-2012).....	19
Figure 25. Age-Adjusted Cancer Mortality Rates by Race/Ethnicity: Northeast Texas, Texas and U.S. (2012) .	19
Figure 26. Age-Adjusted Cancer Mortality Rates by Type of Cancer: Northeast Texas, Texas and U.S. (2012)..	20
Figure 27. Age-Adjusted Cancer Incidence Rates by Type of Cancer: Northeast Texas, Texas and U.S. (2012).	20

Figure 28. Cancer Incidence and Mortality by Cancer Site: Northeast Texas (2012).....21

Figure 29. Male Cancer Incidence and Mortality by Cancer Site: Northeast Texas (2012).....21

Figure 30. Female Cancer Incidence and Mortality by Cancer Site: Northeast Texas (2012).....21

Figure 31. Age-Adjusted Lung Cancer Mortality Rates by Gender: Northeast Texas (2004-2012) .....22

Figure 32. Age-Adjusted Lung Cancer Mortality Rates by Race/Ethnicity: Northeast Texas (2004-2012) .....22

Figure 33. Age-Adjusted Lung Cancer Mortality Rates for Northeast Texas Counties (2012) .....23

Figure 34. Age-Adjusted Colorectal Cancer Mortality Rates by Race/Ethnicity: Northeast Texas, Texas and U.S. (2012).....24

Figure 35. Age-Adjusted Colorectal Cancer Mortality Rates by Gender: Northeast Texas, Texas and U.S. (2012) .....24

Figure 36. Age-Adjusted Female Breast Cancer Mortality Rates by Race/Ethnicity: Northeast Texas, Texas and U.S. (2012) .....25

Figure 37. Age-Adjusted Mortality Rates for COPD in adults  $\geq 45$  years-old: Northeast Texas, Texas and U.S. (2005-2014) .....26

Figure 38. Age-Adjusted Prevalence of COPD among Adults: Northeast Texas and Texas (2014) .....26

Figure 39. Age-Adjusted Mortality Rates for COPD in adults  $\geq 45$  years old by Race/Ethnicity (2014).....27

Figure 40. Age-Adjusted Mortality Rates for COPD in adults  $\geq 45$  years old by Gender (2014).....27

Figure 41. Prevalence of Asthma among Children by Grade: Northeast Texas and Texas (2009-2010).....27

Figure 42. Age-Adjusted Prevalence of Asthma among Adults: Northeast Texas and Texas (2014) .....28

Figure 43. Asthma Hospitalization Rates by Age Group: Northeast Texas and Texas (2014).....28

Figure 44. Asthma Hospitalization Rates for Children Younger than Five Years-Old: Northeast Texas and Texas (2011-2014).....28

Figure 45. Age-Adjusted Stroke Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014) .....29

Figure 46. Age-Adjusted Stroke Prevalence: Northeast Texas and Texas (2014).....29

Figure 47. Age-Adjusted Stroke Mortality Rates by Race/Ethnicity: Northeast Texas, Texas and U.S. (2014) .30

Figure 48. Age-Adjusted Stroke Mortality Rates by Gender: Northeast Texas, Texas and U.S. (2014) .....30

Figure 49. Age-Adjusted Stroke Hospitalization Rates Overall and by Gender: Northeast Texas and Texas (2014).....30

Figure 50. Age-Adjusted Unintentional Injury Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014)31

Figure 51. Unintentional Injury Mortality Rates by Cause of Injury: Northeast Texas and Texas (2014) .....31

Figure 52. Age-Adjusted Motor Vehicle Injury Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014) .....31

Figure 53. Age-Adjusted Motor Vehicle Injury Mortality Rates by Race/Ethnicity: Northeast Texas and Texas (2014).....32

Figure 54. Age-Adjusted Motor Vehicle Injury Mortality Rates by Gender: Northeast Texas and Texas (2014) .....32

Figure 55. Motor Vehicle Crash Rates: Texas and Northeast Texas (2010-2014) .....33



Figure 56. Percent of Crashes Resulting in a Fatality or Severe Injury: Texas and Northeast Texas (2010-2014) .....33

Figure 57. Age-Adjusted Mortality Rates for Diabetes as Underlying or Multiple Cause: Northeast Texas, Texas and U.S. (2005-2014).....34

Figure 58. Age-Adjusted Prevalence of Adults with Diabetes: Northeast Texas and Texas (2014).....34

Figure 59. Age-Adjusted Mortality Rates for Diabetes as Underlying or Multiple Cause by Race/Ethnicity: Northeast Texas, Texas and U.S. (2014).....35

Figure 60. Age-Adjusted Mortality Rates for Diabetes as Underlying or Multiple Cause by Gender: Northeast Texas, Texas and U.S. (2014).....35

Figure 61. Age-Adjusted Mortality Rates for Kidney Disease: Northeast Texas, Texas and U.S. (2005-2014) ...36

Figure 62. Age-Adjusted Mortality Rates for Kidney Disease by Race/Ethnicity: Northeast Texas, Texas and U.S. (2014).....36

Figure 63. Age-Adjusted Mortality Rates for Kidney Disease by Gender: Northeast Texas, Texas and U.S. (2014).....36

Figure 64. Age-Adjusted Mortality Rates for Alzheimer’s Disease: Northeast Texas, Texas and U.S. (2005-2014).....37

Figure 65. Age-Adjusted Mortality Rates for Alzheimer’s Disease by Race/Ethnicity: Northeast Texas, Texas and U.S. (2014) .....37

Figure 66. Age-Adjusted Mortality Rates for Alzheimer’s Disease by Gender: Northeast Texas, Texas and U.S. (2014).....37

Figure 67. HIV Incidence Rates: Northeast Texas, Texas and U.S. (2010-2014).....38

Figure 68. Diagnoses of AIDS infection: Northeast Texas, Texas and U.S. (2010-2014) .....38

Figure 69. HIV Prevalence: Select Northeast Texas Counties, Northeast Texas and Texas (2014).....39

Figure 70. Age-Adjusted HIV Mortality Rates by Race/Ethnicity: Northeast Texas, Texas and U.S. (2010-2014) .....39

Figure 71. Age-Adjusted HIV Mortality Rates by Gender: Northeast Texas, Texas and U.S. (2010-2014).....39

Figure 72. Tuberculosis Incidence Rates: Northeast Texas and Texas (2014).....40

Figure 73. Tuberculosis Incidence Rates: Northeast Texas and Texas (2014).....40

Figure 74. Immunization Rates for Kindergarten Students: Northeast Texas and Texas (2014-2015) .....41

Figure 75. Immunization Rates for 7<sup>th</sup> Grade Students: Northeast Texas and Texas (2014-2015) .....41

Figure 76. Pertussis Incidence Rates: Northeast Texas and Texas (2011-2014) .....42

Figure 77. Varicella Incidence Rates: Northeast Texas and Texas (2011-2014) .....42

Figure 78. Age-Adjusted Suicide Rates: Northeast Texas, Texas and U.S. (2005-2014).....43

Figure 79. Age-Adjusted Suicide Mortality Rates by Race/Ethnicity: Northeast Texas, Texas, and U.S. (2014) 43

Figure 80. Age-Adjusted Suicide Mortality Rates by Gender: Northeast Texas, Texas, and U.S. (2014) .....43

Figure 81. Age-Adjusted Mortality Rates Due to Alcohol/Drug Use: Northeast Texas, Texas and U.S. (2005-2014).....44

Figure 82. Age-Adjusted Mortality Rates Due to Alcohol/Drug Use by Race/Ethnicity: Northeast Texas, Texas and U.S. (2014) .....44

Figure 83. Age-Adjusted Mortality Rates Due to Alcohol/Drug Use by Gender: Northeast Texas, Texas and U.S. (2014).....44

Figure 84. Percentage of Adults who Report Binge or Heavy Drinking in Past Month: Northeast Texas and Texas (2014) .....44

Figure 85. Infant Mortality, Three-Year Rolling Rates: Northeast Texas and Texas (2005-2013).....45

Figure 86. 2011-2013 Infant Mortality, Three-Year Rolling Rates: Texas Counties Highlighting Northeast Texas .....45

Figure 87. Infant Mortality, Three-Year Rolling Rates by Race/Ethnicity: Northeast Texas and Texas (2011-2013).....46

Figure 88. Preterm Births: Northeast Texas and Texas (2011-2013).....47

Figure 89. Preterm Births: Texas Counties Highlighting Northeast Texas (2013).....47

Figure 90. Percent of Births to a Woman who Smoked During Pregnancy: Texas Counties Highlighting Northeast Texas (2013) .....48

Figure 91. Percent of Births to a Woman who Smoked During Pregnancy: Texas and Northeast Texas (2011-2013).....48

Figure 92. Percent of Births to a Woman Who Was Obese Pre-Pregnancy: Northeast Texas and Texas (2011-2013).....49

Figure 93. Percent of Births to a Woman who was Obese Pre-Pregnancy: Texas Counties Highlighting Northeast Texas (2013) .....49

Figure 94. Percent of Births to a Woman who did not Receive Prenatal Care in the First Trimester: Texas Counties, Highlighting Northeast Texas (2013) .....50

Figure 95. Percent of Births to a Woman who did not Receive Prenatal Care in the First Trimester: Northeast Texas and Texas (2011-2013).....50

Figure 96. Age-Adjusted Prevalence of Current Smoking among Adults (2014) .....51

Figure 97. Percent of Municipalities with 100% Smoke-Free Ordinance Coverage by Settings: Northeast Texas and Texas (2014) .....52

Figure 98. Age-Adjusted Prevalence of Adults Reporting No Past-Month Leisure Time Physical Activity (2014) .....53

Figure 99. Prevalence of Meeting Physical Activity Guidelines among 8<sup>th</sup> and 11<sup>th</sup> Grade Students in Northeast Texas and Texas (2009-2010).....53

Figure 100. Age-Adjusted Prevalence of Overweight and Obesity among Adults: Northeast Texas and Texas (2014).....54

Figure 101. Prevalence of Obesity among 8<sup>th</sup> and 11<sup>th</sup> Grade Students: Northeast Texas and Texas (2009-2010).....54

## Table of Tables

Table 1. Geographic and Demographic Characteristics of Northeast Texas and Texas .....	7
Table 2. Socioeconomic Indicators for Northeast Texas, Texas and the U.S.....	9
Table 3. Age-Adjusted Mortality Rates for Top 5 Causes of Death: Northeast Texas Compared to Texas (2014) .....	11
Table A-1. Characteristics of Northeast Texas Counties.....	A1
Table A-2. Percent of Population with Health Insurance Coverage by Age Group: Northeast Texas, Texas and U.S. (2010-2014) .....	A2
Table A-3. Age-Adjusted All-Cause Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014) .....	A3
Table A-4. Age-Adjusted All-Cause Mortality Rates by Gender, Race/Ethnicity: Northeast Texas, Texas and U.S. (2014).....	A3
Table A-5. All-Cause Mortality Rates by Age: Northeast Texas, Texas and U.S. (2014).....	A3
Table A-6. Leading Causes of Death in Northeast Texas for Males, Number of Deaths and Rates per 100,000 by Age Group (2014).....	A4
Table A-7. Leading Causes of Death in Northeast Texas for Females, Number of Deaths and Rates per 100,000 by Age Group (2014) .....	A5
Table A-8. Age-Adjusted Heart Disease Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014) .....	A6
Table A-9. Age-Adjusted Coronary Heart Disease Mortality Rates: Northeast Texas, Texas and U.S. (2005- 2014).....	A6
Table A-10. Age-Adjusted Coronary Heart Disease Mortality Rates by Race/Ethnicity and Gender: Northeast Texas, Texas and U.S. (2014).....	A6
Table A-11. Age-Adjusted Invasive Cancer Incidence Rates: Northeast Texas, Texas and U.S. (2003-2012) ....	A7
Table A-12. Age-Adjusted Invasive Cancer Incidence Rates by Race/Ethnicity and Gender: Northeast Texas, Texas and U.S. (2012).....	A7
Table A-13. Age-Adjusted Cancer Mortality Rates: Northeast Texas, Texas and U.S. (2003-2012).....	A7
Table A-14. Age-Adjusted Cancer Mortality Rates by Race/Ethnicity and Gender: Northeast Texas, Texas and U.S. (2012).....	A7
Table A-15. Age-Adjusted Invasive Cancer Incidence Rates by Site: Northeast Texas, Texas and U.S. (2012).	A8
Table A-16. Age-Adjusted Cancer Mortality Rates by Site: Northeast Texas, Texas and U.S. (2012) .....	A8
Table A-17. Age-Adjusted Invasive Cancer Incidence and Cancer Mortality Rates by Gender: Northeast Texas (2003-2012) .....	A8
Table A-18. Age-Adjusted Lung Cancer Mortality Rates by County: Northeast Texas (2012) .....	A9
Rates are age-adjusted to the 2000 U.S. Standard Population. Table A-19. Age-Adjusted Lung Cancer Mortality Rates by Race/Ethnicity and Gender: Northeast Texas (2003-2012).....	A9
Table A-20. Age-Adjusted Colorectal Cancer Mortality Rates by Race/Ethnicity and Gender: Northeast Texas, Texas and U.S. (2012).....	A9

Table A-21. Age-Adjusted Female Breast Cancer Mortality Rates by Race/Ethnicity: Northeast Texas, Texas and U.S. (2012) ..... A9

Table A-22. Age-Adjusted Mortality Rates for COPD in adults ≥45 years old: Northeast Texas, Texas and U.S. (2005-2014) .....A10

Table A-23. Age-Adjusted Mortality Rates for COPD in adults ≥45 years old by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2014).....A10

Table A-24. Asthma Hospitalization Rates by Age Group: Northeast Texas and Texas (2014).....A10

Table A-25. Asthma Hospitalization Rates for Children Younger than Five Years-Old: Northeast Texas and Texas (2011-2014).....A10

Table A-26. Age-Adjusted Stroke Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014).....A11

Table A-27. Age-Adjusted Stroke Mortality Rates by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2014) .....A11

Table A-28. Age-Adjusted Stroke Hospitalization Rates Overall and by Gender: Northeast Texas and Texas (2014).....A11

Table A-29. Age-Adjusted Unintentional Injury Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014) .....A12

Table A-30. Unintentional Injury Mortality Rates by Cause of Injury: Northeast Texas and Texas (2014) .....A12

Table A-31. Age-Adjusted Motor Vehicle Injury Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014) .....A12

Table A-32. Age-Adjusted Motor Vehicle Injury Mortality Rates by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2014).....A12

Table A-33. Motor Vehicle Crash Rates: Texas and Northeast Texas (2010-2014) .....A13

Table A-34. Percent of Crashes Resulting in a Fatality or Severe Injury: Texas and Northeast Texas (2010-2014).....A13

Table A-35. Age-Adjusted Suicide Rates: Northeast Texas, Texas and U.S. (2005-2014).....A14

Table A-36. Age-Adjusted Suicide Rates by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2014).....A14

Table A-37. Age-Adjusted Mortality Rates due to Alcohol/Drug Use: Northeast Texas, Texas and U.S. (2005-2014).....A14

Table A-38. Age-Adjusted Mortality Rates due to Alcohol/Drug Use by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2014).....A14

Table A-39. Age-Adjusted Mortality Rates for Diabetes as Underlying or Multiple Cause: Northeast Texas, Texas and U.S. (2005-2014) .....A15

Table A-40. Age-Adjusted Mortality Rates for Diabetes as Underlying or Multiple Cause by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2014) .....A15

Table A-41. Age-Adjusted Mortality Rates for Kidney Disease: Northeast Texas, Texas and U.S. (2005-2014) .....A15

Table A-42. Age-Adjusted Mortality Rates for Kidney Disease by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2014).....A15

Table A-43. Age-Adjusted Mortality Rates for Alzheimer’s Disease: Northeast Texas, Texas and U.S. (2005-2014).....A16

Table A-44. Age-Adjusted Mortality Rates for Alzheimer’s Disease by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2014).....A16

Table A-45. Tuberculosis Incidence Rates per 100,000 by Race/Ethnicity: Northeast Texas and Texas (2014) .....A17

Table A-46. Measures of HIV/AIDS: Select Northeast Texas Counties, Northeast Texas and Texas (2014).....A17

Table A-47. HIV Incidence Rates: Northeast Texas, Texas and U.S. (2010-2014).....A17

Table A-48. Diagnoses of AIDS infection: Northeast Texas, Texas and U.S. (2010-2014) .....A17

Table A-49. Age-Adjusted HIV Mortality Rates Overall and by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2010-2014) .....A18

Table A-50. Pertussis Incidence Rate: Northeast Texas and Texas (2011-2014) .....A18

Table A-51. Varicella Incidence Rate: Northeast Texas and Texas (2011-2014) .....A18

Table A-52. Kindergarten Immunization Rates: Northeast Texas and Texas (2014).....A18

Table A-53. 7<sup>th</sup> Grade Immunization Rates: Northeast Texas and Texas (2014) .....A18

Table A-54. BirthOutcomes and Prenatal Risk Factor Prevalence: Northeast Texas and Texas (2005-2013) A19

Table A-55. Infant Mortality Three-Year Rolling Rates by Race/Ethnicity: Northeast Texas and Texas (2011-2013).....A19

Table A-56. Percent of Municipalities with100% Smoke-Free Ordinance Coverage by Settings: Northeast Texas and Texas (2014) .....A20

Table A-57. Unadjusted and Age-Adjusted Prevalence Measures Assessed via Behavioral Risk Factor Surveillance Survey (BRFSS): Northeast Texas and Texas (2014) .....A21

Table A-58. Definitions of Prevalence Measures Assessed via Behavioral Risk Factor Surveillance Survey (BRFSS).....A22

Table A-59. Prevalence Measures Assessed via School Physical Activity and Nutrition (SPAN) Survey: Northeast Texas and Texas (2014) .....A23

Table A-60. Northeast Texas, Texas and U.S.: Comparisons to Select Healthy People 2020 Targets.....A24

Table A-61. Data Sources and Years for Healthy People Objectives Table Measures.....A26



## Executive Summary

### Introduction

A health status report provides an overview of health in a particular population. In 2012 the Department of State Health Services (DSHS) created a health status report for the state of Texas, which became a valuable resource for policy makers, state and local agencies, and researchers interested in understanding the health-related needs of Texans. A next step in meeting the needs of all Texans is to understand the unique challenges facing different areas of our large and diverse state.

This report describes the health status of the population of Northeast Texas, the 35-county area also referred to as the DSHS Health Service Region 4/5N (Fig. 1). The purpose of this report is to provide a reference for stakeholders interested in promoting the health of Texans in this area and addressing geographic health disparities in Texas. This report can be used to prioritize health issues in the region, identify populations at greatest risk, guide targeted public health action, and set and monitor measurable objectives to improve the health and well-being of the Northeast Texas population. The health status of Northeast Texas is described using available population health indicators, including measures of health outcomes such as mortality rates, measures of health

behaviors such as prevalence of cigarette smoking among adults, and measures of health care access such as the proportion of the population with health insurance.

Where possible population health indicators for Northeast Texas are compared:

- by years,
- to Texas and U.S. rates,
- to Healthy People 2020 targets (1),
- by gender and racial/ethnic subpopulations.

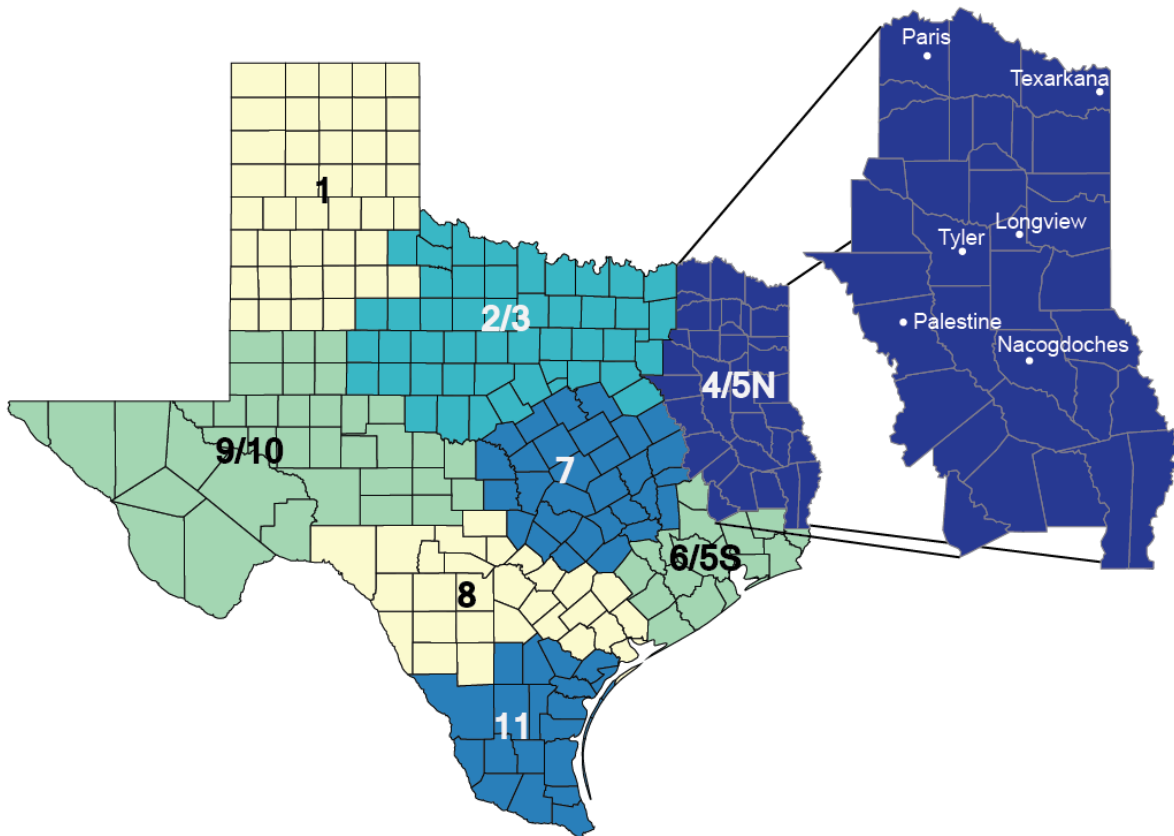
When describing the health status of a region within a state, particularly a rural area such as Northeast Texas, data sources are limited. Detailed mortality data are available through the National Center for Health Statistics, which compiles data from all U.S. death certificates. However, health indicators such as prevalence of health conditions or health behaviors in a population are less available. These types of indicators are estimated via surveys that collect data from a sample of the population, and are typically designed to be representative of either national or state populations. Therefore, this report relies heavily on mortality data, and caution should be used when interpreting survey data. More information on data sources, along with data tables and definitions of terms used in this document, are provided in the appendix.

### Population Description

Northeast Texas is home to just over 1.5 million people, over half of whom live in a rural area. Relative to Texas overall, the Northeast Texas population is slightly older and has a larger proportion of white and

black residents. Although the unemployment rate in the region is slightly lower than in Texas overall, every county in Northeast Texas has a median household income below that of Texas.

Figure 1. Health Service Regions in Texas, Highlighting Northeast Texas





## Geographic Health Disparities

For each of the five leading causes of death in the U.S. — heart disease, cancer, stroke, chronic lower respiratory diseases, and unintentional injury — Northeast Texas experiences higher rates of mortality. If Northeast Texas were a state, in a lineup of the U.S. states it would rank 49<sup>th</sup> in heart disease mortality, 47<sup>th</sup> in chronic lower respiratory disease mortality, and 51<sup>st</sup> in stroke mortality. Northeast Texas as a state would rank 45<sup>th</sup> in overall (all-cause) mortality (after Arkansas and before Louisiana), while Texas ranks 31<sup>st</sup>.

In 2014, mortality rates were 18% higher for males, 20% higher for females, 16% higher for whites, and 7% higher for blacks in Northeast Texas than in Texas overall. For Hispanics, the mortality rate was 33% lower in Northeast Texas than in Texas overall.

In 2014, mortality rates were higher in Northeast Texas than in Texas and in the U.S. for all age groups. If Northeast Texas age-specific mortality rates were the same as those of the rest of Texas in 2014, 2,615 fewer deaths would have occurred (16% of all deaths in Northeast Texas). The age groups in Northeast Texas experiencing the greatest increased mortality risk were those between 25-44 years of age.

Age-adjusted mortality rates in Northeast Texas were higher than in Texas overall for the following causes of death:

- Heart disease and stroke
- Lung and colorectal cancers and melanoma
- Chronic obstructive pulmonary disease (COPD)
- Kidney disease
- Motor vehicle injury
- Suicide
- Infant mortality

The health outcomes for which Northeast Texas had similar or lower mortality rates than Texas overall:

- Breast, prostate and cervical cancers
- Diabetes
- Alzheimer's disease
- Deaths due to alcohol or drug use
- Infectious diseases, including HIV/AIDS

## Health Disparities within Northeast Texas

Within Northeast Texas, mortality due to heart disease, stroke, colorectal and breast cancer, diabetes, HIV/ AIDS and kidney disease was higher among blacks than whites, while mortality due to COPD, Alzheimer's disease, motor vehicle crashes, suicide, and deaths related to alcohol and other drugs were higher among whites than blacks. Importantly, like the rest of the state and the nation, the rate of infant mortality in Northeast Texas was significantly higher among blacks than whites.

## Determinants of Geographic Health Disparities facing Northeast Texas

In order to improve health outcomes in Northeast Texas, it is important to look at the factors that lead to poor health. One critical component for good health is access to healthcare. However, while indicators such as health insurance coverage and availability of primary care physicians suggest that health care access in Northeast Texas is less than optimal, they also suggest that access in this area is similar to that for Texas overall, and therefore do not explain why health outcomes are so much worse in this area of Texas. Likewise, while the prevalence of obesity and

physical inactivity are high, they are similar to the Texas rates, and therefore are unlikely to explain the geographical disparities.

A close look at the data reveals that for most of the causes of death for which rates are higher in Northeast Texas than in Texas overall – including heart disease, stroke, COPD, and the leading cancers in Northeast Texas (lung cancer and colorectal cancer) – a major determinant is tobacco use. Not surprisingly, the rate of tobacco use is substantially higher in Northeast Texas than the rest of the state. In 2014, nearly 1 in 4 adults in Northeast Texas were smokers, compared to 15% in Texas overall. In the same year, 14% of live births in Northeast Texas were to women who smoked during pregnancy, compared to 4% for Texas overall. One of the most impactful steps Northeast Texas can do to improve its health is to address the high rate of tobacco use.

Other important determinants of health status are education and income. As noted previously, every county in Northeast Texas has a median household income below that of Texas. Furthermore, although high school graduation rates are similar in Northeast Texas to Texas, college graduate rates are substantially lower (17% compared to 27%).

## Conclusion

As noted previously, the purpose of this document is to provide the needed data to drive health improvement in Northeast Texas. As described in detail in this document, Northeast Texas has many health challenges and health disparities. Not described in this document, however, are the numerous dedicated health professionals, stakeholders, and community leaders in Northeast Texas

who can and will help coordinate the activities and resources needed to effectively address these issues. Our hope is that this report will aid in focusing those activities and spur on that important work.

Thank you for your interest in the health of Northeast Texas, and commitment to improve health and well-being for all Texans.



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## Overview

### Geographic, Demographic, and Socioeconomic Characteristics

Northeast Texas spans just over 25,000 square miles and is home to approximately 1.5 million people (5.7% of Texas population) (Table 1). Approximately 35% of the population of Northeast Texas resides in the six metropolitan counties (Bowie, Gregg, Newton, Rusk, Smith, and Upshur). Over one-half (55%) of the population lives in a rural area, while less than one-sixth (16%) of the Texas population lives rurally (Table 1).

In contrast to Texas as a whole, where whites are no longer a majority of the population, two-thirds of Northeast Texans are white. The Northeast Texas region also has a slightly larger proportion of black residents, and a substantially smaller proportion of Hispanics (Fig. 2).

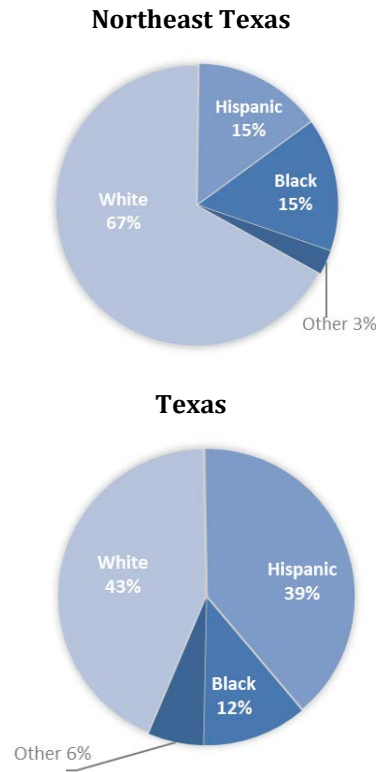
**Table 1. Geographic and Demographic Characteristics of Northeast Texas and Texas**

	Northeast Texas	Texas
Land area (sq. mi.)*	25,328	261,232
Total population**	1,517,767	26,448,193
Population density (people/sq mi)	60	101
Percent living in rural areas*	55%	16%
Gender (% male)**	50.2%	49.7%
Median age**	39	34

\*Data source: U.S. Census Bureau, 2010 Census. Census 2010 Summary File 1. Land Area: Table GCT-PH1; Rural/urban: Table P2.

\*\*Data source: Texas State Data Center and Office of the State Demographer, The University of Texas at San Antonio, Population estimates for July 1, 2013.

**Figure 2. Racial/Ethnic Composition of Northeast Texas and Texas (2013)**



Data source: Texas State Data Center and Office of the State Demographer, The University of Texas at San Antonio, Population estimates for July 1, 2013.

The Northeast Texas population is somewhat older than the population of Texas overall, with a median age of 39 in Northeast Texas and 34 in Texas (Table 1). The Northeast Texas population also has a relative lack of young to early-middle-aged adults, compared

to Texas overall (Fig. 3). The older median age and relative lack of younger adults may be due to a number of factors, including an out-migration of young adults, in-migration of older adults (retirees), and declining birth rates in rural areas (2).

**Figure 3. Population Distribution by Gender: Northeast Texas and Texas (2000 & 2010)**



Data source: U.S. Census Bureau, 2000 & 2010 Census, Summary File 1.

All counties in Northeast Texas have a median household income below that of Texas (Table 2). Compared to the overall Texas and U.S. populations, a smaller proportion of Northeast Texas residents attain higher educational degrees, and a larger proportion

live below the poverty level and experience food insecurity (Table 2). While the unemployment rate in Northeast Texas is slightly lower than that of Texas overall, the percent of full-time workers living in poverty is higher (Table 2).

**Table 2. Socioeconomic Indicators for Northeast Texas, Texas and the U.S.**

	<b>Northeast Texas</b>	<b>Texas</b>	<b>U.S.</b>
<i>Educational attainment (population 25 and older)*</i>			
High school graduate (or equivalency) or higher	82.3%	81.6%	86.3%
Bachelor’s degree or higher	16.9%	27.0%	29.3%
People over age 5 that speak English less than “very well”*	5.3%	14.2%	8.6%
Median annual household income*	~\$29K-\$52K	\$52,576	\$53,482
Households receiving public assistance income (past year)*	1.7%	1.8%	2.8%
Households receiving food stamps/SNAP (Supplemental Nutrition Assistance Program) (past year)*	15.0%	13.5%	13.0%
People whose income in the past year is below the poverty level*			
Females	20.5%	19.2%	16.8%
Males	16.8%	16.1%	14.3%
Less than 18 years-old	27.9%	25.3%	21.9%
65 years-old and older	10.4%	11.2%	9.4%
People whose income in the past 12 months was below 200% of the poverty level*	42.7%	38.7%	34.5%
People below poverty level who worked full-time, year-round the past 12 months*	4.9%	3.8%	3.4%
Civilian labor force ages 16 years and older who are unemployed*	4.6%	4.9%	5.8%
<i>Food-insecurity rate**</i>			
Overall food-insecurity rate (full population)	20.6%	17.6%	15.8%
Child food-insecurity rate (under 18 years old)	28.9%	27.4%	21.4%

\*Data source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates. Educational attainment and Language: Table DP02; Household income: Table S1903; Public assistance income: Table B19057; Food stamps/SNAP: S2201; Employment & Poverty: DP03. Median household income for Northeast Texas is the range of values for the counties in Northeast Texas. (A value for the entire geography is not available.)

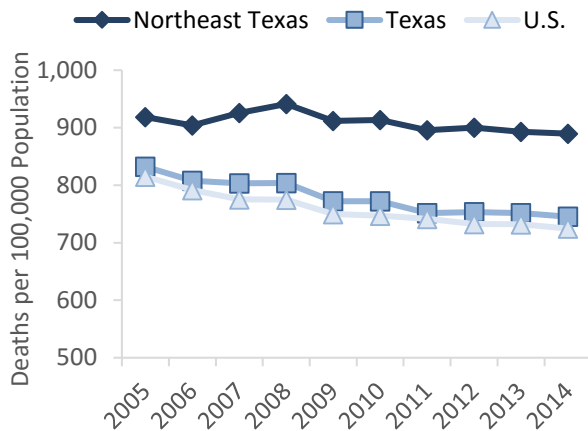
\*\*Data source: Gunderson C, Satoh A, Dewey A, Kato M, Engelhard E. Map the Meal Gap 2015: Food Insecurity and Child Food Insecurity Estimates at the County Level. Feeding America, 2015. Food insecurity rates are determined using data from the U.S. Census Bureau’s 2001-2013 Current Population Survey on individuals in food insecure households.

### All-Cause Mortality Rates and Leading Causes of Death

Compared to Texas overall and the U.S., mortality rates\* are higher in Northeast Texas. While mortality rates declined 10% in Texas from 2005-2014, rates in Northeast Texas declined just 3% (Fig. 4). If in 2014 the Northeast Texas mortality rates had been the same as those in Texas overall by age group, 16% fewer deaths would have occurred, representing 2,615 preventable deaths.

In 2014, within almost every subgroup, mortality rates were higher in Northeast Texas than Texas overall: 18% higher for males, 20% higher for females, 16% higher for whites, and 7% higher for blacks (Figs. 5 & 6). For Hispanics, the mortality rate was 33% lower in Northeast Texas than in Texas overall (Fig. 6).

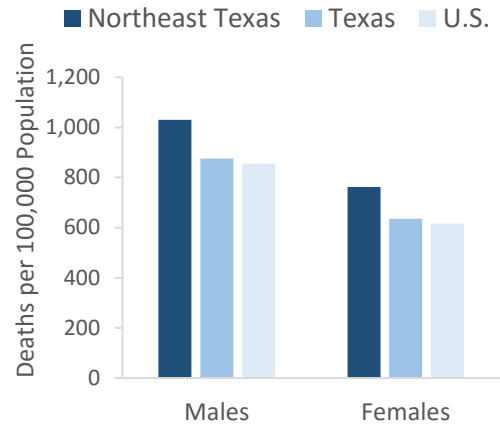
**Figure 4. Age-Adjusted All-Cause Mortality Rates: Northeast Texas, Texas, and U.S. (2005-2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

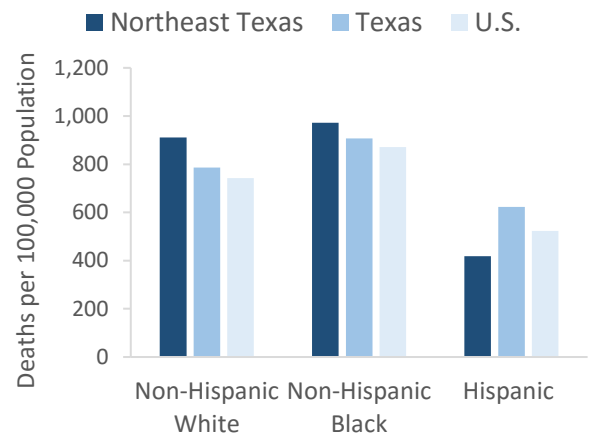
*If in 2014 the Northeast Texas mortality rates had been the same as those in Texas overall, 16% fewer deaths would have occurred, representing 2,615 preventable deaths.*

**Figure 5. Age-Adjusted All-Cause Mortality Rates by Gender: Northeast Texas, Texas and U.S. (2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 6. Age-Adjusted All-Cause Mortality Rates by Race/Ethnicity: Northeast Texas, Texas and U.S. (2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

\* Unless otherwise noted, mortality rates are age-adjusted, using the 2000 U.S. Standard Population.



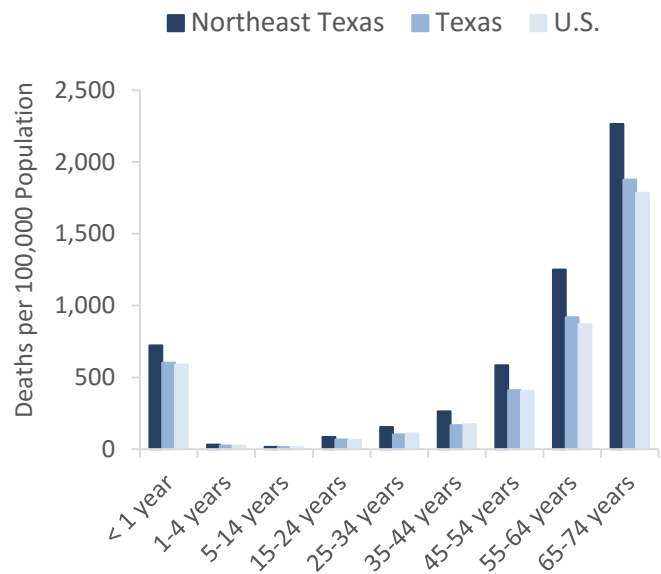
*If Northeast Texas were a state, among states it would rank 47th in chronic lower respiratory disease mortality, 49th in heart disease mortality, 51st in stroke mortality, and 45th in deaths from all causes.*

The geographic disparity in mortality is also seen across age groups (Fig. 7). The age groups in Northeast Texas with the greatest elevated mortality risk are those between 25-44 years of age. In 2014, **the mortality rate was 49% higher for 25-34 year-olds and 57% higher 35-44 year-olds** in Northeast Texas compared to Texas overall.

Geographic disparities are also evident in cause-specific mortality rates. Mortality rates for each of the top five leading causes of death were higher in Northeast Texas than in both Texas and U.S. (Fig. 8). If Northeast Texas were a state, among states it would rank 47<sup>th</sup> in chronic lower respiratory disease mortality, 49<sup>th</sup> in heart

disease mortality, 51<sup>st</sup> in stroke mortality, and 45<sup>th</sup> in deaths from all causes (after Arkansas and before Louisiana) (Table 3).

**Figure 7. All-Cause Mortality Rates by Age Group: Northeast Texas, Texas and U.S. (2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

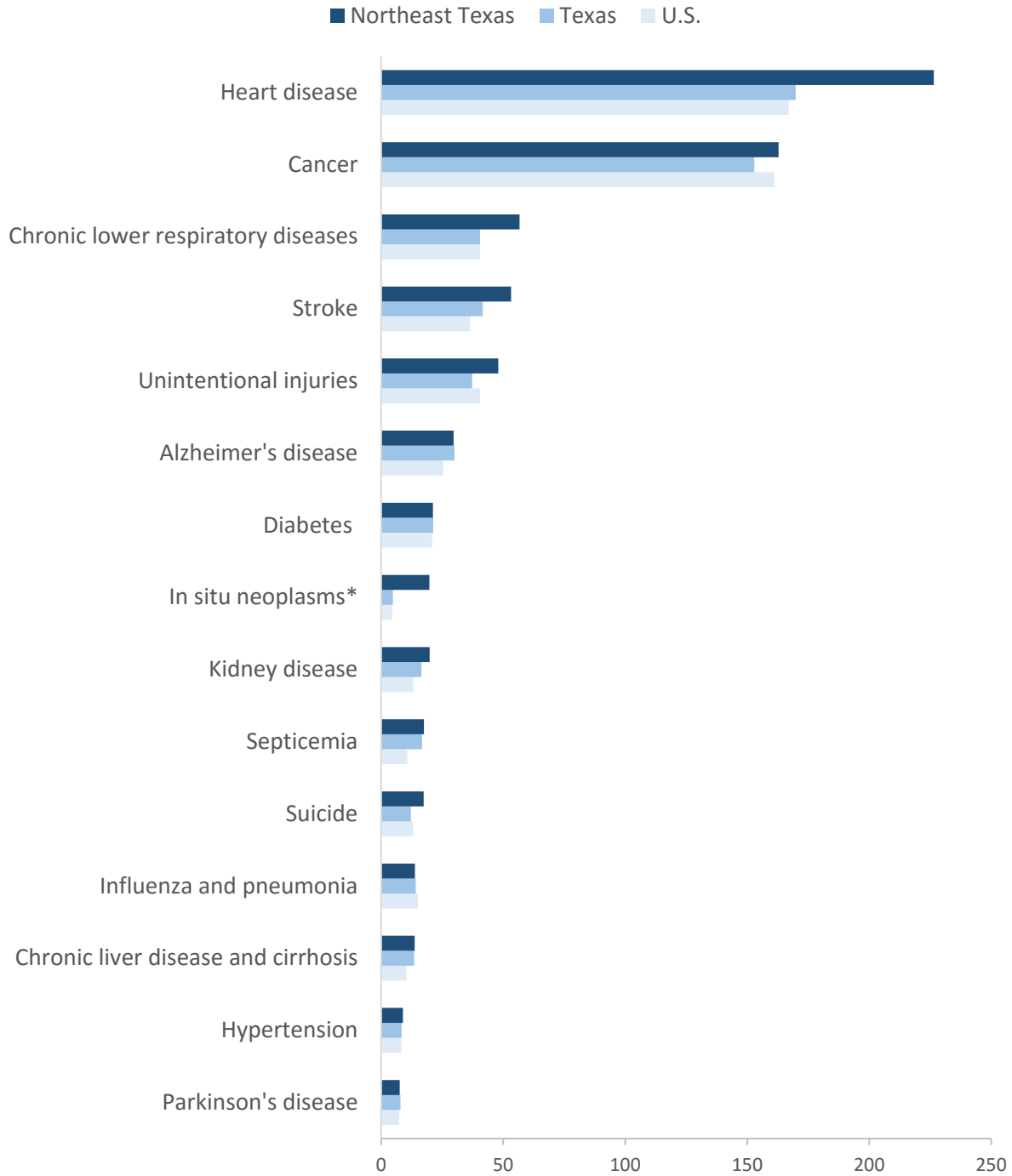
**Table 3. Age-Adjusted Mortality Rates for Top 5 Causes of Death: Northeast Texas Compared to Texas (2014)**

	Texas Rate	Northeast Texas Rate	Rate Difference	% higher rate in Northeast TX	TX State Rank*	Northeast TX "State" Rank*
Heart disease	169.9	226.4	56.5	33%	33 <sup>rd</sup>	49 <sup>th</sup>
Cancer	152.9	162.8	9.9	6%	13 <sup>th</sup>	25 <sup>th</sup>
Chronic lower respiratory diseases	40.5	56.7	16.2	40%	21 <sup>st</sup>	47 <sup>th</sup>
Stroke	41.6	53.2	11.6	28%	38 <sup>th</sup>	51 <sup>st</sup>
Unintentional injuries	37.3	48.0	10.7	29%	9 <sup>th</sup>	34 <sup>th</sup>
<b>All causes</b>	<b>745.3</b>	<b>889.7</b>	<b>144.4</b>	<b>19%</b>	<b>31<sup>st</sup></b>	<b>45<sup>th</sup></b>

\*A rank of 1=best (lowest) rate, 51=worst (highest) rate, with Northeast Texas included as a U.S. "state."

Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 8. Age-Adjusted Mortality Rates for Top 15 Causes of Death: Northeast Texas, Texas and U.S. (2014)**



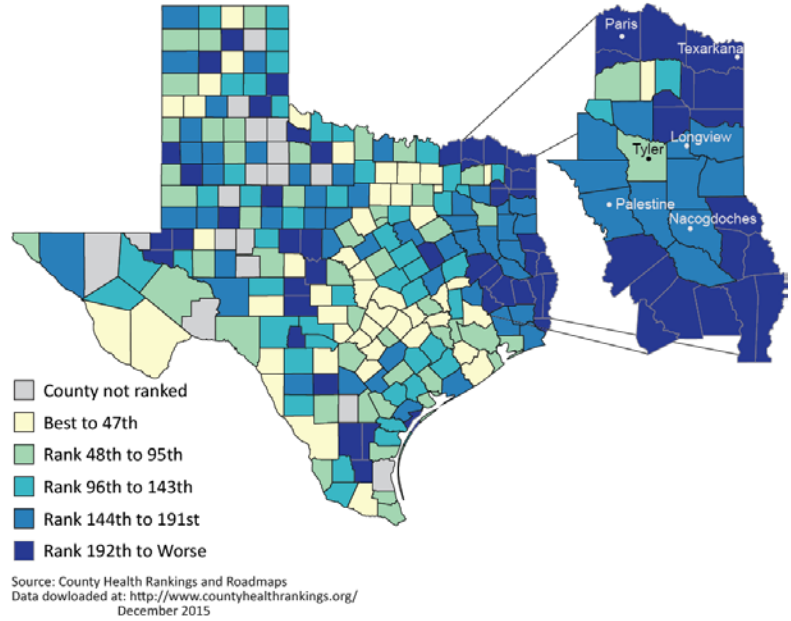
Data source: National Center for Health Statistics on CDC WONDER database.

\*The mortality rate for in situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior is unexpectedly high (over four times higher than that of Texas overall and the U.S.) Given the generally non-lethal nature of these neoplasms, coding errors may explain their position as the 8<sup>th</sup> leading cause of death in Northeast Texas.

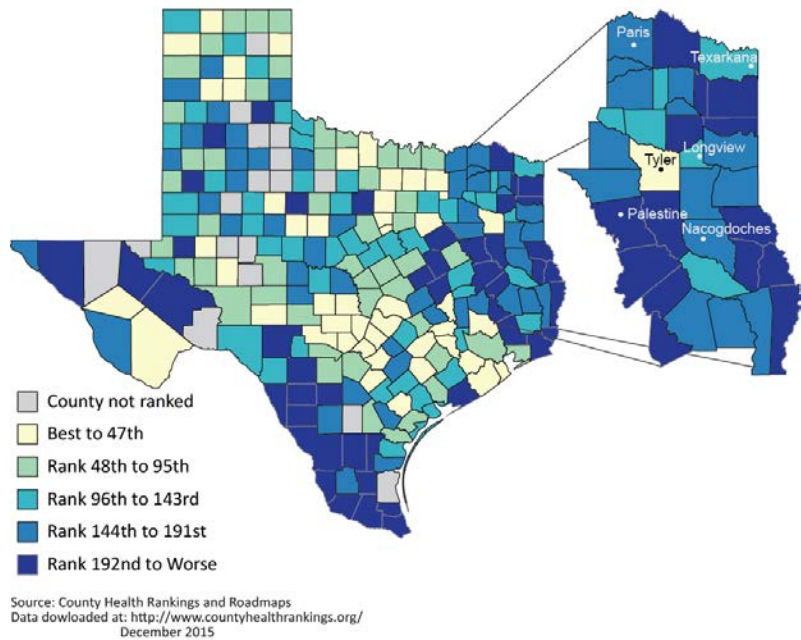
### Composite County Health Rankings

The County Health Rankings & Roadmaps project of the Robert Wood Johnson Foundation generates two county-level composite measures related to health. The health outcomes score is based on an equal weighting of length and quality of life, while the health factors score is a combination of measures of health behaviors, physical environment, and social and economic factors (3). Among all counties in Texas, 30 of the 35 counties in the Northeast Texas region ranked in the worst two quintiles on the health outcomes score (Fig. 9) and 28 of the 35 ranked in the worst two quintiles on the health factors score (Fig. 10).

**Figure 9. County Health Outcome Rankings: Texas Highlighting Northeast Texas**



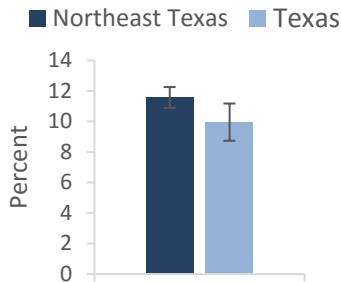
**Figure 10. County Health Factors County Rankings: Texas Highlighting Northeast Texas**



## Self-Rated Health

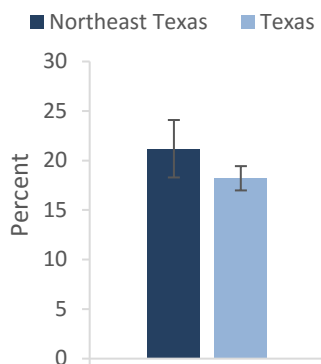
Health perception is an important indicator that assesses how members of a population feel about their overall health. After adjusting for age, 12% of Northeast Texas adults reported 14 or more days of poor physical health (Fig. 11) and 21% reported fair or poor health in general (Fig. 12).

**Figure 11. Age-Adjusted Prevalence of Adults Reporting ≥14 Days in the Previous Month of Poor Physical Health: Northeast Texas and Texas (2014)**



Data source: TX data: Behavioral Risk Factor Surveillance System (BRFSS), Center for Health Statistics, Department of State Health Services. Error bars indicate 95% confidence intervals.

**Figure 12. Age-Adjusted Prevalence of Adults Perceiving Health in General as Fair or Poor: Northeast Texas and Texas (2014)**

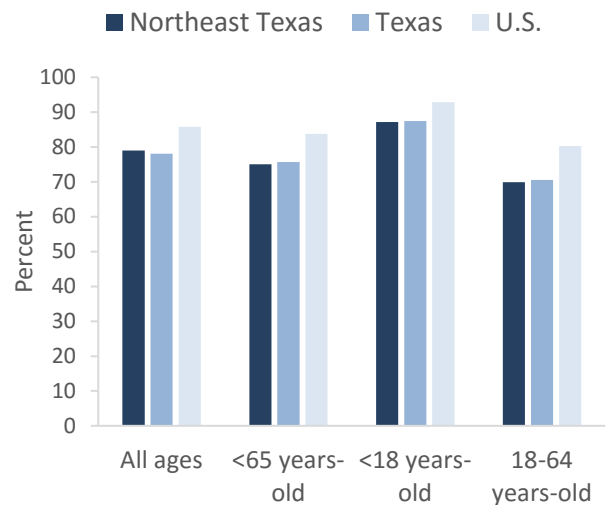


Data source: Behavioral Risk Factor Surveillance System (BRFSS), Center for Health Statistics, Texas Department of State Health Services. Error bars indicate 95% confidence intervals.

## Access to Health Services

Access to health care is important for maintaining health and recovering from illness. Northeast Texas health insurance coverage rates are similar to those of Texas overall, which are below those of the U.S. (Fig. 13). The Healthy People 2020 (HP2020) health insurance coverage target is for 100% of the population less than 65 years-old to have health insurance. In Northeast Texas, 75% of the population less than 65 years of age has health insurance, similar to the percentage in Texas overall, and lower than that of the U.S. (Fig. 13). As in Texas and the U.S., Northeast Texans aged 18-64 years-old have lower rates of health insurance coverage than those younger than 18 years or older than 65 years.

**Figure 13. Percent of Population with Health Insurance Coverage by Age Group: Northeast Texas, Texas and U.S. (2010-2014)**

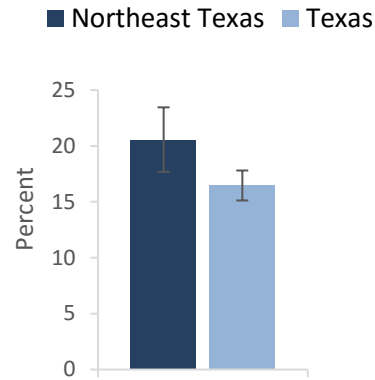


Data source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates: Table DP03.

Other factors affecting health care access include cost and availability of providers. After adjusting for age, 21% of adults in Northeast Texas reported that they had not visited a doctor in the previous twelve months due to cost (Fig. 14). (Data limitations prevent assessing whether these adults lack health insurance.) Northeast Texas has a shortage of primary care health professionals, similar to the rest of the state (Fig. 15).

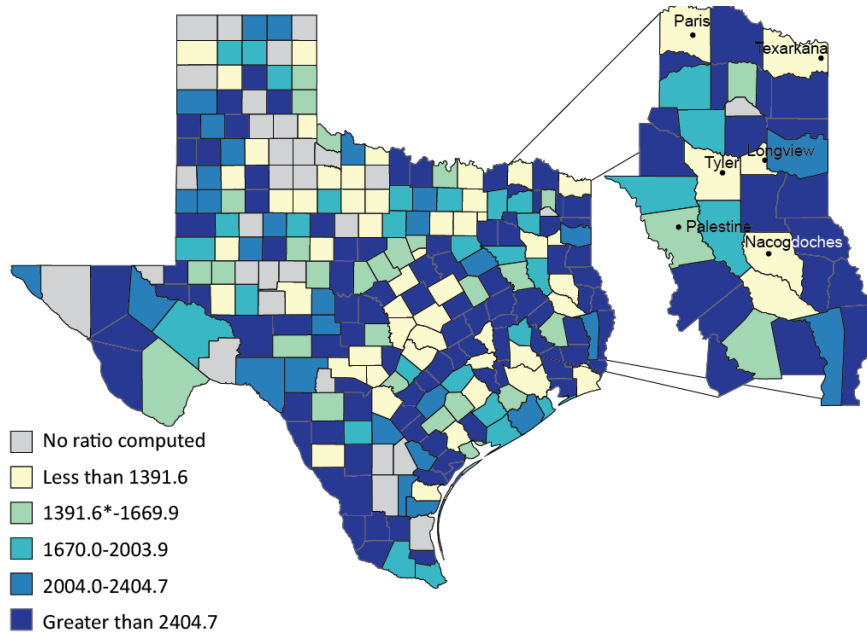
The data suggest that while health care access in Northeast Texas is less than optimal, access in this area is similar to access in the state overall, and therefore is unlikely to account for a significant portion of the geographic health disparities faced by Northeast Texas.

**Figure 14. Age-Adjusted Prevalence of Adults who Report Not Visiting a Doctor in Past Year Because of Medical Cost: Northeast Texas and Texas (2014)**



Data source: Behavioral Risk Factor Surveillance System (BRFSS), Center for Health Statistics, Texas Department of State Health Services. Error bars indicate 95% confidence intervals.

**Figure 15. People per Primary Care Physician in Texas Counties (2015)**



Note: Smaller numbers are better ratios  
 \*Ratio for Texas as a whole  
 Source: Health Professions Resource Center

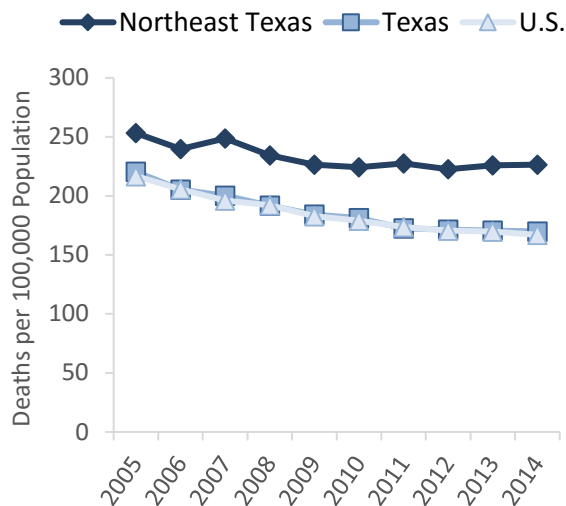
## Leading Causes of Death in Northeast Texas

The following section describes the top five causes of death in Northeast Texas.

### 1. Heart Disease

The leading cause of death in Northeast Texas, Texas and the U.S. is heart disease, which includes a variety of diseases that affect the heart. While heart disease mortality rates have been on the decline, the disparity between rates in Northeast Texas and rates in Texas and the U.S. has grown (Fig. 16). In 2014, the age-adjusted heart disease mortality rate was 33% higher in Northeast Texas than in Texas overall (Table 3). If Northeast Texas were a state, it would rank 49<sup>th</sup> in terms of heart disease mortality rates (Table 3).

**Figure 16. Age-Adjusted Heart Disease Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014)**

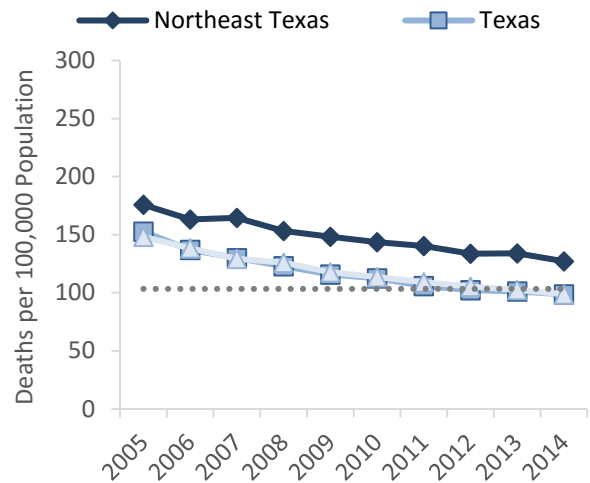


Data source: National Center for Health Statistics on CDC WONDER database. ICD10 codes I00-I09, I11, I13, I20-I51.

### Coronary Heart Disease

The most common type of heart disease in the U.S. is coronary heart disease (CHD), caused by plaque build-up in the walls of the arteries, restricting blood flow (4). When part of the heart muscle does not receive enough blood flow, a heart attack (myocardial infarction) can occur. Modifiable risk factors for coronary heart disease include high blood pressure, high blood cholesterol, cigarette smoking, diabetes, physical inactivity and obesity (5).

**Figure 17. Age-Adjusted Coronary Heart Disease Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014)**

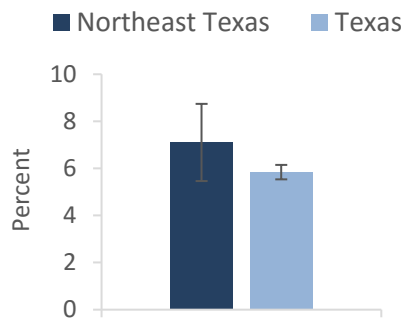


Data source: National Center for Health Statistics on CDC WONDER database. ICD10 codes: I20-I25.

As with heart disease overall, CHD mortality rates have been declining, yet the rate in Northeast Texas has remained above that of Texas and the U.S., both of which met the HP2020 target in 2013 (Fig. 17). After adjusting for age, 7% of Northeast Texas adults in 2014 reported ever being told by a health care professional that they had coronary heart disease, angina, or had a heart attack (Fig. 18). Compared to Texas overall and the U.S., CHD mortality rates are higher in Northeast Texas for males and females (Fig. 19), and for whites and blacks, while rates for Hispanics are lower (Fig. 20).

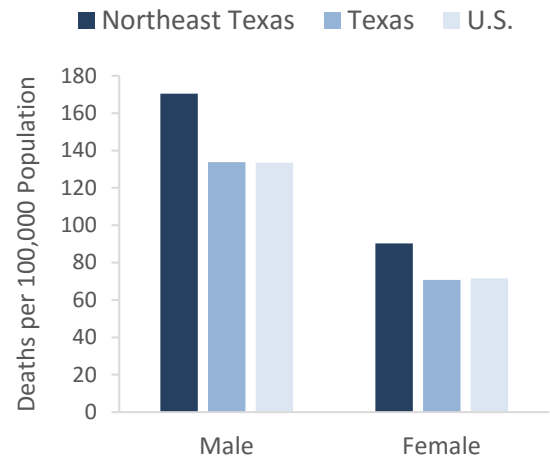
At all geographic levels, males are at a greater risk for CHD mortality than females (Fig. 19), and blacks are at higher CHD mortality risk than whites and Hispanics (Fig. 20).

**Figure 18. Heart Disease Prevalence: Northeast Texas and Texas (2014)**



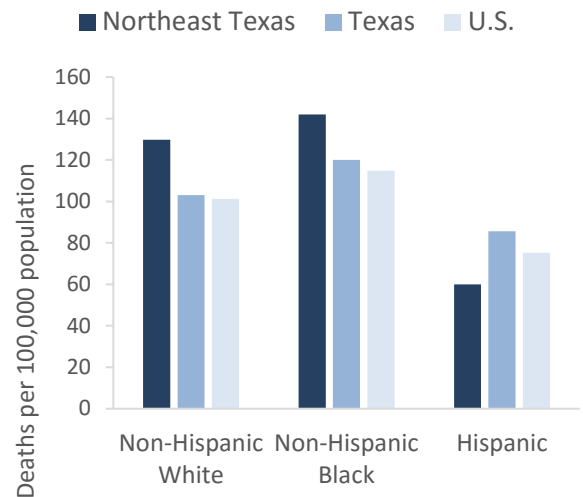
Data source: Behavioral Risk Factor Surveillance System (BRFSS), Center for Health Statistics, Texas Department of State Health Services. Error bars indicate 95% confidence intervals

**Figure 19. Age-Adjusted Coronary Heart Disease Mortality Rates by Gender: Northeast Texas, Texas and U.S. (2014)**



Data source: National Center for Health Statistics on CDC WONDER database. ICD10 codes: I20-I25

**Figure 20. Age-Adjusted Coronary Heart Disease Mortality Rates by Race/Ethnicity: Northeast Texas, Texas and U.S. (2014)**

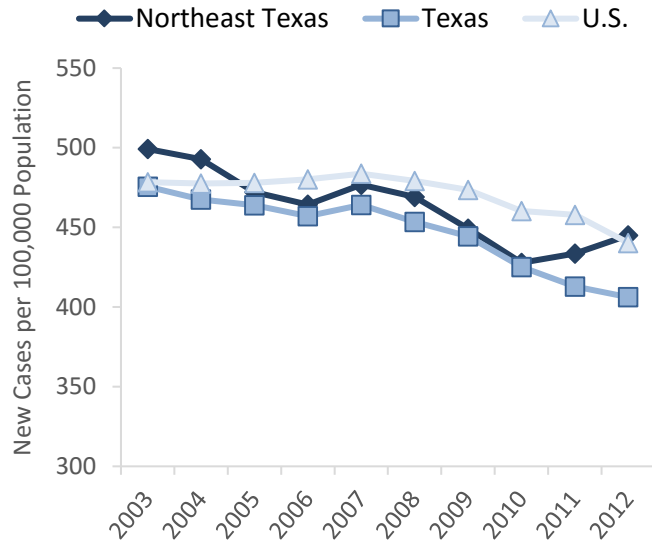


Data source: National Center for Health Statistics on CDC WONDER database. ICD10 codes: I20-I25

## 2. Cancer

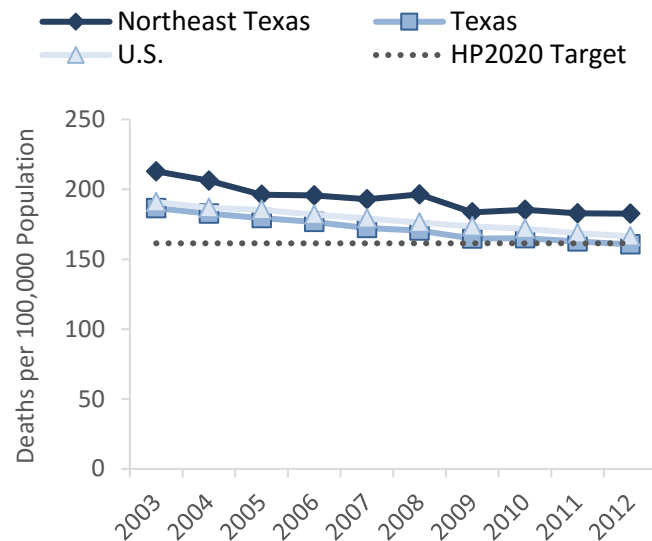
The second leading cause of death in Northeast Texas, Texas and the U.S. is cancer, a collection of diseases characterized by uncontrolled growth of abnormal cells. From 2003-2012, cancer incidence and mortality rates declined at all geographic levels (Figs. 21 & 22). During most of those years, incidence rates were higher in Northeast Texas than in Texas overall, but lower than in the U.S. (Fig. 21). However, throughout this time period cancer mortality rates were between 9-15% higher in Northeast Texas than in Texas, and higher than in the U.S. (Fig. 22). In 2012 cancer incidence rates were 9% higher in Northeast Texas than in Texas overall, while mortality rates were 14% higher.

**Figure 21. Age-Adjusted Cancer Incidence Rates: Northeast Texas, Texas and U.S. (2003-2012)**



Data source: Northeast Texas - Texas Cancer Registry, Department of State Health Services. Texas and National - U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database.

**Figure 22. Age-Adjusted Cancer Mortality Rates: Northeast Texas, Texas and U.S. (2003-2012)**



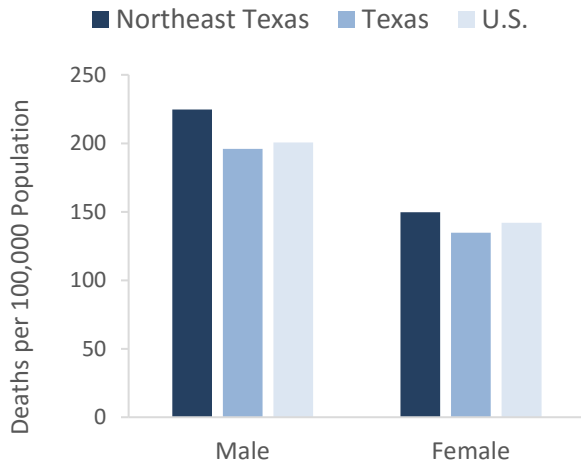
Data source: Northeast Texas - Texas Cancer Registry, Department of State Health Services. Texas and National - U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database.



Both males and females in Northeast Texas experience higher cancer mortality rates in Northeast Texas than in Texas overall (Fig. 23). Men in Northeast Texas have a higher rate of cancer incidence and deaths than do women. However, the decrease in cancer morbidity and mortality from 2003 to 2012 occurred primarily among men (Fig. 24).

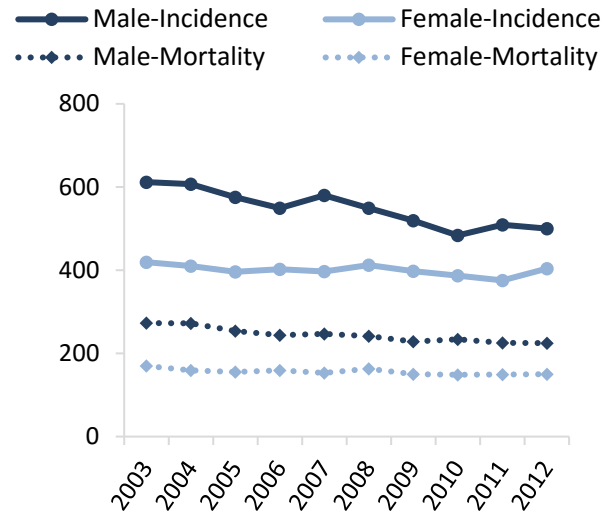
Hispanics in Northeast Texas have slightly lower cancer age-adjusted mortality rates than Hispanics in Texas overall, while the rate for blacks in Northeast Texas is similar to the rate for blacks in Texas overall, and the rate for whites is slightly higher in Northeast Texas than in Texas overall (Fig. 25).

**Figure 23. Age-Adjusted Cancer Mortality Rates by Gender: Northeast Texas, Texas and U.S. (2012)**



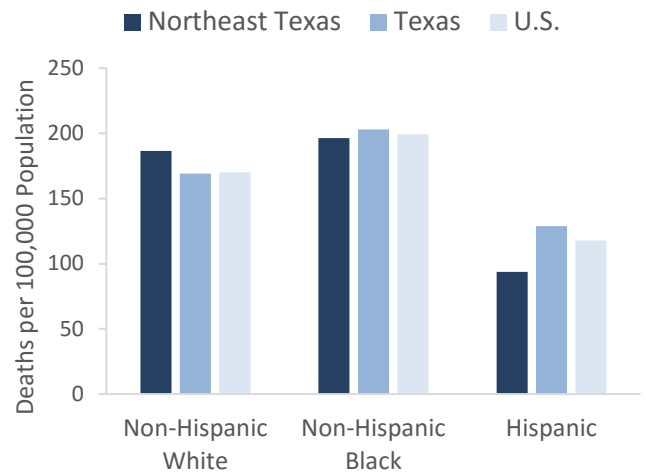
Data source: Northeast Texas - Texas Cancer Registry, Department of State Health Services. Texas and National - U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database.

**Figure 24. Age-Adjusted Cancer Incidence and Mortality Rates by Gender: Northeast Texas (2003-2012)**



Data source: Northeast Texas - Texas Cancer Registry, Department of State Health Services. Texas and National - U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database.

**Figure 25. Age-Adjusted Cancer Mortality Rates by Race/Ethnicity: Northeast Texas, Texas and U.S. (2012)**



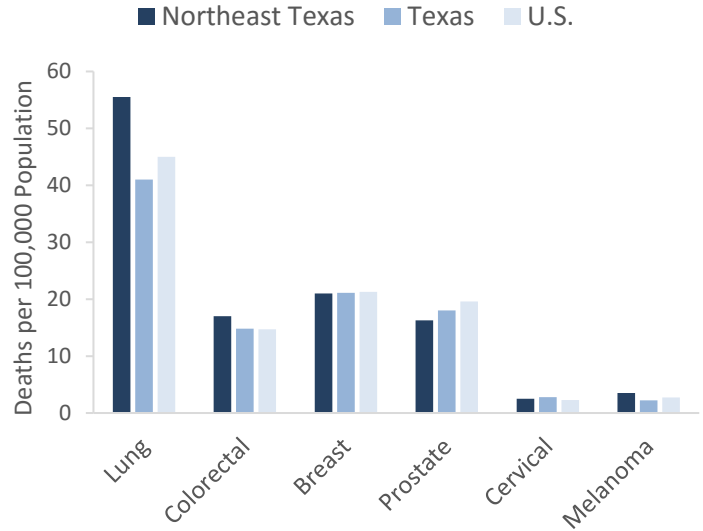
Data source: Northeast Texas - Texas Cancer Registry, Department of State Health Services. Texas and National - U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database.

**Site-Specific Cancers**

Cancer is not just one disease. There are more than one hundred kinds of cancer (6). Of the most common cancers, three types have higher mortality rates in Northeast Texas than in Texas overall: lung cancer, colorectal cancer, and melanoma (Fig 26).

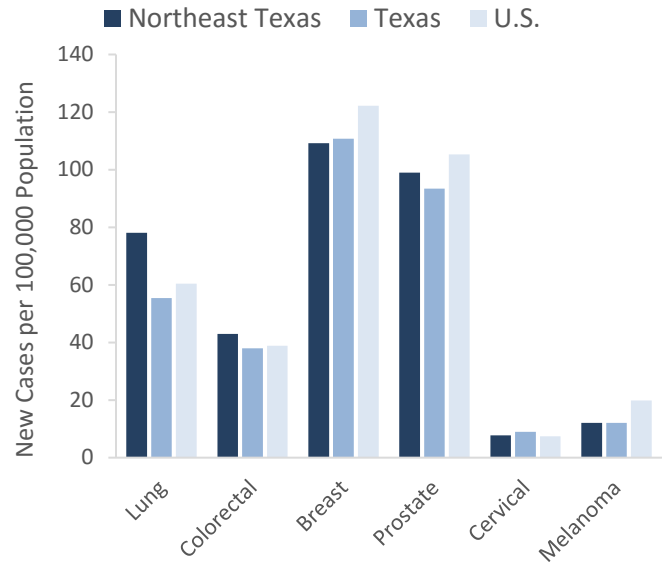
For gender-specific cancers, including female breast cancer, prostate cancer, and cervical cancer, the population count used to calculate incidence and mortality rates is either the number of males or the number of females in the population, rather than the population as a whole. Therefore, although breast cancer and prostate cancer have higher incidence rates than lung cancer (Fig. 27), the largest percentage of new cancer cases in Northeast Texas are lung cancers (Fig. 28). Among males and females, the most common cancers are prostate and breast cancers, respectively, yet the most common cause of cancer deaths in both males and females is lung cancer (Figs. 29 & 30).

**Figure 26. Age-Adjusted Cancer Mortality Rates by Type of Cancer: Northeast Texas, Texas and U.S. (2012)**



Data source: Northeast Texas - Texas Cancer Registry, Texas Department of State Health Services. Texas and National – U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database.

**Figure 27. Age-Adjusted Cancer Incidence Rates by Type of Cancer: Northeast Texas, Texas and U.S. (2012)**



Data source: Northeast Texas - Texas Cancer Registry, Texas Department of State Health Services. Texas and National – U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database.

Figure 28. Cancer Incidence and Mortality by Cancer Site: Northeast Texas (2012)

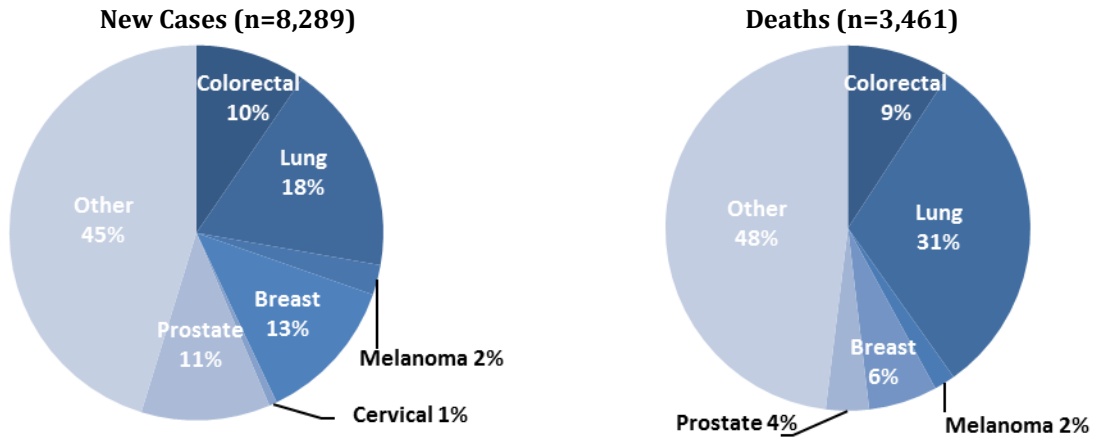


Figure 29. Male Cancer Incidence and Mortality by Cancer Site: Northeast Texas (2012)

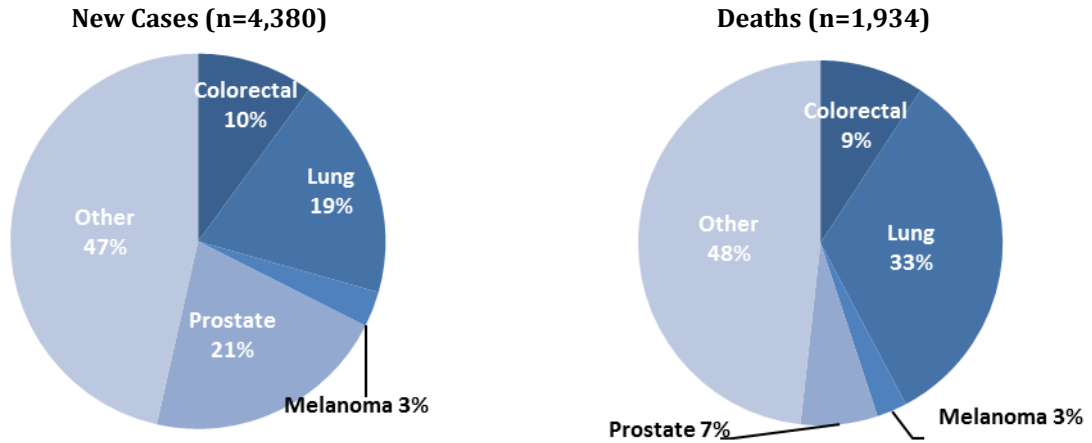
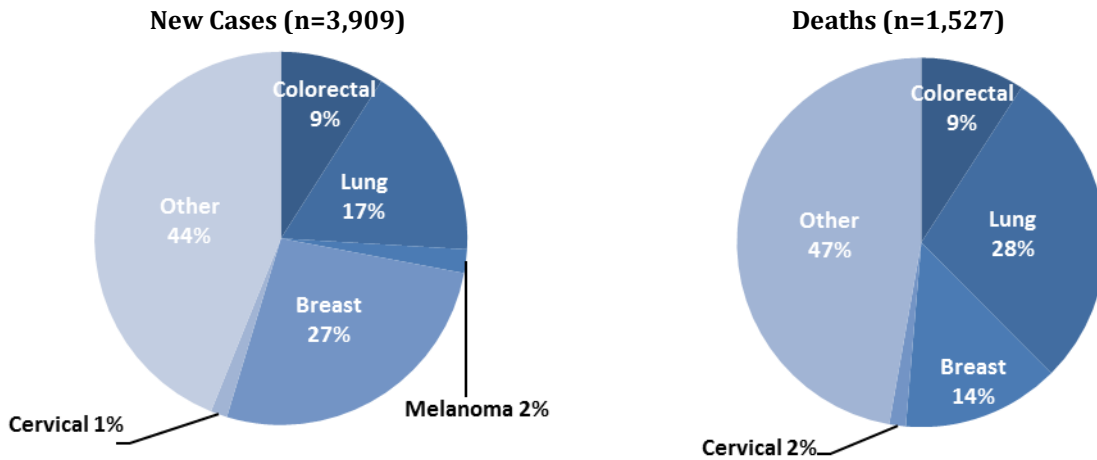


Figure 30. Female Cancer Incidence and Mortality by Cancer Site: Northeast Texas (2012)



Data source (all figures): Northeast Texas - Texas Cancer Registry, Department of State Health Services.

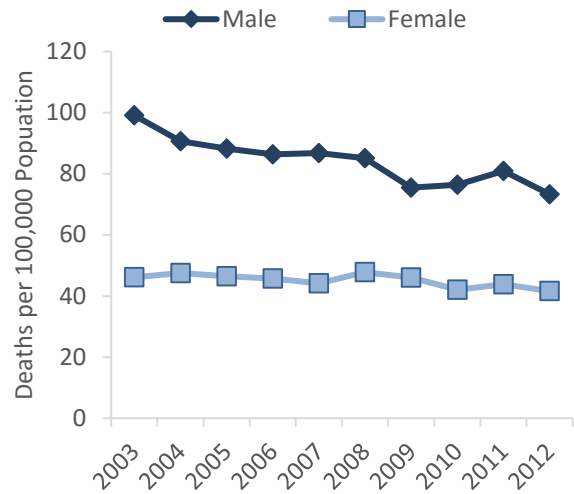
**Lung Cancer**

The biggest killer among cancers is lung cancer. In Northeast Texas in 2012, lung cancer accounted for 18% of new cancer cases and 31% of deaths from cancer (Fig 28). **In 2012, the mortality rate for lung cancer was 35% higher and the lung cancer incidence rate was 41% higher in Northeast Texas compared to Texas overall** (Fig. 26 & 27).

While males are at higher risk of being diagnosed and of dying from lung cancer than females, the gender gap has narrowed as lung cancer mortality rates have declined in recent years among males but not among females (Fig. 31). Rates have also declined among both blacks and whites (Fig. 32). Counties in Northeast Texas experiencing the greatest burden of lung cancer mortality include Marion, Polk, San Jacinto, and Trinity (Fig. 33). Only Wood county experienced a lung cancer mortality rate lower than the state’s rate (Fig. 33).

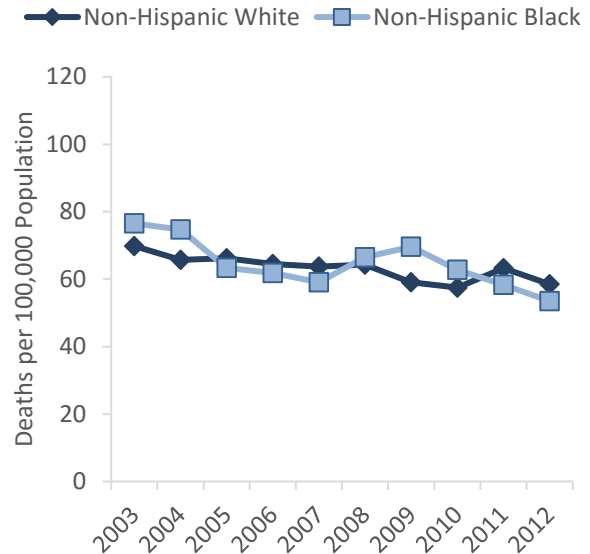
Given the relatively low five-year survival rate (20%) for lung cancer (five-year survival rates for colon and breast cancers are 65% and 90%, respectively)(7), prevention is paramount. In high-income countries such as the U.S., researchers have estimated that lung cancer deaths would drop by 86% if tobacco smoking ceased (8).

**Figure 31. Age-Adjusted Lung Cancer Mortality Rates by Gender: Northeast Texas (2004-2012)**



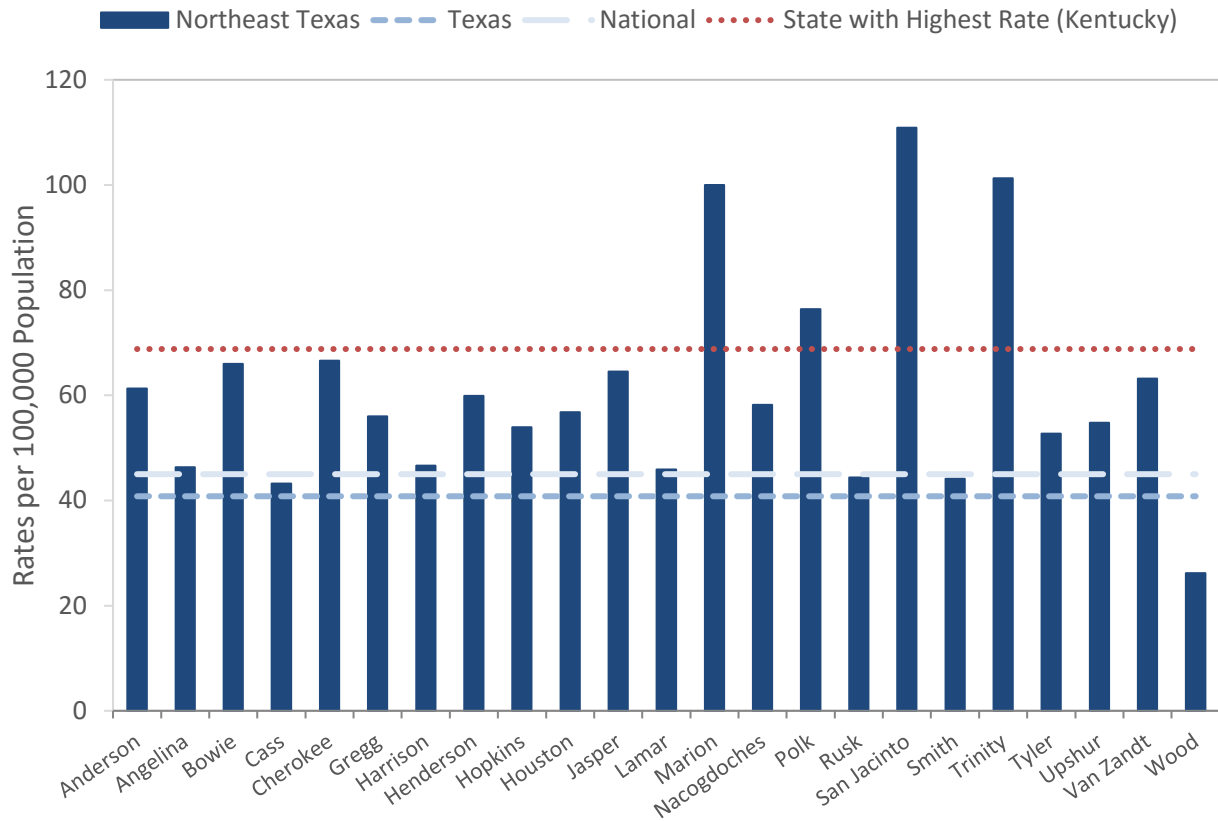
Data source: Texas Cancer Registry, Department of State Health Services

**Figure 32. Age-Adjusted Lung Cancer Mortality Rates by Race: Northeast Texas (2004-2012)**



Data source: Texas Cancer Registry, Department of State Health Services.

Figure 33. Age-Adjusted Lung Cancer Mortality Rates for Northeast Texas Counties (2012)



Data source: Texas - Texas Cancer Registry, Department of State Health Services.



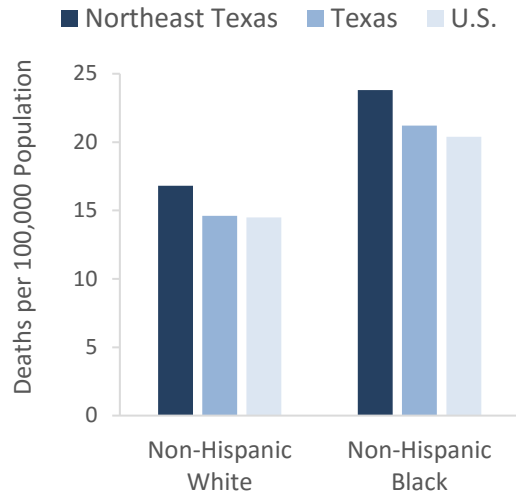
**Colorectal Cancer**

Colorectal cancer starts in either the colon or rectum. Risk factors include diets high in red meat and processed meats, physical inactivity, smoking, and obesity (9). Colorectal cancer accounts for a smaller proportion of cancer cases than either breast or prostate cancer, but a greater proportion of cancer deaths (Fig. 28).

Colorectal cancer mortality rates are higher in Northeast Texas than in Texas and the U.S. (Fig. 26). In 2012, the colorectal cancer incidence rate was 13% higher and the mortality rate was 15% higher in Northeast Texas than in Texas overall. Colorectal cancer rates are higher in Northeast Texas than in the U.S. for whites and blacks (Fig. 34), and males and females (Fig. 35). In Northeast Texas, rates were 42% higher among blacks than whites (Fig. 34), and 49% higher among males than females (Fig. 35).

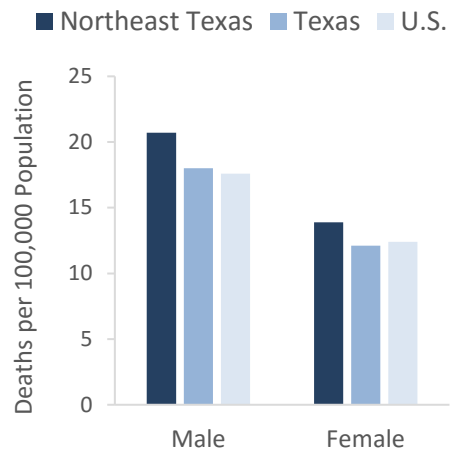
Early detection through screening is effective at preventing colorectal cancer deaths (10). The age-adjusted prevalence of meeting current screening guidelines among adults aged 50-75 in Northeast Texas is 45%, well below the HP2020 target of 71%. National data indicate that blacks are less likely than whites to undergo colorectal cancer screening (11), and this is likely the case in Northeast Texas. Nationally, nineteen percent of the racial disparity in colorectal cancer mortality has been attributed to lower screening rates among blacks (12).

**Figure 34. Age-Adjusted Colorectal Cancer Mortality Rates by Race: Northeast Texas, Texas and U.S. (2012)**



Data source: Northeast Texas - Texas Cancer Registry, Texas Department of State Health Services. Texas and National - U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database.

**Figure 35. Age-Adjusted Colorectal Cancer Mortality Rates by Gender: Northeast Texas, Texas and U.S. (2012)**



Data source: Northeast Texas - Texas Cancer Registry, Texas Department of State Health Services. Texas and National - U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database.

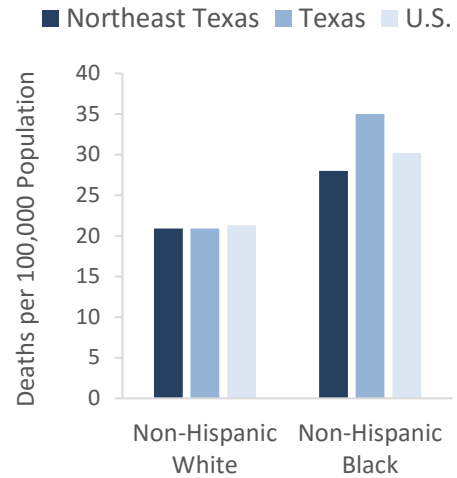
**Female Breast Cancer**

Breast Cancer is the most common type of cancer for women in Northeast Texas and the second most common cause of cancer deaths among women (Fig. 36). Modifiable risk factors include heavy alcohol use, obesity, and physical inactivity (8).

The breast cancer mortality rates in Northeast Texas are similar to those in Texas overall (Fig. 27). In Northeast Texas, as in Texas and the U.S., the breast cancer mortality rate in 2012 was higher among black women than white women (Fig. 36).

The age-adjusted prevalence of meeting current breast cancer screening guidelines among women aged 50-74 in Northeast Texas is 76%, somewhat below the HP2020 target of 81%. Nationally, mammography screening rates have been found to be similar between black and white women, yet black women tend to be diagnosed at a later stage (13).

**Figure 36. Age-Adjusted Female Breast Cancer Mortality Rates by Race: Northeast Texas, Texas and U.S. (2012)**



Data source: National Center for Health Statistics on CDC WONDER database.



### 3. Chronic Lower Respiratory Disease

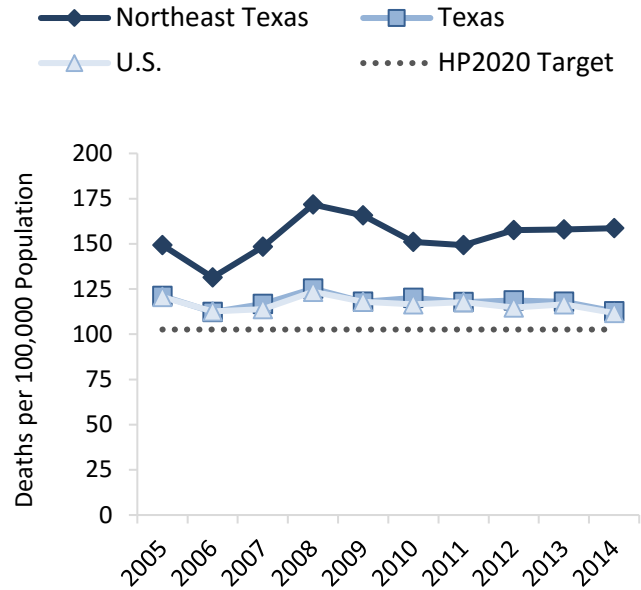
The third leading cause of death in Northeast Texas is chronic lower respiratory disease (CLRD), which includes both chronic obstructive pulmonary disease and asthma. If Northeast Texas were a state, it would rank 47<sup>th</sup> in terms of CLRD mortality (Table 3).

#### Chronic Obstructive Pulmonary Disease

The principal component of CLRD is chronic obstructive pulmonary disease (COPD). COPD is a lung disease that makes breathing difficult due to lung damage that restricts air flow. The disease grows progressively worse over time. The dominant risk factor for COPD is cigarette smoking, which has been estimated to contribute to about 80% of deaths from COPD (14).

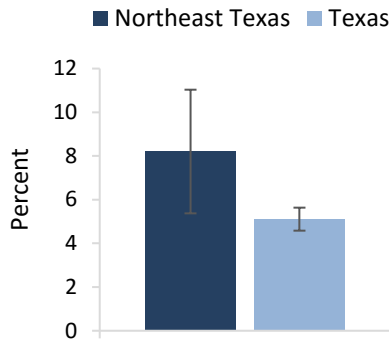
From 2005-2014 COPD rates were higher in Northeast Texas than in Texas overall and in the U.S., and well above the HP2020 target (Fig. 37). In 2014, the COPD mortality rate in Northeast Texas was 40% higher than the rate in Texas overall. Age-adjusted prevalence of COPD for Northeast Texas adults in 2014 was 8% (Fig. 38).

**Figure 37. Age-Adjusted Mortality Rates for COPD in adults ≥45 years-old: Northeast Texas, Texas and U.S. (2005-2014)**



Data source: Texas: Vital Statistics, Center for Health Statistics, Department of State Health Services; National: National Center for Health Statistics, CDC. Chronic Obstructive Pulmonary Disease (COPD) includes ICD-10 codes J40-J44, and excludes asthma.

**Figure 38. Age-Adjusted Prevalence of COPD among Adults: Northeast Texas and Texas (2014)**

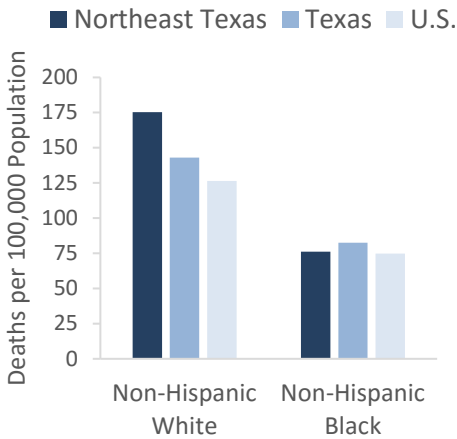


Data source: Behavioral Risk Factor Surveillance System (BRFSS), Center for Health Statistics, Texas Department of State Health Services. Error bars indicate 95% confidence intervals. COPD=Chronic Obstructive Pulmonary Disease



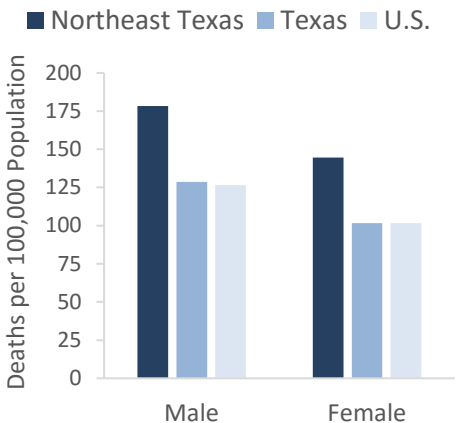
COPD rates are higher in Northeast Texas than in Texas overall for whites but not for blacks. Therefore, the racial difference seen at all geographic levels is even greater in Northeast Texas (Fig. 39). At all geographic levels, COPD mortality rates are higher for males (Fig. 40).

**Figure 39. Age-Adjusted Mortality Rates for COPD in adults ≥45 years old by Race/Ethnicity (2014)**



Data source: Texas: Vital Statistics, Center for Health Statistics, Department of State Health Services. National: National Center for Health Statistics, CDC. Chronic Obstructive Pulmonary Disease (COPD) includes ICD-10 codes J40-J44, and excludes asthma.

**Figure 40. Age-Adjusted Mortality Rates for COPD in adults ≥45 years old by Gender (2014)**

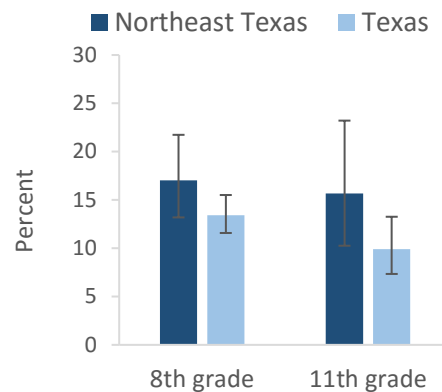


Data Source: Texas: Vital Statistics, Center for Health Statistics, Department of State Health Services. National: National Center for Health Statistics, CDC. Chronic Obstructive Pulmonary Disease (COPD) includes ICD-10 codes J40-J44, and excludes asthma.

**Asthma**

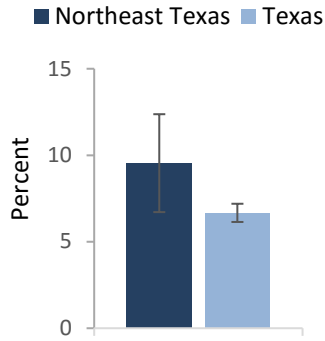
Asthma is a chronic lung disease characterized by inflammation and narrowing or blocking of the airways, which leads to episodes of coughing and shortness of breath (15). Survey data suggest that asthma is at least as prevalent, if not more prevalent, among Northeast Texas children (Fig. 41) and adults (Fig. 42), relative to Texas overall. However, hospitalization rates in Northeast Texas are slightly below those of Texas overall for most age groups, with the exception of adults aged 30-49 years-old (Fig. 43). Hospitalization rates for children five years of age and younger have been in decline, and are below the HP2020 target (Fig. 44).

**Figure 41. Prevalence of Asthma among Children by Grade: Northeast Texas and Texas (2009-2010)**



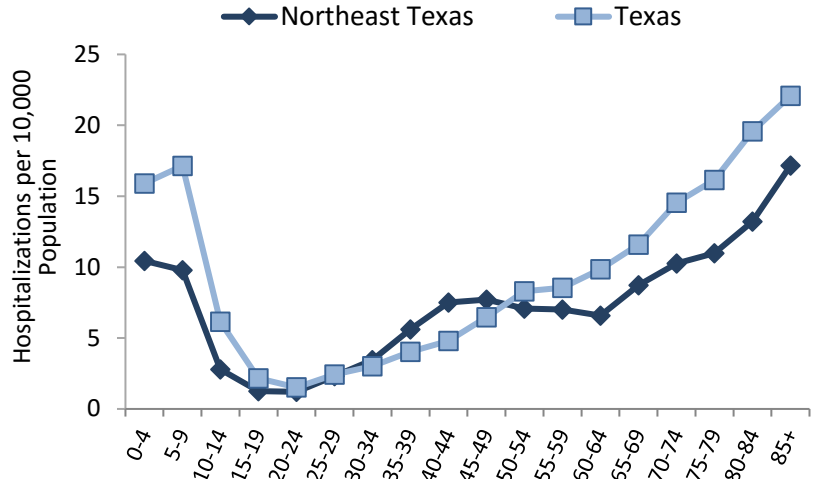
Data source: Texas: School Physical Activity and Nutrition (SPAN) survey, Michael & Susan Dell Center for Healthy Living and Department of State Health Services, Office of Title V.

**Figure 42. Age-Adjusted Prevalence of Asthma among Adults: Northeast Texas and Texas (2014)**



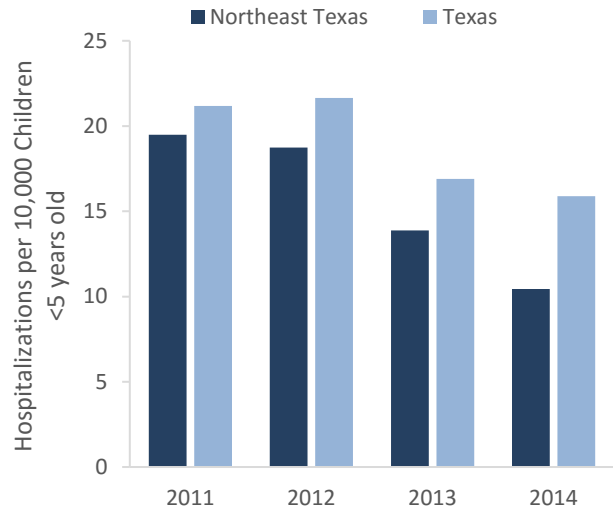
Data source: Behavioral Risk Factor Surveillance System (BRFSS), Center for Health Statistics, Texas Department of State Health Services. Error bars indicate 95% confidence intervals.

**Figure 43. Asthma Hospitalization Rates by Age Group: Northeast Texas and Texas (2014)**



Data source: Texas Hospital Inpatient Discharge Public Use Data Files. Center for Health Statistics, Texas Department of State Health Services. Hospital discharges based on ICD-9 codes for asthma listed as primary diagnosis (493).

**Figure 44. Asthma Hospitalization Rates for Children Younger than Five Years-Old: Northeast Texas and Texas (2011-2014)**



Data source: Texas Hospital Inpatient Discharge Public Use Data Files. Center for Health Statistics, Texas Department of State Health Services. Hospital discharges were based on ICD-9 codes for asthma listed as the primary diagnosis (493).



### 4. Stroke

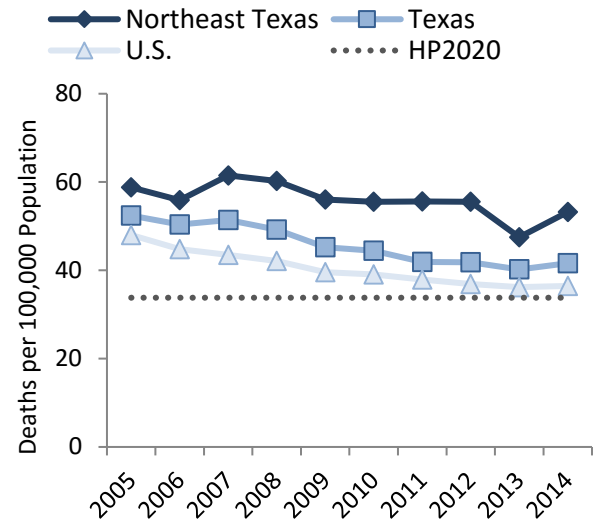
The fourth leading cause of death in Northeast Texas is stroke. Stroke (cerebrovascular disease) results when a blood vessel to the brain is blocked or bursts. Modifiable risk factors for stroke include high fat diets, physical inactivity, obesity, heavy alcohol consumption, and tobacco use (16).

The stroke mortality rate is higher in Northeast Texas than in Texas overall and the U.S. (Fig. 45). In 2014, the stroke mortality rate was 28% higher in Northeast Texas than in Texas overall (Table 3). If Northeast Texas were a state, it would rank worse than all other states in terms of stroke mortality (Table 3). In 2014, the age-adjusted prevalence among Northeast Texas adults of ever having had a stroke was nearly 4% (Fig. 46).



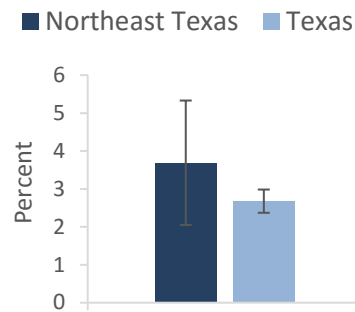
*If Northeast Texas were a state, it would rank worse than all other states in terms of stroke mortality.*

**Figure 45. Age-Adjusted Stroke Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 46. Age-Adjusted Stroke Prevalence: Northeast Texas and Texas (2014)**

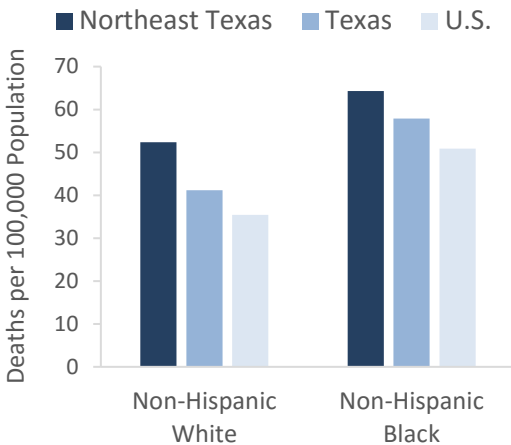


Data source: Behavioral Risk Factor Surveillance System (BRFSS), Center for Health Statistics, Texas Department of State Health Services. Error bars indicate 95% confidence intervals.

Compared to Texas overall, in Northeast Texas the stroke mortality rate was 27% higher for whites and 11% higher for blacks (Fig. 47), and 33% higher for males and 25% higher for females (Fig. 48). At all geographic levels, blacks were at higher risk for stroke mortality than were whites (Fig. 47).

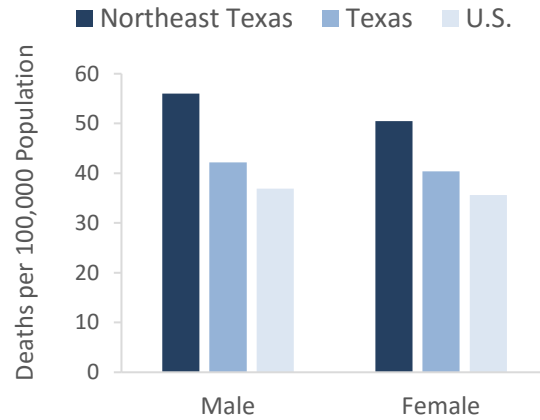
In 2014, the stroke mortality rate was 28% higher in Northeast Texas than in Texas overall, yet age-adjusted hospitalization rates were only 7% higher (Fig. 49). A comparison of stroke hospitalization data in Northeast Texas and Texas overall did not show differences in the severity of strokes or the proportion of stroke patients who died. These results suggest that the higher rate of stroke mortality in Northeast Texas was in part due to strokes that did not lead to hospital admission.

**Figure 47. Age-Adjusted Stroke Mortality Rates by Race: Northeast Texas, Texas and U.S. (2014)**



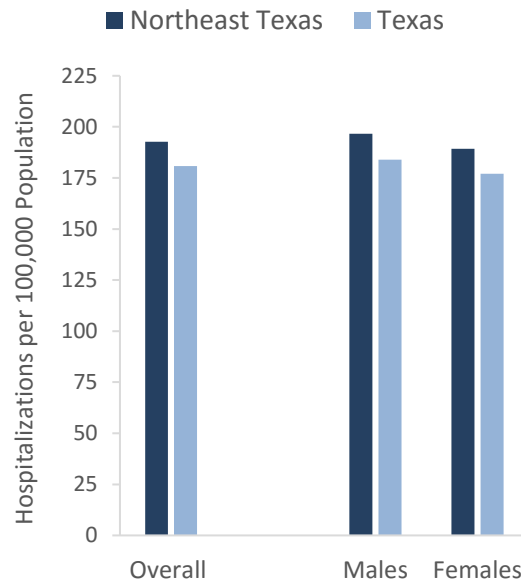
Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 48. Age-Adjusted Stroke Mortality Rates by Gender: Northeast Texas, Texas and U.S. (2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 49. Age-Adjusted Stroke Hospitalization Rates Overall and by Gender: Northeast Texas and Texas (2014)**



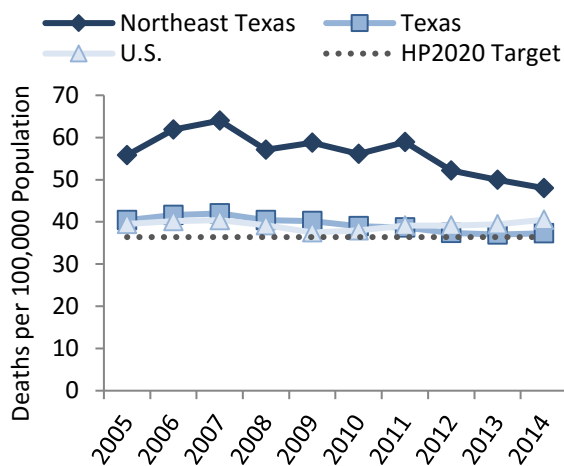
Data source: Texas Hospital Inpatient Discharge Public Use Data Files. Center for Health Statistics, Texas Department of State Health Services. Hospital discharges were based on Diagnosis Related Group (DRG) codes 004.045-047.

### 5. Unintentional Injury

Unintentional injury is the fifth leading cause of death in Northeast Texas, and the leading cause of death for people 1 to 44 years-old. Although often referred to as accidents, unintentional injuries are both predictable and preventable (17). Unintentional injury mortality rates in Northeast Texas exceed those for Texas and the U.S., although the gap is less in 2014 than a decade earlier (Fig. 50).

The top cause of unintentional injury mortality is motor vehicle crashes (Fig. 51). The motor vehicle crash mortality rate was 58% higher in Northeast Texas than in Texas overall in 2014 (Fig. 51). While Northeast Texas rates are trending downward, they remain higher than the Texas and U.S. rates, which are near the HP2020 target (Fig. 52).

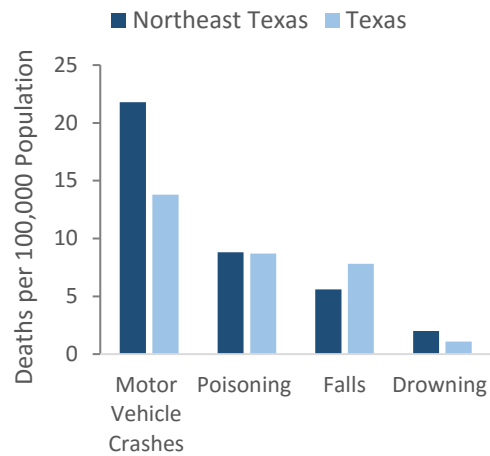
**Figure 50. Age-Adjusted Unintentional Injury Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014)**



Data source: National Center for Health Statistics on CDC WONDER database. ICD10 codes: V01-X59,Y85-Y86.

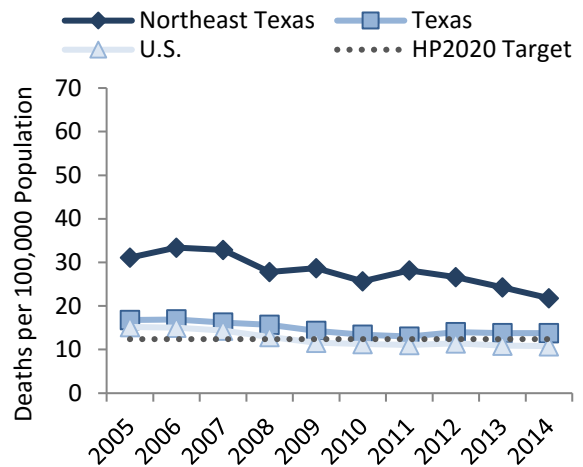
*In 2014, the motor vehicle crash mortality rate was 58% higher in Northeast Texas than in Texas overall.*

**Figure 51. Unintentional Injury Mortality Rates by Cause of Injury: Northeast Texas and Texas (2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 52. Age-Adjusted Motor Vehicle Injury Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014)**

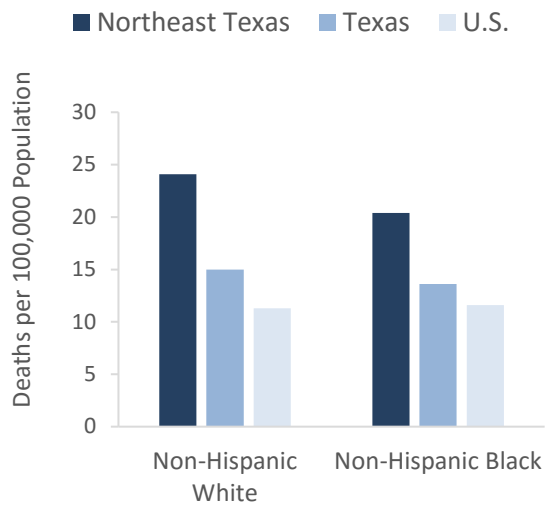


Data source: National Center for Health Statistics on CDC WONDER database.

Compared to Texas overall and the U.S., motor vehicle injury mortality rates are higher in Northeast Texas for blacks and whites (Fig. 53), and males and females (Fig. 54). While at all geographic levels, rates are

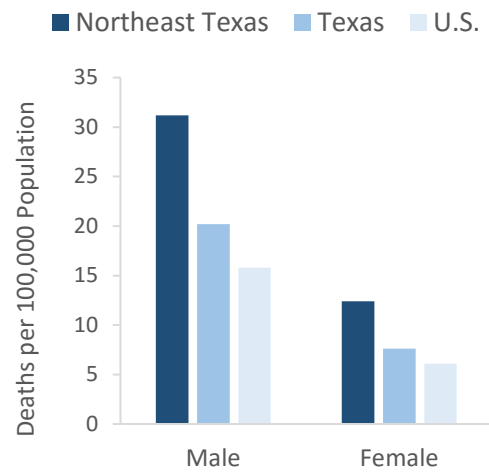
higher for whites than blacks (Fig. 53), and for males than females, the gender gap is wider in Northeast Texas, where males are 2.5 times as likely to be killed in a motor vehicle crash than females (Fig. 54).

**Figure 53. Age-Adjusted Motor Vehicle Injury Mortality Rates by Race: Northeast Texas and Texas (2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 54. Age-Adjusted Motor Vehicle Injury Mortality Rates by Gender: Northeast Texas and Texas (2014)**



Data source: National Center for Health Statistics on CDC WONDER database.



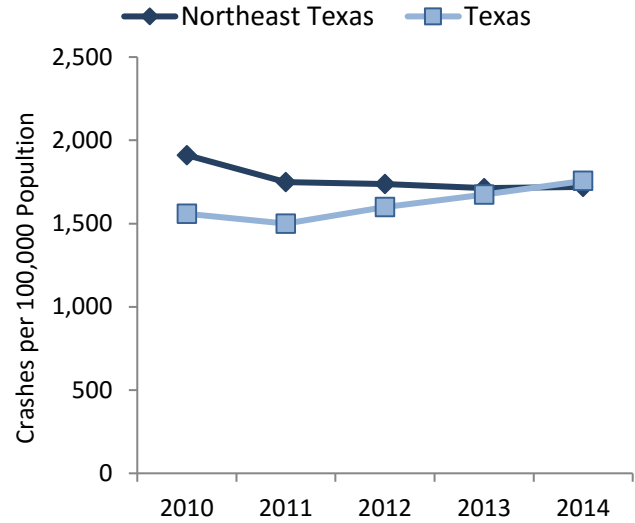
Rates of motor vehicle crashes in Northeast Texas and Texas overall have converged in recent years (Fig. 55). However, the percent of crashes that result in a fatality or severe injury has remained higher in Northeast Texas than in Texas overall (Fig. 56), which accounts for the continued higher motor vehicle injury mortality rates seen in Northeast Texas compared to the state as a whole.

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*The percent of crashes that result in a fatality or severe injury has remained higher in Northeast Texas than in Texas overall.*

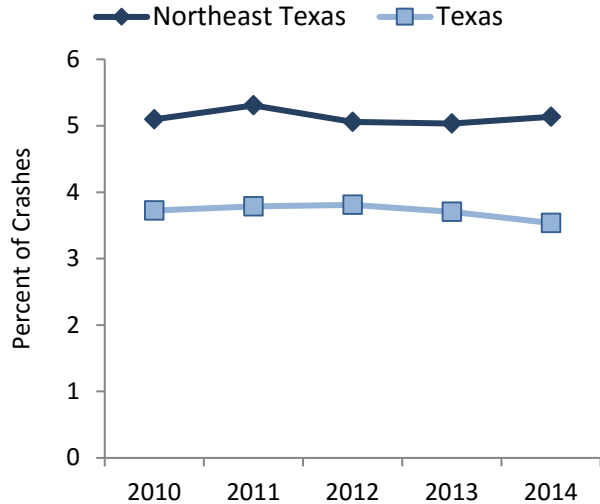
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**Figure 55. Motor Vehicle Crash Rates: Texas and Northeast Texas (2010-2014)**



Data source: Texas Department of Motor Vehicles

**Figure 56. Percent of Crashes Resulting in a Fatality or Severe Injury: Texas and Northeast Texas (2010-2014)**



Data source: Texas Department of Motor Vehicles

## Other Chronic Diseases and Conditions

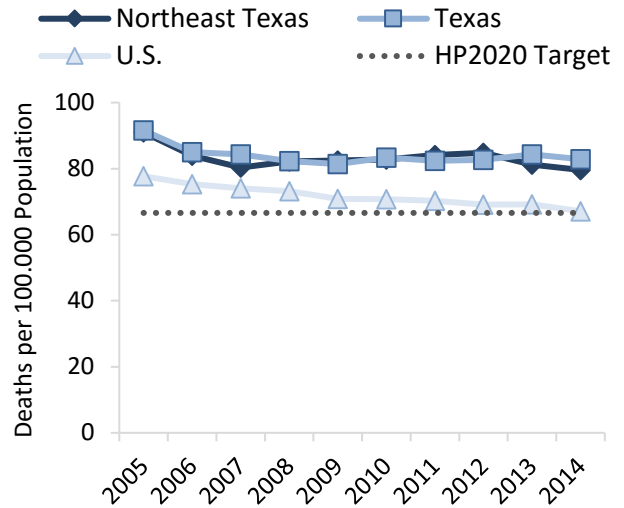
### Diabetes

Diabetes is a group of diseases characterized by elevated blood glucose levels due to deficiency in insulin, a hormone that regulates sugar metabolism. Health consequences of diabetes include heart disease, blindness, kidney failure, leg and foot amputations, and premature death. Leading modifiable risk factors for diabetes are obesity and physical inactivity (18).

Diabetes is three times more likely to be listed as a multiple (contributing) cause of death rather than as the underlying cause of death; therefore, diabetes-related mortality data presented here come from the multiple cause of death files, which include all mentions of diabetes on the death certificate. This approach to measuring diabetes mortality rates is the same as that used in setting the HP2020 target (19).

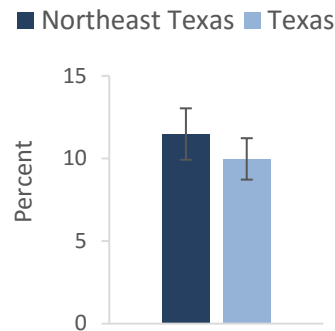
While the U.S. has nearly achieved the diabetes mortality rate HP2020 target, Northeast Texas and Texas overall remain well above this goal (Fig. 57). The age-adjusted prevalence among Northeast Texas adults of having been diagnosed with diabetes by a doctor (not including gestational diabetes) was 11.5% in 2014 (Fig. 58).

**Figure 57. Age-Adjusted Mortality Rates for Diabetes as Underlying or Multiple Cause: Northeast Texas, Texas and U.S. (2005-2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 58. Age-Adjusted Prevalence of Adults with Diabetes: Northeast Texas and Texas (2014)**



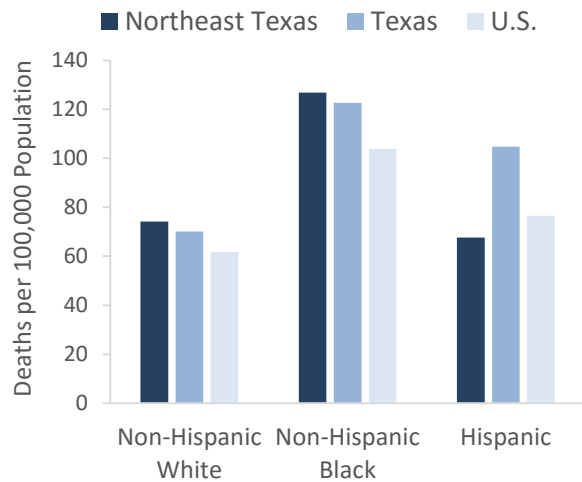
Data source: Behavioral Risk Factor Surveillance System (BRFSS), Center for Health Statistics, Texas Department of State Health Services. Error bars indicate 95% confidence intervals.



At all geographic levels, blacks are more affected by diabetes relative to whites and Hispanics (Fig. 59). In 2014, the mortality rate for diabetes as an underlying or multiple cause was over 70% higher in blacks than whites (Fig. 59). Diabetes mortality rates are

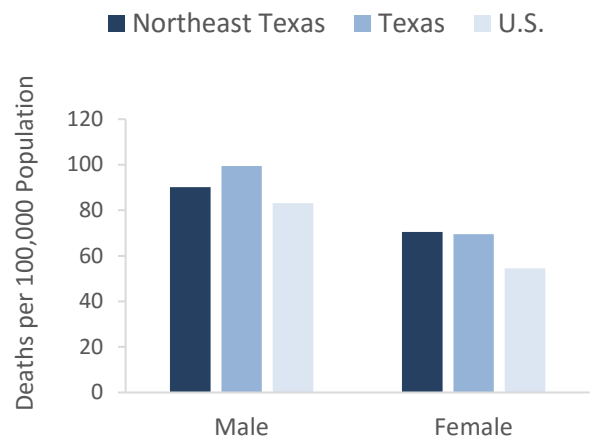
lower for Northeast Texas Hispanics than for Texas and U.S. Hispanics (Fig. 59). Males at all geographic levels have higher diabetes mortality rates than do females, although the gender gap is smaller in Northeast Texas than in Texas overall (Fig. 60).

**Figure 59. Age-Adjusted Mortality Rates for Diabetes as Underlying or Multiple Cause by Race/Ethnicity: Northeast Texas, Texas and U.S. (2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 60. Age-Adjusted Mortality Rates for Diabetes as Underlying or Multiple Cause by Gender: Northeast Texas, Texas and U.S. (2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

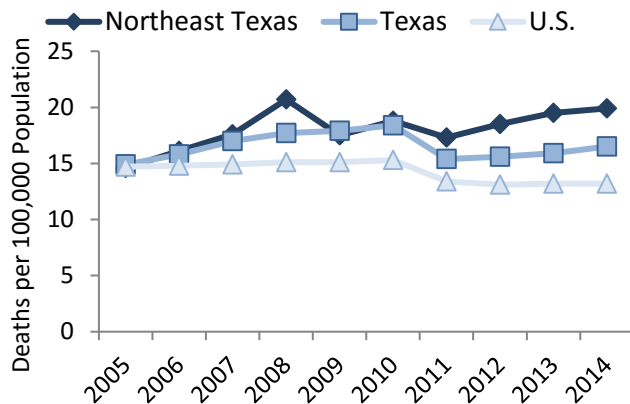


## Kidney Disease

Kidney disease is a chronic condition resulting from damage to the kidneys that affects their ability to filter blood, leading to an accumulation of wastes in the body. In most cases, the kidney damage occurs over many years, often in people with diabetes or high blood pressure, the two most common causes of kidney disease. Cardiovascular disease is also a risk factor for kidney disease (20).

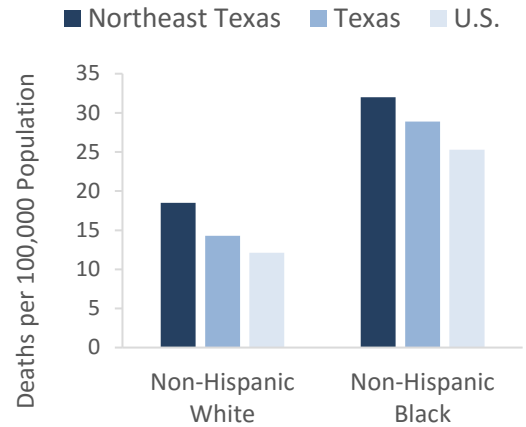
While in 2005, mortality rates from kidney disease were similar in Northeast Texas, Texas and the U.S., in 2014, the mortality rate for kidney disease was 20% higher in Northeast Texas than in Texas overall and 50% higher than in the U.S. (Fig. 61). This excess burden is seen in both blacks and whites (Fig. 62), and males and females (Fig. 63). In Northeast Texas, kidney disease mortality rates were 73% higher in blacks than in whites (Fig. 62), and 25% higher in males than in females in 2014 (Fig. 63).

**Figure 61. Age-Adjusted Mortality Rates for Kidney Disease: Northeast Texas, Texas and U.S. (2005-2014)**



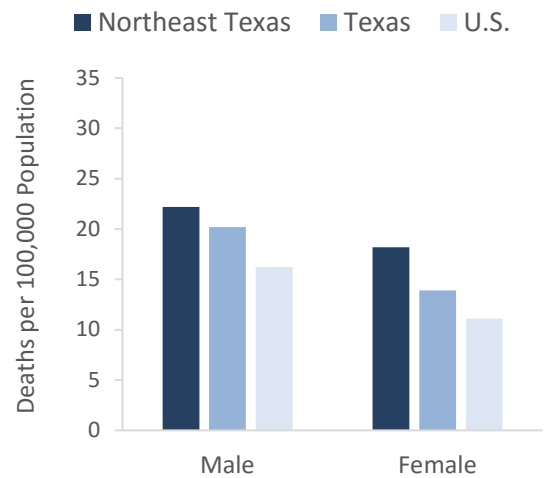
Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 62. Age-Adjusted Mortality Rates for Kidney Disease by Race: Northeast Texas, Texas and U.S. (2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 63. Age-Adjusted Mortality Rates for Kidney Disease by Gender: Northeast Texas, Texas and U.S. (2014)**

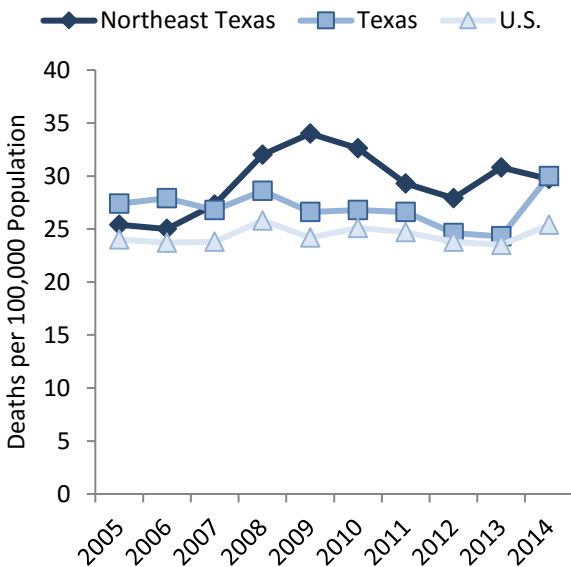


Data source: National Center for Health Statistics on CDC WONDER database.

### Alzheimer’s Disease

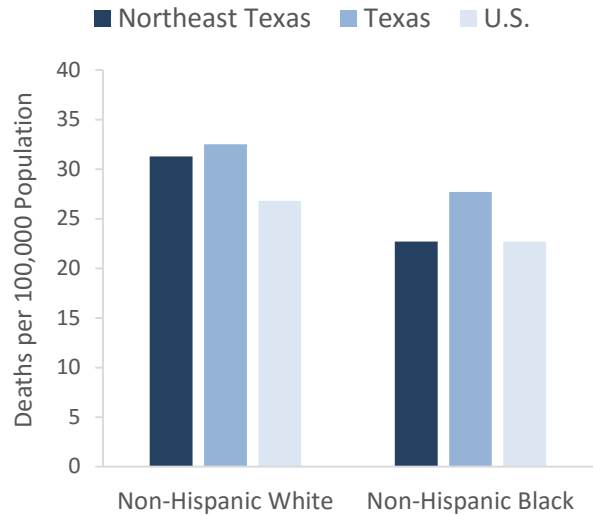
Alzheimer’s disease is a progressive and irreversible loss of brain function that affects memory, thinking skills, and behavior (21). Mortality rates for Alzheimer’s disease in Northeast Texas are similar to those in Texas overall, and slightly higher than in the U.S. (Fig. 64). As in Texas overall and the U.S., mortality rates for Alzheimer’s disease in 2014 were higher in whites than in blacks (Fig. 65), and higher in women than in men (Fig. 66).

**Figure 64. Age-Adjusted Mortality Rates for Alzheimer’s Disease: Northeast Texas, Texas and U.S. (2005-2014)**



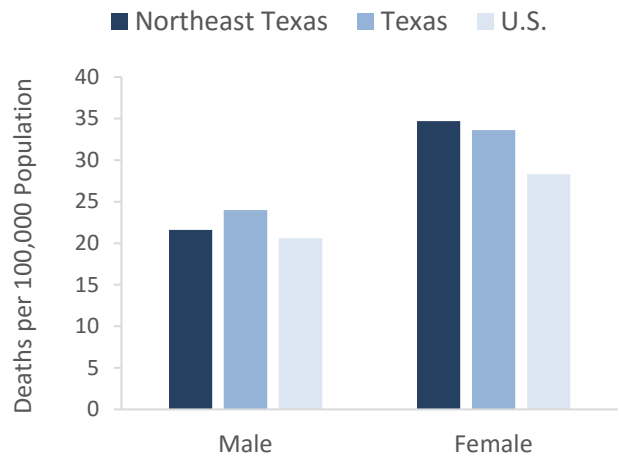
Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 65. Age-Adjusted Mortality Rates for Alzheimer’s Disease by Race: Northeast Texas, Texas and U.S. (2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 66. Age-Adjusted Mortality Rates for Alzheimer’s Disease by Gender: Northeast Texas, Texas and U.S. (2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

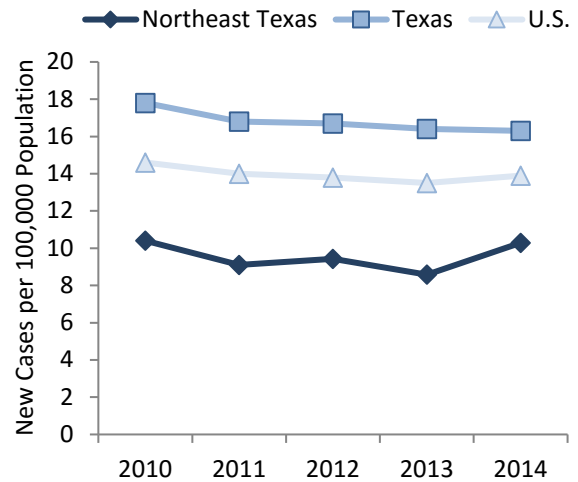
## Infectious Disease

### HIV and AIDS

Infection with HIV (Human Immunodeficiency Virus) reduces the immune system’s ability to fight off infections. HIV can be managed as a chronic condition through medications. Untreated, HIV can lead to AIDS (Acquired Immunodeficiency Syndrome), whereby the immune system is so weak that opportunistic infections can quickly spread and cause death. HIV is primarily transmitted through sexual contact, and to a lesser extent through sharing syringes for intravenous drug use (22).

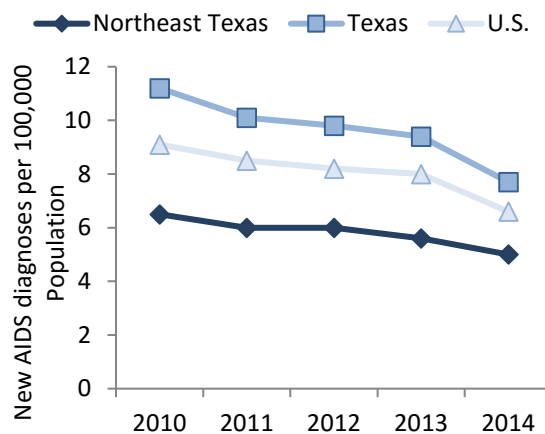
Although unadjusted measures of HIV/AIDS incidence and prevalence have been lower in Northeast Texas than in Texas overall (Figs. 67-69), five-year age-adjusted HIV mortality rates from 2010-2014 were similar in Northeast Texas and Texas for whites and blacks (Fig. 70) and for males and females (Fig. 71). The similarity in adjusted rates but not unadjusted rates may be due to the somewhat older population in Northeast Texas compared to Texas. As in Texas overall, HIV mortality rates in Northeast Texas were over five times higher among blacks than whites (Fig. 70) and over 2.5 times higher among males than females (Fig. 71).

**Figure 67. HIV Incidence Rates: Northeast Texas, Texas and U.S. (2010-2014)**



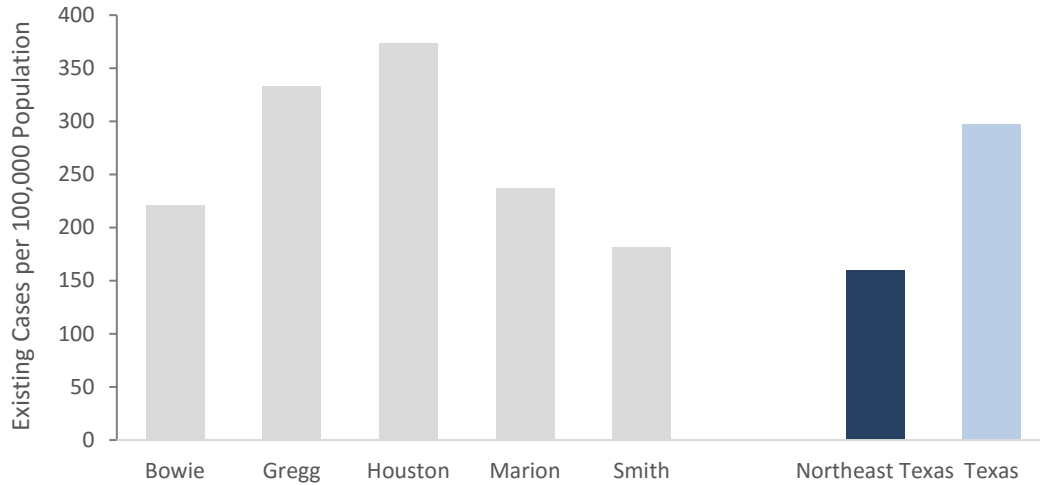
Source: Texas HIV Surveillance Reports, Department of State Health Services, July 22, 2015. U.S. data source: Centers for Disease Control and Prevention. HIV Surveillance Report, 2014; vol. 26. Incidence rates include all HIV cases regardless of disease status (HIV-only or AIDS) at diagnosis.

**Figure 68. Diagnoses of AIDS infection: Northeast Texas, Texas and U.S. (2010-2014)**



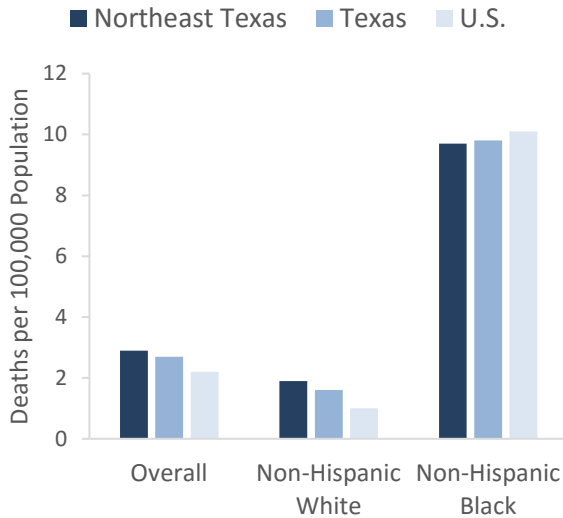
Source: Texas HIV Surveillance Reports, Department of State Health Services, July 22, 2015. U.S. data source: Centers for Disease Control and Prevention. HIV Surveillance Report, 2014; vol. 26. AIDS diagnoses include all cases who were diagnosed with AIDS in the given year, regardless of whether they were previously diagnosed with HIV.

**Figure 69. HIV Prevalence: Select Northeast Texas Counties, Northeast Texas and Texas (2014)**



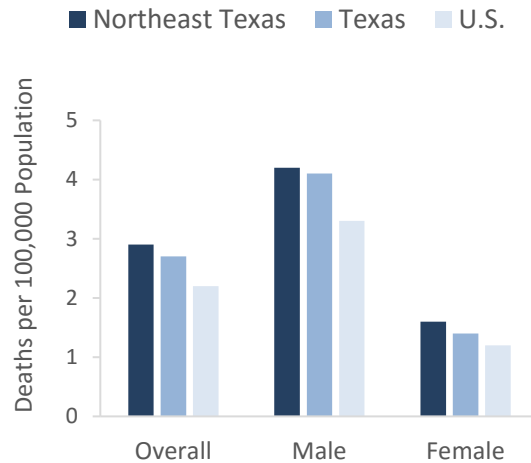
Source: Texas HIV Surveillance Reports, Department of State Health Services, July 22, 2015. HIV prevalence includes all persons living with HIV infection, including infections classified as Stage 3 (AIDS). HIV cases include all persons diagnosed with HIV infection, including infections classified as Stage 3 (AIDS), in the given year.

**Figure 70. Age-Adjusted HIV Mortality Rates by Race: Northeast Texas, Texas and U.S. (2010-2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 71. Age-Adjusted HIV Mortality Rates by Gender: Northeast Texas, Texas and U.S. (2010-2014)**

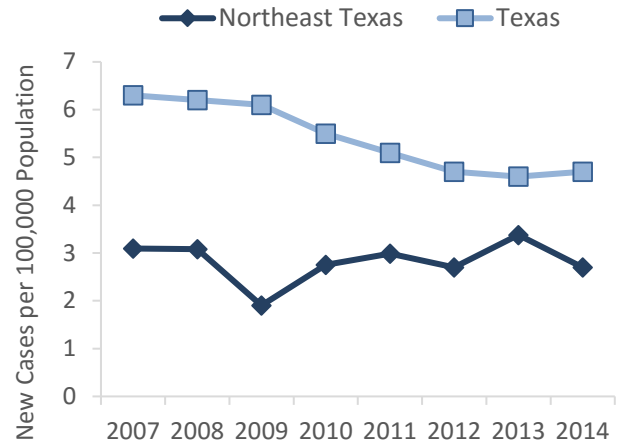


Data source: National Center for Health Statistics on CDC WONDER database.

## Tuberculosis

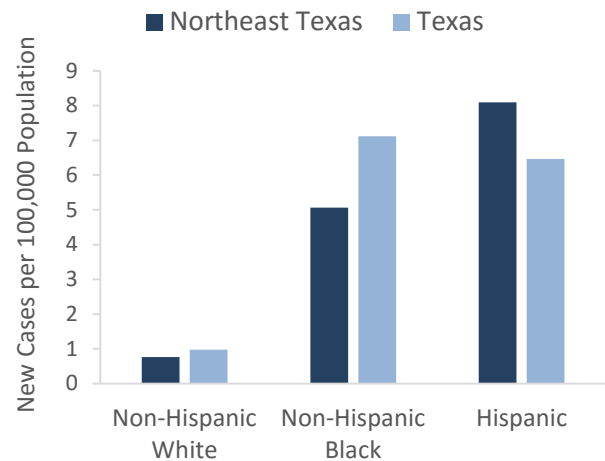
Tuberculosis (TB) is caused by a bacterial infection that typically occurs in the lungs (23). The TB incidence rate has been lower in Northeast Texas than Texas since at least 2007 (Fig. 72). However, the Texas rate has declined over this time period, while the Northeast Texas rate has not shown a downward trend. In 2014, the Hispanic population had a higher rate of TB than any of the other racial/ethnic group in Northeast Texas, while in Texas overall, blacks had the highest rate (Fig. 73).

**Figure 72. Tuberculosis Incidence Rates: Northeast Texas and Texas (2014)**



Data source: Tuberculosis Service Branch, Texas Department of State Health Services.

**Figure 73. Tuberculosis Incidence Rates: Northeast Texas and Texas (2014)**



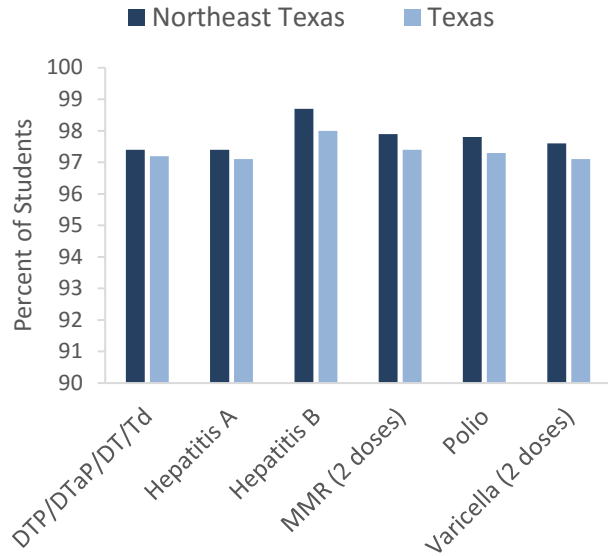
Data source: Tuberculosis Service Branch, Texas Department of State Health Services.

## Vaccine-Preventable Infectious Diseases

Widespread vaccination is an important component of population health. Vaccinations introduce a killed or weakened form of a disease-causing organism (such as a virus) into a person’s body. This dead or weakened organism stimulates a person’s immune system to produce antibodies against the disease, without causing the immunized person to become ill with the disease itself. The resulting immunity protects that individual from developing the disease if exposed to a fully-functional version of the organism (24).

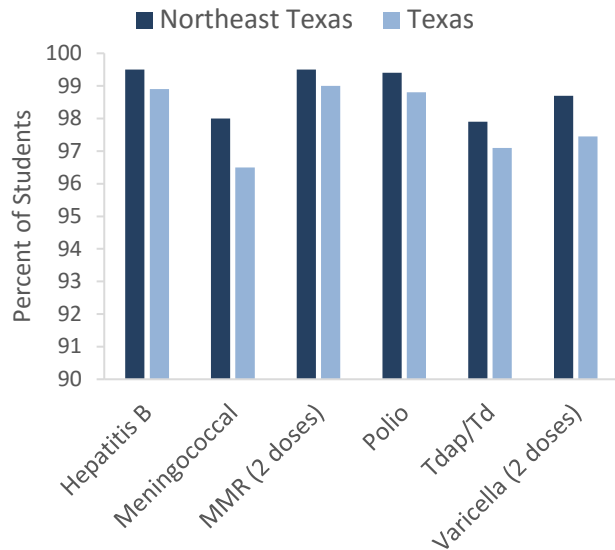
Importantly, when a large enough proportion of a population is immune, even the non-immune are protected. This protection for all – known as herd immunity – happens because the pathogen cannot spread far in a community in which most people are immune, reducing the chance that individuals within that community will come in contact with the virus. Therefore, high rates of vaccination help protect everyone.

**Figure 74. Immunization Rates for Kindergarten Students: Northeast Texas and Texas (2014-2015)**



Data source: Texas Department of State Health Services Immunization Branch.

**Figure 75. Immunization Rates for 7<sup>th</sup> Grade Students: Northeast Texas and Texas (2014-2015)**

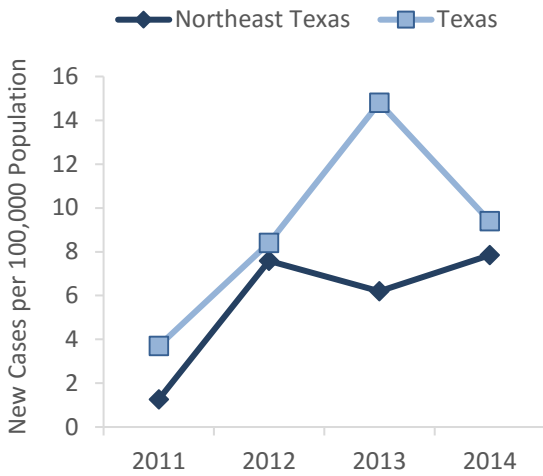


Data source: Texas Department of State Health Services Immunization Branch.

Immunization rates in Northeast Texas for Kindergarten and 7<sup>th</sup> grade students range from 97.4% to 99.5%, and are slightly higher than those in Texas overall (Figs. 74 & 75). Unadjusted incidence rates for the two most common vaccine-preventable diseases seen in Texas in recent years - pertussis

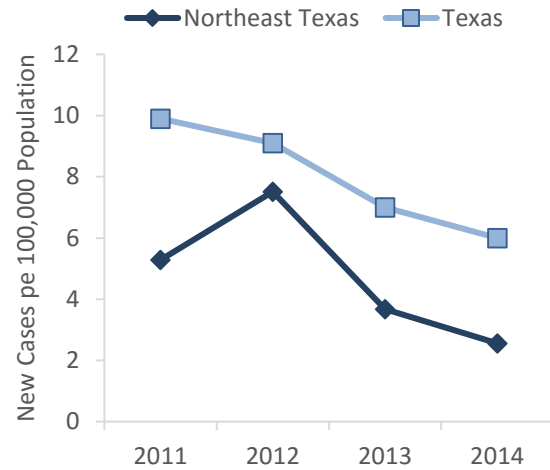
(whooping cough) and varicella (chicken pox) - have been lower in Northeast Texas than in Texas overall (Figs 76 & 77). These lower rates may be due to a somewhat older population in Northeast Texas than Texas overall.

**Figure 76. Pertussis Incidence Rates: Northeast Texas and Texas (2011-2014)**



Data source: Texas Department of State Health Services Immunization Branch.

**Figure 77. Varicella Incidence Rates: Northeast Texas and Texas (2011-2014)**



Data source: Texas Department of State Health Services Immunization Branch.



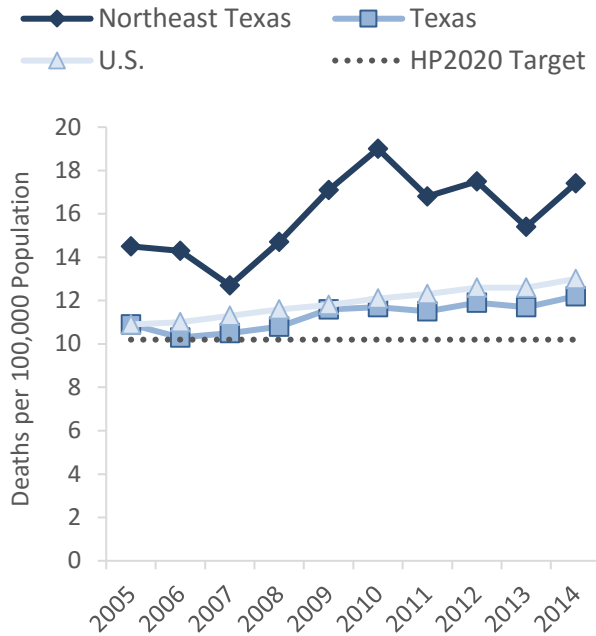


## Mental/Behavioral Health

### Suicide

Typically, suicide is an outcome of mental health disorders, including mood, personality, and substance use disorders (25). Since 2005, suicide rates in Northeast Texas have been consistently higher than those in Texas overall and in the U.S., and may be trending upwards (Fig. 78). In 2014, the suicide rate in Northeast Texas was 43% higher than in Texas, and exceeded the HP2020 target by 73%. Suicide rates in Northeast Texas are nearly double for whites than blacks (Fig. 79), and 250% higher among males than females (Fig. 80).

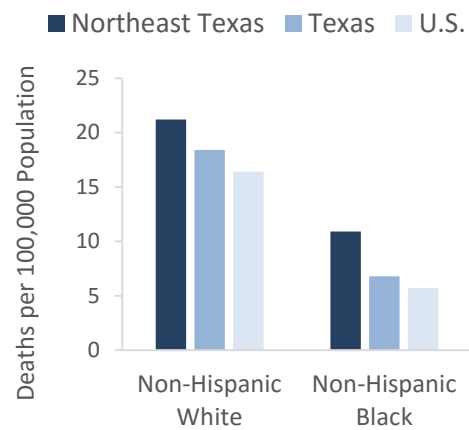
**Figure 78. Age-Adjusted Suicide Rates: Northeast Texas, Texas and U.S. (2005-2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

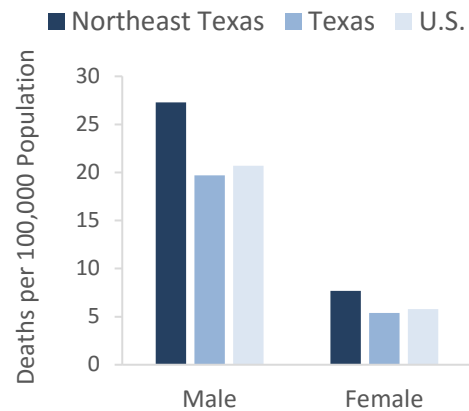
*Suicide rates in Northeast Texas have been consistently higher than those in Texas overall and in the U.S., and may be trending upwards*

**Figure 79. Age-Adjusted Suicide Mortality Rates by Race: Northeast Texas, Texas, and U.S. (2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 80. Age-Adjusted Suicide Mortality Rates by Gender: Northeast Texas, Texas, and U.S. (2014)**

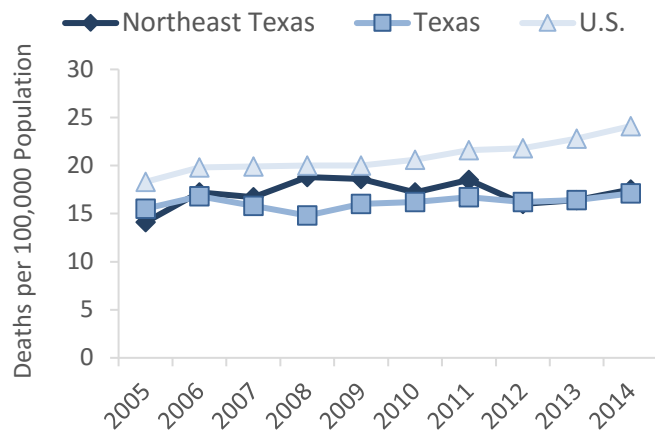


Data source: National Center for Health Statistics on CDC WONDER database.

## Alcohol and Drug Abuse

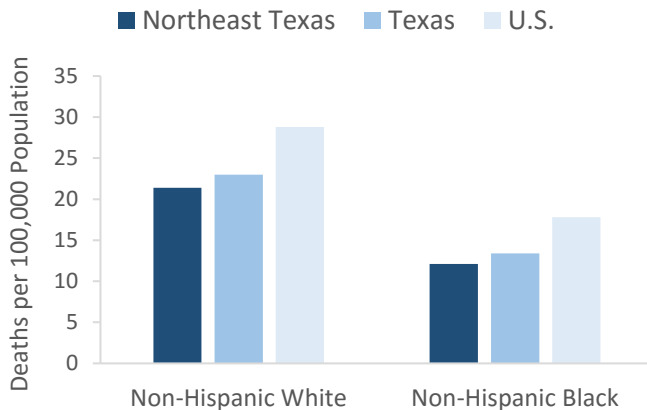
Heavy use of alcohol can contribute to unintentional injuries (such as those resulting from motor vehicle crashes), as well as to intentional injuries (such as sexual assault, homicide and suicide), and the development of several chronic diseases (26). Mortality rates related to alcohol or drug use in Northeast Texas are similar to those seen in Texas

**Figure 81. Age-Adjusted Mortality Rates Due to Alcohol/Drug Use: Northeast Texas, Texas and U.S. (2005-2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

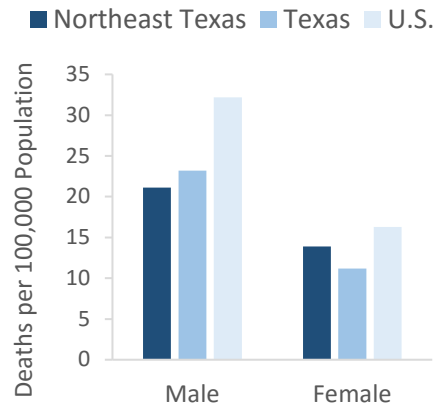
**Figure 82. Age-Adjusted Mortality Rates Due to Alcohol/Drug Use by Race: Northeast Texas, Texas and U.S. (2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

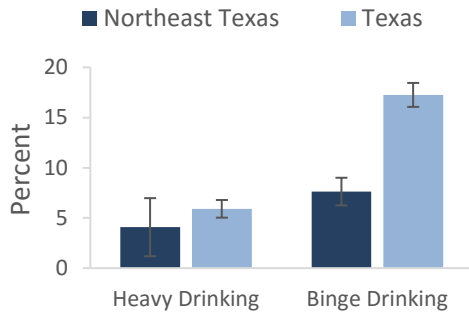
overall, and lower than those of the U.S. (Fig. 81). Rates are higher for whites than for blacks (Fig. 82), and for men than for women (Fig. 83). Age-adjusted prevalence of binge drinking in Northeast Texas is lower than in Texas overall (Fig. 84).

**Figure 83. Age-Adjusted Mortality Rates Due to Alcohol/Drug Use by Gender: Northeast Texas, Texas and U.S. (2014)**



Data source: National Center for Health Statistics on CDC WONDER database.

**Figure 84. Percentage of Adults who Report Binge or Heavy Drinking in Past Month: Northeast Texas and Texas (2014)**



Data source: Behavioral Risk Factor Surveillance System (BRFSS), Center for Health Statistics, Texas Department of State Health Services. Error bars indicate 95% confidence intervals.

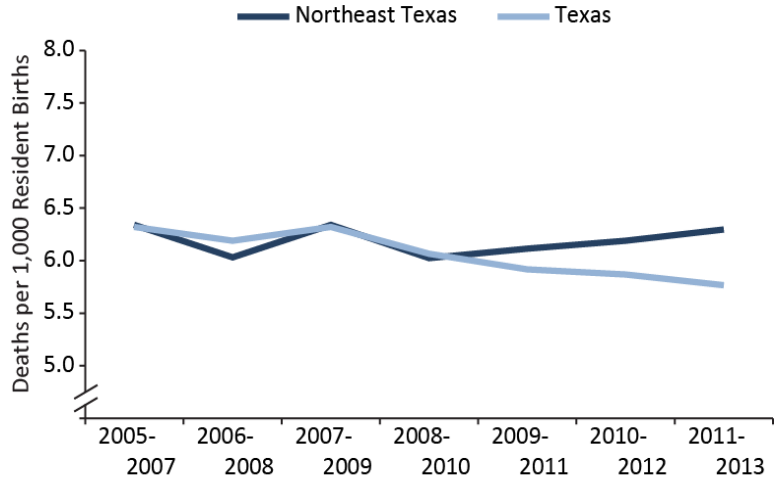
## Maternal and Infant Health

### Infant Mortality

Infant mortality is defined as death to an infant in the first year of life. A key population health indicator, the infant mortality rate reflects not only the health and well-being of infants, but also the community at large. The HP2020 objective for this health outcome is to reduce the infant mortality rate to 6.0 per 1,000 live births, which was achieved in the U.S. overall in 2013 (27).

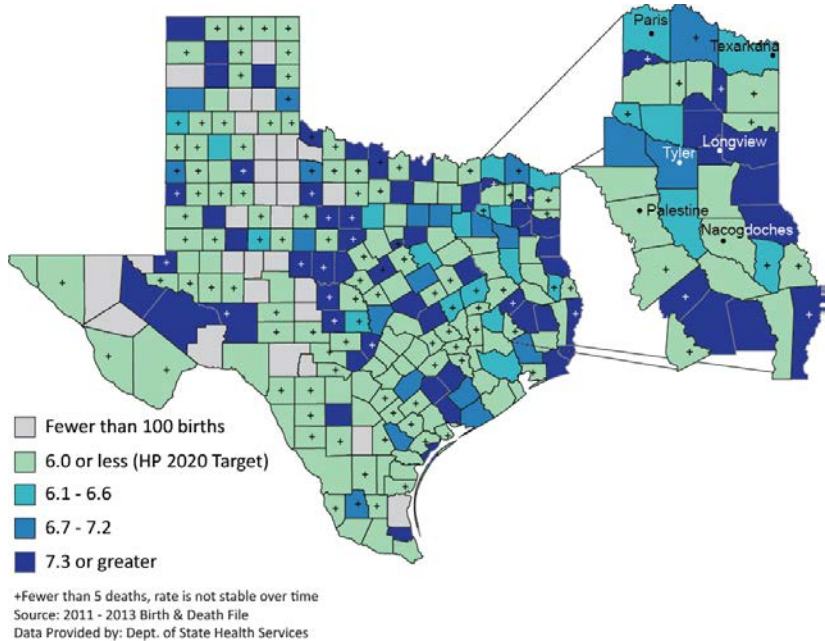
In Northeast Texas, the three year rolling infant mortality rate from 2011-2013 was 6.3 infant deaths per 1,000 live births, compared with 5.8 in Texas overall (Fig. 85). **Northeast Texas has the second highest infant mortality rate of all health service regions in the state, and is the only health service region that has not seen decreases in infant mortality since 2005.**

**Figure 85. Infant Mortality, Three-Year Rolling Rates: Northeast Texas and Texas (2005-2013)**



Source: 2005 - 2013 Birth & Death File  
Data Provided by: Dept. of State Health Services, Vital Statistics Report

**Figure 86. 2011-2013 Infant Mortality, Three-Year Rolling Rates: Texas Counties Highlighting Northeast Texas**

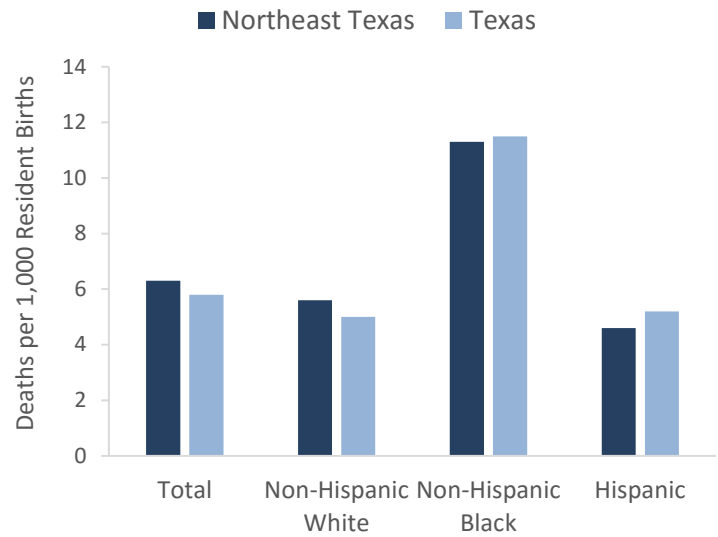


The infant mortality rate is commonly subdivided by infants who died within 28 days of birth (neonatal deaths), and those who died after 28 days (post-neonatal deaths). The leading causes of neonatal deaths are very different from the leading causes of post-neonatal deaths. For neonatal deaths, the leading causes are congenital abnormalities and extreme prematurity. The leading cause of post-neonatal death is Sudden Infant Death Syndrome (SIDS) (28).

The HP2020 target for post-neonatal deaths per 1,000 live births is 2.0. From 2011-2013, Northeast Texas had the second highest post-neonatal death rate of all health service regions in the state, at 2.3 deaths per 1,000 live births (the post-neonatal death rate for the state was 2.0 deaths per 1,000 live births).

One of the most tragic of racial health disparities in the U.S. is that found in infant mortality rates. The higher rates of infant mortality seen in the U.S. overall are reflected in both Texas and Northeast Texas (Fig. 87). In both Texas and Northeast Texas, from 2011-2013 infant mortality rate for blacks was more than double that of whites (Fig. 87).

**Figure 87. Infant Mortality, Three-Year Rolling Rates by Race/Ethnicity: Northeast Texas and Texas (2011-2013)**



Data source: 2011-2013 Birth & Death File. Data provided by Dept. of State Health Services.

### Preterm Birth

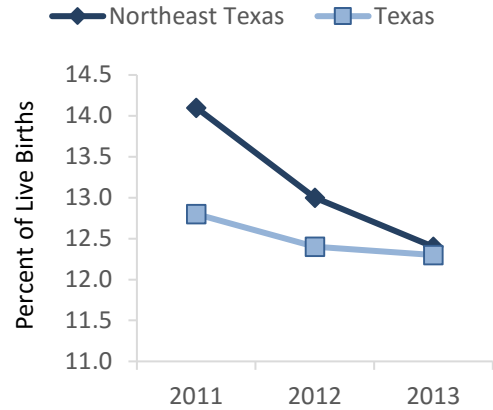
Being born prematurely is the leading cause of infant death, and increases the risk of a number of conditions, including long-term neurological disabilities, developmental delays, and problems with breathing, feeding, vision and hearing (29).

Preterm birth is defined as less than 37 completed weeks of gestation. The method used to estimate length of gestation in the data presented here is the same as that used by HP2020 -- the interval between the first day of the mother's last normal menstrual period, as reported on the birth certificate. If that information is missing or out of range with birth weight, the obstetric estimation is used.

In 2013, the percent of preterm births in Northeast Texas was similar to that of Texas overall, having declined from 2011 (Fig. 88). In 2013, both Northeast

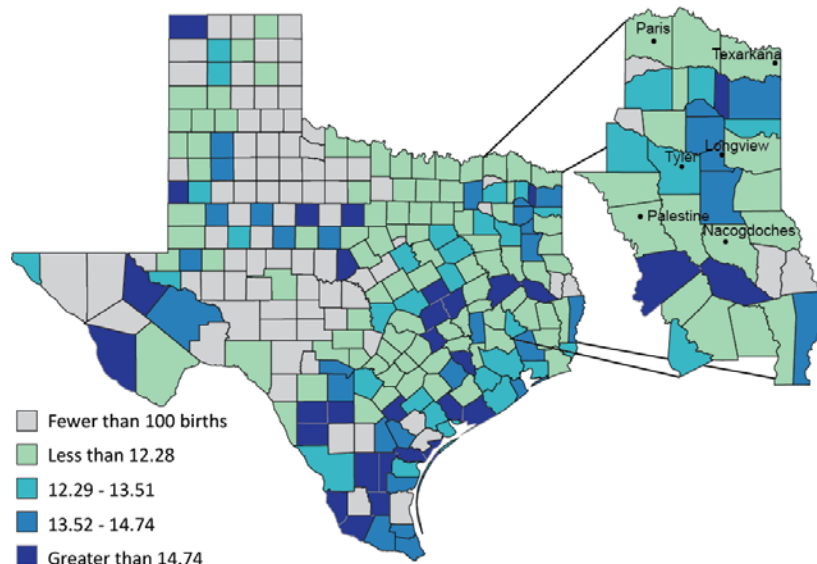
Texas and Texas were above the HP2020 target of 11.4% for preterm birth.

**Figure 88. Preterm Births: Northeast Texas and Texas (2011-2013)**



Data source: 2013 Birth File. Data provided by: Office of Program Decision Support, Department of State Health Services. Preterm birth is determined using the procedure outlined by Healthy People 2020.

**Figure 89. Preterm Births: Texas Counties Highlighting Northeast Texas (2013)**



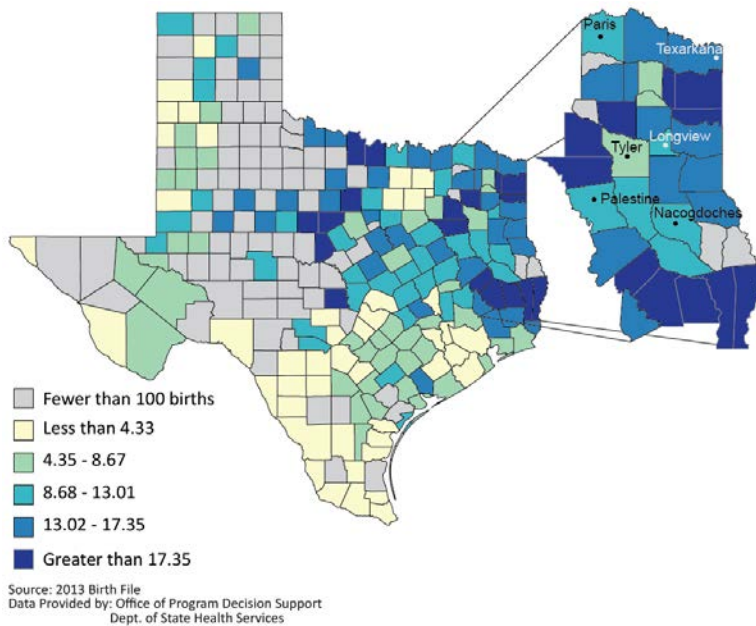
Source: 2013 Birth File  
 Data Provided by: Office of Program Decision Support  
 Dept. of State Health Services  
 Definition: Preterm birth is determined using the procedure outline by Healthy People 2020. Other procedure will produce different rates for the state and individual counties.

## Prenatal Risk Factors

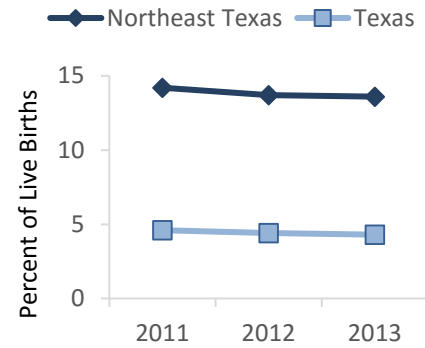
### Smoking during Pregnancy

Smoking during pregnancy is significantly associated with an increased risk for SIDS and other sleep related deaths (30). Among births in Texas, infants born to a woman who smoked during pregnancy have more than three times the risk of a SIDS death than infants whose mother did not smoke (28). Environmental smoke exposure once an infant is born has also been implicated as a risk to the infant (31). Furthermore, smoking during pregnancy has been shown to have a dose dependent relation with birth weight. Every cigarette a women smokes during pregnancy is proportionately related to a decrease in her fetus’s birth weight (32, 33).

**Figure 90. Percent of Births to a Woman who Smoked During Pregnancy: Texas Counties Highlighting Northeast Texas (2013)**



**Figure 91. Percent of Births to a Woman who Smoked During Pregnancy: Texas and Northeast Texas (2011-2013)**



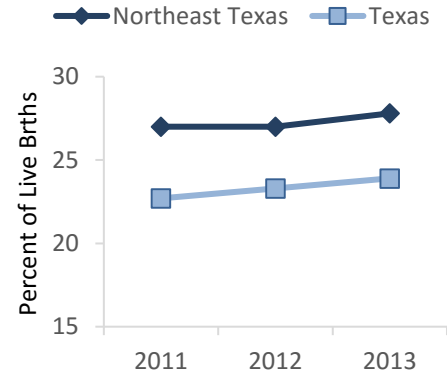
Data source: 2013 Birth File. Data provided by: Office of Program Decision Support. Department of State Health Services.

**In Northeast Texas, the percentage of live births in 2013 that were to a woman who smoked during pregnancy was more than triple that of Texas overall (Fig. 91). That same year, all Northeast Texas counties had a higher percentage of women who smoked during pregnancy than did the state as a whole, and all but three counties in Northeast Texas had pregnancy smoking rates more than double the state rate (Fig 90).**

### Maternal Obesity

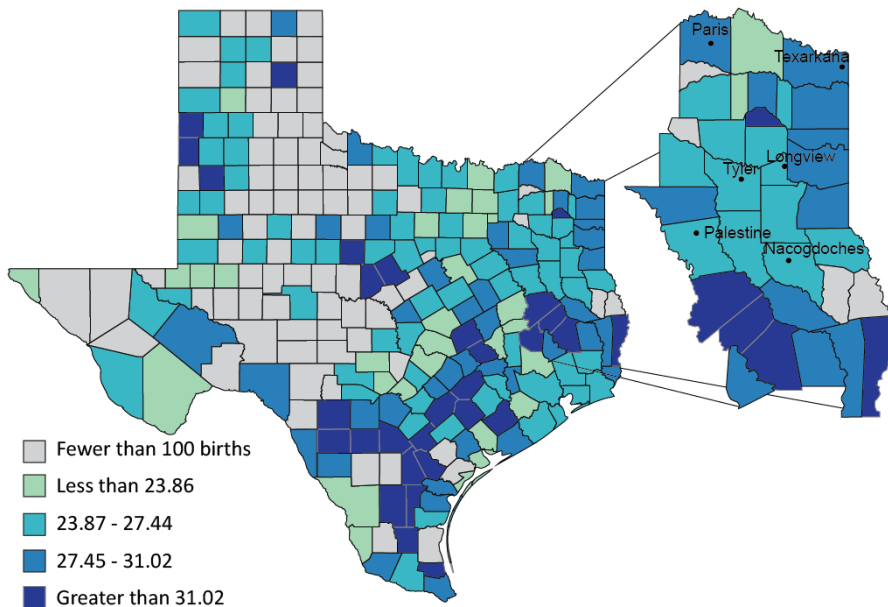
Pre-pregnancy obesity is a risk for both the mother and fetus. Pre-pregnancy obesity is associated with the development of diabetes and hypertension during pregnancy (34, 35). Obese women are at higher risk than non-obese women of having a cesarean delivery (36). Additionally, maternal obesity has been shown to be associated with higher infant mortality and stillbirth rates (37, 38). In 2013, over one-quarter of all births in Northeast Texas were to a woman who began her pregnancy obese, which was slightly higher than the percentage in Texas overall (Fig. 92).

**Figure 92. Percent of Births to a Woman Who Was Obese Pre-Pregnancy: Northeast Texas and Texas (2011-2013)**



Data source: 2013 Birth File. Data provided by: Office of Program Decision Support. Department of State Health Services.

**Figure 93. Percent of Births to a Woman who was Obese Pre-Pregnancy: Texas Counties Highlighting Northeast Texas (2013)**



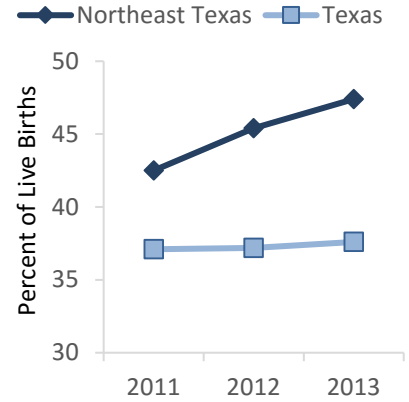
Source: 2013 Birth File  
Data Provided by: Office of Program Decision Support  
Dept. of State Health Services

**Prenatal Care Access**

Prenatal care is the main route for pregnant women to receive care and interact with the medical community. Adequate prenatal care includes both accessing care in the first trimester, and having regular visits once care begins. Infants whose mother did not receive adequate care are at an increased risk of infant and fetal death. Such infants also have three times greater risk of being born preterm than infants of mothers receiving an adequate amount of prenatal care (39).

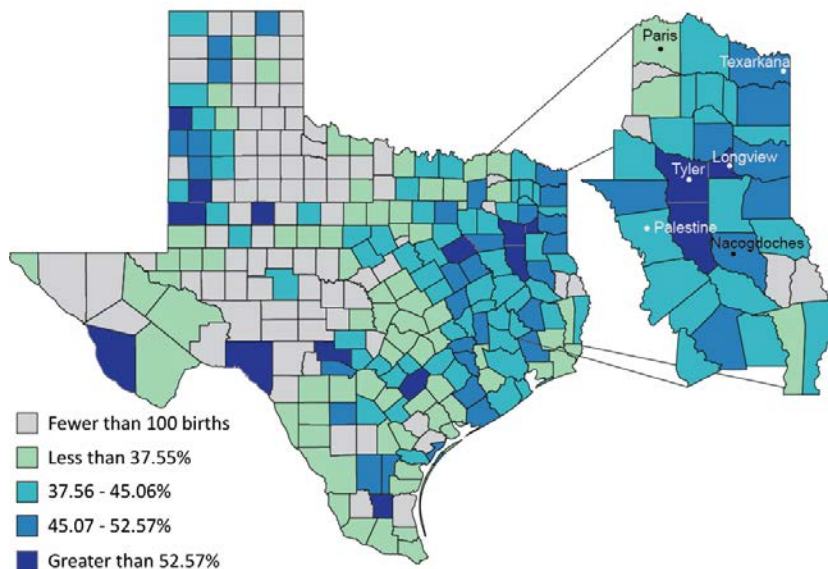
While late entry into prenatal care is a statewide problem, this is especially true in Northeast Texas, where nearly half of pregnant women did not have a prenatal visit during the first trimester of pregnancy in 2013 (Fig. 95). This low population prevalence represents a tremendous missed opportunity to manage important health conditions in the mother and prevent prematurity and infant deaths in Northeast Texas.

**Figure 95. Percent of Births to a Woman who did not Receive Prenatal Care in the First Trimester: Northeast Texas and Texas (2011-2013)**



Data source: 2013 Birth File. Data provided by: Office of Program Decision Support. Department of State Health Services.

**Figure 94. Percent of Births to a Woman who did not Receive Prenatal Care in the First Trimester: Texas Counties, Highlighting Northeast Texas (2013)**



Source: 2013 Birth File  
Data Provided by: Office of Program Decision Support  
Dept. of State Health Services



## Leading Modifiable Health Risk Factors for Northeast Texas

### Cigarette Smoking

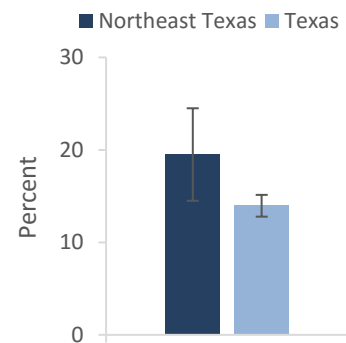
Tobacco smoking is the leading cause of preventable death in the U.S. (40). Smoking is a key determinant for heart disease, stroke, lung cancer, colorectal cancer, and COPD – diseases for which mortality rates are higher in Northeast Texas than in Texas overall. Lung cancer and COPD in particular are primarily caused by tobacco smoking. In 2014, lung cancer rates were 35% higher and COPD mortality rates were 40% higher in Northeast Texas than in Texas.

In 2014, 23.4% of adults in Northeast Texas reported daily cigarette smoking, compared to 14.5% in Texas overall. Age-adjusted prevalence for Northeast Texas and Texas overall were 19.5 and 14.0, respectively (Fig. 96). Further, in 2013, 13.6% of live births in Northeast Texas were to women who smoked during pregnancy (Fig. 91).

### Smoking Ordinances

The Health Law & Policy Institute at University of Houston Law Center maintains a database on Texas municipal ordinances designed to protect the public from secondhand smoke (41). Five settings are considered: municipal worksites, private worksites, restaurants, bars in restaurants, and bars. Coverage in each setting is rated on a five-point scale, ranging from no coverage to 100% smoke free.

**Figure 96. Age-Adjusted Prevalence of Current Smoking among Adults (2014)**



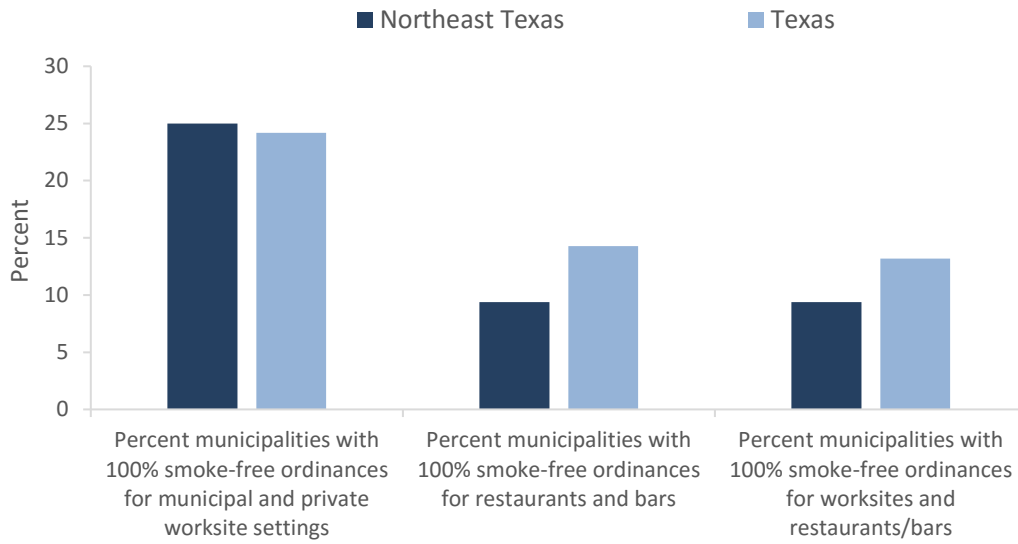
Data source: Behavioral Risk Factor Surveillance System (BRFSS), Center for Health Statistics, Texas Department of State Health Services. Error bars indicate 95% confidence intervals.



According to this database, 25% of municipalities in Northeast Texas had 100% smoke-free ordinances covering both municipal and private worksites, similar to the 24% Texas-wide. Just 9% of Northeast

Texas municipalities had 100% smoke-free ordinances covering restaurants and bars, while the proportion in Texas overall was slightly higher, at 14% (Fig. 97).

**Figure 97. Percent of Municipalities with 100% Smoke-Free Ordinance Coverage by Settings: Northeast Texas and Texas (2014)**



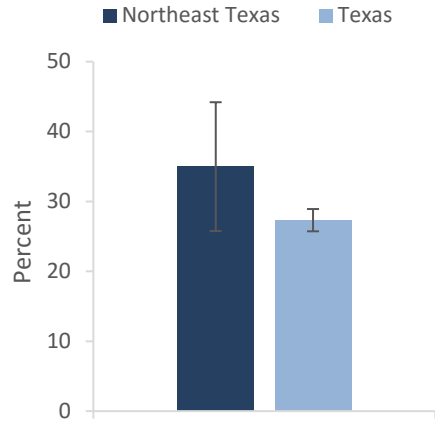
Data source: Texas Smoke-Free Ordinance Database, University of Houston. All incorporated Texas municipalities with populations of greater than 5,000 residents are included. Details on the methodology and data by municipality can be found at: <http://shsordinances.uh.edu/>

## Physical Inactivity

Regular physical activity decreases the risk of all-cause mortality as well as several chronic diseases for which mortality rates are higher in Northeast Texas than Texas overall, including coronary heart disease, stroke, and colon cancer (42). Physical activity also plays an important role in maintaining a healthy weight.

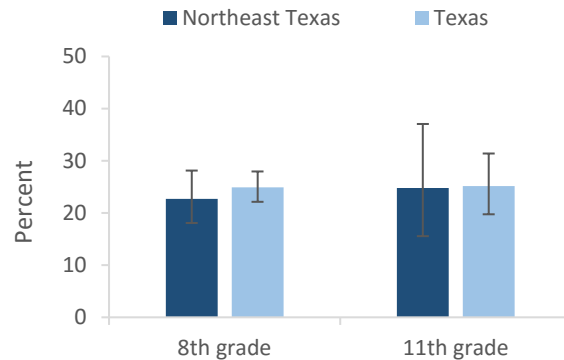
In 2012, after adjusting for age, the percentage of adults in Northeast Texas reporting *no* leisure-time physical activity in the past month was slightly higher than the HP2020 target of 32.6%, while Texas overall had met the target (Fig. 98). In 2010 in Northeast Texas, just 23% of 8th grade students and 25% of 11th grade students met the U.S. physical activity guidelines for aerobic physical activity (being physically active for a total of at least 60 minutes per day, every day). These percentages are similar to the prevalence in Texas overall (Fig. 99).

**Figure 98. Age-Adjusted Prevalence of Adults Reporting No Past-Month Leisure Time Physical Activity (2014)**



Data source: Behavioral Risk Factor Surveillance System (BRFSS), Center for Health Statistics, Texas Department of State Health Services. Error bars indicate 95% confidence intervals.

**Figure 99. Prevalence of Meeting Physical Activity Guidelines among 8<sup>th</sup> and 11<sup>th</sup> Grade Students in Northeast Texas and Texas (2009-2010)**



Data source: School Physical Activity and Nutrition (SPAN) survey, Michael & Susan Dell Center for Healthy Living and Department of State Health Services, Office of Title V. Meeting physical activity guidelines is defined as being physically active for a total of at least 60 minutes per day during the past seven days, assessed via self-report. Error bars indicate 95% confidence intervals.

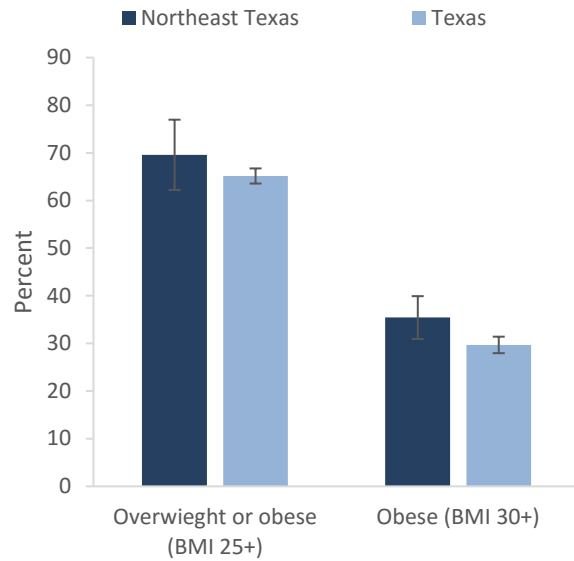
## Overweight and Obesity

Body Mass Index (BMI) is used as an approximation of a person’s body fat. BMI is the weight of a person in kilograms divided by their height in meters. A high BMI is indicative of high body fat. Obesity is a risk factor in many chronic diseases, including heart disease, stroke, diabetes, and some forms of cancer.

For adults, the CDC defines a person as obese if their BMI is 30.0 or greater. The age-adjusted prevalence of Northeast Texas adults classified as obese in 2014 was 35%, similar to the statewide prevalence (Fig. 100).

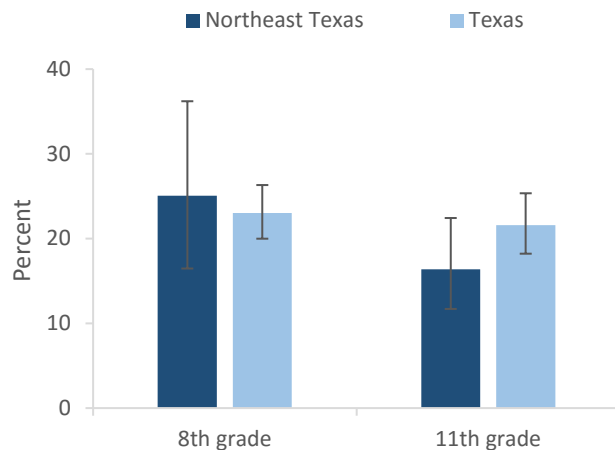
Estimated obesity prevalence among 11<sup>th</sup> grade students in Northeast Texas in 2010 was in the range of the HP2020 target for obesity in adolescents aged 12 to 19 years (Fig. 101).

**Figure 100. Age-Adjusted Prevalence of Overweight and Obesity among Adults: Northeast Texas and Texas (2014)**



Data source: Behavioral Risk Factor Surveillance System (BRFSS), Center for Health Statistics, Texas Department of State Health Services. Error bars indicate 95% confidence intervals.

**Figure 101. Prevalence of Obesity among 8<sup>th</sup> and 11<sup>th</sup> Grade Students: Northeast Texas and Texas (2009-2010)**



Data source: Texas: School Physical Activity and Nutrition (SPAN) survey, Michael & Susan Dell Center for Healthy Living and Department of State Health Services, Office of Title V. Error bars indicate 95% confidence intervals.

## **Appendix**



## Data Tables

Table A-1. Characteristics of Northeast Texas Counties

County Name	Cities >10K Population	Population Size <sup>1</sup>	% Rural <sup>2</sup>	Median Household Income <sup>2</sup>	% Poverty <sup>2</sup>	Age-Adjusted Mortality rate <sup>3</sup>	Mortality Rate Rank <sup>4</sup>
Anderson	Palestine	59,008	67%	\$42,511	18.2	1079.6	31
Angelina	Lufkin	89,839	43%	\$42,374	20.0	857.5	13
Bowie	Texarkana	94,440	35%	\$42,917	19.4	862.4	14
Camp	-	12,617	61%	\$38,154	21.5	921.6	25
Cass	-	30,784	74%	\$36,342	20.9	878.5	16
Cherokee	Jacksonville	52,538	63%	\$38,949	23.2	855.5	11
Delta	-	5,276	100%	\$40,988	20.3	1156.2	35
Franklin	-	10,656	69%	\$44,000	13.8	824.4	6
Gregg	Longview	124,939	13%	\$46,391	19.2	915.7	24
Harrison	Marshall	66,931	56%	\$46,969	16.3	829.8	7
Henderson	Athens	79,849	60%	\$40,299	19.8	966.7	28
Hopkins	Sulphur Springs	35,601	60%	\$45,158	20.6	850.3	10
Houston	-	23,396	73%	\$32,855	22.5	836.7	8
Jasper	-	35,438	78%	\$39,176	17.9	907.0	21
Lamar	Paris	50,270	47%	\$41,130	18.9	959.7	27
Marion	-	10,482	57%	\$34,363	23.9	1089.4	33
Morris	-	13,214	78%	\$39,387	17.6	795.7	3
Nacogdoches	Nacogdoches	65,043	46%	\$39,126	24.3	876.6	15
Newton	-	14,525	100%	\$36,890	14.9	845.7	9
Panola	-	24,244	73%	\$51,794	13.8	912.8	23
Polk	-	47,097	78%	\$39,412	18.0	1133.9	34
Rains	-	11,024	93%	\$46,531	11.2	933.7	26
Red River	-	12,418	76%	\$31,344	17.6	823.3	5
Rusk	Henderson	53,545	66%	\$46,924	17.0	885.0	17
Sabine	-	11,045	100%	\$33,951	25.4	912.1	22
San Augustine	-	8,906	100%	\$29,293	23.7	998.3	30

County Name	Cities >10K Population	Population Size <sup>1</sup>	% Rural <sup>2</sup>	Median Household Income <sup>2</sup>	% Poverty <sup>2</sup>	Age-Adjusted Mortality rate <sup>3</sup>	Mortality Rate Rank <sup>4</sup>
San Jacinto	-	27,547	100%	\$46,969	20.2	809.0	4
Shelby	-	25,987	79%	\$36,250	23.1	1082.3	32
Smith	Tyler	214,986	32%	\$46,669	16.9	790.4	1
Titus	Mount Pleasant	32,893	51%	\$42,856	22.3	795.5	2
Trinity	-	14,186	77%	\$35,223	16.0	856.3	12
Tyler	-	22,261	78%	\$41,630	15.8	985.7	29
Upshur	-	40,115	79%	\$46,834	14.0	904.8	20
Van Zandt	-	53,561	75%	\$42,579	17.1	896.8	19
Wood	-	43,106	74%	\$44,376	14.6	894.4	18

<sup>1</sup>Data source: Texas State Data Center and Office of the State Demographer, The University of Texas at San Antonio, Population estimates for July 1, 2013.

<sup>2</sup>Data source: U.S. Census Bureau, Rural: Census 2010 Summary File 1, Table P2. Poverty: 2010-2014 American Community Survey 5-Year Estimates, Table DP03. Median Household Income: 2010-2014 American Community Survey 5-Year Estimates, Table S1903.

<sup>3</sup>Data source: National Center for Health Statistics on CDC WONDER database.

<sup>4</sup>Counties ranked in order of age-adjusted mortality rate from lowest to highest. Smith County has the lowest age-adjusted mortality rate, and Delta County has the highest.

**Table A-2. Percent of Population with Health Insurance Coverage by Age Group: Northeast Texas, Texas and U.S. (2010-2014)**

	Northeast Texas	Texas	U.S.
All ages	78.9	78.1	85.8
<65 years-old	75.0	75.7	83.7
<18 years-old	87.1	87.4	92.9
18-64 years-old	69.9	70.5	80.2

Data source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates. Table DP03.



**Table A-3. Age-Adjusted All-Cause Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014)**

Year	Northeast Texas	Texas	U.S.
2005	918.7	832.1	815.0
2006	904.1	807.7	791.8
2007	925.6	803.1	775.3
2008	941.2	803.6	774.9
2009	911.9	772.1	749.6
2010	913.5	772.3	747.0
2011	895.8	751.6	741.3
2012	900.2	753.3	732.8
2013	893.1	751.6	731.9
2014	889.7	745.3	724.6

Data source: National Center for Health Statistics on CDC WONDER database. Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-4. Age-Adjusted All-Cause Mortality Rates by Gender, Race/Ethnicity: Northeast Texas, Texas and U.S. (2014)**

	Northeast Texas	Texas	U.S.	% difference: Northeast Texas vs. Texas
Male	1030.9	876.1	855.1	17.7
Female	762.4	635.5	616.7	20.0
Non-Hispanic White	911.6	786.2	742.8	16.0
Non-Hispanic Black	971.7	906.6	870.7	7.2
Hispanic	418.7	622.6	523.3	-32.7

Data source: National Center for Health Statistics on CDC WONDER database. Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-5. All-Cause Mortality Rates by Age: Northeast Texas, Texas and U.S. (2014)**

	Northeast Texas	Texas	U.S.	% difference: Northeast Texas vs. Texas
1-4 years	32.1	24.2	24.0	32.6
5-14 years	15.0	14.2	12.7	5.6
15-24 years	85.5	66.2	65.5	29.2
25-34 years	153.8	103.1	108.4	49.2
35-44 years	263.1	167.8	175.2	56.8
45-54 years	584.0	410.2	404.8	42.4
55-64 years	1250.9	918.7	870.3	36.2
65-74 years	2265.6	1876.4	1786.3	20.7
75-84 years	5300.3	4785.9	4564.2	10.7
85+ years	14517.5	13486.8	13407.9	7.6

Data source: National Center for Health Statistics on CDC WONDER database. Rates are per 100,000 population.

**Table A-6. Leading Causes of Death in Northeast Texas for Males, Number of Deaths and Rates per 100,000 by Age Group (2014)**

Rank	1-44	45-64	65-74	75+
1	Accidents (unintentional injuries) 226(52.4)	Diseases of heart 607(313.1)	Diseases of heart 555 (785.5)	Diseases of heart 1115(2412.9)
2	Intentional self-harm (suicide) 91(21.1)	Malignant neoplasms 541(279.1)	Malignant neoplasms 537(760.0)	Malignant neoplasms 657(1421.8)
3	Diseases of heart 74(17.2)	Accidents (unintentional injuries) 134(69.1)	Chronic lower respiratory diseases 154(217.9)	Chronic lower respiratory diseases 293(634.1)
4	Assault (homicide) 50(11.6)	Chronic lower respiratory diseases 91(46.9)	Cerebrovascular diseases 89(126.0)	Cerebrovascular diseases 283(612.4)
5	Malignant neoplasms 43(10.0)	Chronic liver disease and cirrhosis 82(42.3)	In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior 73(103.3)	Alzheimer's disease 149(322.4)
6		Intentional self-harm (suicide) 71(36.6)	Diabetes mellitus 55(77.8)	In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior 90(194.8)
7		Cerebrovascular diseases 67(34.6)	Accidents (unintentional injuries) 52(73.6)	Nephritis, nephrotic syndrome and nephrosis 90(194.8)
8		Nephritis, nephrotic syndrome and nephrosis 52(26.8)	Nephritis, nephrotic syndrome and nephrosis 47(66.5)	Accidents (unintentional injuries) 84(181.8)
9		Diabetes mellitus 51(26.3)	Chronic liver disease and cirrhosis 42(59.4)	Diabetes mellitus 82(177.5)
10		In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior 43(22.2)	Septicemia 36(50.9)	Influenza and pneumonia 79(171.0)

Data source: National Center for Health Statistics on CDC WONDER database.  
Empty cells indicate too few deaths occurred to calculate rates.

**Table A-7. Leading Causes of Death in Northeast Texas for Females, Number of Deaths and Rates per 100,000 by Age Group (2014)**

Rank	1-44	45-64	65-74	75+
1	Accidents (Unintentional Injuries) 81(19.9)	Malignant neoplasms 351(179.1)	Malignant neoplasms 393(501.9)	Diseases of heart 1259(1983.7)
2	Diseases of heart 46(11.3)	Diseases of heart 331(168.9)	Diseases of heart 324(413.8)	Malignant neoplasms 603(950.1)
3	Malignant neoplasms 38(9.3)	Chronic lower respiratory diseases 83(42.3)	Chronic lower respiratory diseases 154(196.7)	Cerebrovascular diseases 409(644.4)
4	Intentional self-harm (suicide) 23(5.6)	Accidents (unintentional injuries) 75(38.3)	Cerebrovascular diseases 74(94.5)	Alzheimer's disease 379(597.2)
5	Assault (homicide) 23(5.6)	Cerebrovascular diseases 66(33.7)	In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior 39(49.8)	Chronic lower respiratory diseases 333(524.7)
6		In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior 57(29.1)	Septicemia 39(49.8)	Diabetes mellitus 116(182.8)
7		Chronic liver disease and cirrhosis 54(27.5)	Diabetes mellitus 38(48.5)	Nephritis, nephrotic syndrome and nephrosis 110(173.3)
8		Diabetes mellitus 48(24.5)	Nephritis, nephrotic syndrome and nephrosis 35(44.7)	Septicemia 95(149.7)
9		Nephritis, nephrotic syndrome and nephrosis 44(22.4)	Chronic liver disease and cirrhosis 21(26.8)	Influenza and pneumonia 85(133.9)
10		Intentional self-harm (suicide) 29(14.8)	Alzheimer's disease 20(25.5)	In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior 77(121.3)

Data source: National Center for Health Statistics on CDC WONDER database.  
Empty cells indicate too few deaths occurred to calculate rates.

**Heart Disease Data Tables**

**Table A-8. Age-Adjusted Heart Disease Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014)**

Year	Northeast Texas	Texas	U.S.
2005	253.2	220.4	216.8
2006	239.7	205.2	205.5
2007	248.7	200.1	196.1
2008	234.3	191.7	192.1
2009	226.4	184.1	182.8
2010	224.4	181.1	179.1
2011	227.5	172.5	173.7
2012	222.6	171.3	170.5
2013	226.0	170.7	169.8
2014	226.4	169.9	167.0

Data source: National Center for Health Statistics on CDC WONDER database. ICD10 codes I00-I09,I11,I13,I20-I51. Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-9. Age-Adjusted Coronary Heart Disease Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014)**

Year	Northeast		
	Texas	Texas	U.S.
2005	175.8	152.6	148.2
2006	163.2	136.9	138.3
2007	164.7	129.9	129.2
2008	153.4	122.9	126.1
2009	148.3	115.7	117.7
2010	143.7	112.5	113.6
2011	140.3	105.9	109.2
2012	133.7	102.2	105.4
2013	133.9	101.3	102.6
2014	127.2	98.7	98.8

**Table A-10. Age-Adjusted Coronary Heart Disease Mortality Rates by Race/Ethnicity and Gender: Northeast Texas, Texas and U.S. (2014)**

	Northeast		
	Texas	Texas	U.S.
Male	170.4	133.7	133.5
Female	90.2	70.8	71.6
Non-Hispanic White	129.7	103.1	101.2
Non-Hispanic Black	141.9	120.1	114.8
Hispanic	60.0	85.6	75.3

Data source (Both tables): National Center for Health Statistics on CDC WONDER database. ICD10 codes I20-I25. Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population..

**Cancer Data Tables**

**Table A-11. Age-Adjusted Invasive Cancer Incidence Rates: Northeast Texas, Texas and U.S. (2003-2012)**

Year	Northeast		
	Texas	Texas	U.S.
2003	499.2	475.6	478.3
2004	492.9	467.5	477.6
2005	472.1	463.9	477.9
2006	464.4	457.1	480.1
2007	476.7	464.1	483.7
2008	469.2	453.5	479.2
2009	449.3	444.4	473.6
2010	427.8	425.1	460.3
2011	433.6	412.8	457.9
2012	445.1	406.2	440.3

**Table A-12. Age-Adjusted Invasive Cancer Incidence Rates by Race/Ethnicity and Gender: Northeast Texas, Texas and U.S. (2012)**

	Northeast		
	Texas	Texas	U.S.
Male	500.4	452.7	483.0
Female	403.6	374.8	411.7
Non-Hispanic White	456.9	438.1	453.0
Non-Hispanic Black	452.1	454.7	454.7
Hispanic	311.2	332.5	340.5

Data source (Both tables): Northeast Texas - Texas Cancer Registry, Texas Department of State Health Services. Texas and National - U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database.

Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-13. Age-Adjusted Cancer Mortality Rates: Northeast Texas, Texas and U.S. (2003-2012)**

Year	Northeast		
	Texas	Texas	U.S.
2003	212.9	186.6	190.9
2004	206.1	182.6	186.8
2005	196.1	179.5	185.3
2006	195.6	176.7	182.0
2007	192.9	172.3	179.3
2008	196.4	170.4	176.3
2009	183.6	164.8	173.4
2010	185.3	165.1	171.8
2011	182.9	162.6	168.7
2012	182.6	160.6	166.4

**Table A-14. Age-Adjusted Invasive Cancer Mortality Rates by Race/Ethnicity and Gender: Northeast Texas, Texas and U.S. (2012)**

	Northeast		
	Texas	Texas	U.S.
Male	224.7	195.9	200.6
Female	149.7	134.8	141.9
Non-Hispanic White	186.5	169.1	170.2
Non-Hispanic Black	196.3	203.1	199.2
Hispanic	93.8	128.9	117.8

Data source (Both tables): Northeast Texas - Texas Cancer Registry, Texas Department of State Health Services. Texas and National - U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database.

Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-15. Age-Adjusted Invasive Cancer Incidence Rates by Site: Northeast Texas, Texas and U.S. (2012)**

Site	Northeast		
	Texas	Texas	U.S.
All Sites	445.1	406.2	440.3
Lung	78.1	55.4	60.4
Colorectal	43.0	38.0	38.9
Female Breast	109.2	110.8	122.2
Prostate	99.0	93.4	105.3
Cervical	7.7	9.0	7.4
Melanoma	12.1	12.1	19.9

**Table A-16. Age-Adjusted Cancer Mortality Rates by Site: Northeast Texas, Texas and U.S. (2012)**

Site	Northeast		
	Texas	Texas	U.S.
All Sites	182.6	160.6	166.4
Lung	55.5	41.0	45.0
Colorectal	17.0	14.8	14.7
Female Breast	21.0	21.1	21.3
Prostate	16.3	18.0	19.6
Cervical	2.5	2.8	2.3
Melanoma	3.5	2.2	2.7

Data source (Both tables): Northeast Texas - Texas Cancer Registry, Texas Department of State Health Services. Texas and National - U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-17. Age-Adjusted Invasive Cancer Incidence and Cancer Mortality Rates by Gender: Northeast Texas (2003-2012)**

	Incidence Rates		Mortality Rates	
	Males	Females	Males	Females
2003	611.8	419.3	272.9	169.7
2004	607.3	409.7	272.7	159.1
2005	575.8	396.2	254.0	155.4
2006	549.3	402.0	244.1	158.9
2007	580.4	396.6	247.0	152.7
2008	549.0	412.0	241.7	163.0
2009	519.0	397.7	228.2	149.9
2010	483.6	386.8	233.7	148.7
2011	509.1	375.5	225.1	149.4
2012	500.4	403.6	224.7	149.7

Data source: Texas Cancer Registry, Texas Department of State Health Services. Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-18. Age-Adjusted Lung Cancer Mortality Rates by County: Northeast Texas (2012)**

County	Incidence Rate
Anderson	61.3
Angelina	46.3
Bowie	66.0
Cass	43.2
Cherokee	66.6
Gregg	56.0
Harrison	46.6
Henderson	59.9
Hopkins	53.9
Houston	56.8
Jasper	64.5
Lamar	45.9
Marion	100.0
Nacogdoches	58.2
Polk	76.4
Rusk	44.4
San Jacinto	110.9
Smith	44.1
Trinity	101.4
Tyler	52.7
Upshur	54.8
Van Zandt	63.2
Wood	26.2
Northeast Texas	55.5
Texas	41.0
U.S.	45.0

Data sources: Northeast Texas - Texas Cancer Registry, Texas Department of State Health Services. Texas and National – U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database. Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-19. Age-Adjusted Lung Cancer Mortality Rates by Race/Ethnicity and Gender: Northeast Texas (2003-2012)**

Year	Non-Hispanic White	Non-Hispanic Black	Male	Female
	2003	69.8	76.5	99.1
2004	65.7	74.7	90.6	47.5
2005	66.2	63.3	88.2	46.5
2006	64.5	61.8	86.4	45.7
2007	63.7	59.1	86.8	44.2
2008	64.3	66.5	85.1	47.8
2009	59.1	69.6	75.5	46.0
2010	57.5	62.8	76.4	42.1
2011	63.2	58.3	80.9	43.8
2012	58.5	53.5	73.3	41.6

Data source: Texas Cancer Registry, Texas Department of State Health Services. Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-20. Age-Adjusted Colorectal Cancer Mortality Rates by Race/Ethnicity and Gender: Northeast Texas, Texas and U.S. (2012)**

	Northeast		
	Texas	Texas	U.S.
Male	20.7	18.0	17.6
Female	13.9	12.1	12.4
Non-Hispanic White	16.8	14.6	14.5
Non-Hispanic Black	23.8	21.2	20.4

Data source: Northeast Texas - Texas Cancer Registry, Texas Department of State Health Services. Texas and National – U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database. Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-21. Age-Adjusted Female Breast Cancer Mortality Rates by Race/Ethnicity: Northeast Texas, Texas and U.S. (2012)**

	Northeast		
	Texas	Texas	U.S.
Non-Hispanic White	20.9	20.9	21.3
Non-Hispanic Black	28.0	35.0	30.2

Data source: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database. Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Chronic Lower Respiratory Disease Data Tables**

**Table A-22. Age-Adjusted Mortality Rates for COPD in adults ≥45 years old: Northeast Texas, Texas and U.S. (2005-2014)**

Year	Northeast		U.S.
	Texas	Texas	
2005	149.2	121.2	120.6
2006	131.4	112.3	112.7
2007	148.3	116.7	113.9
2008	171.7	125.2	123.5
2009	165.8	118.0	117.9
2010	151.1	120.0	116.6
2011	149.3	117.8	117.7
2012	157.6	118.6	114.8
2013	157.9	117.9	116.5
2014	158.6	112.7	111.7

Data source: National Center for Health Statistics on CDC WONDER database.  
 COPD: Chronic Obstructive Pulmonary Disease (ICD10 codes: J40-J44). Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-24. Asthma Hospitalization Rates by Age Group: Northeast Texas and Texas (2014)**

Age Group (years)	Northeast Texas	Texas
0-4	10.5	15.9
5-9	9.8	17.1
10-14	2.8	6.2
15-19	1.3	2.2
20-24	1.2	1.5
25-29	2.3	2.4
30-34	3.5	3.0
35-39	5.6	4.0
40-44	7.5	4.8
45-49	7.7	6.5
50-54	7.1	8.3
55-59	7.0	8.6
60-64	6.6	9.9
65-69	8.7	11.6
70-74	10.3	14.6
75-79	11.0	16.2
80-84	13.2	19.6
85+	17.2	22.1

Data source: Texas Hospital Inpatient Discharge Public Use Data Files. Center for Health Statistics, Texas Department of State Health Services. Hospital discharges were based on ICD-9 codes for asthma listed as the primary diagnosis (493).

**Table A-23. Age-Adjusted Mortality Rates for COPD in adults ≥45 years old by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2014)**

	Northeast		U.S.
	Texas	Texas	
Male	178.4	128.7	126.5
Female	144.6	101.7	101.6
Non-Hispanic White	175.4	143.1	126.3
Non-Hispanic Black	76.1	82.6	74.8

Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-25. Asthma Hospitalization Rates for Children Younger than Five Years-Old: Northeast Texas and Texas (2011-2014)**

Year	Northeast	
	Texas	Texas
2011	19.5	21.2
2012	18.7	21.6
2013	13.5	16.9
2014	10.5	15.9

Data source: Texas Hospital Inpatient Discharge Public Use Data Files. Center for Health Statistics, Texas Department of State Health Services. Hospital discharges were based on ICD-9 codes for asthma listed as the primary diagnosis (493). Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.



**Stroke Data Tables**

**Table A-26. Age-Adjusted Stroke Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014)**

Year	Northeast		
	Texas	Texas	U.S.
2005	58.8	52.4	48.0
2006	55.9	50.4	44.8
2007	61.5	51.4	43.5
2008	60.2	49.2	42.1
2009	56.0	45.2	39.6
2010	55.5	44.4	39.1
2011	55.6	41.9	37.9
2012	55.5	41.8	36.9
2013	47.5	40.2	36.2
2014	53.2	41.6	36.5

**Table A-27. Age-Adjusted Stroke Mortality Rates by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2014)**

	Northeast		
	Texas	Texas	U.S.
Male	56.0	42.2	36.9
Female	50.5	40.4	35.6
Non-Hispanic White	52.4	41.2	35.4
Non-Hispanic Black	64.3	57.9	50.9

Data source: National Center for Health Statistics on CDC WONDER database. Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-28. Age-Adjusted Stroke Hospitalization Rates Overall and by Gender: Northeast Texas and Texas (2014)**

	Northeast Texas	Texas
Overall	192.6	180.8
Male	196.7	184.0
Female	189.2	177.0

Data source: Texas Hospital Inpatient Discharge Public Use Data Files. Center for Health Statistics, Texas Department of State Health Services. Hospital discharges were based on ICD-9 codes for stroke listed as the primary diagnosis. Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population. Cases with missing geography were excluded to allow comparison between Texas and Northeast Texas. Therefore, actual stroke hospitalization rates are somewhat higher.

**Unintentional Injury Tables**

**Table A-29. Age-Adjusted Unintentional Injury Mortality Rates: Northeast Texas, Texas and U.S. (2005-2014)**

Year	Northeast		U.S.
	Texas	Texas	
2005	55.8	40.4	39.5
2006	61.9	41.6	40.2
2007	64.0	42.0	40.4
2008	57.1	40.4	39.2
2009	58.8	40.2	37.5
2010	56.1	39.0	38.0
2011	58.9	38.7	39.1
2012	52.2	37.4	39.1
2013	50.0	37.0	39.4
2014	48.0	37.3	40.5

Data source: National Center for Health Statistics on CDC WONDER database.  
Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-30. Unintentional Injury Mortality Rates by Cause of Injury: Northeast Texas and Texas (2014)**

	Northeast	
	Texas	Texas
Motor Vehicle Crashes	21.8	13.8
Poisoning	8.8	8.7
Falls	5.6	7.8
Drowning	2.0	1.1

**Table A-31. Age-Adjusted Motor Vehicle Injury Mortality Rate: Northeast Texas, Texas and U.S. (2005-2014)**

Year	Northeast		U.S.
	Texas	Texas	
2005	31.1	16.8	15.2
2006	33.4	16.9	15.0
2007	32.9	16.2	14.4
2008	27.8	15.7	12.9
2009	28.7	14.3	11.6
2010	25.7	13.4	11.3
2011	28.2	13.0	11.1
2012	26.6	14.0	11.4
2013	24.3	13.8	10.9
2014	21.8	13.8	10.8

Data source: National Center for Health Statistics on CDC WONDER database.  
Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-32. Age-Adjusted Motor Vehicle Injury Mortality Rates by Gender and Race: Northeast Texas, Texas and U.S. (2014)**

	Northeast		U.S.
	Texas	Texas	
Male	31.2	20.2	15.8
Female	12.4	7.6	6.1
Non-Hispanic White	24.1	15.0	11.3
Non-Hispanic Black	20.4	13.6	11.6

**Table A-33. Motor Vehicle Crash Rates: Texas and Northeast Texas (2010-2014)**

<b>Year</b>	<b>Northeast Texas</b>	<b>Texas</b>
2010	1,911	1,559
2011	1,748	1,500
2012	1,738	1,599
2013	1,713	1,674
2014	1,721	1,756

Data source: Texas Department of Motor Vehicles  
Rates are per 100,000 population.

**Table A-34. Percent of Crashes Resulting in a Fatality or Severe Injury: Texas and Northeast Texas (2010-2014)**

<b>Year</b>	<b>Northeast Texas</b>	<b>Texas</b>
2010	5.1	3.7
2011	5.3	3.8
2012	5.1	3.8
2013	5.0	3.7
2014	5.1	3.5

Data source: Texas Department of Motor Vehicles.

**Mental and Behavioral Health Data Tables**

**Table A-35. Age-Adjusted Suicide Rates: Northeast Texas, Texas and U.S. (2005-2014)**

Year	Northeast		U.S.
	Texas	Texas	
2005	14.5	10.9	10.9
2006	14.3	10.3	11.0
2007	12.7	10.5	11.3
2008	14.7	10.8	11.6
2009	17.1	11.6	11.8
2010	19.0	11.7	12.1
2011	16.8	11.5	12.3
2012	17.5	11.9	12.6
2013	15.4	11.7	12.6
2014	17.4	12.2	13.0

Data source: National Center for Health Statistics on CDC WONDER database.  
Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-36. Age-Adjusted Suicide Rates by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2014)**

	Northeast		U.S.
	Texas	Texas	
Male	27.3	19.7	20.7
Female	7.7	5.4	5.8
Non-Hispanic White	21.2	18.4	16.4
Non-Hispanic Black	10.9	6.8	5.7

**Table A-37. Age-Adjusted Mortality Rates due to Alcohol/Drug Use: Northeast Texas, Texas and U.S. (2005-2014)**

Year	Northeast		U.S.
	Texas	Texas	
2005	14.1	15.5	18.3
2006	17.2	16.8	19.8
2007	16.7	15.8	19.9
2008	18.8	14.8	20.0
2009	18.6	16.0	20.0
2010	17.2	16.2	20.6
2011	18.5	16.7	21.6
2012	16.0	16.2	21.8
2013	16.4	16.4	22.8
2014	17.5	17.1	24.1

Data source: National Center for Health Statistics on CDC WONDER database.  
Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-38. Age-Adjusted Mortality Rates due to Alcohol/Drug Use by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2014)**

	Northeast		U.S.
	Texas	Texas	
Male	21.1	23.2	32.2
Female	13.9	11.2	16.3
Non-Hispanic White	21.4	23.0	28.8
Non-Hispanic Black	12.1	13.4	17.8

**Diabetes Data Tables**

**Table A-39. Age-Adjusted Mortality Rates for Diabetes as Underlying or Multiple Cause: Northeast Texas, Texas and U.S. (2005-2014)**

Year	Northeast		
	Texas	Texas	U.S.
2005	91.0	91.6	77.7
2006	83.9	85.0	75.3
2007	80.3	84.3	74.0
2008	82.2	82.3	73.2
2009	82.5	81.4	70.8
2010	82.8	83.3	70.7
2011	84.1	82.4	70.3
2012	84.8	82.7	69.1
2013	81.2	84.3	69.2
2014	79.6	82.9	67.1

**Table A-40. Age-Adjusted Mortality Rates for Diabetes as Underlying or Multiple Cause by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2014)**

	Northeast		
	Texas	Texas	U.S.
Male	90.2	99.5	83.1
Female	70.5	69.5	54.4
Non-Hispanic White	74.2	70.1	61.8
Non-Hispanic Black	126.9	122.6	104.9
Hispanic	67.7	107.6	76.5

Data source: National Center for Health Statistics on CDC WONDER database. Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Kidney Disease Data Tables**

**Table A-41. Age-Adjusted Mortality Rates for Kidney Disease: Northeast Texas, Texas and U.S. (2005-2014)**

Year	Northeast		
	Texas	Texas	U.S.
2005	14.6	14.9	14.7
2006	16.1	15.8	14.8
2007	17.6	17	14.9
2008	20.7	17.7	15.1
2009	17.5	17.9	15.1
2010	18.8	18.4	15.3
2011	17.3	15.4	13.4
2012	18.5	15.6	13.1
2013	19.5	15.9	13.2
2014	19.9	16.5	13.2

**Table A-42. Age-Adjusted Mortality Rates for Kidney Disease by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2014)**

	Northeast		
	Texas	Texas	U.S.
Male	22.2	20.2	16.2
Female	18.2	13.9	11.1
Non-Hispanic White	18.5	14.3	12.1
Non-Hispanic Black	32.0	28.9	25.3

Data source: National Center for Health Statistics on CDC WONDER database. Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-43. Age-Adjusted Mortality Rates for Alzheimer’s Disease: Northeast Texas, Texas and U.S. (2005-2014)**

Year	Northeast		
	Texas	Texas	U.S.
2005	25.4	27.4	24.0
2006	25.0	27.9	23.7
2007	27.3	26.8	23.8
2008	32.0	28.6	25.8
2009	34.0	26.6	24.2
2010	32.6	26.8	25.1
2011	29.3	26.6	24.7
2012	27.9	24.6	23.8
2013	30.8	24.3	23.5
2014	29.7	30.0	25.4

**Table A-44. Age-Adjusted Mortality Rates for Alzheimer’s Disease by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2014)**

	Northeast		
	Texas	Texas	U.S.
Male	21.6	24.0	20.6
Female	34.7	33.6	28.3
Non-Hispanic White	31.3	32.5	26.8
Non-Hispanic Black	22.7	27.7	22.7

Data source: National Center for Health Statistics on CDC WONDER database.  
 Rates are per 100,000 population. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Infectious Disease Data Tables**

**Table A-45. Tuberculosis Incidence Rates per 100,000 by Race/Ethnicity: Northeast Texas and Texas (2014)**

	Northeast Texas	Texas
Overall	2.8	4.7
Non-Hispanic White	0.8	1.0
Non-Hispanic Black	5.1	7.1
Hispanic	8.1	6.5

Data source: Tuberculosis Service Branch, Texas Department of State Health Services. Rates are per 100,000 population.

**Table A-46. Measures of HIV/AIDS: Select Northeast Texas Counties, Northeast Texas and Texas (2014)**

Geography	Existing HIV Cases		New HIV Cases		New AIDS Cases	
	Count	Prevalence	Count	Incidence Rate	Count	Incidence Rate
Angelina County	135	153.8	10	11.4	9	10.3
Bowie County	206	220.9	21	22.5	6	6.4
Gregg County	410	332.8	27	21.9	8	6.5
Houston County	85	373.8	6	26.4	3	8.4
Marion County	24	236.5	1	9.9	0	0.0
Smith County	397	181.4	22	10.1	8	3.7
Northeast Texas	2,480	159.4	160	10.3	78	5.0
Texas	80,073	297.0	4,405	16.3	2,089	7.7

Source: Texas HIV Surveillance Reports, Department of State Health Services, July 22, 2015. Prevalence and incidence rates are per 100,000 population.

**Table A-47. HIV Incidence Rates: Northeast Texas, Texas and U.S. (2010-2014)**

Year	Northeast		
	Texas	Texas	U.S.
2010	10.4	17.8	14.6
2011	9.1	16.8	14.0
2012	9.4	16.7	13.8
2013	8.6	16.4	13.5
2014	10.3	16.3	13.9

**Table A-48. Diagnoses of AIDS infection: Northeast Texas, Texas and U.S. (2010-2014)**

Year	Northeast		
	Texas	Texas	U.S.
2010	6.5	11.2	9.1
2011	6.0	10.1	8.5
2012	6.0	9.8	8.2
2013	5.6	9.4	8.0
2014	5.0	7.7	6.6

Source: Texas HIV Surveillance Reports, Department of State Health Services, July 22, 2015. U.S. data source: Centers for Disease Control and Prevention. HIV Surveillance Report, 2014; vol. 26. Rates are per 100,000 population.

**Table A-49. Age-Adjusted HIV Mortality Rates Overall and by Gender and Race/Ethnicity: Northeast Texas, Texas and U.S. (2010-2014)**

	Northeast Texas	Texas	U.S.
Overall	2.9	2.7	2.2
Male	4.2	4.1	3.3
Female	1.6	1.4	1.2
Non-Hispanic White	1.9	1.6	1.0
Non-Hispanic Black	9.7	9.8	10.1

Rates are per 100,000 population.

**Table A-50. Pertussis Incidence Rates: Northeast Texas and Texas (2011-2014)**

Year	Northeast	
	Texas	Texas
2010	1.3	3.7
2011	7.6	8.4
2012	6.2	14.8
2013	7.8	9.4
2014	1.3	3.7

Rates are per 100,000 population.

**Table A-51. Varicella Incidence Rates: Northeast Texas and Texas (2011-2014)**

Year	Northeast	
	Texas	Texas
2010	5.3	9.9
2011	7.5	9.1
2012	3.7	7.0
2013	2.6	6.0
2014	5.3	9.9

**Table A-52. Kindergarten Immunization Rates: Northeast Texas and Texas (2014)**

Vaccine	Northeast	
	Texas	Texas
DTP/DTaP/DT/Td	97.4%	97.2%
Hepatitis A	97.4%	97.1%
Hepatitis B	98.7%	98.0%
MMR (2 doses)	97.9%	97.4%
Polio	97.8%	97.3%
Varicella (2 doses)	97.6%	97.1%

**Table A-53. 7<sup>th</sup> Grade Immunization Rates: Northeast Texas and Texas (2014)**

Vaccine	Northeast	
	Texas	Texas
Hepatitis B	99.5%	98.9%
Meningococcal	98.0%	96.5%
MMR (2 doses)	99.5%	99.0%
Polio	99.4%	98.8%
Tdap/Td	97.9%	97.1%
Varicella (2 doses)	98.7%	97.5%



**Maternal and Infant Health Data Tables**

**Table A-54. Birth Outcomes and Prenatal Risk Factor Prevalence: Northeast Texas and Texas (2005-2013)**

Measure	Year	Northeast Texas	Texas
Infant mortality rates, three-year rolling rates	2005-2007	6.3	6.3
	2006-2008	6.2	6.0
	2007-2009	6.3	6.3
	2008-2010	6.1	6.0
	2009-2011	6.1	5.9
	2010-2012	6.2	5.9
	2011-2013	6.3	5.8
Percent of preterm live births*	2011	14.1	12.8
	2012	13.0	12.4
	2013	12.4	12.3
Percent of live births to women who did not receive prenatal care in first trimester	2011	42.5	37.1
	2012	45.4	37.2
	2013	47.4	37.6
Percent of live births to women who were obese pre-pregnancy	2011	27.0	22.7
	2012	27.0	23.3
	2013	27.8	23.9
Percent of live births to women who smoked during pregnancy	2011	14.2	4.6
	2012	13.7	4.4
	2013	13.6	4.3

Data source: 2005-2013 Birth Files. Data provided by: Office of Program Decision Support. Department of State Health Services.

\*Preterm birth is determined using the procedure outlined by Healthy People 2020.

**Table A-55. Infant Mortality Three-Year Rolling Rates by Race/Ethnicity: Northeast Texas and Texas (2011-2013)**

	Northeast Texas	Texas
Total	6.3	5.8
Non-Hispanic White	5.6	5.0
Non-Hispanic Black	11.3	11.5
Hispanic	4.6	5.2

Data source: 2011-2013 Birth Files. Data provided by: Office of Program Decision Support. Department of State Health Services.

**Smoking Ordinance Coverage Data Table**

**Table A-56. Percent of Municipalities with 100% Smoke-Free Ordinance Coverage by Settings: Northeast Texas and Texas (2014)**

	<b>Northeast Texas</b>	<b>Texas</b>
Percent municipalities with 100% smoke-free ordinances for municipal and private worksite settings	25.0	24.2
Percent municipalities with 100% smoke-free ordinances for restaurants and bars	9.4	14.3
Percent municipalities with 100% smoke-free ordinances for worksites and restaurants/bars	9.4	13.2

Data source: Texas Smoke-Free Ordinance Database, University of Houston.  
 All incorporated Texas municipalities with populations of greater than 5,000 residents are included. Details on the methodology and data by municipality can be found at: <http://shsordinances.uh.edu/>

**Behavioral Risk Factor Surveillance Survey (BRFSS) and School Physical Activity and Nutrition (SPAN) Data**

**Table A-57. Unadjusted and Age-Adjusted Prevalence Measures Assessed via Behavioral Risk Factor Surveillance Survey (BRFSS): Northeast Texas and Texas (2014)**

Measure	Northeast Texas %(95% CI)		Texas %(95% CI)	
	Unadjusted	Age-Adjusted	Unadjusted	Age-adjusted
Physical health not good 14+ days in the past 30 days	14.5(11.4-18.3)	11.6(10.9-12.3)	10.9(10.1-11.7)	10.0(8.7-11.2)
Perceive health in general as fair or poor	23.5(19.9-27.5)	21.2(18.3-24.1)	19.5(18.4-20.5)	18.2(17.0-19.4)
Have not visited a doctor in past year because of medical cost	22.4(18.5-26.7)	20.6(17.7-23.5)	17.6(16.6-18.7)	16.5(15.1-17.8)
Met current cervical cancer screening guidelines (women)	65.1(55.9-73.3)	75.4(65.9-85.0)	77.7(75.6-79.8)	78.0(75.7-80.4)
Met current breast cancer screening guidelines (women)	72.6(64.8-79.3)	76.4(66.1-86.7)	76.7(74.3-78.9)	76.8(74.2-79.4)
Met current colorectal cancer screening guidelines	57.5(50.6-64.2)	54.9(46.9-62.8)	60.8(58.6-62.9)	61.4(59.1-63.7)
Been told by health care provider: have heart disease	5.1(3.6-7.1)	7.1(5.1-9.1)	3.7(3.3-4.2)	5.8(5.3-6.4)
Been told by health care provider: had a stroke	2.6(1.5-4.4)	3.7(2.1-5.3)	3.0(2.6-3.4)	2.7(2.4-3.0)
Been told by health care provider: have COPD	7.3(5.6-9.5)	8.2(5.4-11.0)	5.3(4.8-5.9)	5.1(4.6-5.6)
Been told by health care provider: have asthma (current)	9.6(7.3-12.5)	9.5(7.2-11.9)	6.7(6.1-7.3)	6.7(5.8-7.6)
Been told by health care provider: have diabetes	12.3(9.7-15.5)	11.5(9.9-13.0)	11.0(10.3-11.8)	10.0(8.7-11.2)
Heavy drinking in past 30 days	3.8(2.6-5.6)	4.1(1.2-7.0)	5.8(5.2-6.5)	5.9(5.0-6.8)
Binge drinking in past 30 days	9.6(7.2-12.5)	7.6(6.2-9.0)	16.3(15.2-17.4)	17.3(16.1-18.5)
Overweight or obese	64.9(60.1-69.4)	69.6(62.2-77.0)	67.8(66.5-69.2)	65.1(63.6-66.7)
Obese	32.4 (28.3-36.9)	35.4(30.9-39.9)	31.9(30.6-33.3)	29.7(28.0-31.4)
Current smoker	23.4(19.4-27.9)	19.5(14.5-24.5)	14.5(13.6-15.6)	14.0(12.8-15.1)
No past-month leisure-time physical activity	35.3(31.0-39.9)	35.0(25.8-44.2)	27.6(26.4-28.8)	27.3(25.7-28.9)

Data source: Behavioral Risk Factor Surveillance System (BRFSS), Center for Health Statistics, Texas Department of State Health Services. Rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-58. Definitions of Prevalence Measures Assessed via Behavioral Risk Factor Surveillance Survey (BRFSS)**

<b>Measure</b>	<b>Question/Definition</b>
Physical health not good 14+ days in past 30 days	“Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?”
Perceive health in general as fair or poor	“Would you say that in general your health is excellent, very good, good, fair, poor?”
Have not visited a doctor in past year because of medical cost	“Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?”
Met current cervical cancer screening guidelines (women)	Females ages 21-65 years, with intact cervix, who have had a pap test within the past 3 years
Met current breast cancer screening guidelines (women)	Females ages 50-75 years who have had a mammogram within the past 2 years
Met current colorectal cancer screening guidelines	Adults aged 50 to 75 years who have had a blood stool test in the past year, sigmoidoscopy in the past 5 years and blood stool test in the past 3 years, or a colonoscopy in the past 10 years
Been told by health care provider: have heart disease	“Has a doctor, nurse, or other health professional ever told you that you had a heart attack, also called a myocardial infarction?” or “Has a doctor, nurse, or other health professional ever told you that you had angina or coronary heart disease?” (Yes to either question)
Been told by health care provider: had a stroke	“Has a doctor, nurse, or other health professional ever told you that you had a stroke?”
Been told by health care provider: have COPD	“Has a doctor, nurse, or other health professional ever told you that you have COPD (chronic obstructive pulmonary disease), emphysema, or chronic bronchitis?”
Been told by health care provider: have asthma (current)	“Have you ever been told by a doctor, nurse, or other health professional that you had asthma” and “do you still have asthma?” (Yes to both questions)
Been told by health care provider: have diabetes	“Have you ever been told by a doctor, nurse, or other health professional that you have diabetes?” (Does not include gestational diabetes)
Heavy drinking in past 30 days	>2 drinks a day for males or >1 drink a day for females on average during past 30 days.
Binge drinking in past 30 days	> 5 drinks on one occasion for males or >4 drinks on one occasion for females during past 30 days.
Overweight or obese	BMI $\geq$ 25, calculated using self-reported height and weight measurements.
Obese	BMI $\geq$ 30, calculated using self-reported height and weight measurements.
Current smoker	Smoke at least 100 cigarettes in his/her entire life and smoke cigarettes every day.
No past-month leisure-time physical activity	"During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?"

**Table A-59. Prevalence Measures Assessed via School Physical Activity and Nutrition (SPAN) Survey: Northeast Texas and Texas (2014)**

Measure	Grade	Northeast Texas	Texas
		%(95% CI)	%(95% CI)
Asthma prevalence	8 <sup>th</sup>	17.0(13.2-21.7)	13.4(11.6-15.5)
	11 <sup>th</sup>	15.7(10.3-23.2)	9.9(7.3-13.3)
Prevalence of meeting physical activity guidelines	8 <sup>th</sup>	22.7(18.1-28.1)	24.9(22.1-28.0)
	11 <sup>th</sup>	24.8(15.6-37.1)	24.9(19.8-31.4)
Obesity prevalence	8 <sup>th</sup>	25.1(16.5-36.2)	23.0(20.0-26.3)
	11 <sup>th</sup>	16.4(11.7-22.4)	21.6(18.2-25.4)

Data source: School Physical Activity and Nutrition (SPAN) survey, Michael & Susan Dell Center for Healthy Living and Department of State Health Services, Office of Title V.

Asthma is assessed via student self-report. Meeting physical activity guidelines is defined as being physically active for a total of at least 60 minutes per day on each of the past seven days, assessed via student self-report. Obesity is defined as having a BMI  $\geq 30$ , calculated using investigator-measured height and weight.

Prevalence proportions are percentages.

Healthy People 2020 Objectives

Table A-60. Northeast Texas, Texas and U.S.: Comparisons to Select Healthy People 2020 Targets

HP2020 Topics/Objectives	Measure	Target	Northeast Texas Value	Texas Value	U.S. Value
<b>Access to Health Services</b>					
Increase the proportion of persons ≤65 with medical insurance	Percent	100%	75.0%	75.7%	83.7%
<b>Cancer</b>					
Decrease overall cancer mortality rate	Deaths per 100,000	161.4	186.5	160.6	166.4
Decrease lung cancer mortality rate	Deaths per 100,000	45.5	55.5	41.0	45.0
Decrease female breast cancer mortality rate	Deaths per 100,000	20.7	21.0	21.1	21.3
Increase the proportion of women who receive a breast cancer screening based on the most recent guidelines	Percent	81.1%	76.4%	76.8%	*
Decrease colorectal cancer incidence rate	New cases per 100,000	39.9	43.0	38.0	38.9
Decrease colorectal cancer mortality rate	Deaths per 100,000	14.5	17.0	14.8	14.7
Increase the proportion of adults who receive a colorectal cancer screening based on the most recent guidelines	Percent	70.5%	54.9%	61.4%	*
Decrease melanoma cancer mortality rate	Deaths per 100,000	2.4	3.5	2.2	2.7
Decrease cervical cancer incidence rate	New cases per 100,000	7.2	7.7	9.0	7.4
Decrease cervical cancer mortality rate	Deaths per 100,000	2.2	2.5	2.8	2.3
Increase the proportion of women who receive a cervical cancer screening based on the most recent guidelines	Percent	93%	75%	78%	*
Decrease prostate cancer mortality rate	Deaths per 100,000	21.8	16.3	18.0	19.6
<b>Diabetes</b>					
Reduce the diabetes death rate	Deaths per 100,000	66.6	81.2	84.3	67.1
<b>Heart Disease and Stroke</b>					
Reduce coronary heart disease deaths	Deaths per 100,000	103.4	226.4	169.9	167.0
Reduce stroke deaths	Deaths per 100,000	34.8	53.2	41.6	36.5

The Health Status of Northeast Texas

HP2020 Topics/Objectives	Measure	Target	Northeast Texas Value	Texas Value	U.S. Value
<b>Injury and Violence Prevention</b>					
Reduce unintentional injury deaths	Deaths per 100,000	36.4	48.0	37.3	40.5
Reduce motor vehicle crash-related deaths	Deaths per 100,000	12.4	21.8	13.8	10.8
Reduce the suicide rate	Deaths per 100,000	10.2	17.4	12.2	13.0
<b>Maternal, Infant and Child Health</b>					
Reduce the rate of all infant deaths (within 1 year)	Deaths per 1,000 live births	6.0	6.3	5.8	6.0
Reduce the rate of post-neonatal deaths (between 28 days and 1 year)	Deaths per 1,000 live births	2.0	2.3	2.0	1.9
<b>Physical Activity</b>					
Reduce the proportion of adults who engage in no-leisure time physical activity	Percent	32.6%	35.0%	27.3%	30.0%
<b>Respiratory Diseases</b>					
Reduce deaths from COPD among adults ≥45 years-old	Deaths per 100,000	102.6	158.6	112.3	111.7

\*Data not available for same year (2014) as data given for Northeast Texas and Texas. All Mortality rates are age-adjusted to the 2000 U.S. Standard Population.

**Table A-61. Data Sources and Years for Healthy People Objectives Table Measures**

<b>HP2020 Objectives</b>	<b>Year(s)</b>	<b>Data Source(s)</b>	<b>Comments</b>
Proportion of persons ≤65 with medical insurance	2010-2014	U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates. Table DP03.	HP2020 sets targets and monitors progress using NHIS survey data; however, these data are not available at the county level.
Cancer mortality and incidence rates	2012	Northeast Texas: Texas Cancer Registry, Texas Department of State Health Services. Texas and National: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute	
Cancer screening prevalence	2014	Texas: BRFSS	HP2020 sets targets and monitors progress using NHIS survey data; however, these data are not available at the county level.
Chronic disease and injury mortality rates	2014	National Center for Health Statistics	
Infant Mortality Rates	2013	Texas: 2013 Birth & Death File, Texas Department of State Health Services, Vital Statistics Report National: National Vital Statistics Reports, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention	
No leisure time physical activity prevalence	2014	Texas: BRFSS National: National Health Interview Survey (NHIS)	HP2020 sets targets and monitors progress using NHIS survey data; however, these data are not available at the county level.



## Definitions

**Adjustment:** A summarizing procedure for a statistical measure (e.g. a mortality rate) in which the effects of differences in composition of the populations (e.g. differences in age distributions) have been minimized by statistical methods.

**Age adjustment (age standardization):** The rates of almost all causes of disease, injury, and death vary by age. Age adjustment is a technique to minimize the effects of differences in age composition when comparing rates for different populations, or for one population at different points in time. Age-adjusted rates are computed by the direct method by applying age-specific rates in a population of interest to a standardized age distribution, to eliminate differences in observed rates that result from age differences in population composition. The standard for age-adjusting mortality rates and estimates from surveys for most indicators in public health surveillance is the projected year 2000 U.S. resident population. Age-adjusted rates should be viewed as relative indexes rather than actual measures of risk. Age-adjusted estimates from any data source presented may differ from age-adjusted estimates based on the same data presented in other reports, if different age groups are used in the adjustment procedure.

**Age-specific rate:** Rate obtained for specific age groups. The numerator and denominator refer to the same age group.

**Body mass index (BMI):** BMI is a measure that adjusts bodyweight for height. It is calculated as weight in kilograms divided by height in meters squared. Healthy weight for adults (20 years of age and over) is defined as a BMI of 18.5 to less than 25; overweight, as greater than or equal to a BMI of 25; and obesity, as greater than or equal to a BMI of 30.

**Cause of death:** Any condition which leads to or contributes to death and is classifiable according to the tenth revision of The International Classification of Diseases (ICD-10).

**Chronic Obstructive Pulmonary Disease (COPD):** COPD is a lung disease that makes breathing difficult due to restricted air flow due to lung damage. COPD includes ICD-10 codes J40-J44, and excludes asthma.

**Confidence interval:** The confidence interval may be thought of as the range of probable true values for a statistic. In general, as a population or sample size increases, the confidence interval gets smaller. Estimates with smaller confidence intervals are referred to as more "precise." Less precise estimates, such as those calculated from small numbers, tend to have wide confidence

intervals. Typically, the 95% confidence interval (calculated as 1.96 times the standard error of a statistic) indicates the range of values within which the statistic would fall 95% of the time if the researcher were to calculate the statistic (e.g., a percentage or rate) from an infinite number of samples of the same size drawn from the same base population.

**Count:** The number of health events, such as a death or a reported disease incident, that occurred within a specified time period.

**Crude rate:** The rate of any demographic or vital event that is based on an entire population. Also called unadjusted rate.

**Educational attainment:** Education is frequently used as the measure of socioeconomic status in presentations of health data. Educational attainment is generally measured as the highest level of school the respondent has completed or the highest credential received. In general, data on educational attainment are presented for ages beginning with 25 years, consistent with guidance given by the U.S. Bureau of the Census.

**Healthy People 2020:** Healthy People provides science-based, 10-year objectives for improving the health of all Americans. Launched in December 2010, Healthy People 2020 is the most recent 10-year agenda for improving the Nation's health. Healthy People is managed by the Office of Disease Prevention and Health Promotion (ODPHP) within the U.S. Department of Health and Human Services (HHS).

**Heart Disease:** Heart disease includes a variety of diseases that affect the heart. The most common type of heart disease in the U.S. is coronary heart disease (CHD), caused by plaque build-up in the walls of the arteries, making it harder for blood to flow.

**Hispanic:** Persons of Mexican, Puerto Rican, Cuban, Central and South American, and other or unknown Latin American or Spanish origins; almost always self-reported.

**Incapacitating Injury:** Any injury, other than a fatal injury, which prevents the injured person from walking, driving or normally continuing the activities he was capable of performing before the injury occurred.

**Incidence rate:** The rate at which new events occur in a population. The numerator is the number of new events that occur in a defined period of time. The denominator is the population at risk of experiencing the event during this time period.

**International Classification of Diseases (ICD):** The purpose of the ICD is to promote international comparability in the collection, classification, processing, and presentation of health statistics. The ICD is used to code and classify cause-of-death data. The ICD is developed collaboratively by the World Health Organization and 10 international centers, one of which is housed at the National Center for Health Statistics. ICD-10 is the 10<sup>th</sup> edition of the International Classification of Diseases, which has been in use since January 1, 1999.

**Infant death:** Death of an individual less than one year of age. Infant deaths are further classified as neonatal deaths and post-neonatal deaths.

**Live birth:** The complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which after such separation, breathes or shows any other evidence of life such as beating of the heart, pulsation of umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached.

**Modifiable Risk Factor:** A risk factor is an attribute, characteristic or exposure of an individual that increases the likelihood of developing a disease or injury. Modifiable risk factors are those that can be changed to reduce a person's disease or injury risk.

**Morbidity:** The occurrence of a disease in a population.

**Mortality:** Death as a component of population change.

**Obesity:** Abnormal or excessive fat accumulation that may impair health, commonly defined as having a Body Mass Index (BMI) equal to or more than 30.

**Population:** The total of all individuals in a given area.

**Prevalence:** The total number of people in a population who have an attribute or disease at a point in time or a given time period divided by the population at risk of having the attribute or disease at that time or midway through the period. Prevalence estimates are often used to describe the burden of a disease for a given population.

**Race/ethnicity:** A categorization scheme that closely aligns with general perceptions of diversity within the population. For statistical reporting, four major categories (White, Hispanic, Black, Other) represent the array of diversity of language, culture, national origin, and historical context within which individuals self-identify. Persons of Hispanic origin are reported as Hispanic, regardless of other racial identification.

**Rate:** The frequency of a demographic event in a specified period of time divided by the population at risk of the event during that time period.

**Underlying cause of death:** The disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury.

**Unintentional injury:** Injuries that occur without intent of harm. Such injuries are frequently called accidents or accidental in common usage.

## Abbreviations

**AIDS:** Acquired Immunodeficiency Syndrome

**BMI:** Body Mass Index (see definitions)

**BRFSS:** Behavior Health Risk Factor Surveillance System (see data sources)

**CDC:** Center for Disease Control and Prevention

**CHD:** Coronary Heart Disease

**CLRD:** Chronic Lower Respiratory Disease

**COPD:** Chronic obstructive pulmonary diseases and allied conditions.

**DSHS:** Department of State Health Services

**HIV:** Human Immunodeficiency Virus

**HP2020:** Healthy People 2020 (see definitions)

**ICD:** The International Classification of Diseases (see definitions)

**TB:** Tuberculosis

## Data Sources

### Behavior Health Risk Factor Surveillance System (BRFSS)

The BRFSS is a federally-supported landline and cellular telephone survey that collects data from Texas residents about their health-related risk behaviors, chronic health conditions, and use of preventive services. [http://www.dshs.state.tx.us/chs/brfss/query/brfss\\_form.shtm](http://www.dshs.state.tx.us/chs/brfss/query/brfss_form.shtm)

### Birth Data

Birth data are derived from the Texas Certificate of Live Birth. Data categories include four or more prior births, no prenatal care, prenatal care began in first trimester, smoking during pregnancy, cesarean section, vaginal birth after cesarean, spacing less than 18 months apart, low birth weight, very low birth weight, and premature births. <http://soupfin.tdh.state.tx.us/birthdoc.htm>

### Cancer Registry Data

The Texas Cancer Registry (TCR) is a statewide population-based registry that serves as the foundation for measuring the Texas cancer burden, comprehensive cancer control efforts, health disparities, progress in prevention, diagnosis, treatment, and survivorship, as well as supports a wide variety of cancer-related research. <http://www.cancer-rates.info/tx/index.php>

The [United States Cancer Statistics](#) (USCS) are the official federal statistics on cancer incidence from registries having high-quality data and cancer mortality statistics for 50 states and the District of Columbia. USCS are produced by the Centers for Disease Control and Prevention (CDC) and the National Cancer Institute (NCI). <http://wonder.cdc.gov/cancer.html>.

### Immunization Status

The Texas Department of State Health Services collects the immunization status of children and the number of conscientious exemption affidavit forms filed at the private school and ISD level via a mailed survey to approximately 1,300 independent school districts and 800 accredited private schools in Texas. The data is self-reported and although the Annual Report of Immunization Status is mandated by law not all schools participate each year. The Texas Department of State Health Services Immunization Branch policy regarding reporting of conscientious exemption data at the grade level is to suppress data for school districts with kindergarten enrollments of less than five students.

### **Mortality Data**

Mortality data are based on information from all death certificates filed in the fifty states and the District of Columbia. Deaths of nonresidents (e.g. nonresident aliens, nationals living abroad, residents of Puerto Rico, Guam, the Virgin Islands, and other territories of the U.S.) and fetal deaths are excluded. Mortality data from the death certificates are coded by the states and provided to the National Center for Health Statistics (NCHS) through the Vital Statistics Cooperative Program or coded by NCHS from copies of the original death certificates provided to NCHS by the State registration offices. <http://wonder.cdc.gov/ucd-icd10.html>

### **Demographic and Socioeconomic Data**

The Texas Demographic Center produces and disseminates population estimates and projections for Texas, as well as other demographic information. Special emphasis is placed on data that may be useful to policy makers in dealing with issues regarding the demand for State services.

<http://osd.texas.gov/Data/TPEPP/>

The United States Census Bureau is a principal agency of the U.S. Federal Statistical System, responsible for producing data about the American people and economy. The Decennial Census of Population and Housing counts every resident in the United States and takes place every 10 years. The American Community Survey (ACS) is a mandatory, ongoing statistical survey that samples a small percentage of the population every year. The ACS collects information such as age, race, income, commute time to work, home value, veteran status, and other important data. In 2010, the Census Bureau released the first 5-year estimates for small areas. <http://factfinder.census.gov/>

### **Motor Vehicle Crash Data**

Texas Department of Motor Vehicles maintains a database of all reportable motor vehicle traffic crashes in Texas collected from Texas Peace Officer's Crash Reports (CR-3). A reportable motor vehicle crash is any crash involving a motor vehicle in transport that occurs or originates on a traffic way, results in injury to or death of any person, or damage to the property of any one person to the apparent extent of \$1,000. <http://www.txdot.gov/inside-txdot/division/traffic/crash-statistics.html>

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