



The Texas Governmental Public Health Nurse Staffing Survey (TGPHNSS) assesses nurse staffing and related issues in Texas governmental public health agencies. In the spring of 2017, the Texas Center for Nursing Workforce Studies (TCNWS) administered the TGPHNSS to 82 public health agencies in Texas. This included local health departments, public health service regions, and Department of State Health Services (DSHS) and Health and Human Services (HHS) central offices in Austin. DSHS and HHS central office programs will be referred to as state offices. A total of 48 agencies participated for a final response rate of 58.5%.

Vacancy and turnover rates are among the key measures for assessing nurse staffing adequacy. The Institute of Medicine (IOM) has asserted that vacancy rates “are widely accepted as evidence of supply shortages of RNs” and can be used to estimate current and future nursing shortages.¹ Vacancy rates indicate the ability of an organization to recruit and fill nursing positions and turnover rates indicate the ability of the organization to retain its current employees.^{2,3} This report features the results of the 2017 TGPHNSS nurse vacancy and turnover in Texas governmental public health agencies. It includes statewide vacancy and turnover rates as well as vacancy and turnover by region, geographic designation, and agency type.

¹IOM (Institute of Medicine). (2011). *The Future of nursing: Leading change, advancing health*. Washington, DC: The National Academies Press.
²Rondeau, K.V., Williams, E.S., & Wagar, T.H. (2008). Turnover and vacancy rates for registered nurses: Do local labor market factors matter?. *Health Care Management Review*, 33(1), 69-78.
³Hayes, L., O'Brien-Pallas, L., Duffield, C., Shamian, J., Buchan, J., Hughes, F., Laschinger, K.S., & North, N. (2012). Nurse turnover: A literature review – An update. *International Journal of Nursing Studies*, 49(7), 887-905.

Vacancy

Vacancy Rates - Statewide

Table 1 displays vacancy data for all governmental public health agencies that responded to the survey. In the current study, position vacancy rates and median agency vacancy rates were assessed for January 27, 2017. The position vacancy rate describes the proportion of all full-time equivalent (FTE) positions that are vacant across all responding agencies, whereas the median agency vacancy rate provides the midpoint of vacancy rates among all agencies, regardless of agency or staff size. The methods for calculating both types of vacancy rates are described in the Design and Methods section.

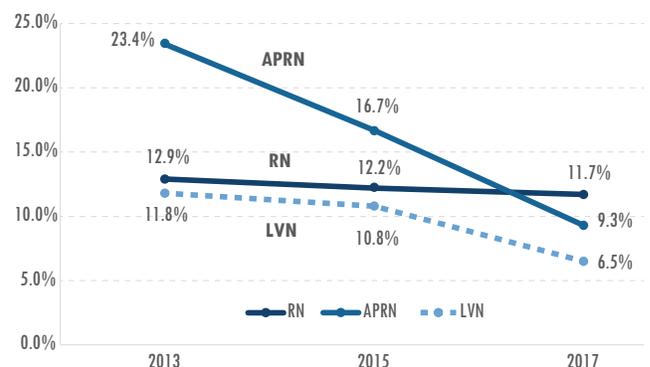
Table 1. Statewide vacancy rates among responding agencies by nurse type, 2017

	n	Occupied FTE positions	Vacant FTE positions	Statewide position vacancy rate	Statewide median agency vacancy rate	% of agencies that reported zero vacancies
RNs	46	318.0	42	11.7%	0%	69.6%
APRNs	16	39.0	4	9.3%	0%	87.5%
LVNs	33	159.0	11	6.5%	0%	78.8%

Note: n=number of agencies in Texas that reported FTE positions for each nurse type. Agencies with inconsistent staffing data were excluded from these calculations.

- For the 46 agencies that reported employing RNs, 32 (69.6%) of those agencies had a 0% vacancy rate.
- Of the 33 agencies who reported employing LVNs, 26 (78.8%) of those agencies had a 0% vacancy rate.
- 16 agencies reported having APRN positions, and 14 (87.5%) of those agencies had a 0% vacancy rate.

Figure 1 represents the position vacancy rates for Texas
Figure 1. Position vacancy rates by nurse type, 2013 - 2017



from 2013-2017 by nursing staff type.

- Overall, the statewide position vacancy rate was lowest for LVN positions (6.5%) and highest for RN positions (11.7%).
- The position vacancy rate for RNs was 11.7%, slightly lower than reported for 2015 (12.2%).
- 16 agencies reported employing APRNs. The total APRN position vacancy rate among those agencies was 9.3%. There were only 4.0 total vacant APRN positions and 39.0 occupied APRN positions among responding agencies.

Table 2 shows median public health agency vacancy rates, which represent the middle value among all position vacancy rates calculated for each individual agencies. The median agency vacancy rate gives a sense of how widespread an issue staff vacancy is.

- Statewide median agency vacancy rates were 0% for RNs, LVNs and APRNs.

Table 2. Public health agency vacancy rate descriptive statistics

	n	Minimum	25th Percentile	Median	75th Percentile	Maximum	Mean
RNs	46	0%	0%	0%	11.3%	50.0%	5.9%
APRN	16	0%	0%	0%	0%	100%	7.3%
LVNs	33	0%	0%	0%	0%	50.0%	5.1%

Note: n=number of agencies in Texas that reported each nursing staff type

Vacancy Rates - Agency Types

Figure 2 and Table 3 show position vacancy rates by the different types of responding governmental public health agencies.

- The highest position vacancy rate for RNs (22.8%) was found among DSHS public health service regions. The highest reported vacancy rate in 2015 (21.4%) was in the DSHS central office divisions.
- Among local health departments, the position vacancy rate for RNs was 7.1%.

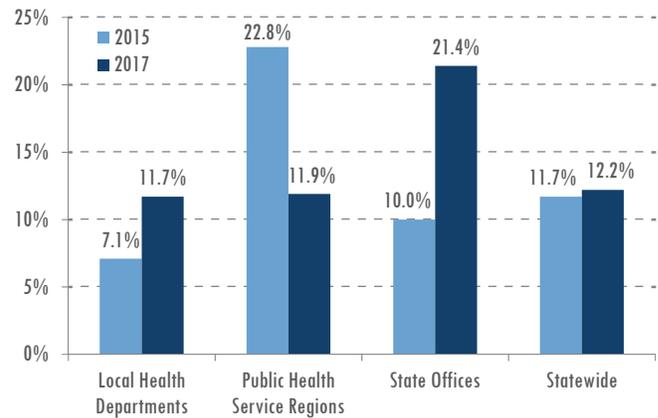
Table 3. Position vacancy rates in responding agencies by agency type, 2017

	Local Health Departments		Public Health Service Regions		State Offices		Statewide	
	Number of Agencies	Position Vacancy Rate	Number of Agencies	Position Vacancy Rate	Number of Agencies	Position Vacancy Rate	Number of Agencies	Position Vacancy Rate
RNs	37	7.1%	6	22.8%	3	10.0%	46	11.7%
APRNs	15	9.8%	1	0%	0	-	16	9.3%
LVNs	30	6.3%	3	9.1%	0	-	33	6.5%

Note: Agencies that reported zero nurse positions for a nurse type were excluded from the vacancy rate calculation.

- 93.8% of APRNs were employed by local health departments.
- Approximately 38.4% (50% in 2015) of local health departments surveyed reported employing APRNs. Among these local health departments, the position vacancy rate was 9.8%.

Figure 2. RN position vacancy rate by agency type, 2015 & 2017



Vacancy Rates - Metropolitan Areas/Border Designation

As shown in Table 4, nurse position vacancy rates in responding governmental public health agencies varied by geographic designation. Position vacancy rates for nurses were higher among agencies in metropolitan counties compared to agencies in non-metropolitan counties. Agencies located in border counties reported inconsistent position vacancy rates compared to 2015 when border rates were higher than non-border counties for all nurse types.

Table 4. Nurse position vacancy rates in responding agencies by metropolitan/border designation, 2017

	Metropolitan		Non-Metropolitan		Border		Non-Border	
	n	%	n	%	n	%	n	%
RNs	36	12.3%	10	0%	4	10.9%	42	11.8%
APRNs	13	11.1%	3	0%	1	0%	15	10.0%
LVNs	25	6.9%	8	3.8%	4	8.1%	29	6.0%

Note: n= number of agencies in Texas that reported FTE positions for each nurse type. Agencies that report zero nurse positions for a nurse type were excluded from the calculations. %= Position vacancy rate.



Vacancy Rates - Regions

RN and LVN position vacancy rates were also analyzed by region. Figures 3 and 4 display RN and LVN position vacancy rates by region, respectively.

- The Panhandle reported the lowest RN position vacancy rate (6.7%) and the highest LVN position vacancy rate (25.0%). This region reported the second lowest RN vacancy rate in 2015 (3.2%).
- North Texas had the highest RN vacancy rate at 13.6%. The Rio Grande Valley reported the highest vacancy rate for RNs in 2015 (29.9%).
- 4 regions had zero vacancies among their LVN positions.

Figure 3. RN position vacancy rate by region, 2017

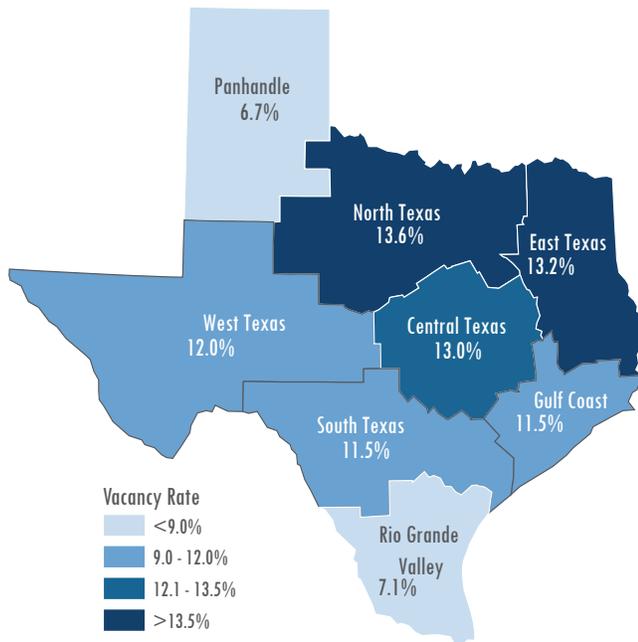
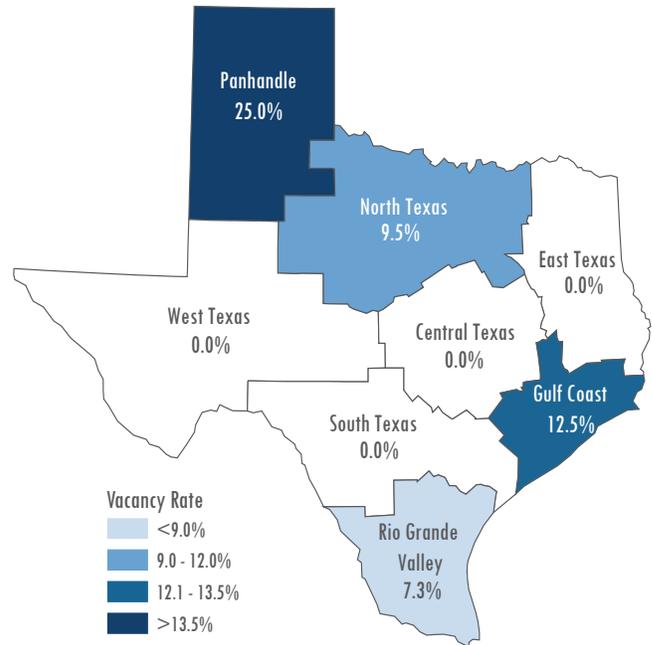


Figure 4. LVN position vacancy rate by region, 2017



Turnover Rates - Statewide

Table 5 displays the total average headcount for 2016, total number of separations, and median agency turnover rate for RNs, newly licensed RNs, LVNs, and APRNs in responding governmental public health agencies. Turnover rates were assessed for the calendar year of 2016 (January 1, 2016 to December 31, 2016).

Table 6 shows median turnover rates, which represent the middle value among all turnover rates calculated for each agency. The median value is reported because it is less sensitive to outliers than the mean.

- For the 46 agencies that reported employing RNs, 26 (56.5%) of those agencies had a 0% turnover rate.
- 33 agencies reported employing LVNs, and 22 (66.7%) of those agencies had a 0% turnover rate.
- 16 agencies reported having APRN positions, and 11 (68.8%) of those agencies had a 0% turnover rate.
- The statewide median turnover rate was 0% for LVNs, RNs and APRNs.

Table 5. Headcount and separations in responding agencies by nurse type, 2016

	n	Average Headcount 01/01/16 – 12/31/16	Number of Separations 01/01/16 – 12/31/16	Median Agency Turnover Rate	Number of Agencies that Reported Zero Separations
RNs	46	313.5	55	0%	26
New RNs	3	3	1	0%	43
APRNs	16	42	11	0%	11
LVNs	33	165	14	0%	22

Note: n=number of agencies in Texas that reported both head counts and number of separations for each nurse type.

Table 7. Turnover rates in responding agencies by agency type, 2017

	Local Health Department			Public Health Service Region			State Offices			Statewide		
	n	Mean Turnover Rate	Median Turnover Rate	n	Mean Turnover Rate	Median Turnover Rate	n	Mean Turnover Rate	Median Turnover Rate	n	Mean Turnover Rate	Median Turnover Rate
RNs	37	11.4%	0%	6	14.0%	12.4%	3	43.7%	31.3%	46	13.9%	0%
New RNs	3	0%	0%	0	-	-	0	-	-	3	0%	0%
APRNs	15	27.8%	0%	1	0%	0%	0	-	-	15	26.5%	0%
LVNs	31	7.1%	0%	3	4.4%	0%	0	-	-	31	7.1%	0%

Note: Agencies that reported zero nurse positions for a nurse type were excluded from the turnover rate calculation.

Table 6. Agency turnover rate descriptive statistics

	n	Minimum	25th Percentile	Median	75th Percentile	Maximum	Mean
RNs	46	0%	0%	0%	19.5%	100%	13.9%
New RNs	3	0%	0%	0%	0%	0%	0%
APRN	16	0%	0%	0%	26.0%	200%	26.5%
LVNs	33	0%	0%	0%	13.3%	57.0%	7.1%

Note: n=number of agencies in Texas that reported each nursing staff type

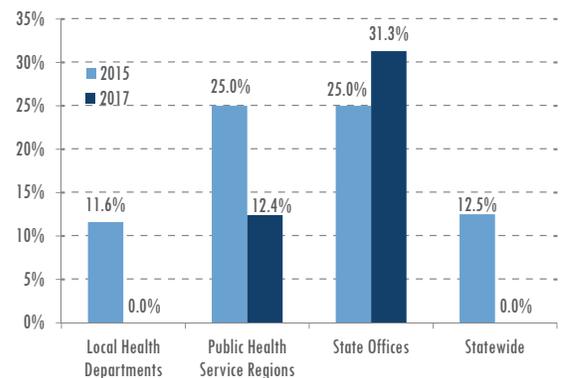
Turnover Rates - Agency Types

Table 7 shows median turnover rates for each nurse type by the different types of responding governmental public health agencies.

- The median turnover rate for RNs was lowest among the 37 responding local health department (0.0%) and highest for the state office programs (n=3, 31.3%). Public health service regions reported 12.4% (n=6) median turnover rate.
- The median turnover rate among local health departments was also 0% for LVNs and APRNs.

No state offices reported employing LVNs or APRNs, so they were excluded from this analysis.

Figure 5. Median RN turnover rate by agency type, 2015 & 2017



Turnover Rates - Metropolitan Status/Border Status

Figures 6 and 7 display the median turnover rate for each nurse type by border and metropolitan counties.

- The median turnover rate for RN positions was higher among agencies in metropolitan counties (n=36, 9.7%) than non-metropolitan counties (n=10, 0%).
- Among agencies located in border counties (n=4), the median turnover rate for RNs was 11.7%, compared to a median turnover rate of 0% among agencies in non-border counties (n=42).
- A higher median turnover rate in non-border counties (14.1%) than in border counties (0.0%) was reported in 2015.
- The median turnover rate was higher in border counties for LVNs (11.2%) than agencies in non-border counties (0.0%).
- For APRNs, the median turnover rate was 0.0% for both border and non-border counties.

Figure 6. Median turnover rate by border classification

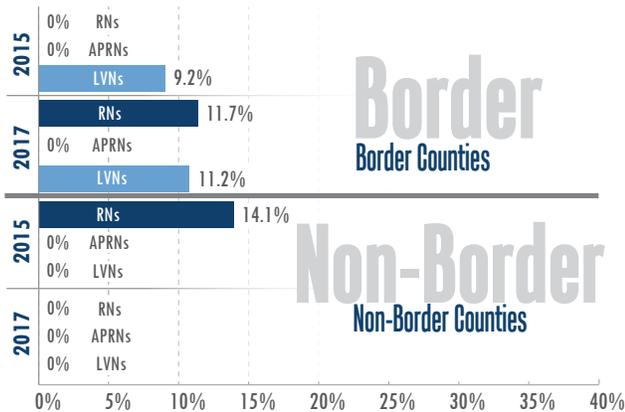
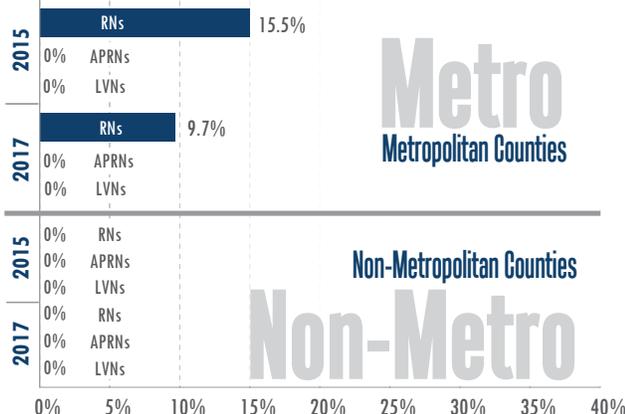


Figure 7. Median turnover by metropolitan status



Turnover Rates - Public Health Service Regions

In Figure 8, median RN turnover rates are displayed by region. Agencies in four regions of Texas reported a 0% median turnover rate for RNs (East Texas, North Texas, South Texas, West Texas).

- The Panhandle reported the highest median turnover rate for LVNs and RNs at 57.1% and 18.8%, respectively.

Figure 8. RN median turnover rate by region

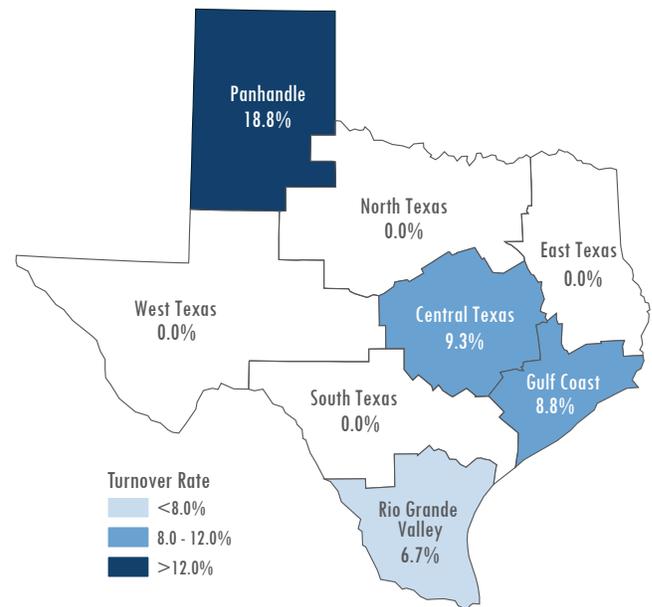
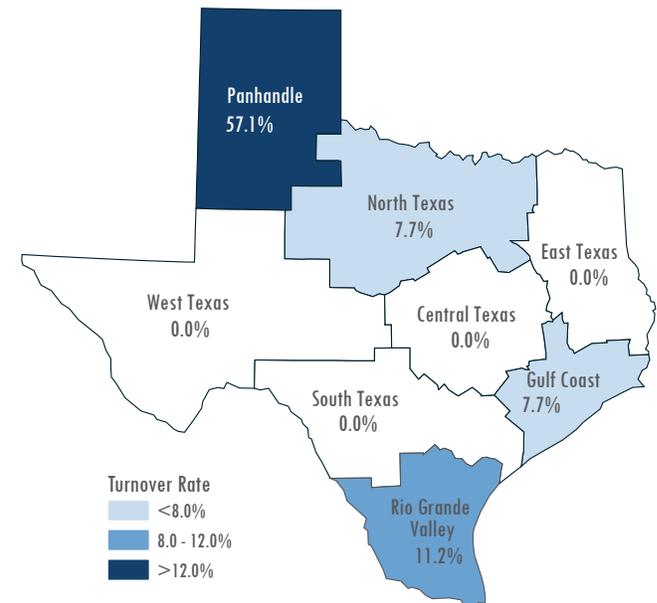


Figure 9. LVN median turnover rate by region



Conclusion

The statewide position vacancy rate was 11.7% for RNs, 6.5% for LVNs and 16.7% for APRNs. This was a decrease from 2015 for all nurse types.

When comparing vacancy rates by agency type, health service regions reported the highest vacancy rates for RNs (22.8%). Regionally, the Panhandle reported the lowest position vacancy rate (6.7%) and North Texas reported the highest (13.6%).

In 2017, the statewide median turnover rate was 0% for RNs, LVNs and APRN positions, indicating that at least half of responding agencies did not have any staff turnover during the reporting period. By agency type, the median turnover rate for RNs was lowest among the 37 responding local health departments (0.0%). State offices had the highest median turnover rate (n=3, 31.3%). For RNs, agencies in four regions of Texas (East Texas, North Texas, South Texas, West Texas) reported a 0% median turnover rate with the Panhandle reporting the highest at 18.8%.

