Texas Rural Health – Challenges and Opportunities

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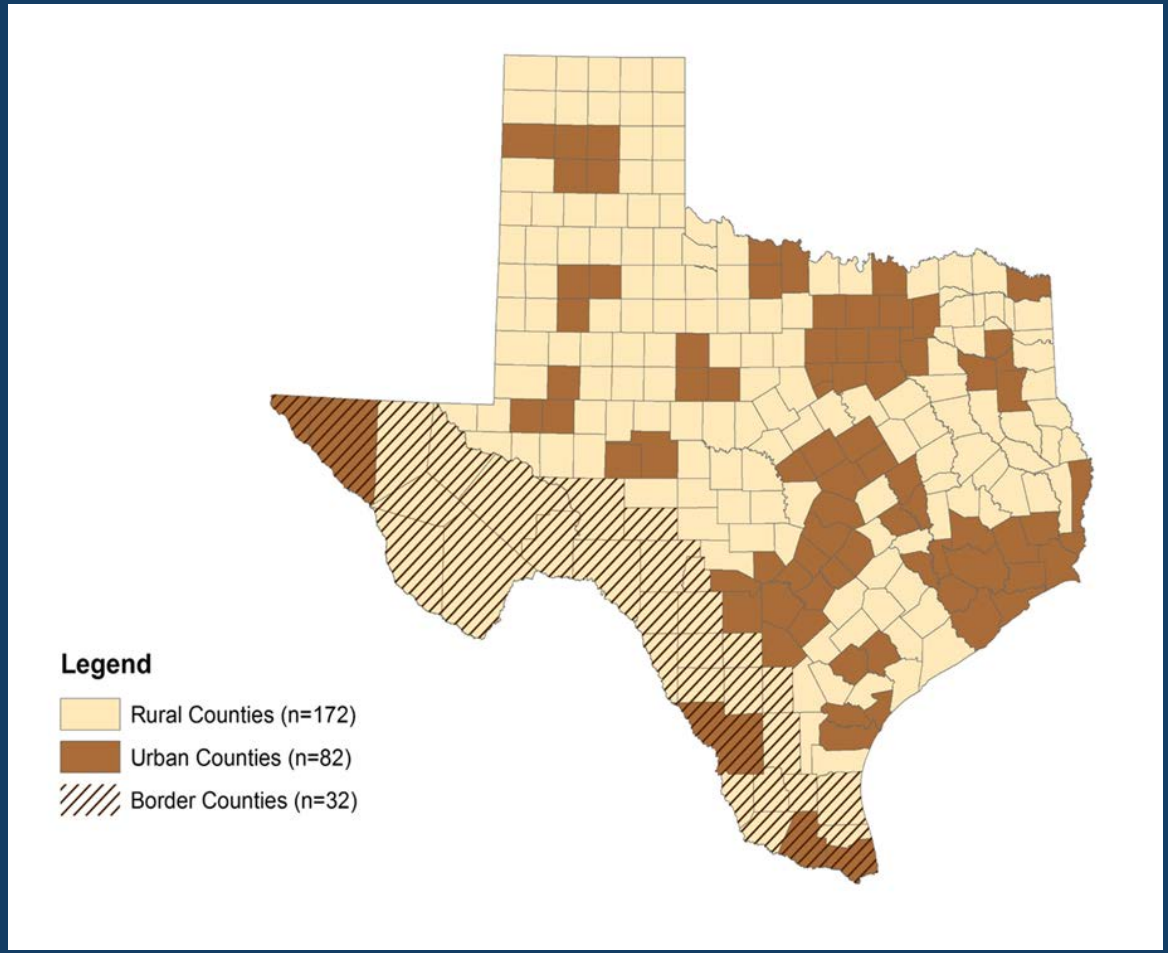
Texas Rural Communities

- Over half of the counties in Texas are rural
- Rural counties are home to more than three million Texans
- Rural population tends to be older, less affluent, and less healthy than more urban populations.
- Frontier and Remote Zip codes
  - According to the 2010 census, of all the U.S. states, Texas has the most number (1,757) with 521,683 (2.1% of population)



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Challenges in Rural Health

- Social Determinates of Health
  - Lower education levels
  - Older
  - Higher rates of unemployment
  - Poorer
  - Lack of insurance
  - Lack of high speed internet in certain areas
  - Migrant workers
  - Reliance on supplemental food programs
- Health risk factors
  - Higher obesity rates
  - Higher tobacco rates
  - Less physical activity
- Healthcare
  - Closure of acute care rural hospitals
  - Limited health care workforces with decreased depth and breadth
  - Absence of transportation resources and distance
  - Communications concerns and lack of confidence in quality and confidentiality
  - Lack of substance use treatment services
  - Lesser access to preventive and disease detection services

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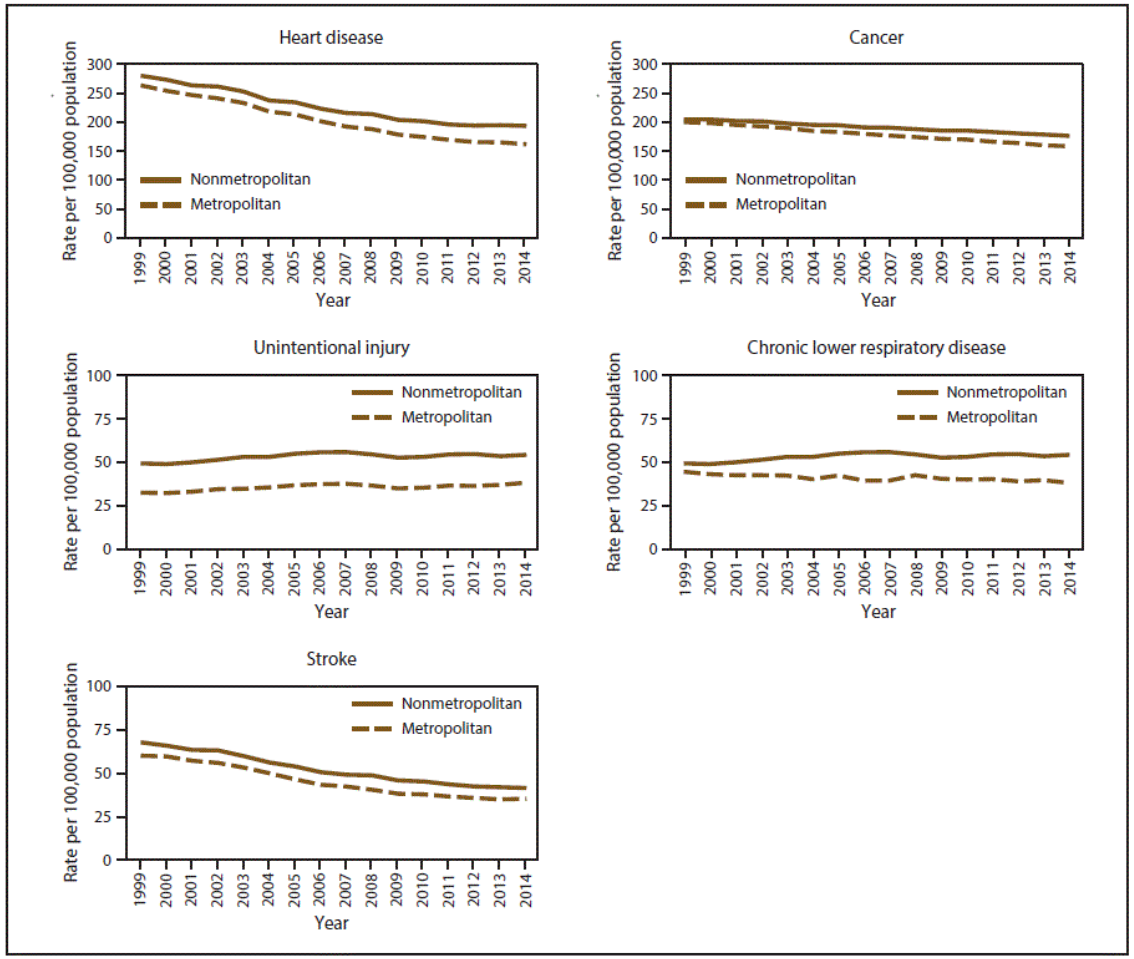
National Rural Health Challenge

FIGURE 2. Age-adjusted death rates among persons of all ages for five leading causes of death in nonmetropolitan and metropolitan areas,* by year — National Vital Statistics System, United States, 1999–2014



In 2014

- **Age adjusted mortality rates per 100,000**
  - **US 724.6**
  - **Rural 830.5**
  - **Urban 704.3**
- **62 % of all death were from the 5 leading causes of death**

Garcia MC, Faul M, Massetti G, Thomas CC, Hong Y, Bauer UE, Iademarco MF; Reducing Potentially Excess Deaths from the Five Leading Causes of Death in the Rural United States, MMWR, January 13, 2017, Vol. 66, No. 2

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Unintentional Injury

- From 2008-2010 the annual age-adjusted death rates for unintentional injury were 50% higher in rural than urban areas
- Causes
  - Severe trauma from high speed motor vehicle accidents
  - Behavior factors such as seat belt use, alcohol impaired driving, and opioid prescription
  - Opioid analgesic misuse
  - Access to trauma and overdose treatment is often delayed

Garcia MC, Faul M, Massetti G, Thomas CC, Hong Y, Bauer UE, Iademarco MF; Reducing Potentially Excess Deaths from the Five Leading Causes of Death in the Rural United States, MMWR, January 13, 2017, Vol. 66, No. 2

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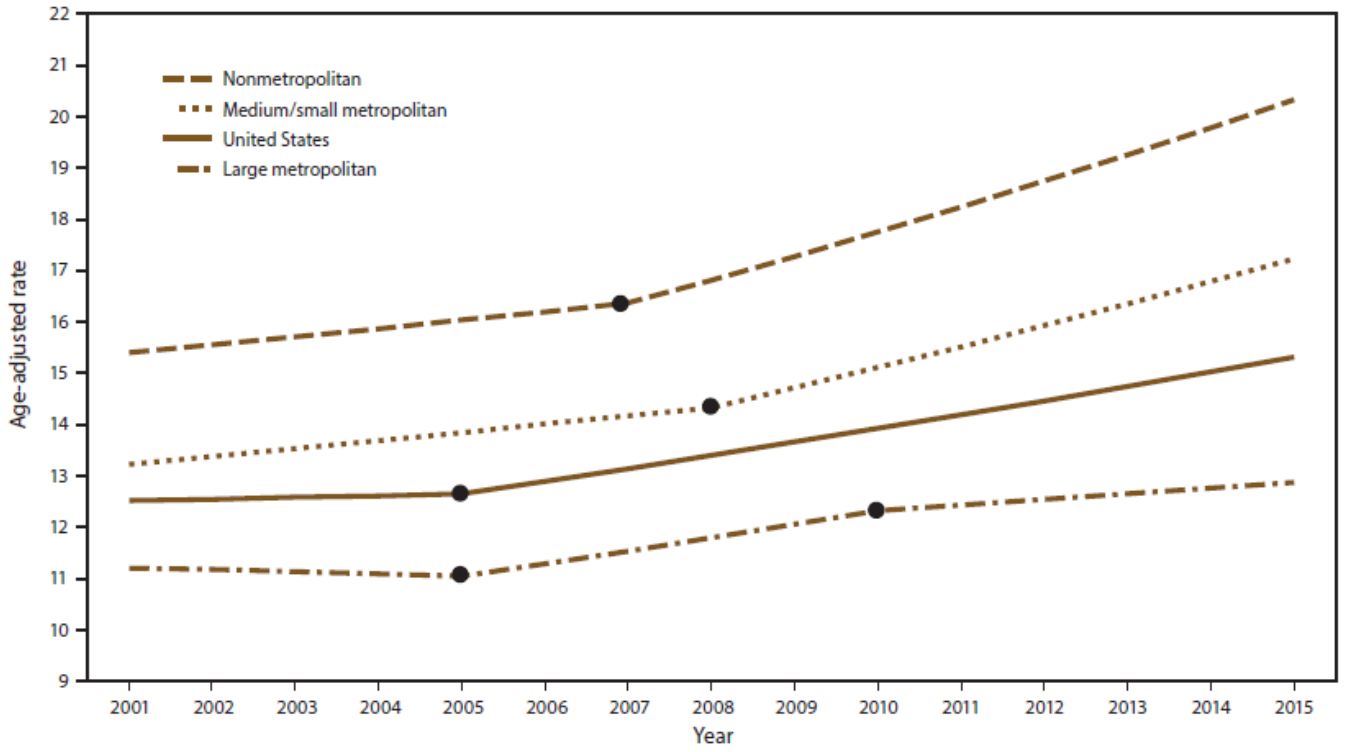
Suicide Rates are Higher Nationally in Rural Communities

FIGURE 1. Suicide rates* among persons aged ≥10 years, by county urbanization level† — United States, 2001–2015§



* Per 100,000 residents aged ≥10 years, age adjusted to the 2000 U.S. standard population.

† Levels of urbanization were collapsed using the 2006 National Center for Health Statistics urban classification scheme. The six classification levels for counties are 1) large central metropolitan (part of a metropolitan statistical area with ≥1 million population and includes a principal city); 2) large fringe metropolitan (part of a metropolitan statistical area with ≥1 million population but does not include a principal city); 3) medium metropolitan (part of a metropolitan statistical area with ≥250,000 but <1 million population); 4) small metropolitan (part of a metropolitan statistical area with <250,000 population); 5) micropolitan (nonmetro) (part of a micropolitan statistical area [has an urban cluster of ≥10,000 but <50,000 population]); and 6) noncore (nonmetropolitan) (not part of a metropolitan or micropolitan statistical area). Large metropolitan classification includes counties from large central metropolitan and large fringe metropolitan areas. Medium/small metropolitan classification includes counties from medium metropolitan and small metropolitan areas. Nonmetropolitan classification includes counties from micropolitan and noncore areas.

§ Joinpoint regression analysis was used to determine annual percentage change with statistically significant trend ($p<0.05$). Dots indicate the joinpoints.

- **Suicide is the nations 10th leading cause of death**
- **The greatest rate increases are seen in medium/ small metropolitan and nonmetropolitan/ rural counties**

Ivey-Stephenson AZ, Crosby AE, Jack SPD, Haileyesus T, Kresnow-Sedacca M, Suicide Trends Among and Within Urbanization Levels by Sex, Race/Ethnicity, Age Group, and Mechanism of Death — United States, 2001–2015, MMWR, October 6, 2017, Vol. 66, No. 18

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Obesity in Rural America/ Texas

TABLE 1. Prevalence of self-reported obesity among adults (aged ≥18 years) by respondent characteristics and metropolitan/nonmetropolitan status — Behavioral Risk Factor Surveillance System, 50 states and the District of Columbia, 2016

Return

Characteristic	No. of respondents	Unadjusted adult obesity prevalence–weighted % (95% CI)*		
		Total	Metropolitan†	Nonmetropolitan†
Total	**438,479**	**29.6 (29.3–29.8)**	**28.7 (28.4–29.0)§**	**34.2 (33.6–34.8)§**
Age group (yrs)¶				
18–24	23,734	17.3 (16.5–18.1)	16.5 (15.6–17.4)§	22.2 (20.3–24.2)§
25–34	42,706	27.2 (26.5–27.9)	26.4 (25.6–27.2)§	32.5 (30.8–34.3)§
35–44	48,951	33.1 (32.3–33.8)	32.0 (31.2–32.9)§	39.6 (38.0–41.2)§
45–54	68,854	35.1 (34.4–35.8)	34.0 (33.2–34.8)§	40.8 (39.4–42.3)§
55–64	96,566	34.2 (33.6–34.8)	33.4 (32.7–34.1)§	38.0 (36.9–39.2)§
≥65	157,668	28.0 (27.5–28.5)	27.5 (26.9–28.1)§	30.1 (29.3–31.0)§
Sex**				
Male	198,440	29.6 (29.2–30.0)	28.8 (28.3–29.2)§	34.4 (33.6–35.2)§
Female	240,000	29.5 (29.1–29.9)	28.7 (28.2–29.1)§	34.0 (33.2–34.8)§
Race/Ethnicity¶,**				
White, non-Hispanic	341,192	28.6 (28.3–28.9)	27.5 (27.2–27.9)§	33.2 (32.6–33.8)§
Black, non-Hispanic	35,091	38.3 (37.4–39.3)	37.7 (36.7–38.7)§	44.2 (41.7–46.7)§
Hispanic, any race	28,666	33.1 (32.1–34.1)	32.9 (31.9–33.9)	36.0 (32.6–39.5)
Other, non-Hispanic	26,954	18.2 (17.3–19.2)	16.8 (15.8–17.8)§	33.2 (31.2–35.3)§

- **All age, ethnic, educational, and income groups have higher obesity rates in rural areas**
- **Texas urban rate of 32.9 (31.0-34.8) is the 7th highest nationally**
- **Texas rural rate of 38.7 (34.3-43.2) is the third highest**

Lundeen EA, Park S, Pan L, O'Toole T, Matthews K, Blanck HM. Obesity Prevalence Among Adults Living in Metropolitan and Nonmetropolitan Counties — United States, 2016. MMWR Morb Mortal Wkly Rep 2018;67:653–658. DOI: http://dx.doi.org/10.15585/mmwr.mm6723a1

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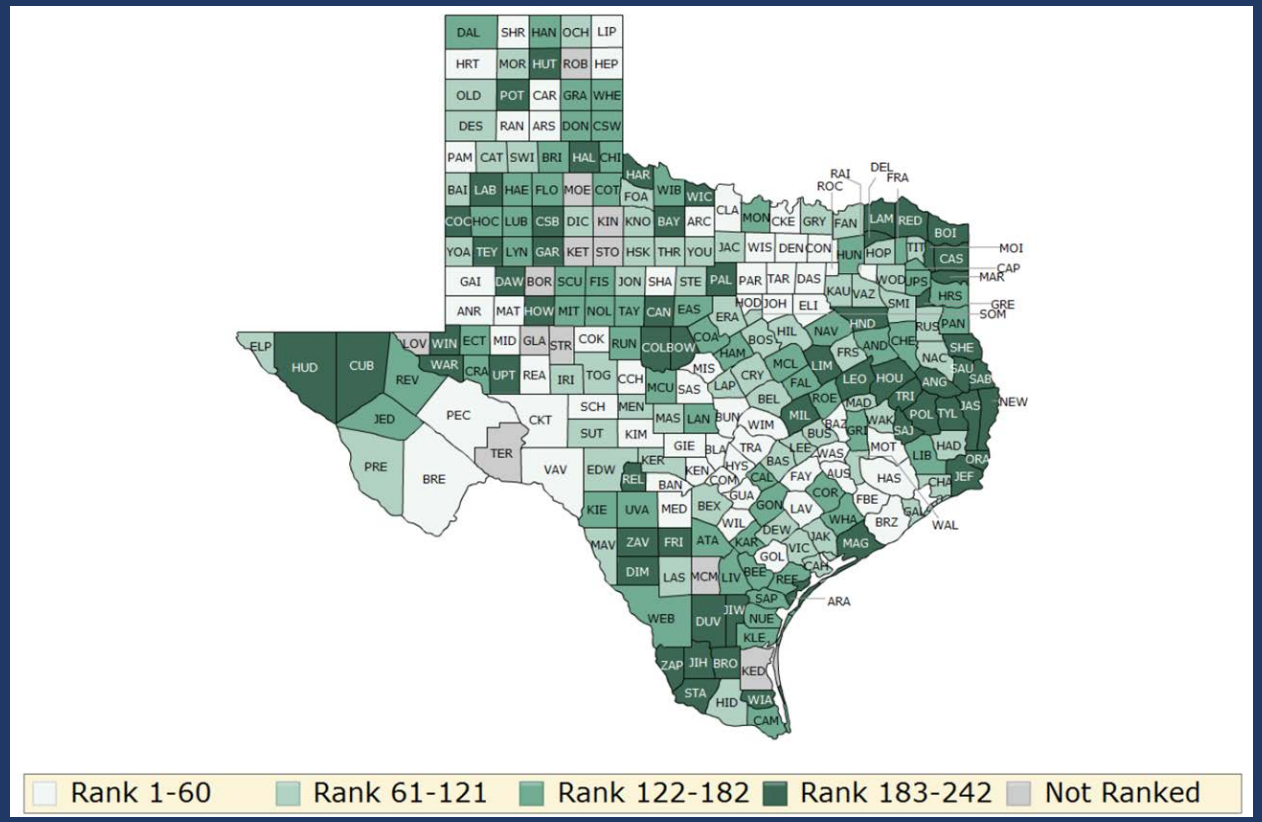
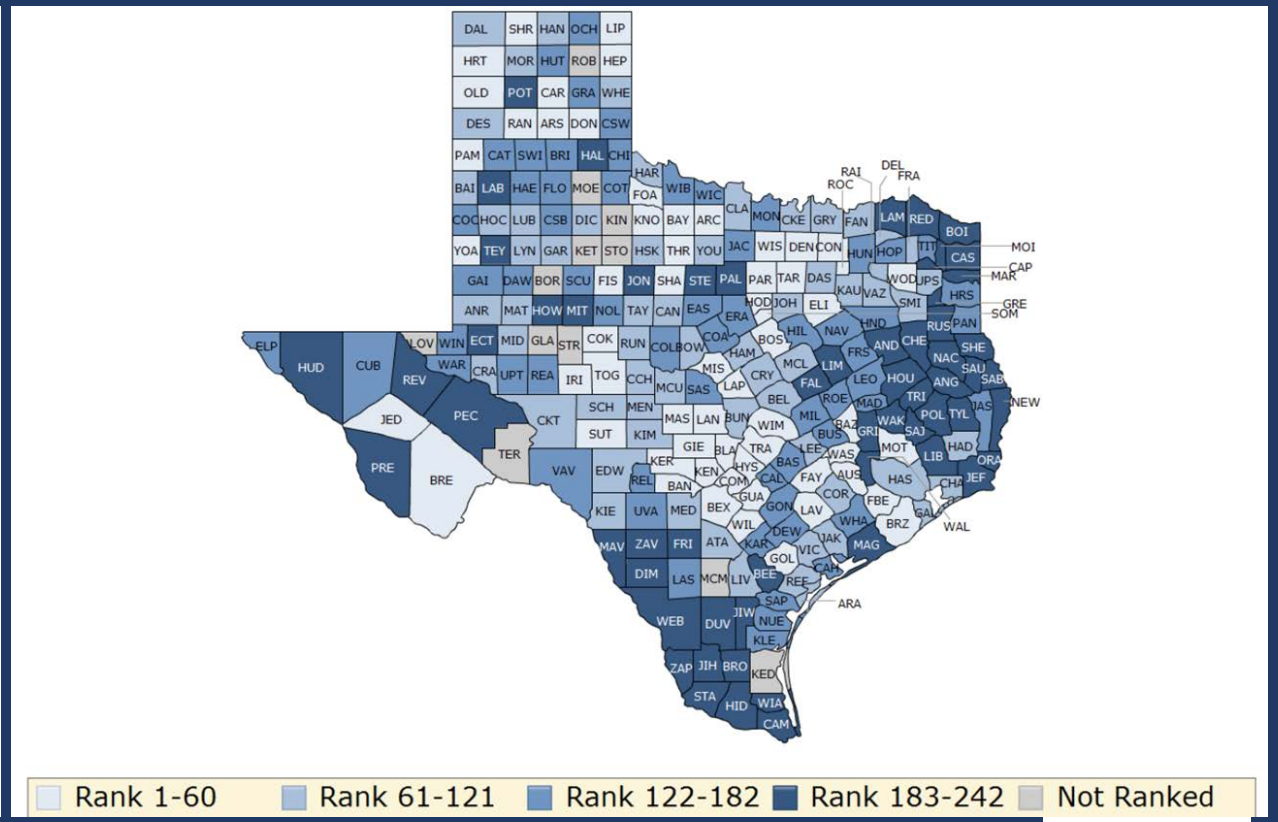
Texas County Heath Rankings 2018

Health Outcomes



Health Factors



Source: County Health Rankings & Roadmap, www.countyhealthrankings.org/explore-health-rankings

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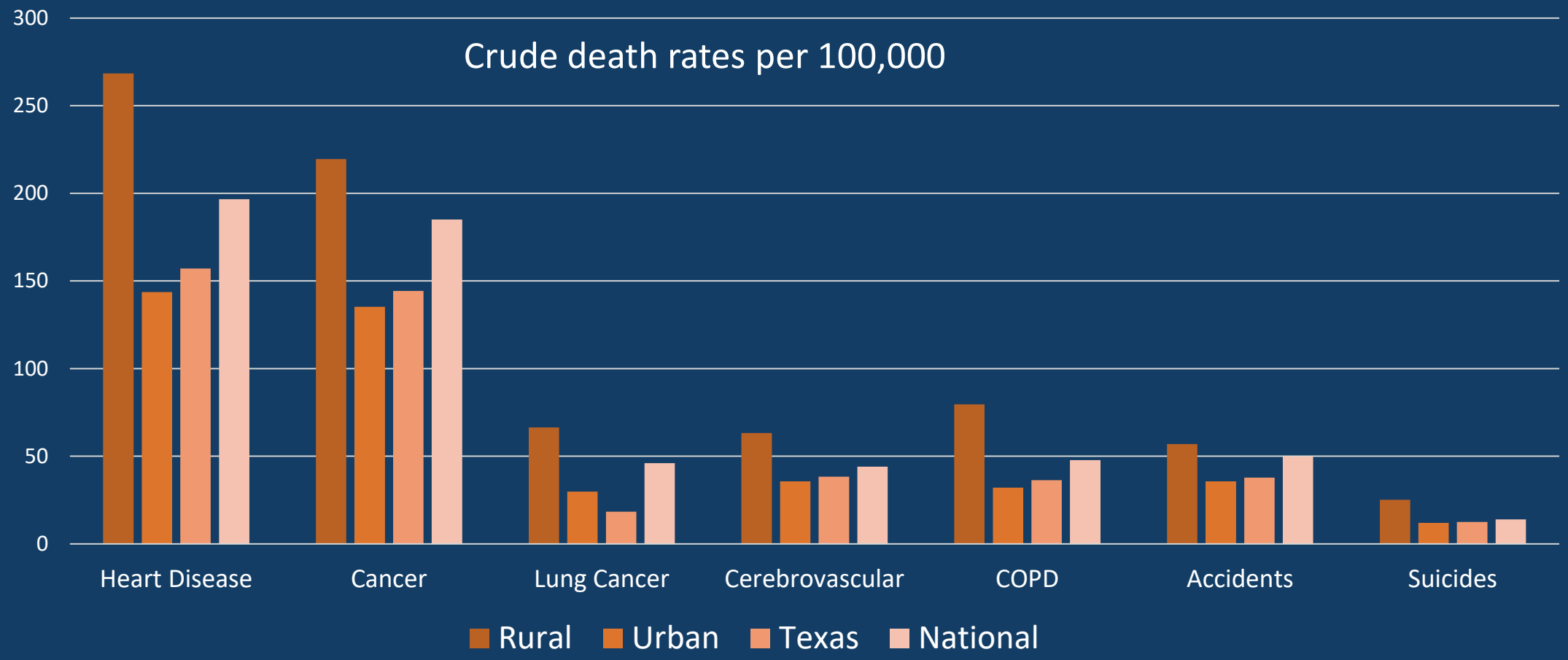
Select Causes of Death in Texas – 2016



Source: National Center for Health Statistics, CDC Wonder
wonder.cdc.gov

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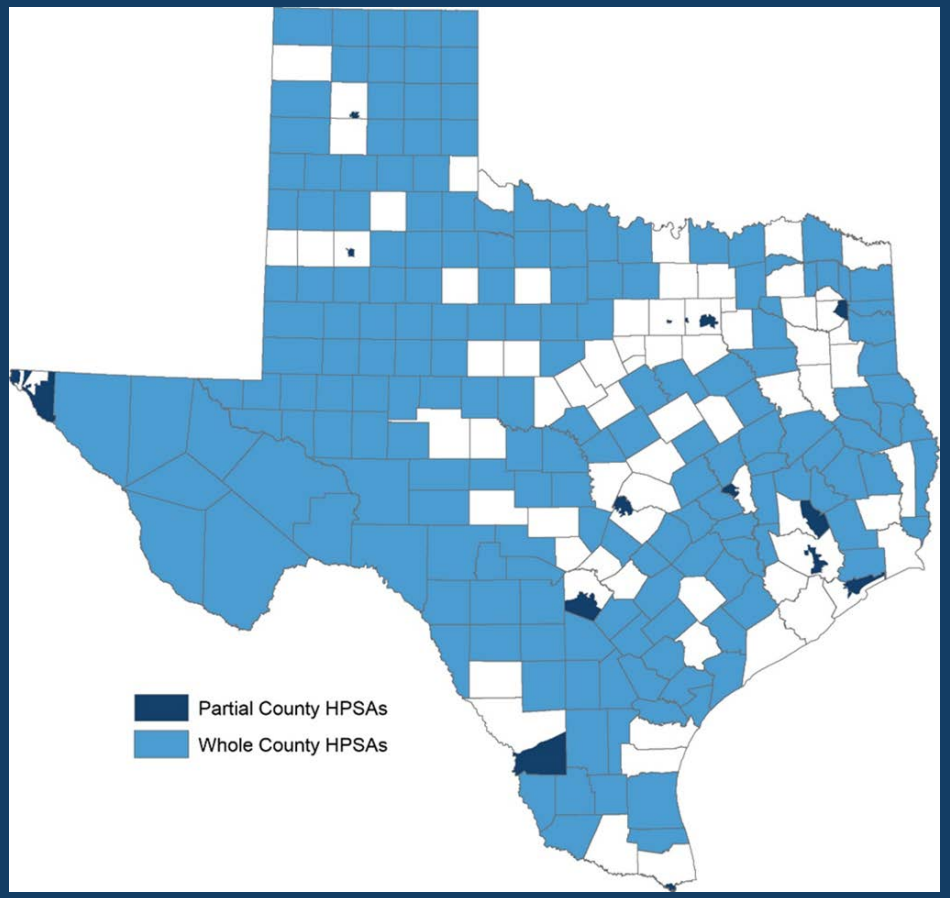
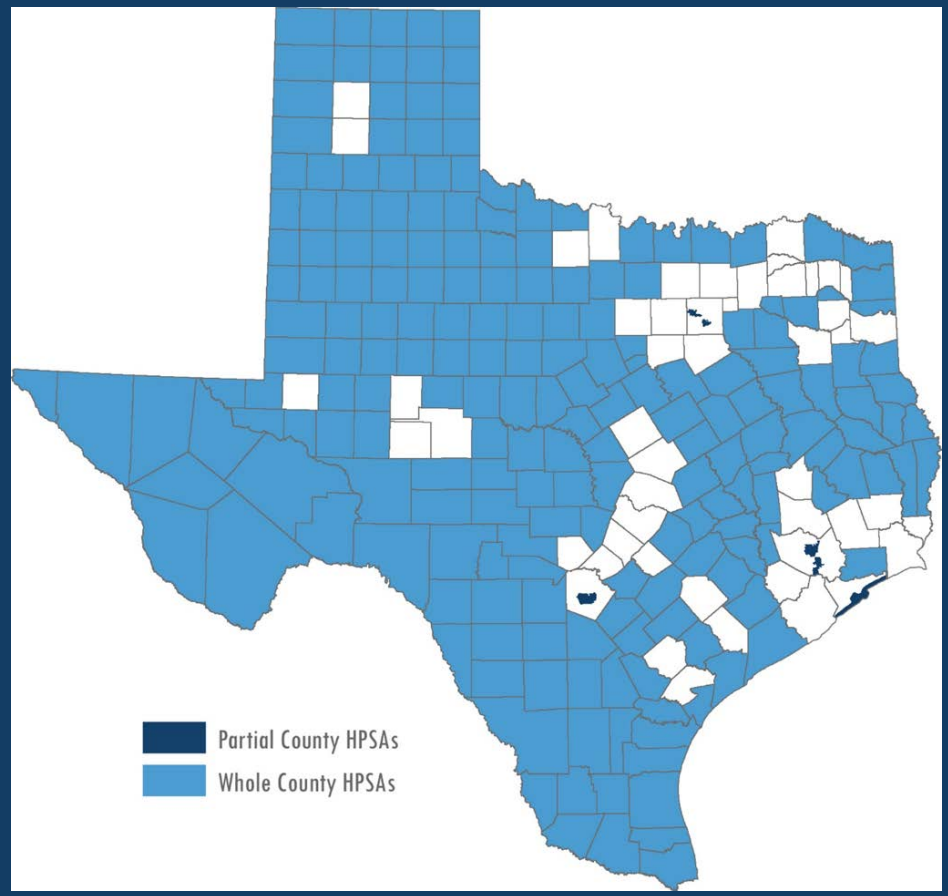
Texas Health Professional Shortage Areas

Primary Care



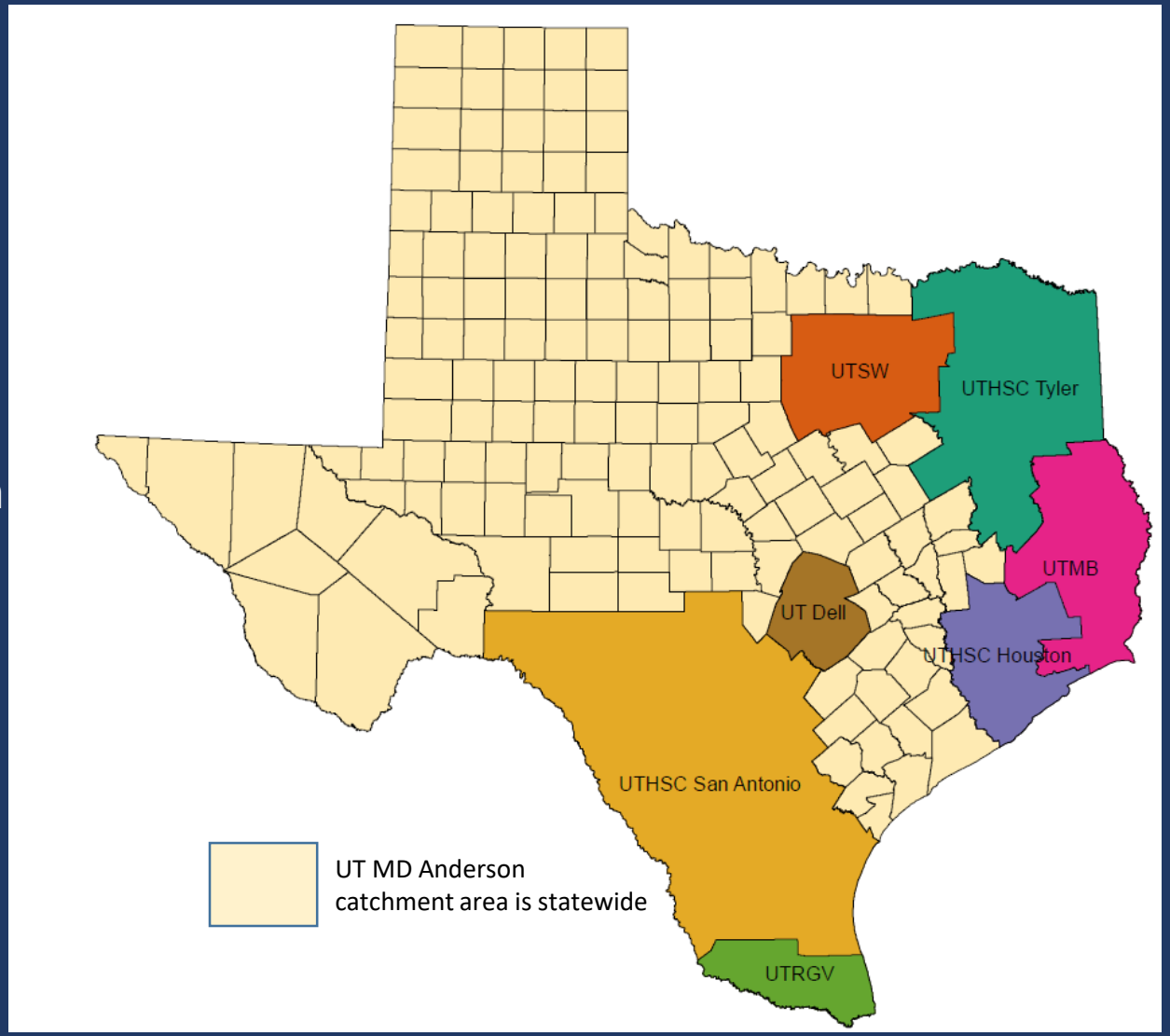
Mental Health



Source: HRSA: https://datawarehouse.hrsa.gov/data/datadownload.aspx, data downloaded on 2/14/2018. Map generated by Center for Health Statistics, DSHS.

University of Texas Health Institutions Catchment Areas

- **The catchment areas were defined as part of the UT Collaboration for Population Health Innovation and Improvement Initiative**
- **Each UT Health related institution has developed their own population health strategic plan**



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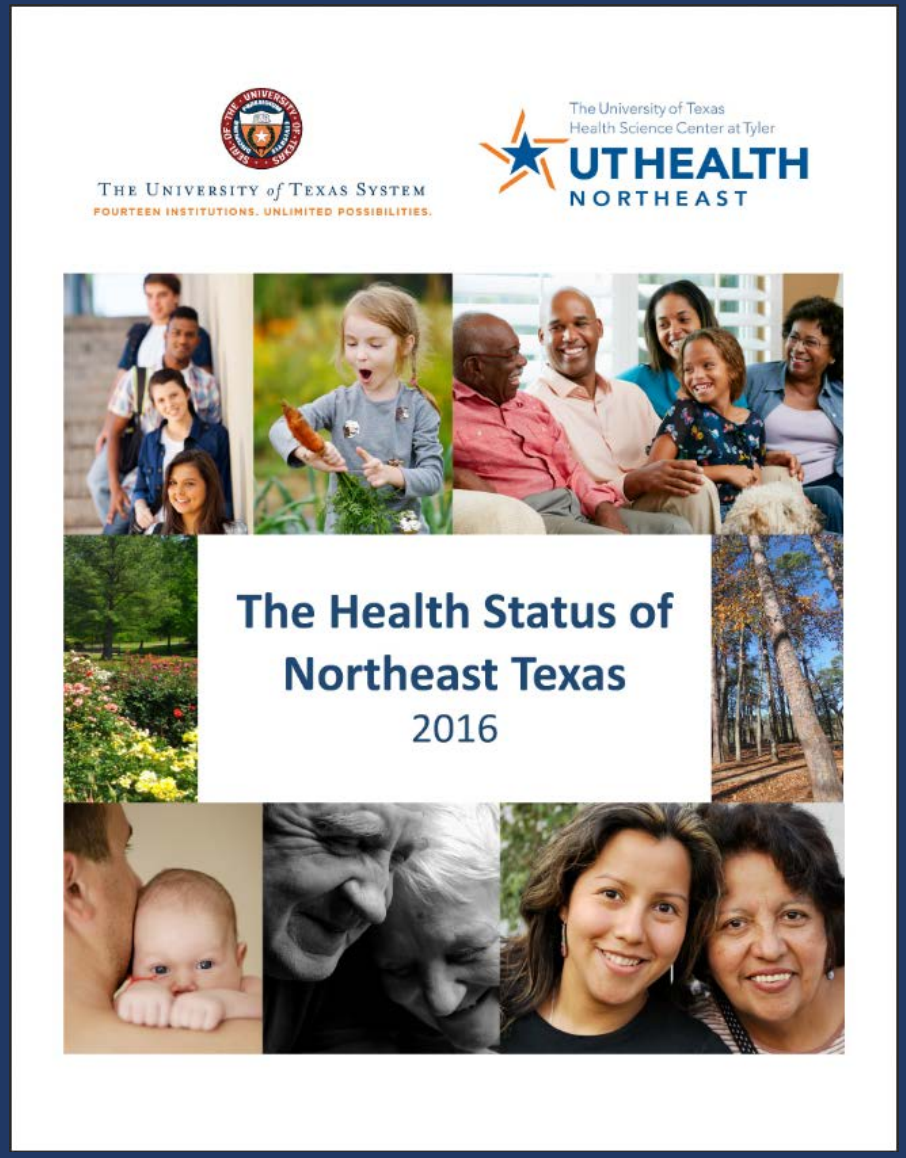
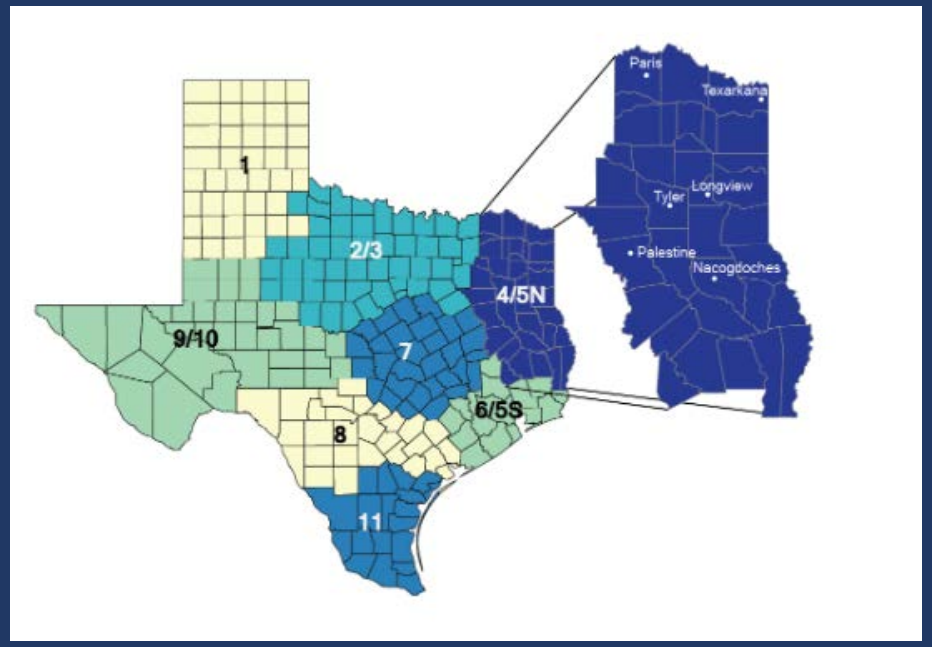
The Health Status of Northeast Texas 2016



Published August 2016 by UT Health Northeast in collaboration with UT System

The status of the population of Northeast Texas, the 35-county area also referred to as the DSHS Health Service Region 4/5N.



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If Northeast Texas was a State…

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%	33rd	49th
Cancer	152.9	162.8	9.9	6%	13th	25th
Chronic lower respiratory diseases	40.5	56.7	16.2	40%	21st	47th
Stroke	41.6	53.2	11.6	28%	38th	51st
Unintentional injuries	37.3	48.0	10.7	29%	9th	34th
All causes	**745.3**	**889.7**	**144.4**	**19%**	**31st**	**45th**

*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. Rates are per 100,000 population.

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Tobacco and Northeast Texas, 2014

- Tobacco use
  - 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
- Tobacco Impact
  - Heart disease mortality rate (age adjusted) was 33% higher in Northeast Texas than in Texas overall
  - Lung cancer mortality rate was 35% higher and incidence rate was 41% higher in Northeast Texas compared to Texas overall
  - Deaths from lung cancer make up 31% of all cancer deaths in the region.
  - Chronic Obstructive Pulmonary Diseases mortality rate in Northeast Texas was 40% higher than the rate in Texas overall
- Furthermore, in 2013, 13.6% of live births in Northeast Texas were to women who smoked during pregnancy

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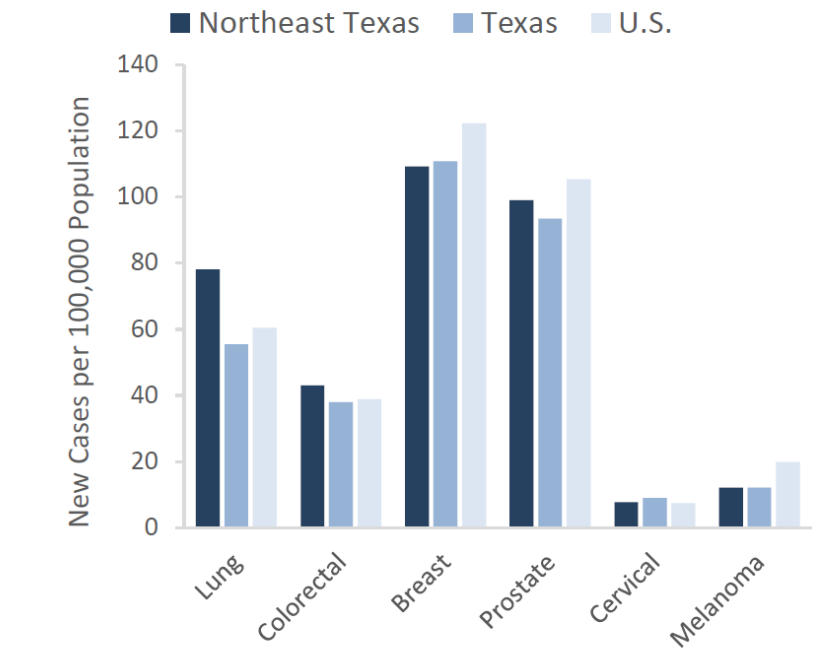
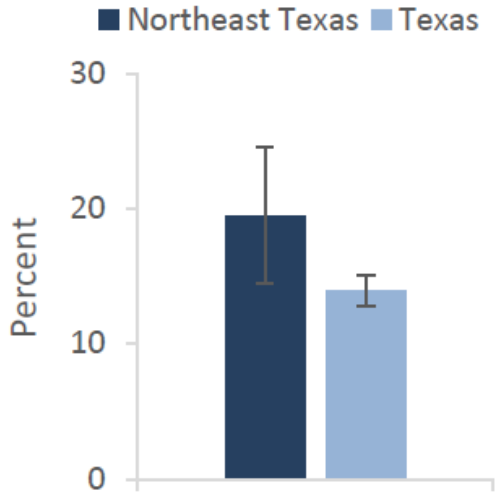
Tobacco and Northeast Texas

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

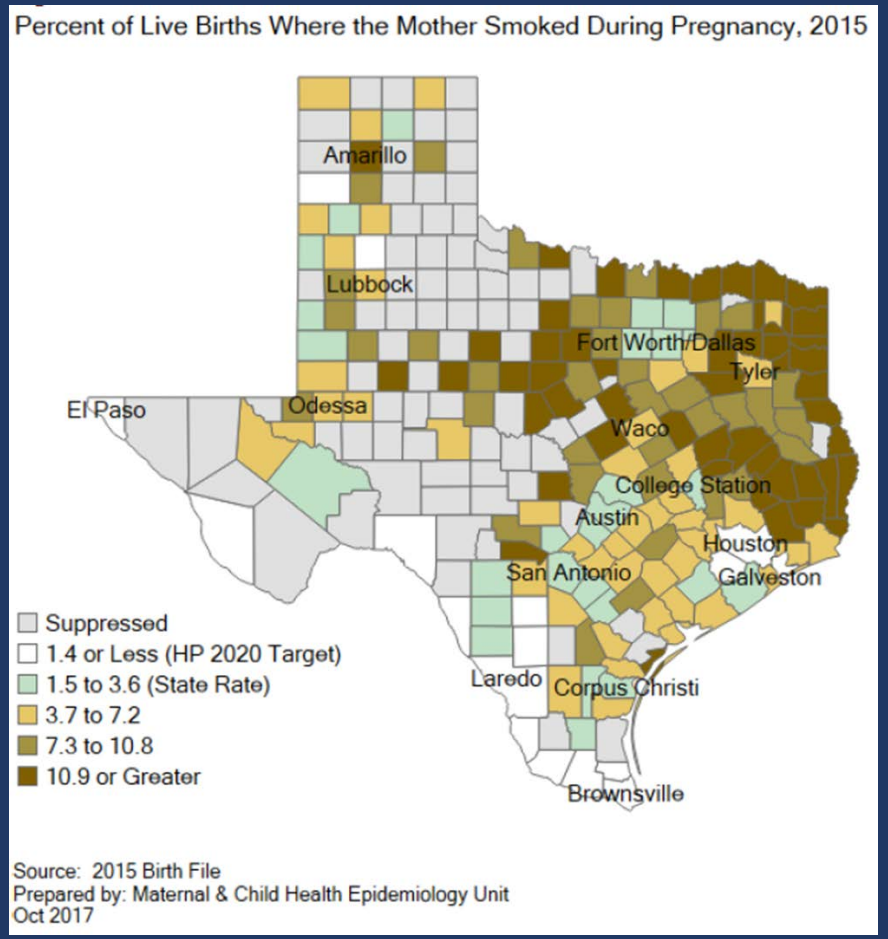


Data source: Northeast Texas - Texas Cancer Registry, Texas Department of State Health Services. Texas and National – U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute on CDC WONDER database.

Figure 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.



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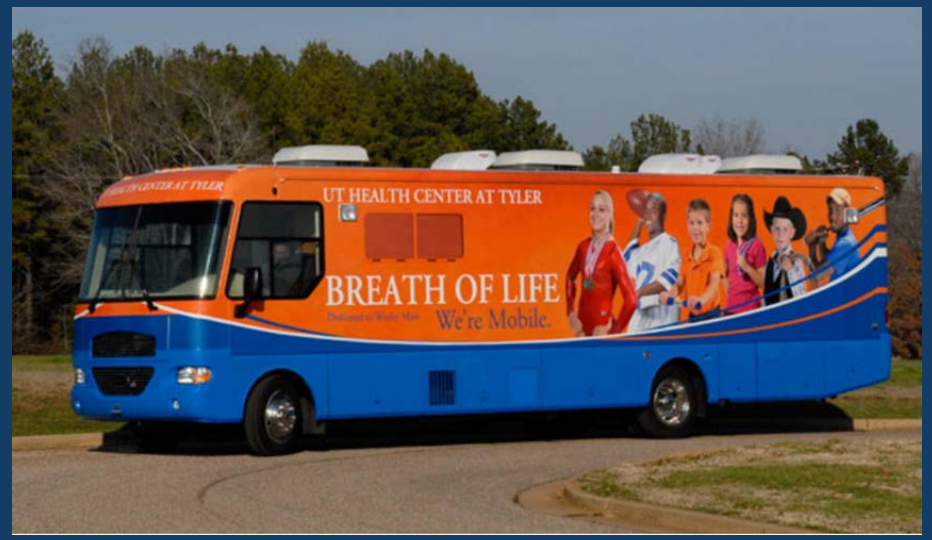
UT Health Science Center Tyler

- Access to mobile care services for pediatric asthma in school settings
- Referral of chronic disease patients and children for dental preventive services in collaboration with an academic dental hygiene program
- Pairing registered nurses with low-income, first-time mothers to improve prenatal care and child development (nurse-family partnership)
- Collaborating Episcopal Health Foundation to conduct a community needs assessment and to map health care resources available within a multicounty area



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UT Health Science Center Tyler-contin

- New partnership with MD Anderson Cancer Center in January 2018
- New CPRIT grant in partnership with UTSW Moncrief Cancer Institution to extend mobile cancer screening into rural areas
- Southwest Center for Agricultural Health, Injury Prevention, and Education
  - Continuous funding from the Center for Disease Control and Prevention since 1995
  - Serves Arkansas, Louisiana, New Mexico, Oklahoma and Texas
- Establishing a new School of Community and Rural Health
  - First class began January 2017
  - Over 30 individuals in Master of Public Health Degree program
  - New building will open Spring 2019
- Significantly increasing graduate medical education through UT Health East Texas

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Life Expectancy in Lower Rio Grande Valley

- **Cameron, Hidalgo, Starr and Willacy counties**
  - **Population 1,777,930**

- **Life expectancy (years) in 2013**

	Females	Males
• Texas	80.9	76.2
• Cameron	82.3	77.7
• Hildago	83.2	77.9
• Starr	79.9	74.6
• Willacy	81.5	74.5

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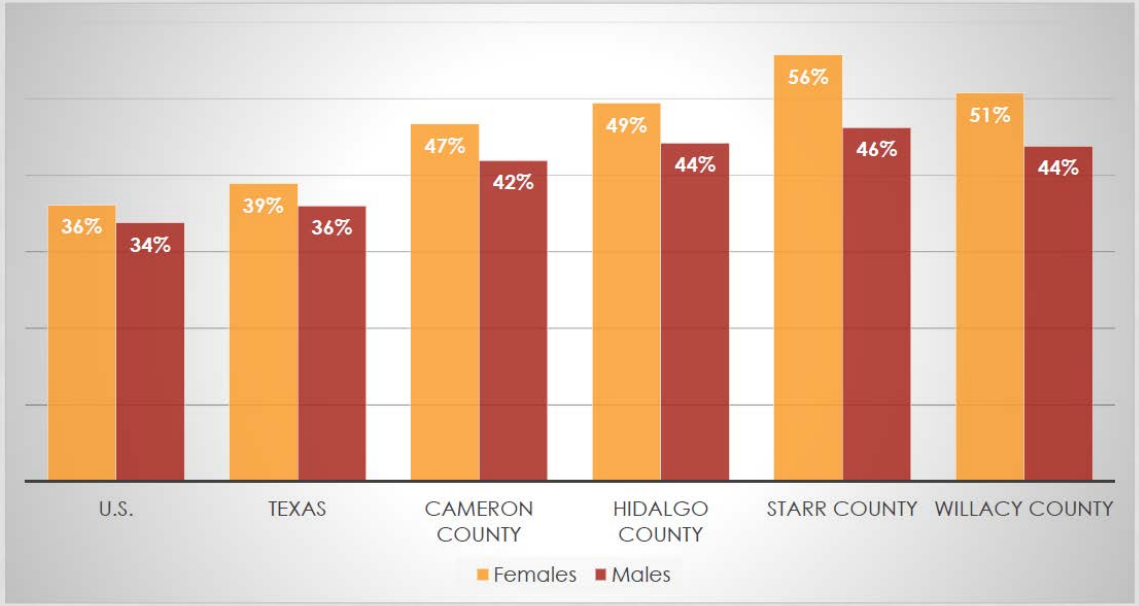
Select measures compiled by UTRGV for catchment counties

Table 3. Select Health Indicators for U.S., Texas, and RGV Counties						
Health Determinant – Demographics						
Measure	**U.S.**	**Texas**	**Cameron**	**Hidalgo**	**Starr**	**Willacy**
Of Hispanic or Latino origin	17%	38%	88%	91%	96%	87%
Per capita income	$28,555	$26,513	$14,898	$14,525	$11,935	$11,693
People living below poverty level	16%	18%	35%	35%	39%	38%
Percent high school graduate or higher	86%	82%	64%	62%	47%	63%
Foreign-born	13%	17%	25%	29%	33%	16%
Speak English less than very well	9%	14%	30%	32%	51%	21%
Health Determinant – Health Care (Access and Quality)						
Uninsured – Under 65 years	13%	21%	33%	34%	32%	26%
Uninsured – 18-64 years	14%	26%	44%	46%	43%	33%
Primary care physicians/100K population	76	60	46	46	18	32
Dentists/100K population	60	51	26	26	11	9
Psychiatrists/100K population	10	6	3	1	0	0
Health Determinant – Health Behaviors						
Binge drinking among males	25%	25%	29%	29%	30%	34%
Health Outcome – Morbidity						
Fair/poor health – age-adjusted	10%	18%	30%	27%	33%	-*
Obesity prevalence						
Females	36%	39%	47%	49%	56%	51%
Males	34%	36%	42%	44%	46%	44%
Total diabetes prevalence**	14%	16%	22%	22%	26%	23%
For metric definitions and data sources, please see the Appendix. *Data is statistically unreliable. **Total diabetes prevalence is equal to the sum of diagnosed and undiagnosed diabetes prevalence.						

South Texas Statistics

OBESITY PREVALENCE*



*2011 data for individuals with a Body Mass Index of 30 or more
Source: Institute for Health Metrics and Evaluation (IHME), US County Profiles. Seattle, WA: IHME, 2015.

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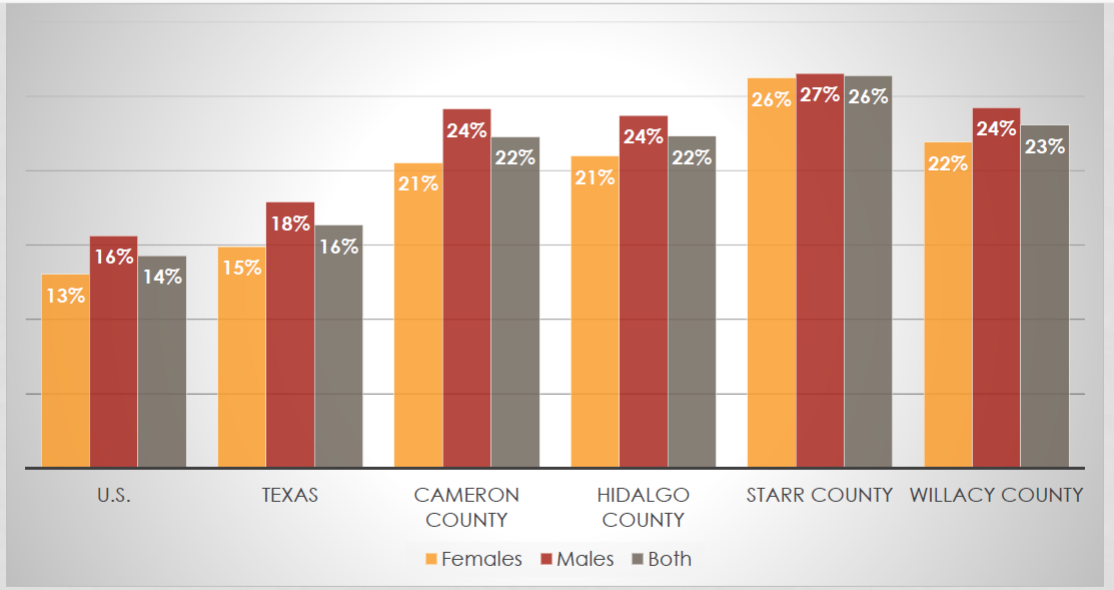
TOTAL DIABETES PREVALENCE*
AGE-STANDARDIZED



*Proportion of adults ≥20 years of age who report a previous diabetes diagnosis and/or have high FPG/A1C (FPG ≥126 mg/dL and/or A1C ≥6.5%); total diabetes prevalence is equal to the sum of diagnosed and undiagnosed diabetes prevalence; 2012 data
Source: Institute for Health Metrics and Evaluation (IHME), US County Profiles. Seattle, WA: IHME, 2015.

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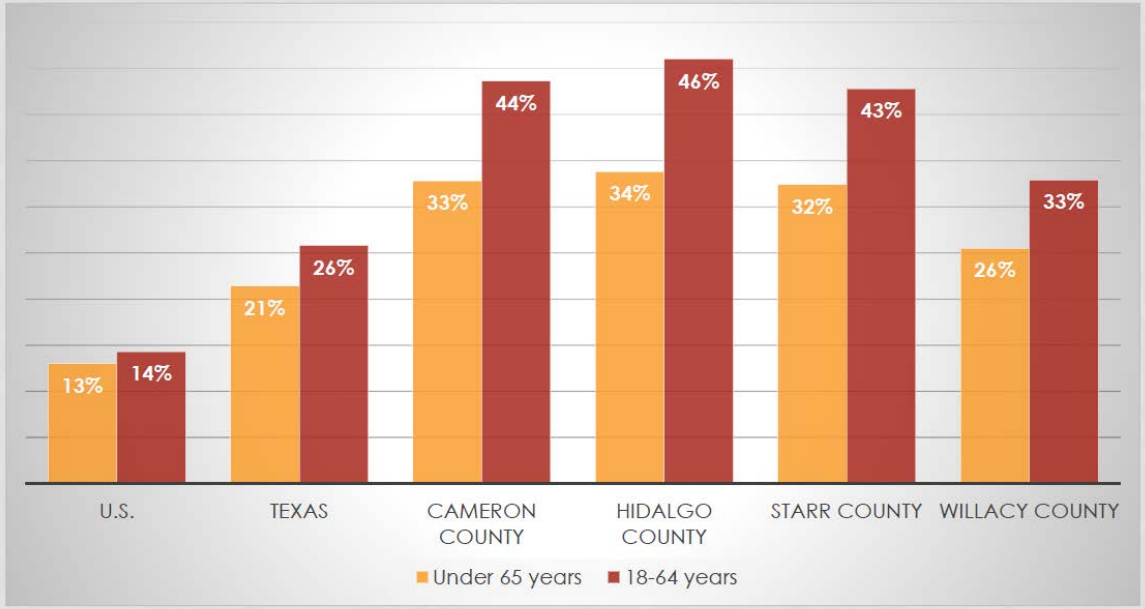
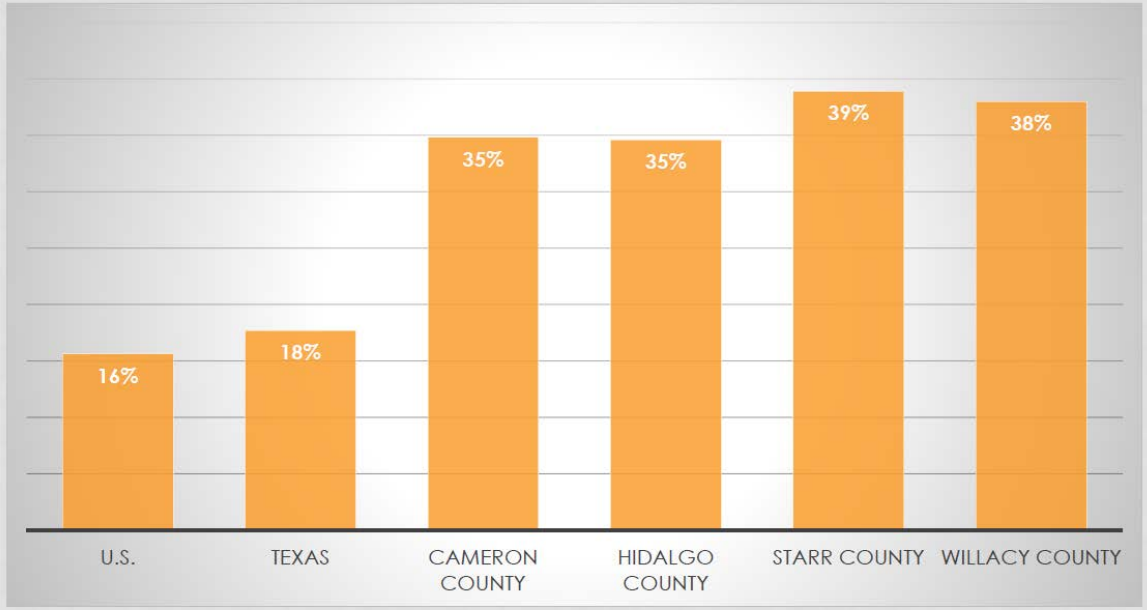
South Texas Statistics - continued

UNINSURED



Percent of population uninsured
Source: U.S. Census Bureau, Small Area Health Insurance Estimates, 2014

PEOPLE LIVING IN POVERTY*



*Percentage of people whose income in the past 12 months is below the poverty level
Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates

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University of Texas Rio Grande Valley

- **UTHealth Rio Grande Valley:**
  - The UTRGV School of Medicine is bringing medical care to several communities throughout the Rio Grande Valley, including rural underserved areas, through various clinics staffed with board-certified physicians.
  - Developing the workforce through medical and graduate medical education

- **South Texas Diabetes and Obesity Institute**
  - Mission : to advance the health of South Texas and the world through cutting edge research on diabetes, obesity, and related disorders.
  - Established October 2014
  - 21 faculty and staff
  - Brought over $13.8 million in NIH funding to UTRGV or one of its legacy institutions during the first 18 months of operation

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Center for Colonia Integrated Care Program: VIDAS (Valley Interprofessional Development and Services)

- Funded by United Health Foundation in January 2015 through a three-year, $2.88 million grant
- Goal: build an integrated, inter-professional collaborative that will create a sustainable model for healthcare delivery to the most vulnerable members of the community.
- As a part of the grant, the UT RGV School of Medicine purchased its Unimóvil mobile clinic to bring comprehensive primary care to people living in underserved communities who struggle with access to health care.
- UTRGV-affiliated health care providers operate a 40-foot-long clinic, which includes two examination rooms, a laboratory and restroom, and state-of-the-art diagnostic equipment.
- Since beginning operations in summer 2016, Unimóvil has traveled more than 12,000 miles and has provided care to more than 2,000 patients.

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Area Health Education Centers in South Texas (AHECS)

- The University of Texas Rio Grande Valley School of Medicine will develop three AHECS in rural communities
  - Bob Clark Center in Cameron County
  - San Carlos in Hidalgo County,
  - La Victoria in Starr County
- The centers are intended to:
  - Help increase access to primary healthcare in rural and underserved areas.
  - Develop and enhance education and training networks within communities, academic institutions and community-based organizations.
  - Teach medical and students in other health-related disciplines about the social determinants of health and health disparities.
- The AHECS will include primary healthcare clinics operated by professional healthcare staff, faculty and students of the School of Medicine and the College of Health Affairs.
- Program initiatives will begin September 2018.
- Funded by the Health Resources and Services Administration
  - $3.75 million over five years

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Tele-mentoring

The MD Anderson Project ECHO team connect with their partners from South Texas via teleconferencing. Credit: MD Anderson Cancer Center

- Project ECHO
  - Extension for Community Healthcare Outcomes
  - Began at University of New Mexico in 2003
  - Supports primary care providers with subspecialty expertise and mentoring
  - Now 109 partners working in 21 countries to improve treatment for 60 conditions
- MD Anderson is a designated super hub, training other healthcare institutions
  - Cervical Cancer, breast cancer, tobacco cessation

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Strategies to Address Rural Health Challenge

- Improve rural health data
  - Oversampling of surveys in rural areas
- Focus on keeping people healthy
  - Tobacco, obesity, substance use and injury prevention
- Use technology wisely
  - Mobile technology
  - Telehealth
  - Tele-mentoring: Project ECHO
  - Expand broadband access
- Maximize the current rural work force
  - Community Health Workers
  - Integration of mental health services into primary care
  - Pharmacists and nurse practitioners
  - School health programs
- Support your rural Academic Health Science Centers
  - Expand graduate medical education in rural areas
- Encourage Strategic Partnerships

Thank You!

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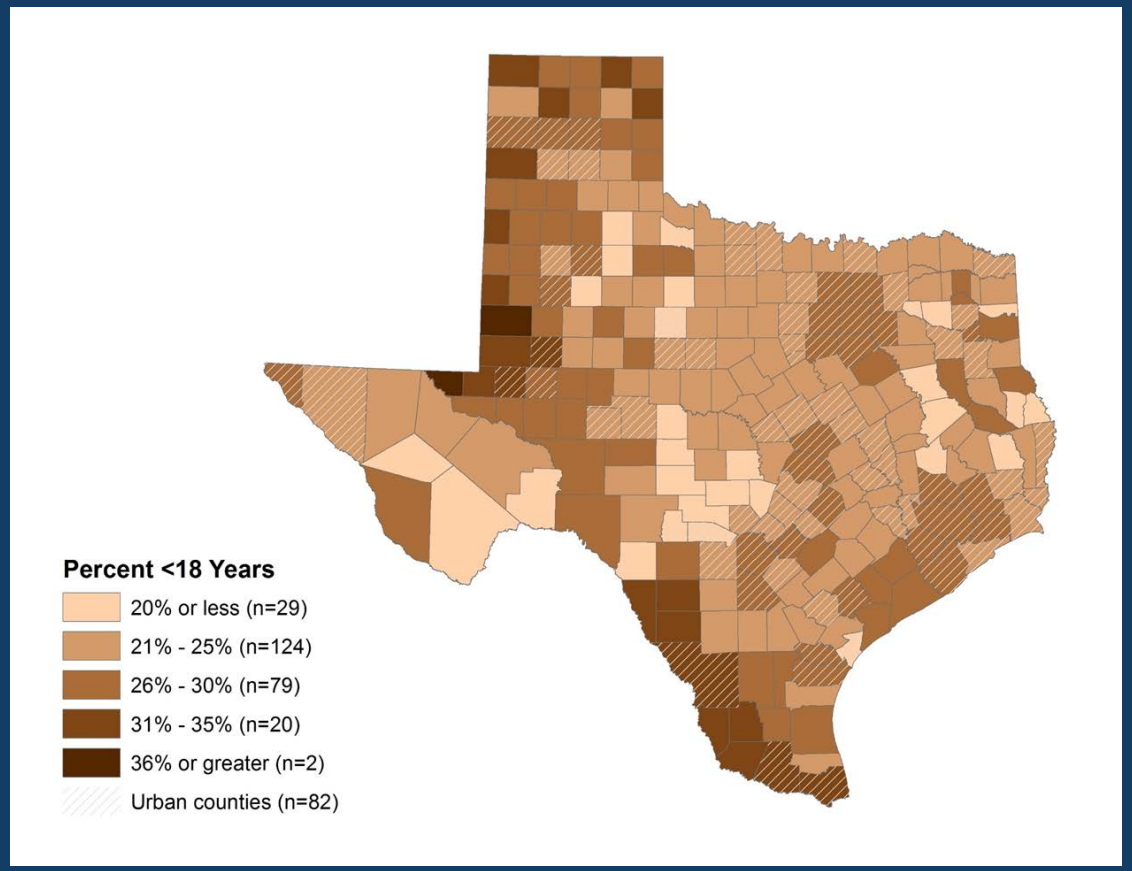
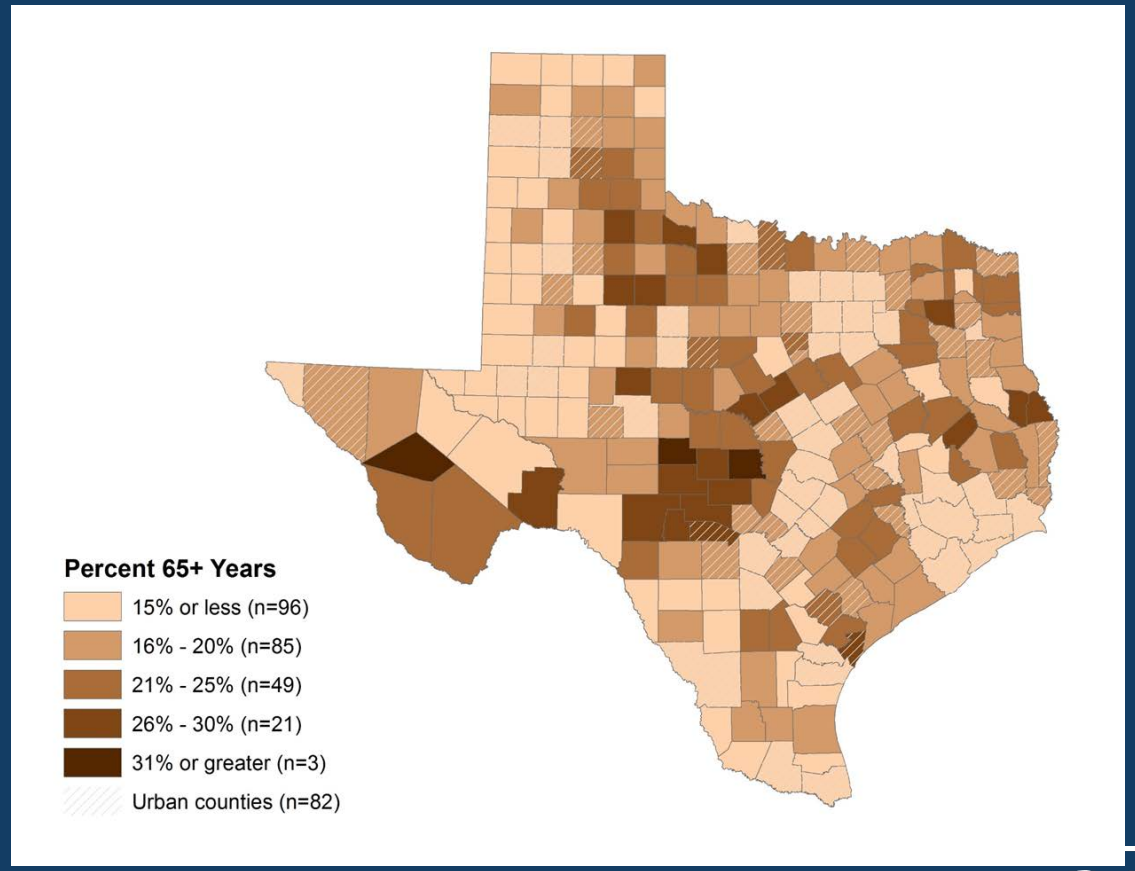
Appendix

2016 Age Distribution in Texas

Percent of Population Less than 18 Years



Percent of Population 65+ Years



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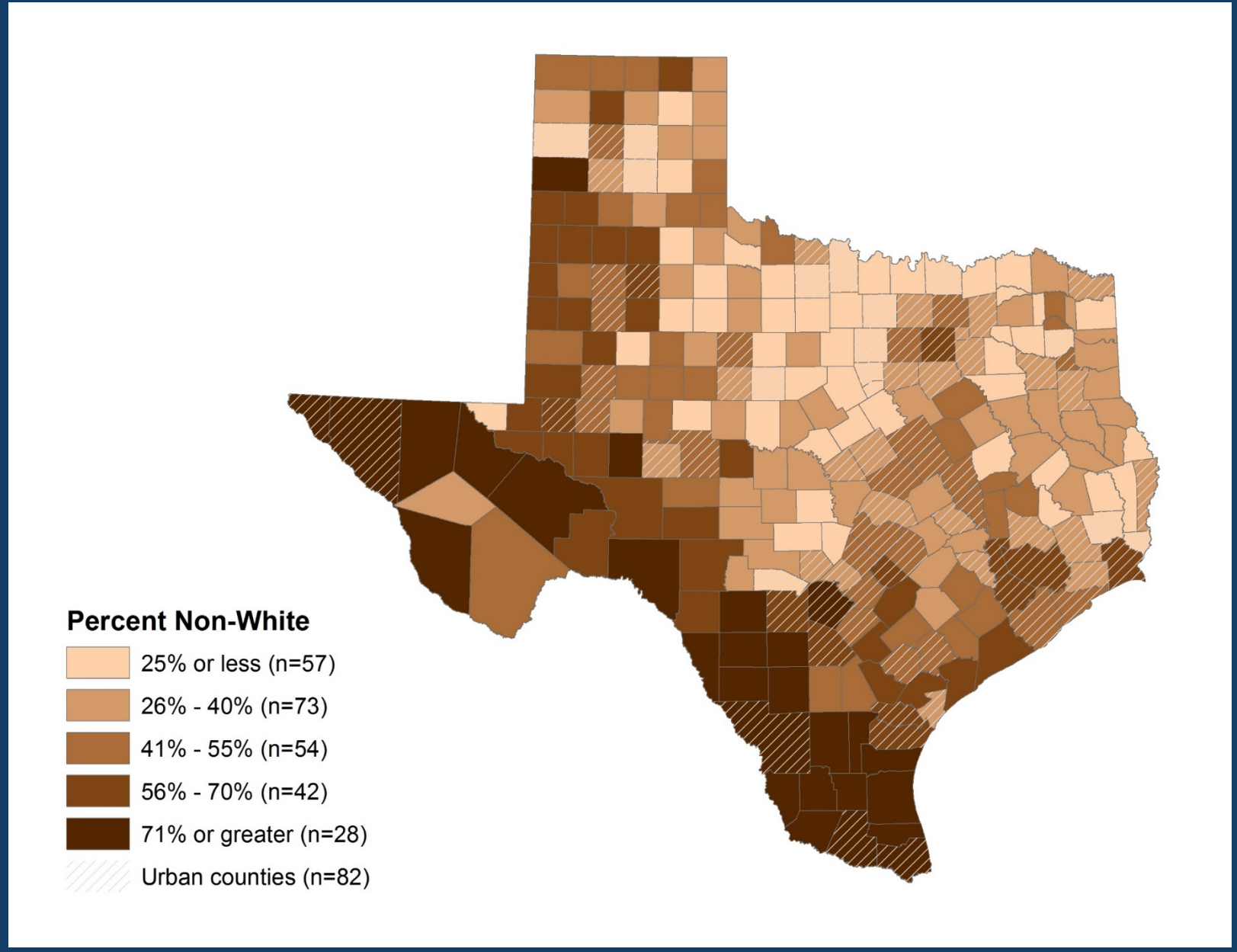
Percent of Population Non-White 2016



Source: National Center for Health Statistics, CDC Wonder. bridged-race population estimates produced by the U.S. Census Bureau in collaboration with the National Center for Health Statistics (NCHS) and released by NCHS
wonder.cdc.gov

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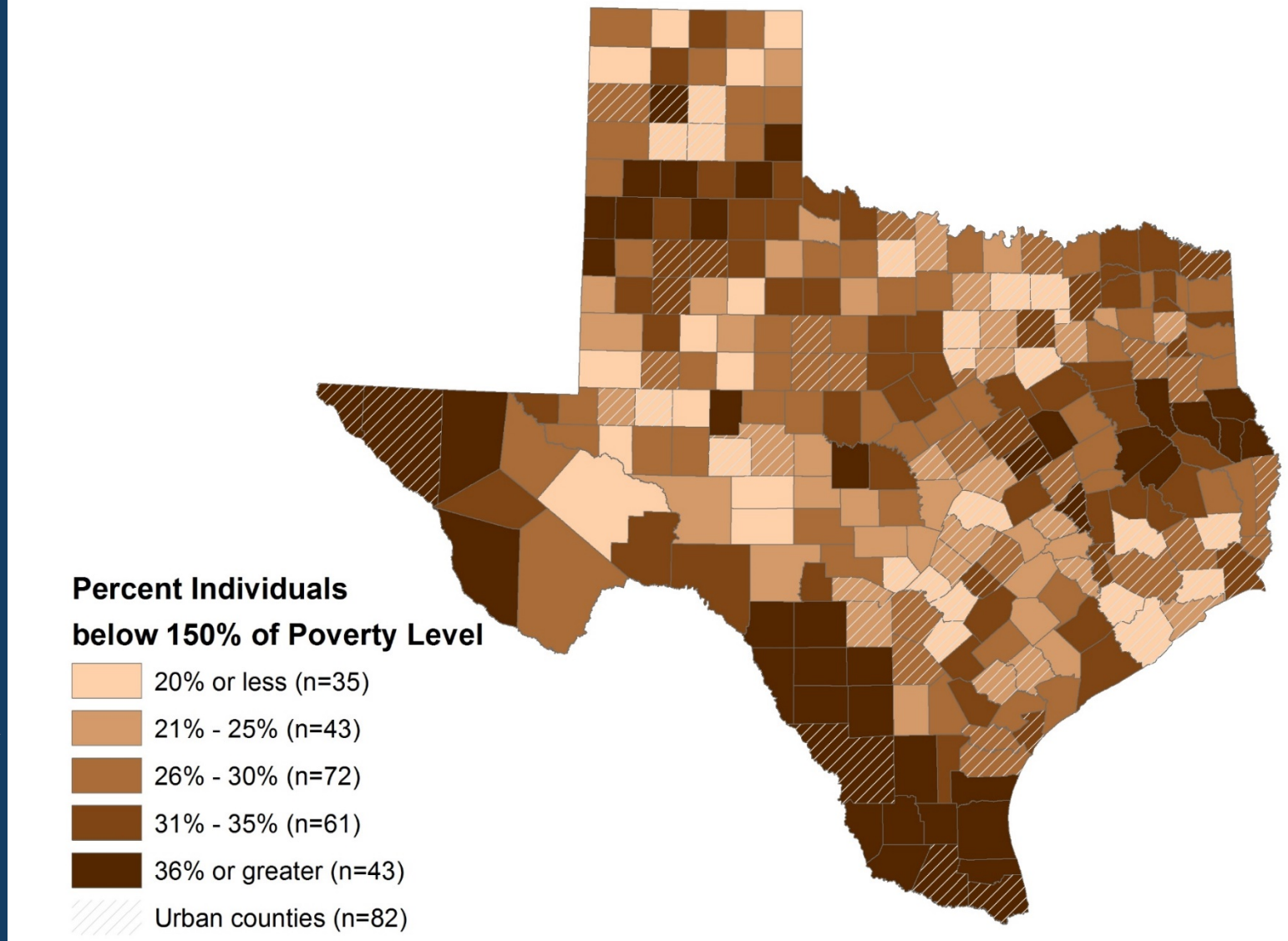
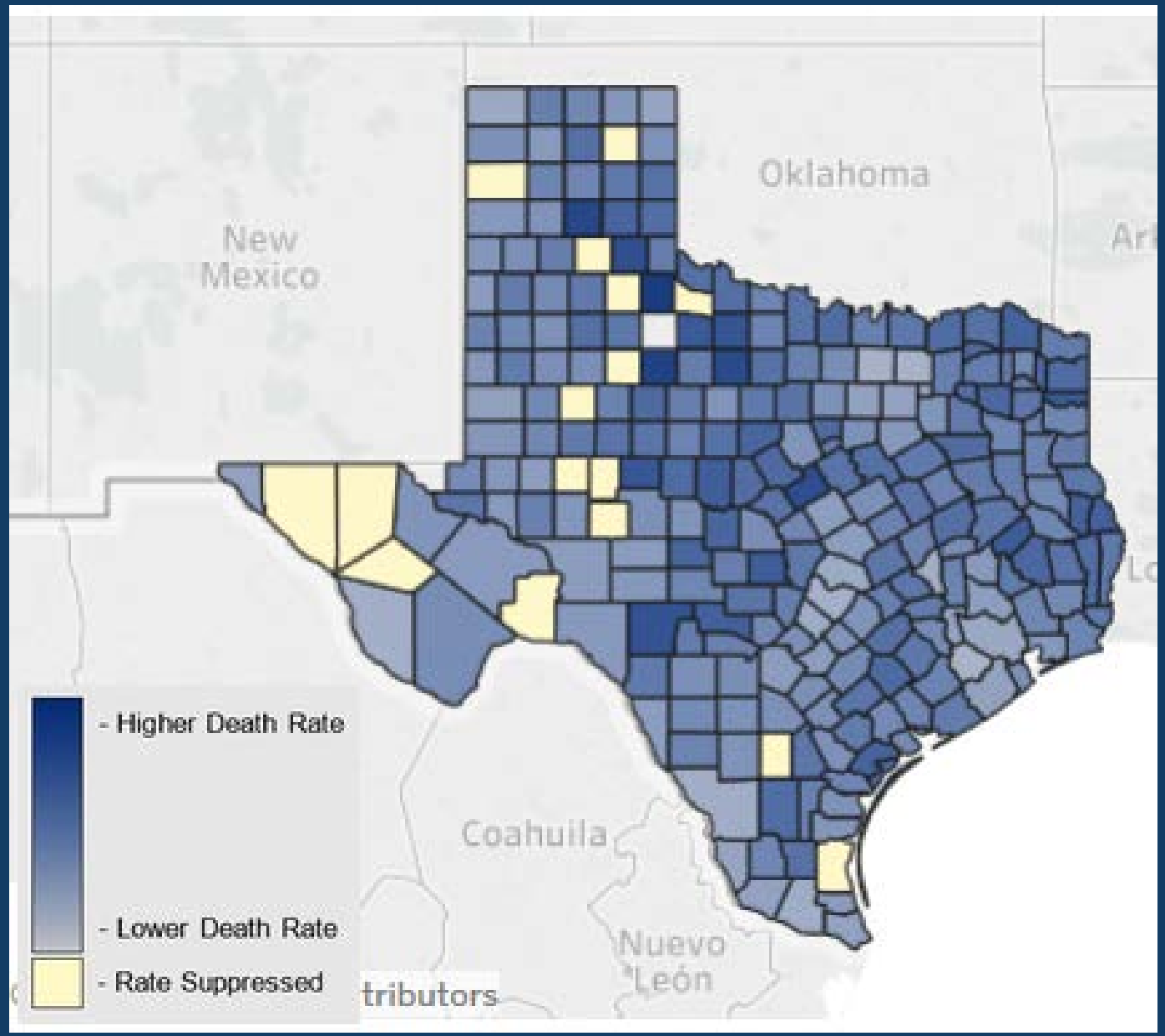
Percent of Population Below 150% Poverty 2016



Source: National Center for Health Statistics, CDC Wonder. bridged-race population estimates produced by the U.S. Census Bureau in collaboration with the National Center for Health Statistics (NCHS) and released by NCHS
wonder.cdc.gov

PH

Texas Crude Death Rate, 2015



Source: Texas Department of State Health Services, Center for Health Statistics
healthdata.dshs.texas.gov

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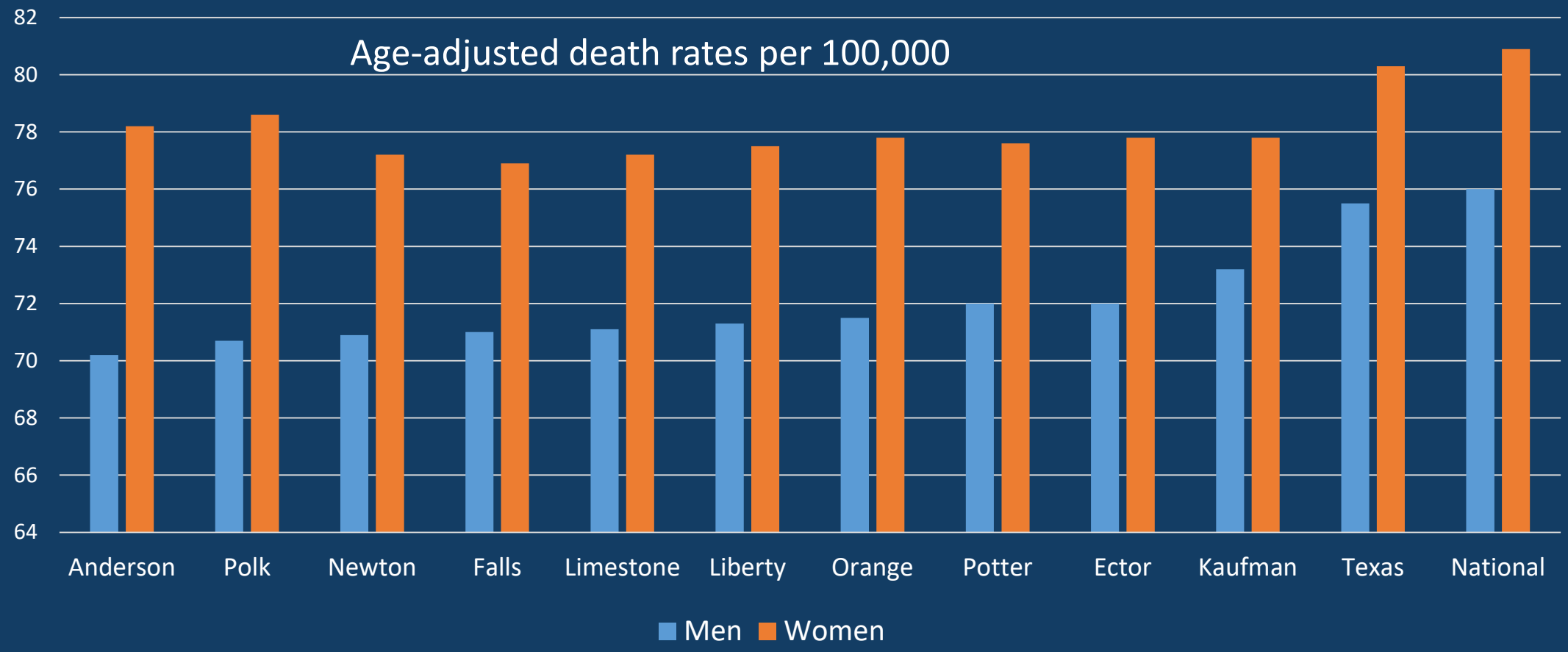
Life Expectancy in Texas – 2009

Rural Counties Experience



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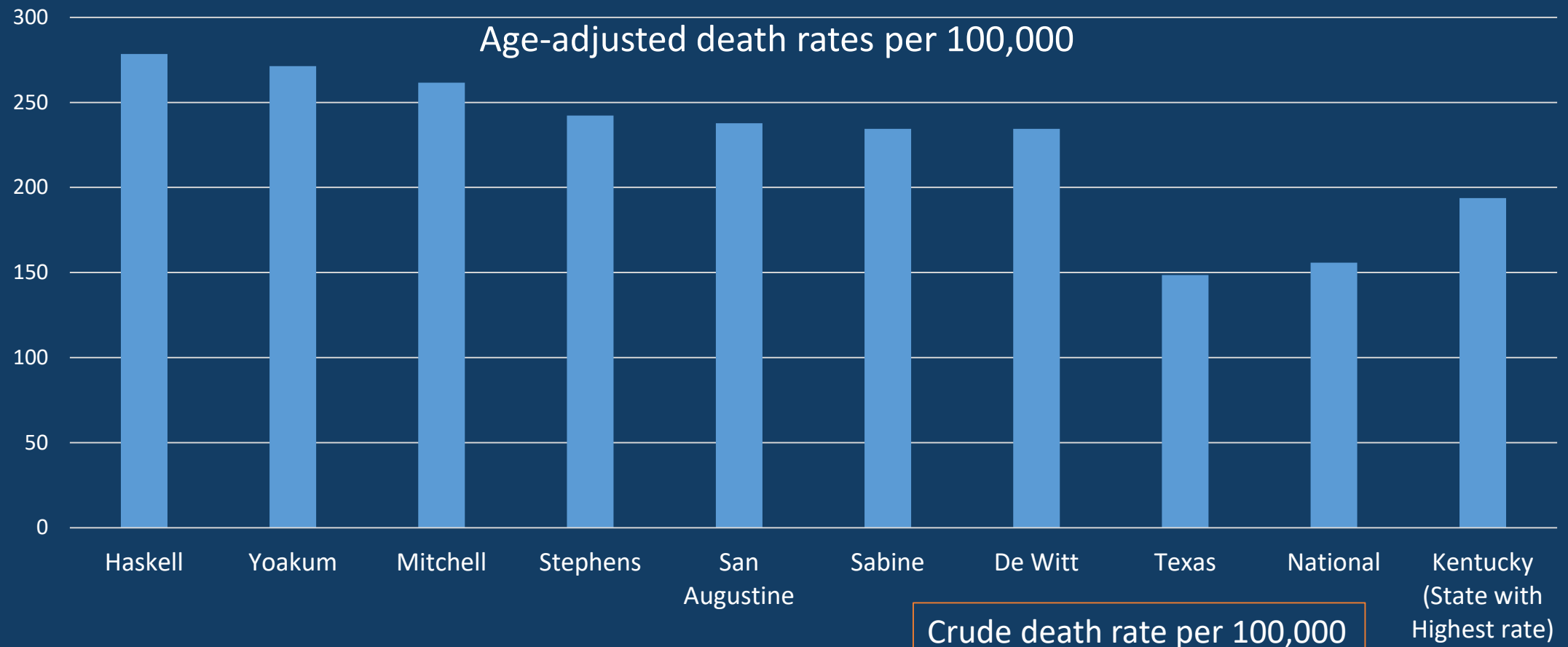
Cancer Death Rates in Texas – 2016
Rural Counties Experience



Source: National Center for Health Statistics, CDC Wonder
wonder.cdc.gov

Crude death rate per 100,000
Urban - 135.26
Rural – 219.64

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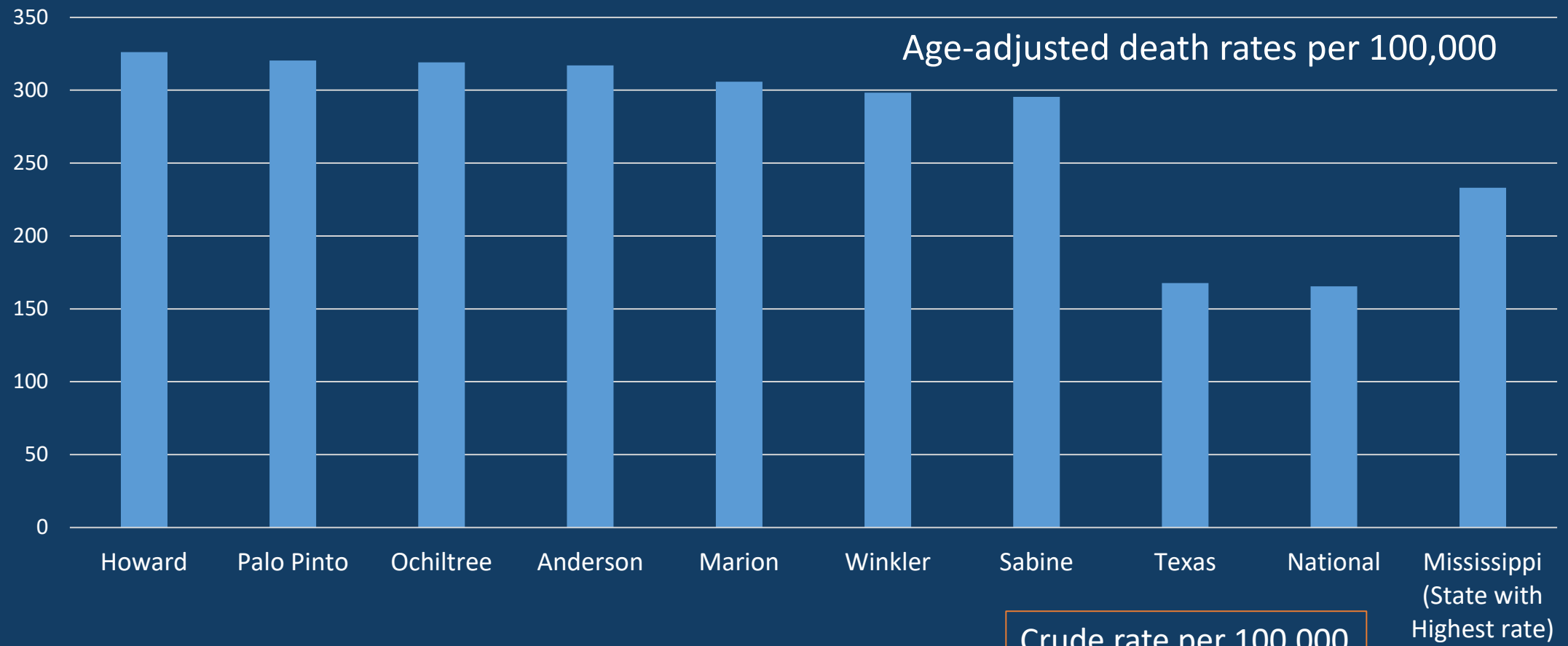
Heart Disease Death Rates in Texas – 2016
Rural Counties Experience



Source: National Center for Health Statistics, CDC Wonder
wonder.cdc.gov

Crude rate per 100,000
Urban - 143.71
Rural – 268.47

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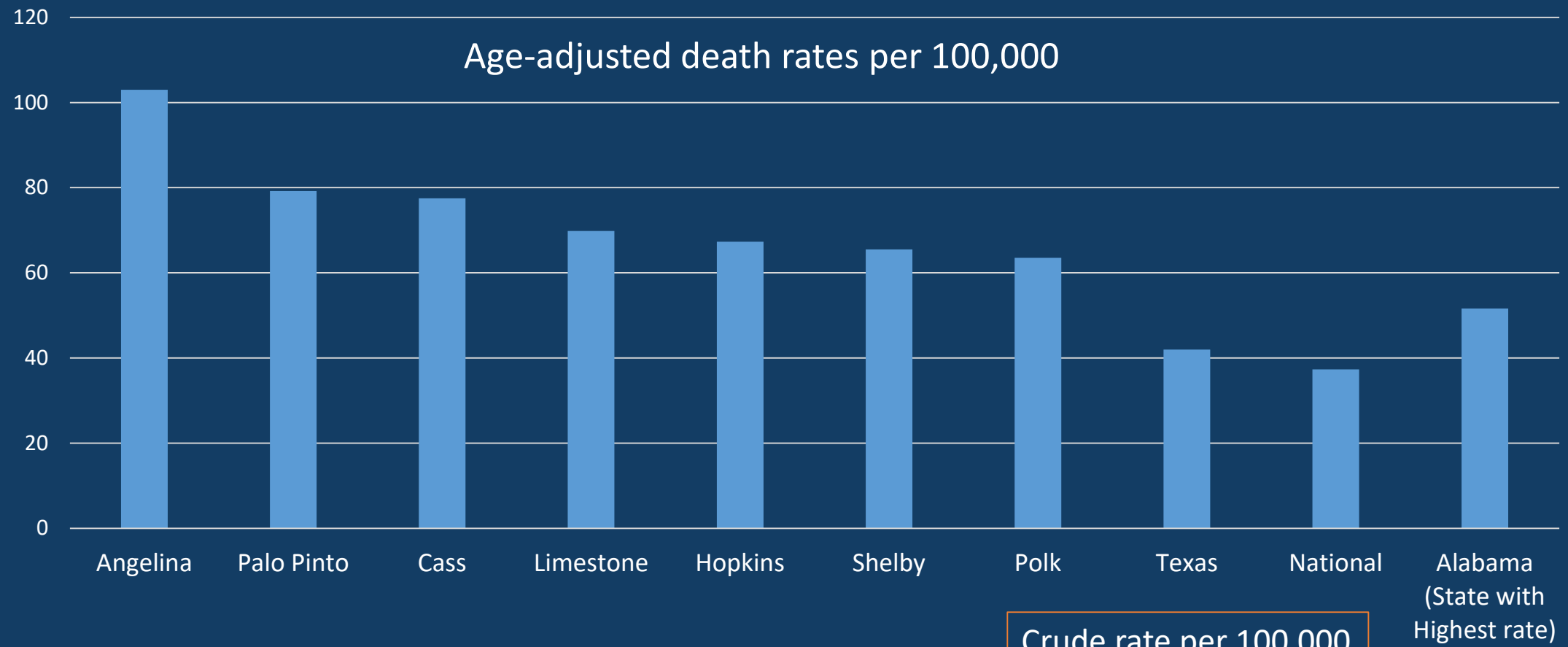
Cerebrovascular Death Rates in Texas – 2016
Rural Counties Experience



Crude rate per 100,000
Urban - 35.65
Rural – 63.26

Source: National Center for Health Statistics, CDC Wonder
wonder.cdc.gov

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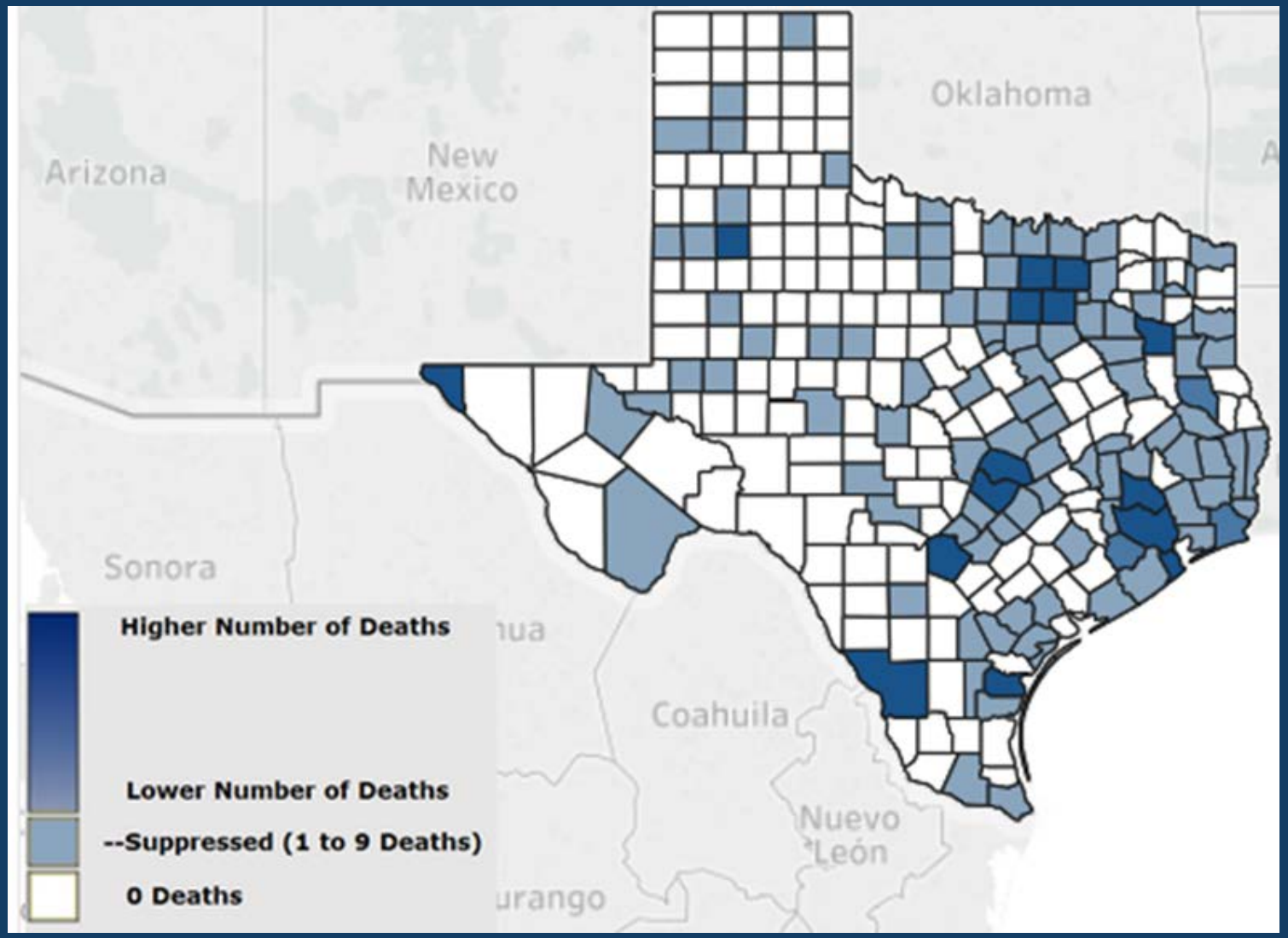
2015 Opioid-related Deaths



Source: Texas Department of State Health Services, Center for Health Statistics
healthdata.dshs.texas.gov

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Frontier and Remote Areas

- The term "frontier and remote" describe territory characterized by some combination of low population size and high geographic remoteness. FAR areas are defined in relation to the time it takes to travel by car to the edges of nearby Urban areas.
- Four levels are necessary because rural areas experience degrees of remoteness at higher or lower population levels that affect access to different types of goods and services. A relatively large number of people live far from cities providing "high order" goods and services, such as advanced medical procedures, stores selling major household appliances, regional airport hubs, or professional sports franchises.
  - Level one FAR codes are meant to approximate this degree of remoteness. A much smaller, but still significant, number of people find it hard to access "low order" goods and services, such as grocery stores, gas stations, and basic health-care services.
  - Level four FAR codes more closely coincide with this much higher degree of remoteness. Other types of goods and services—clothing stores, car dealerships, movie theaters—fall somewhere in between.
- Of all the U.S. states, Texas has the most number of FAR zip codes - 1,757 and the following population distribution based on 2010 census:
  - Level 1 FAR – 521,683 (2.1% of population)
  - Level 2 FAR – 219,133 (0.9% of population)
  - Level 3 FAR – 129,920 (0.5% of population)
  - Level 4 FAR – 50,292 (0.2 % of population)

Source: United States Department of Agriculture. Economic Research Services.

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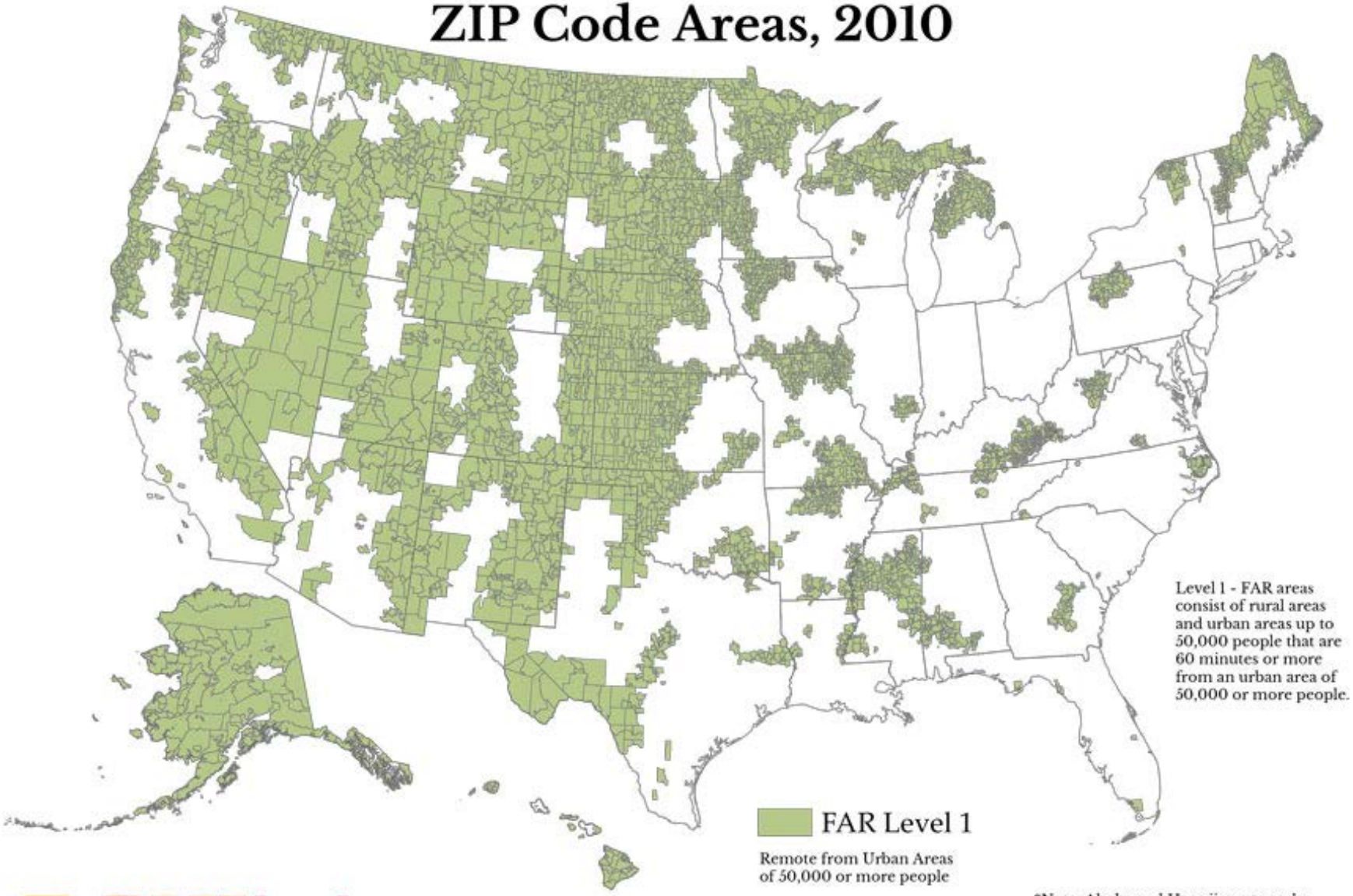
Frontier and Remote (FAR) Level 1 ZIP Code Areas, 2010



Level 1 - FAR areas consist of rural areas and urban areas up to 50,000 people that are 60 minutes or more from an urban area of 50,000 or more people.

FAR Level 1

Remote from Urban Areas of 50,000 or more people

*Note: Alaska and Hawaii not to scale

Source(s): Economic Research Service, United States Department of Agriculture, April 2015 Based on Census 2010 data.

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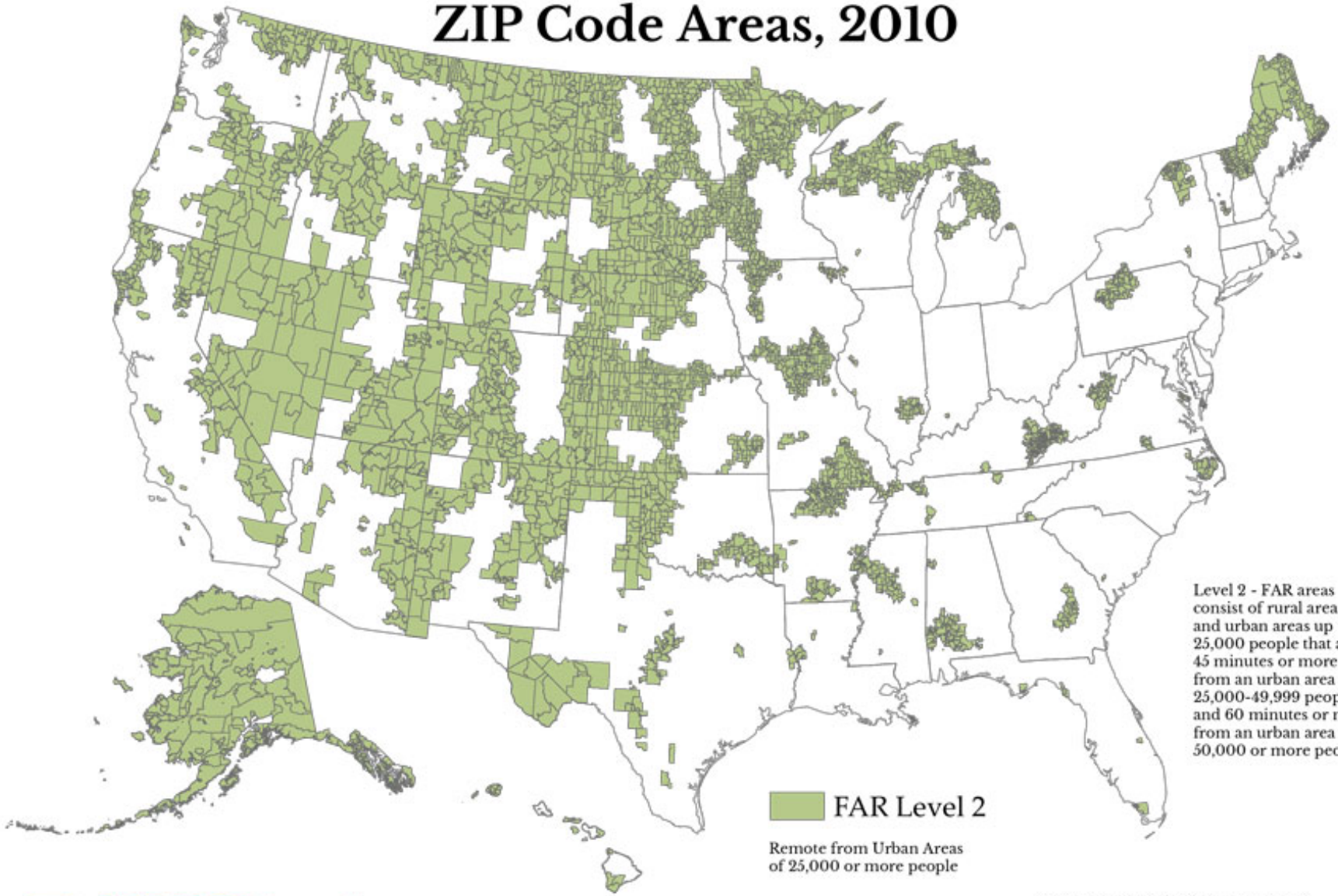
Frontier and Remote (FAR) Level 2 ZIP Code Areas, 2010



Level 2 - FAR areas consist of rural areas and urban areas up to 25,000 people that are: 45 minutes or more from an urban area of 25,000-49,999 people; and 60 minutes or more from an urban area of 50,000 or more people.

*Note: Alaska and Hawaii not to scale

Source(s): Economic Research Service, United States Department of Agriculture, April 2015 Based on Census 2010 data.

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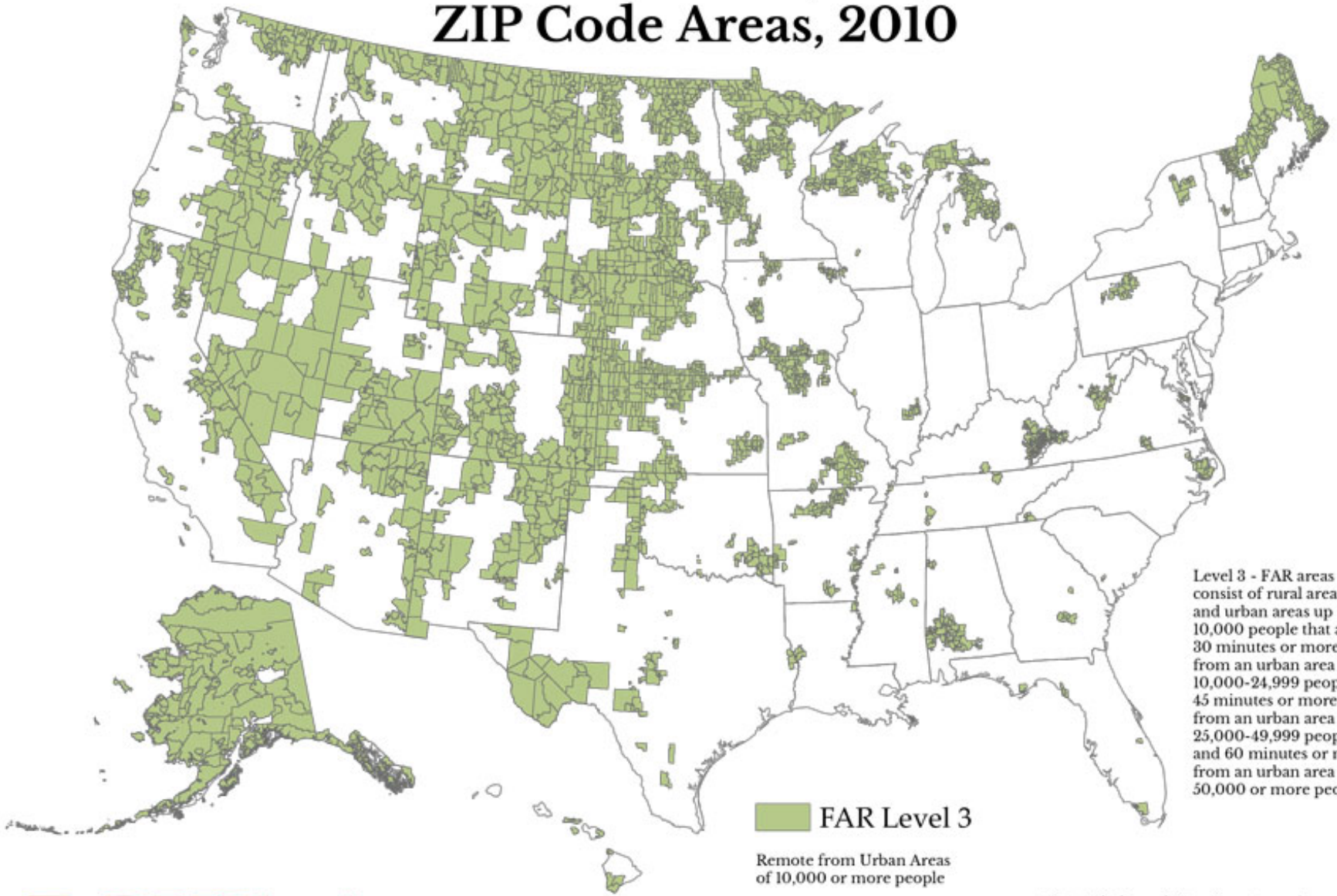
Frontier and Remote (FAR) Level 3 ZIP Code Areas, 2010



Level 3 - FAR areas consist of rural areas and urban areas up to 10,000 people that are: 30 minutes or more from an urban area of 10,000-24,999 people; 45 minutes or more from an urban area of 25,000-49,999 people; and 60 minutes or more from an urban area of 50,000 or more people.

FAR Level 3

Remote from Urban Areas of 10,000 or more people

*Note: Alaska and Hawaii not to scale

Source(s): Economic Research Service, United States Department of Agriculture, April 2015 Based on Census 2010 data.

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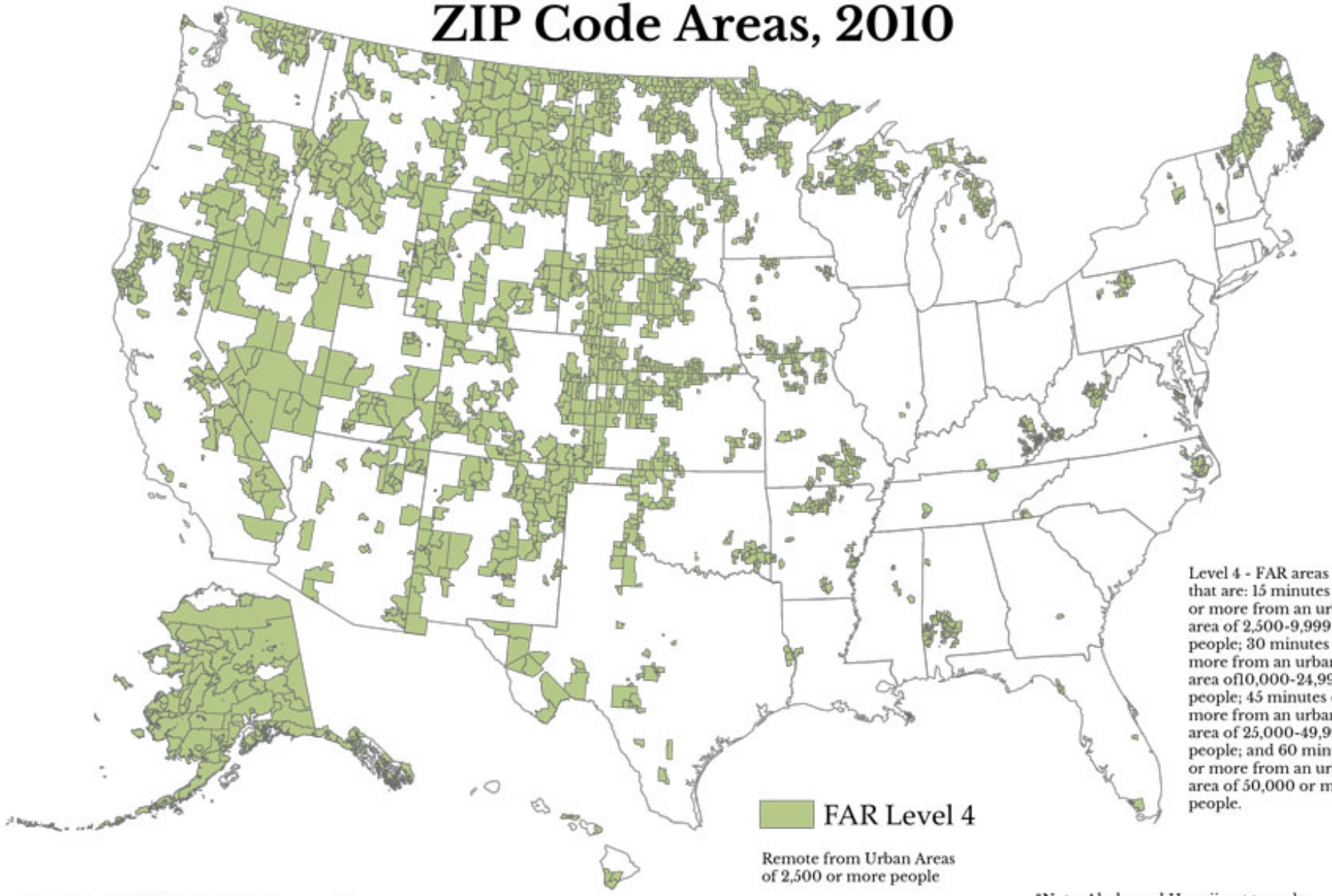
Frontier and Remote (FAR) Level 4 ZIP Code Areas, 2010



Level 4 - FAR areas that are: 15 minutes or more from an urban area of 2,500-9,999 people; 30 minutes or more from an urban area of10,000-24,999 people; 45 minutes or more from an urban area of 25,000-49,999 people; and 60 minutes or more from an urban area of 50,000 or more people.

FAR Level 4

Remote from Urban Areas of 2,500 or more people

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*Note: Alaska and Hawaii not to scale

Source(s): Economic Research Service, United States Department of Agriculture, April 2015
Based on Census 2010 data.