

## Vacancy and Turnover

### Introduction

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 2012, the Texas Center for Nursing Workforce Studies (TCNWS) administered the HNSS to 603 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. 373 (61.9%) hospitals responded to the survey. The hospitals that completed the 2012 HNSS were representative of all Texas hospitals by region and bed size.

This report presents the findings of the 2012 HNSS related to position vacancies and staff turnover at Texas hospitals. It includes rates of each across Texas geographic regions and nursing types.

According to a 2011 TCNWS report, our state faces a continuing nursing shortage.<sup>1</sup> 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 2012 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 (1/22/2012-1/28/2012). The 2012 HNSS turnover rates measure the frequency of staff separations, both voluntary and involuntary, over a one year period (1/1/2011-12/31/2011). 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.<sup>2</sup> 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.

### 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. 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.

**Regional position vacancy rate** =  $(\sum \text{Vacant FTE positions being recruited, on hold or frozen in a region}) / (\sum \text{Occupied and vacant FTE positions in a region}) \times 100$

**Statewide position vacancy rate** =  $(\sum \text{Vacant FTE positions being recruited, on hold or frozen across the state}) / (\sum \text{Occupied and vacant FTE positions across the state}) \times 100$

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

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

Source: <sup>1</sup> Center for Nursing Workforce Studies, "Nursing Workforce in Texas—2011 Demographics and Trends", [http://www.dshs.state.tx.us/chs/cnws/2011\\_nursing\\_workforce.pdf](http://www.dshs.state.tx.us/chs/cnws/2011_nursing_workforce.pdf)

<sup>2</sup> American Association of Colleges of Nursing, "Nursing Shortage Fact Sheet", 2012, <http://www.aacn.nche.edu/media-relations/NrsgShortageFS.pdf>

**Methods of Calculation (continued)**

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 (1/1/2011 and 12/31/11) and the numbers provided were then averaged to calculate the average number of employees.

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

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)****Table 1. Number of Occupied and Vacant FTE Positions in Texas by Nurse Type**

	n	Occupied FTE Positions	Total Vacant FTE Positions	Statewide Position Vacancy Rate	Number of Hospitals that Reported Zero Vacancies
Registered Nurses (RNs)	351	56,032	4,923	8.1%	90
Licensed Vocational Nurses (LVNs)	316	5,094	282	5.2%	219
Nurse Aides (NAs)	329	14,032	1,145	7.5%	152

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

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.

- RNs were the most numerous nurse type in Texas hospitals and had the highest position vacancy rate.
- Just 25.6% of hospitals reported zero RN vacancies, while 69.3% reported zero LVN vacancies and 46.2% reported zero NA vacancies.

**Table 2. Position Vacancy Rates in Texas by Region and Nurse Type**

	n	Region 1 Panhandle	Region 2 North Texas	Region 3 East Texas	Region 4 Gulf Coast	Region 5 Central Texas	Region 6 South Texas	Region 7 Rio Grande Valley	Region 8 West Texas
RNs	351	4.1%	5.2%	7.6%	7.1%	11.0%	12.6%	22.2%	9.0%
LVNs	316	4.8%	2.7%	4.5%	4.4%	10.5%	11.0%	1.5%	3.2%
NAs	329	4.8%	4.5%	5.9%	8.6%	11.0%	13.3%	7.8%	7.2%

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

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 2012, though the position vacancy rates for RNs ranged from 4.1% in Region 1 to 22.2% in Region 7.
- For LVNs in Texas, the position vacancy rate was 5.2% in 2012. Regionally, the position vacancy rate for LVNs ranged from 1.5% in Region 7 to 11.0% in Region 6.
- For NAs in Texas, the position vacancy rate was 7.5% in 2012 with a range from 4.5% in Region 2 to 13.3% in Region 6.
- The position vacancy rates in Regions 5 and 6 (Central Texas and South Texas, respectively) exceeded the state rates for all three nurse types.
- In Regions 1 (Panhandle) and 2 (North Texas), position vacancy rates were below the state rates for all three nurse types.

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

**Figure 1. Statewide Position Vacancy Rates by Nurse Type, 2006-2012**

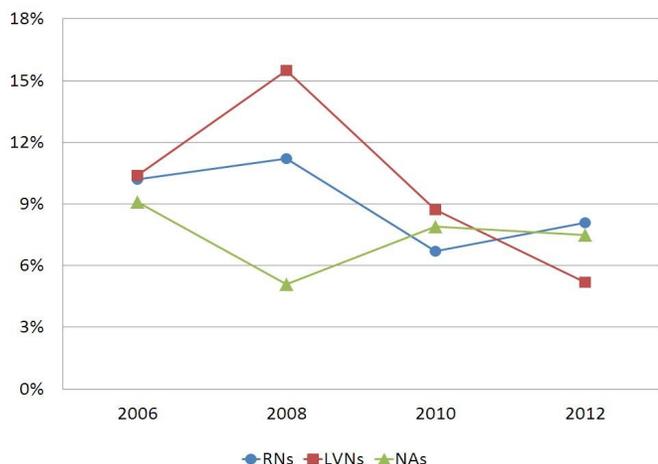


Figure 1 represents the position vacancy rates for Texas from 2006-2012 for RNs, LVNs, and NAs.

- From 2010 to 2012, there was a 20.9% increase in the overall position vacancy rate for RNs. However, the 2012 RN position vacancy rate remained lower than it was prior to 2010.
- Among LVNs, there was a considerable decrease (40.2%) in the position vacancy rate from 2010 to 2012. The 2012 LVN rate was roughly half of the 2006 rate.
- The 2012 position vacancy rate for NAs decreased slightly to 7.5% from 7.9% in 2010.

**Table 3. Median Facility Vacancy Rates in Texas by Region and Nurse Type**

	n	Region 1 Panhandle	Region 2 North Texas	Region 3 East Texas	Region 4 Gulf Coast	Region 5 Central Texas	Region 6 South Texas	Region 7 Rio Grande Valley	Region 8 West Texas	Texas
<b>RNs</b>	<b>351</b>	5.0%	4.7%	5.3%	4.5%	7.1%	7.5%	7.2%	7.1%	<b>5.6%</b>
<b>LVNs</b>	<b>316</b>	0%	0%	0%	0%	0%	0%	0%	0%	<b>0%</b>
<b>NAs</b>	<b>329</b>	0%	0%	4.7%	4.1%	10.2%	5.8%	4.2%	3.9%	<b>3.1%</b>

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

Table 3 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.

- Overall, the median facility vacancy rate for RNs in Texas was 5.6% in 2012, down from 6.2% in 2010.
- The median facility vacancy rate for RNs ranged from 4.5% in Region 4 to 7.5% in Region 6.
- Overall, the median facility vacancy rate for LVNs in Texas was 0% in 2012, the same rate seen in 2010.
- Overall, the median facility vacancy rate for NAs in Texas was 3.1% in 2012, down from 3.9% in 2010.
- Median facility vacancy rates in Regions 5, 6, 7, and 8 exceeded the state rates among both RNs and NAs.

**Table 4. Median Facility Turnover Rates in Texas by Region and Nurse Type**

	n	Region 1 Panhandle	Region 2 North Texas	Region 3 East Texas	Region 4 Gulf Coast	Region 5 Central Texas	Region 6 South Texas	Region 7 Rio Grande Valley	Region 8 West Texas	Texas
<b>RNs</b>	<b>351</b>	21.8%	21.2%	25.8%	17.6%	20.2%	21.2%	24.9%	22.3%	<b>21.4%</b>
<b>LVNs</b>	<b>316</b>	26.7%	19.4%	40.0%	21.3%	10.0%	18.5%	22.2%	22.9%	<b>20.0%</b>
<b>NAs</b>	<b>329</b>	34.9%	36.0%	30.2%	21.0%	28.7%	28.6%	31.3%	31.3%	<b>30.7%</b>

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

The numbers in Table 4 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 21.4% median facility turnover rate for RN positions among the 351 hospitals that responded to this question. This number means that roughly half of all hospitals had a turnover rate for RNs greater than 21.4% and roughly half had a turnover rate lower than 21.4%.

Continued on page 4

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

- As seen in Table 4, there was also a 20.0% median facility turnover rate among LVN positions. However, the turnover rate between regions ranged from 10.0% in Region 5 to 40.0% in Region 3.
- The highest overall turnover rate was among Nurse Aides (30.7%). This nurse type also had the highest turnover rate in 6 of the 8 regions.
- Note that the Central and South Texas regions both had turnover rates below the state rates, while the Panhandle, West Texas, and the Rio Grande Valley exceeded the state rates for all three nurse types.

**Figure 2. RN Vacancy and Turnover Rates by State and Year**

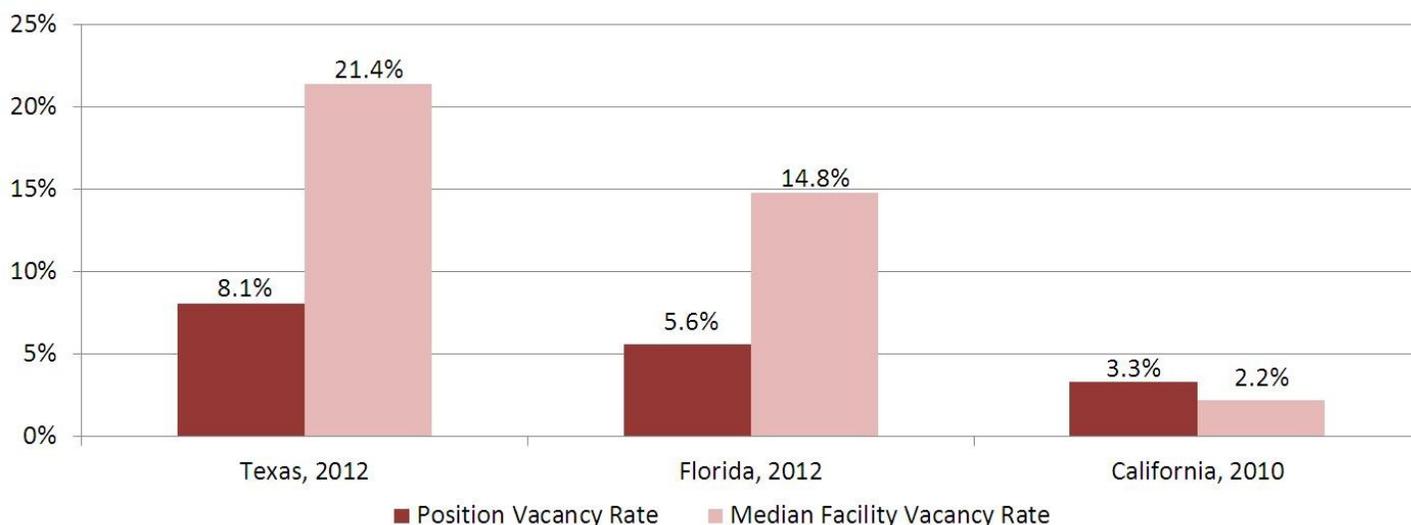


Figure 2 compares Texas vacancy and turnover rates to those of Florida<sup>3</sup> and California<sup>4</sup>, two states that have updated vacancy and turnover rates since 2010.

- As in 2010, Texas continued to have higher vacancy rates than other states.
- The turnover rate in Texas was also higher than in both Florida and California.

**Advanced Practice Registered Nurses (APRNs)**

In 2011, there were 10,995 Advanced Practice Registered Nurses (APRNs) in Texas. 6,676 were Nurse Practitioners (NPs), 1,602 were Clinical Nurse Specialists (CNSs), 2,449 were Certified Registered Nurse Anesthetists (CRNAs), and 268 were Certified Nurse Midwives (CNMs).<sup>5</sup> 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 5. Number of Occupied and Vacant FTE Positions by APRN Type**

	n	Occupied FTE Positions	Total Vacant FTE Positions	Statewide Position Vacancy Rate	Number of Hospitals that Reported Zero Vacancies
<b>Nurse Practitioners (NPs)</b>	<b>98</b>	581	83	12.5%	<b>66</b>
<b>Clinical Nurse Specialist (CNSs)</b>	<b>28</b>	69	15	17.9%	<b>21</b>
<b>Certified Registered Nurse Anesthetists (CRNAs)</b>	<b>62</b>	363.5	13	3.5%	<b>55</b>
<b>Certified Nurse Midwives (CNMs)</b>	<b>6</b>	16	3	15.8%	<b>4</b>

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

Sources: <sup>3</sup> Florida Center for Nursing, Nurse Employer Industry Reports, February 2012

<sup>4</sup> 2010 Allied for Health Quarterly Turnover and Vacancy Report, 2nd Quarter, Hospital Council of Southern California

<sup>5</sup> Center for Nursing Workforce Studies, "Nursing Workforce in Texas—2011 Demographics and Trends," [http://www.dshs.state.tx.us/chs/cnws/2011\\_nursing\\_workforce.pdf](http://www.dshs.state.tx.us/chs/cnws/2011_nursing_workforce.pdf)

**Advanced Practice Registered Nurses (APRNs) (continued)**

Table 5 presents the number of occupied and vacant FTE positions in Texas by APRN type and the resulting position vacancy rate for each.

- NPs were the most common advanced practice nurse type in Texas and were employed in the most number of Texas hospitals. Over two-thirds of hospitals with NP positions had zero vacancies.
- CNS positions had the highest vacancy rate in Texas among APRN types, with 15 reported vacancies out of 84 CNS FTE positions. This represented a 17.9% vacancy rate for CNSs among reporting hospitals.
- Sixty-two hospitals reported 13 vacancies out of 376.5 CRNA FTE positions, a 3.5% vacancy rate. This was the lowest vacancy rate among the APRN types and 88.7% 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 15.8%.

**Table 6. Position Vacancy Rates in Texas by Region and APRN Type**

	n	Region 1 Panhandle	Region 2 North Texas	Region 3 East Texas	Region 4 Gulf Coast	Region 5 Central Texas	Region 6 South Texas	Region 7 Rio Grande Valley	Region 8 West Texas
<b>NPs</b>	<b>98</b>	5.0%	12.6%	10.3%	7.7%	18.2%	23.5%	42.9%	10.3%
<b>CNSs</b>	<b>28</b>	-	16.3%	16.7%	0%	0%	0%	0%	60.0%
<b>CRNAs</b>	<b>62</b>	0%	5.8%	0.9%	1.3%	0%	25%	0%	0%
<b>CNMs</b>	<b>6</b>	-	28.6%	0%	9.1%	-	-	-	-

Note: n=number of hospitals in Texas that reported FTE positions for each APRN type.  
A dash ( - ) indicates that there were no FTE positions reported in the region.

Table 6 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 Region 8 where 36 hospitals responded to the survey, just two hospitals had CNS positions. Table 6 reports a 60.0% position vacancy rate while Table 7 reports that the median facility vacancy rate for CNSs was 33.3%. This disparity in the two methods of reporting vacancy rates can be explained by the fact that one hospital reported all 6 of the vacancies for this position in Region 8, while the other hospital reporting CNS positions indicated 0 vacancies.

- The position vacancy rate for NPs ranged from 5% in Region 1 to 42.9% in Region 7.
- The position vacancy rate for CNS ranged from 0% in multiple regions to 60.0% in Region 8.
- The position vacancy rate for CRNAs ranged from 0% in multiple regions to 25.0% in Region 6.
- Only Regions 2, 3, and 4 reported CNM positions. All vacancies for CNMs were in Regions 2 and 4.

**Table 7. Median Facility Vacancy Rates in Texas by Region and APRN Type**

	n	Region 1 Panhandle	Region 2 North Texas	Region 3 East Texas	Region 4 Gulf Coast	Region 5 Central Texas	Region 6 South Texas	Region 7 Rio Grande Valley	Region 8 West Texas	Texas
<b>NPs</b>	<b>98</b>	0%	0%	0%	0%	0%	0%	50%	0%	<b>0%</b>
<b>CNSs</b>	<b>28</b>	-	0%	0%	0%	0%	0%	0%	33.3%	<b>0%</b>
<b>CRNAs</b>	<b>62</b>	0%	0%	0%	0%	0%	0%	0%	0%	<b>0%</b>
<b>CNMs</b>	<b>6</b>	-	0%	0%	8.3%	-	-	-	-	<b>0%</b>

Note: n=number of hospitals in Texas that reported FTE positions for each APRN type.  
A dash ( - ) indicates that there were no FTE positions reported in the region.

Table 7 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 the number of hospitals in each region that reported 0 vacancies for their APRN positions. Table 5 (page 4) shows the number of hospitals that reported 0 vacancies for the different APRN types.

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**Advanced Practice Registered Nurses (APRNs) (continued)**

There were median facility vacancy rates higher than zero in some regions, but an overall median facility vacancy rate of zero for the state may be attributed to a number of things. One is that on a regional level, the number of hospitals reporting FTE positions for any of the APRN types is much lower than the total number of hospitals reporting across the state. Another reason is that the number of FTE APRN positions in each hospital is small, in relation to RN or LVN positions, for example. Thus, the small number of FTE APRN positions could have an impact on the increased vacancy rate calculated for a given region.

**Table 8. Median Facility Turnover Rates in Texas by Region and APRN Type**

	n	Region 1 Panhandle	Region 2 North Texas	Region 3 East Texas	Region 4 Gulf Coast	Region 5 Central Texas	Region 6 South Texas	Region 7 Rio Grande Valley	Region 8 West Texas	Texas
<b>NPs</b>	<b>98</b>	14.8%	0%	0%	6.35%	0%	0%	0%	0%	<b>0%</b>
<b>CNSs</b>	<b>28</b>	-	10.9%	0%	0%	0%	0%	100%	0%	<b>0%</b>
<b>CRNAs</b>	<b>62</b>	15.0%	0%	0%	0.5%	33%	0%	0%	0%	<b>0%</b>
<b>CNMs</b>	<b>6</b>	-	50%	0%	20%	-	-	-	-	<b>20%</b>

Note: n=number of hospitals in Texas that reported both average number of employees and total number of separations for each APRN type.  
A dash ( - ) indicates that there were no FTE positions reported in the region.

The numbers in Table 8 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. This is indicative of the high number of hospitals that reported zero separations during the reporting period.