Section 1

The Registered Nurse and Licensed Practical Nurse Workforce

An analysis of recent trends in the nursing workforce is important to anticipate future supply growth and identify likely changes in educational and demographic composition. Information on the size of the U.S. nursing workforce and its distribution across states and in rural and urban areas is presented. Growth in the workforce over time is measured against growth in the general population. Next, key trends in educational attainment, racial/ethnic composition, and gender are highlighted. The section concludes with an analysis of trends in the setting and work hours of the nursing workforce.

Two sources of data from the U.S. Census Bureau were used to examine the current supply of registered nurses (RNs) and licensed practical nurses (LPNs), as well as changes in the workforce that have occurred during the past decade: the American Community Survey (ACS) three-year combined file for 2008 to 2010 and the Census 2000 Long Form 5-percent sample. (See "About the Data" below.)

Owing to the household sampling strategy of these Census surveys, all results presented in this section are for the nursing *workforce*—those individuals who report their current occupation as nursing and who currently have or are seeking a job. It is not possible to count, with either data source, the number of individuals educated or licensed as nurses who are working in another field or are out of the workforce entirely. Another important note is that advanced practice registered nurses are included in results for RNs. The Census data sources used here do not separate them.

About the Data

The ACS 2008 to 2010 three-year file and Census 2000 Long Form 5-percent sample offer nearly identical question wording and an established set of techniques for comparing results over time. The sources also offer large sample sizes: more than 110,000 RNs and 31,000 LPNs are included within the 2000 5-percent sample, while nearly 90,000 RNs and more than 21,000 LPNs are included in the ACS 2008 to 2010 three-year file. This means that estimates derived from these sources are highly precise and, in most cases, can be made at both state and national levels.

The ACS 2008 to 2010 three-year file was selected over a single-year file in order to improve the precision of state and national estimates. Unlike the Census 2000 data, which represent a point in time, the ACS three-year file represents an average of the three-year time period. It is inappropriate to refer to this estimate as representing 2009. Throughout this section, we refer to this as the "current" nurse supply because it was the most up-to-date three-year file available at the time of our analysis.

For most estimates, relative standard errors (RSEs) are quite small. Because of the large sample size, even small differences across time (1 or 2 percentage points) are statistically significant at the 0.05 level. All differences over time discussed within the text of this section are statistically significant, though detailed results of significance testing are not presented. All estimates reported in this section have an RSE of less than 30 percent. More information about the data sources and methods used in this report can be found in "The U.S. Nursing Workforce: Technical Documentation," available at http://bhpr.hrsa.gov/healthworkforce/index.html.

Workforce Size and Distribution

There were an estimated 2,824,641 RNs and 690,038 LPNs within the nursing workforce during the 2008 to 2010 time period. Based on the size of the U.S. population during the period, this equates to 921 RNs and 225 LPNs per 100,000 members of the population (per capita). Tables 1 and 2, below, show the RN and LPN workforces by state, based on the ACS 2008 to 2010 three-year file. Nurses who live in one state but work in another were placed according to the state in which they work. The total population in each state, also derived from the ACS three-year file, was used to calculate the number of RNs per 100,000 population in each state.

Table 1. The RN Workforce, by State, per 100,000 Population

State[1]	RNs	Total Population	RNs per 100,000
Alabama	45,666	4,753,812	960.6
Alaska	5,605	700,113	800.6
Arizona	50,841	6,345,751	801.2
Arkansas	27,415	2,897,671	946.1
California	274,722	36,971,641	743.1
Colorado	43,480	4,970,333	874.8
Connecticut	37,555	3,561,486	1,054.5
Delaware	10,380	891,791	1,163.9
District of Columbia[2]	9,869	592,306	1,666.2
Florida	167,476	18,674,425	896.8
Georgia	75,976	9,612,759	790.4
Hawaii	9,357	1,347,518	694.4
Idaho	10,527	1,553,404	677.7
Illinois	120,203	12,795,658	939.4
Indiana	63,655	6,458,253	985.6
Iowa	33,378	3,033,163	1,100.4

Table 1. The RN Workforce, by State, per 100,000 Population (cont'd)

State[1]	RNs	Total Population	RNs per 100,000
Kansas	28,556	2,833,318	1,007.9
Kentucky	44,755	4,317,738	1,036.5
Louisiana	42,856	4,490,487	954.4
Maine	16,153	1,329,222	1,215.2
Maryland	55,944	5,733,779	975.7
Massachusetts	80,725	6,514,611	1,239.1
Michigan	89,445	9,908,690	902.7
Minnesota	57,639	5,279,601	1,091.7
Mississippi	29,016	2,958,873	980.6
Missouri	63,756	5,960,413	1,069.7
Montana	11,172	983,763	1,135.6
Nebraska	22,260	1,813,164	1,227.7
Nevada	19,428	2,680,981	724.7
New Hampshire	13,860	1,316,255	1,053.0
New Jersey	75,269	8,756,104	859.6
New Mexico	15,701	2,037,799	770.5
New York	196,189	19,303,930	1,016.3
North Carolina	90,663	9,440,195	960.4
North Dakota	7,702	665,681	1,157.0
Ohio	126,582	11,526,823	1,098.2
Oklahoma	29,366	3,716,087	790.2
Oregon	32,113	3,805,432	843.9
Pennsylvania	140,077	12,662,926	1,106.2
Rhode Island	12,744	1,053,846	1,209.3
South Carolina	42,254	4,585,057	921.6

Table 1. The RN Workforce, by State, per 100,000 Population (cont'd)

State[1]	RNs	Total Population	RNs per 100,000
South Dakota	10,076	807,563	1,247.7
Tennessee	67,159	6,303,437	1,065.4
Texas	186,573	24,789,312	752.6
Utah	18,771	2,720,974	689.9
Vermont	6,528	624,976	1,044.5
Virginia	64,268	7,928,022	810.6
Washington	56,607	6,658,052	850.2
West Virginia	19,220	1,847,352	1,040.4
Wisconsin	60,813	5,667,100	1,073.1
Wyoming	4,296	556,787	771.6
U.S. Total	**2,824,641**	**306,738,434**	**920.9**

Data Source: HRSA analysis of the ACS 2008-2010 three-year file
[1]All state estimates have a relative standard error (RSE) of less than 10%.
[2]The nursing workforce is likely denser in the District of Columbia (D.C.) in part because of the presence of several academic medical centers, like most cities, that require a large RN workforce. Many nurses and patients commute into D.C. for work and health services. Since most states include rural and/or suburban areas, it is not instructive to compare D.C. with states in terms of per capita supply.

Table 2. The LPN Workforce, by State, per 100,000 Population

State	LPNs	Total Population	LPNs per 100,000
Alabama	12,297	4,753,812	258.7
Alaska[3]	782	700,113	111.7
Arizona	7,853	6,345,751	123.8
Arkansas	10,734	2,897,671	370.4
California	54,817	36,971,641	148.3
Colorado	5,843	4,970,333	117.6
Connecticut	8,605	3,561,486	241.6
Delaware[2]	1,679	891,791	188.3
District of Columbia[1]	1,982	592,306	334.6

Table 2. The LPN Workforce, by State, per 100,000 Population (cont'd)

State	LPNs	Total Population	LPNs per 100,000
Florida	45,686	18,674,425	244.6
Georgia	22,076	9,612,759	229.7
Hawaii[2]	2,107	1,347,518	156.4
Idaho[1]	2,880	1,553,404	185.4
Illinois	20,949	12,795,658	163.7
Indiana	17,114	6,458,253	265.0
Iowa	7,397	3,033,163	243.9
Kansas	7,056	2,833,318	249.0
Kentucky	9,857	4,317,738	228.3
Louisiana	17,457	4,490,487	388.8
Maine[1]	1,952	1,329,222	146.9
Maryland	11,733	5,733,779	204.6
Massachusetts	14,390	6,514,611	220.9
Michigan	19,196	9,908,690	193.7
Minnesota	15,462	5,279,601	292.9
Mississippi	9,719	2,958,873	328.5
Missouri	18,841	5,960,413	316.1
Montana[2]	1,737	983,763	176.6
Nebraska	5,882	1,813,164	324.4
Nevada	3,101	2,680,981	115.7
New Hampshire[1]	3,526	1,316,255	267.9
New Jersey	16,584	8,756,104	189.4
New Mexico[1]	2,555	2,037,799	125.4

Table 2. The LPN Workforce, by State, per 100,000 Population (cont'd)

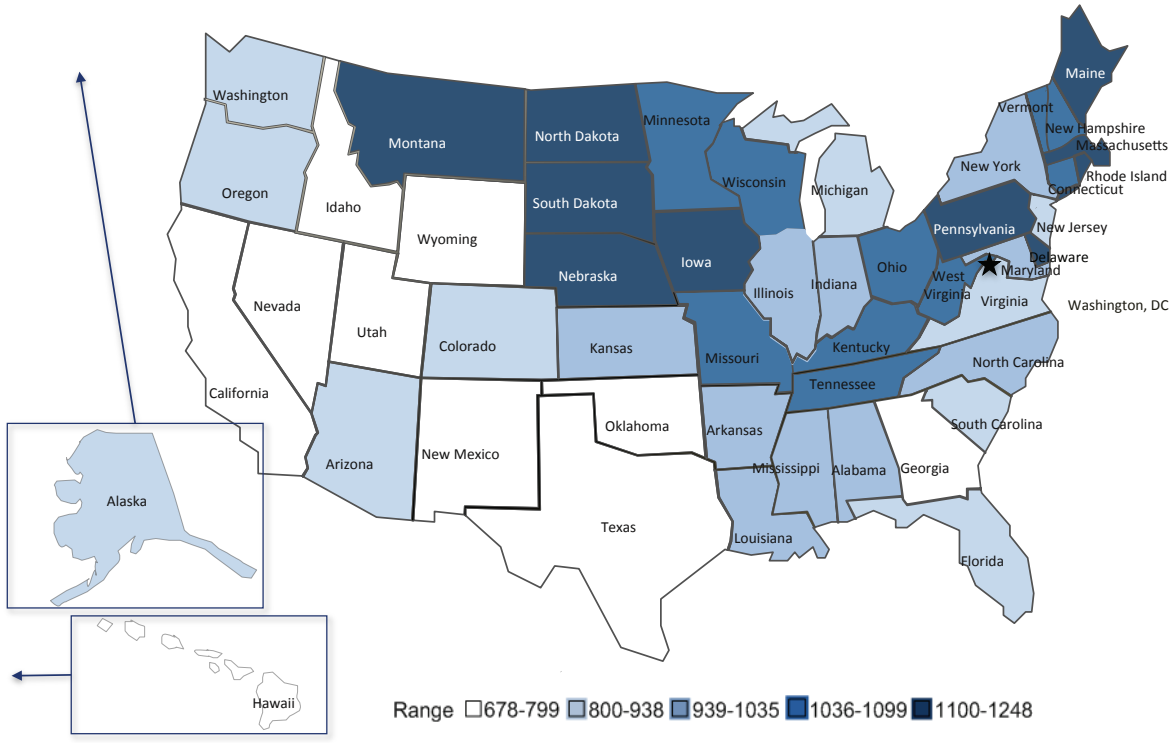
State	LPNs	Total Population	LPNs per 100,000
New York	46,063	19,303,930	238.6
North Carolina	20,535	9,440,195	217.5
North Dakota[2]	2,802	665,681	420.9
Ohio	36,934	11,526,823	320.4
Oklahoma	13,335	3,716,087	358.8
Oregon[1]	2,998	3,805,432	78.8
Pennsylvania	38,202	12,662,926	301.7
Rhode Island[1]	1,735	1,053,846	164.6
South Carolina	10,149	4,585,057	221.3
South Dakota[2]	2,149	807,563	266.1
Tennessee	23,373	6,303,437	370.8
Texas	58,189	24,789,312	234.7
Utah[1]	2,728	2,720,974	100.3
Vermont[2]	1,229	624,976	196.6
Virginia	22,276	7,928,022	281.0
Washington	8,226	6,658,052	123.5
West Virginia	6,346	1,847,352	343.5
Wisconsin	10,279	5,667,100	181.4
Wyoming	641	556,787	115.1
U.S. Total	**690,038**	**306,738,434**	**225.0**

Data Source: HRSA analysis of the ACS 2008-2010 three-year file
Note: The LPN population in small states is more difficult to estimate with precision.
Higher RSEs in these states mean less precise estimates.
[1]State has an RSE between 10% and 14.9%.
[2]State has an RSE between 15% and 19.9%.
[3]State has an RSE between 20% and 25%.

As Table 1 shows, the per capita supply of RNs varies substantially across states, from a high of 1,248 in South Dakota to a low of 678 in Idaho. Per capita RN supply does not take into account differences in population age, disease prevalence, or the number of hospital beds that must be staffed. Still, it is informative because it illustrates that national-level information masks substantial local-level differences. Figures 1 and 2 present the information graphically, showing that states located in the West and West South Central Census areas tend to have a lower per capita supply of RNs, whereas states in the Midwest and Northeast tend to have a higher per capita supply.

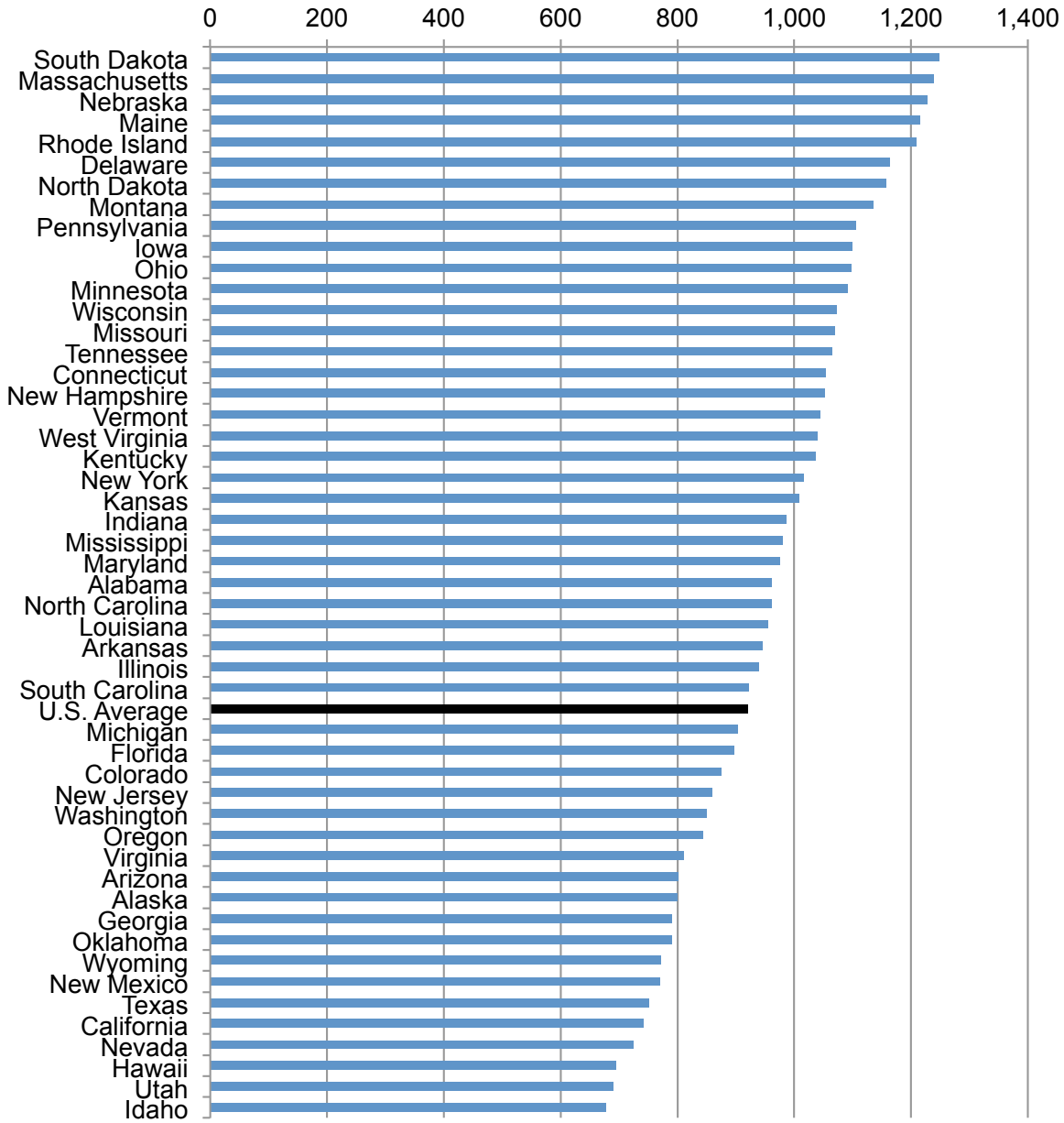
Table 2 and Figures 3 and 4 present the same information for LPNs. Similar to the density of RNs, LPN density is lowest in Western states. In general, areas of the country with a comparatively dense population of RNs also have a comparatively dense population of LPNs.

Figure 1. The RN Workforce per 100,000 Population, by State



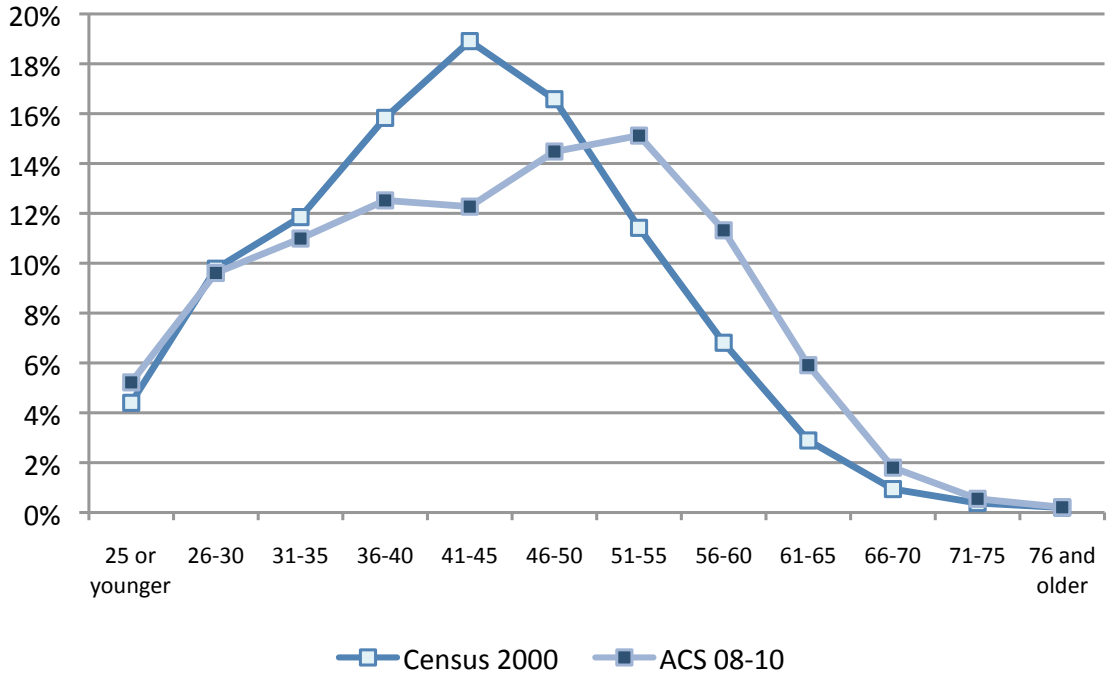
Data Source: HRSA analysis of the ACS 2008-2010 three-year file

Figure 2. The per Capita RN Workforce, Ranked by State



Data Source: HRSA analysis of the ACS 2008-2010 three-year file

Figure 9. Age Distribution of RNs, in Five-Year Increments



Data Sources: HRSA analysis of the ACS 2008-2010 three-year file and Census 2000 Long Form 5% sample

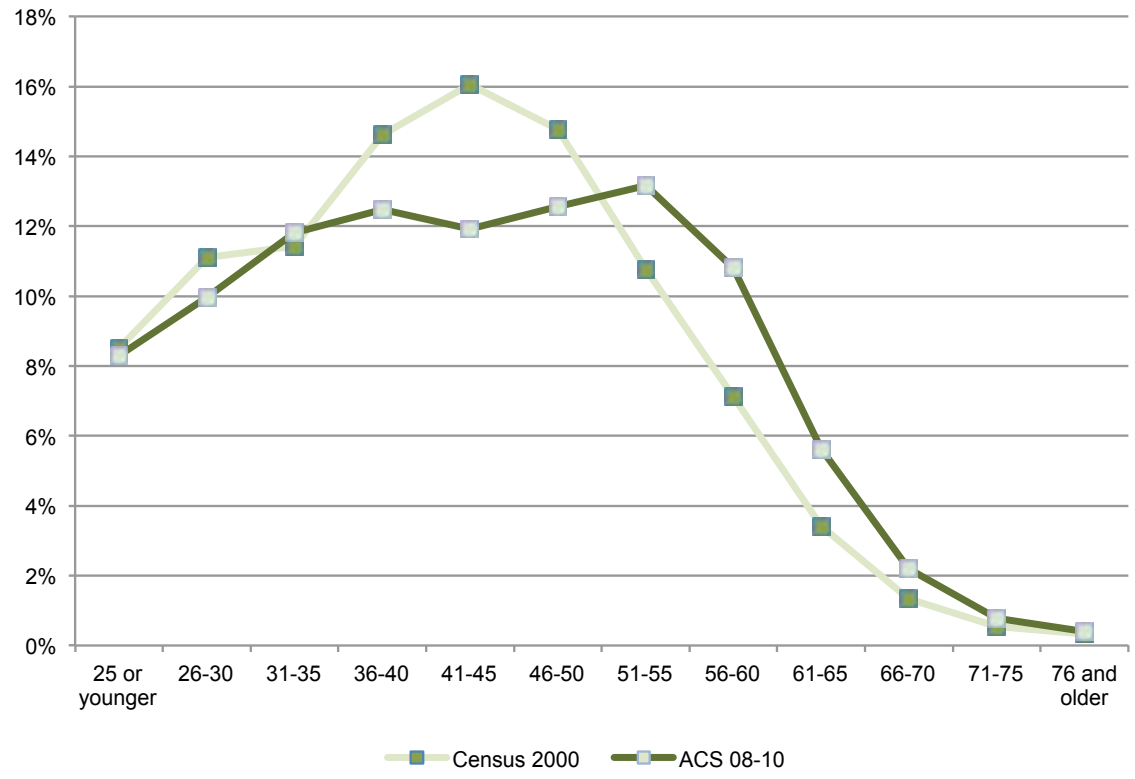
Another way to view the changing age structure of nurses is through a comparison of absolute numbers in the workforce (see Figure 10). The workforce has grown overall, but this growth is concentrated in the older and younger ends of the age spectrum, and there are actually fewer RNs aged 36 to 45 working today, compared with nine years ago. Although the nursing workforce has aged over the past decade, it is encouraging to see growth in the number aged 35 and younger. This finding suggests that young people continue to see nursing as a viable career and predicts longer-term stability in the age distribution of the nursing workforce.

However, the tremendous growth of RN cohorts nearing retirement age is still a cause for concern. Over the next 10 to 15 years, the nearly 1 million RNs older than 50—about one-third of the current workforce—will reach retirement age. Retirement of large numbers of RNs over the next two decades means a loss of experiential knowledge and leadership brought to the workforce by seasoned RNs. The retirement decisions of this older cohort, which may be influenced by the pace of economic recovery, will affect the nursing workforce going forward.

LPN Workforce Demographics

Many of the demographic trends observed for RNs hold for LPNs as well. As Figure 12 shows, the LPN age distribution has also flattened and shifted toward older ages. Also consistent with the findings for RNs, the proportion of younger nurses appears to be holding reasonably steady. During the time period covered by this analysis, the average age of LPNs increased by about 1.75 years, from 41.9 in 2000 to 43.6 in the ACS 2008 to 2010.

Figure 12. Age Distribution of LPNs, in Five-Year Increments



Data Sources: HRSA analysis of the ACS 2008-2010 three-year file and Census 2000 Long Form 5% sample

Similar to RNs, the absolute number of LPNs has grown overall, but this growth has occurred only among those younger than 30 and older than 50 (see Figure 13). The number of LPNs aged 31 to 50 has actually decreased over the past 10 years. More than one-third of the LPN workforce is older than age 50.

Table 7. Estimated Number of RNs, by Setting of Employment

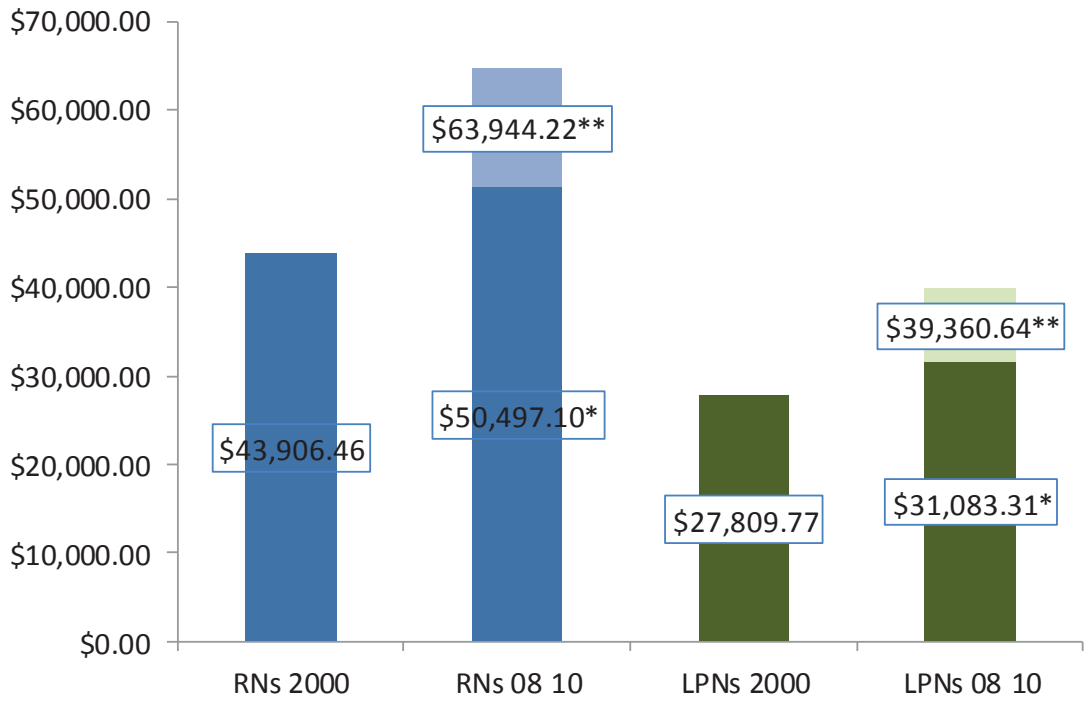
	Census 2000 Estimate	ACS 08-10 Estimate	Estimated Growth/ Decline	% Change in Growth
Hospitals	1,427,497	1,785,304	357,807	25.1%
Nursing Care Facilities	189,594	208,051	18,457	9.7%
Offices of Physicians	156,559	134,231	-22,328	-14.3%
Home Health Care Services	101,895	105,922	4,027	4.0%
Outpatient Care Centers	70,224	131,022	60,798	86.6%
Other Health Care Services	66,723	153,449	86,726	130.0%
Elementary and Secondary Schools	51,495	61,323	9,828	19.1%
Employment Services	45,835	58,362	12,527	27.3%
Insurance Carriers and Related Activities	22,919	25,155	2,236	9.8%
Administration of Human Resource Programs[1]	20,509	38,136	17,627	85.9%
Justice, Public Order, and Safety Activities[2]	14,793	18,137	3,344	22.6%
Offices of Other Health Practitioners	13,346	7,596	-5,750	-43.1%
Colleges and Universities, Including Junior Colleges	12,637	16,320	3,683	29.1%
Residential Care Facilities, Without Nursing	10,853	9,928	-925	-8.5%
All Other Settings[3]	70,397	71,705	1,308	1.9%
Totals	**2,275,276**	**2,824,641**	**549,365**	**24.1%**

Data Sources: HRSA analysis of the ACS 2008-2010 three-year file and Census 2000 Long Form 5% sample
[1]Category includes RNs whose jobs focus primarily on administration.
[2]Category includes the majority of nurses working in public health settings.
[3]For this analysis, all settings holding less than 1% of the RN population have been recoded to "Other."

The average hours worked by LPNs also held quite steady over time, hovering around 37 hours per week across all ages. Similar to RNs, the ACS 2008 to 2010 data suggest that LPNs are working more hours than in 2000 within older age categories (refer to Figure 16). The difference is particularly noticeable in the 61 to 70 age category.

Figure 17 shows the average salary of a full-time nurse (36 or more hours per week). Full-time salary has increased by about $20,000 for RNs and about $11,500 for LPNs over the past decade. An increasing average salary can reflect the influence of many factors, including inflation, an older (and more experienced) workforce, and wage hikes to stimulate employment interest in areas facing a nursing shortage. Figure 17 presents the average salary within the ACS 2008 to 2010 adjusted to 2000 constant dollars to remove the impact of inflation (darker part of the bar). As the figure also shows, once inflation has been accounted for, the salary increase remains notable at nearly 15 percent ($6,600) over 10 years.

Figure 17. Growth in Full-Time Nurse Salaries



Data Sources: HRSA analysis of the ACS 2008-2010 three-year file and Census 2000 Long Form 5% sample
*Inflation adjusted to 2000 constant dollars.
**Actual salary in the ACS 2008-2010, adjusted to 2010 dollars.