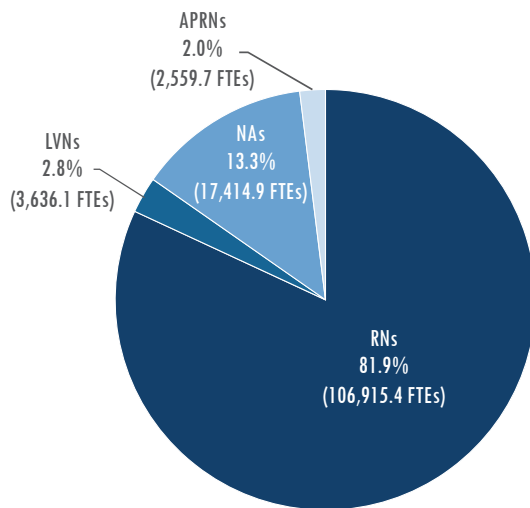The Hospital Nurse Staffing Survey (HNSS) assesses the size and effects of the nursing shortage in hospitals, Texas' largest employer of nurses. During the summer of 2019, the Texas Center for Nursing Workforce Studies (TCNWS) administered the HNSS to the Chief Nursing Officers/Directors of Nursing of 715 Texas hospitals. These included for-profit, nonprofit, 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; outpatient or community-based clinics were not included. Respondents provided data for 404 hospitals for a response rate of 56.5%.

This report presents the relevant findings of this survey related to staffing practices at Texas hospitals. It also reviews changes in numbers of occupied and vacant registered nurse (RN) positions at hospitals and the reasons for these changes. Analyses are provided across Texas geographic regions.

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

Figure 1 presents the nursing staff mix, which represents filled hospital staff positions in responding facilities by nursing staff type.

Figure 1. Nursing staff mix (n=361), 2019

APRNs
2.0%
(2,559.7 FTEs)

LVNs
2.8%
(3,636.1 FTEs)

NAs
13.3%
(17,414.9 FTEs)

RNs
81.9%
(106,915.4 FTEs)

- Registered nurses (RNs) made up the largest proportion of nurses in hospitals, followed by nurse aides (NAs).
- Advanced practice registered nurses (APRNs) made up only 2.0% of the staff mix, a decrease from 2.4% in 2017.
- Since 2006, the proportion of RNs has increased from 70.2% while the proportion of LVNs has decreased from 9.2%.
- In 2019, 302 hospitals reported employing a total of 376 nursing informaticist FTEs.

Changes in Budgeted FTEs

In addition to providing employment numbers for the specified periods, hospitals also described changes in the past year in their numbers of direct patient care RN FTEs, the reasons for these changes, and their hiring plans for the coming fiscal year (Table 1).
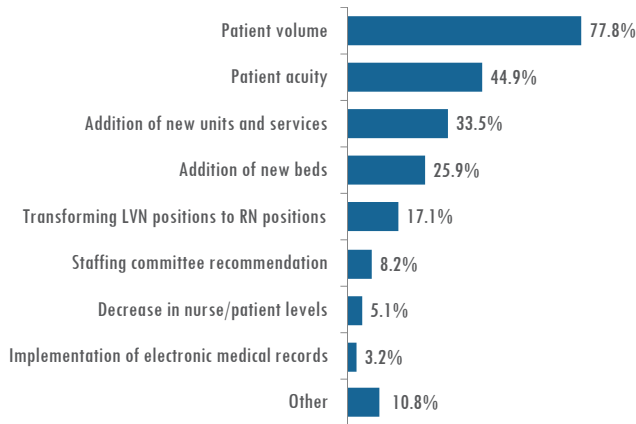
Table 1. Number of hospitals reporting changes in budgeted direct patient care RN FTEs by region

Region	Increased	Decreased	No Change
Panhandle	8	4	17
Rio Grande Valley	12	1	8
North Texas	50	21	52
East Texas	11	2	9
Gulf Coast	23	4	26
Central Texas	18	4	22
South Texas	23	2	14
West Texas	13	4	12
Texas	158	42	160

158 responding hospitals (43.9%) reported having increased budgeted direct patient care RN FTEs in the past year. These hospitals were then asked to indicate reasons why they had done so (Figure 2).
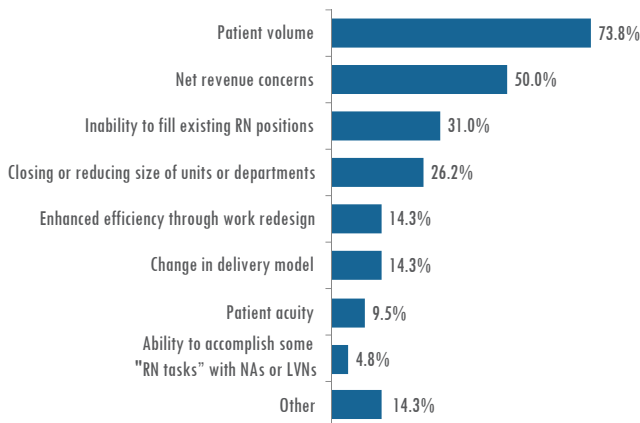
Figure 2. Reasons hospitals increased budgeted RN FTEs

Reason	Percentage
Patient volume	77.8%
Patient acuity	44.9%
Addition of new units and services	33.5%
Addition of new beds	25.9%
Transforming LVN positions to RN positions	17.1%
Staffing committee recommendation	8.2%
Decrease in nurse/patient levels	5.1%
Implementation of electronic medical records	3.2%
Other	10.8%

- Patient volume continues to be the leading reason to increase RN FTEs.
- Other reasons included opening a new hospital and converting beds.

42 responding hospitals (11.7%) reported having decreased budgeted direct patient care RN FTEs in the past year. These hospitals were asked to indicate reasons why they had done so (Figure 3).

Figure 3. Reasons hospitals decreased budgeted RN FTEs

Reason	Percentage
Patient volume	73.8%
Net revenue concerns	50.0%
Inability to fill existing RN positions	31.0%
Closing or reducing size of units or departments	26.2%
Enhanced efficiency through work redesign	14.3%
Change in delivery model	14.3%
Patient acuity	9.5%
Ability to accomplish some "RN tasks" with NAs or LVNs	4.8%
Other	14.3%

- The top reason for decreasing budgeted RNs was also patient volume.
- Hospitals with fewer than 100 beds were less likely to have increased their number of RN FTEs than those with 100 beds or more (34.8% of hospitals with less than 100 beds vs. 56.7% of hospitals with 100 beds or more).
- Other reasons included ownership changes.

160 responding hospitals (44.4%) reported no change in budgeted direct patient care RN FTEs in the past year.

RN Degree Type

Respondents reported the degree types of newly licensed RNs hired and of all RNs employed during the hospital's last fiscal year (Table 2).

Table 2. Newly licensed RNs and all RNs employed last fiscal year by degree type

Degree Type	Newly licensed RN applicants hired	All RNs employed
ADN or Diploma	33.7%	34.0%
BSN or higher degree	66.3%	66.0%

- There was essentially no difference in degree type distribution of newly licensed RNs hired and all RNs employed.

Additional Budgeted FTEs

Table 3 shows the number of FTEs that responding hospitals expect to budget in the next fiscal year, by nursing staff type and region.

Table 3. Number of additional RN, LVN, and NA FTEs hospitals plan to budget next fiscal year by region (n=124)

Region	RNs	LVNs	NAs	Total
n	121	28	71	-
Panhandle	40.0	10.0	20.0	70.0
Rio Grande Valley	112.0	7.0	46.0	165.0
North Texas	555.8	33.0	132.3	721.1
East Texas	116.3	26.2	32.9	175.4
Gulf Coast	634.0	19.0	322.1	975.1
Central Texas	77.9	11.0	36.5	125.4
South Texas	321.9	22.0	56.1	400.0
West Texas	171.0	13.0	44.0	228.0
Texas	2,028.9	141.2	689.9	2,860.0

Note: n=number of responding hospitals in Texas that reported planning to budget additional RN, LVN, or NA FTEs

- RNs were the most commonly reported nursing staff type to be added (70.9% of planned FTEs).

Advance Practice Registered Nurses (APRNs) are classified as one of four types: Nurse Practitioners (NPs), Clinical Nurse Specialists (CNSs), Certified Registered Nurse Anesthetists (CRNAs), and Certified Nurse Midwives (CNMs).

Figure 4 presents the percent of filled APRN positions in responding hospitals by APRN type.

Figure 4. APRN staff mix (n=150), 2019
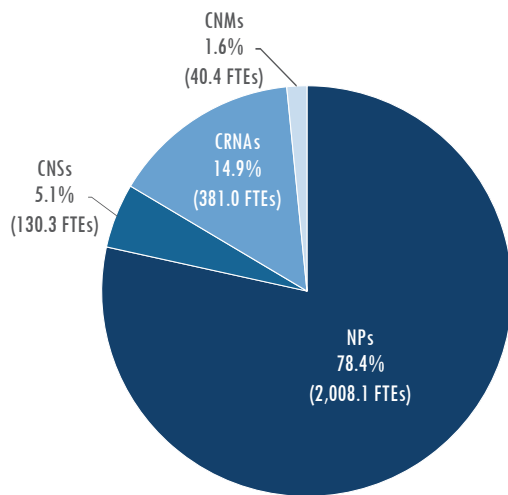
- NPs were the most common APRN type in hospitals (78.4%), followed by CRNAs (14.9%).

Hospitals were asked to specify how their facility employs APRNs - directly, contracted through an outside agency, employed by a private provider group and credentialed by the healthcare organization, unknown/unsure, or the facility does not employ the APRN type (Table 4).

Table 4. How hospitals in Texas employed APRNs in 2019 (n=249)

Method of Employment	NPs	CNSs	CRNAs	CNMs
Hospital directly employs this APRN type.	42.4%	8.9%	6.9%	2.2%
Hospital uses these APRN types who are employed by a private provider group and credentialed by the healthcare organization.	29.6%	0.8%	28.5%	6.4%
Hospital contracts this APRN service through an outside agency	3.9%	0.6%	8.9%	0.3%
Unsure whether hospital directly employs or contracts this APRN type.	0.3%	0.8%	1.9%	0.6%
Hospital does not employ this APRN type.	38.0%	90.0%	56.0%	92.2%

- NPs were the most common APRN type to be employed directly by hospitals (42.4%).
- CRNAs were most commonly employed by a private provider group (28.5%).
- The percentage of hospitals that did not employ CNSs increased from 85.4% in 2017 to 90% in 2019.

Table 5 shows the number of FTEs that responding hospitals expect to budget in the next fiscal year, by APRN type and region.

Table 5. Number of additional APRN FTEs hospitals plan to budget next fiscal year (n=42)

Region	NPs	CNSs	CRNAs	CNMs	Total
n	34	2	12	2	-
Panhandle	11.0	0.0	2.0	1.0	14.0
Rio Grande Valley	3.0	1.0	1.0	0.0	5.0
North Texas	29.1	0.0	4.4	0.0	33.5
East Texas	8.0	0.0	3.0	4.6	15.6
Gulf Coast	8.0	5.0	0.0	0.0	13.0
Central Texas	6.0	0.0	3.0	0.0	9.0
South Texas	3.0	0.0	0.0	0.0	3.0
West Texas	7.0	0.0	2.0	0.0	9.0
Texas	75.1	6.0	15.4	5.6	102.1

Note: n=number of responding hospitals in Texas that reported planning to budget additional APRN FTEs

- Most new positions will be for NPs.
- Hospitals planned to budget for approximately the same number of additional APRN FTEs as in 2017 (103.6 FTEs).
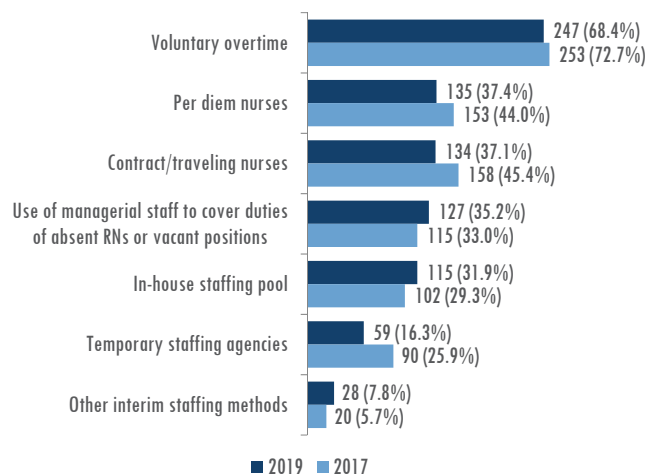
To replace sick or absent RNs, cover budgeted but vacant positions, and handle unusual workloads, hospitals reported using various methods of interim staffing.

Figure 5 shows the percentage of the 361 responding hospitals using each type of interim staffing method.

- Voluntary overtime was the most commonly used method of interim staffing (68.4%), followed by per diem nurses (37.4%).

Figure 5. Number and percentage of responding hospitals using methods of interim staffing, 2017 and 2019

Voluntary overtime: 247 (68.4%) [2019], 253 (72.7%) [2017]
Per diem nurses: 135 (37.4%) [2019], 153 (44.0%) [2017]
Contract/traveling nurses: 134 (37.1%) [2019], 158 (45.4%) [2017]
Use of managerial staff to cover duties of absent RNs or vacant positions: 127 (35.2%) [2019], 115 (33.0%) [2017]
In-house staffing pool: 115 (31.9%) [2019], 102 (29.3%) [2017]
Temporary staffing agencies: 59 (16.3%) [2019], 90 (25.9%) [2017]
Other interim staffing methods: 28 (7.8%) [2019], 20 (5.7%) [2017]

■ 2019 ■ 2017

139 responding hospitals reported filling 1,481.8 FTEs for all nursing staff types using contract/traveling nurses or temporary staffing agencies on 1/25/2019 (Figure 6).

- Of these FTEs, the majority of the contract, agency, and traveling staff hours were worked by RNs, followed by APRNs.

In addition to the types of interim staffing methods used, hospitals were asked to detail the hours and cost* of each method (Table 6).

- A total of 13,105,338 hours of interim staffing (6,300.6 FTEs) were used by 170 responding facilities at a cost of over $460 million, for a cost per hour of $35.13.
- Over half of the cost was expended on voluntary overtime and contract/traveling nurses.
- Although it is the most commonly used method of interim staffing, the percent of all interim staffing hours used by voluntary overtime has been

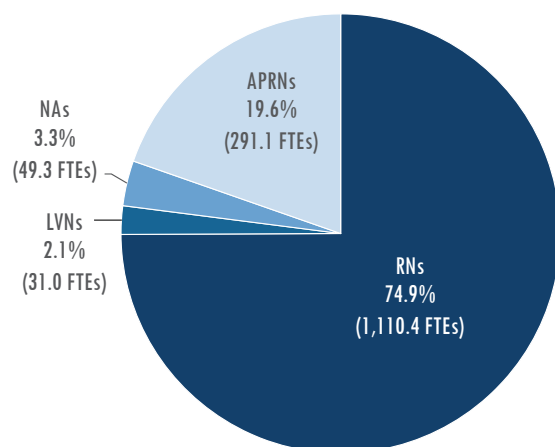**Figure 6. Temporary staffing agency and contract/traveling nurse hours by nursing staff type**

APRNs 19.6% (291.1 FTEs)
NAs 3.3% (49.3 FTEs)
LVNs 2.1% (31.0 FTEs)
RNs 74.9% (1,110.4 FTEs)

Table 6. Hours and cost* of interim staffing in Texas

Method of Interim Staffing	n	Hours	Cost*	Cost/Hour*
Voluntary Overtime	138	3,901,118	$167,597,963.46	$42.96
In-house Staffing Pool	59	2,000,713	$70,914,856.30	$35.44
Contract/Traveling Nurses	85	2,611,530	$95,690,978.18	$36.64
Per Diem Nurses	70	4,123,587	$98,037,843.40	$23.77
Temporary Staffing Agencies	27	380,353	$24,381,578.25	$64.10
Use of Managerial Staff	45	88,037	$3,783,765.64	$42.98
Total	-	13,105,338	$460,406,985.23	$35.13

*The analysis on cost of interim staffing is to demonstrate the cost differential between staffing methods, and is not intended for use in estimating nurse wages. Note: n=number of responding hospitals in Texas that reported hours and cost of interim staffing methods

decreasing, from 50.7% in 2012 to 29.8% in 2019.
- In 2017, similar numbers of hospitals reported using the various methods of interim staffing (Figure 5), but in 2019 many more of them reported their hours and cost of those methods. This led the reported hours to triple and cost to double between 2017 and 2019.

Consequences of Inadequate Staffing

Hospitals were asked to select consequences their facility had experienced in the past year as a result of an inadequate supply of nursing personnel (Table 7).

- The top 5 consequences were the same as in 2017; however, a larger percentage of hospitals reported use of administrative staff to cover nursing duties.

Table 7. Number and percent of responding hospitals experiencing consequences of inadequate nursing supply

Consequence of Inadequate Staffing	# of Hospitals	% of Hospitals
Increase in voluntary overtime	233	64.5%
Increased workloads	212	58.7%
Use of administrative staff to cover nursing duties	162	44.9%
Low nursing staff morale	160	44.3%
Increased use of temporary/agency nurses	144	39.9%
Increased nursing staff turnover	120	33.2%
Difficulty completing required documentation on time	86	23.8%
Delayed admissions	75	20.8%

Consequence of Inadequate Staffing	# of Hospitals	% of Hospitals
Increased absenteeism	63	17.5%
Delays in providing care	54	15.0%
Increased patient/family complaints	53	14.7%
Wage increases	52	14.4%
Inability to expand services	50	13.9%
Declined referrals	23	6.4%
Increased number of incident reports	21	5.8%
Other	13	4.2%
NONE, We had an adequate supply of nursing personnel.	62	17.2%

Conclusion

RNs made up the largest proportions of nurses in hospitals (81.9%), followed by NAs (13.3%), LVNs (2.8%), and APRNs (2.0%). 43.9% of responding hospitals reported an increase in budgeted RN FTEs in the past 2 years, and responding hospitals reported they expect to add 2,860 additional FTEs in the next fiscal year. NPs were the most common APRN type in hospitals (78.4%), followed by CRNAs (14.9%). NPs were most commonly employed directly by hospitals (42.4%), while CRNAs were most commonly contracted through another entity (28.5%).

Voluntary overtime was the most commonly used method of interim staffing (68.4%), followed by per diem nurses (37.4%). A total of 13,105,338 hours of interim staffing were used by 170 responding facilities at a cost of over $460 million, for a cost per hour of $35.13. Over half of the cost was expended on voluntary overtime and contract/traveling nurses.

The top 3 reported consequences of inadequate nurse staffing were an increase in voluntary overtime (64.5%), increased workloads (58.7%), and use of administrative staff to over nursing duties (44.9%).

Texas is projected to face a shortage of nurses from 2015 through 2030.[1] By 2030, the supply of RN FTEs is expected to grow by 35.4% to 271,667, while demand will grow by 53.8% to 331,638, leaving a deficit of 59,970 RN FTEs. Based on these projections, 20% of the projected demand for RNs in 2030 will not be met. Between 2015 and 2030, the demand for RNs in inpatient hospital settings is projected to grow by 57%. This will account for more than half of the growth in demand for RNs across all settings. In order to meet the growing demand for RNs, employers should consider the following strategies:

- Provide safe working conditions for nurses by maintaining appropriate staffing levels and implementing work schedules that minimize fatigue. 64.5% of responding hospitals reported an increase in voluntary overtime, 58.7% reported increased workloads, and 44.9% reported using administrative staff to cover nursing duties in response to an inadequate supply of nurses.

- Based on the findings of the 2018 Workplace Violence Against Nurses Survey Employer survey, hospitals should create a culture of safety for all nurses, encourage reporting of violent events, encourage nurse staffing committees to consider incidents of workplace violence in their work, and establish and maintain ongoing surveillance.[2]

- Encourage nurses to extend their work-life careers. In 2018, 35.1% of RNs in Texas were over 50 years old. Research suggests that retirement of RNs is one of the biggest challendges facing the nursing workforce, and that facilities should work with RNs to delay their retirement by offering shortened work days/shifts, modifying work duties, and making ergonomic accomodations.[3]

- Continue to support endeavors to increase funding levels as well as provide resources such as mentors/preceptors and clinical space to nursing programs in order to increase capacity to admit and graduate nursing students. 31.0% of responding hospitals that reported having decreased budgeted direct patient care RN FTEs in the past year did so because they were unable to fill existing RN positions.

- Continue the work that the Texas Team has begun on increasing nursing education capacity in Texas, including regional partnerships with health care providers and participants (e.g. hospitals, health plans, and businesses) working with academic institutions to support development of the nursing workforce in Texas.[4] A total of 13,105,338 hours of interim staffing were used by 170 responding facilities at a cost of over $460 million ($35.13 per hour). In 2018, 64.5% percent of hospitals reported an increase in voluntary overtime as a consequence of inadequate nurse staffing.

[1] Texas Center for Nursing Workforce Studies. (2016). Nurse supply and demand projections, 2015-2030. http://www.dshs.texas.gov/chs/cnws/WorkforceReports/SupplyDemand.pdf

[2] Texas Center for Nursing Workforce Studies. (2019). Workplace violence against nurses survey. https://www.dshs.texas.gov/chs/cnws/WorkforceReports/2018_WPVAN.pdf

[3] Buerhaus, P.I., Skinner, L.E., Auerbach, D.I., and Staiger, D.O. (2017). Four challenges facing the nursing workforce in the United States. Journal of Nursing Regulation, 8(2). 40-46.

[4] Green, A., Mancini, M.E., Flemming, S., Bingle, C., Jordan, C., Kishi, A., Fowler, C., Thomas, K., Sjoberg, E., and Walker, S. (2011). Building academic capacity through statewide partnerships, 27(6). 51-57.