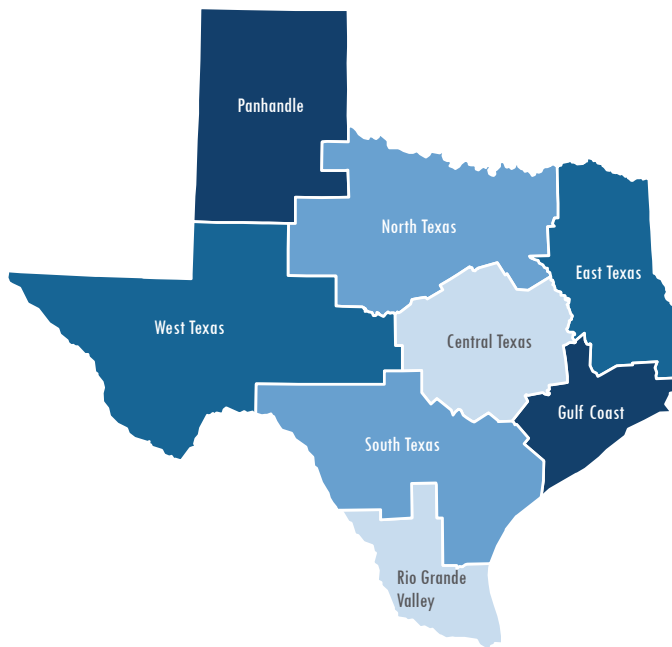




The Hospital Nurse Staffing Survey (HNSS) assesses the size and effects of the nursing shortage in hospitals, Texas' largest employer of nurses. During the spring of 2014, the Texas Center for Nursing Workforce Studies (TCNWS) administered the HNSS to 619 Texas hospitals. These included for-profit, non-profit, public, and Texas Department of State Health Services-operated hospitals, as well as hospitals linked to academic institutions; military hospitals were not surveyed. The facilities surveyed were general acute care, psychiatric, special, and rehabilitation hospitals. 428 (69.1%) hospitals responded to the survey. The hospitals that completed the 2014 HNSS were representative of all Texas hospitals by region and bed size.

This report presents the findings of the 2014 HNSS related to position vacancies and staff turnover at Texas hospitals. It includes rates of each across Texas geographic regions and nursing types.

Nurse vacancy and turnover rates are among the key measures for assessing a nursing workforce shortage, the severity of the shortage, and changes in the nursing labor market over time. The 2014 HNSS vacancy rates reported herein measure the percentage of positions that were vacant over a one week period during one of the year's peak occupancy times (1/19/2014-1/25/2014). The 2014 HNSS turnover rates measure the frequency of staff separations, both voluntary and involuntary, over a one year period (1/1/2013-12/31/2013).



High vacancy and turnover rates can lead to negative outcomes that can affect quality of care such as losing experienced staff and increasing the workload and stress levels of existing staff.¹ High vacancy and turnover is also costly to hospitals due to the high cost associated with overtime or the use of agency nurses to fill vacant positions as well as the cost associated with recruiting qualified nurses.

¹American Association of Colleges of Nursing, "Nursing Shortage Fact Sheet", 2012, <http://www.aacn.nche.edu/media-relations/NrsgShortageFS.pdf>

Methods of Calculation

This vacancy and turnover report provides the position vacancy rate and the median facility vacancy rate for each of the nurse types. TCNWS has chosen to report both methods in order to compare our data to work being done by other entities across the state and country. The two methods for calculating vacancy rates describe two different considerations: the position vacancy rate describes the proportion of all full-time equivalent (FTE) positions that are vacant across all responding hospitals,

whereas the median facility vacancy rate provides the midpoint of vacancy rates among all hospitals, regardless of hospital or staff size.

In this report, the **regional position vacancy rate** was calculated by taking the sum of all vacant direct patient care RN FTE positions in each region, dividing it by the total of all FTE positions, occupied or vacant, in each region and multiplying by 100.



Regional position vacancy rate =

$$\frac{(\sum \text{Vacant FTE positions being recruited, on hold or frozen in a region})}{(\sum \text{Occupied and vacant FTE positions in a region}) \times 100}$$

This was also done for the **statewide position vacancy rate**. FTE positions are defined as the total number of occupied and vacant FTE positions in the hospital. Vacant FTE positions are defined as the total number of FTE positions that were vacant in the hospital regardless of whether they were being actively recruited or were on hold or frozen.

Statewide position vacancy rate =

$$\frac{(\sum \text{Vacant FTE positions being recruited, on hold or frozen across the state})}{(\sum \text{Occupied and vacant FTE positions across the state}) \times 100}$$

The **facility vacancy rate** was calculated by dividing the number of vacant FTE positions in a hospital by the total number of FTE positions (occupied and vacant) in that hospital and multiplying by 100. Some researchers prefer median value over mean values because medians are less sensitive to outliers. This is because 50% of hospitals have a turnover rate that is less than the median value and the other 50% of hospitals have a turnover rate higher than the median value.

Facility vacancy rate =

$$\frac{(\sum \text{Vacant FTEs being recruited, on hold or frozen in a facility})}{(\sum \text{Occupied and vacant FTE positions in a facility}) \times 100}$$

When vacancy rate is calculated for each individual hospital, the median facility vacancy rate represents the median value for all hospitals.

The **facility turnover rate** was calculated by dividing the total number of separations by the average number of employees (both full-time and part-time) the hospital had during the reporting period. That number was then multiplied by 100. The survey instrument asked hospitals to provide the number of full and part-time positions at two points (1/1/2013 and 12/31/13) and the numbers provided were then averaged to calculate the average number of employees.

Facility turnover rate =

$$\frac{\text{Total Number of Separations}}{(\text{Average \# Full-time} + \text{Average \# Part-time}) \times 100}$$

When turnover rate is calculated for each individual hospital, the median facility turnover rate represents the median value for all hospitals.

Registered Nurses (RNs), Licensed Vocational Nurses (LVNs), and Nurse Aides (NAs)

Vacancy Rates

Table 1 presents the total number of occupied and vacant FTE positions in Texas by nurse type and the resulting position vacancy rate for each.

Table 1. Number of occupied and vacant FTE positions in Texas by nurse type

	n	Total Occupied FTE Positions	Total Vacant FTE Positions	Statewide Position Vacancy Rate	Number of Hospitals that Reported Zero Vacancies
RNs	387	64,087	5,632	8.1%	88
LVNs	368	5,911	200	3.3%	268
NAs	377	15,825	1,562	9.0%	149

Note: n=number of hospitals in Texas that reported each nurse type

- RNs were the most numerous nurse type in Texas hospitals while NAs had the highest position vacancy rate.
- Just 22.7% of hospitals reported zero RN vacancies, while 72.8% reported zero LVN vacancies and 39.5% reported zero NA vacancies.

The position vacancy rates in Table 2 represent the total percentage of vacancies for a position across a region.

- Overall, the position vacancy rate for RNs in Texas was 8.1% in 2014, though the position vacancy rates for RNs ranged from 5.2% in the Panhandle to 15.6% in Central Texas.
- For LVNs in Texas, the position vacancy rate was 3.3% in 2014. Regionally, the position vacancy rate for LVNs ranged from 0.8% in Central Texas to 6% in South Texas.
- For NAs in Texas, the position vacancy rate was 9% in 2014 with a range from 5.3% in the Rio Grande Valley to 12.7% in South Texas.



Table 2. Position vacancy rates in Texas by region and nurse type

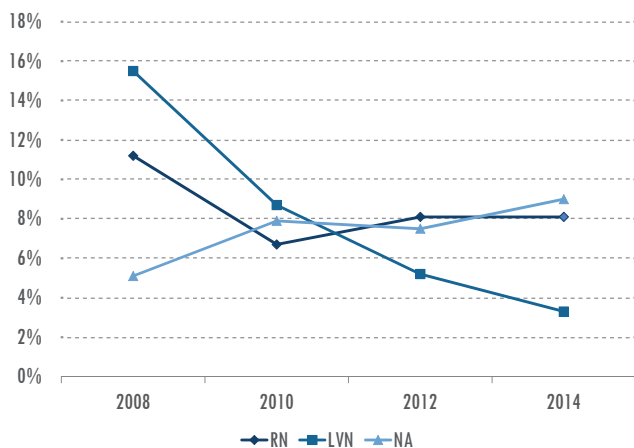
	RNs	LVNs	NAs
n	387	368	377
Panhandle	5.2%	4.1%	10.3%
North Texas	6.8%	3.2%	8.6%
East Texas	5.5%	5.2%	7.7%
Gulf Coast	7.5%	2.5%	7.7%
Central Texas	15.6%	0.8%	11.0%
South Texas	7.6%	6.0%	12.7%
Rio Grande Valley	8.6%	2.1%	5.3%
West Texas	8.7%	3.9%	9.7%

Note: n=number of hospitals in Texas that reported each nurse type

- The position vacancy rates in West Texas exceeded the state rates for all three nurse types.
- In North Texas and the Gulf Coast, position vacancy rates were below the state rates for all three nurse types.

Figure 1 and Table 3 represent the position vacancy rates for Texas from 2008-2014 for RNs, LVNs, and NAs.

Figure 1. Position vacancy rates for RNs, LVNs, and NAs, 2008-2014



- From 2012 to 2014, there was little change in the overall position vacancy rate for RNs; however, the

2014 RN position vacancy rate remained lower than it was prior to 2010.

- The position vacancy rate for LVNs has decreased by 78.9% since its peak in 2008.
- The position vacancy rate for NAs increased slightly from 7.5% in 2012 to 9% in 2014.

Table 3. Statewide position vacancy rates by nurse type, 2006-2014

	2008	2010	2012	2014
RNs	11.2%	6.8%	8.1%	8.1%
LVNs	15.5%	8.7%	5.2%	3.3%
NAs	5.1%	7.9%	7.5%	9.0%

Table 4 represents the median facility vacancy rate by region and nurse type. These numbers represent the median value when vacancy rates are calculated for each individual hospital. The median value is reported because it is less sensitive to outliers than the mean. Vacancy rates of 0% reflect that at least half of the hospitals in each region had zero vacancies for their nurse positions. Table 1 (page 2) shows the number of hospitals that reported zero vacancies for the different nurse types.

Table 4. Median facility vacancy rates in Texas by region and nurse type

	RNs	LVNs	NAs
n	387	368	377
Panhandle	5.2%	0.0%	0.0%
North Texas	6.4%	0.0%	5.5%
East Texas	5.1%	0.0%	2.1%
Gulf Coast	5.0%	0.0%	4.9%
Central Texas	15.3%	0.0%	15.0%
South Texas	6.2%	0.0%	8.8%
Rio Grande Valley	7.7%	0.0%	6.6%
West Texas	7.8%	0.0%	0.0%
Texas	6.5%	0.0%	5.6%

Note: n=number of hospitals in Texas that reported occupied and vacant FTE positions for each nurse type

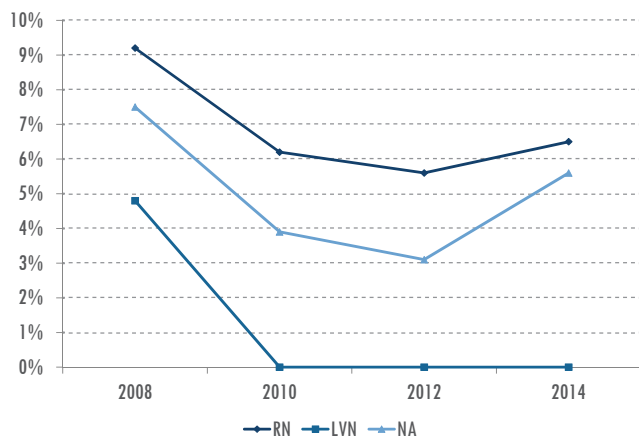


- Overall, the median facility vacancy rate for RNs in Texas was 6.5% in 2014, up from 5.6% in 2012.
- The median facility vacancy rate for RNs ranged from 5% in the Gulf Coast to 15.3% in Central Texas.
- Overall, the median facility vacancy rate for LVNs in Texas was 0% in 2014, the same rate seen in 2012.
- Overall, the median facility vacancy rate for NAs in Texas was 5.6% in 2014, up from 3.1% in 2012.
- Median facility vacancy rates in Central Texas and the Rio Grande Valley exceeded the state rates among both RNs and NAs.

Figure 2 shows the median facility vacancy rates for Texas from 2008-2014 for RNs, LVNs, and NAs.

- Median facility vacancy rates for RNs decreased from 2008 to 2012 and increased from 2012 to 2014 (Figure 3).
- With the exception of 2008, median facility vacancy rates for LVNs were measured at 0%.

Figure 2. Median facility vacancy rates for RNs, LVNs, and NAs, 2008-2014



Turnover Rates

The numbers in Table 5 represent the median facility turnover rate in Texas by region and nurse type among hospitals that reported an average number of employees and the total number of separations for the reporting period. These numbers represent the middle value when turnover is calculated for each individual hospital facility. The median value is reported because it is less sensitive to outliers than the mean.

- Overall, there was a 23.6% median facility turnover rate for RN positions among the 362 hospitals that responded to this question. This number means that roughly half of all hospitals had a turnover rate

for RNs greater than 23.6% and roughly half had a turnover rate lower than 23.6%.

- As seen in Table 5, there was also a 20% median facility turnover rate among LVN positions. However, the turnover rate between regions ranged from 12.5% in the Gulf Coast to 31.6% in East Texas.
- The highest overall turnover rate was among Nurse Aides (28.6%). This nurse type also had the highest turnover rate in all eight regions.
- The Gulf Coast and Rio Grande Valley regions both had turnover rates below the state rates, while East Texas, Central Texas, and West Texas exceeded the state rates for all three nurse types.

Table 5. Median facility turnover rates in Texas by region and nurse type

	RNs	LVNs	NAs
n	362	323	343
Panhandle	20.2%	25.0%	31.6%
North Texas	26.5%	19.7%	28.6%
East Texas	27.6%	31.6%	42.9%
Gulf Coast	18.1%	12.5%	21.9%
Central Texas	23.8%	21.1%	30.9%
South Texas	20.5%	21.7%	32.5%
Rio Grande Valley	20.3%	13.8%	24.0%
West Texas	28.6%	22.2%	29.4%
Texas	23.6%	20.0%	28.6%

Note: n=number of hospitals in Texas that reported average number of employees and total separations for each nurse type

Figure 3 compares Texas vacancy and turnover rates to those of California,² Florida,³ and New York,⁴ three states that have updated vacancy and turnover rates since 2012.

²Spetz, J., Hollingsworth, T., & Berg, J. (2014, August). Economic Recovery and the Nursing Labor Market in California [Webinar]. Retrieved from http://rnworkforce.ucsf.edu/sites/rnworkforce.ucsf.edu/files/CaliforniaEmployerWebinar2014_Slides.pdf

Note: California staffing numbers are based only on full-time personnel.

³Florida Center for Nursing, Demand for Nurses in Florida: The 2013 Survey of Florida's Nurse Employers, February 2014, <http://www.flcenterfornursing.org/StatewideData/NurseDemandReports.aspx>

⁴Healthcare Association of New York State, 2013 Nursing and Allied Health Care Professionals Workforce Survey Report, http://www.hanys.org/workforce/survey/reports/2013_nursing_allied_workforce_survey_report.pdf



- As in 2012, Texas continued to have higher vacancy rates than other states.
- The turnover rate in Texas was also higher than in California, Florida, and New York.

Figure 3. RN vacancy and turnover rates by state and year

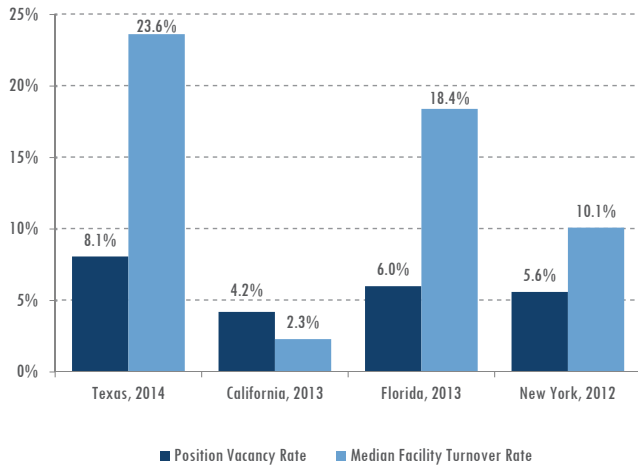
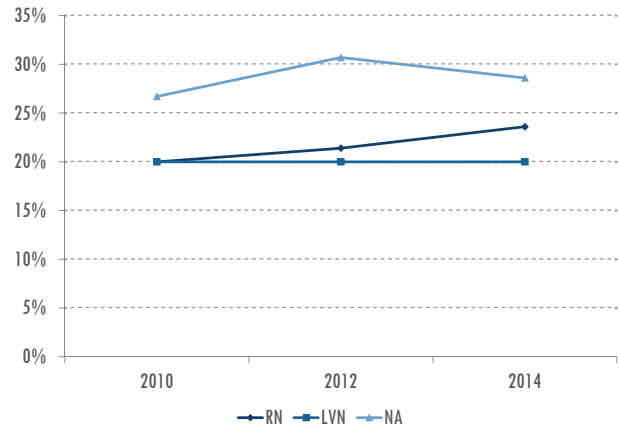


Figure 4 shows that median facility turnover rates for RNs, LVNs, and NAs have remained fairly stable over the past three HNSS measurements.

Figure 4. Median facility turnover rates for RNs, LVNs, and NAs, 2010-2014



Advanced Practice Registered Nurses (APRNs)

Vacancy Rates

In 2013, there were 11,070 Nurse Practitioners (NPs), 1,369 Clinical Nurse Specialists (CNSs), 3,786 Certified Registered Nurse Anesthetists (CRNAs), and 393 Certified Nurse Midwives (CNMs) in Texas.⁴ As with RNs, recent data have shown that the number of NPs in Texas on a per capita basis was lower than the number in the US as a whole. Moreover, border counties in Texas showed even lower numbers than the rest of the state, especially among NPs, CRNAs, and CNSs.

Table 6 presents the number of occupied and vacant FTE positions in Texas by APRN type and the resulting position vacancy rate for each.

Table 6. Number of occupied and vacant FTE positions in Texas by APRN type

	n	Occupied FTE Positions	Total Vacant FTE Positions	Statewide Position Vacancy Rate	Number of Hospitals that Reported Zero Vacancies
NPs	144	1,293	153	10.6%	83
CNSs	37	98	6	5.8%	28
CRNAs	38	361	5	1.4%	24
CNMs	8	47	7	13.1%	4

Note: n=number of hospitals in Texas that reported each APRN type

- NPs were the most common advanced practice nurse type in Texas and were employed in the most number of Texas hospitals. Over half of hospitals with NP positions had zero vacancies.
- CNS positions had a reported 6 vacancies out of 97.5 CNS FTE positions. This represented a 5.8% vacancy rate for CNSs among reporting hospitals, while 75.7% of hospitals had zero CNS vacancies.
- Thirty-eight hospitals reported 5 vacancies out of 361.2 CRNA FTE positions, for a 1.4% vacancy rate. This was the lowest vacancy rate among the APRN types, and 63.2% of hospitals had zero CRNA vacancies.
- The number of hospitals reporting CNM FTE positions was relatively low, but still there was a vacancy rate of 13.1%.

Table 7 displays the position vacancy rate by region for each of the APRN types. Position vacancy rates can be greatly affected by a small number of hospitals that reported a large number of vacancies in a given region. For example, in West Texas where 39 hospitals responded to the survey, just 11 hospitals had NP positions. Table 6 reports a 15.6% position vacancy rate while Table 7 reports that the median facility vacancy rate for NPs was 0%. This disparity in the two methods of reporting vacancy rates

⁴Center for Nursing Workforce Studies, "Nursing Workforce in Texas—2013 Demographics and Trends", <http://www.dshs.state.tx.us/chs/cnws/2013-Demographics-and-Trends-Report.pdf>



can be explained by the fact that three hospitals accounted for all of the vacancies for this position in West Texas, while the other eight hospitals reporting CNS positions indicated zero vacancies.

Table 7. Position vacancy rates in Texas by region and APRN type

	NPs	CNSs	CRNAs	CNMs
n	144	37	38	8
Panhandle	4.3%	-	16.7%	-
North Texas	12.5%	3.1%	0.8%	0.0%
East Texas	19.9%	0.0%	1.1%	14.3%
Gulf Coast	7.5%	8.4%	1.5%	37.0%
Central Texas	11.1%	12.5%	0.0%	-
South Texas	5.4%	0.0%	0.0%	0.0%
Rio Grande Valley	3.2%	0.0%	-	-
West Texas	15.6%	50.0%	8.3%	-

Note: n=number of hospitals in Texas that reported each APRN type

- The position vacancy rate for NPs ranged from 3.2% in the Rio Grande Valley to 19.9% in East Texas.
- The position vacancy rate for CNSs ranged from 0% in multiple regions to 50% in West Texas.
- The position vacancy rate for CRNAs ranged from 0% in multiple regions to 16.7% in the Panhandle.
- Only North Texas, East Texas, Gulf Coast, and South Texas reported CNM positions. All vacancies for CNMs were in East Texas and the Gulf Coast.

Figure 5 shows the position vacancy rates for Texas from 2008-2014 for NPs, CNSs, CRNAs, and CNMs.

- Position vacancy rates have decreased overall since 2008 for all APRN types except CNMs.
- Position vacancy rates for NPs and CRNAs have decreased every year since 2008.

Table 8 shows the median facility vacancy rate by region and APRN type. These numbers represent the median value when vacancy rates are calculated for each individual hospital. The median value is reported because it is less sensitive to outliers than the mean. The zeros in

this table reflect that half of the hospitals in the region reported zero vacancies for their APRN positions. Table 6 (page 5) shows the number of hospitals that reported zero vacancies for the different APRN types.

Figure 5. Position vacancy rates for NPs, CNSs, CRNAs, and CNMs, 2008-2014

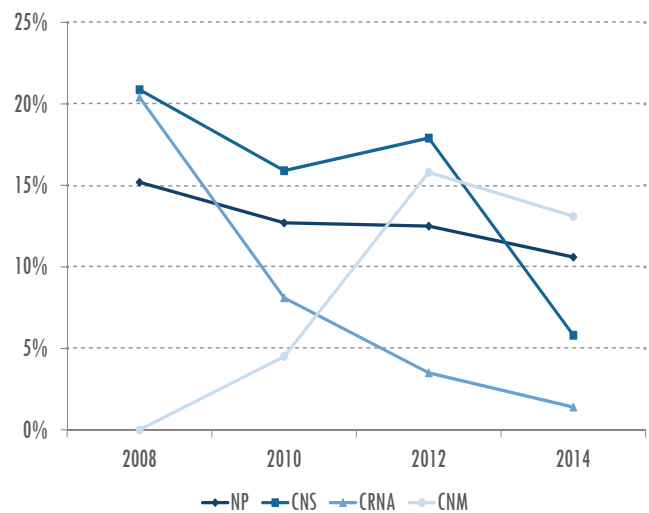


Table 8. Median facility vacancy rates in Texas by region and APRN type

	NPs	CNSs	CRNAs	CNMs
n	118	28	26	6
Panhandle	0.0%	-	0.0%	-
North Texas	0.0%	0.0%	0.0%	0.0%
East Texas	2.9%	0.0%	0.0%	16.7%
Gulf Coast	2.4%	0.0%	0.8%	26.8%
Central Texas	0.0%	0.0%	0.0%	-
South Texas	0.0%	0.0%	-	0.0%
Rio Grande Valley	0.0%	0.0%	-	-
West Texas	0.0%	50.0%	0.0%	-
Texas	0.0%	0.0%	0.0%	0.0%

Note: n=number of hospitals in Texas that reported occupied and vacant FTE positions for each APRN type

Turnover Rates

The numbers in Table 9 represent the median facility turnover rate in Texas by region and APRN type among hospitals with APRN FTE positions of each type.

- The median facility turnover rate in Texas was 0% for all APRN types but CNMs, which means that more than half of facilities employing CNMs experienced CNM turnover.
- That the median facility turnover rates for NPs, CNSs, and CRNAs are 0% in every region is indicative of the high number of hospitals that reported zero separations during the reporting period.
- Median facility turnover rates for all APRN types were 0% for all survey measurements from 2010-2014, with the exception of CNMs who had a 20% rate in 2012 and a 16.7% rate in 2014.

Table 9. Median facility turnover rates in Texas by region and APRN type

	NPs	CNSs	CRNAs	CNMs
n	125	32	30	7
Panhandle	0.0%	-	0.0%	-
North Texas	0.0%	0.0%	0.0%	9.2%
East Texas	0.0%	0.0%	0.0%	28.6%
Gulf Coast	0.0%	0.0%	0.0%	26.5%
Central Texas	0.0%	0.0%	0.0%	-
South Texas	0.0%	0.0%	0.0%	0.0%
Rio Grande Valley	0.0%	0.0%	0.0%	-
West Texas	0.0%	0.0%	0.0%	-
Texas	0.0%	0.0%	0.0%	16.7%

Note: n=number of hospitals in Texas that reported average number of employees and total separations for each APRN type

