Introduction & Background

Texas is projected to face a shortage of nurses from 2015 through 2030. Based on projections from IHS Inc's Health Workforce model, the same model used by the U.S. Health Resources and Services Administration's National Center for Health Workforce Analysis, the supply of registered nurses (RN), nurse practitioners (NPs), certified registered nurse anesthetists (CRNAs), and certified nurse midwives (CNMs) will not be able to meet the projected demand for these nurses between 2015 and 2030. The supply of LVNs is projected to exceed demand between 2015 and 2028, after which demand will outpace supply.

In December of 2014, the Health Services and Research Administration (HRSA) released national and state level nursing projections from 2012-2025 based on a new projection model developed in conjunction with IHS Inc. In this report, HRSA projected that nationally, by 2025, the supply of RNs will be in excess of 340,000 relative to the demand. HRSA also projected that in Texas, the supply of RNs will be in excess of 6,100 relative to demand. These projections were based on IHS' Health Workforce Model and used survey data for both the supply and demand side of the models (HRSA, 2014).

In August of 2015, the Texas Center for Nursing Workforce Studies contracted with IHS to adapt the Health Workforce Model to Texas using Texas-specific data when available. The projections derived from this model will serve as a guideline in the development of recommendations by the Texas Center for Nursing Workforce Studies Advisory Committee to address nursing workforce shortages.

This report contains supply and demand projections for the different nurse types at the state-level as well as regional-level based on the 8 health service regions defined by the Texas Department of State Health Services (DSHS, 2014). Demand projections by employment setting are also included. This report also contains some background on the Texas nursing workforce, general information about the model, how the model was adapted to Texas, considerations for using the model, as well as recommendations from the Texas Center for Nursing Workforce Studies Advisory Committee.

About the Model

These projections are based on three models: Health Workforce model is comprised of three separate models: The Health Workforce Simulation Model (HWSM), the Healthcare Demand Microsimulation Model (HDMM), and the Disease Prevention Microsimulation Model (DPMM). The models use a microsimulation approach. In microsimulation, the unit of analysis is the individual, in this case providers for the HWSM and patients for the HDMM and DPMM.

The HWSM uses a microsimulation approach that models the likely career choices of individual nurses in Texas to project what supply might look like annually through 2030. The HWSM starts with the current supply of nurses from Texas' licensure files and models new nurses entering the workforce, nurses leaving the workforce, and workforce participation patterns as the demographics of the nursing workforce change over time.

The HDMM models demand for health care services and providers and includes 3 major components 1.) characteristics of each person in a representative sample of current and future population, 2.) health care use patterns that relate to patient characteristics, and 3.) staffing patterns that translate to demand for services. In this model, demand is defined as "the level and mix of health care services (and providers) that are likely to be used based on population characteristics and economic considerations such as price of services and people's ability and willingness to pay for services."

The DPMM models the health and economic effects of interventions to improve population health. Lifestyle indicators and health-related behaviors play a role in modeling demand for health care services and providers in a number of ways. Disease prevention interventions provided by health care providers increases demand as those services increase, reducing prevalence or acuity of chronic conditions can reduce demand for health workers who provide those services, and interventions that reduce mortality or increase life expectancy can have an impact on increased use of other health care services. Output from this model can be run through the HDMM to simulate how the increase or decrease in chronic

conditions can affect patient use of health care services.

Information about the models contained within this report is based on IHS' Health Workforce Model Documentation (IHS Inc., 2016). Further detail about the models can also be obtained from the technical document available at https://cdn.ihs.com/www/pdf/IHS-HDMM-DocumentationApr2016.pdf.

Adapting the Model to Texas

The workforce models were adapted to Texas to model supply and demand for RNs, LVNs, NPs, CRNAs, and CNMs at the state and regional level. Texas specific data was used in the model when possible and data from national or other sources was used when necessary.

For the HWSM, Texas Board of Nursing licensure data for each of the nurse types served as the primary source for creating the starting supply files. These records were based on nurses actively practicing as a nurse in Texas, with a current license, and whose employment setting was not a military hospital. Estimates for new entrants to the workforce, nurse retirement patterns, and hours worked patterns were derived from these records.

New entrants to the Texas workforce were based on estimates derived from nurses' reported graduation year in the licensure file. Due to small numbers of new entrants based on licensure data, national age and sex distributions were used for new graduates.

Nurse retirement patterns were estimated from comparing age distribution of active nurses across multiple years. Age distributions of nurses in one year were compared to the expected age distribution of nurses in that year if all active nurses in the previous year had remained active. The difference in number of active nurses of a given age in one year and the number of nurses one year younger in the previous year reflect the net loss or gain of active nurses during the year. These patterns were compared to those of South Carolina and overall national workforce for people with comparable levels of education. Based on this analysis, Texas LVNs retire earlier than RNs and RNs tend to retire later than the overall college-educated population. Retirement pattern estimates for APRNs are based on retirement patterns for primary care physicians. More on how those estimates are derived can be found in the technical documentation.

Hours worked patterns for RNs and LVNs were based on data from the American Community Survey (ACS). This source was used in place of Texas licensure data due to the availability of wage data in the ACS. However, hours worked patterns derived from ACS were compared to actual hours worked reported by nurses in the Texas licensure data. Hours worked by RNs were higher than national averages, but when data was converted to FTEs, hours worked by RNs in Texas were similar to those estimated for nurses nationally. Hours worked for APRNs were estimated similarly to physicians. A description of those methods can be found in the technical documentation.

For the HDMM, county level population files were created for each county in Texas based on 2014 data published by the U.S. Census Bureau. These files were used to draw a representative sample from a file that merged Texas data from the American Community Survey, Behavioral Risk Factor Surveillance System, and the National Nursing Home Survey. The sampling process creates a file that is representative of the demographic distribution in Texas and that includes a health risk profile for each person. Predicted prevalence of chronic disease and other health risk factors was then compared to estimates reported by Texas Department of State Health Services' Community Assessment Team who oversees the BRFSS in Texas.

Further detail about the adaptation of the models to Texas can be found in IHS' technical documentation on TCNWS' website at http://www.dshs.texas.gov/chs/cnws/publications/.

Considerations for Using the Model

Baseline projections in this report are based on three assumptions one should keep in mind as the projections are considered: 1.) Supply and demand are in equilibrium in the baseline year. Based on this assumption, there is a large gap between the supply of nurses and the demand for nurses between 2015 and 2030. Vacancy and turnover rates among nurse employers in Texas over the last several years suggests that supply of and demand for nurses hasn't been in equilibrium. Baseline projections likely underestimate the nursing shortage in Texas. 2.) The baseline projections presented in this report model the impact of changing demographics over time while health care use and delivery patterns remain the same. In the baseline projections, disease prevalence and health risk factors also remain consistent by demographic groups. As access to care changes, models of care transform, technology improves health practices and outcomes, and the myriad of other influences evolve, it is difficult to predict how health care use and delivery patterns as well as disease prevalence and health risk factors will change over time. 3.) The demand projections are based on national utilization patterns. Without better state-level data on healthcare utilization patterns to use in the demand model, it is difficult to know how Texas compares to national utilizations patterns.

Additionally, these projections are based on nurse FTEs. While one FTE could be filled by one nurse, it could also be filled by two part-time nurses. A shortage of FTEs underestimates the headcount of nurses needed to meet demand.

Conclusion

Based on Texas-specific data that was applied to the Health Workforce Model, Texas will face a shortage of RNs, NPs, CRNAs, and CNMs in relation to projected demand for each nurse type each year between 2015 and 2030. The supply of LVNs is projected to exceed demand between 2015 and 2028 when demand begins to outpace supply of LVNs.

Demand for nurses by setting indicates that nursing home, residential care, and home health settings are projected to see the fastest rates of growth in the demand for RNs and LVNs between 2015 and 2030. The demand for nurses in nursing homes and residential care settings is projected to double between 2015 and 2030 while the demand for nurses in home health settings is projected to increase by 74%.

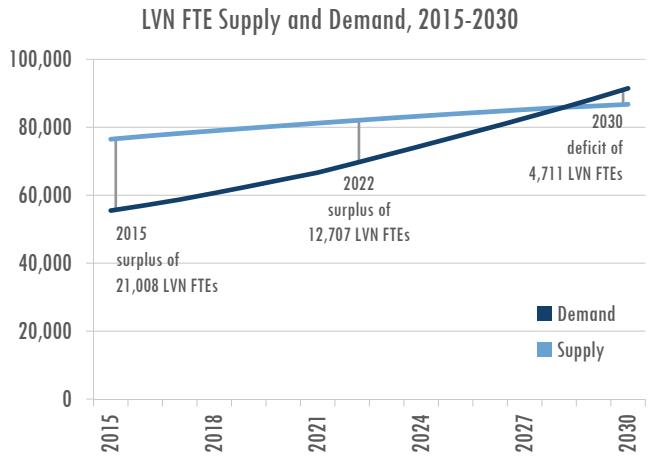
In general, the supply and demand for nurses will vary by region and nurse type. The demand for RNs will exceed supply for each year between 2015 and 2030 in each region except the Panhandle, where supply will exceed demand until 2028. The supply of LVNs will exceed the demand for them every year through 2030 in the Panhandle, East Texas, South Texas, and the Rio Grande Valley. Demand for LVNs will surpass the supply in the North Texas, Gulf Coast, Central Texas, and West Texas regions by 2026. The demand for NPs and CNMs will exceed the supply of those nurses in all regions every year between 2015 and 2030. The Rio Grande Valley region will be the only region with a surplus of CRNAs between 2015 and 2030, all other regions will face a shortage of this nurse type by 2021 and increasing through 2030.

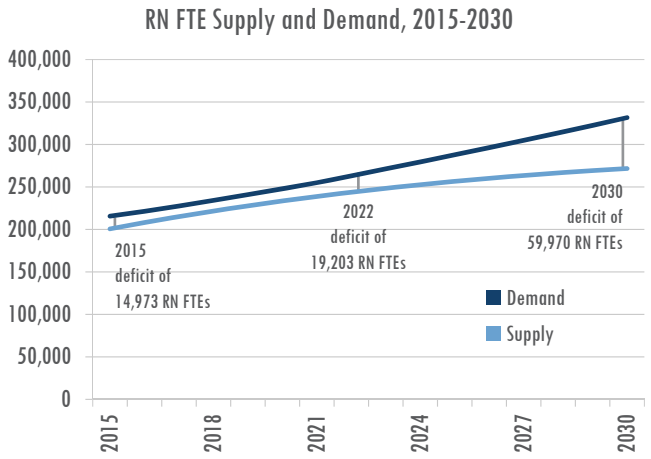
Again it is important to note that these models are based on assumptions described in the previous section "Considerations for Using the Model." It is also important to note that these projections are based on FTEs and that the actual number of nurses needed to fill these FTE positions is likely underestimated.

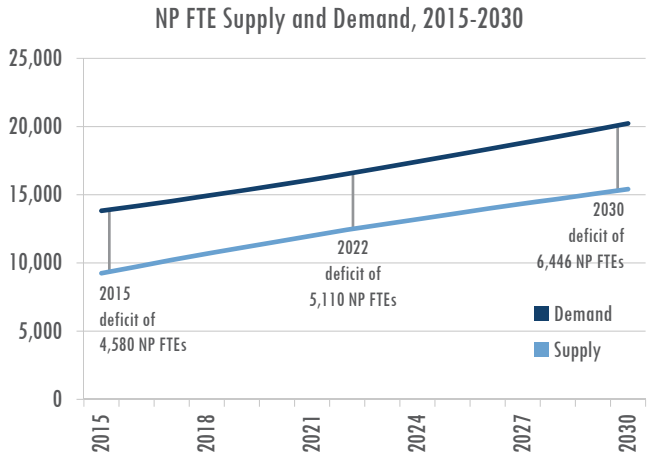
These projections are meant to be used as a planning tool for adequately preparing the future workforce to meet the needs of the Texas population. However, predicting future supply of and demand for nurses is a challenging quest. There are many factors that can influence either supply of or demand for nurses. It is important to keep in mind what the impact will be on demand for health care providers as more people gain health care coverage, as the way people use health care services evolves, as the way health care services are delivered transforms, and as disease prevalence and acuity changes. Likewise, there are a number of factors that can impact supply, such as ability to draw nurses to the workforce and train them in adequate numbers, and improvements or declines in the economic climate that may drive retirement patterns. There are also factors worth considering that extend beyond just numbers such as such ensuring diversity in the workforce in order to deliver culturally competent care and the geographical distribution of not just nurses but the right combination of nurses to meet demand for needed specializations and skillsets.

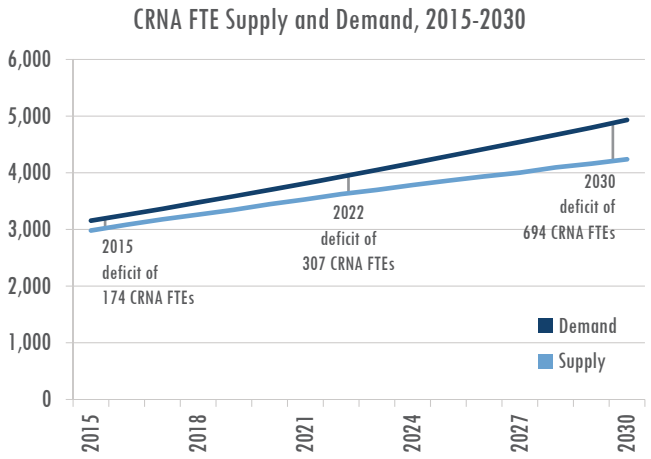
Statewide Supply and Demand Projections, 2015-2030

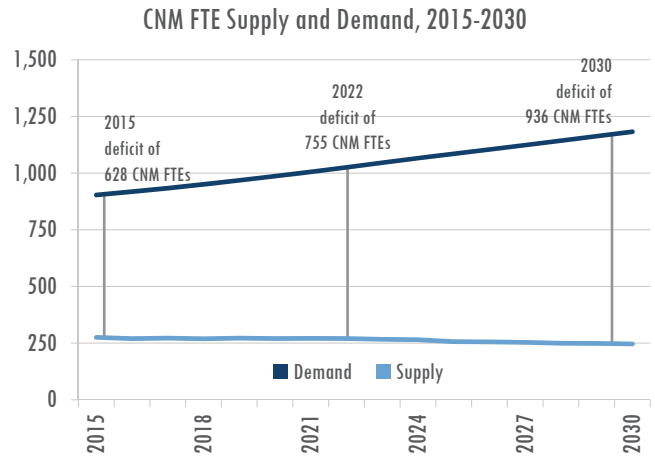
From 2015 to 2030, RNs will experience a larger growth in the deficit between supply and demand than any other nurse type. During that time period, the projected demand for nurses outpaces the projected supply every year for every nurse type except LVNs. Between 2015 and 2028, the state will have more than enough LVN FTEs to meet demand. By 2029, the surplus of LVN FTEs will become a deficit that will more than double by 2030. CNMs are the only nurse type that will see a decrease in supply from 2015 to 2030. Demand projections are based on current national health care use and delivery patterns. As access to care changes and models of care transform, health care use and delivery patterns may change the demand for nurses over time.



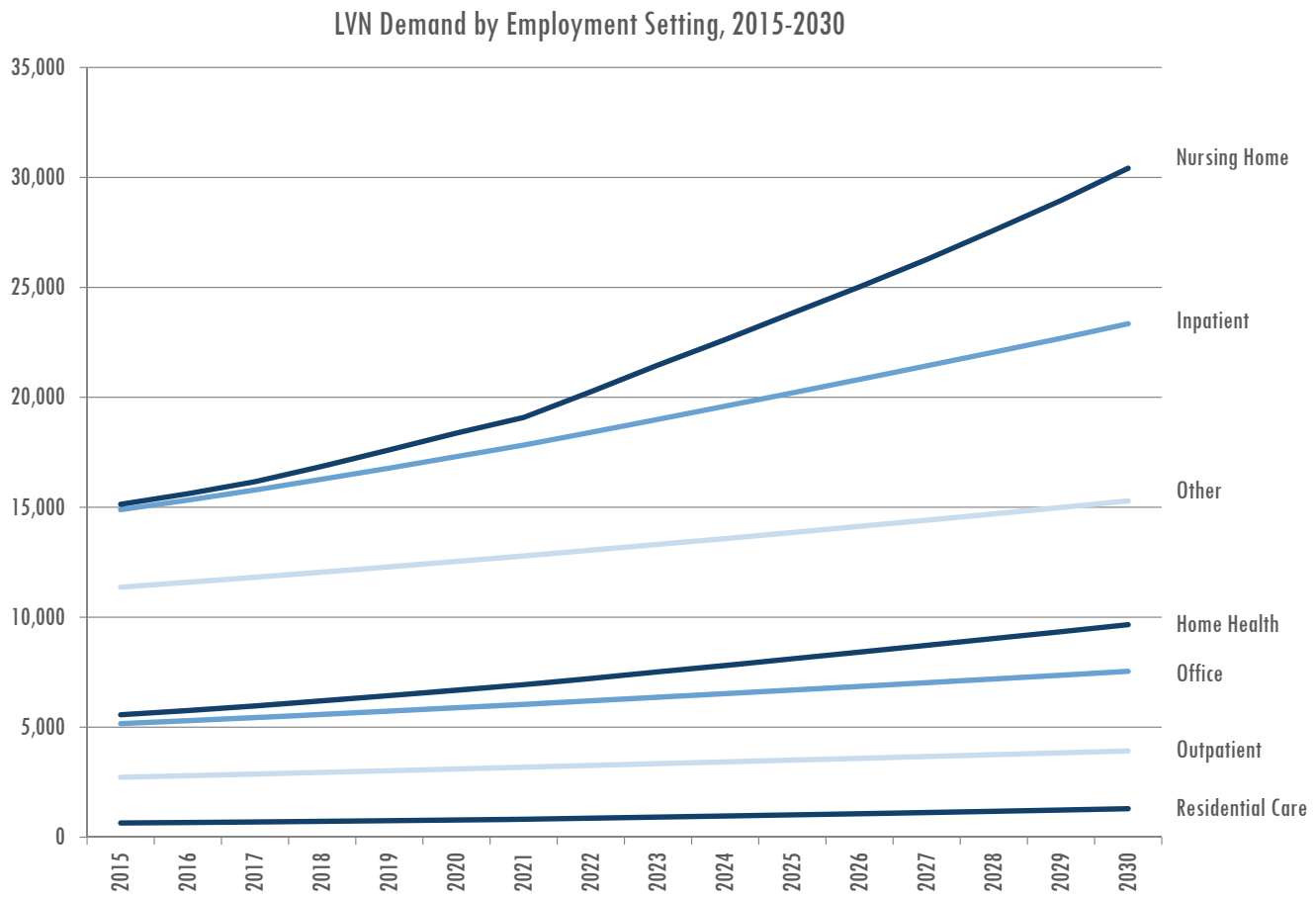




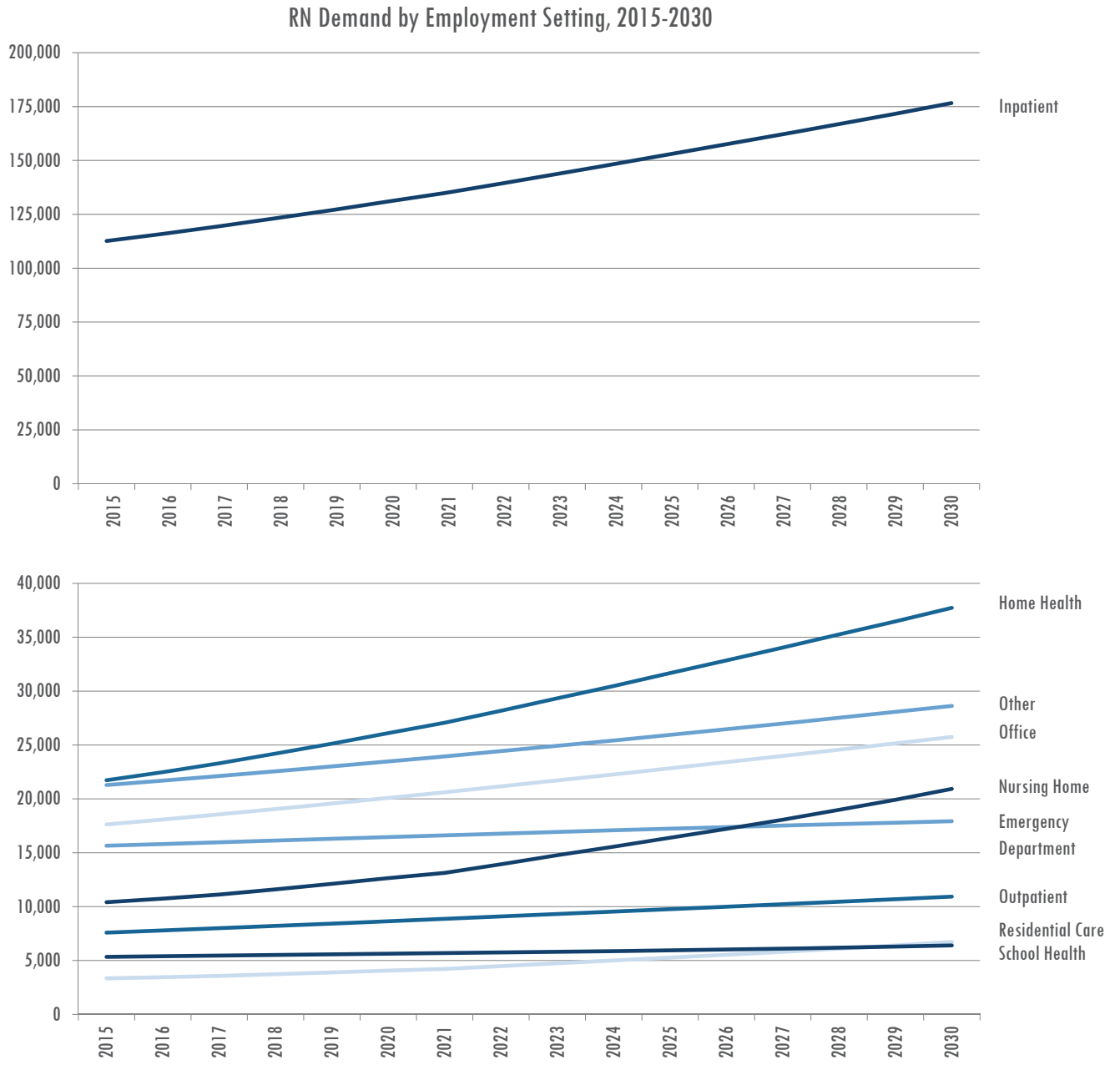




Demand by Employment Setting, 2015-2030



- Demand projections are based on current national health care use and delivery patterns. As access to care changes and models of care transform, health care use and delivery patterns may change the demand for nurses over time.
- Demand for LVN FTEs is projected to grow 65%, or by 35,984 LVN FTEs, between 2015 and 2030.
- The demand for LVNs in nursing homes is projected grow at the fastest rate and by the largest number of nurses. The growth in demand for LVNs in this setting will account for nearly 43% of all growth in demand for LVNs.
- The demand for LVNs in residential care settings is also projected to nearly double during this period growing from 644 LVNs FTEs in 2015 to 1,294 by 2030.
- From 2015 to 2030, the demand for LVN FTEs in home health will increase by 74%, or by an estimated 4,097 LVNs.
- Demand for LVNs in inpatient hospital settings is projected to increase by 8,019 nurses, or by 54%, between 2015 and 2030.



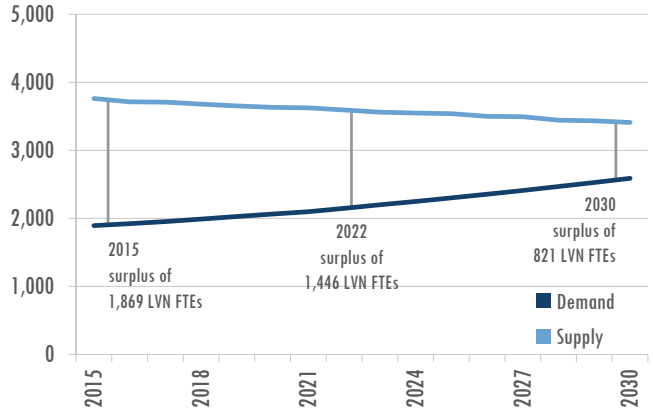
- Demand projections are based on current national health care use and delivery patterns. As access to care changes and models of care transform, health care use and delivery patterns may change the demand for nurses over time.
- Between 2015 and 2030, the demand for RNs in inpatient hospital settings is projected to grow 57% from 112,662 RN FTEs to 176,629 RN FTEs. This will account for more than half of the growth in demand for RNs across all settings.
- Nursing home, residential care, and home health settings are projected to see the fastest rates of growth in demand for RNs between 2015 and 2030. The demand for nurses in these three settings will account for one quarter of the growth in demand for RNs across all settings.
- Demand for RNs in office settings will increase 46%, or by about 8,119 RN FTEs.
- Emergency departments are projected to increase their demand for RN FTEs by the smallest margin, 15%, or 2,275 RN FTEs during the 15 year period.

Supply and Demand by Nurse Type and Region, 2015-2030

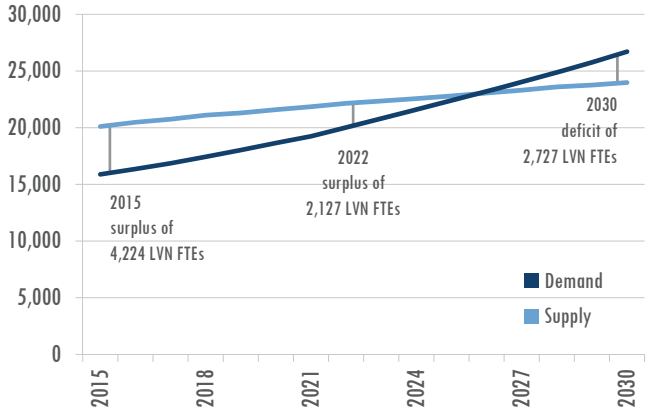
LVNs

The Panhandle, East Texas, South Texas, and the Rio Grande Valley are projected to have a surplus of LVNs each year from 2015 to 2030. The Gulf Coast will experience the most growth in supply of LVNs, while Central Texas will experience the most growth in demand. The Gulf Coast will also have the highest percentage of unmet LVN demand by 2030. Demand projections are based on current national health care use and delivery patterns. As access to care changes and models of care transform, health care use and delivery patterns may change the demand for nurses over time.

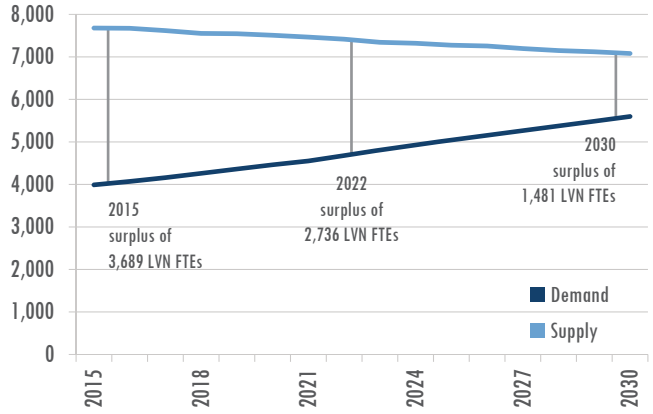
LVN FTE Supply and Demand, Panhandle, 2015-2030



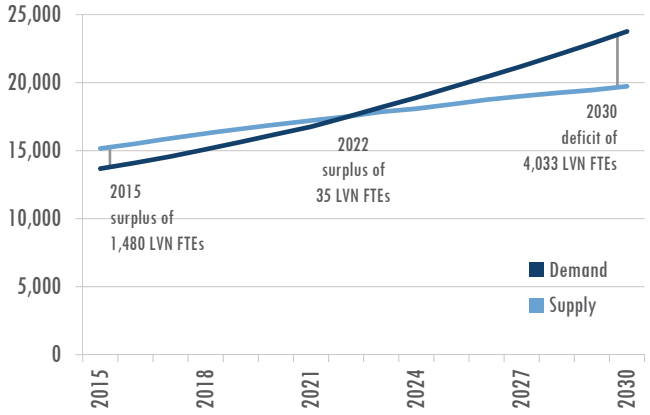
LVN FTE Supply and Demand, North Texas, 2015-2030



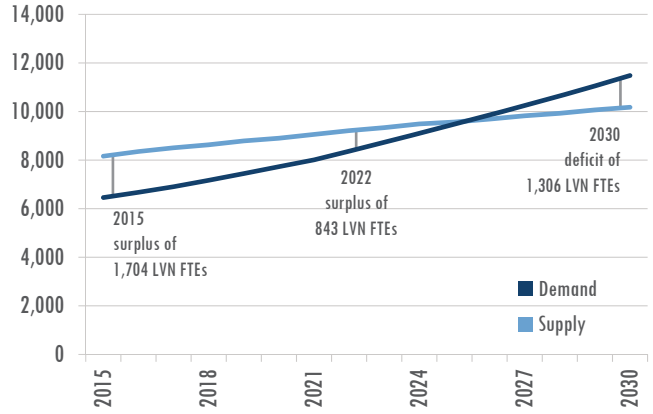
LVN FTE Supply and Demand, East Texas, 2015-2030



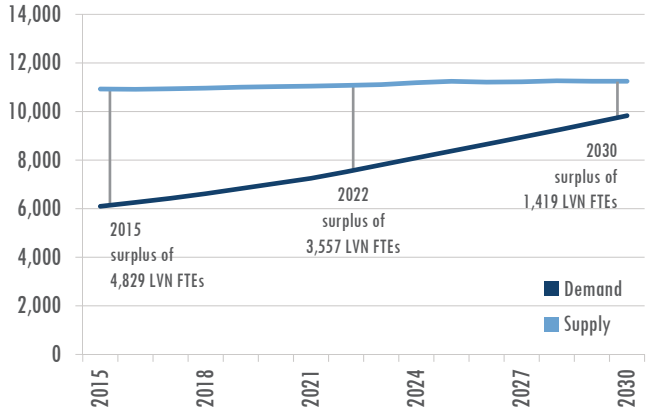
LVN FTE Supply and Demand, Gulf Coast, 2015-2030

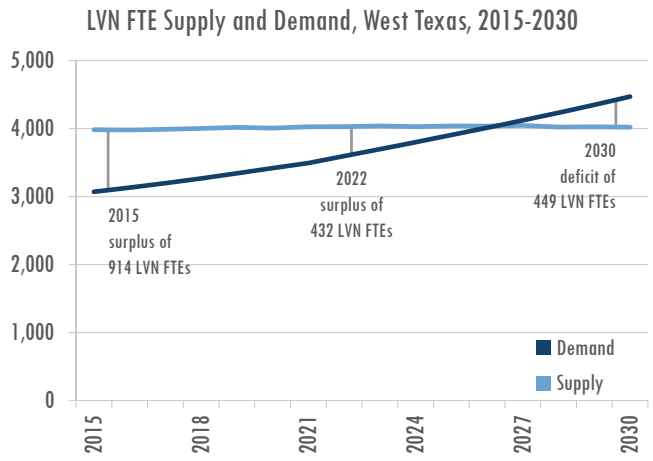


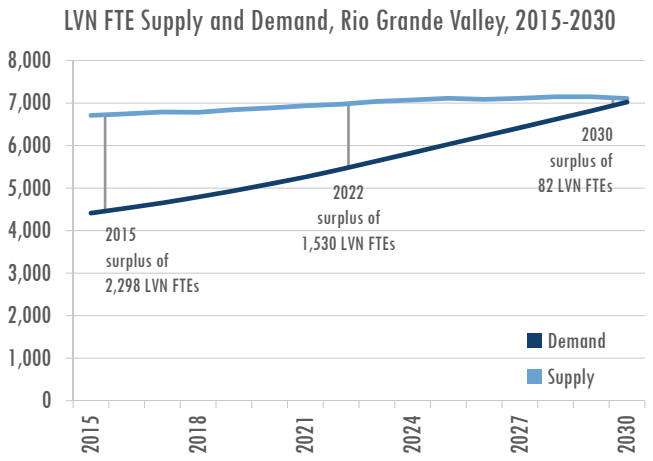
LVN FTE Supply and Demand, Central Texas, 2015-2030



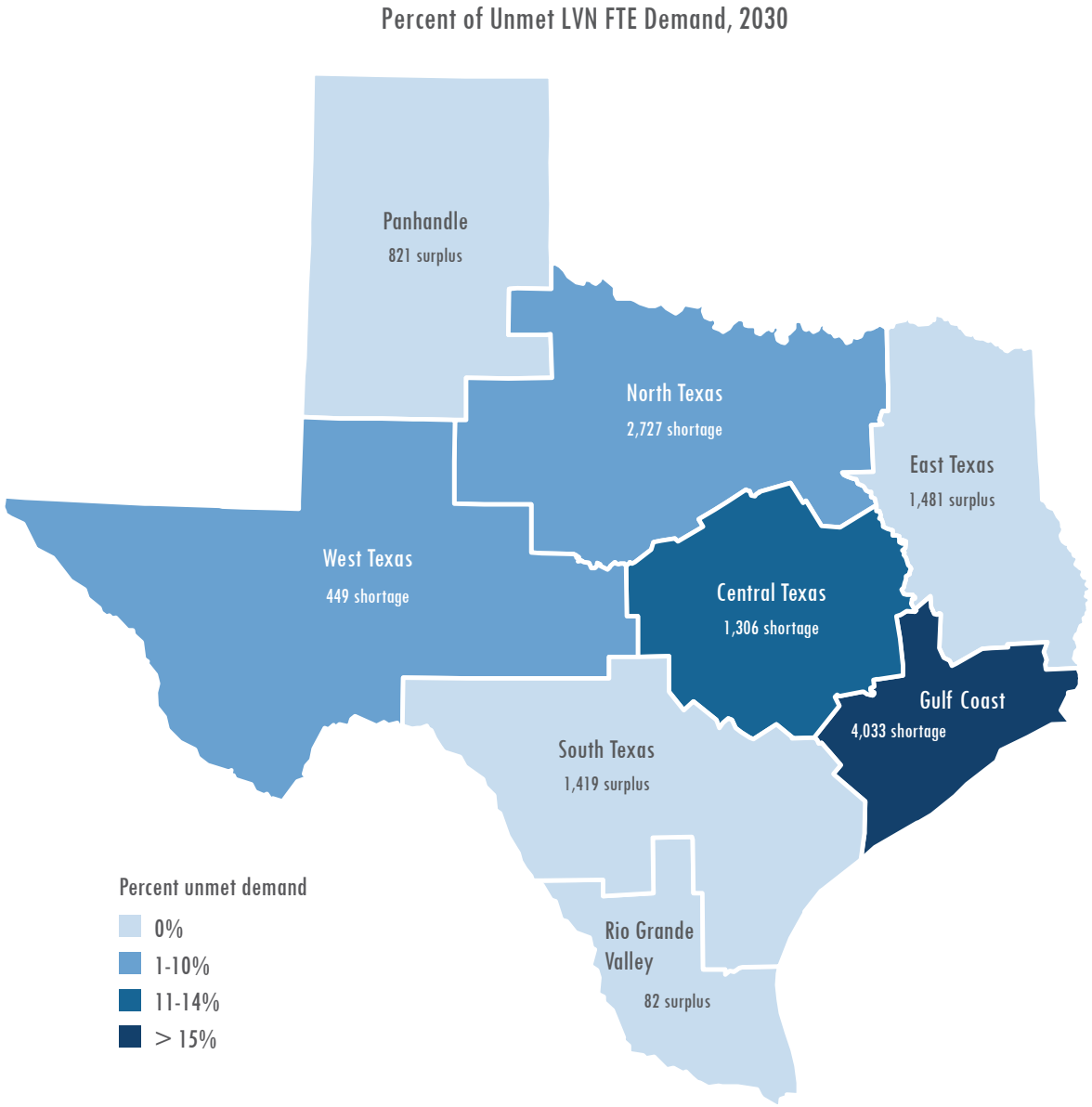
LVN FTE Supply and Demand, South Texas, 2015-2030





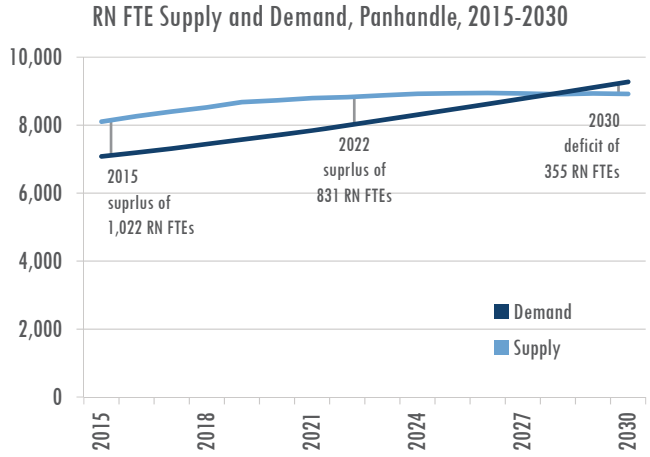


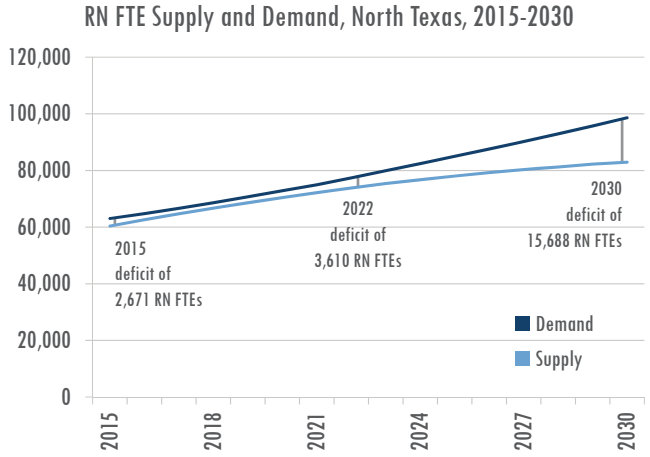
For LVN data tables, see Appendix A.

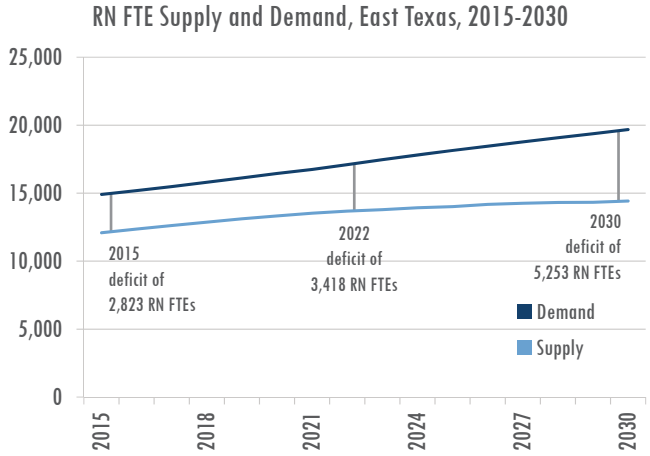


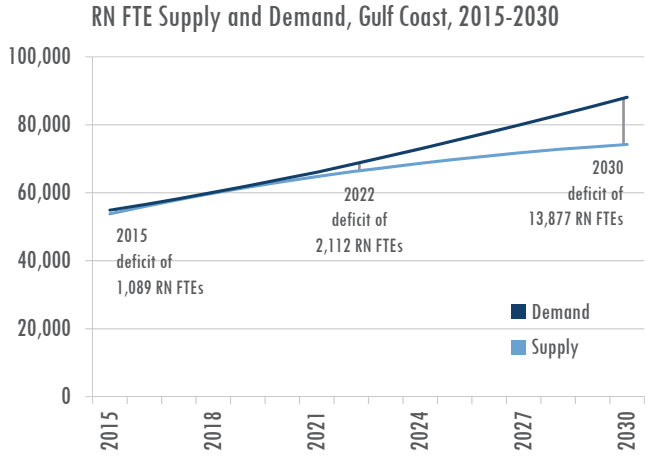
RNs

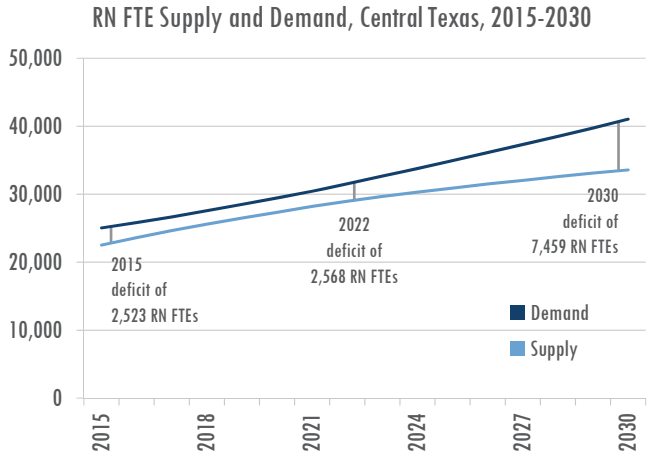
The Panhandle is the only region in Texas where the projected supply of RNs outpaces the projected demand. Supply and demand for RNs in Central Texas is projected to grow more than in any other region in Texas from 2015 to 2030. The Rio Grande Valley will need more RNs than anywhere else in the state between 2015 and 2022, when the deficit in supply becomes larger in North Texas. Demand projections are based on current national health care use and delivery patterns. As access to care changes and models of care transform, health care use and delivery patterns may change the demand for nurses over time.

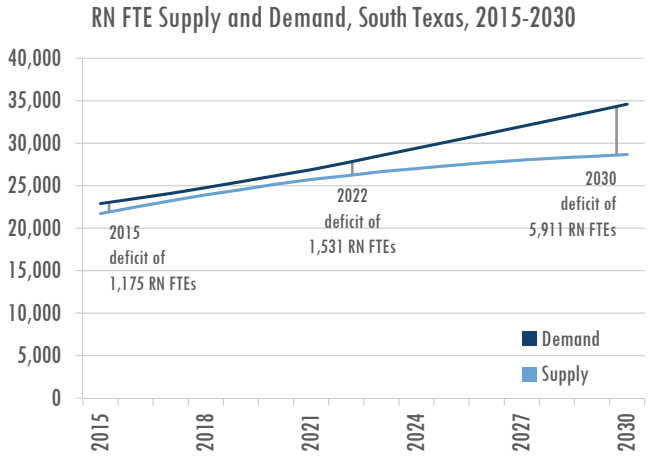


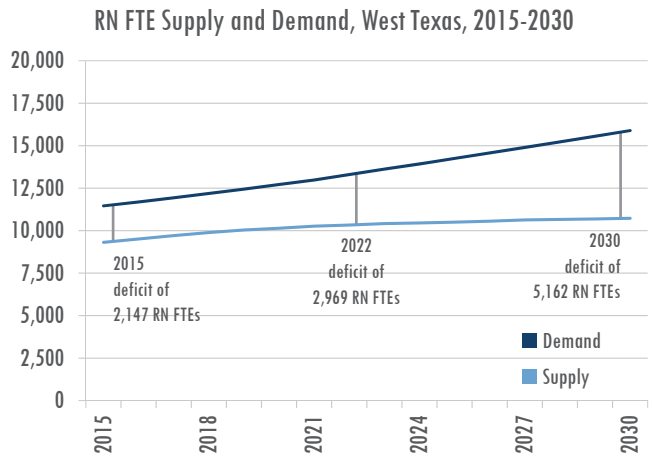


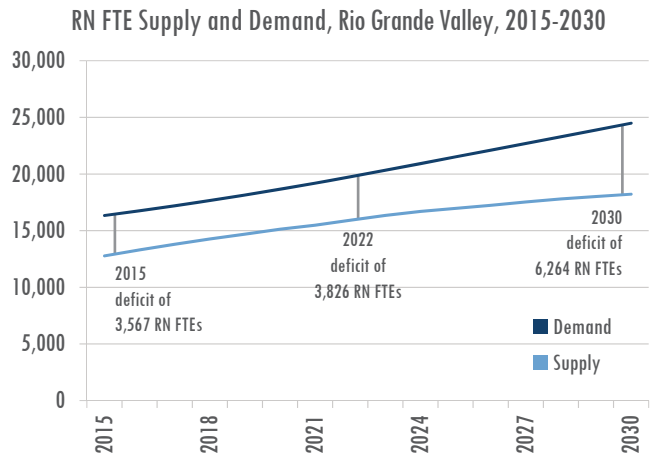




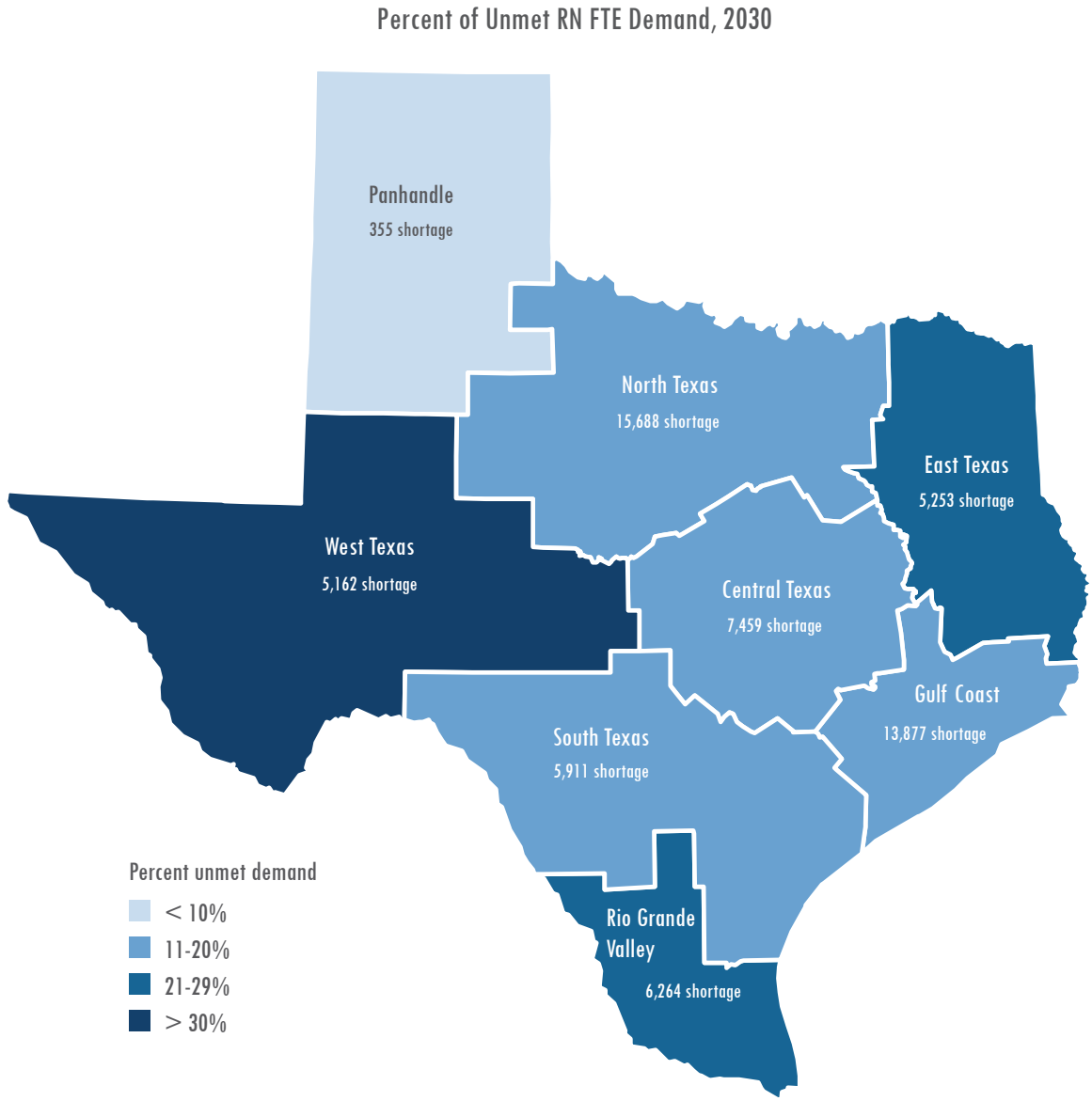






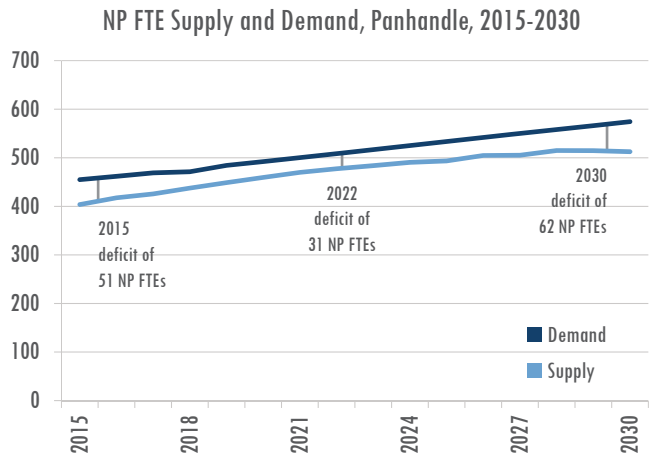


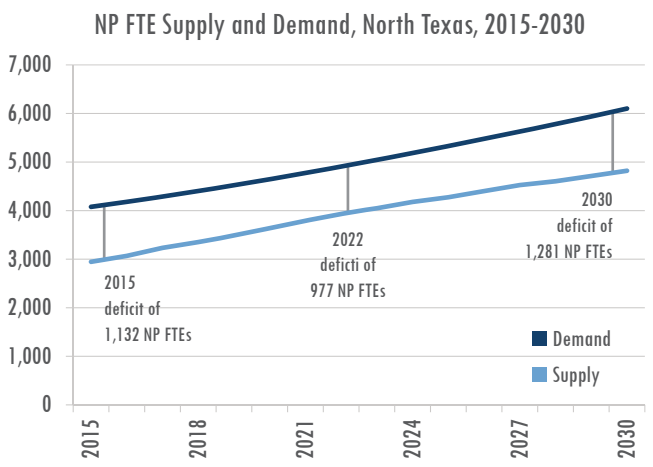
For RN data tables, see Appendix A.

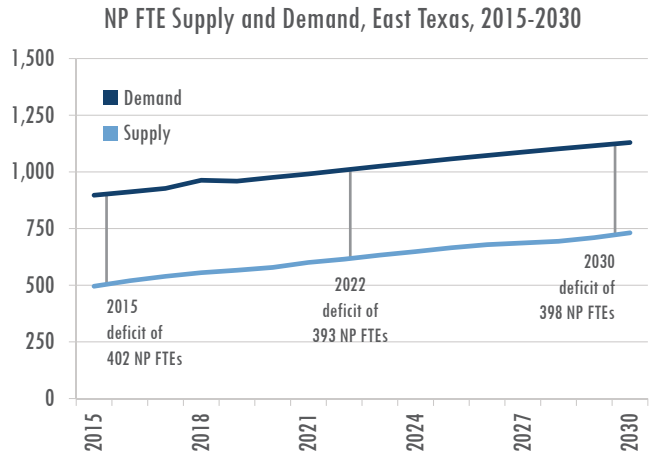


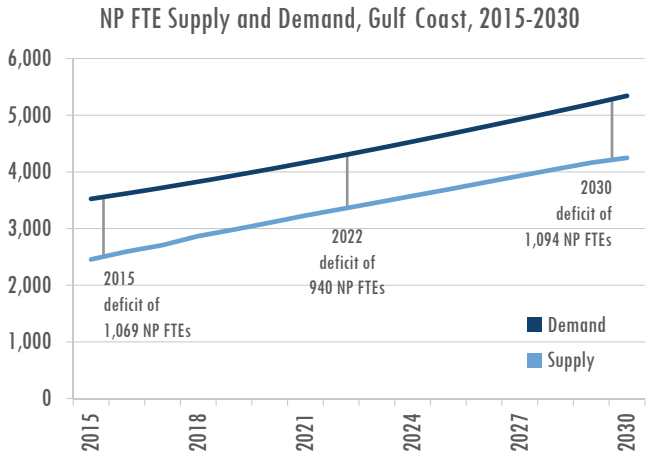
NPs

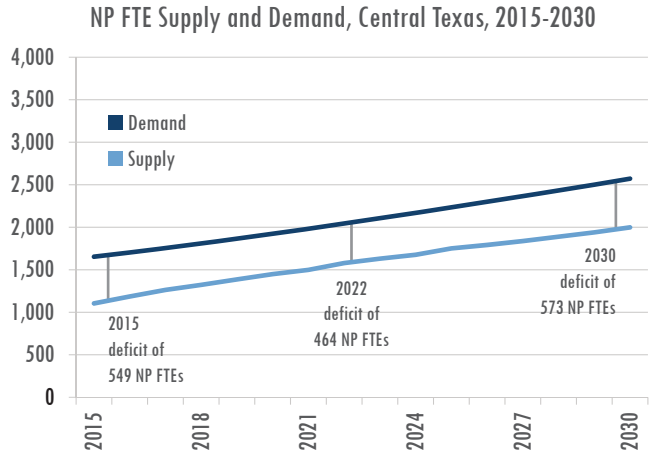
The projected demand for NPs outpaces the projected supply in every Texas region. Supply and demand for NPs in Central Texas is projected to grow more than in any other region in Texas from 2015 to 2030. The Rio Grande Valley and East Texas will see the highest percentage of unmet NP demand by 2030. Demand projections are based on current national health care use and delivery patterns. As access to care changes and models of care transform, health care use and delivery patterns may change the demand for nurses over time.

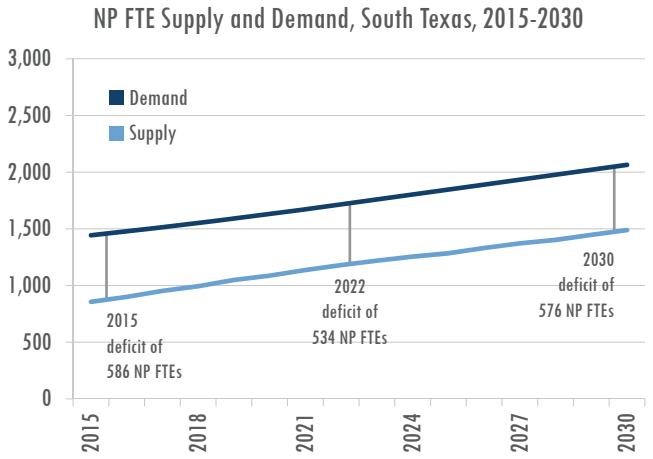


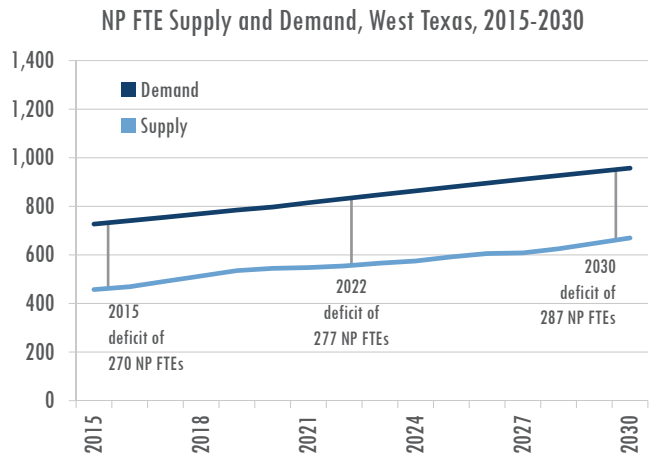


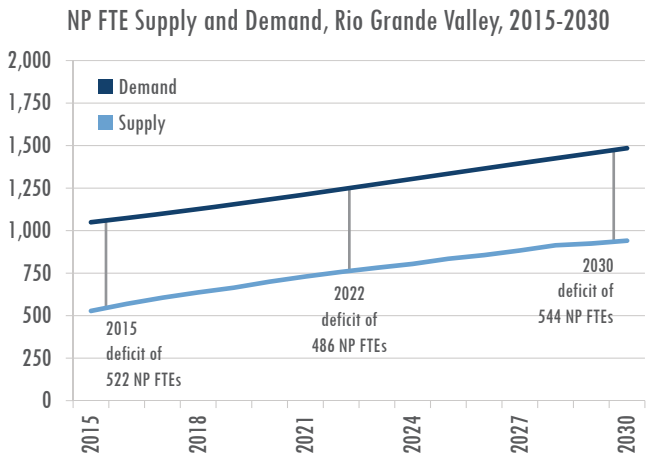




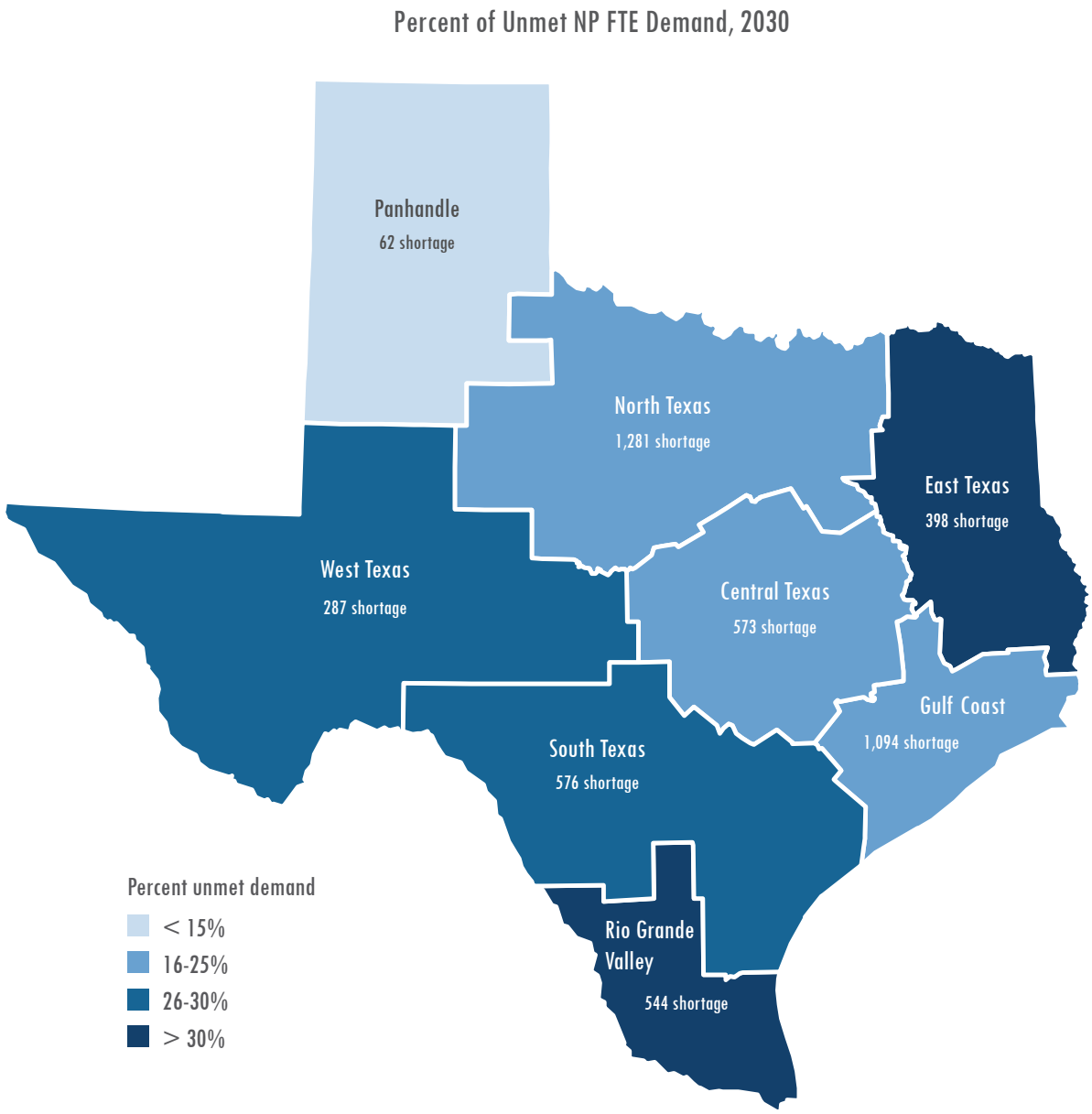






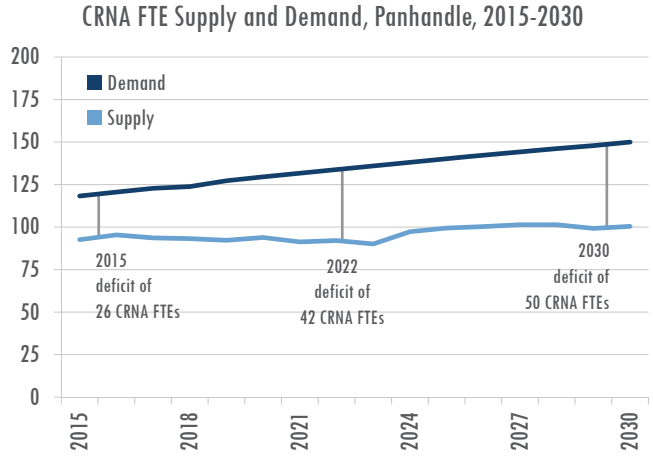


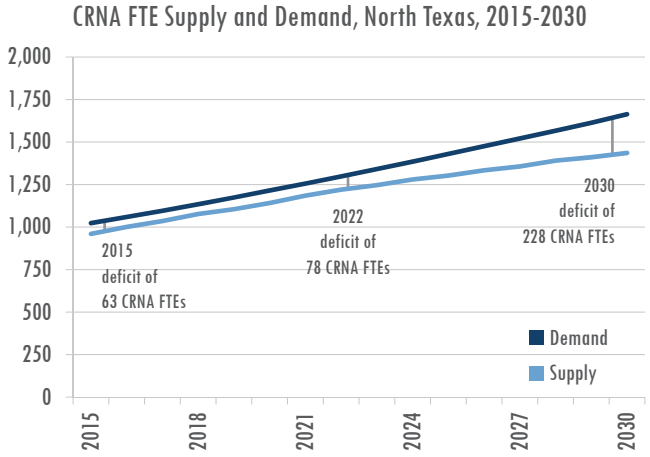
For NP data tables, see Appendix A.

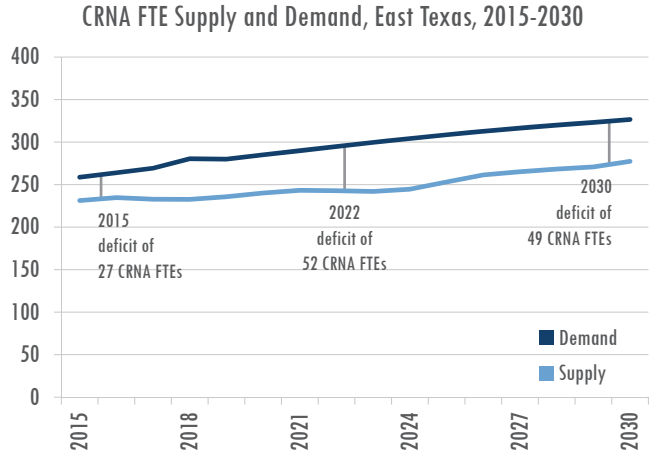


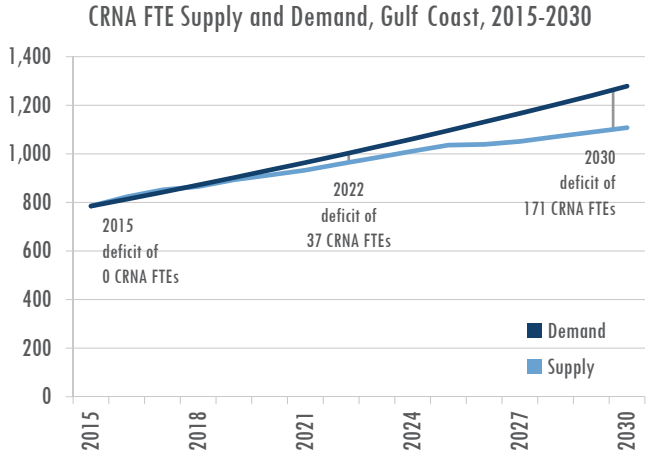
CRNAs

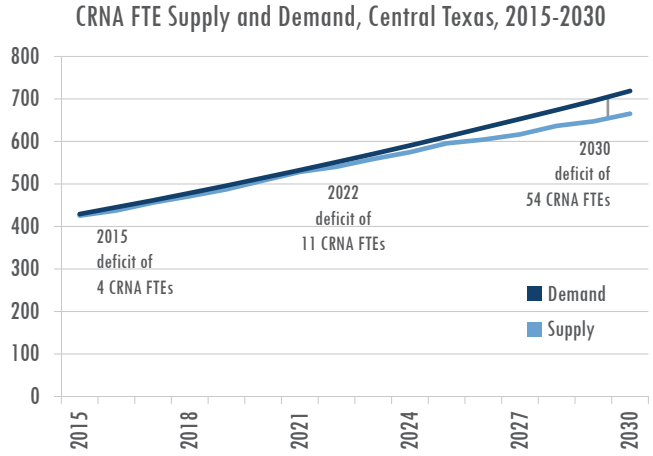
The projected demand for CRNAs outpaces the projected supply in every Texas region except the Rio Grande Valley, where there is a higher supply of CRNAs than demand each year between 2015 and 2030. South Texas will experience the most growth in supply of CRNAs, while Central Texas will experience the most growth in demand. The Panhandle and West Texas will experience the highest percentage of unmet CRNA demand by 2030. Demand projections are based on current national health care use and delivery patterns. As access to care changes and models of care transform, health care use and delivery patterns may change the demand for nurses over time.

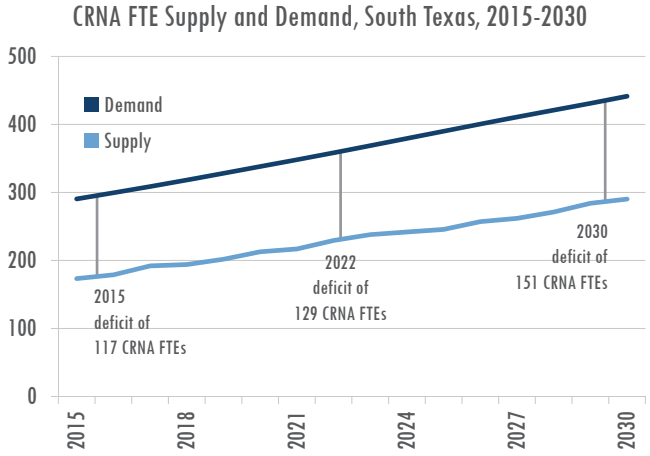


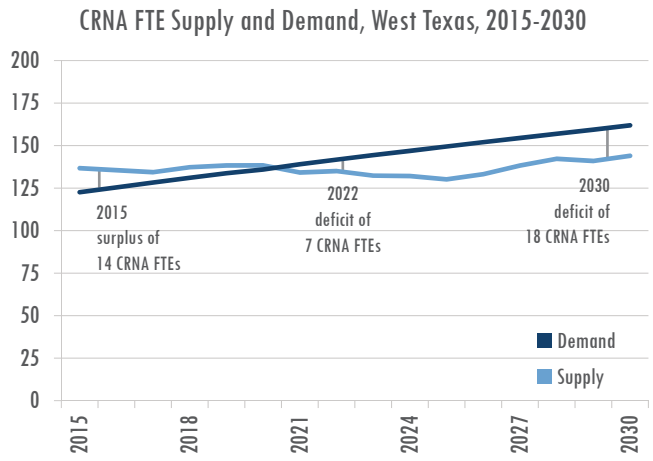


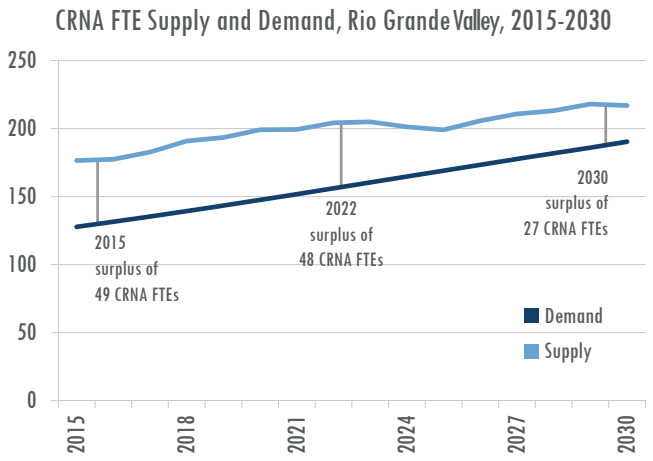




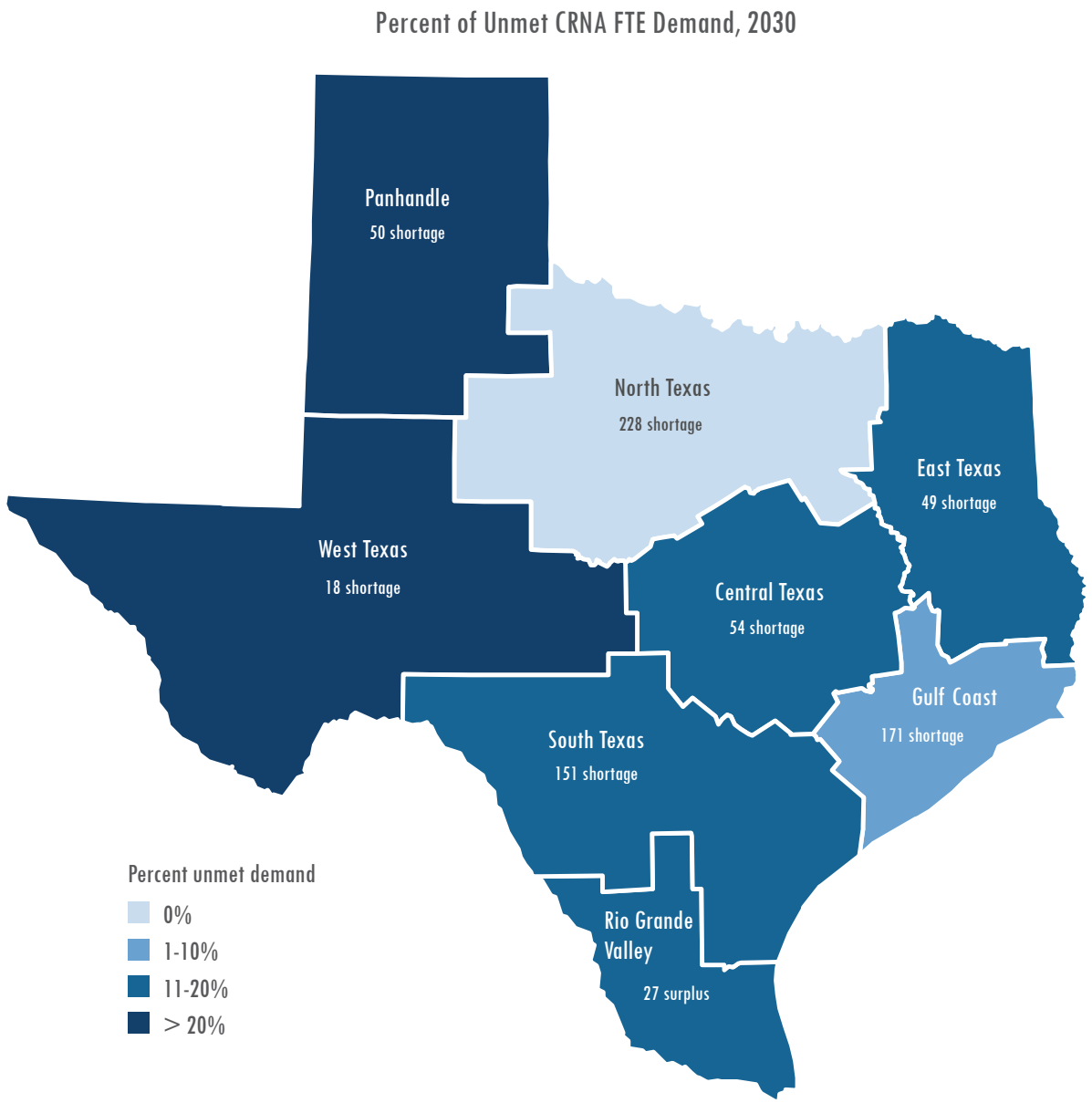






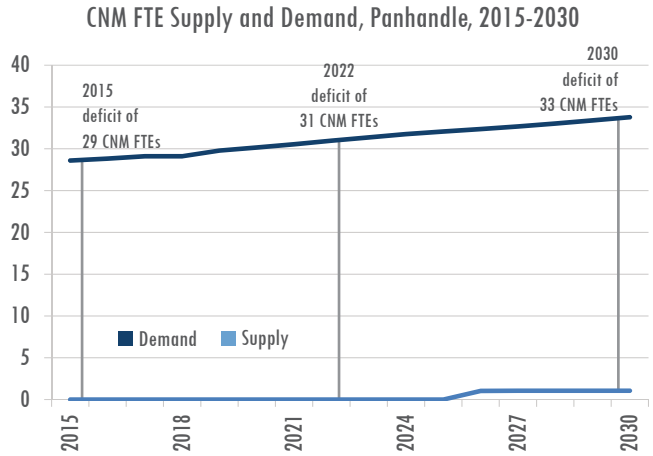


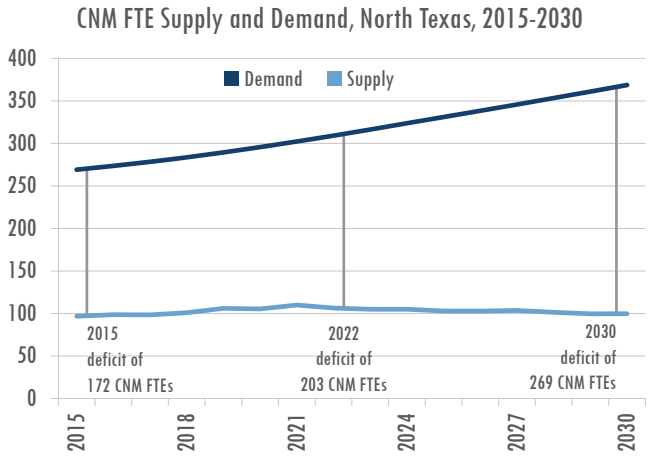
For CRNA data tables, see Appendix A.

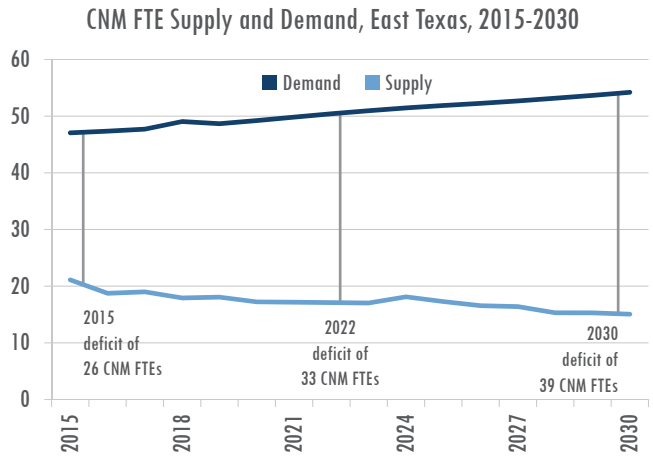


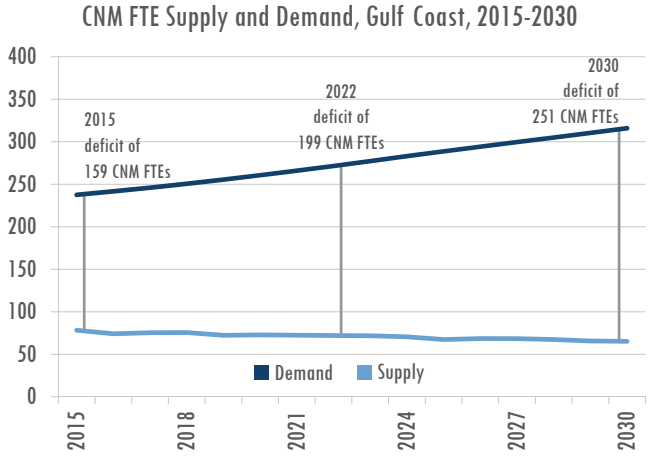
CNMs

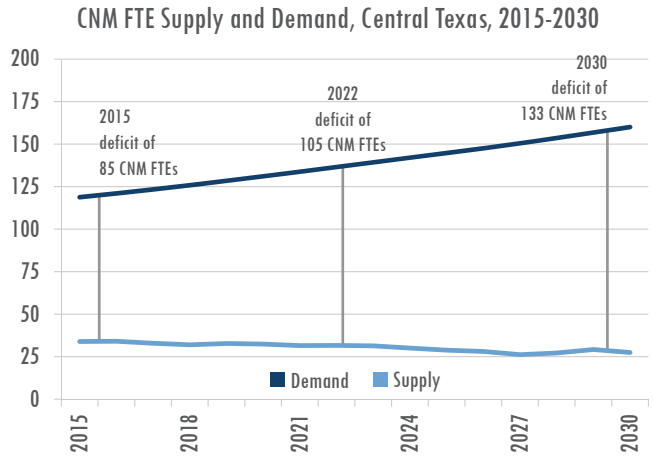
CNMs are the only nurse type expected to experience a decrease in supply between 2015 and 2030. This will occur in every region except the Panhandle and North Texas. East Texas will experience the largest decrease in supply, while Central Texas will experience the largest increase in demand. The Panhandle will see the highest percentage of unmet CNM demand by 2030. Demand projections are based on current national health care use and delivery patterns. As access to care changes and models of care transform, health care use and delivery patterns may change the demand for nurses over time.

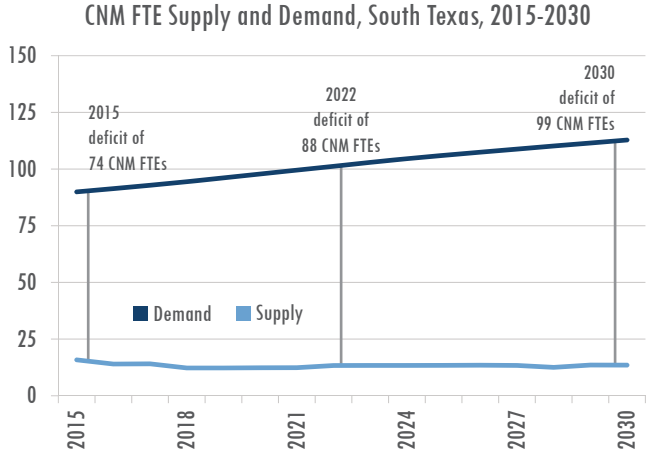


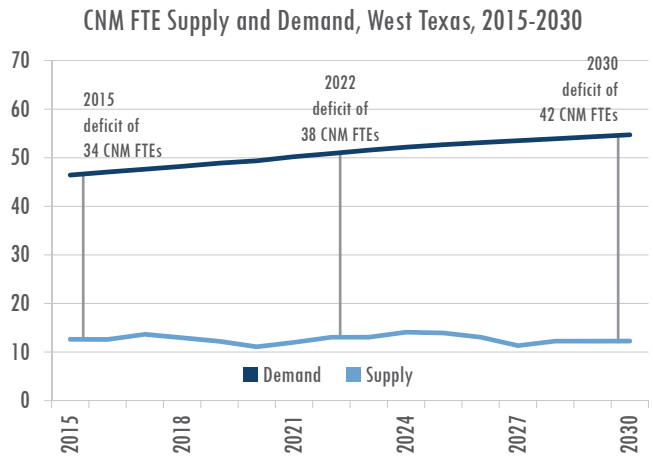


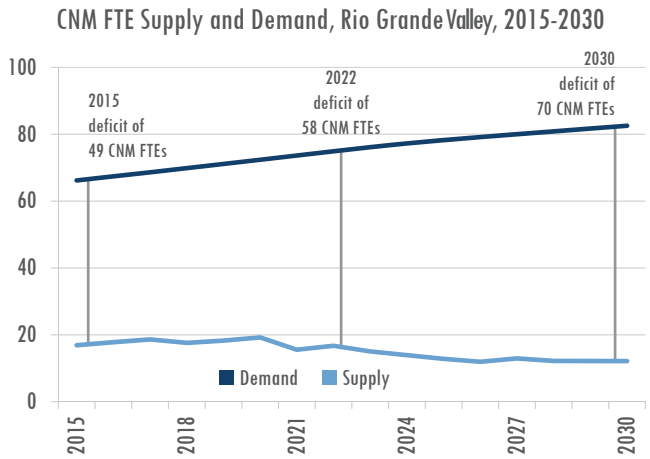




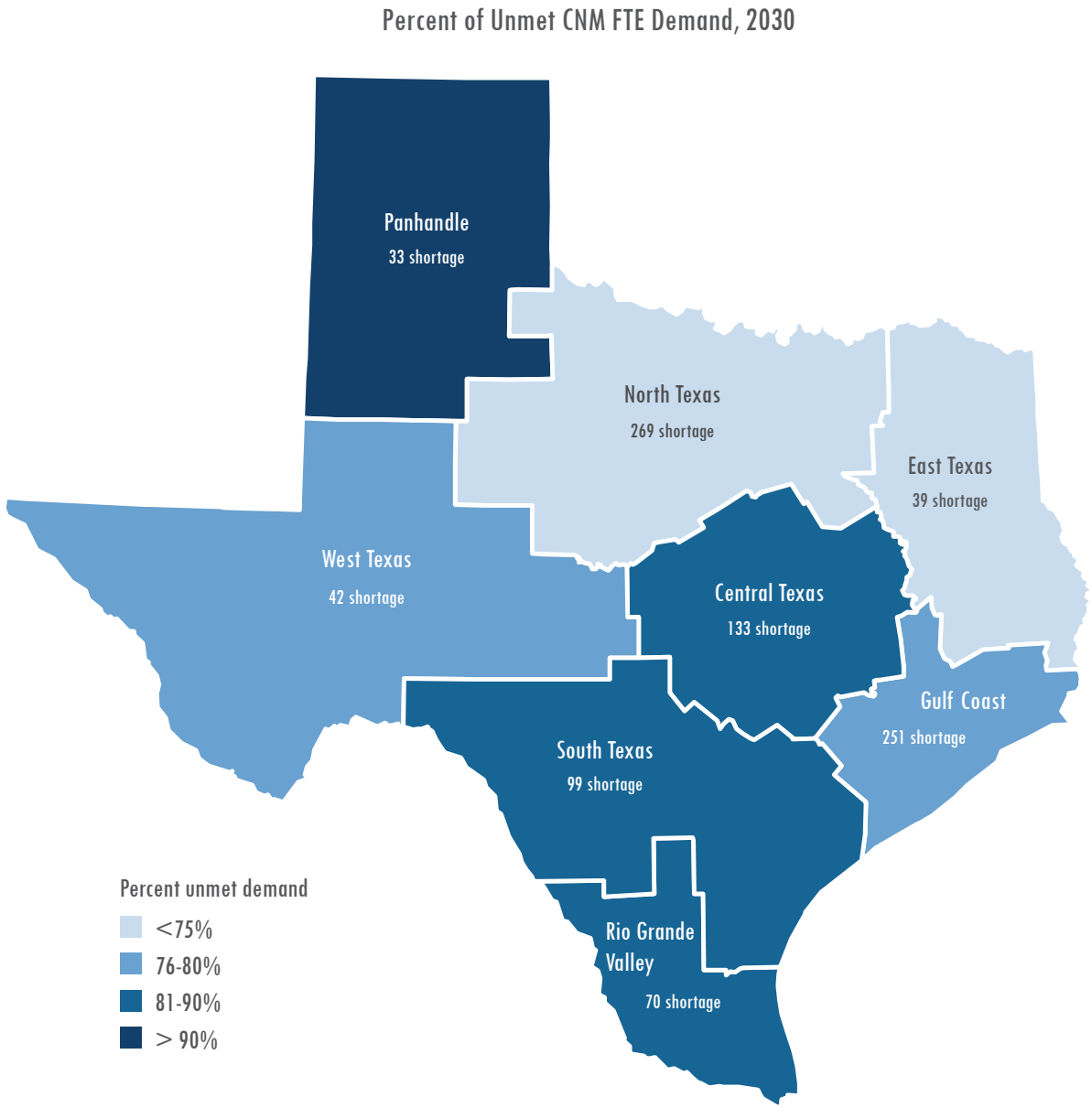








For CNM data tables, see Appendix A.



Appendix A - Supply and Demand Numbers

LVNs

	2015		2030		Percent Growth from 2015 to 2030	
	Supply	Demand	Supply	Demand	Supply	Demand
Panhandle	3,763	1,894	3,411	2,590	-9.4%	36.7%
North Texas	20,108	15,884	23,984	26,710	19.3%	68.2%
East Texas	7,679	3,990	7,080	5,599	-7.8%	40.3%
Gulf Coast	15,162	13,682	19,732	23,765	30.1%	73.7%
Central Texas	8,162	6,458	10,176	11,482	24.7%	77.8%
South Texas	10,927	6,097	11,248	9,830	2.9%	61.2%
West Texas	3,984	3,071	4,022	4,470	0.9%	45.6%
Rio Grande Valley	6,711	4,413	7,107	7,025	5.9%	59.2%

RNs

	2015		2030		Percent Growth from 2015 to 2030	
	Supply	Demand	Supply	Demand	Supply	Demand
Panhandle	8,101	7,079	8,917	9,273	10.1%	31.0%
North Texas	60,362	63,033	82,924	98,613	37.4%	56.4%
East Texas	12,085	14,908	14,423	19,677	19.3%	32.0%
Gulf Coast	53,797	54,886	74,215	88,092	38.0%	60.5%
Central Texas	22,516	25,039	33,572	41,032	49.1%	63.9%
South Texas	21,721	22,895	28,673	34,584	32.0%	51.1%
West Texas	9,311	11,458	10,726	15,888	15.2%	38.7%
Rio Grande Valley	12,770	16,337	18,216	24,480	42.6%	49.8%

NPs

	2015		2030		Percent Growth from 2015 to 2030	
	Supply	Demand	Supply	Demand	Supply	Demand
Panhandle	404	455	513	574	26.9%	26.2%
North Texas	2,946	4,077	4,821	6,102	63.7%	49.7%
East Texas	495	897	731	1,130	47.6%	25.9%
Gulf Coast	2,455	3,524	4,248	5,343	73.0%	51.6%
Central Texas	1,104	1,653	1,999	2,572	81.0%	55.5%
South Texas	857	1,443	1,489	2,065	73.8%	43.1%
West Texas	457	727	670	957	46.4%	31.7%
Rio Grande Valley	528	1,049	941	1,485	78.3%	41.5%

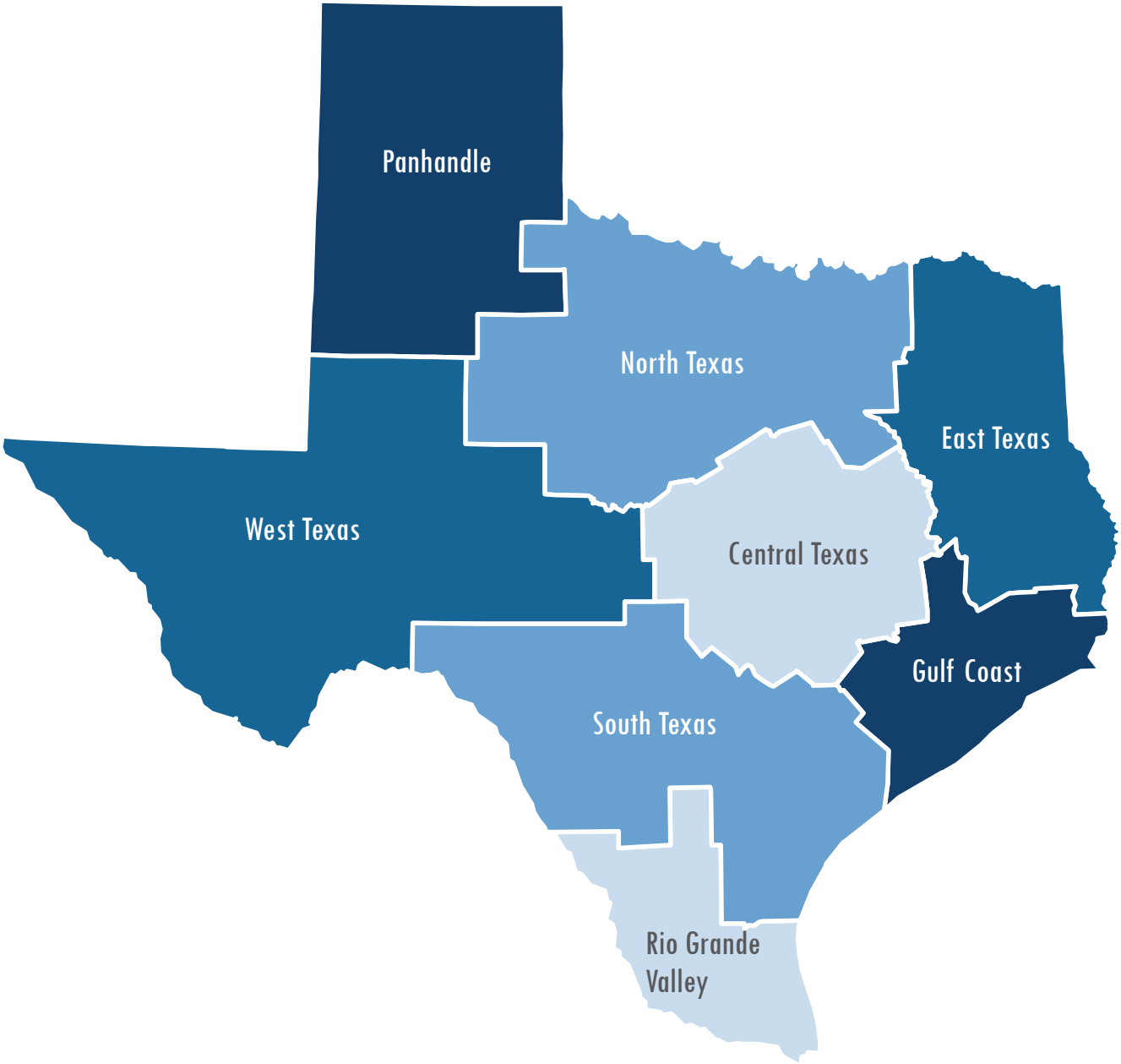
CRNAs

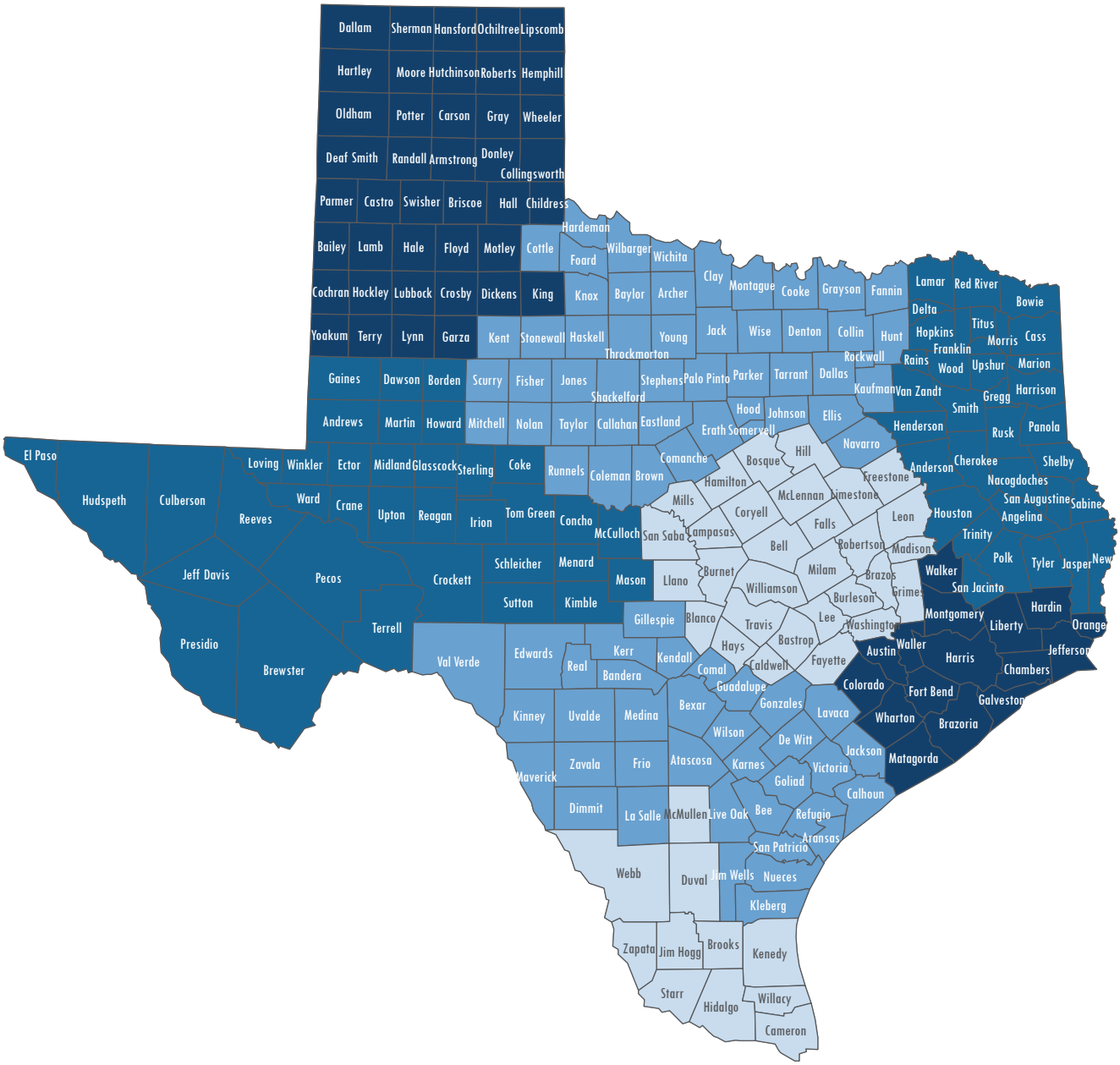
	2015		2030		Percent Growth from 2015 to 2030	
	Supply	Demand	Supply	Demand	Supply	Demand
Panhandle	93	118	100	150	8.4%	26.8%
North Texas	960	1,023	1,436	1,664	49.6%	62.6%
East Texas	231	259	277	327	19.9%	26.2%
Gulf Coast	785	785	1,108	1,279	41.1%	62.9%
Central Texas	426	429	665	719	56.3%	67.5%
South Texas	173	290	290	441	67.5%	52.0%
West Texas	137	123	144	162	5.3%	32.1%
Rio Grande Valley	177	128	217	190	22.9%	49.0%

CNMs

	2015		2030		Percent Growth from 2015 to 2030	
	Supply	Demand	Supply	Demand	Supply	Demand
Panhandle	0	29	1	34	-	18.1%
North Texas	97	269	100	369	3.0%	37.0%
East Texas	21	47	15	54	-28.7%	15.2%
Gulf Coast	78	238	65	316	-16.6%	33.0%
Central Texas	34	119	27	160	-19.1%	34.7%
South Texas	16	90	14	113	-14.5%	25.4%
West Texas	13	46	12	55	-2.8%	17.8%
Rio Grande Valley	17	66	12	83	-28.0%	24.7%

Appendix B - Texas County Designations




Dallam
Sherman
Hansford
Ochiltree
Lipscomb
Hartley
Moore
Hutchinson
Roberts
Hemphill
Oldham
Potter
Carson
Gray
Wheeler
Deaf Smith
Randall
Armstrong
Donley
Collingsworth
Parmer
Castro
Swisher
Briscoe
Hall
Childress
Hardeman
Bailey
Lamb
Hale
Floyd
Motley
Cottle
Foard
Wilbarger
Wichita
Clay
Montague
Cooke
Grayson
Fannin
Lamar
Red River
Bowie
Cochran
Hockley
Lubbock
Crosby
Dickens
King
Knox
Baylor
Archer
Delta
Hopkins
Titus
Morris
Cass
Yoakum
Terry
Lynn
Garza
Kent
Stonewall
Haskell
Throckmorton
Young
Jack
Wise
Denton
Collin
Hunt
Franklin
Rockwall
Rains
Wood
Upshur
Marion
Gaines
Dawson
Borden
Scurry
Fisher
Jones
Shackelford
Stephens
Palo Pinto
Parker
Tarrant
Dallas
Kaufman
Van Zandt
Gregg
Harrison
Andrews
Martin
Howard
Mitchell
Nolan
Taylor
Callahan
Eastland
Erath
Hood
Johnson
Ellis
Smith
Henderson
Rusk
Panola
El Paso
Loving
Winkler
Ector
Midland
Glasscock
Sterling
Coke
Runnels
Coleman
Brown
Comanche
Somervell
Bosque
Hill
Navarro
Anderson
Cherokee
Shelby
Hudspeth
Culberson
Ward
Crane
Upton
Reagan
Irion
Tom Green
Concho
McCulloch
San Saba
Mills
Hamilton
McLennan
Limestone
Freestone
Nacogdoches
San Augustine
Sabine
Houston
Angelina
Reeves
Coryell
Lampasas
Falls
Leon
Trinity
Bell
Robertson
Madison
Polk
Tyler
Jasper
Jeff Davis
Pecos
Crockett
Schleicher
Menard
Mason
Llano
Burnet
Milam
Brazos
Walker
San Jacinto
Williamson
Burleson
Grimes
Sutton
Kimble
Gillespie
Blanco
Travis
Lee
Washington
Montgomery
Hardin
Liberty
Orange
Presidio
Terrell
Hays
Bastrop
Austin
Waller
Harris
Jefferson
Brewster
Val Verde
Edwards
Real
Kerr
Bandera
Kendall
Comal
Caldwell
Fayette
Chambers
Guadalupe
Colorado
Fort Bend
Galveston
Kinney
Uvalde
Medina
Bexar
Gonzales
Lavaca
Wharton
Brazoria
Wilson
De Witt
Jackson
Matagorda
Zavala
Frio
Atascosa
Karnes
Victoria
Maverick
Goliad
Calhoun
Dimmit
La Salle
McMullen
Live Oak
Bee
Refugio
Aransas
San Patricio
Webb
Duval
Jim Wells
Nueces
Kleberg
Zapata
Jim Hogg
Brooks
Kenedy
Starr
Hidalgo
Willacy
Cameron

Texas County Designations

County	Region	Metro Status	Border Status
Anderson	East Texas	Non-Metro	Non-Border
Andrews	West Texas	Non-Metro	Non-Border
Angelina	East Texas	Non-Metro	Non-Border
Aransas	Rio Grande Valley	Metro	Non-Border
Archer	North Texas	Metro	Non-Border
Armstrong	Panhandle	Metro	Non-Border
Atascosa	South Texas	Metro	Non-Border
Austin	Gulf Coast	Metro	Non-Border
Bailey	Panhandle	Non-Metro	Non-Border
Bandera	South Texas	Metro	Non-Border
Bastrop	Central Texas	Metro	Non-Border
Baylor	North Texas	Non-Metro	Non-Border
Bee	Rio Grande Valley	Non-Metro	Non-Border
Bell	Central Texas	Metro	Non-Border
Bexar	South Texas	Metro	Non-Border
Blanco	Central Texas	Non-Metro	Non-Border
Borden	West Texas	Non-Metro	Non-Border
Bosque	Central Texas	Non-Metro	Non-Border
Bowie	East Texas	Metro	Non-Border
Brazoria	Gulf Coast	Metro	Non-Border
Brazos	Central Texas	Metro	Non-Border
Brewster	West Texas	Non-Metro	Border
Briscoe	Panhandle	Non-Metro	Non-Border
Brooks	Rio Grande Valley	Non-Metro	Border
Brown	North Texas	Non-Metro	Non-Border
Burleson	Central Texas	Metro	Non-Border
Burnet	Central Texas	Non-Metro	Non-Border
Caldwell	Central Texas	Metro	Non-Border
Calhoun	South Texas	Non-Metro	Non-Border
Callahan	North Texas	Metro	Non-Border
Cameron	Rio Grande Valley	Metro	Border
Camp	East Texas	Non-Metro	Non-Border
Carson	Panhandle	Metro	Non-Border
Cass	East Texas	Non-Metro	Non-Border
Castro	Panhandle	Non-Metro	Non-Border
Chambers	Gulf Coast	Metro	Non-Border
Cherokee	East Texas	Non-Metro	Non-Border
Childress	Panhandle	Non-Metro	Non-Border
Clay	North Texas	Metro	Non-Border
Cochran	Panhandle	Non-Metro	Non-Border
Coke	West Texas	Non-Metro	Non-Border
Coleman	North Texas	Non-Metro	Non-Border
Collin	North Texas	Metro	Non-Border

County	Region	Metro Status	Border Status
Collingsworth	Panhandle	Non-Metro	Non-Border
Colorado	Gulf Coast	Non-Metro	Non-Border
Comal	South Texas	Metro	Non-Border
Comanche	North Texas	Non-Metro	Non-Border
Concho	West Texas	Non-Metro	Non-Border
Cooke	North Texas	Non-Metro	Non-Border
Coryell	Central Texas	Metro	Non-Border
Cottle	North Texas	Non-Metro	Non-Border
Crane	West Texas	Non-Metro	Non-Border
Crockett	West Texas	Non-Metro	Border
Crosby	Panhandle	Metro	Non-Border
Culberson	West Texas	Non-Metro	Border
Dallam	Panhandle	Non-Metro	Non-Border
Dallas	North Texas	Metro	Non-Border
Dawson	West Texas	Non-Metro	Non-Border
De Witt	South Texas	Non-Metro	Non-Border
Deaf Smith	Panhandle	Non-Metro	Non-Border
Delta	East Texas	Non-Metro	Non-Border
Denton	North Texas	Metro	Non-Border
Dickens	Panhandle	Non-Metro	Non-Border
Dimmit	South Texas	Non-Metro	Border
Donley	Panhandle	Non-Metro	Non-Border
Duval	Rio Grande Valley	Non-Metro	Border
Eastland	North Texas	Non-Metro	Non-Border
Ector	West Texas	Metro	Non-Border
Edwards	South Texas	Non-Metro	Border
El Paso	West Texas	Metro	Border
Ellis	North Texas	Metro	Non-Border
Erath	North Texas	Non-Metro	Non-Border
Falls	Central Texas	Metro	Non-Border
Fannin	North Texas	Non-Metro	Non-Border
Fayette	Central Texas	Non-Metro	Non-Border
Fisher	North Texas	Non-Metro	Non-Border
Floyd	Panhandle	Non-Metro	Non-Border
Foard	North Texas	Non-Metro	Non-Border
Fort Bend	Gulf Coast	Metro	Non-Border
Franklin	East Texas	Non-Metro	Non-Border
Freestone	Central Texas	Non-Metro	Non-Border
Frio	South Texas	Non-Metro	Border
Gaines	West Texas	Non-Metro	Non-Border
Galveston	Gulf Coast	Metro	Non-Border
Garza	Panhandle	Non-Metro	Non-Border
Gillespie	South Texas	Non-Metro	Non-Border

County	Region	Metro Status	Border Status
Glasscock	West Texas	Non-Metro	Non-Border
Goliad	South Texas	Metro	Non-Border
Gonzales	South Texas	Non-Metro	Non-Border
Gray	Panhandle	Non-Metro	Non-Border
Grayson	North Texas	Metro	Non-Border
Gregg	East Texas	Metro	Non-Border
Grimes	Central Texas	Non-Metro	Non-Border
Guadalupe	South Texas	Metro	Non-Border
Hale	Panhandle	Non-Metro	Non-Border
Hall	Panhandle	Non-Metro	Non-Border
Hamilton	Central Texas	Non-Metro	Non-Border
Hansford	Panhandle	Non-Metro	Non-Border
Hardeman	North Texas	Non-Metro	Non-Border
Hardin	Gulf Coast	Metro	Non-Border
Harris	Gulf Coast	Metro	Non-Border
Harrison	East Texas	Non-Metro	Non-Border
Hartley	Panhandle	Non-Metro	Non-Border
Haskell	North Texas	Non-Metro	Non-Border
Hays	Central Texas	Metro	Non-Border
Hemphill	Panhandle	Non-Metro	Non-Border
Henderson	East Texas	Non-Metro	Non-Border
Hidalgo	Rio Grande Valley	Metro	Border
Hill	Central Texas	Non-Metro	Non-Border
Hockley	Panhandle	Non-Metro	Non-Border
Hood	North Texas	Metro	Non-Border
Hopkins	East Texas	Non-Metro	Non-Border
Houston	East Texas	Non-Metro	Non-Border
Howard	West Texas	Non-Metro	Non-Border
Hudspeth	West Texas	Metro	Border
Hunt	North Texas	Metro	Non-Border
Hutchinson	Panhandle	Non-Metro	Non-Border
Irion	West Texas	Metro	Non-Border
Jack	North Texas	Non-Metro	Non-Border
Jackson	South Texas	Non-Metro	Non-Border
Jasper	East Texas	Non-Metro	Non-Border
Jeff Davis	West Texas	Non-Metro	Border
Jefferson	Gulf Coast	Metro	Non-Border
Jim Hogg	Rio Grande Valley	Non-Metro	Border
Jim Wells	Rio Grande Valley	Non-Metro	Non-Border
Johnson	North Texas	Metro	Non-Border
Jones	North Texas	Metro	Non-Border
Karnes	South Texas	Non-Metro	Non-Border
Kaufman	North Texas	Metro	Non-Border
Kendall	South Texas	Metro	Non-Border
Kenedy	Rio Grande Valley	Non-Metro	Border

County	Region	Metro Status	Border Status
Kent	North Texas	Non-Metro	Non-Border
Kerr	South Texas	Non-Metro	Non-Border
Kimble	West Texas	Non-Metro	Non-Border
King	Panhandle	Non-Metro	Non-Border
Kinney	South Texas	Non-Metro	Border
Kleberg	Rio Grande Valley	Non-Metro	Non-Border
Knox	North Texas	Non-Metro	Non-Border
La Salle	South Texas	Non-Metro	Border
Lamar	East Texas	Non-Metro	Non-Border
Lamb	Panhandle	Non-Metro	Non-Border
Lampasas	Central Texas	Metro	Non-Border
Lavaca	South Texas	Non-Metro	Non-Border
Lee	Central Texas	Non-Metro	Non-Border
Leon	Central Texas	Non-Metro	Non-Border
Liberty	Gulf Coast	Metro	Non-Border
Limestone	Central Texas	Non-Metro	Non-Border
Lipscomb	Panhandle	Non-Metro	Non-Border
Live Oak	Rio Grande Valley	Non-Metro	Non-Border
Llano	Central Texas	Non-Metro	Non-Border
Loving	West Texas	Non-Metro	Non-Border
Lubbock	Panhandle	Metro	Non-Border
Lynn	Panhandle	Metro	Non-Border
Madison	Central Texas	Non-Metro	Non-Border
Marion	East Texas	Non-Metro	Non-Border
Martin	West Texas	Metro	Non-Border
Mason	West Texas	Non-Metro	Non-Border
Matagorda	Gulf Coast	Non-Metro	Non-Border
Maverick	South Texas	Non-Metro	Border
Mcculloch	West Texas	Non-Metro	Non-Border
Mclennan	Central Texas	Metro	Non-Border
Mcmullen	Rio Grande Valley	Non-Metro	Border
Medina	South Texas	Metro	Non-Border
Menard	West Texas	Non-Metro	Non-Border
Midland	West Texas	Metro	Non-Border
Milam	Central Texas	Non-Metro	Non-Border
Mills	Central Texas	Non-Metro	Non-Border
Mitchell	North Texas	Non-Metro	Non-Border
Montague	North Texas	Non-Metro	Non-Border
Montgomery	Gulf Coast	Metro	Non-Border
Moore	Panhandle	Non-Metro	Non-Border
Morris	East Texas	Non-Metro	Non-Border
Motley	Panhandle	Non-Metro	Non-Border
Nacogdoches	East Texas	Non-Metro	Non-Border
Navarro	North Texas	Non-Metro	Non-Border
Newton	East Texas	Metro	Non-Border

County	Region	Metro Status	Border Status
Nolan	North Texas	Non-Metro	Non-Border
Nueces	Rio Grande Valley	Metro	Non-Border
Ochiltree	Panhandle	Non-Metro	Non-Border
Oldham	Panhandle	Metro	Non-Border
Orange	Gulf Coast	Metro	Non-Border
Palo Pinto	North Texas	Non-Metro	Non-Border
Panola	East Texas	Non-Metro	Non-Border
Parker	North Texas	Metro	Non-Border
Parmer	Panhandle	Non-Metro	Non-Border
Pecos	West Texas	Non-Metro	Border
Polk	East Texas	Non-Metro	Non-Border
Potter	Panhandle	Metro	Non-Border
Presidio	West Texas	Non-Metro	Border
Rains	East Texas	Non-Metro	Non-Border
Randall	Panhandle	Metro	Non-Border
Reagan	West Texas	Non-Metro	Non-Border
Real	South Texas	Non-Metro	Border
Red River	East Texas	Non-Metro	Non-Border
Reeves	West Texas	Non-Metro	Border
Refugio	Rio Grande Valley	Non-Metro	Non-Border
Roberts	Panhandle	Non-Metro	Non-Border
Robertson	Central Texas	Metro	Non-Border
Rockwall	North Texas	Metro	Non-Border
Runnels	North Texas	Non-Metro	Non-Border
Rusk	East Texas	Metro	Non-Border
Sabine	East Texas	Non-Metro	Non-Border
San Augustine	East Texas	Non-Metro	Non-Border
San Jacinto	East Texas	Non-Metro	Non-Border
San Patricio	Rio Grande Valley	Metro	Non-Border
San Saba	Central Texas	Non-Metro	Non-Border
Schleicher	West Texas	Non-Metro	Non-Border
Scurry	North Texas	Non-Metro	Non-Border
Shackelford	North Texas	Non-Metro	Non-Border
Shelby	East Texas	Non-Metro	Non-Border
Sherman	Panhandle	Non-Metro	Non-Border
Smith	East Texas	Metro	Non-Border
Somervell	North Texas	Metro	Non-Border
Starr	Rio Grande Valley	Non-Metro	Border
Stephens	North Texas	Non-Metro	Non-Border
Sterling	West Texas	Non-Metro	Non-Border
Stonewall	North Texas	Non-Metro	Non-Border
Sutton	West Texas	Non-Metro	Border
Swisher	Panhandle	Non-Metro	Non-Border
Tarrant	North Texas	Metro	Non-Border
Taylor	North Texas	Metro	Non-Border

County	Region	Metro Status	Border Status
Terrell	West Texas	Non-Metro	Border
Terry	Panhandle	Non-Metro	Non-Border
Throckmorton	North Texas	Non-Metro	Non-Border
Titus	East Texas	Non-Metro	Non-Border
Tom Green	West Texas	Metro	Non-Border
Travis	Central Texas	Metro	Non-Border
Trinity	East Texas	Non-Metro	Non-Border
Tyler	East Texas	Non-Metro	Non-Border
Upshur	East Texas	Metro	Non-Border
Upton	West Texas	Non-Metro	Non-Border
Uvalde	South Texas	Non-Metro	Border
Val Verde	South Texas	Non-Metro	Border
Van Zandt	East Texas	Non-Metro	Non-Border
Victoria	South Texas	Metro	Non-Border
Walker	Gulf Coast	Non-Metro	Non-Border
Waller	Gulf Coast	Metro	Non-Border
Ward	West Texas	Non-Metro	Non-Border
Washington	Central Texas	Non-Metro	Non-Border
Webb	Rio Grande Valley	Metro	Border
Wharton	Gulf Coast	Non-Metro	Non-Border
Wheeler	Panhandle	Non-Metro	Non-Border
Wichita	North Texas	Metro	Non-Border
Wilbarger	North Texas	Non-Metro	Non-Border
Willacy	Rio Grande Valley	Non-Metro	Border
Williamson	Central Texas	Metro	Non-Border
Wilson	South Texas	Metro	Non-Border
Winkler	West Texas	Non-Metro	Non-Border
Wise	North Texas	Metro	Non-Border
Wood	East Texas	Non-Metro	Non-Border
Yoakum	Panhandle	Non-Metro	Non-Border
Young	North Texas	Non-Metro	Non-Border
Zapata	Rio Grande Valley	Non-Metro	Border
Zavala	South Texas	Non-Metro	Border

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