

# **Long-Term Services and Supports: Nursing Workforce Demand Projections 2015-2030**

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National Center for Health Workforce Analysis**



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## Overview

Long-Term Services and Supports (LTSS) are the paid and unpaid medical and personal care provisions that people need when they experience difficulty living independently and completing daily self-care tasks. These difficulties are generally the result of disabling conditions and chronic illnesses. LTSS are delivered in both institutional (e.g. nursing homes) and home and community-based settings (e.g. adult day centers). Combined, Registered Nurses and Licensed Practical Nurses currently represent about one quarter of the LTSS workforce. **This report contains demand projections for Registered Nurses and Licensed Practical Nurses working in LTSS.** A companion report, also prepared by HRSA, presents demand projections for Direct Care Worker occupations in LTSS.

The analysis is conducted using the Health Resources and Services Administration’s “Health Workforce Simulation Model.” This model is an integrated microsimulation model that can estimate current and future supply of and demand for healthcare workers from multiple professions and in multiple care settings.<sup>1</sup> The primary (or “baseline”) scenario in this model assumes that demand equals supply in the base year.<sup>2</sup> Demand for selected nursing occupations in LTSS is projected up until the year 2030, with 2015 serving as the baseline year. Two important limitations for demand projections in this baseline scenario are: (a) the underlying assumption that health care delivery and practices in the base year (2015) will not change substantially in the future (by 2030), and (b) that there will be stability in the current rates of health care utilization. A second, “alternative” demand scenario is also modelled for this report. This alternative scenario takes into account potential changes in population health and models the impact these changes would have on demand for nursing occupations in LTSS.

While this report does not provide projections for the future supply of Registered Nurses and Licensed Practical Nurses in LTSS, it does discuss current supply of those occupations. Forecasting the future nursing workforce supply in LTSS is challenging because future setting-

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<sup>1</sup> For additional information about HWSM, please see the technical documentation at [Technical Documentation for Health Resources Service Administration’s Health Workforce Simulation Model](#)

<sup>2</sup> Ono T, Lafortune G, Schoenstein M. “Health workforce planning in OECD countries: a review of 26 projection models from 18 countries.” *OECD Health Working Papers, No. 62*. France: OECD Publishing; 2013: 8-11.

specific workforce supplies will likely be dependent on the competitiveness of wages, benefits, and workplace characteristics in LTSS settings,<sup>3,4</sup> as well as on fundamental workforce supply determinants (e.g., number of new entrants to the nursing workforce). The broad labor market factors that may affect health care providers' choice of work setting are not able to be estimated using the current HWSM, but future improvements to the model may support such complex analyses.

## Key Findings

*The increase in demand for nursing occupations in LTSS in the United States, although anticipated to be seen in all states, will be distributed unevenly across the nation. Specifically, projected demand growth for Registered Nurses and Licensed Practical Nurses between 2015 and 2030 varies substantially by state and region.*

- Under the Primary Scenario, demand for RNs will grow by 46% from 438,600 FTEs in 2015 to 638,800 FTEs in 2030 and demand for LPNs is projected to drive the workforce to grow by 46%, from 364,200 FTEs in 2015 to 532,900 FTEs in 2030.
- If current levels of LTSS care are maintained, Texas is projected to have the largest increase in demand for overall LTSS nursing care provided by Registered Nurses and Licensed Practical Nurses between 2015 and 2030.
  - For Registered Nurses, the states with the highest projected increases in demand include Colorado (76%), Utah (74%), New Mexico (72%), Arizona (72%), California (71%) and Texas (71%).
  - For Licensed Practical/Vocational Nurses, the highest projected increases in demand include Colorado (78%), Utah (75%), New Mexico (74%), Arizona (73%), California (72%) and Texas (72%).

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<sup>3</sup> National Academies of Sciences, Engineering, and Medicine. 2017. Strengthening the workforce to support community living and participation for older adults and individuals with disabilities: Proceedings of a workshop. Washington, DC: The National Academies Press.

<sup>4</sup> Texas Center for Nursing Workforce Studies. 2016. Long-term care nurse staffing study: Recruitment and retention. Publication Number 25-14896. Retrieved December 28, 2017 from: <http://www.dshs.texas.gov/chs/cnws/Home-Health-and-Hospice-and-Long-Term-Care-Survey-Reports/>.

- The state projected to experience the smallest demand increase is Nebraska (4%), followed by New York (21%). These states have the same percentage of increase in demand for both Registered Nurses and Licensed Practical Nurses.
- Under an alternative scenario which takes into account possible improvements in population health, short-term demand for Registered Nurses and Licensed Practical Nurses in LTSS will likely decline. However, because of anticipated increases in longevity, long-term demand for LTSS is likely to rise by about 8% compared to baseline projections for Registered Nurses (increased by 49,800 Full Time Equivalents) and Licensed Practical Nurses (increased by 43,100 Full Time Equivalents).

## Background

Growth in the aging population due to demographic shifts, increased longevity, and a corresponding increase in disability prevalence will amplify the future need for Long Term Services and Supports (LTSS). In 2015, there were an estimated 47.8 million people in the U.S. age 65 or older, and by 2030 this number will rise to nearly 73 million (about one in five U.S. residents).<sup>5</sup> Disabling conditions and chronic illnesses are highly correlated with older age, and rapid growth in the number of older adults raises questions of whether the LTSS workforce will be sufficient to meet the future demand for services.

Registered Nurses (RNs) and Licensed Practical/Vocational Nurses (LPNs) perform a variety of patient care duties and are critical to the delivery of health care services across the long-term care continuum, from institutional care to home and community based services. Analysis of 2015 American Community Survey One-Year estimates suggests 45% of LPNs in the United States worked in LTSS in 2015. This is similar to estimates from the 2013 American Community Survey, but reflects substantial growth in employment of LPNs in LTSS since 2008.<sup>6</sup> Approximately 15% of RNs worked in LTSS settings in 2015.

According to the Health Resources and Services Administration's (HRSA's) 2017 report on nursing occupations in the U.S.,<sup>7</sup> nursing shortages represent a problem with workforce distribution across states, rather than a shortage at the national level. Examining the nursing workforce providing LTSS, this report continues a regional focus by describing the distribution of RN and LPN demand across states, as opposed to focusing solely on national-level demand projections. This study also supports the HRSA health workforce goals by presenting workforce demand projections for select nursing occupations working in LTSS. Furthermore, this study is

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<sup>5</sup> U.S. Census Bureau. An Aging Nation. Accessed at [https://www.census.gov/library/visualizations/2017/comm/cb17-ff08\\_older\\_americans.html](https://www.census.gov/library/visualizations/2017/comm/cb17-ff08_older_americans.html)

<sup>6</sup> Coffman JM, Chan K, Bates T. (2015). Profile of the Licensed Practical Nurse/Licensed Vocational Nurse Workforce, 2008 and 2013. San Francisco, CA: UCSF Health Workforce Research Center on Long-Term Care. [https://healthworkforce.ucsf.edu/sites/healthworkforce.ucsf.edu/files/Report-Profile\\_of\\_the\\_Licensed\\_Practical\\_Nurse\\_Licensed\\_Vocational\\_Nurse\\_Workforce\\_2008\\_and\\_2013.pdf](https://healthworkforce.ucsf.edu/sites/healthworkforce.ucsf.edu/files/Report-Profile_of_the_Licensed_Practical_Nurse_Licensed_Vocational_Nurse_Workforce_2008_and_2013.pdf)

<sup>7</sup> U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis. 2017. *National and Regional Supply and Demand Projections of the Nursing Workforce: 2014-2030*. Rockville, Maryland.

responsive to findings and recommendations from a 2016 General Accountability Office report pertaining to the LTSS workforce.<sup>8</sup>

## Model and Results

This analysis utilized the HRSA's Health Workforce Simulation Model (HWSM), a forecasting model developed to estimate and project workforce supply and demand across a wide range of healthcare occupations. The HWSM projected the impact of key factors influencing LTSS demand (not supply) on two specific nursing occupations--RNs and LPNs. These key factors include population growth, population aging, overall economic conditions, expanded health insurance coverage, changes in health care reimbursement, geographic location, and health workforce availability. LTSS settings included nursing homes, residential care facilities, home health, and adult day care. Estimates of current numbers (supply) of RNs and LPNs working in LTSS are also provided, and a discussion of the barriers in estimating current and projecting future supply is included. Workforce numbers are reported as full-time equivalents (FTEs), where an FTE is defined as 40 hours worked per week.

Two demand scenarios are modelled for this report. The first (baseline) scenario reflects the changing demographics from 2015 to 2030 and extrapolates current care utilization and delivery patterns. The second (alternative) scenario further takes into account possible improvements in population health and trends in unpaid care that might impact future demand for paid care.

### Demand: Primary (Baseline) Scenario

Under the baseline scenario, between 2015 and 2030, demand for both RNs and LPNs in LTSS is projected to increase substantially. Demand for RNs will grow by 46%--from 438,600 FTEs in 2015 to 638,800 FTEs in 2030 (an increase of 200,200 FTEs). Similarly, demand for LPNs is projected to drive the workforce to grow by 46%, from 364,200 FTEs in 2015 to 532,900 FTEs in 2030 (an increase of 168,700 FTEs).

Substantial variation is observed in RN demand growth at the regional and state levels (*Exhibit I*). The Western (68%) and Southern (52%) Census regions exhibit the highest projected growth

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<sup>8</sup> Accessed at <http://www.gao.gov/assets/680/679169.pdf>



### Exhibit 1: LTSS Demand for Registered Nurses by State, 2015-2030

Region/State	2015	2020	2025	2030	Percent Change
<b>Northeast</b>	<b>92,990</b>	<b>99,550</b>	<b>108,520</b>	<b>122,590</b>	<b>32%</b>
Connecticut	6,230	6,910	7,860	8,970	44%
Maine	2,380	2,550	2,760	3,050	28%
Massachusetts	11,410	12,420	13,600	15,520	36%
New Hampshire	2,390	2,630	3,010	3,660	53%
New Jersey	12,860	14,480	16,130	18,470	44%
New York	30,580	31,570	33,450	36,870	21%
Pennsylvania	23,770	25,550	27,910	31,710	33%
Rhode Island	2,370	2,400	2,620	3,030	28%
Vermont	1,000	1,040	1,180	1,310	31%
<b>Midwest</b>	<b>113,690</b>	<b>122,780</b>	<b>135,560</b>	<b>153,020</b>	<b>35%</b>
Illinois	20,590	22,710	25,680	29,150	42%
Indiana	10,900	11,860	13,100	15,020	38%
Iowa	5,980	6,210	6,700	7,460	25%
Kansas	5,080	5,740	6,480	7,310	44%
Michigan	14,400	15,540	17,170	19,210	33%
Minnesota	8,060	8,850	9,910	11,530	43%
Missouri	11,170	12,210	13,600	15,590	40%
Nebraska	3,630	3,620	3,630	3,770	4%
North Dakota	1,760	1,770	1,990	2,230	27%
Ohio	21,460	22,580	24,130	26,310	23%
South Dakota	1,930	2,200	2,510	2,880	49%
Wisconsin	8,730	9,490	10,660	12,560	44%
<b>South</b>	<b>158,460</b>	<b>181,200</b>	<b>208,970</b>	<b>240,150</b>	<b>52%</b>
Alabama	7,990	9,100	10,160	11,320	42%
Arkansas	5,300	5,860	6,350	6,860	29%
Delaware	1,490	1,680	1,920	2,190	47%
District of Columbia	1,090	1,260	1,420	1,580	45%
Florida	27,620	30,810	35,250	39,400	43%
Georgia	10,670	12,670	14,750	16,800	57%
Kentucky	7,530	8,300	9,220	10,330	37%
Louisiana	7,470	8,210	9,320	10,660	43%
Maryland	7,940	9,220	10,690	12,350	56%
Mississippi	5,320	6,230	7,120	8,050	51%
North Carolina	13,530	15,930	18,560	21,310	58%
Oklahoma	5,610	6,320	7,040	7,830	40%
South Carolina	6,070	6,950	8,010	9,190	51%
Tennessee	9,130	10,600	12,410	14,720	61%
Texas	28,730	33,860	40,630	49,240	71%
Virginia	9,930	10,930	12,570	14,450	46%
West Virginia	3,040	3,270	3,550	3,870	27%
<b>West</b>	<b>73,420</b>	<b>86,410</b>	<b>102,460</b>	<b>123,050</b>	<b>68%</b>
Alaska	750	860	990	1,170	56%
Arizona	5,750	7,040	8,360	9,890	72%
California	37,100	43,710	52,100	63,370	71%
Colorado	5,320	6,360	7,670	9,350	76%
Hawaii	1,370	1,500	1,740	2,070	51%
Idaho	1,810	2,130	2,480	2,860	58%
Montana	1,900	2,050	2,300	2,690	42%
Nevada	2,390	2,880	3,300	3,700	55%
New Mexico	2,040	2,430	2,960	3,500	72%
Oregon	4,260	4,960	5,660	6,380	50%
Utah	2,270	2,740	3,280	3,940	74%
Washington	7,570	8,780	10,520	12,820	69%
Wyoming	890	970	1,100	1,310	47%

Note: Totals may differ from national tables in the report due to rounding.

in demand for RNs in LTSS, and the Northeastern (32%) and Midwestern (35%) regions exhibit a smaller growth in demand. The states with the highest projected demand growth for RNs in LTSS include Colorado (76%) and Utah (74%), while those with the lowest growth include Nebraska (4%) and New York (21%).

Similar patterns are observed in LPN demand growth at the regional and state levels (Exhibit 2). The Western (69%) and Southern (52%) Census regions exhibit the highest projected growth and the Northeastern (32%) and Midwestern (35%) the smallest. The states with the highest growth in projected LPN demand include Colorado (78%) and Utah (75%). As with RNs, Nebraska (4%) and New York (21%) are projected to experience the lowest growth by 2030.

### **Demand: Secondary (Alternative) Scenario**

The results of the first scenario are based on recent national health care utilization and staffing patterns, and assume that within each demographic group, the prevalence of chronic disease and disability remain unchanged over time. However, improvements in population health could contribute to changes in workforce demand by setting. For example, an increased focus on preventive care, medication management and adherence, and evidence-based care protocols may result in improvements in population health. In turn, there may be changes in the level of demand for DCWs across the nation for the provision of LTSS.

An alternative scenario seeks to model the potential long-term health impacts (and subsequent impact on demand for providers) of achieving the following population health goals: 1) sustained a 5 percent reduction in body weight for people who were overweight or obese; 2) improved uncontrolled hypertension, high cholesterol, and high blood glucose levels; and 3) eliminated smoking. Results suggest that improved population health might reduce LTSS demand slightly in the short term, but to the extent that preventive care increases longevity, particularly among older population cohorts, overall demand for LTSS nurses is likely to rise by about 92,900 FTEs (8%) in the long term, compared to the projected demand in the baseline scenario (*Exhibit 3*).

## Exhibit 2: LTSS Demand for Licensed Practical Nurses by State, 2015-2030

Region/State	2015	2020	2025	2030	Percent Change
<b>Northeast</b>	<b>77,820</b>	<b>83,270</b>	<b>90,730</b>	<b>102,840</b>	<b>32%</b>
Connecticut	5,170	5,730	6,530	7,470	44%
Maine	2,010	2,160	2,330	2,590	29%
Massachusetts	9,550	10,390	11,360	13,000	36%
New Hampshire	2,020	2,220	2,540	3,100	53%
New Jersey	10,770	12,130	13,510	15,510	44%
New York	25,230	26,020	27,570	30,490	21%
Pennsylvania	20,190	21,680	23,650	26,970	34%
Rhode Island	2,030	2,060	2,250	2,600	28%
Vermont	850	880	990	1,110	31%
<b>Midwest</b>	<b>95,370</b>	<b>102,990</b>	<b>113,770</b>	<b>128,950</b>	<b>35%</b>
Illinois	17,060	18,820	21,330	24,310	42%
Indiana	9,070	9,870	10,910	12,550	38%
Iowa	4,970	5,170	5,560	6,210	25%
Kansas	4,360	4,930	5,580	6,320	45%
Michigan	11,800	12,730	14,080	15,840	34%
Minnesota	7,000	7,690	8,620	10,070	44%
Missouri	9,330	10,190	11,350	13,040	40%
Nebraska	3,160	3,150	3,150	3,280	4%
North Dakota	1,550	1,560	1,760	1,980	28%
Ohio	17,870	18,790	20,070	21,970	23%
South Dakota	1,680	1,920	2,190	2,510	49%
Wisconsin	7,520	8,170	9,170	10,870	45%
<b>South</b>	<b>129,840</b>	<b>148,460</b>	<b>171,590</b>	<b>197,780</b>	<b>52%</b>
Alabama	6,490	7,410	8,300	9,290	43%
Arkansas	4,290	4,750	5,160	5,590	30%
Delaware	1,250	1,400	1,600	1,830	46%
District of Columbia	920	1,060	1,200	1,330	45%
Florida	22,780	25,330	29,040	32,430	42%
Georgia	8,590	10,220	11,940	13,650	59%
Kentucky	6,110	6,740	7,500	8,440	38%
Louisiana	6,040	6,630	7,540	8,650	43%
Maryland	6,650	7,720	8,990	10,440	57%
Mississippi	4,360	5,130	5,870	6,660	53%
North Carolina	11,060	13,040	15,230	17,560	59%
Oklahoma	4,590	5,180	5,780	6,440	40%
South Carolina	4,900	5,610	6,490	7,470	52%
Tennessee	7,400	8,600	10,090	12,040	63%
Texas	23,660	27,870	33,460	40,680	72%
Virginia	8,310	9,130	10,520	12,130	46%
West Virginia	2,440	2,640	2,880	3,150	29%
<b>West</b>	<b>61,170</b>	<b>72,040</b>	<b>85,540</b>	<b>103,360</b>	<b>69%</b>
Alaska	650	740	860	1,020	57%
Arizona	4,620	5,660	6,730	7,990	73%
California	30,790	36,310	43,300	52,960	72%
Colorado	4,420	5,300	6,400	7,860	78%
Hawaii	1,160	1,260	1,460	1,760	52%
Idaho	1,510	1,780	2,080	2,410	60%
Montana	1,640	1,770	1,980	2,330	42%
Nevada	1,900	2,300	2,640	2,970	56%
New Mexico	1,650	1,970	2,410	2,870	74%
Oregon	3,660	4,280	4,910	5,570	52%
Utah	1,890	2,280	2,740	3,310	75%
Washington	6,530	7,570	9,100	11,200	72%
Wyoming	750	820	930	1,110	48%

Note: Totals may differ from national tables in the report due to rounding.

**Exhibit 3: FTE LTSS Demand: Population Health Scenario, 2030**

Occupation	2030 Projected Demand	Population Health Scenario	Percent Change
<b>Nursing Occupations</b>	<b>1,171,700</b>	<b>1,264,600</b>	<b>8%</b>
Licensed Practical Nurses	532,900	576,000	8%
Registered Nurses	638,800	688,600	8%

**Supply**

The 2015 American Community Survey is the main source for estimating the LTSS workforce supply in 2015 by occupation, care delivery setting (industry), and state. In 2015, an estimated 434,500 RNs and 361,700 LPNs worked in LTSS settings (*Exhibit 4*).

**Exhibit 4: FTE LTSS Workforce, 2015 American Community Survey**

Occupation	Long-Term Services and Supports Settings				All Health Care Settings
	Nursing Facilities	Residential Care	Home Health	Total LTSS	
Registered Nurses	250,500	27,000	157,000	434,500	2,947,200
Licensed Practical/Vocational Nurses	219,400	35,300	107,000	361,700	801,000
<b>Total</b>	<b>469,900</b>	<b>62,300</b>	<b>264,000</b>	<b>796,200</b>	<b>3,748,200</b>

Source: U.S. Census Bureau. 2015 American Community Survey One-Year Estimates. Notes: Estimates of full time equivalents (FTEs) were calculated by dividing each person’s reported weekly hours worked by 40 hours.

In addition to the ACS estimates, data from the National Center for Health Statistics’ 2014 National Study of Long-Term Care Providers were used to estimate the number of RNs and LPNs working in Adult Day Service Center settings. These estimates (4,100 FTEs for RNs; 2,500 FTEs for LPNs) were included in the 2015 RN and LPN demand estimates shown on Exhibits 1 and 2.

Forecasting the future supply of health workers in a particular employment setting is more difficult than simply projecting the future supply of health workers. Setting-specific supply is dependent on future competitiveness of wages and benefits in that setting, as well as on overall

supply trends. For nursing occupations, a recent HRSA nursing occupation report<sup>9</sup> provides insights on the future adequacy of supply. In terms of RNs, HRSA's 2017 nursing report suggested that, at the national level, the supply of RNs will be adequate to meet demand over the foreseeable future. If the overall future supply of RNs is adequate to meet demand, then within a particular employment sector such as LTSS settings, there is a greater likelihood that supply will also be adequate. For LPNs, HRSA's 2017 nursing report suggests that demand is growing slightly faster than supply, and by 2030, there may be a projected shortfall of 151,500 FTEs.

In summary, RNs constitute just over 13% of the LTSS workforce, and future supply is expected to be adequate to meet demand. LPNs make up 11% of the LTSS workforce, and supply is growing more slowly than demand. As a consequence of these dynamics, the adequacy of future LTSS nursing supplies, especially at regional and state levels, may be determined not only by workforce availability but also by employers' offering competitive wages, benefits, and other incentives to encourage staff recruitment and retention.

## Strengths and Limitations

The primary strengths of this analysis include the use of recent data with sufficient sample size to provide reliable estimates of key model parameters, and the use of state-of-the-art microsimulation workforce projection modeling techniques.

### Modeling Demand

A microsimulation approach was used to project future demand because of the flexibility it provides to simulate potential changes in care delivery patterns. This report presents national, regional and state-level demand projections—where geographic variation in the populations' health risk factors is included. One major modeling limitation is lack of data on how care delivery patterns might change over time with emerging care delivery models, third party payment trends, improvements in technology, and other such developments. The HWSM

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<sup>9</sup> U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis. 2017. National and Regional Supply and Demand Projections of the Nursing Workforce: 2014-2030. Rockville, Maryland. [https://bhw.hrsa.gov/sites/default/files/bhw/nchwa/projections/NCHWA\\_HRSA\\_Nursing\\_Report.pdf](https://bhw.hrsa.gov/sites/default/files/bhw/nchwa/projections/NCHWA_HRSA_Nursing_Report.pdf)

operates under many assumptions regarding current status and future trends in health care utilization and workforce demand.

This model, like most other health workforce projection models, assumes that the national labor market for the LTSS workforce is currently in balance (i.e., supply and demand in the base year are equal). Current demand is defined by FTE employment in each occupation, which in turn reflects compensation levels of the number of people willing to work in each occupation given market wages.

Thus, the baseline demand projections reported here reflect future changes in the LTSS workforce relative to a balanced 2015 baseline. However, changes in health care service delivery are not incorporated into the baseline model. Ongoing attempts to understand the effects and implications of these changes in care delivery are reflected in the alternative scenario. If the growing population health emphasis on prevention and chronic disease management leads to reduced mortality and therefore a greater need for LTSS workforce, the baseline scenario may underestimate future demand.

## **Modeling Supply**

Modeling the supply of RNs and LPNs in LTSS entails similar challenges to modeling demand. These include predicting how health care delivery may change over time; determining how a greater focus on team-based care may alter staffing levels; and estimating how improvements in technology may change staff loads. Additional challenges specific to modeling LTSS workforce supply relate to deriving setting-specific estimates, recognizing that RNs and LPNs have a choice of workplace opportunities. Setting-specific workforce supplies are likely dependent on a number of factors, including wage competitiveness, employment benefits, workplace environment, and workplace recognition. Estimating the interplay between these various factors over time is beyond the scope of the current HWSM, although future versions of the model may be able to address these elements, and thus estimate health workforce supplies in specific care settings, including LTSS.

In considering the baseline supply estimates of RNs and LPNs in LTSS settings, it must also be noted that the primary data source for these LTSS analyses is the 2015 American Community Survey One-Year estimates. Strengths of these ACS data include the availability of recent, state-level estimates; the availability of occupation codes and industry codes that permit identification of health workers in various LTSS settings; and the availability of detailed labor force participation data. However, some occupation-industry code combinations may be ambiguous. For example, LPNs working for a home health agency owned by a hospital may be characterized as working in a hospital setting, when, in fact, these providers provide LTSS in a home setting. As a result of these coding constraints, certain occupation/industry code combinations may have led to either an underestimate or an overestimate of the current supply of RNs and LPNs working in LTSS. Given the detail available in the ACS occupation and industry codes, it is expected that the overall impact of these potentially ambiguous codes is small.

## Conclusions

This is one in a series of HRSA reports on the health care workforce, in this case intended to provide information on the future demand for RNs and LPNs in LTSS. These occupations are faced with the challenges of a rapidly aging U.S. population, with longer life expectancy and rising burden of disease.

Looking to the future, many factors will continue to affect demand and supply of the LTSS workforce, including demographically driven demand for health services.<sup>10</sup> For example, any potential future changes to the Medicaid program could play a role in determining service use, site of care, and workforce availability.

Policies to improve population health are likely to increase (rather than reduce) demand for nursing occupations in LTSS due to increased longevity, despite slight short-term declines in demand related to improvements in average health.

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<sup>10</sup> Institute of Medicine (US). Committee on the Future Health Care Workforce for Older Americans. (2008). *Retooling for an aging America: Building the health care workforce*. National Academies Press.

## About the Model

The results presented in this report come from HRSA's Health Workforce Simulation Model, which is an integrated health professions projection model that estimates the current and future supply of and demand for health care providers.

The supply component of the Model simulates workforce decisions for each provider based on his or her demographics and profession, along with the characteristics of the local or national economy and the labor market. The basic file that underlies the supply analysis contains individual records of the RNs and LPNs in the workforce from the American Community Survey (ACS) and the state licensure data.

Demand projections for health care services in different care settings are produced by applying regression equations for individuals' health care use on the projected population. The current nurse staffing patterns by care setting are then applied to forecast the future demand for nurses. The population database used to estimate demand consists of records of individual characteristics of a representative sample of the entire U.S. population derived from the ACS, National Nursing Home Survey, and the Behavioral Risk Factor Surveillance System. Using the Census Bureau's projected population and the Urban Institute's state-level estimates of the impact of the healthcare reform on insurance coverage,<sup>1,2</sup> the Model simulates future populations with expected demographic, socioeconomic, health status, health risk and insurance status.

This Model makes projections at the state level, which are then aggregated to the national level. A detailed description of the Model can be found in the accompanying technical documentation available at <http://bhw.hrsa.gov/healthworkforce/index.html>.

<sup>1</sup> Holahan, J. & Blumberg, L. (2010 January). *How would states be affected by health reform? Timely analysis of immediate health policy issues*. Retrieved August 2013 from [http://www.urban.org/UploadedPDF/412015\\_affected\\_by\\_health\\_reform.pdf](http://www.urban.org/UploadedPDF/412015_affected_by_health_reform.pdf).

<sup>2</sup> Holahan, J. (2014 March) *The launch of the Affordable Care Act in selected states: coverage expansion and uninsurance*. Retrieved August 2013 from <http://www.urban.org/uploadedPDF/413036-the-launch-of-the-Affordable-Care-Act-in-selected-states-coverage-expansion-and-uninsurance.pdf>. Washington D.C., The Urban Institute.