Washington State's 2019 Licensed Practical Nurse Workforce

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KEY FINDINGS

Information about the demographic, education, and practice characteristics of the licensed practical nurse (LPN) workforce is needed to support health workforce planning in the state. In 2018, Washington's Nursing Care Quality Assurance Commission required that all nurses licensed in the state provide workforce data at initial licensure and renewal through the Nursys e-Notify survey conducted by the National Council of State Boards of Nursing. The survey, which had been voluntary since 2015, enhances the basic nurse workforce supply information available from sources such as the state's health professional licensing files. Other than a one-time survey conducted in 2008, the three demographic variables collected during licensing (age, sex and mailing address) have been the only pieces of information available to characterize the LPN workforce. This report, funded by the Washington Center for Nursing, presents findings from the University of Washington Center for Health Workforce Studies' analyses of data from LPNs who completed the Nursys-e-Notify survey as of May, 2019. Highlights of findings include:

- Among the estimated 9,489 LPNs with a Washington license who were employed in nursing, 83.3% resided in Washington and worked in-state, and 3.3% worked in-state but resided outside. The remaining 13.3% of LPNs with a Washington license and employed in nursing did not practice in Washington. This means that in May 2019, there were an estimated 8,198 LPNs with an active license practicing in Washington.
- Of LPNs with an active Washington license, 87.9% were employed in nursing, 7.5% were unemployed and 4.7% were retired, worked as a volunteer or worked outside of nursing.
- The highest number of LPNs, and number per capita, was found in western Washington along the I-5 corridor. Many LPNs commuted to neighboring counties for work.
- Washington's LPNs were, on average, about 49 years of age and 13.2% were male. In all regions of the state, LPNs under the age of 50 were more likely to be a race other than White and were more likely to be Hispanic/Latino ethnicity than older LPNs.
- An estimated 89.5% of LPNs employed in nursing and practicing in Washington indicated their highest nursing education was a certificate or diploma, and 9.5% had an associate degree. Approximately 1% of LPNs indicated they had a baccalaureate in nursing.
- Fewer LPNs per capita worked in Washington's rural areas (100 per 100,000 population) compared with urban areas (113 LPNs per 100,000 population).

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- Statewide, 83.9% of LPNs practicing in Washington reported working full time (32 hours a week or more), and of these, 11.6% reported having more than one employer.
- Over 40% of LPNs reported working in long term care or hospice, the highest single setting category reported. Washington's LPNs who reported having more than one employer (11.2% overall) were more likely to work in long term care, compared with LPNs with a single employer.

The continued availability of these data will allow Washington State to consistently track LPN workforce trends over time, providing critical information to assess changes in the LPN workforce and better anticipate education, training, practice and policy needs.

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INTRODUCTION

Prior studies of Washington State's licensed practical (LPN) workforce include the "Data Snapshots" conducted since 2006 by the University of Washington Center for Health Workforce Studies (UW CHWS) and funded by the Washington Center for Nursing (WCN).[1-9] Using data from state license records, these Snapshots have provided useful records of changes in the state and regional distribution and basic demographic characteristics of the LPN workforce. However, the information presented in these snapshots was limited to licensee mailing address, birthdate and sex. With such minimal data, it was not possible to assess questions such as how many licensed LPNs actively worked in nursing and how many held a license but did not work as a nurse, where in the state practicing LPNs worked, in which settings they worked, the race and ethnicity of the workforce, and other information relevant to health workforce planning. In 2008 Washington State sponsored surveys of multiple licensed health occupations, including LPNs, which addressed many of the details needed to assess workforce supply. UW CHWS analyzed and published findings from these one-time survey data.[10] In addition, using available data at the time UW CHWS produced projections of the LPN supply and distribution in the state.[11] However resources to update these projections with newer data have not been available since that time.

To collect supply data to answer fundamental questions on supply and distribution of the nursing workforce, Washington's Nursing Care Quality Assurance Commission (NCQAC) required in 2018 that all nurses licensed in the state, including LPNs, must provide workforce data at initial licensure and renewal through the Nursys e-Notify survey conducted by the National Council of State Boards of Nursing (NCSBN).[12] For three years prior to mandatory data submission, nurses were invited to voluntarily submit data through the Nursys e-Notify online survey. Nurses, including those who submitted data prior to January, 2018, were asked to update responses, as needed, when they renewed their license.

With funding from the Washington Center for Nursing, the UW CHWS conducted analyses of these data following the first full year of mandated data collection for LPNs, as well as for advanced registered nurse practitioners (ARNPs)[13] and registered nurses (RNs).[14] This report describes the results of these analyses for Washington's LPNs.

METHODS

Survey responses and a complete roster of nurses licensed in the state were downloaded from Nursys at the end of May, 2019. We linked survey responses to the nursing roster by license number and restricted the analysis to LPNs with an active license at the end of May, 2019. This allowed us to correctly calculate the survey response rate by excluding responses from LPNs who completed the survey at some time in the past, but later had their license transition to inactive status. As a result, this report focuses on LPNs with an active license on May 31, 2019.

QUESTIONNAIRE

The questions in the Nursys questionnaire were derived from the National Forum of Nursing Workforce Center's Minimum Nurse Supply Dataset.[15] Question categories included demographics (ethnicity, race), education (initial and highest nursing and non-nursing education), employment information (current status, hours, setting, position, specialty and location), license status, and country initially licensed as a nurse. The online Nursys questionnaire included skip

logic that specified that demographics and education questions were asked of all nurses and employment questions were asked only of those who indicated they were employed in nursing.

RESPONSE RATES AND SURVEY WEIGHTS

The state licensing board (NCQAC) sent multiple reminders to nurses who had not submitted their required data at licensing or renewal. We found that 5,294 LPNs (48.7% of LPNs with active licenses in May, 2019) had completed the Nursys survey at least once since 2015.

We compared survey respondents to all LPNs with an active Washington license based on age, sex and mailing address, the information provided by all nurses as part of the licensing process regardless of whether they completed the Nursys survey questions. We found that survey respondents were older, less likely to be male and more likely to live outside of Washington compared to all licensed LPNs. Therefore, we created survey weights based on age categories, sex and mailing address location to make survey responses more representative of all LPNs with an active Washington license. See **Appendix A** for further details.

An online supplemental appendix[16] summarizes unweighted response frequencies for each survey question, including the number missing.

STUDY GROUP AND DATA ANALYSIS

All analyses presented in this report are for LPNs with an active Washington State license on May 31, 2019. Some of the figures and tables that follow summarize results for LPNs employed in nursing and practicing in any state. The majority summarize results for LPNs employed as a nurse and practicing in Washington State.

Descriptive statistics were carried out using R statistical software.[17] Weighted estimates and measures of uncertainty were calculated using the R "survey" package[18] (see **Appendix A** for details). Percentages were calculated by excluding missing cases for each variable (complete case analysis) and the percent missing was reported separately for each variable. The one exception was the ethnicity variable. Survey respondents were asked to check a box if they identified as Hispanic/Latino. There was not a corresponding box for "Not Hispanic/Latino" or for "Choose not to answer." Therefore it was not possible to assess the percentage missing for the ethnicity question.

CLASSIFYING RACE AND ETHNICITY

For this survey, race and ethnicity were considered to be two distinct concepts and were reported separately. Respondents could self-identify as belonging to one or more racial category: American Indian and Alaska Native, Asian, Black or African American, Native Hawaiian and Other Pacific Islander, White, or some other race. Respondents could report multiple races. Ethnicity was broken into two categories separate from race: Hispanic or Latino and Not Hispanic or Latino. Hispanics/Latinos could report as any race.

When summarizing race by another category (such as practice location, age or work setting), the number of individuals in that category can be very small for some racial designations. While there is great interest in the distribution of nurses in each racial category, we consolidated all races other than White into the category "race other than White" when presenting race in many (but not all) of the tables in this report due to confidentiality concerns and our efforts to present estimates that are statistically valid. "Race other than White" refers to the racial designation of the respondent and not Hispanic/Latino ethnicity. For example a respondent could be a "race other than White" and Hispanic/Latino or a "race other than White and not Hispanic/Latino or any other combination of the race and ethnicity categories.

GEOGRAPHIC ASSIGNMENT

Using a data crosswalk of Washington ZIP Codes to counties, we attributed residence location to the county associated with the mailing ZIP Code for the nurse's Washington State license. Similarly, we used survey responses for LPNs employed in nursing that indicated the ZIP Code of their primary employer to assign the county of the LPN's primary work location. We then used county designations to assign LPNs to one of the state's nine Accountable Communities of Health (ACH) healthcare planning regions[19] for both the residence and practice location ZIP Codes.

We classified the ZIP Code in which LPNs practiced as urban or rural using the Rural-Urban Commuting Areas (RUCA) geographic taxonomy codes[20] and also estimated the number of LPNs working in each county or ACH per 100,000 population based on 2018 estimates of the population in each ZIP Code.[21]

HUMAN SUBJECTS

The procedures and data protection protocols for this study were approved by the State of Washington Institutional Review Board

FINDINGS

NURSES WITH WASHINGTON STATE LPN LICENSES

On May 31, 2019, there were 10,864 LPNs with an active Washington state license. An estimated 87.9% were employed in nursing, 7.5% were unemployed and the remaining 4.7% were retired, worked as a nurse only as a volunteer or worked in a field other than nursing (**Table 1**).

Table 1: Employment Status of LPNs with Active Washington Licenses, May 2019

	Estimated Statewide LPN Totals	
	Number (95% CI)	Column Percent (95% CI)
LPNs with an active WA license	10,864	100%
Employed in nursing	9,489 (9,419 - 9,559)	87.9% (87.2% - 88.5%)
Unemployed	807 (752 - 863)	7.5% (7.0% - 8.0%)
Employed in a field other than nursing	267 (234 - 299)	2.5% (2.2% - 2.8%)
Working in nursing only as a volunteer	129 (107 - 152)	1.2% (1.0% - 1.4%)
Retired	106 (86 - 126)	1.0% (0.8% - 1.2%)

Notes: 1) LPNs could be employed in Washington or any other state. The number of active licenses is a complete count from state licensing records so confidence intervals do not apply. All other numbers in the table are weighted estimates, including 95% confidence intervals, based on survey responses.
2) Missing survey responses: None – all survey respondents filled out the employment status question.

Among unemployed LPNs, over 35% selected "Other" as the reason for being unemployed. There was not a write-in option for this question, so it was not possible to classify these responses further. Among responses that were not in the "Other" category, the top three reasons for being unemployed were "Taking care of home and family" (29.6% of all unemployed LPNs), "School" (18.1%), "Difficulty in finding a nursing position" (11.4%) (**Table 2**).

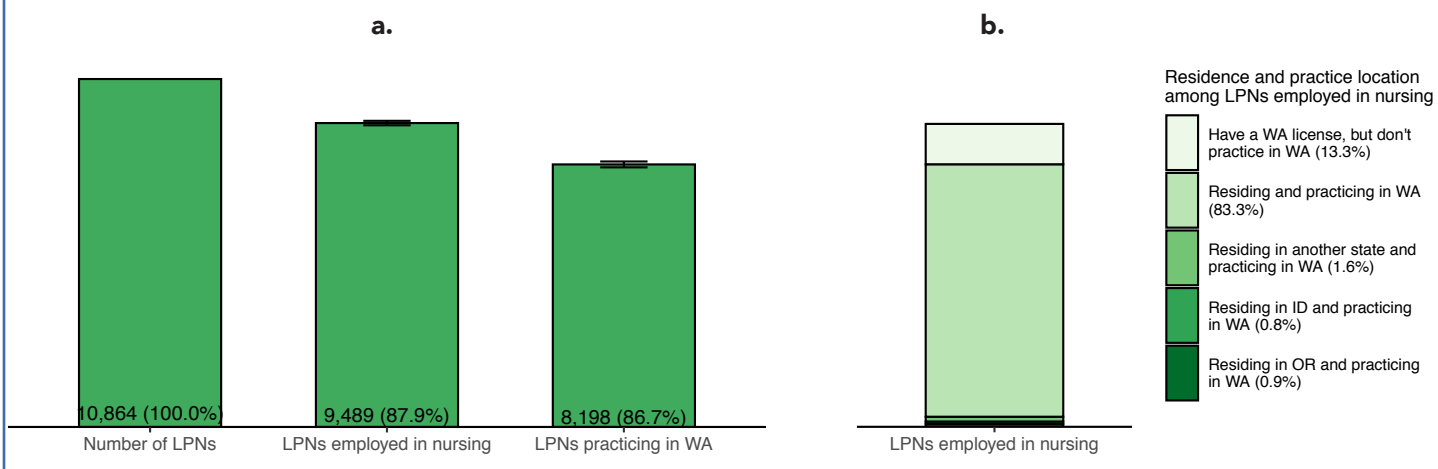
Table 2: Reason Cited by Washington's LPNs for Being Unemployed, May 2019

Reason for being unemployed	Estimated Statewide LPN Totals	
	Number (95% CI)	Column Percent (95% CI)
Taking care of home and family	236 (205 - 267)	29.6% (26.3% - 32.9%)
School	144 (119 - 169)	18.1% (15.3% - 20.9%)
Difficulty in finding a nursing position	91 (72 - 110)	11.4% (9.1% - 13.7%)
Disabled	20 (11 - 29)	2.5% (1.4% - 3.6%)
Inadequate Salary	12 (5 - 19)	1.5% (0.7% - 2.4%)
Other	294 (259 - 328)	36.9% (33.4% - 40.3%)

Notes: 1) Only one answer was allowed for each unemployed LPN.
2) 95% CI = 95% Confidence Interval. Percent calculations do not include missing data.
3) Missing data: 1.3% of unemployed LPNs did not answer the reason for unemployment question.

Among the estimated 9,489 LPNs with a Washington license who were employed in nursing, 83.3% with a known practice address resided in Washington and worked in-state, 0.9% resided in Oregon and practiced in Washington, 0.8% resided in Idaho and practiced in Washington and 1.6% practiced in Washington but resided in a state other than Washington, Oregon or Idaho. (**Figure 1a and 1b**). These figures also show that an estimated 13.3% of LPNs with a Washington license and employed in nursing did not practice in Washington. This means that in May 2019, there were an estimated 8,198 LPNs with an active license practicing in Washington.

Figure 1a: LPNs with Active Washington Licenses, May 2019
Figure 1b: Residence and Practice Location Among LPNs Employed in Nursing, May 2019



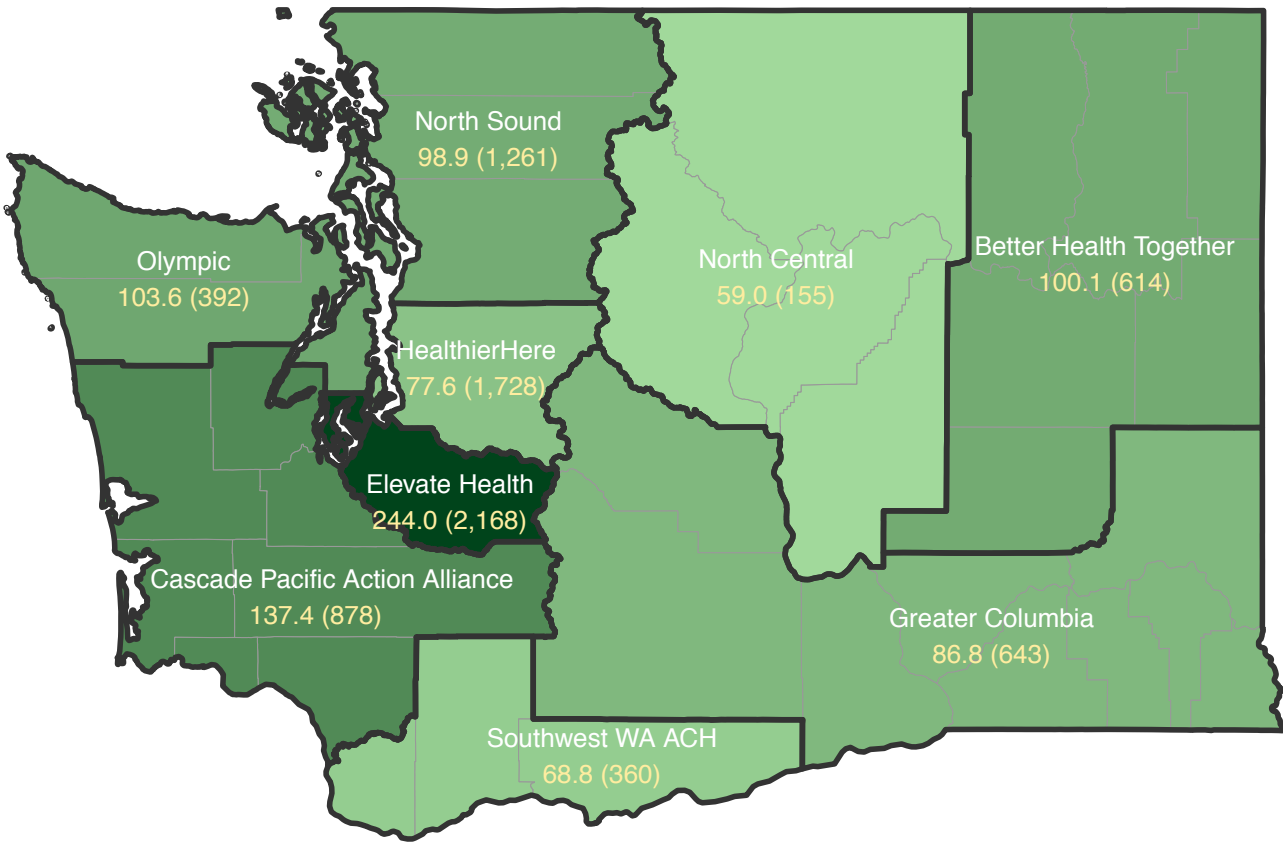
Notes: 1) Residence was attributed to the state associated with the mailing ZIP Code for the LPN's Washington State license. Practice location was based on survey responses for actively employed LPNs indicating the ZIP Code of their primary employer.
2) Percent calculations do not include missing data. For Figure 1a, percentages are out of the total licensed in WA. For Figure 1b, percentages are out of the number employed in nursing.
3) Missing data: Among LPNs employed in nursing, 0.4% did not fill out practice location and none were missing residence location.

The remainder of this report will focus on the estimated 8,198 nurses actively employed as LPNs and practicing in Washington.

PRACTICE LOCATION

There was wide variation in the number of LPNs practicing in each region of the state in terms of both the estimated number of practitioners per 100,000 population and weighted counts based on survey responses. **Figure 2** shows the estimated count and number of LPNs per 100,000 population practicing in each of the state's ACH health care planning regions. The highest number of LPNs, in both count and per 100,000 population, practiced in the Elevate Health ACH, comprised solely of Pierce County, where the state's third most populous city, Tacoma, is located (2,168 LPNs or 244.0 LPNs per 100,000 population). HealthierHere ACH (King County and containing the Seattle metro area) had the second highest estimated count of LPNs (1,728) but a relatively low number of LPNs per 100,000 population (77.6) because this is the most populated region of the state. North Central ACH (Okanogan, Chelan, Douglas and Grant Counties) had the fewest LPNs (155 or 59.0 per 100,000 population).

Figure 2: Number of LPNs per 100,000 Population (Estimated Count) Practicing in Each Accountable Community of Health, May 2019



Notes: 1) The first number in each region is the estimated number of LPNs per 100,000 population practicing in that ACH. The estimated count practicing in each ACH is in parentheses. The map color intensity is based on the number of LPNs per 100,000 population.
2) Practice location was based on survey responses for LPNs employed in nursing indicating the ZIP Code of their primary employer.
3) Missing data: 0.3% missing practice location.

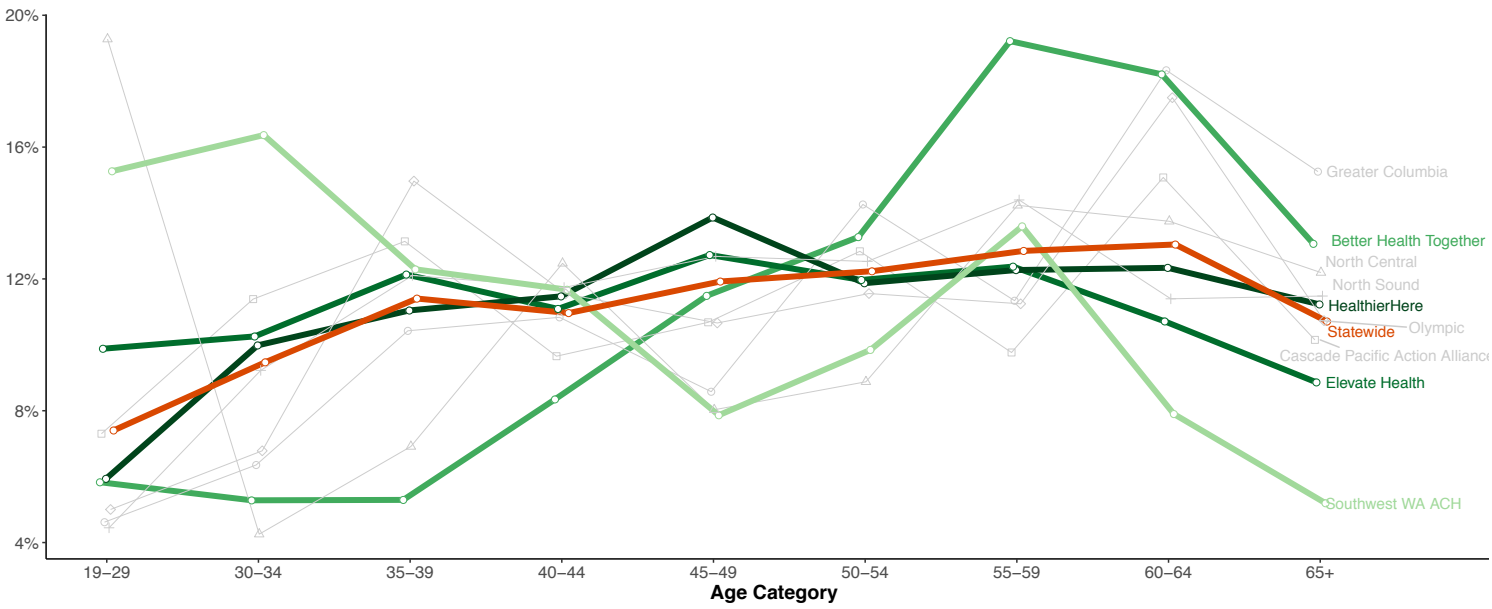
LPN DEMOGRAPHICS

Age - The estimated average age of Washington's practicing LPNs was 48.5 years and the percentage of practicing LPNs in the state who were age 55 and older was 36.6% (**Table 3**). Some areas of the state had an LPN workforce with a higher average age. For example, the average age of LPNs practicing in the Better Health Together ACH (Ferry, Stevens, Pend Oreille, Lincoln, Spokane and Adams counties) was 52.0 years with 50.5% age 55 or older.

Statewide, the percentage of practicing LPNs in each age category gradually increased from 7.4% in the 19-29 category to 13.8% in the 60-64 age group before dropping to 10.7% of all practicing LPNs in the 65+ category (**Figure 3** orange line and **Table B2**). Figure 3 illustrates that the age distribution varied by ACH, however. For example, Better Health Together ACH, with the highest mean age, had a low percentage of LPNs in the younger age groups and a high percentage of LPNs in older age groups. Southwest Washington ACH had the opposite age distribution, with a high percentage in younger age groups and a low percentage in most older age groups, resulting in the lowest mean age of all ACHs (43.7 years).

Sex - Male LPNs comprised 13.2% of LPNs practicing in-state. The percentage of LPNs who were male ranged from 10.0% in North Central ACH to 14.4% in Better Health Together ACH (**Table 3**). Close to 20% of the LPNs working in hospitals were male, compared to 7.7% of LPNs working in the ambulatory care setting (**Table B1**).

Figure 3: Percentage of LPNs in Each Age Group in 2019, Statewide and by ACH



Notes: 1) Percent calculations do not include missing data.
2) Missing data: Practice location = 0.3% missing statewide.

Table 3: Demographic and Work Characteristics of LPNs Practicing in Washington Statewide and by Accountable Community of Health, May 2019

	Statewide	Accountable Community of Health (ACH) in which LPNs practice								
		1. BHT N ≈ 614	2. CPAA N ≈ 878	3. EH N ≈ 2,168	4. GC N ≈ 643	5. HH N ≈ 1,728	6. N Central N ≈ 155	7. N Sound N ≈ 1,261	8. Olympic N ≈ 392	9. SW N ≈ 360
Age										
Mean	48.5 (48.2 - 48.8)	52.0 (51.0 - 53.0)	48.0 (47.2 - 48.9)	46.9 (46.4 - 47.5)	51.3 (50.3 - 52.3)	48.7 (48.1 - 49.3)	47.1 (44.7 - 49.5)	49.1 (48.5 - 49.8)	49.6 (48.4 - 50.8)	43.7 (42.3 - 45.0)
% 55 or older	36.6% (35.5% - 37.7%)	50.5% (46.5% - 54.5%)	35.0% (31.9% - 38.1%)	31.9% (29.9% - 33.9%)	44.9% (41.0% - 48.8%)	35.8% (33.5% - 38.1%)	40.2% (32.4% - 47.9%)	37.3% (34.6% - 40.0%)	39.5% (34.6% - 44.3%)	26.7% (22.2% - 31.2%)
Sex										
Male	13.2% (12.5% - 14.0%)	14.4% (11.5% - 17.2%)	10.4% (8.3% - 12.5%)	14.3% (12.7% - 15.9%)	11.9% (9.3% - 14.5%)	14.9% (13.1% - 16.7%)	10.0% (5.0% - 15.1%)	11.9% (10.0% - 13.8%)	13.4% (9.9% - 16.9%)	12.1% (8.6% - 15.6%)
Ethnicity										
Hispanic or Latino	6.3% (5.7% - 6.8%)	4.7% (3.0% - 6.4%)	6.6% (4.9% - 8.3%)	6.2% (5.2% - 7.3%)	15.9% (12.9% - 18.8%)	3.9% (2.9% - 4.8%)	12.6% (7.1% - 18.1%)	5.8% (4.4% - 7.1%)	3.1% (1.3% - 4.8%)	5.2% (2.8% - 7.5%)
Race										
Race other than White	26.8% (25.8% - 27.8%)	11.0% (8.5% - 13.6%)	12.7% (10.4% - 15.0%)	31.7% (29.7% - 33.8%)	17.0% (13.9% - 20.1%)	42.9% (40.4% - 45.3%)	14.9% (9.0% - 20.7%)	22.8% (20.4% - 25.3%)	25.3% (20.9% - 29.7%)	19.0% (14.8% - 23.2%)
Work Characteristics										
Percent working in a rural area	10.8% (10.1% - 11.4%)	9.6% (7.3% - 12.0%)	35.1% (31.9% - 38.3%)	NA	16.6% (13.6% - 19.6%)	NA	55.2% (47.2% - 63.2%)	16.5% (14.4% - 18.7%)	26.9% (22.5% - 31.4%)	2.3% (0.7% - 3.9%)
Percent Full-Time (≥ 32 hours per week)	83.9% (83.1% - 84.7%)	86.0% (83.3% - 88.8%)	81.9% (79.3% - 84.5%)	86.5% (85.0% - 88.0%)	83.5% (80.6% - 86.4%)	85.1% (83.4% - 86.8%)	72.9% (65.6% - 80.1%)	79.9% (77.7% - 82.2%)	83.6% (79.9% - 87.3%)	83.2% (79.2% - 87.1%)
Mean Hours Worked per Week (Full-time)	41.3 (41.1 - 41.5)	40.7 (40.0 - 41.4)	41.5 (40.9 - 42.1)	41.3 (40.9 - 41.6)	41.9 (41.2 - 42.7)	41.4 (41.0 - 41.9)	40.2 (38.7 - 41.7)	41.6 (41.0 - 42.1)	40.1 (39.3 - 40.8)	40.6 (39.9 - 41.3)
Percent Working for 2 or More Employers	11.2% (10.5% - 11.9%)	8.4% (6.2% - 10.7%)	12.2% (10.0% - 14.4%)	11.0% (9.6% - 12.4%)	12.6% (10.0% - 15.2%)	12.9% (11.3% - 14.6%)	9.1% (4.5% - 13.8%)	10.3% (8.6% - 12.1%)	7.3% (4.7% - 10.0%)	11.9% (8.5% - 15.3%)

Notes: 1)) 95% CI = 95% confidence interval. NA = Not applicable (there were no ZIP Codes designated as rural in these ACHs).
2) Race other than White was defined as all races other than White alone (including two or more races). Hispanic/Latino ethnicity was considered separately and did not factor in to the classification of race.
3) Rural/Urban designation based on rural-urban commuting area codes (RUCA version 3.1) for the ZIP Code in which LPNs were employed.[20]
4) Full-time employment was defined as greater than or equal to 32 hours worked per week for all employers.
5) All LPNs included in this table indicated that their primary employment was in nursing. Additional employers could have been in nursing or another field, if applicable.
6) Percent calculations do not include missing data, other than for the Hispanic/Latino question. Survey respondents were asked to check a box if they identified as Hispanic/Latino. There was not a corresponding box for not Hispanic/Latino" or for "Choose not to answer." Therefore, it was not possible to assess the percentage of respondents who chose not to answer the ethnicity question.
7) Counties comprising ACHs: 1) Better Health Together (BHT) includes Adams, Ferry, Lincoln, Pend Oreille, Spokane, and Stevens counties, 2) Cascade Pacific Action Alliance (CPAA) includes Cowlitz, Grays Harbor, Lewis, Mason, Pacific, Thurston, and Wahkiakum counties, 3) Elevate Health (EH) is Pierce County, 4) Greater Columbia (GC) includes Asotin, Benton, Columbia, Franklin, Garfield, Kittitas, Walla Walla, Whitman, and Yakima counties, 5) HealthierHere (HH) is King County, 6) North Central (N. Central) includes Chelan, Douglas, Grant, and Okanogan counties. 7) North Sound (N. Sound) includes Snohomish, Skagit, Island, San Juan, and Whatcom counties, 8) Olympic Community of Health (Olympic) includes Clallam, Jefferson and Kitsap counties, 9) Southwest Washington (SW) includes Clark, Klickitat, and Skamania counties.
8) Missing data: Practice location and rural/urban designation = 0.3% missing statewide; Race = 1.9% statewide, range 1.1% (HH, SW) – 5.3% GC; Highest nursing education = 0.1% statewide, range 0.0% (multiple ACHs) – 0.4% (HH). All other categories: No missing data for LPNs employed in nursing and practicing in WA.

Race and Ethnicity - Table 4 compares the race and ethnicity of the practicing LPN workforce in May, 2019 with the estimated Washington State overall population in April, 2018.[21] Based on survey responses, a lower percentage of LPNs employed in nursing and practicing in Washington identified as Hispanic/Latino compared with the overall state population. The percentage of LPNs who were Black (9.2%) was higher than the percentage of Washington residents who were Black (4.1%) and the percentage of White LPNs was lower than the percentage of White Washington residents. The percentage of LPNs who were a race other than White was higher in HealthierHere ACH (42.9%) and Elevate Health ACH (31.7%), indicating that the distribution of non-White practicing LPNs was not equal throughout the state. Similarly, Greater Columbia and North Central ACHs had higher percentages of Hispanic/Latino LPNs than other regions (Table 3).

Table 4: Hispanic/Latino Ethnicity and Racial Composition of Washington's Practicing LPNs (2019) Compared with the 2018 Washington State Overall Population

	LPNs practicing in WA, 2019 N = 8.198		Washington population, 2018 N = 7,427,570
Hispanic and race identification, among responding LPNs	Estimated Statewide Total (95% CI)	Percent (95% CI)	Percent
Hispanic or Latino	514 (468 - 559)	6.3% (5.7% - 6.8%)	13.0%
Race:			
American Indian or Alaska Native alone	84 (65 - 102)	1.0% (0.8% - 1.3%)	1.8%
Asian alone	702 (650 - 755)	8.7% (8.1% - 9.4%)	8.7%
Black/African American alone	737 (683 - 791)	9.2% (8.5% - 9.8%)	4.1%
Native Hawaiian or Other Pacific Islander alone	71 (53 - 88)	0.9% (0.7% - 1.1%)	0.8%
White alone	5,885 (5,780 - 5,989)	73.2% (72.2% - 74.2%)	79.5%
Other race alone	214 (184 - 244)	2.7% (2.3% - 3.0%)	NA
Two or more races	350 (312 - 388)	4.4% (3.9% - 4.8%)	5.1%

Notes: 1) 95% CI = 95% Confidence Interval.
2) Percent calculations for LPNs do not include missing data.
3) Missing data for LPNs: 1.9% for race identification. Survey respondents were asked to check a box if they identified as Hispanic/Latino ethnicity. There was not a corresponding box for "Not Hispanic/Latino" or for "Choose not to answer." Therefore, it was not possible to assess the percentage of missing responses for the ethnicity question.
4) State population estimates from: Washington State Office of Financial Management.[21]

EDUCATION

Survey respondents were asked about their highest education in a nursing program and their highest education of any type. An estimated 89.5% of LPNs employed in nursing and practicing in Washington indicated their highest nursing education was a certificate or diploma, 9.5% indicated they had an associate degree and 1.0% indicated they had a baccalaureate from a nursing program. When considering the highest level of education from either a nursing or a non-nursing program, 15.6% of LPNs indicated they had an associate degree and 5.4% indicated they had a baccalaureate (Table 5).

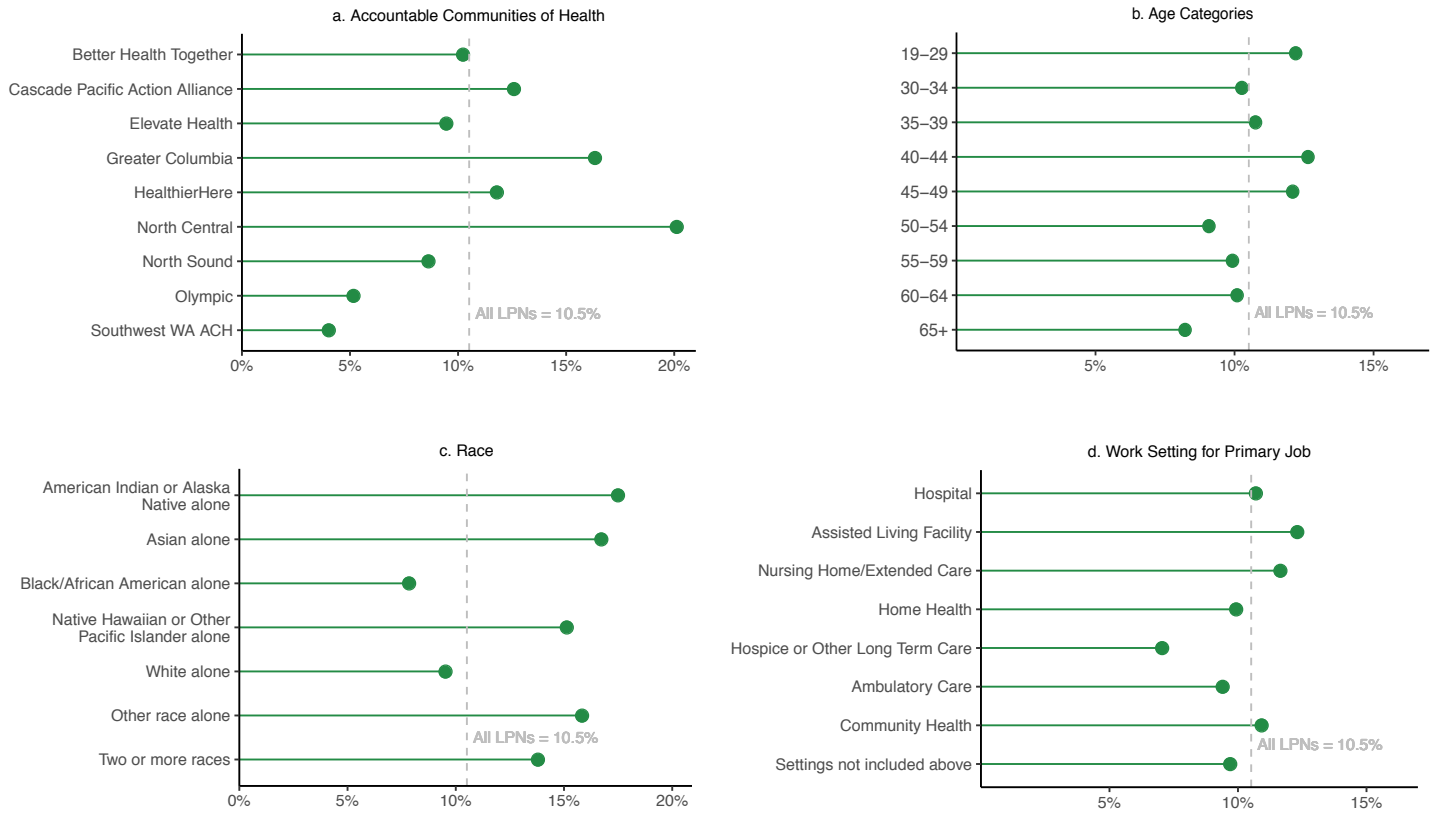
Table 5: Highest Nursing Education Compared to Highest Education of Any Type for LPNs Practicing in Washington, May 2019

	Highest Nursing Education Column Percent (95% CI)]	Highest Education of Any Type Column Percent (95% CI)]
Certificate or diploma	89.5% (88.8% - 90.2%)	79.0% (78.1% - 80.0%)
Associate degree	9.5% (8.9% - 10.2%)	15.6% (14.8% - 16.4%)
Baccalaureate	1.0% (0.8% - 1.2%)	5.4% (4.9% - 5.9%)

Notes: 1) 95% CI = 95% confidence interval. Percent calculations do not include missing data.
3) Missing data: Among survey respondents who indicated they were employed in nursing and practicing in WA: Highest nursing education: 0.1%. Highest education of any type: 0.03%.

Focusing on highest nursing education, **Figure 4** shows that the percentage of LPNs who reported having an associate degree or higher varied by geography, age, race and work setting. The ACHs with the highest percentage of LPNs with an associate degree in nursing or higher were North Central (20.1%) and Greater Columbia (16.3%) (**Figure 4a**). LPNs less than 50 years old reported having an associate degree or higher at rates approximately equal to or above the state average, whereas older LPNs reported having an associate degree or higher at rates approximately equal to or below the state average (**Figure 4b**). Black LPNs were the least likely to have a nursing degree above the certificate or diploma level (7.9% of Black LPNs reported an associate degree in nursing or higher) followed by White LPNs (9.5%) (**Figure 4c**). When considering highest nursing education by work setting, LPNs working in hospice and ambulatory care had the lowest rate with an associate degree or higher (7.1% and 9.4% respectively, **Figure 4d**).

Figure 4: Among all LPNs Practicing in Washington, the Percent with an Associate Degree in Nursing or Higher by ACH, Age, Race and Work Setting, 2019



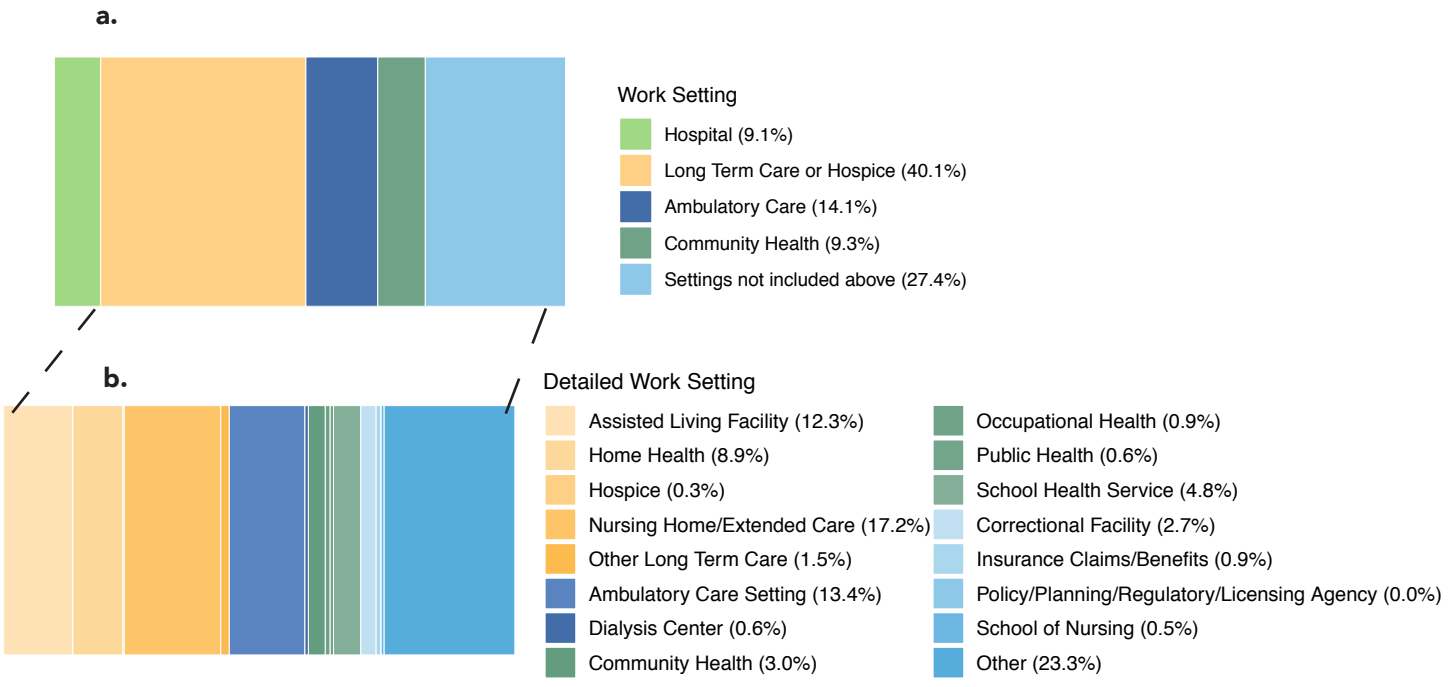
Notes: 1) Percent calculations do not include missing data.
2) Missing data: Among survey respondents who indicated they were employed as an LPN:
Highest nursing education: 0.1%; Race: 1.9%; Work setting for primary employer: 0.3%; All other categories: No missing data for LPNs employed in nursing and practicing in WA.
3) Counties comprising ACHs: 1) Better Health Together includes Adams, Ferry, Lincoln, Pend Oreille, Spokane, and Stevens counties, 2) Cascade Pacific Action Alliance includes Cowlitz, Grays Harbor, Lewis, Mason, Pacific, Thurston, and Wahkiakum counties, 3) Elevate Health is Pierce County, 4) Greater Columbia includes Asotin, Benton, Columbia, Franklin, Garfield, Kittitas, Walla Walla, Whitman, and Yakima counties, 5) HealthierHere is King County, 6) North Central includes Chelan, Douglas, Grant, and Okanogan counties. 7) North Sound includes Snohomish, Skagit, Island, San Juan, and Whatcom counties, 8) Olympic Community of Health includes Clallam, Jefferson and Kitsap counties, 9) Southwest Washington includes Clark, Klickitat, and Skamania counties.

WORK SETTING

An estimated 40.1% of LPNs practicing in Washington worked in a long term care or hospice setting in 2019, making this the work setting with the highest percentage of practicing LPNs (**Figure 5** and **Table B1**). Breaking this down into more detailed setting categories, an estimated 17.2% worked in a nursing home or extended care facility, 12.3% worked in an assisted living facility, 8.9% worked in home health and 1.8% worked in hospice or other long term care settings (**Figure 5b**). It is important to note that more than 23% of LPNs selected "other" for their work setting. There was no write-in option for LPNs who selected "other" so we are not able to place these responses in a more appropriate category. It is possible that the estimates presented below for work setting would change if the "other" responses could be reclassified.

Selected demographic and work characteristics for LPNs practicing in Washington by work setting are shown in **Figure 6**, with statewide averages shown as a dashed vertical line in each graph (see also **Table B1** for point estimates and confidence intervals). The home health setting had the highest percentage of LPNs age 55 or older (44.8%) (**Figure 6a**). Hospitals and assisted living facilities were the settings with the lowest percentage of Hispanic/Latino LPNs (**Figure 6b**), but these, along with nursing home/extended care facilities were the settings with the highest percentage of LPNs who were a race other than White (**Figure 6c**). Home health and community health setting had the highest percentage of LPNs with more than one employer (**Figure 6d**).

Figure 5: Work Setting of Primary Employer for LPNs Practicing in Washington, 2019

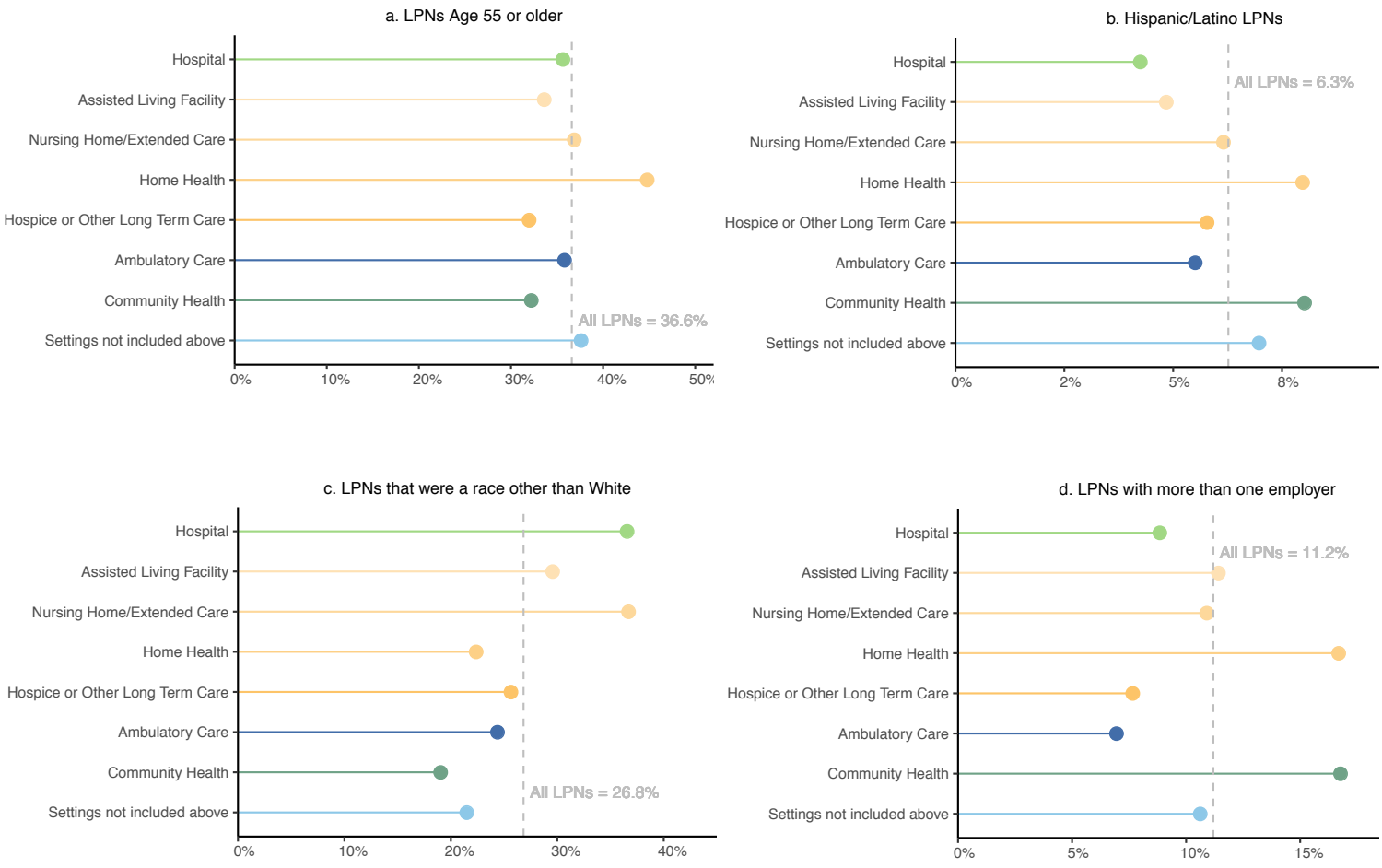


a. General work setting categories.

b. Detailed categories for non-hospital settings.

Notes: 1) Percent calculations do not include missing data.
2) Missing data: 0.3% missing work setting

Figure 6: Selected Demographic and Work Characteristics for LPNs Practicing in Washington in 2019, by Work Setting of Primary Employer



Notes: 1) The maximum value on the x-axis of each graph differs, so the length of the lines in one graph should not be compared to the length of the lines in another graph.
2) Race other than White was defined as all races other than White alone (including two or more races). Hispanic/Latino ethnicity was considered separately and did not factor in to the classification of race.
3) Full-time employment defined as greater than or equal to 32 hours worked per week for all employers.
4) Percent calculations do not include missing data, other than for the Hispanic/Latino question. Survey respondents were asked to check a box if they identified as Hispanic/Latino ethnicity. There was not a corresponding box for not Hispanic/Latino" or for "Choose not to answer." Therefore, it was not possible to assess the percentage of respondents who chose not to answer the ethnicity question.
5) Missing data: Among survey respondents who indicated they were employed as an LPN:
Work Setting: 0.3% statewide. Race: 1.9% statewide, range 0.9% (ambulatory care) – 4.2% (hospice or other long term care). All other categories: No missing data for LPNs employed in nursing and practicing in WA.

PROFESSIONAL HOURS AND NUMBER OF EMPLOYERS

Statewide, 83.9% of LPNs practicing in Washington reported working 32 hours or more per week for all employers, which we defined as working full-time (**Table B5**). This rate was reported relatively consistently across most regions of the state, although 72.9% of LPNs in North Central ACH reported working 32 hours or more per week (**Table 3**). Home health was the setting with the lowest percentage of LPNs working full-time (70.7%) (**Table B1**). Compared to part-time workers, full-time workers were younger, more likely to be male and more likely to be a race other than White. Among LPNs working 32 hours or more per week, 11.6% reported having more than one employer compared to 9.2% having more than one employer for part-time workers (**Table B5**).

Among all LPNs practicing in Washington who reported their primary employment as being in nursing, 11.2% reported having two or more employers. It is important to note that, based on the way the survey question was asked ("How many employers are you currently working for?"), additional employers could be in nursing or in another field and an LPN could work for one employer, such as a temporary agency, and work in multiple jobs. Hospitals and ambulatory care were the work settings where LPNs were the least likely to have more than one employer (**Figure 6d**). Across long term care settings, 12.2% of LPNs worked for more than one employer, with the highest percentage in home health (16.7% - **Table B1**). By geography, LPNs with two or more employers ranged from 7.6% of LPNs practicing in Olympic ACH to 12.9% of LPNs practicing in HealthierHere ACH (**Table 3**). Compared to LPNs with only one nursing employer, LPNs with two or more employers were younger, more likely to have an associate degree in nursing, more likely to be a race other than White and more likely to be Hispanic or Latino (**Table B6**).

WORK SPECIALTY AND JOB TITLE FOR PRIMARY NURSING EMPLOYMENT

LPNs reported the work specialty / area of practice for their primary nursing position. The 15 most-selected specialties are listed in **Table 6**. More than 1 in 4 LPNs who answered this question reported geriatrics/gerontology as their specialty. The next highest specialties were psychiatric/mental health/substance abuse (8.2% of all LPNs who answered this question), home health (7.4%), rehabilitation (6.3%) and pediatrics (5.9%). Note that 13.9% of LPNs who

Table 6: Work Specialty of Primary Employer for Washington's LPNs, May 2019

Specialty/Area of Practice	Estimated Statewide LPN Totals	
	Number (95% CI)	Column Percent (95% CI)
Geriatric/Gerontology	2,042 (1,960 - 2,124)	28.9% (27.8% - 30.0%)
Psychiatric/Mental Health/Substance Abuse	579 (532 - 627)	8.2% (7.5% - 8.9%)
Home Health	521 (477 - 566)	7.4% (6.8% - 8.0%)
Rehabilitation	448 (405 - 490)	6.3% (5.7% - 6.9%)
Pediatrics	419 (379 - 460)	5.9% (5.4% - 6.5%)
Adult Health	397 (357 - 436)	5.6% (5.1% - 6.2%)
Family Health	342 (305 - 379)	4.8% (4.3% - 5.4%)
School Health	311 (276 - 346)	4.4% (3.9% - 4.9%)
Acute Care/Critical Care	257 (225 - 290)	3.6% (3.2% - 4.1%)
Medical Surgical	172 (145 - 198)	2.4% (2.1% - 2.8%)
Oncology	137 (113 - 160)	1.9% (1.6% - 2.3%)
Women's Health	133 (109 - 156)	1.9% (1.5% - 2.2%)
Maternal - Child Health/Obstetrics	108 (87 - 128)	1.5% (1.2% - 1.8%)
Community	106 (85 - 127)	1.5% (1.2% - 1.8%)
Other - Clinical Specialties	489 (445 - 533)	6.9% (6.3% - 7.5%)
Other - Not in the top 15	609 (560 - 657)	8.6% (7.9% - 9.3%)

Notes: 1) 95% CI = 95% Confidence Interval. Percent calculations do not include missing data.
2) The table shows LPNs with primary employment in nursing and practicing in Washington.
3) Missing data: 13.9% did not answer the specialty question.

indicated they were practicing in Washington did not answer this question. The estimated number of LPNs in each specialty was calculated by excluding survey responses with missing data for this question. Therefore, the actual percentage of LPNs in each specialty may be different than we were able to estimate with such a high rate of missing data.

The job title for the LPN's primary nursing employment is shown in **Table 7**. More than three-quarters of LPNs practicing in Washington reported "staff nurse" as their primary job title and an additional 7.8% listed "nurse manager." Other job titles were cited at lower percentages.

Table 7: Job Titles for Primary Employment Position for LPNs Practicing in Washington, May 2019

	Estimated Statewide Totals	
Job Title for Primary Employment Position	Number (95% CI)	Column Percent (95% CI)
Staff Nurse	6,176 (6,070 - 6,281)	76.4% (75.5% - 77.4%)
Nurse Manager	631 (581 - 680)	7.8% (7.2% - 8.4%)
Case Manager	162 (136 - 187)	2.0% (1.7% - 2.3%)
Nurse Faculty/Educator	107 (87 - 128)	1.3% (1.1% - 1.6%)
Nurse Executive	55 (40 - 69)	0.7% (0.5% - 0.9%)
Consultant	19 (10 - 28)	0.2% (0.1% - 0.3%)
Nurse Researcher	15 (8 - 23)	0.2% (0.1% - 0.3%)
Clinical Nurse Leader	12 (5 - 19)	0.1% (0.1% - 0.2%)
Other - Health Related	879 (822 - 936)	10.9% (10.2% - 11.6%)
Other - Not Health Related	24 (14 - 34)	0.3% (0.2% - 0.4%)

Notes: 1) 95% CI = 95% Confidence Interval. Percent calculations do not include missing data.
2) The table shows LPNs employed in nursing and practicing in Washington.
3) Missing data: 1.5% did not answer the job title question

LPNS WORKING IN RURAL AREAS

There were an estimated 111 LPNs practicing in Washington in 2019 per 100,000 population (**Table B4**). Statewide, there were fewer LPNs per capita working in rural areas (100 per 100,000 population) compared with urban areas (113 LPNs per 100,000 population). However, Western Washington (see notes for **Table B4** for a list of the relevant counties) showed the opposite relationship, with a higher number of practicing LPNs per capita in rural areas (131 per 100,000 population) compared with urban areas (116 per 100,000 population).

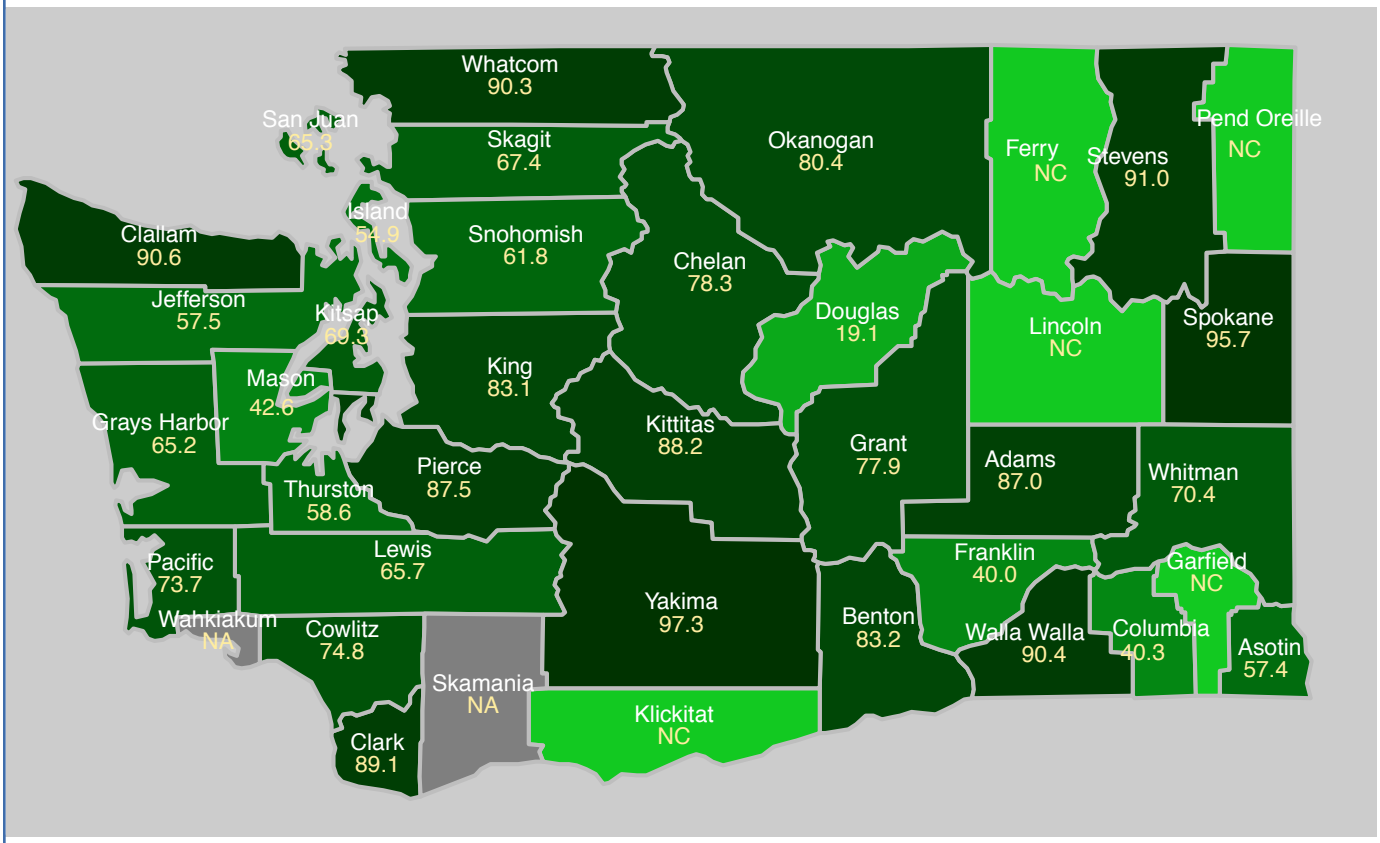
Statewide, rural areas had a higher percentage of LPNs with an associate degree in nursing (compared with a certificate or diploma) and a lower percentage of LPNs who were male, compared with urban areas (**Table B4**). This table also shows that there were differences in race and ethnicity of LPNs working in rural areas in Eastern Washington compared to Western Washington. The percentage of LPNs identifying as Hispanic/Latino was highest in Eastern Washington. Considering race in Western Washington, urban areas had a higher percentage of LPNs identifying as a race other than White compared with rural areas. The opposite was true in Eastern Washington, where the percentage of non-White LPNs was higher in rural areas compared with urban areas.

COMMUTING PATTERNS FOR WASHINGTON'S LPNS

We compared residence address (based on the mailing ZIP Code provided by each LPN during licensing) to work address (based on the practice location ZIP Code provided by survey respondents who indicated they were employed in nursing) at the county level to understand where LPNs lived compared to where they worked. In 8 (out of 39 total) counties, fewer than 60% of the LPNs who resided in the county also worked in the same county (**Figure 7**). These counties were Douglas (19.1%), Franklin (40.0%), Columbia (40.3%), Mason (42.6%), Island (54.9%), Asotin (57.4%), Jefferson (57.5%) and Thurston (58.6%).

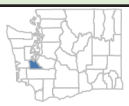
In many of these counties, a large percentage of LPNs worked in one neighboring county (**Table 8**). For example, among all LPNs actively practicing in Washington and with a residence mailing address in Douglas County, 80.9% worked in Chelan County. In other counties, LPNs traveled to more than one county for work. In Mason County, for example, 21.6% of LPNs who lived there traveled to Thurston County for work and 18.0% traveled to Pierce County.

Figure 7: Percentage of LPNs Residing in Each Washington County Who Worked in the Same County (May, 2019)



Notes: 1) NA = Not applicable. No LPNs actively practicing in WA had a mailing ZIP Code in these counties.
2) NC = Not calculated. Fewer than 10 LPNs actively practicing in WA had a mailing ZIP code in these counties. Due to the small number of survey responses indicating a practice location, reliable estimates could not be calculated for these counties

Table 8: Washington Counties with the Highest Percentage of LPNs Who Work in Another County, May 2019

County of Residence (a)	Work County (b)	For LPNs Who Live in (a), Percent Working in (b)
Counties in which many LPNs work in a single neighboring county		
Douglas 	Chelan 	80.9%
Columbia 	Walla Walla 	59.7%
Franklin 	Benton 	50.0%
Asotin 	Spokane 	42.6%
Snohomish 	King 	36.0%
Thurston 	Pierce 	27.9%
Counties in which LPNs work in several neighboring counties		
Mason 	Thurston 	21.6%
	Pierce 	18.0%
Island 	Skagit 	18.7%
	Snohomish 	14.8%
Jefferson 	Clallam 	20.8%
	Kitsap 	11.2%
San Juan 	Pierce 	19.2%
	Kittitas 	15.5%

Notes for Figure 7 and Table 8: 1) Residence was attributed to the ACH associated with the mailing ZIP Code for the LPN's Washington State license. Practice location was based on survey responses for actively employed nurses indicating the ZIP Code of their primary employer. Residence and practice locations outside of Washington were not included.
2) Percent calculations do not include missing data.
3) Missing data: Practice location = 0.3% missing statewide. Among LPNs employed in nursing with a known practice location, none were missing residence location.

STUDY LIMITATIONS

The accuracy of survey findings depends on how well respondents represent the overall population under study. Approximately 49% of LPNs with an active Washington license responded to the Nursys survey at least once between early 2015 and May 2019. To minimize bias introduced by survey respondents with different demographic characteristics compared with all licensed LPNs, we created survey weights as described in the methods section.

We found that some of the responses for LPNs were completed as far back as 2015. It is therefore possible that the survey responses saved in the Nursys data file may not reflect the current situation for an individual LPN if, for example, they have changed work settings. However, 90.2% of LPN survey records indicated they were completed in 2018 or 2019 and 99.0% were completed in 2017 or more recently. The analyses presented in this report estimate the composition and characteristics of Washington's LPN workforce on May 31, 2019, and while the information for some individual nurses may have changed between the time of survey completion and the date the data were downloaded, these differences are unlikely to be sufficiently large to change the overall findings presented here.

For individual survey questions for which response frequencies were low, there was greater potential for error in our estimates. We calculated 95% confidence intervals for most estimates presented in this report to show the degree of uncertainty in each estimate. Additionally, we suppressed summaries for cell sizes less than 10 (for example LPNs living in certain counties) to show that these estimates may not be reliable and to protect disclosure (albeit highly unlikely) of the identity of LPNs living in those areas.

Some individual questions had high rates of missing data. For example, approximately 79% of LPN survey respondents did not complete the question about the initial education level that qualified them for their first nursing license. Therefore, we were not able to analyze this question. The next-highest missing data rate was for the question related to specialty/area of practice (13.9% missing responses). We presented estimates for this question, but it is possible that our estimates would change if the response rate were higher. All other questions had missing data rates of less than 2%, so we can be relatively confident in our estimates for these questions.

Approximately 1% of LPNs indicated they had a baccalaureate in nursing. There are not typically baccalaureate-level LPN education programs, so it is possible this indicates that some nurses working as LPNs had a bachelor of science in nursing degree (BSN), which typically prepares a graduate to work as an RN. Alternatively, it could be that these LPNs actually had a baccalaureate degree in a non-nursing field and mistakenly indicated that their degree was in nursing.

DISCUSSION

The survey findings presented in this report greatly enhance the basic nurse workforce supply information that we have from sources such as the state's health professional licensing files.[1-9] This reflects a concerted effort by the Washington Center for Nursing, the Washington State Department of Health, the Washington Nursing Care Quality Assurance Commission and other organizations to more accurately define the current demographic, education and professional practice characteristics of Washington's LPN workforce by encouraging completion of the Nursys survey on initial licensure and renewal. These data are of great benefit to planners and policy makers in the state by providing more precise and timely information about the distribution, qualifications and practice settings of LPNs.

Other than a one-time survey conducted in 2008, the three demographic variables collected during licensing (age, sex and mailing address) were the only pieces of information available to characterize the LPN workforce before the voluntary Nursys survey was initiated in 2015 and mandatory data collection began in 2018. From this information, state planners knew that the

number of LPNs licensed in the state and with a Washington mailing address was steadily decreasing from a maximum of 13,751 in 2008 to a minimum of 9,859 in 2018[1] (for this report, we found there were 9,622 LPNs with an active license and a Washington mailing address – **Table A1**). Additionally, the number of nurses completing LPN training programs had rapidly decreased from approximately 800 per year in 2010-2011 to just over 200 per year in 2017-2018, with only 5 approved LPN training programs operating in the state in 2018.[22] While it was generally recognized that demand for the LPN profession was declining among some Washington employers, without information such as the number of LPNs practicing in the state (as opposed to holding an active license) the settings in which LPNs practiced and other information provided by the Nursys supply survey, it was difficult to know if these trends were applicable to all sectors of the LPN workforce.

From our analyses we found that about 88% of LPNs with an active Washington license on May 31, 2019, were employed in nursing and 7.5% were unemployed. The overall unemployment rate in Washington was 4.6% in that same month.[23] Survey results showed that 4.3% of Washington's licensed RNs reported being unemployed[14] and 4.7% of licensed ARNPs were unemployed in May 2019.[13]

With approximately 37% of unemployed LPNs selecting "other" as the reason for being unemployed and with no write-in option to further classify these responses, it is difficult to determine from these survey data the cause of the relatively high unemployment rate in LPNs. Among unemployed LPNs who did not select "other" as the reason for being unemployed, the top two answers were "taking care of home and family" and "school" (**Table 2**). 'Difficulty finding a nursing position" was the third-most common answer, perhaps indicating that low employer demand was not the most important factor in the relatively high unemployment rate among Washington's LPNs. Similarly, about a quarter of LPNs listed "other" as their work setting but the survey lacked a write-in option to describe the other settings. It would be helpful if future iterations of this survey could capture more detail on questions with "other" responses options.

We found that LPNs practicing in Washington were not evenly distributed throughout the state. The highest number of LPNs was found in the ACHs comprising the I-5 corridor (North Sound, HealthierHere, Elevate Health and Cascade Pacific Action Alliance – **Figure 2**). Those last two ACHs also had the highest number of practicing LPNs per 100,000 population. Many LPNs commuted to neighboring counties for work. As might be expected, some of the counties that drew heavily from surrounding areas were the same ones that had the highest number of practicing LPNs (**Figure 7** and **Table 8**).

We found LPNs in Washington to be, on average, about 49 years of age. LPNs under the age of 50 were more likely to be a race other than White and were more likely to be Hispanic/Latino ethnicity than older LPNs. These analyses showed that while Washington's overall LPN workforce was not as racially and ethnically diverse as the state population, it nonetheless is more diverse than other health care occupations in the state such as RNs.[14] We should preserve and enhance routes for people of color to become LPNs in order to strengthen this valuable workforce. In addition, expansion of LPN-to-RN programs could support career pathways for LPNs and increase the diversity of the RN workforce.

Over 40% of LPNs reported working in long term care or hospice, the highest single setting category reported. Washington's LPNs who reported having more than one employer (11.2% overall) were more likely to work in long term care, compared with LPNs with a single employer. Our recent experience with the COVID-19 pandemic has increased recognition of the risks that movement among multiple employment sites can play in spreading infection. While more details are needed to fully understand LPN work patterns, these survey data help illuminate where worker mobility may be greatest.

This report characterizes Washington's LPN workforce based on responses to a new, ongoing survey completed by LPNs during initial licensure and renewal. The continued availability of these data will allow Washington State to consistently track LPN workforce trends over time, providing critical information to assess changes in the LPN workforce and better anticipate education, training, practice and policy needs.

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APPENDICES - TABLES OF STUDY FINDINGS

APPENDIX A: METHODS

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APPENDIX B: DETAILED FINDINGS

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APPENDIX A: METHODS

Table A1: Age, Sex and Residence Location of all LPNs with an Active Washington License in May 2019 Compared to Survey Respondents

	Total LPNs with an Active License	Survey Respondents
Total Number (%)	10,864	5,294
Age		
Mean (sd)	48.0 (12.8)	48.9 (12.7)
Median	48	50
Age categories (n, %)		
19-24	146 (1.3%)	68 (1.3%)
25-29	690 (6.4%)	310 (5.9%)
30-34	1,134 (10.4%)	488 (9.2%)
35-39	1,313 (12.1%)	614 (11.6%)
40-44	1,185 (10.9%)	533 (10.1%)
45-49	1,347 (12.4%)	619 (11.7%)
50-54	1,253 (11.5%)	633 (12.0%)
55-59	1,298 (11.9%)	703 (13.3%)
60-64	1,329 (12.2%)	731 (13.8%)
65+	1,169 (10.8%)	595 (11.2%)
Sex* (n, %)		
Male	1,496 (13.8%)	667 (12.6%)
ACH of residence location (n, %)		
Better Health Together	612 (5.6%)	311 (5.9%)
Cascade Pacific Action Alliance	1,175 (10.8%)	618 (11.7%)
Elevate Health	2,299 (21.2%)	1,073 (20.3%)
Greater Columbia	667 (6.1%)	332 (6.3%)
HealthierHere	1,869 (17.2%)	788 (14.9%)
North Central	243 (2.2%)	122 (2.3%)
North Sound	1,666 (15.3%)	839 (15.8%)
Olympic	562 (5.2%)	273 (5.2%)
Southwest WA ACH	528 (4.9%)	248 (4.7%)
State Other Than Washington	1,242 (11.4%)	690 (13.0%)

Notes: 1) All data are taken from the roster of nurses licensed in Washington, which includes information about date of birth, sex and mailing address for all LPNs.
2) No records were missing date of birth or sex.
3) Counties comprising Accountable Communities of Health (ACHs): 1) Better Health Together (BHT) includes Adams, Ferry, Lincoln, Pend Oreille, Spokane, and Stevens counties, 2) Cascade Pacific Action Alliance (CPAA) includes Cowlitz, Grays Harbor, Lewis, Mason, Pacific, Thurston, and Wahkiakum counties, 3) Elevate Health (EH) is Pierce County, 4) Greater Columbia (GC) includes Asotin, Benton, Columbia, Franklin, Garfield, Kittitas, Walla Walla, Whitman, and Yakima counties, 5) HealthierHere (HH) is King County, 6) North Central ACH (NC) includes Chelan, Douglas, Grant, and Okanogan counties. 7) North Sound ACH (NS) includes Snohomish, Skagit, Island, San Juan, and Whatcom counties, 8) Olympic Community of Health (Oly) includes Clallam, Jefferson and Kitsap counties, 9) Southwest Washington (SW) includes Clark, Klickitat, and Skamania counties.
4) Residence was attributed to the county associated with the mailing ZIP code for the nurse's Washington State license.
Missing residence location - Total Licensed LPNs: 1 (0.01%); Survey Respondents: None

DETAILS ABOUT THE CONSTRUCTION OF SURVEY WEIGHTS

The roster of all nurses licensed in Washington included information about age, sex and residence location (based on the mailing ZIP code submitted by the nurse on initial licensing or renewal). We used these three variables to compare LPNs who completed the Nursys survey to all LPNs licensed in Washington. We found that LPNs who completed the Nursys survey were older, less like to be male and more likely to live outside of Washington State (see **Table A1**). A further analysis (not shown) found that each of these factors was also associated with many of the items collected in the survey. If we analyzed the survey responses without accounting for these differences, the estimates we reported would not be representative of all LPNs licensed in Washington. Therefore, we constructed survey weights to make the survey responses more representative of all LPNs licensed in Washington.

We used the rake function of the survey package[18] of R[17] to create weights using iterative post-stratification, which adjusts the calculated sample weights until the distribution of known characteristics (in this case age, sex and residence location) in the group of LPNs who answered the survey matches the distribution of these same variables in the data for all LPNs with a Washington license. The sample frame was all LPNs with an active license on May 31, 2019 based on the nursing roster maintained by NCQAC. The survey design was defined as a simple random sample without replacement and the variables included in construction of the weights were: age category (19-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65+), sex (M/F) and practice ACH (BHT, CPAA, EH, GC, HH, NC, NS, Oly, SW, Out of State – see footnote #3 to **Table A1** above for Accountable Community of Health abbreviations). A finite population correction representing all LPNs with an active license on May 31, 2019 was applied to adjust standard error calculations to account for a sample that was taken without replacement and that represents a large proportion of the total licensed LPN population. As a result, the weights adjust survey responses to represent the LPN nursing population with active licenses on the date the survey data were downloaded (May 31, 2019). The calculated weights ranged from 1.62 – 2.62.

APPENDIX B: DETAILED FINDINGS

Table B1: Demographic and Work Characteristics of Nurses Employed as LPNs Practicing in Washington by Work Setting of Primary Employment, 2019

Work Setting for Primary Employment	Statewide Estimate [n (95% CI), Column Percent (95% CI)]	Mean Age (95% CI)	Percent Age 55 or Older (95% CI)	Percent with an Associate Degree in Nursing or Higher (95% CI)	Percent Male (95% CI)	Percent Race Other than White (95% CI)	Percent Hispanic/ Latino Ethnicity (95% CI	Percent Working in a Rural Area (95% CI)	Percent Full-Time (95% CI)	Mean Hours Worked per Week (Full-Time) (95% CI)	Percent with More Than One Employer (95% CI)
Hospital	740 (687 - 794) 9.1% (8.4% - 9.7%)	48.0 (47.0 - 49.0)	35.6% (32.1% - 39.1%)	10.7% (8.4% - 13.0%)	19.5% (16.5% - 22.5%)	36.6% (32.9% - 40.2%)	4.2% (2.7% - 5.8%)	7.8% (5.8% - 9.8%)	83.3% (80.5% - 86.1%)	40.3 (39.8 - 40.9)	8.8% (6.7% - 11.0%)
Long term care or hospice	3,283 (3,187 - 3,380) 40.1% (39.1% - 41.2%)	49.0 (48.6 - 49.5)	37.4% (35.7% - 39.1%)	11.3% (10.1% - 12.4%)	14.0% (12.7% - 15.3%)	30.9% (29.2% - 32.5%)	6.1% (5.3% - 7.0%)	11.9% (10.8% - 13.0%)	82.9% (81.6% - 84.2%)	42.3 (42.0 - 42.6)	12.2% (11.0% - 13.4%)
Assisted living facility	1,007 (946 - 1,068) 12.3% (11.6% - 13.0%)	47.7 (46.9 - 48.5)	33.6% (30.7% - 36.6%)	12.3% (10.1% - 14.4%)	12.9% (10.7% - 15.1%)	29.6% (26.6% - 32.5%)	4.8% (3.5% - 6.2%)	11.0% (9.1% - 13.0%)	85.0% (82.7% - 87.3%)	42.4 (41.7 - 43.0)	11.4% (9.4% - 13.5%)
Nursing home/ Extended Care	1,403 (1,332 - 1,473) 17.2% (16.3% - 18.0%)	48.9 (48.2 - 49.5)	36.9% (34.3% - 39.4%)	11.6% (9.9% - 13.4%)	15.0% (13.0% - 17.0%)	36.7% (34.1% - 39.3%)	6.2% (4.8% - 7.5%)	14.4% (12.6% - 16.3%)	87.3% (85.5% - 89.1%)	42.1 (41.7 - 42.6)	10.9% (9.2% - 12.6%)
Home health	727 (675 - 780) 8.9% (8.3% - 9.5%)	51.7 (50.8 - 52.7)	44.8% (41.1% - 48.5%)	9.9% (7.7% - 12.1%)	14.4% (11.7% - 17.0%)	22.4% (19.2% - 25.5%)	8.0% (6.0% - 10.0%)	7.2% (5.3% - 9.1%)	70.7% (67.3% - 74.0%)	42.8 (41.9 - 43.6)	16.7% (13.9% - 19.5%)
Hospice or other long term care	146 (122 - 171) 1.8% (1.5% - 2.1%)	46.2 (44.1 - 48.2)	32.0% (24.4% - 39.6%)	7.1% (2.8% - 11.3%)	10.0% (4.9% - 15.0%)	25.7% (18.1% - 33.2%)	5.8% (1.8% - 9.7%)	16.4% (10.3% - 22.6%)	87.0% (81.3% - 92.6%)	41.8 (40.3 - 43.2)	7.7% (3.0% - 12.3%)
Ambulatory care	1,151 (1,086 - 1,215) 14.1% (13.3% - 14.8%)	47.7 (47.0 - 48.5)	35.8% (33.0% - 38.6%)	9.4% (7.7% - 11.2%)	7.7% (6.1% - 9.3%)	24.4% (21.8% - 27.0%)	5.5% (4.1% - 6.9%)	7.1% (5.6% - 8.6%)	86.0% (83.9% - 88.1%)	40.2 (39.8 - 40.5)	6.9% (5.4% - 8.5%)
Community health	761 (707 - 815) 9.3% (8.7% - 10.0%)	46.9 (46.0 - 47.8)	32.2% (28.9% - 35.6%)	10.9% (8.6% - 13.2%)	11.3% (8.9% - 13.7%)	19.0% (16.1% - 22.0%)	8.0% (6.0% - 10.1%)	13.5% (11.0% - 16.0%)	80.2% (77.2% - 83.1%)	40.3 (39.7 - 40.9)	16.8% (14.0% - 19.5%)
Other settings not included above	2,243 (2,158 - 2,328) 27.4% (26.4% - 28.4%)	48.7 (48.2 - 49.3)	37.6% (35.6% - 39.6%)	9.7% (8.4% - 11.0%)	13.3% (11.8% - 14.8%)	21.5% (19.7% - 23.3%)	7.0% (5.9% - 8.1%)	11.0% (9.7% - 12.3%)	85.6% (84.1% - 87.1%)	41.0 (40.7 - 41.4)	10.6% (9.3% - 11.9%)
All work settings	8,198 (8,106 - 8,290)	48.5 (48.2 - 48.8)	36.6% (35.5% - 37.7%)	10.5% (9.8% - 11.2%)	13.2% (12.5% - 14.0%)	26.3% (25.3% - 27.3%)	6.3% (5.7% - 6.8%)	10.8% (10.1% - 11.4%)	83.9% (83.1% - 84.7%)	41.3 (41.1 - 41.5)	11.2% (10.5% - 11.9%)

Notes: 1)) Race other than White was defined as all races other than White alone (including two or more races). Hispanic/Latino ethnicity was considered separately and did not factor in to the classification of race.
2) Full-time employment defined as greater than or equal to 32 hours worked per week for all employers.
3) All LPNs included in this table indicated that their primary employment was in nursing. Additional employers could have been in nursing or another field, if applicable.
4) 95% CI = 95% confidence interval
5) Percent calculations do not include missing data, other than for the Hispanic/Latino question. Survey respondents were asked to check a box if they identified as Hispanic/Latino. There was not a corresponding box for "Not Hispanic/Latino" or for "Choose not to answer." Therefore, it was not possible to assess the percentage of respondents who chose not to answer the ethnicity question.
6) Missing data: Among survey respondents who indicated they were employed in nursing and practicing in WA:
Work Setting: 0.3% statewide. Race: 1.9% statewide, range 0.9% (ambulatory care) – 4.2% (hospice or other long term care). Highest nursing education: 0.1% statewide, range 0.0% (Multiple settings) – 0.4% (assisted living facility). All other categories: No missing data for LPNs employed in nursing and practicing in WA.

Table B2: Demographic and Work Characteristics of LPNs Practicing in Washington by Age, 2019

Age Categories	Statewide Estimate [n (95% CI), Column Percent (95% CI)]	Percent Working in Long Term Care or Hospice (95% CI)	Percent with an Associate Degree in Nursing or Higher (95% CI)	Percent Male (95% CI)	Percent Race Other than White (95% CI)	Percent Hispanic/Latino Ethnicity (95% CI)	Percent Working in a Rural Area (95% CI)	Percent Full-Time (95% CI)	Mean Hours Worked per Week (Full-Time) (95% CI)	Percent with More Than One Employer (95% CI)
19-29	607 (556 - 658) 7.4% (6.8% - 8.0%)	39.2% (35.0% - 43.4%)	12.2% (9.4% - 15.0%)	12.0% (9.1% - 14.8%)	33.3% (29.2% - 37.4%)	14.3% (11.3% - 17.3%)	11.3% (8.6% - 14.0%)	78.4% (74.9% - 81.9%)	40.0 (39.3 - 40.6)	12.4% (9.5% - 15.2%)
30-34	776 (719 - 833) 9.5% (8.8% - 10.2%)	36.8% (33.1% - 40.5%)	10.3% (8.0% - 12.6%)	10.8% (8.4% - 13.3%)	38.3% (34.6% - 42.1%)	7.9% (5.9% - 10.0%)	9.5% (7.3% - 11.8%)	81.9% (78.9% - 84.8%)	41.4 (40.8 - 42.1)	15.9% (13.2% - 18.7%)
35-39	935 (874 - 996) 11.4% (10.7% - 12.1%)	35.4% (32.1% - 38.6%)	10.8% (8.6% - 12.9%)	13.2% (10.9% - 15.6%)	32.7% (29.5% - 35.9%)	7.6% (5.8% - 9.4%)	9.6% (7.6% - 11.6%)	84.6% (82.2% - 87.1%)	41.6 (41.0 - 42.1)	12.3% (10.1% - 14.6%)
40-44	899 (839 - 959) 11.0% (10.2% - 11.7%)	39.2% (35.8% - 42.6%)	12.6% (10.3% - 14.9%)	13.1% (10.7% - 15.5%)	31.4% (28.1% - 34.7%)	10.9% (8.8% - 13.1%)	11.0% (8.9% - 13.2%)	84.3% (81.8% - 86.8%)	41.3 (40.7 - 41.8)	12.4% (10.1% - 14.7%)
45-49	977 (916 - 1,039) 11.9% (11.2% - 12.7%)	42.5% (39.2% - 45.7%)	12.1% (9.9% - 14.2%)	16.1% (13.7% - 18.6%)	36.0% (32.8% - 39.2%)	5.9% (4.4% - 7.5%)	9.7% (7.8% - 11.6%)	87.5% (85.3% - 89.6%)	41.7 (41.2 - 42.2)	14.2% (11.9% - 16.4%)
50-54	1,003 (943 - 1,063) 12.2% (11.5% - 13.0%)	43.7% (40.6% - 46.9%)	9.1% (7.3% - 10.9%)	16.0% (13.7% - 18.4%)	26.1% (23.3% - 28.9%)	4.2% (2.9% - 5.5%)	9.3% (7.5% - 11.1%)	91.6% (89.8% - 93.3%)	42.3 (41.7 - 42.9)	13.4% (11.3% - 15.6%)
55-59	1,053 (994 - 1,113) 12.8% (12.1% - 13.6%)	40.2% (37.3% - 43.1%)	9.9% (8.2% - 11.7%)	14.7% (12.6% - 16.9%)	19.4% (17.0% - 21.7%)	4.5% (3.2% - 5.7%)	10.8% (9.0% - 12.6%)	86.5% (84.5% - 88.5%)	41.1 (40.6 - 41.6)	9.0% (7.3% - 10.6%)
60-64	1,069 (1,011 - 1,128) 13.0% (12.3% - 13.8%)	40.1% (37.2% - 43.0%)	10.1% (8.3% - 11.8%)	11.0% (9.1% - 12.8%)	17.1% (14.9% - 19.4%)	2.7% (1.8% - 3.7%)	13.2% (11.2% - 15.1%)	86.4% (84.4% - 88.4%)	41.1 (40.6 - 41.7)	6.7% (5.2% - 8.1%)
65+	878 (822 - 934) 10.7% (10.0% - 11.4%)	43.2% (39.9% - 46.5%)	8.2% (6.4% - 10.0%)	11.0% (8.8% - 13.1%)	13.2% (10.9% - 15.4%)	2.2% (1.2% - 3.2%)	12.3% (10.1% - 14.4%)	69.4% (66.3% - 72.4%)	40.1 (39.6 - 40.6)	6.0% (4.4% - 7.6%)
All LPNs	8,198 (8,106 - 8,290)	40.1% (26.4% - 28.4%)	10.5% (9.8% - 11.2%)	13.2% (12.5% - 14.0%)	26.3% (25.3% - 27.3%)	6.3% (5.7% - 6.8%)	10.8% (10.1% - 11.4%)	83.9% (83.1% - 84.7%)	41.3 (41.1 - 41.5)	11.2% (10.5% - 11.9%)

Notes: 1) Race other than White was defined as all races other than White alone (including two or more races). Hispanic/Latino ethnicity was considered separately and did not factor in to the classification of race.
2) Full-time employment defined as greater than or equal to 32 hours worked per week for all employers.
3) All LPNs included in this table indicated that their primary employment was in nursing. Additional employers could have been in nursing or another field, if applicable.
4) 95% CI = 95% confidence interval.
5) Percent calculations do not include missing data, other than for the Hispanic/Latino question. Survey respondents were asked to check a box if they identified as Hispanic/Latino. There was not a corresponding box for "Not Hispanic/Latino" or for "Choose not to answer." Therefore, it was not possible to assess the percentage of respondents who chose not to answer the ethnicity question.
6) Missing data: Among survey respondents who indicated they were employed in nursing and practicing in WA:
Work Setting: 0.3% statewide, range 0.0% (35-39) – 0.4% (19-29, 45-49 & 65+). Race: 1.9% statewide, range 0.9% (65+) – 4.4% (40-44). Highest nursing education: 0.1% statewide, range 0.0% (multiple age categories) – 0.9% (30-34). All other categories: No missing for LPNs employed in nursing and practicing in WA.

Table B3: Demographic and Work Characteristics of LPNs Practicing in Washington by Highest Nursing Education and Highest Education of Any Type, 2019

	Statewide Estimate [n (95% CI), Column Percent (95% CI)]	Mean Age (95% CI)	Percent Age 55 or Older (95% CI)	Percent Working in Long Term Care or Hospice (95% CI)	Percent Male (95% CI)	Percent Race Other than White (95% CI)	Percent Hispanic/ Latino Ethnicity (95% CI)	Percent Working in a Rural Area (95% CI)	Percent Full-Time (95% CI)	Mean Hours Worked per Week (Full-Time) (95% CI)	Percent with More Than One Employer (95% CI)
Highest Nursing Education											
Certificate or Diploma	7,328 (7,229 - 7,427) 89.5% (88.8% - 90.2%)	48.6 (48.3 - 48.9)	37.1% (35.9% - 38.2%)	39.8% (38.6% - 40.9%)	13.0% (12.2% - 13.8%)	26.0% (24.9% - 27.0%)	5.9% (5.3% - 6.5%)	10.3% (9.6% - 11.0%)	83.9% (83.0% - 84.7%)	41.2 (41.0 - 41.4)	10.8% (10.1% - 11.6%)
Associate Degree or Higher	861 (804 - 918) 10.5% (9.8% - 11.2%)	47.4 (46.5 - 48.2)	33.1% (29.9% - 36.2%)	43.1% (39.6% - 46.5%)	15.6% (13.0% - 18.2%)	33.4% (30.1% - 36.8%)	9.1% (7.1% - 11.1%)	14.8% (12.4% - 17.2%)	84.5% (82.0% - 87.0%)	41.8 (41.2 - 42.4)	14.5% (12.0% - 16.9%)
Highest Education of Any Type											
Certificate or Diploma	6,479 (6,375 - 6,582) 79.0% (78.1% - 80.0%)	48.9 (48.6 - 49.2)	38.0% (36.8% - 39.2%)	40.8% (39.5% - 42.0%)	12.3% (11.5% - 13.2%)	26.1% (25.0% - 27.3%)	5.8% (5.2% - 6.4%)	10.4% (9.6% - 11.1%)	84.4% (83.4% - 85.3%)	41.2 (41.0 - 41.4)	10.2% (9.4% - 11.0%)
Associate Degree or Higher	1,717 (1,640 - 1,795) 21.0% (20.0% - 21.9%)	46.8 (46.2 - 47.4)	31.3% (29.0% - 33.5%)	37.7% (35.3% - 40.1%)	16.7% (14.8% - 18.6%)	29.4% (27.1% - 31.6%)	8.2% (6.8% - 9.5%)	12.2% (10.7% - 13.8%)	82.1% (80.3% - 84.0%)	41.6 (41.1 - 42.0)	15.0% (13.2% - 16.8%)
All LPNs	8,198 (8,106 - 8,290)	48.5 (48.2 - 48.8)	36.6% (35.5% - 37.7%)	40.1% (26.4% - 28.4%)	13.2% (12.5% - 14.0%)	26.3% (25.3% - 27.3%)	6.3% (5.7% - 6.8%)	10.8% (10.1% - 11.4%)	83.9% (83.1% - 84.7%)	41.3 (41.1 - 41.5)	11.2% (10.5% - 11.9%)

Notes: 1) Race other than White was defined as all races other than White alone (including two or more races). Hispanic/Latino ethnicity was considered separately and did not factor in to the classification of race.
2) Full-time employment defined as greater than or equal to 32 hours worked per week for all employers.
3) All LPNs included in this table indicated that their primary employment was in nursing. Additional employers could have been in nursing or another field, if applicable.
4) 95% CI = 95% confidence interval.
5) Percent calculations do not include missing data, other than for the Hispanic/Latino question. Survey respondents were asked to check a box if they identified as Hispanic/Latino. There was not a corresponding box for "Not Hispanic/Latino" or for "Choose not to answer." Therefore, it was not possible to assess the percentage of respondents who chose not to answer the ethnicity question.
6) Missing data: Among survey respondents who indicated they were employed in nursing and practicing in WA:
Highest Nursing Education: 0.1% statewide. Race: 1.9% statewide, range 1.8% (certificate or diploma) – 2.2% (associate degree or higher). Work Setting: 0.3% statewide, range 0.2% (certificate or diploma) – 0.5% (associate degree or higher). All other categories: No missing data for LPNs employed in nursing and practicing in WA.
Highest Education of Any Type: 0.03% statewide. Race: 1.9% statewide, range 1.6% (associate degree or higher) – 1.9% (certificate or diploma). Work Setting: 0.3% statewide, range 0.2% (certificate or diploma) – 0.4% (associate degree or higher). All other categories: No missing data for LPNs employed in nursing and practicing in WA.

Table B4: Demographic and Work Characteristics of LPNs Practicing in Washington by Rural/Urban Designation of the ZIP Code in Which They Work, 2019

Region	Rural/Urban Designation	LPNs per 100,000 Population (95% CI)	Mean Age (95% CI)	Percent Age 55 or Older (95% CI)	Percent with an Associate Degree in Nursing or Higher (95% CI)	Percent Male (95% CI)	Percent Race Other than White (95% CI)	Percent Hispanic/ Latino Ethnicity (95% CI)	Percent Full-Time (95% CI)	Mean Hours Worked per Week (Full-Time) (95% CI)	Percent with More Than One Employer (95% CI)
Washington State	Urban	113 (112 - 115)	48.4 (48.1 - 48.7)	36.1% (34.9% - 37.2%)	10.0% (9.3% - 10.7%)	13.9% (13.0% - 14.7%)	28.2% (27.1% - 29.3%)	6.0% (5.4% - 6.6%)	84.2% (83.3% - 85.0%)	41.4 (41.2 - 41.6)	11.2% (10.5% - 12.0%)
	Rural	100 (93 - 106)	49.3 (48.4 - 50.2)	41.1% (37.8% - 44.4%)	14.5% (12.1% - 16.8%)	7.9% (6.1% - 9.8%)	15.4% (12.9% - 17.9%)	8.5% (6.6% - 10.4%)	81.4% (78.8% - 84.1%)	40.5 (40.0 - 41.0)	11.1% (8.9% - 13.2%)
Eastern WA	Urban	101 (96 - 107)	51.4 (50.6 - 52.1)	47.8% (44.9% - 50.8%)	13.1% (11.1% - 15.0%)	13.9% (11.8% - 16.0%)	12.4% (10.4% - 14.4%)	8.9% (7.2% - 10.6%)	83.7% (81.5% - 85.8%)	41.5 (40.9 - 42.0)	9.9% (8.1% - 11.7%)
	Rural	62 (54 - 70)	50.0 (48.4 - 51.6)	42.1% (36.0% - 48.3%)	18.9% (14.0% - 23.8%)	7.5% (4.1% - 10.9%)	22.3% (16.9% - 27.7%)	18.6% (13.6% - 23.7%)	82.3% (77.5% - 87.1%)	40.0 (39.2 - 40.8)	12.7% (8.4% - 17.0%)
Western WA	Urban	116 (114 - 118)	47.8 (47.5 - 48.1)	33.8% (32.6% - 35.0%)	9.5% (8.7% - 10.2%)	13.9% (13.0% - 14.8%)	31.1% (29.9% - 32.4%)	5.4% (4.8% - 6.0%)	84.3% (83.3% - 85.2%)	41.3 (41.1 - 41.6)	11.5% (10.6% - 12.3%)
	Rural	131 (121 - 141)	49.0 (48.0 - 50.1)	40.7% (36.8% - 44.5%)	12.7% (10.1% - 15.3%)	8.1% (5.9% - 10.3%)	12.7% (10.0% - 15.4%)	4.5% (2.8% - 6.2%)	81.1% (78.0% - 84.2%)	40.7 (40.1 - 41.4)	10.5% (8.0% - 12.9%)
Washington State	Rural and Urban Combined	111 (110 - 113)	48.5 (48.2 - 48.8)	36.6% (35.5% - 37.7%)	10.5% (9.8% - 11.2%)	13.2% (12.5% - 14.0%)	26.8% (25.8% - 27.8%)	6.3% (5.7% - 6.8%)	83.9% (83.1% - 84.7%)	41.3 (41.1 - 41.5)	11.2% (10.5% - 11.9%)

Notes: 1) Rural/urban designation based on rural-urban commuting area codes (RUCA version 3.1) for the ZIP Code in which nurses are employed.[20]
2) Population estimates are for the ZIP Code in which a LPN was employed, based on 2018 estimates.[21]
3) Eastern and western Washington designations are comprised of the counties located on the respective sides of the Cascade mountain range.
Counties in Eastern WA: Okanogan, Chelan, Douglas, Grant, Kittitas, Yakima, Benton, Franklin, Walla Walla, Columbia, Garfield, Asotin, Whitman, Adams, Lincoln, Spokane, Stevens, Ferry, Pend Oreille.
Counties in Western WA: Whatcom, Skagit, San Juan, Island, Snohomish, King, Pierce, Kitsap, Jefferson, Clallam, Grays Harbor, Mason, Thurston, Pacific, Lewis, Wahkiakum, Cowlitz, Skamania, Clark, Klickitat.
4) Race other than White was defined as all races other than White alone (including two or more races). Hispanic/Latino ethnicity was considered separately and did not factor in to the classification of race.
5) Full-Time employment was defined as greater than or equal to 32 hours worked per week for all employers.
6) All LPNs included in this table indicated that their primary employment was in nursing. Additional employers could have been in nursing or another field, if applicable.
7) 95% CI = 95% confidence interval.
8) Percent calculations do not include missing data, other than for the Hispanic/Latino question. Survey respondents were asked to check a box if they identified as Hispanic/Latino. There was not a corresponding box for "Not Hispanic/Latino" or for "Choose not to answer." Therefore, it was not possible to assess the percentage of respondents who chose not to answer the ethnicity question.
9) Missing data: Work location and rural/urban designation: 0.3%% statewide. Race: 1.9% statewide, range 1.3% (Rural Western WA) – 4.8% (Rural Eastern WA). Highest nursing education: 0.1% statewide, range 0.0% (multiple regions) – 0.1% (Urban Western WA). All other categories: No missing for LPNs employed in nursing and practicing in WA.

Table B5: Demographic and Work Characteristics of LPNs Practicing in Washington by Work Status, 2019

Work Status	Statewide Estimate [n (95% CI), Column Percent (95% CI)]	Mean Age	Percent Age 55 or Older	Percent Working in Long Term Care or Hospice (95% CI)	Percent with an Associate Degree in Nursing or Higher (95% CI)	Percent Male (95% CI)	Percent Race Other than White (95% CI)	Percent Hispanic/ Latino Ethnicity (95% CI)	Percent Working in a Rural Area (95% CI)	Mean Hours Worked per Week (Full-Time) (95% CI)	Percent with More Than One Employer (95% CI)
Full-time	6,877 (6,775 - 6,980) 83.9% (83.1% - 84.7%)	48.3 (48.0 - 48.6)	35.5% (34.4% - 36.7%)	39.7% (38.5% - 40.9%)	10.6% (9.8% - 11.3%)	14.2% (13.3% - 15.0%)	28.0% (26.9% - 29.2%)	6.4% (5.8% - 7.0%)	10.4% (9.7% - 11.2%)	41.3 (41.1 - 41.5)	11.6% (10.8% - 12.4%)
Part-time	1,321 (1,252 - 1,389) 16.1% (15.3% - 16.9%)	49.4 (48.5 - 50.2)	42.2% (39.5% - 44.9%)	42.5% (39.8% - 45.3%)	10.1% (8.5% - 11.8%)	8.5% (6.9% - 10.0%)	20.6% (18.3% - 22.8%)	5.5% (4.2% - 6.8%)	12.4% (10.6% - 14.2%)	19.9 (19.5 - 20.3)	9.2% (7.6% - 10.9%)
All LPNs	8,198 (8,106 - 8,290)	48.5 (48.2 - 48.8)	36.6% (35.5% - 37.7%)	40.1% (26.4% - 28.4%)	10.5% (9.8% - 11.2%)	13.2% (12.5% - 14.0%)	26.3% (25.3% - 27.3%)	6.3% (5.7% - 6.8%)	10.8% (10.1% - 11.4%)	41.3 (41.1 - 41.5)	11.2% (10.5% - 11.9%)

Notes: 1) Full-time employment defined as greater than or equal to 32 hours worked per week for all employers.
2) Race other than White was defined as all races other than White alone (including two or more races). Hispanic/Latino ethnicity was considered separately and did not factor in to the classification of race.
3) All LPNs included in this table indicated that their primary employment was in nursing. Additional employers could have been in nursing or another field, if applicable.
4) 95% CI = 95% confidence interval.
5) Percent calculations do not include missing data, other than for the Hispanic/Latino question. Survey respondents were asked to check a box if they identified as Hispanic/Latino. There was not a corresponding box for "Not Hispanic/Latino" or for "Choose not to answer." Therefore, it was not possible to assess the percentage of respondents who chose not to answer the ethnicity question.
6) Missing data: Among survey respondents who indicated they were employed in nursing and practicing in WA:
Work Setting: 0.3% statewide, range 0.0% (part-time) – 0.3% (full-time). Race: 1.9% statewide, range 1.2% (part-time) – 2.0% (full-time). Highest nursing education: 0.1% statewide, range 0.1% (full-time) – 0.3% (part-time).
All other categories: No missing for LPNs employed in nursing and practicing in WA.

Table B6: Demographic and Work Characteristics of LPNs Practicing in Washington by Number of Employers, 2019

Number of Employers	Statewide Estimate [n (95% CI), Column Percent (95% CI)]	Mean Age	Percent Age 55 or Older	Percent Working in Long Term Care or Hospice (95% CI)	Percent with an Associate Degree in Nursing or Higher (95% CI)	Percent Male (95% CI)	Percent Race Other than White (95% CI)	Percent Hispanic/ Latino Ethnicity (95% CI)	Percent Working in a Rural Area (95% CI)	Percent Full-Time (95% CI)	Mean Hours Worked per Week (Full-Time) (95% CI)
One	7,280 (7,181 - 7,380) 88.8% (88.1% - 89.5%)	48.8 (48.5 - 49.2)	38.2% (37.1% - 39.3%)	39.7% (38.5% - 40.8%)	10.1% (9.4% - 10.8%)	13.0% (12.2% - 13.8%)	25.0% (23.9% - 26.0%)	5.9% (5.3% - 6.4%)	10.8% (10.0% - 11.5%)	83.5% (82.7% - 84.4%)	37.0 (36.7 - 37.2)
Two or more	918 (858 - 977) 11.2% (10.5% - 11.9%)	45.5 (44.7 - 46.3)	23.8% (21.1% - 26.6%)	43.9% (40.6% - 47.3%)	13.6% (11.3% - 15.9%)	15.2% (12.8% - 17.7%)	41.6% (38.2% - 44.9%)	9.6% (7.6% - 11.6%)	10.7% (8.6% - 12.7%)	86.7% (84.4% - 89.0%)	44.8 (43.8 - 45.8)
All LPNs	8,198 (8,106 - 8,290)	48.5 (48.2 - 48.8)	36.6% (35.5% - 37.7%)	40.1% (26.4% - 28.4%)	10.5% (9.8% - 11.2%)	13.2% (12.5% - 14.0%)	26.3% (25.3% - 27.3%)	6.3% (5.7% - 6.8%)	10.8% (10.1% - 11.4%)	83.9% (83.1% - 84.7%)	41.3 (41.1 - 41.5)

Notes: 1) Full-time employment defined as greater than or equal to 32 hours worked per week for all employers.
2) Race other than White was defined as all races other than White alone (including two or more races). Hispanic/Latino ethnicity was considered separately and did not factor in to the classification of race.
3) All LPNs included in this table indicated that their primary employment was in nursing. Additional employers could have been in nursing or another field, if applicable.
4) 95% CI = 95% confidence interval.
5) Percent calculations do not include missing data, other than for the Hispanic/Latino question. Survey respondents were asked to check a box if they identified as Hispanic/Latino. There was not a corresponding box for "Not Hispanic/Latino" or for "Choose not to answer." Therefore, it was not possible to assess the percentage of respondents who chose not to answer the ethnicity question.
6) Missing data: Among survey respondents who indicated they were employed in nursing and practicing in WA:
Work Setting: 0.3% statewide, range 0.2% (one) – 0.7% (two or more). Race: 1.9% statewide, range 1.7% (one) – 2.7% (two or more). Highest nursing education: 0.1% statewide, range 0.0% (two or more) – 0.1% (one). All other categories: No missing for LPNs employed in nursing and practicing in WA.