

THE
DEMAND
FOR **NURSING**
PROFESSIONALS
in Oregon

2016



Oregon Center for
NURSING



The Oregon Center for Nursing is a 501(c)(3) nonprofit organization established in 2002 by Oregon’s nursing leaders. OCN’s mission is to facilitate research and collaboration for Oregon’s nursing workforce to support informed, well-prepared, diverse and exceptional nursing professionals.

Our strategic objectives include:

- Conduct, analyze and disseminate research
- Promote collaboration and build partnerships with diverse stakeholders to advance nursing
- Advocate for nursing and healthcare in all settings in which nurses practice

Oregon Center for Nursing

www.oregoncenterfornursing.org

5000 N Willamette Blvd., MSC 192 · Portland, OR 97203

Report Authors

Christopher S. Lee, PhD, RN, FAHA, FAAN

Jana Bitton, MPA

Kelley Ilic, BA

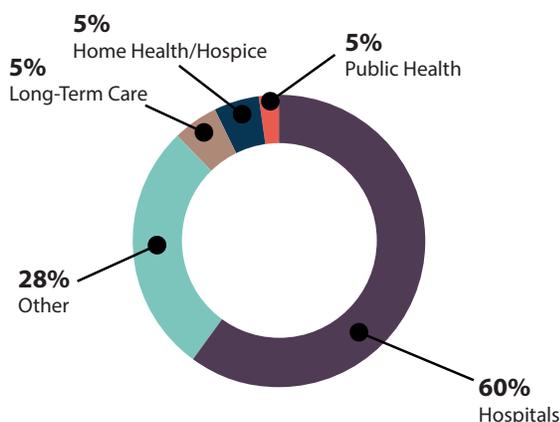
This work was made possible by the Oregon Nursing Advancement Fund, supported by Oregon’s licensed practical and registered nurses.

Suggested Citation

Oregon Center for Nursing. (2016). *The Demand for Nursing Professionals in Oregon*. Portland, OR: Oregon Center for Nursing.

INTRODUCTION

Nursing comprises the largest segment of the healthcare workforce in Oregon and in the United States at large. The supply and demand for nurses has received considerable attention at the state and national level over growing concern that there will not be enough nurses to meet the escalating health needs of a growing and aging population. Though there is recent evidence of a potential national surplus of nurses by 2025, western states, including Oregon, are projected to experience a deficit of registered nurses (U.S. Department of Health and Human Services, 2014).



Source: Oregon Health Authority, 2015

Figure 1: Registered Nurses By Work Setting, 2014

In 2014, a majority (60%) of nurses in Oregon worked in hospitals, with another 5% working in long term care, 5% working in home health and hospice, and 2% working in public health (Oregon Health Authority, 2015). Therefore, information on these particular workforce sectors can inform the experience of nearly

Nursing comprises the largest segment of the healthcare workforce in Oregon and in the United States at large.

three out of every four nurses working in the state and their employers. The Oregon Center for Nursing (OCN) conducted a survey of nurse employers in 2004, 2010 and again in 2015 with a specific emphasis on hospitals and health systems, long term care, home health and hospice and public health departments. The purpose of these surveys was to inform the landscape of demand for nursing in Oregon with respect to vacancy of budgeted nursing positions and turnover, as well as experiences in recruiting nurses and expectations about future trends in employment. The results of the 2015 OCN Survey of Nurse Employers are presented herein along with trends in demand over the past 11 years.

The overall demand for nursing is challenging to characterize because it is dependent on the aging of the population and increased nursing needs for the aging populous, which must take into consideration changes in demographics, health risk factors, disease prevalence and even insurance coverage. To present Oregon nursing supply and demand data, the 2016 Nursing Health Workforce Model developed by the Health Resources & Services Administration (HRSA) was used to make projections about demand for nurses by healthcare sector, including several scenarios for the supply of nurses in Oregon through 2025.

METHODS

The Survey

The 2015 versions of the OCN Survey of Nurse Employers were distributed, completed, and returned electronically. Due to budget and time constraints, not every employer of nurses in Oregon received a survey. Distribution was targeted to health care sectors

historically surveyed and representing the majority of nurses employed in the state. The 2015 survey was sent to **299 nurse employers across Oregon**. Several follow-up surveys and communications were sent to non-responders to strengthen the return rate. A total

of 116 usable surveys were returned for an **overall response of 38.8% percent**. Separate surveys were developed for each healthcare sector (hospitals and health systems, long term care, home health and hospice and public health) to reflect relevant clinical services and types of nursing personnel needed. Respondents were asked to provide raw data necessary to calculate vacancy and turnover rates for registered nurses and licensed practical nurses. It should be noted that long term care was the only sector where data on licensed practical nurses was sufficient for estimations. The survey also included items about employers' use of contract labor, the number of vacant positions to which newly-licensed nurses are eligible to apply, the level of difficulty employers experienced hiring

Metrics

Key metrics included in the OCN surveys of nurse employers were vacancy and turnover. Independently, **vacancy rates are not a direct measure of nursing demand but rather an indicator of the relative difficulty with which employers can recruit and hire particular personnel** (Reinier et al., 2005). In that way, vacancy can indicate the severity of a shortage in a particular healthcare sector. It can also be used in combination with the number of vacant positions to help describe the status quo with respect to difficulty/ease in finding the right nurse for the right job. For this survey, vacancy was calculated as the number of vacant budgeted positions divided by the total number of budgeted positions per employer. **Turnover rates reflect the ability of the employer to retain personnel and in that way indicate the stability of the workforce** within each healthcare sector (Reinier et al., 2005). High turnover can be a sign of job dissatisfaction, poor work environment or management style, lack of empowerment and autonomy, and/or personal disposition (Hayes et al., 2006; Hayes et al., 2011).

Analysis

A random-effects meta-analytic approach was chosen to analyze nurse vacancy and turnover because of substantial variation across employers in terms of the total numbers of nursing positions and because of the limited response rate. Using random-effects meta-analysis (DerSimonian & Laird, 1986), rates calculated

various types of nursing personnel over the past year, and expectations for future hiring. OCN conducted similar surveys of nurse employers in 2004 (*Oregon Center for Nursing, 2005*) and in 2010 (*Oregon Center for Nursing 2011*). The overall response rate of the 2015 survey was similar to the response rate in 2010. Response rates can fluctuate, especially since some of the fact finding necessary to answer the survey questions can be burdensome, require considerable investigation on the part of the respondent, and/or involve consultation with other organizational key informants. Additionally, some organizations may consider the requested information to be confidential and therefore opt out of participation.

As part of the 2015 survey, employers of nurses in Oregon were asked to provide information on the number of budgeted positions and the number of separations from employment over the past 12 months. This did not include employees who moved from one position to another within the organization. Turnover was calculated as the number of budgeted positions and the number of separations from employment over the past 12 months divided by the total number of budget positions averaged over the past 12 months. To complement information on vacancy and turnover, the OCN Survey of Nurse Employers also included information on employers' use of contract labor to fill vacant budgeted positions, the level of difficulty experienced hiring various types of nursing personnel over the past year, and expectations for future hiring of nurses by specialty. These data were aggregated by healthcare sector and presented as the proportion of employers reporting each level of response.

from responding employers are considered to be a sampling of possible vacancy and turnover rates. The average vacancy and turnover rates presented are the weighted average of all employer responses, with more weight given to employers with larger numbers of nursing positions. In that way, information from

an employer of 100 nurses with 50 vacancies is given more weight than information from an employer of two nurses with one vacancy despite having the same vacancy rate. This is done to optimize data collected by some to reflect the reality across the entire state. Importantly, a random-effects meta-analysis approach also provides a 95% confidence interval around the mean estimates of vacancy and turnover so that in combination there is information about the average and variability around the average. The confidence interval allows one to be 95% certain that the true nurse vacancy and turnover rates fall within the given range. To make appropriate comparisons across multiple years of the survey, nurse vacancy and turnover rates from all prior surveys were recalculated using this same meta-analytic approach. The Monte Carlo simulation (Kroese et al., 2014) was used to project nurse vacancy

by sector. In brief, the Monte Carlo simulation methods involved repeated random sampling of information obtained from the current and past surveys of nurse employers on the average and variability in nurse vacancy, as well as changes over time by healthcare sector to make predictions about what might happen in the future. Finally, adapted estimates from the 2016 Nursing Health Workforce Model developed by HRSA were created to make projections about Oregon nursing supply and demand (*U.S. Department of Health and Human Services, 2014*). Specifically, projections were adapted to convert information from full-time equivalents to nursing positions, and create variations on nursing supply to reflect different levels of change and combined strategies.

Turnover rates reflect the ability of the employer to retain personnel and in that way indicate the stability of the workforce.

Table 1: 2015 Nurse Employer Characteristics

	Hospital and Health Systems	Long Term Care	Home Health and Hospice	Public Health
Responding Entities	23	57	19	17
Response Rate	34.3%	42.2%	24.4%	48.6%
Types of Nurses Employed				
Licensed Practical Nurses	65.2%	98.0%	29.4%	69.6%
Registered Nurses	100.0%	100.0%	100.0%	100.0%
Nurse Practitioners	9.6%	12.0%	82.4%	34.8%
Nurse Anesthetists	39.1%	0.0%	0.0%	0.0%
Clinical Nurse Specialists	30.4%	0.0%	5.9%	4.3%
RN Vacancy Rate				
Confidence Interval	6.2%	17.3%	16.7%	15.2%
Range	4.8% to 7.9%	13.7% to 21.5%	11.4% to 23.8%	11.4% to 20.2%
% of vacant jobs available for newly-licensed RNs	<1% to 13%	<1% to 93%	<1% to 40%	<1% to 25%
RN Turnover Rate	32.4%	82.0%	21.4%	65.6%
Confidence Interval	10.8%	33.0%	27.7%	21.5%
Range	8.3% to 13.9%	27.2% to 39.3%	18.5% to 39.3%	15.3% to 29.3%
Use contract labor to fill Registered Nurse positions	1.4% to 32.6%	2.2% to >100%	<1% to 60%	<1% to 66.7%
Most difficult positions to fill	82.6%	22.8%	10.5%	11.8%
	Pediatric/ neonatal intensive care nurses, clinical nurse leaders, and critical nurses	Case managers, patient care, coordinators, rehabilitation nurses and staff nurses	Staff nurses, care managers, and patient care coordinators	Quality or infection control nurses, and nurse practitioners

PART I: 2015 NURSE EMPLOYER SURVEY RESULTS

A summary of the results of the 2015 OCN Survey of Nurse Employers can be found in **Table 1**. Detailed results by healthcare sector are presented in the sections that follow.

Hospitals and Health Systems

A majority of nurses in Oregon, more than 60%, work in hospitals and health systems (*Oregon Center for Nursing, 2015*). Thus, information on difficulty and stability of employing nurses in this healthcare sector provides insight into the largest segment of the Oregon nursing workforce. A total of 23 hospitals and health systems responded to the nurse employers survey (response rate = 34.3%). Registered nurse (RN) vacancy rates among hospitals and health systems are presented in **Figure 2**. The average RN vacancy rate in 2015 was **6.2%**, and the RN vacancy rate of the vast majority of hospitals and health systems fell between 4.8% and 7.9%. The **current RN vacancy rate in hospitals and health systems represents an increase in RN vacancy compared with both 2004 and 2010**. Although the RN vacancy rate in hospitals and health systems is the smallest among healthcare sectors, the overall number of vacant RN positions is greatest in this sector (78% of all current RN vacancies).



Figure 2: Hospitals and Health Systems Nurse Vacancy The average registered nurse vacancy rates by year are presented in bold text at the bottom of each bar. The high and low whiskers represent the upper and lower bound of the 95% confidence interval. The bold line with an end arrow demarcates average change over time, and the dashed lines mark the 95% confidence boundary of change over time.

In 2015, 73.9% of hospitals & health systems used traveling nurses, 73.9% used agency nurses, and 65.2% used per diem nurses to fill budgeted RN positions.

Overall, 82.6% of hospitals & health systems use some form of contract labor to fill budgeted nursing positions comprising an average of 4.2% of all nursing positions (range 1%-20%). The use of contract labor to fill budgeted positions was higher in 2015 compared to 2010 (71.0%), further evidence of an increase in the relative difficulty with which hospital and health systems can recruit and hire particular personnel.

The average nurse turnover rate among hospitals and health systems in 2015 was 10.8% (**Figure 3**). **Turnover among hospitals and health systems has remained relatively stable over the past 11 years and is the lowest compared to other healthcare sectors.**



Figure 3: Hospitals and Health Systems Nurse Turnover The average registered nurse turnover rates by year are presented in bold text at the bottom of each bar. The high and low whiskers represent the upper and lower bound of the 95% confidence interval. The bold line with an end arrow demarcates average change over time, and the dashed lines mark the 95% confidence boundary of change over time.

In 2010, the most challenging nursing positions to fill at Oregon hospitals and health systems were executive and administrative, operating room nurses and unit-level nurse managers. The experience of hospitals and health systems in recruiting and hiring different types of nursing personnel in 2015 is presented in **Figure 4**. Hospitals and health systems faced less difficulty in the recruitment of newly-licensed nurses, psychiatric/mental health nurses and licensed practical nurses (LPNs). In 2015, the most challenging nursing personnel

to recruit and hire at hospitals and health systems were pediatric/neonatal critical care nurses, clinical nurse leaders and adult critical care nurses. Of the vacant RN positions being recruited among hospitals and health systems in 2015, newly-licensed nurses were eligible to apply for 32.4%, a slight reduction from the

39.0% reported in 2010. It is important to note that it was somewhat or very difficult for hospitals and health systems to recruit and hire a majority of nursing specialty personnel. This may contribute to the slight decrease in the percent of vacant positions now open to new nursing graduates compared to 2010.

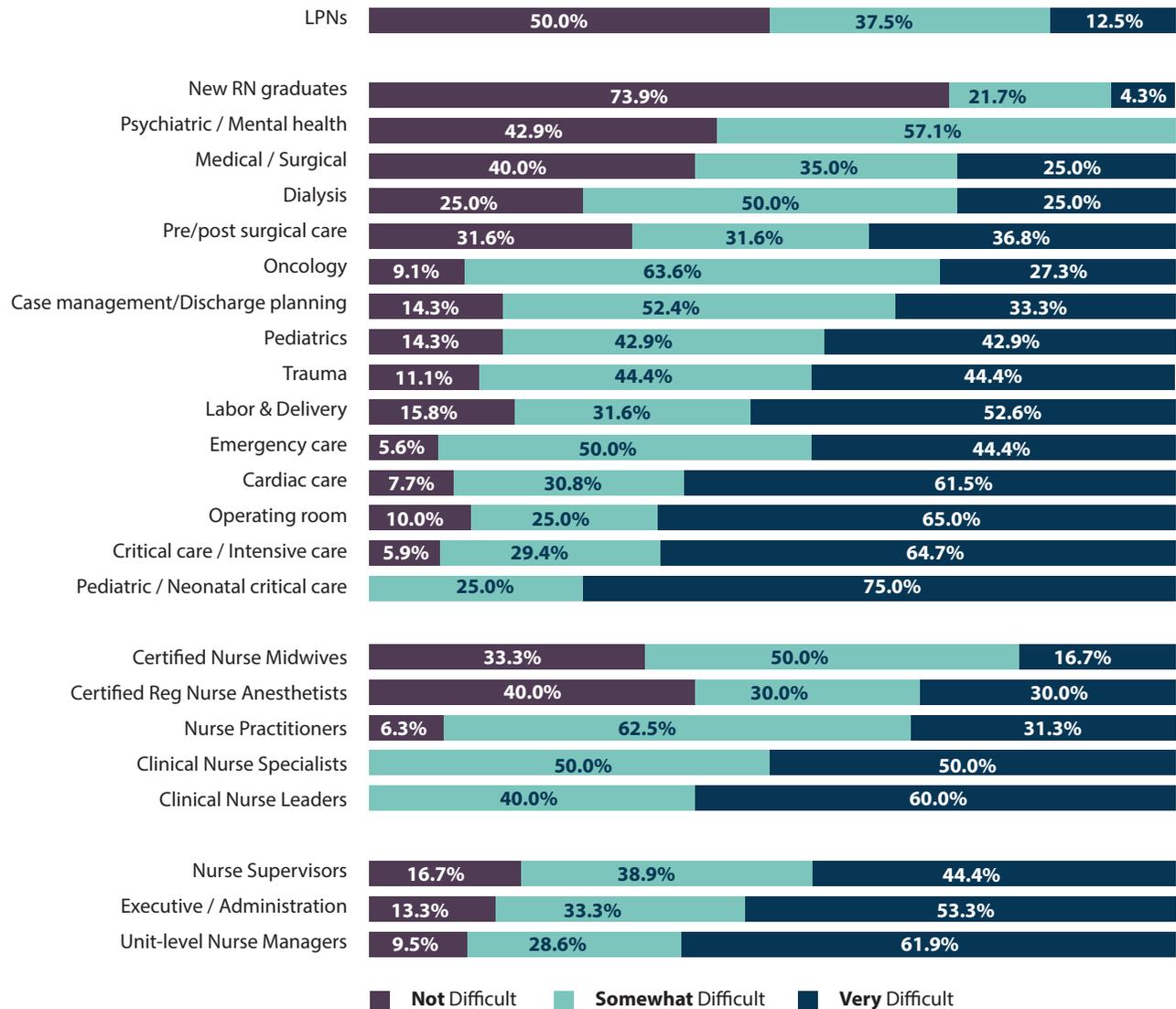


Figure 4: Hospitals and Health Systems Difficulty Recruiting and Hiring Employers ranked the difficulty in recruiting and hiring different types of nurses as being not difficult (purple), somewhat difficult (teal), or very difficult (blue). This figure presents the percentage of hospitals and health systems that responded with each level of difficulty. These results are organized by LPN, RN, advanced practice nurse and administrative roles and listed in order of overall difficulty (from least to most difficult).

Expected growth/decline in nursing positions in hospitals and health systems are presented in **Figure 5**. The number of budgeted positions for LPNs is expected to decrease in one-third of hospitals and health systems and stay the same in another 41.7%. **The number of budgeted positions for new nurse graduates and RNs with baccalaureate degrees is expected to increase or stay the same in the vast majority of hospitals and health systems, whereas positions for RNs with associate degrees are expected to decrease in 42.9%**

of those surveyed. Among Master's prepared nurses, budgeted positions are expected to increase the most for nurse practitioners. In contrast, budgeted positions for certified registered nurse anesthetists are expected to decrease in one-third of hospitals and health systems. Finally, positions requiring doctorates of nursing practice are expected to increase or stay the same in hospitals and health systems; no facilities reported a decrease in need for nurses with this level of education.

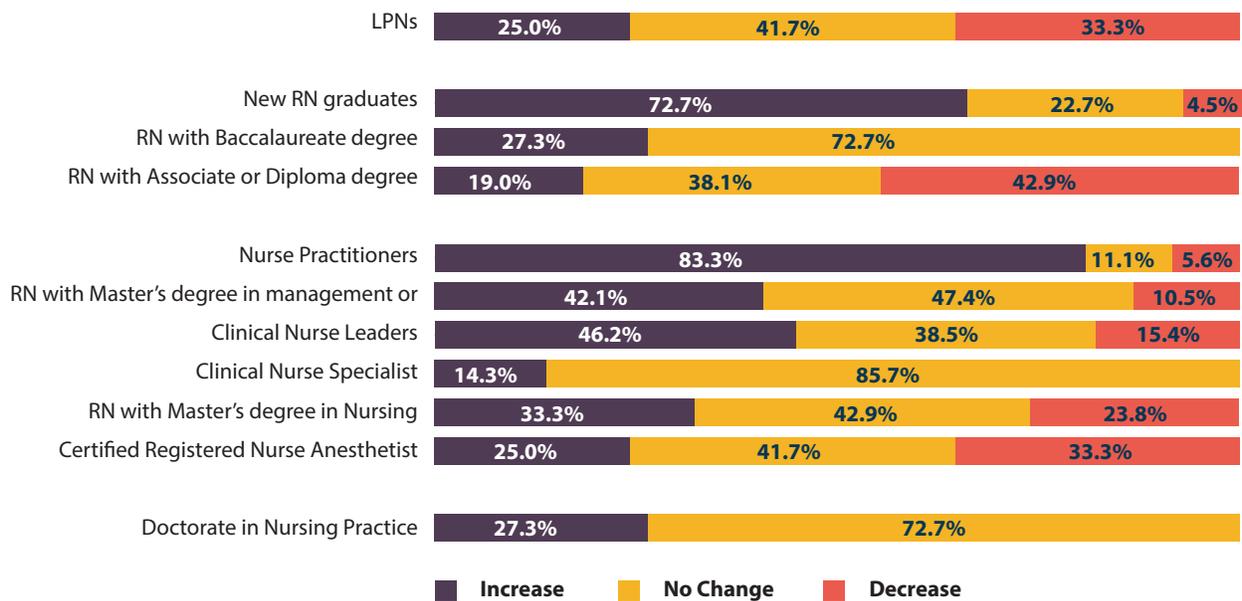


Figure 5: Hospitals and Health Systems Expected Change in Budgeted Nursing Positions Employers indicated their expectations about the number of budgeted positions increasing (purple), not changing (yellow), or decreasing (red) over the next two years. This figure presents the percentage of hospitals and health systems that responded with each level of expectation. These results are organized by LPN, RN, Master's degree prepared nurses, and Doctorates of Nursing Practice and listed in order of overall expectations (from expected increases to expected decreases).

Long Term Care

A total of 57 long term care facilities responded to the OCN Survey of Nurse Employers (response rate = 42.2%). Registered nurse vacancy rates in long term care are presented in **Figure 6**. **The average RN vacancy rate in 2015 was 17.3%**, and the RN vacancy rate of the vast majority of long term care facilities fell between 13.7% and 21.5%. The current RN vacancy rate in long term care represents an increase compared to 2004 and 2010. The average 2015 LPN vacancy rate in long term care was lower than that of RNs at 12.8%, and the LPN vacancy rate in the vast majority of long term care facilities fell was between 9.5% and 17.2%.

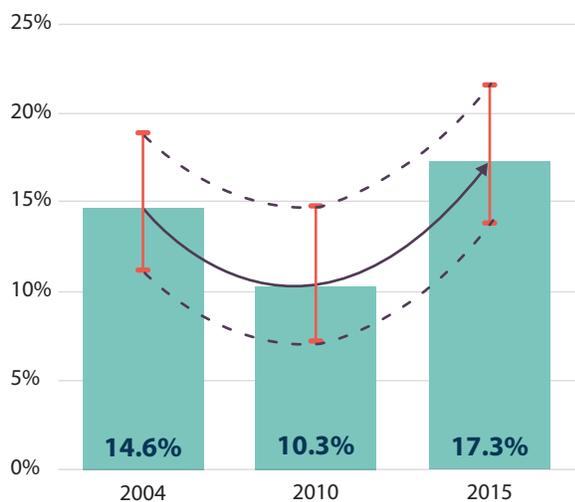


Figure 6: Long Term Care Nurse Vacancy The average registered nurse vacancy rates by year are presented in bold text at the bottom of each bar. The high and low whiskers represent the upper and lower bound of the 95% confidence interval. The bold line with an end arrow demarcates average change over time, and the dashed lines mark the 95% confidence boundary of change over time.

Traveling nurses were used in 5.2% of long term care facilities, while 21.1% used agency nurses, and 10.5% used per diem nurses to fill budgeted RN positions. Additionally, 1.8% of long term care facilities used traveling nurses to fill budgeted LPN positions, while 22.8% used agency nurses, and 10.5% used per diem nurses. Overall, 22.8% and 21.1% of long term care facilities used some form of contract labor to fill budgeted RN and LPN positions, respectively, comprising an average of 8.6% of RN positions (range

1%-33%) and an average of 6.3% of LPN positions (range 1%-10%). This change represents an increase in the use of contract labor care compared to the 14.0% of long term care facilities that reported using contract labor to fill RN positions in 2010. Similar to hospitals and health systems, it is likely the increased use of contract labor is one way that long term care facilities are attempting to manage increased difficulty in recruiting and hiring nursing personnel.

The average RN turnover rate in long term care in 2015 was 33.0%, an increase compared to 2004 and 2010 (Figure 7). Long term care has the highest RN turnover rate, indicating that it experiences the least workforce stability among health care sectors in Oregon. The 2015 average turnover rate for LPN positions in long term care was slightly lower compared to that of RNs at 30.8%, with the LPN turnover rate in the vast majority of long term care facilities being between 24.8% and 37.5%.

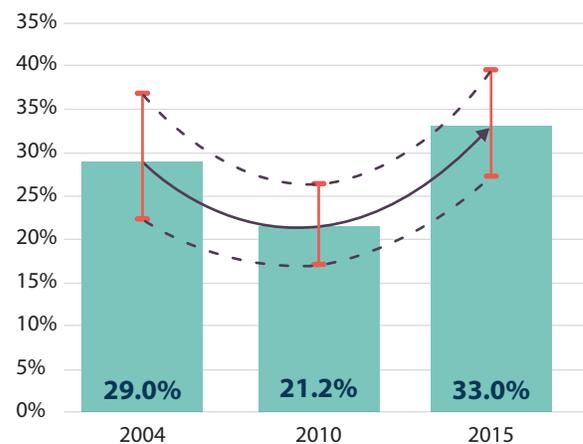


Figure 7: Long Term Care Registered Nurse Turnover The average registered nurse turnover rates by year are presented in bold text at the bottom of each bar. The high and low whiskers represent the upper and lower bound of the 95% confidence interval. The bold line with an end arrow demarcates average change over time, and the dashed lines mark the 95% confidence boundary of change over time.

In 2010, it was most challenging to recruit and hire residential care managers and staff RNs in long term care. The experiences of long term care facilities in recruiting and hiring different types of nursing

personnel in 2015 are presented in **Figure 8**. The least difficult nursing positions to fill in 2015 were LPNs, infection control nurses and positions for new nurse graduates. In contrast, **the most challenging nursing personnel to recruit and hire in long term care were case managers, patient care coordinators, rehabilitation nurses and staff RNs**. This may partially explain why the proportion of nursing vacancies

available for new nurse graduates in long term care decreased from 2010 to 2015. Specifically, of the vacant RN positions being recruited, newly-licensed nurses were eligible to apply for 82.0% of positions in 2015, a reduction from 2010 when 100% of vacant RN positions were available for new graduates.

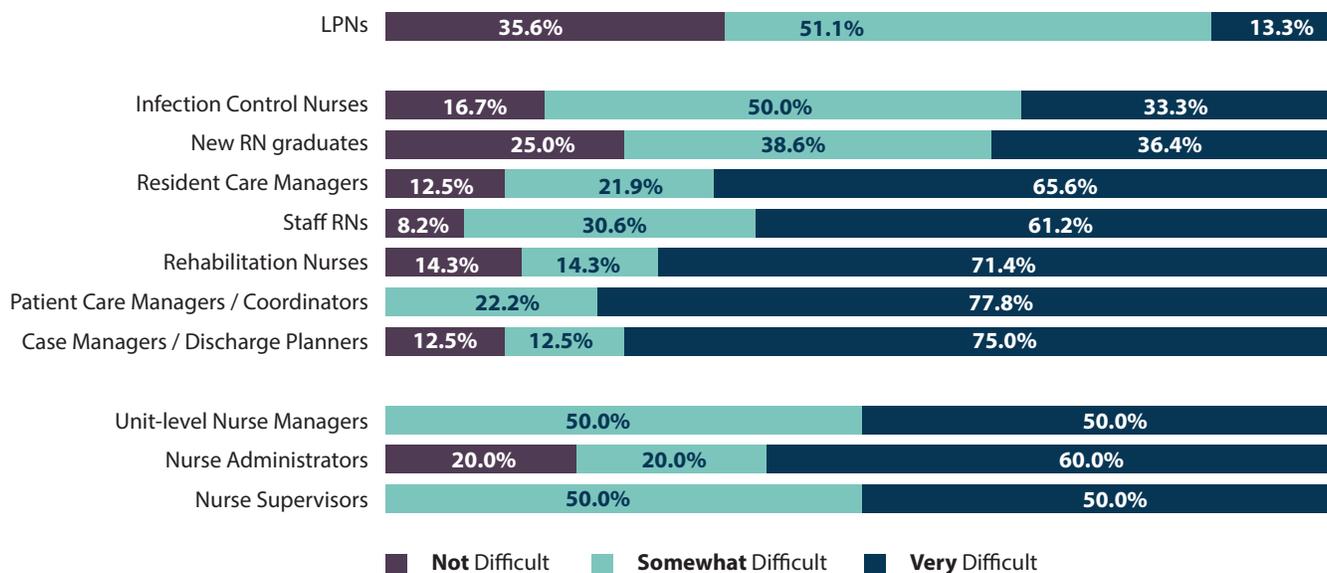


Figure 8: Long Term Care Difficulty Recruiting and Hiring Employers ranked the difficulty in recruiting and hiring different types of nurses as being not difficult (purple), somewhat difficult (teal), or very difficult (blue). This figure presents the percentage of long term care employers that responded with each level of difficulty. These results are organized by LPN, RNs and administrative roles and listed in order of overall difficulty (from least to most difficult).

Long term care has the highest RN turnover rate, indicating that it experiences the least workforce stability among health care sectors in Oregon.

Expected growth/decline in nursing positions in long term care are presented in **Figure 9**. The number of budgeted positions for LPNs is expected to stay the same or decrease in two-thirds of home health and hospice agencies. The number of budgeted positions for RNs with associate degrees, nurse practitioners, and RNs

with baccalaureate degrees is expected to increase or not change. In contrast, there is no change and in some instances decreases in the expected number of budgeted positions for clinical nurse specialists and clinical nurse leaders in long term care.

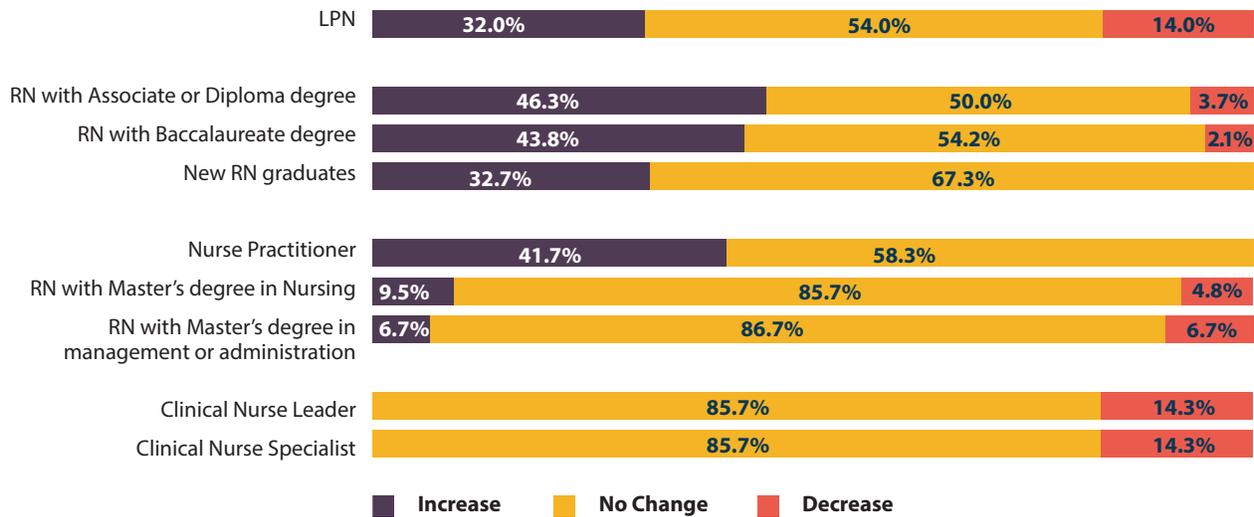


Figure 9: Long Term Care Expected Change in Budgeted Nursing Positions Employers indicated their expectations about the number of budgeted positions increasing (purple), not changing (yellow), or decreasing (red) over the next two years. This figure presents the percentage of long term care employers that responded with each level of expectation. These results are organized by LPN, RN, and Master's degree prepared nurses and listed in order of overall expectations (from expected increases to expected decreases).

The average nurse vacancy rate in 2015 was 16.7% for home health/hospice employers.

Home Health and Hospice

A total of 19 home health and hospice agencies responded to the Survey of Nurse Employers (response rate = 24.4%). Registered nurse vacancy rates for home health and hospice are presented in **Figure 10**. **The average nurse vacancy rate in 2015 was 16.7%**, with the RN vacancy rate of the vast majority of home health and hospice agencies was between 11.4% and 23.8%. The current RN vacancy rate in home health and hospice represents an increase compared to both 2004 and 2010 indicating an overall increase in the difficulty recruiting and hiring RNs in this sector.

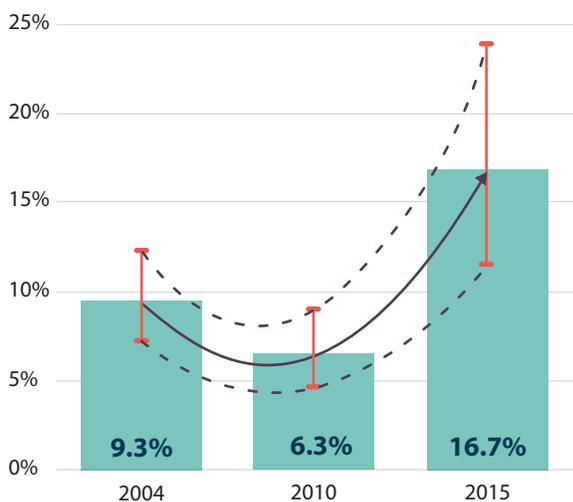


Figure 10: Home Health and Hospice Nurse Vacancy
The average registered nurse vacancy rates by year are presented in bold text at the bottom of each bar. The high and low whiskers represent the upper and lower bound of the 95% confidence interval. The bold line with an end arrow demarcates average change over time, and the dashed lines mark the 95% confidence boundary of change over time.

No home health and hospice organizations reported using traveling nurses, though 5.3% used agency nurses, and 10.5% used per diem nurse to fill budgeted RN positions. Overall, 10.5% of home health and hospice organizations used some form of contract labor to fill budgeted RN positions, comprising an average of 3.3% of all nursing positions (range 0%-10%). This is a substantive change compared to 2010 when no home health and hospice agencies reported using contract labor. The slight increase in contract labor use over time

in home health and hospice may reflect changing strategies used in this sector to fill budgeted RN positions.

The average RN turnover rate in home health and hospice in 2015 was 27.7% (**Figure 11**). **Nurse turnover rates have changed considerably over the past 11 years.** The current turnover rate represents an increase since 2004, but a slight decline compared to 2010. If the turnover rate in home health and hospice continues to decline in future years, this may indicate the nursing workforce in this sector is becoming more stable.

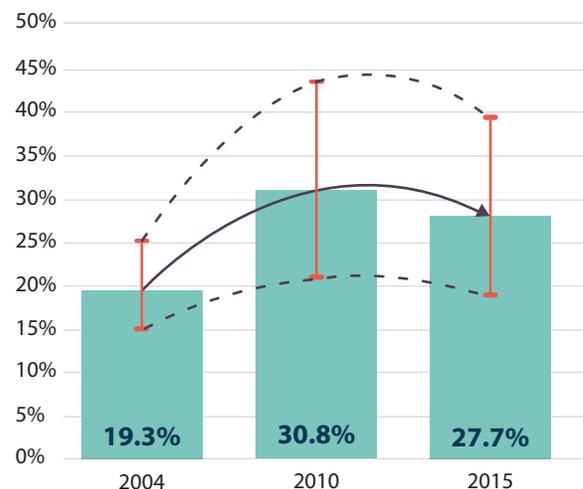


Figure 11: Home Health and Hospice Nurse Turnover
The average registered nurse turnover rates by year are presented in bold text at the bottom of each bar. The high and low whiskers represent the upper and lower bound of the 95% confidence interval. The bold line with an end arrow demarcates average change over time, and the dashed lines mark the 95% confidence boundary of change over time.

In 2010, the most challenging nursing position to fill in home health and hospice was staff RNs. The experience of home health and hospice in recruiting and hiring different types of nursing personnel in 2015 are presented in **Figure 12**. The least difficulty faced in home health and hospice involved the recruitment of LPNs and newly-licensed RNs. In 2015, the most challenging nursing personnel to recruit and hire in home health and hospice continued to be staff RNs followed by care managers and patient

care coordinators. **Of the vacant RN positions being recruited in home health and hospice in 2015, newly-licensed nurses were eligible to apply for 21.0% of positions.** This is a considerable change since 2010 when there were no home health and hospice positions available for newly-licensed nurses, and may reflect a changing attitude toward employing new nurse graduates in this field and another indicator of the difficulty employers are facing recruiting experienced nurses into this sector.

Expected growth/decline in home health and hospice are presented in **Figure 13**. The number of budgeted positions for LPNs will increase or stay the same in home health and hospice. The number of budgeted positions for RNs with a baccalaureate or associate degrees is expected to increase; positions for new nurse graduates will likely stay the same. Budgeted positions for a majority of positions requiring an RN with a Master’s degree are expected to decrease in home health and hospice, especially for clinical nurse specialists and clinical nurse leaders.

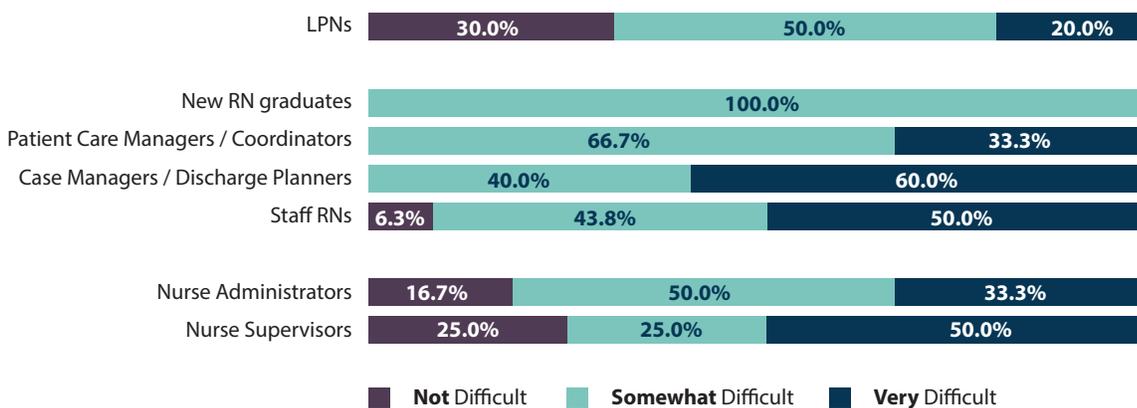


Figure 12: Home Health and Hospice Difficulty Recruiting and Hiring Employers ranked the difficulty in recruiting and hiring different types of nurses as being not difficult (purple), somewhat difficult (teal), or very difficult (blue). This figure presents the percentage of home health and hospice employers that responded with each level of difficulty. These results are organized by LPN, RNs and administrative roles and listed in order of overall difficulty (from least to most difficult).

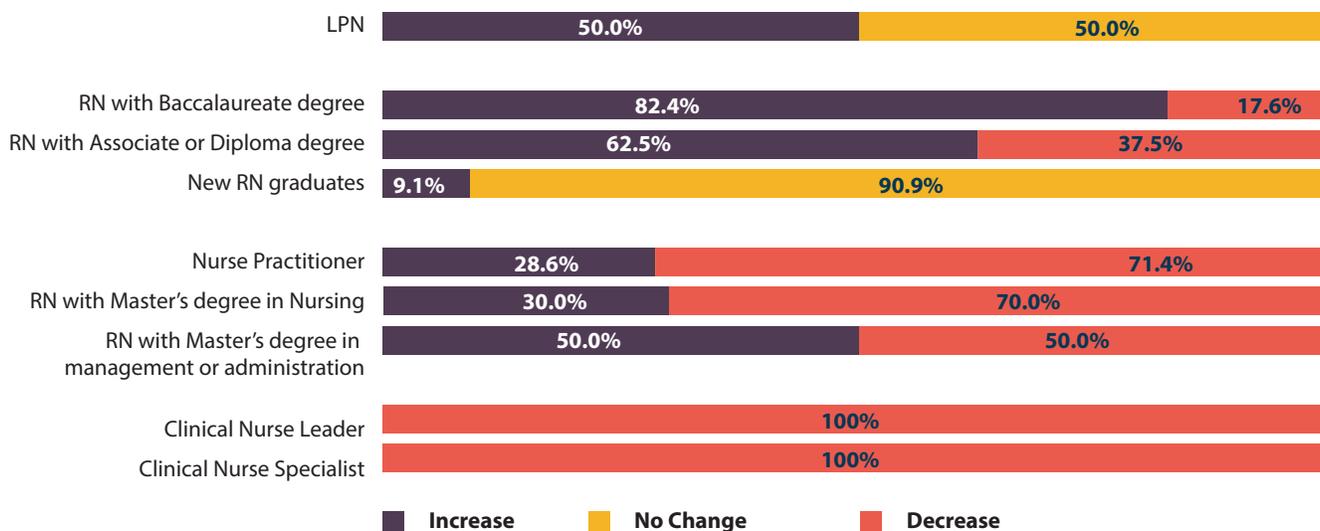


Figure 13: Home Health and Hospice Expected Change in Budgeted Nursing Positions Employers indicated their expectations about the number of budgeted positions increasing (purple), not changing (yellow), or decreasing (red) over the next two years. This figure presents the percentage of home health and hospice employers that responded with each level of expectation. These results are organized by LPN, RN, and Master’s degree prepared nurses and listed in order of overall expectations (from expected increases to expected decreases).

Public Health

A total of 17 public health departments responded to the **2015 OCN Survey of Nurse Employers** (response rate = 48.6%). Registered nurse vacancy rates in public health are presented in **Figure 14**. **The average RN vacancy rate in public health in 2015 was 15.2%**, with the RN vacancy rate falling between 11.4% and 20.2% in the vast majority of public health agencies. The current RN vacancy rate is an increase compared to 2004 and 2010 indicating it is becoming more difficult to recruit and hire RNs in public health.

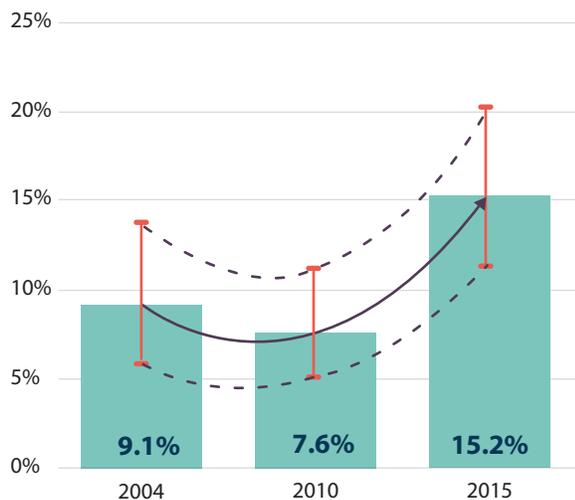


Figure 14: Public Health Nurse Vacancy The average registered nurse vacancy rates by year are presented in bold text at the bottom of each bar. The high and low whiskers represent the upper and lower bound of the 95% confidence interval. The bold line with an end arrow demarcates average change over time, and the dashed lines mark the 95% confidence boundary of change over time.

No public health employers reported using traveling nurses, though 11.8% used agency nurses, and 5.9% used per diem nurses to fill budgeted RN positions. Overall, 11.8% of public health employers used some form of contract labor to fill budgeted RN positions, comprising an average of 5.8% of all nursing positions (range 0%-10%). This change represents an overall decrease in the use of contract labor compared to 2010 when 26.0% of public health nurse employers reported using contract labor. Thus, the public health sector may intentionally or otherwise be relying on means other

than contract labor to match the apparent increase in difficulty in recruiting and hiring RNs.

The average nurse turnover rate in public health in 2015 was 21.5% (**Figure 15**). **Nurse turnover rates in public health have more than doubled since 2004**. The increase in turnover indicates increased instability.

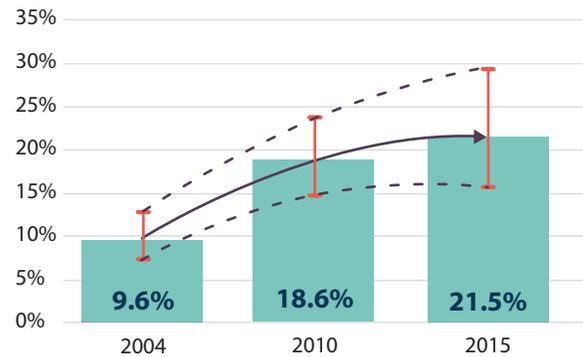


Figure 15: Public Health Nurse Turnover The average registered nurse turnover rates by year are presented in bold text at the bottom of each bar. The high and low whiskers represent the upper and lower bound of the 95% confidence interval. The bold line with an end arrow demarcates average change over time, and the dashed lines mark the 95% confidence boundary of change over time.

In 2010, the most challenging nursing position to fill in public health was nurse practitioners. The 2015 experience in recruiting and hiring different types of nursing personnel in public health are presented in **Figure 16**. The least difficulty faced in public health involved the recruitment of school nurses and care coordinators. In 2015, with the exception of school nurses, **there was considerable difficulty in recruiting and hiring a majority of nursing specialties in public health**. The most challenging nursing personnel to recruit and hire in public health were quality or infection control nurses, nurse practitioners and nurse managers. This may contribute to a decrease in the number of vacant positions open for new graduates. Of the vacant RN positions in 2015, newly-licensed nurses were eligible to apply for 66.0%, a considerable reduction compared to 2010 when 100% of recruited positions in public health were available for newly-licensed nurses.

Expected growth/decline in public health are presented in **Figure 17**. The number of budgeted position for LPNs and nurse practitioners is expected to increase or stay the same in a majority of public health agencies. In contrast,

budgeted positions for clinical nurse leaders and RNs with associate degrees are expected to decrease in the vast majority of public health agencies.

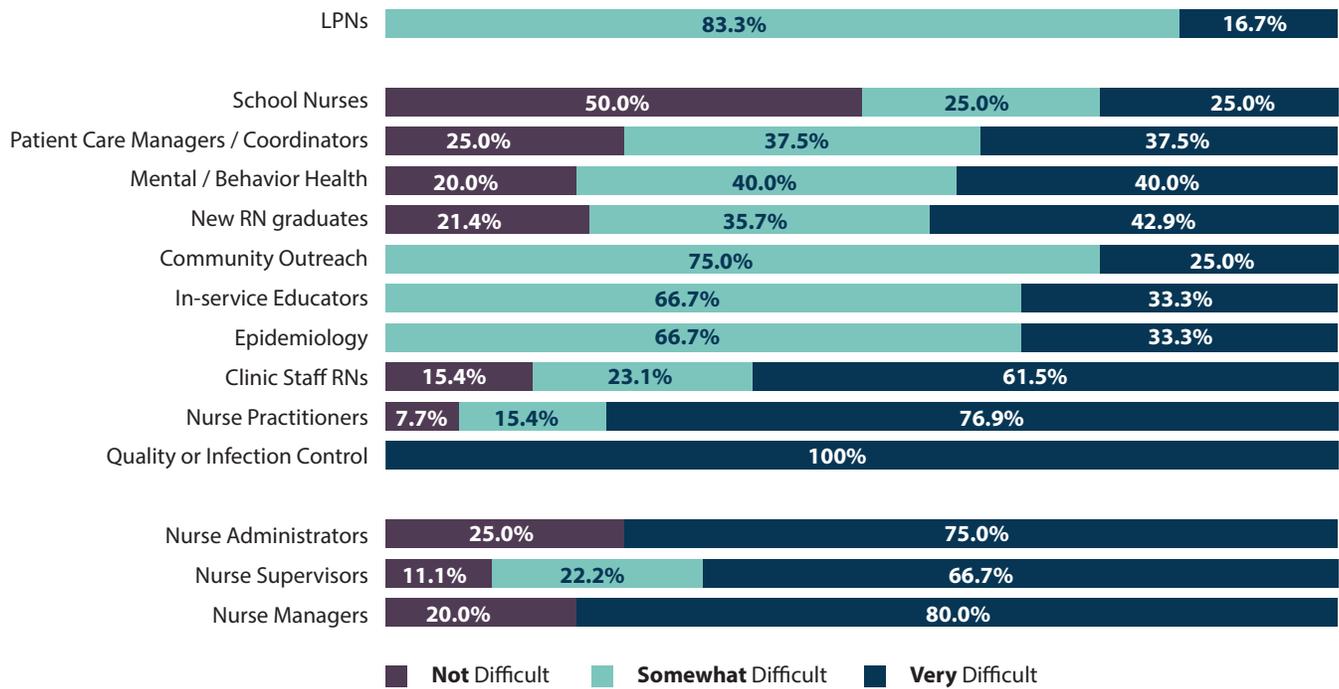


Figure 16: Public Health Difficulty Recruiting and Hiring Employers ranked the difficulty in recruiting and hiring different types of nurses as not being difficult (purple), somewhat difficult (teal), or very difficult (blue). This figure presents the percentage of public health employers that responded with each level of difficulty. These results are organized by LPN, RN/NP, and administrative roles and listed in order of overall difficulty (from least to most difficult).

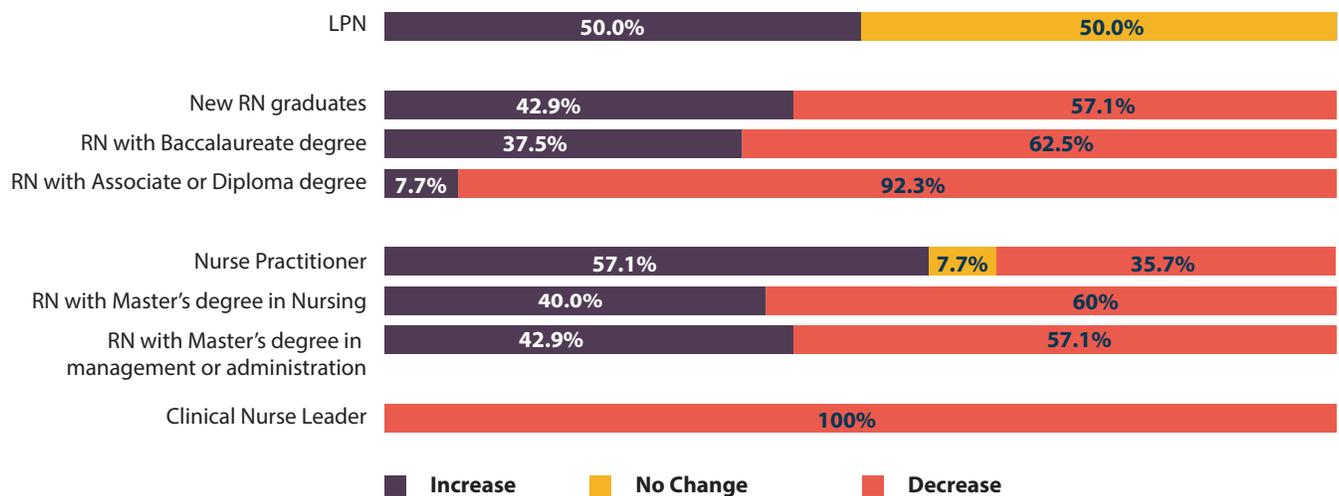


Figure 17: Public Health Expected Change in Budgeted Nursing Positions Employers indicated their expectations about the number of budgeted positions increasing (purple), not changing (yellow), or decreasing (red) over the next two years. This figure presents the percentage of public health employers that responded with each level of expectation. These results are organized by LPN, RN, and Master's degree prepared nurses and listed in order of overall expectations (from expected increases to expected decreases).

PART II: PROJECTIONS FOR NURSING IN OREGON

Demand for Nurses in Oregon

The demand for nurses in Oregon is expected to invariably increase over the next decade at least. According to the Nursing Health Workforce Model developed by the Health Resources and Services Administration (HRSA), the **demand for active RNs in Oregon will increase by approximately 1.9% annually between 2015 and 2025**. It is important to note that this projected demand for RNs takes

into consideration increased nursing needs for the aging populous (including population demographics, health risk factors, disease prevalence and insurance coverage), as opposed to a consistent increase in the demand for nurses because of population growth (*Figure 18*).

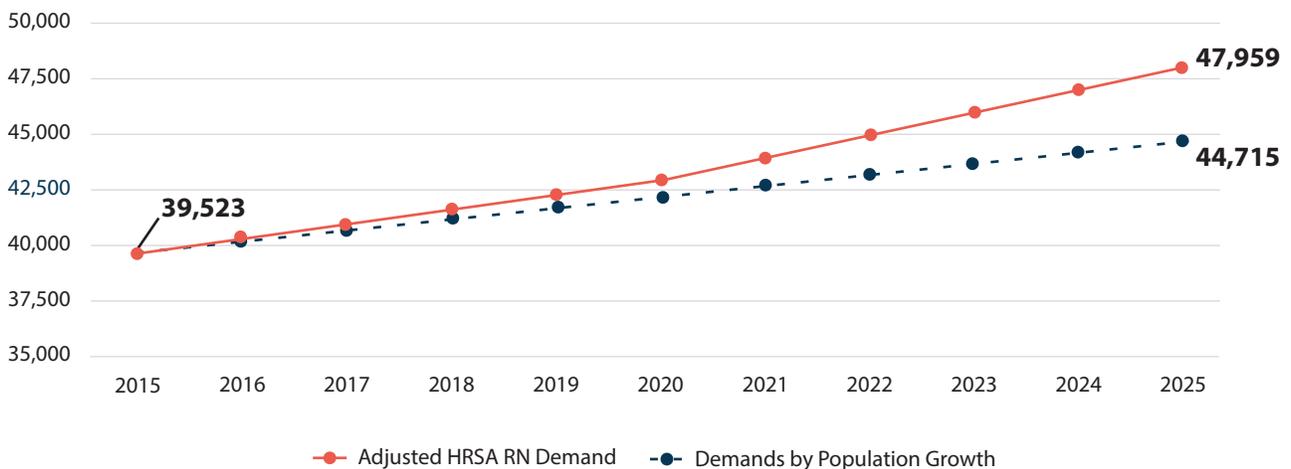


Figure 18: Increasing Overall Demand for Registered Nurses in Oregon This figure depicts two projections of demand for nursing in Oregon. The first (solid red line) represents Oregon-specific estimates from the 2016 HRSA Nursing Health Workforce Model. Estimates from the HRSA model reflect the increasing care needs of the aging population and have been adjusted to account for refined estimates of the number of active nurses currently working in Oregon. The second projection of demand for nursing in Oregon (dashed blue line) is provided as a frame of reference and is based on maintaining the current Oregonian-to-registered nurse ratio of approximately 101 and the projected growth of the population (Data Sources: Oregon Center for Nursing, 2015; Population Research Center, 2015).

The demand for RNs in Oregon is projected to grow at different rates by workforce sector over the next ten years. For example, based on the HRSA model, the demand for nurses in hospitals is projected to increase fairly consistently by approximately 1.7% annually between 2015 and 2025 for a total of 17.3% growth. Similarly, the demand for nurses in home health is expected to increase relatively consistently by approximately 1.0% annually for a total of 9.7%, and the demand for nursing in public health is expected to increase consistently by approximately 2.0% annually for a total of 19.5% growth between 2015 and 2025. **The nursing workforce sector that will experience the**

greatest growth is long term care, which is projected to increase in demand for nursing by an average of 4.2% annually between 2015 and 2025 for a total of 42.1% growth (Figure 19). Despite variable growth in nursing demand by sector, by 2025 it is still projected that approximately 62% of the registered nursing workforce in Oregon will be working in hospitals. The greatest change in the where nurses work in 2025 will be in long term care where 8.5% of Oregon RNs will work compared to the approximate 5% in 2015. Put simply, more than 70% of the entire nursing workforce will be needed to address the increasing acute and long term care needs of Oregonians by 2025.

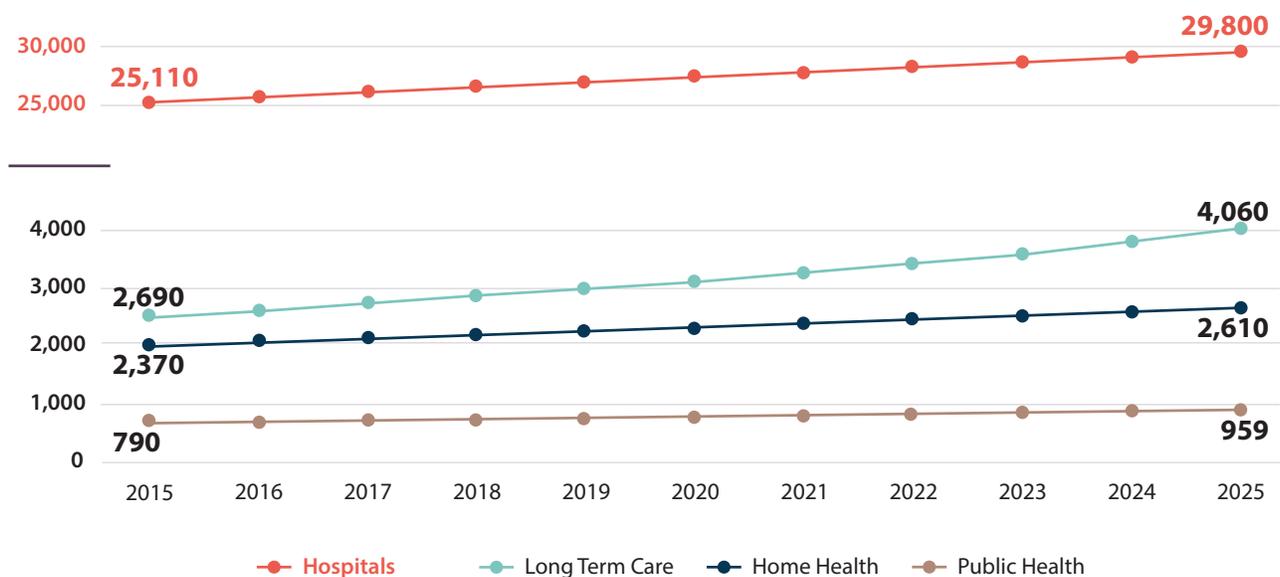


Figure 19: Growth in Demand for Registered Nurses in Oregon by Workforce Sector This figure depicts projections of demand for nursing in Oregon across four workforce sectors. Projections are based on the 2016 HRSA Nursing Health Workforce Model and have been adjusted for more precise estimates of the number of registered nurses working in Oregon. Estimates from the HRSA model reflect the increasing care needs of the aging population. Although only about 5% of Oregonian nurses work in long term care currently, this sector is likely to see the greatest growth in the demand for nursing because of the increasing needs of the aging population.

The demand for RNs in Oregon is projected to grow at different rates by workforce sector over the next ten years.

The number of new demand-based nursing jobs by sector are presented in **Figure 20**. Because nurses working in hospitals represent the largest segment of the nursing workforce in Oregon (approximately 60% in 2015), the demand for nursing in raw numbers will be greatest in hospital and health systems, followed by long term care, home health and hospice and public health, respectively. As an example, to meet the projected statewide demand for nurses in Oregon hospitals, there would need to be approximately 440 additional RN jobs in 2016, an additional 400 RN jobs in 2017, and so on. As another example, to meet

the projected statewide demand for nurses in long term care, there would need to be approximately 60 additional positions in 2016, 60 additional registered nurse jobs in 2017, and so on. Collectively, increasing demand reflects a considerable change in the size of the Oregon nursing workforce with an increasing proportion of new jobs anticipated in long term care. It is important to note that the **additional RN jobs will present challenges above and beyond existing issues with RN recruitment/hiring and turnover that are already troublesome in many sectors.**

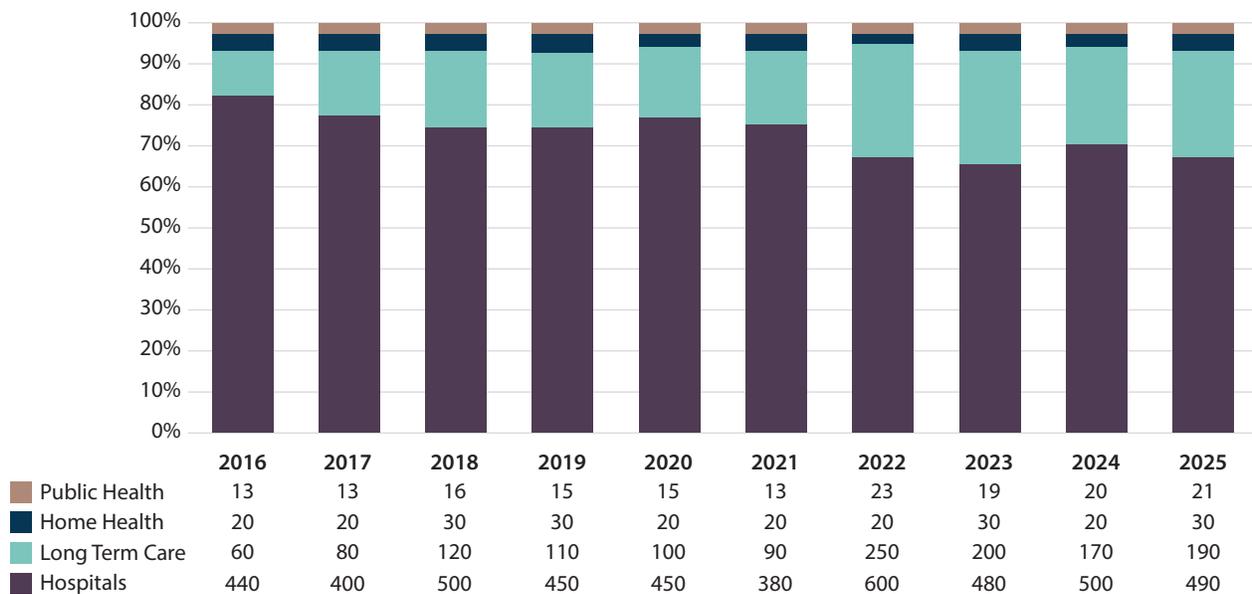


Figure 20: Demand-based Additional Registered Nurse Jobs per Sector This figure depicts demand-based additional (new) jobs for registered nurses by year and by healthcare sector. Projections are based on the 2016 Nursing Health Workforce Model developed by the Health Resources & Services Administration and have been adjusted for more precise estimates of the number of active registered nurses working in Oregon.

With the growth in demand for RNs in Oregon, vacancy rates for RNs are also expected to increase. Based on expected demand, the projected RN vacancy rates among hospitals and health systems and long term care are presented in **Figure 21**. The average vacancy rate for budgeted RN positions is expected to be 7.2% in hospitals and health systems and 21.5% in long term care in 2025.

Although they represent a much smaller segment of the nursing workforce, the projected RN vacancy rates among home health and hospice and public health are presented in **Figure 22**. The average vacancy rate for budgeted registered nurse positions is expected to be 18.9% in home health and hospice and 16.9% in public health in 2025.

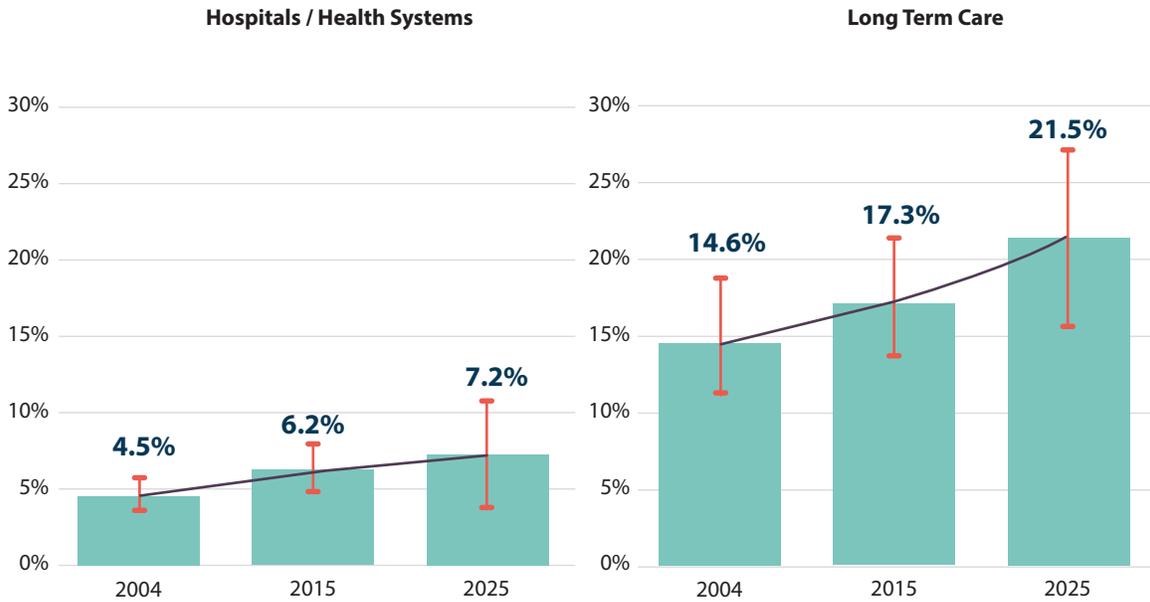


Figure 21: Projected Registered Nurse Vacancy Rates With the expected increase in demand for nurses, the vacancy rate for budgeted registered nurse position is also expected to increase. The vacancy rate is expected to increase most in long term care that will experience the greatest increase in demand for registered nurses in the coming decade. The average nurse vacancy rates by year are presented in bold text above each bar. The high and low whiskers represent the upper and lower bound of the 95% confidence interval. The bold line demarcates average change over time.

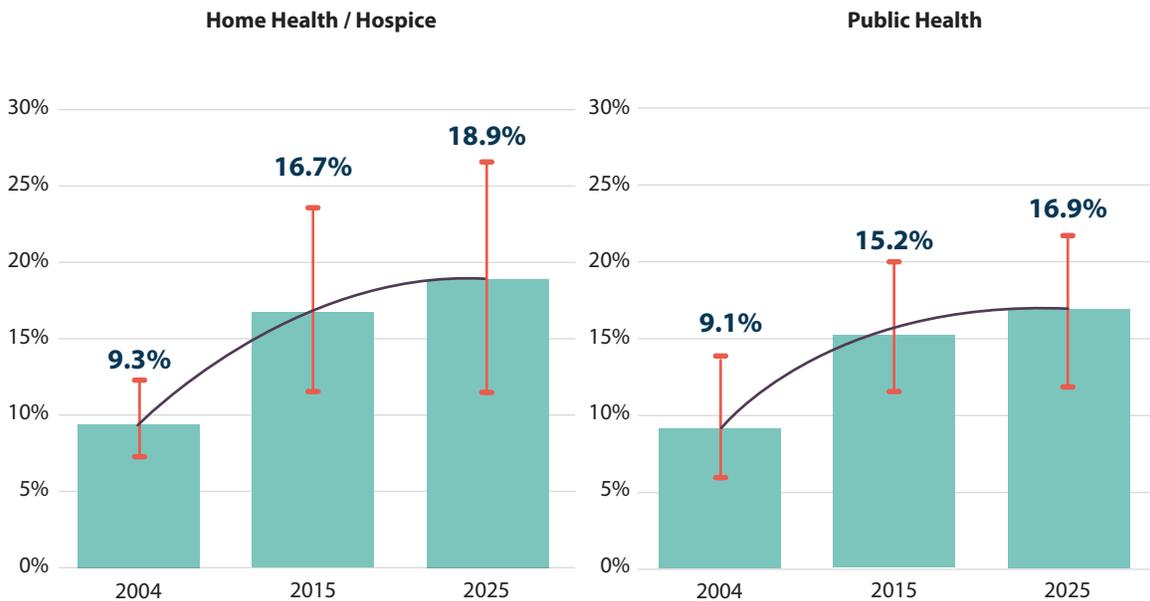


Figure 22: Projected Registered Nurse Vacancy Rates With the expected increase in demand for nurses, the vacancy rate for budgeted registered nurse position is also expected to increase. The vacancy rate is expected to increase consistently with the growth in demand for nurses in home health and hospice and in public health over the next decade. The average nurse vacancy rates by year are presented in bold text above each bar. The high and low whiskers represent the upper and lower bound of the 95% confidence interval. The bold line demarcates average change over time.

Supply of Nurses in Oregon

The demand for RNs in Oregon will increase considerably over the next decade. **If there is no change in the supply of RNs in Oregon, there will**

be a sizeable and increasing gap in supply versus demand over the next 10 years (Figure 23).

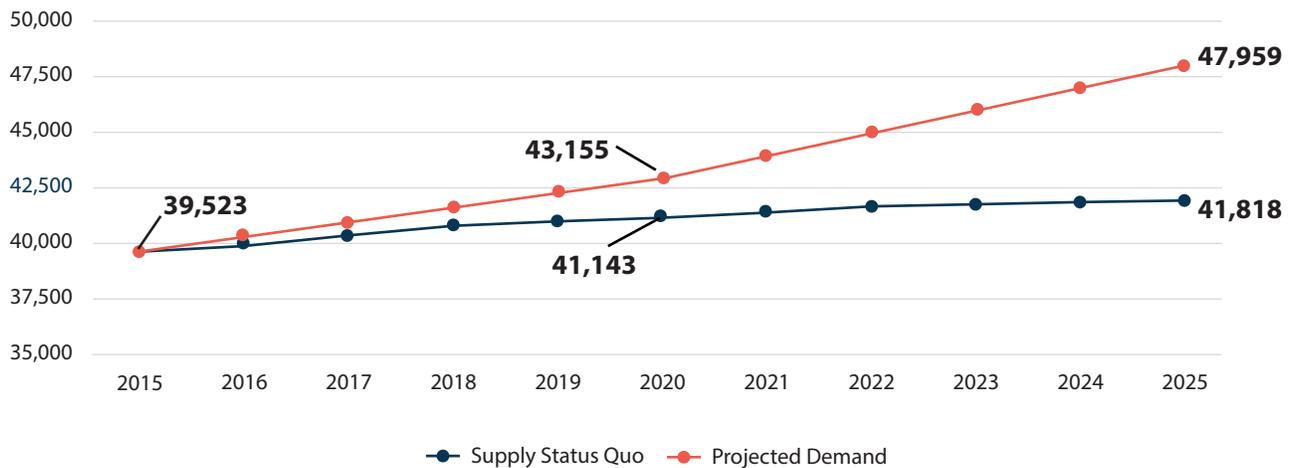


Figure 23: Increasing Gap in Supply versus Demand for Registered Nurses in Oregon With the expected increase in demand and an unchanged supply over the next decade, there will be an increasing gap in supply versus demand for registered nurses in Oregon. Projections are based on the 2016 Nursing Health Workforce Model developed by the Health Resources & Services Administration and have been adjusted for more precise estimates of the number of active registered nurses working in Oregon.

A common scenario to match increasing workforce demand as well as meet family financial needs is delayed retirement. Many RNs are the single source of family income and work/intend to work well beyond a typical retirement age. The delayed retirement scenario is common in nursing workforce projections because of the large segment of the nursing workforce close to retirement age. In Oregon, a delayed retirement

scenario for RNs, specifically meaning that the average age of RNs leaving the workforce is increased by two years, would result in minor short term gains over the status quo but would inevitably fail to meet the increasing demand for nurses by 2017 (Figure 24). Thus, **RNs working for more years is a rate-limited solution** to the increasing gap in supply versus demand that is expected in Oregon.

More than 70% of the entire nursing workforce will be needed to address the increasing acute and long term care needs of Oregonians by 2025.

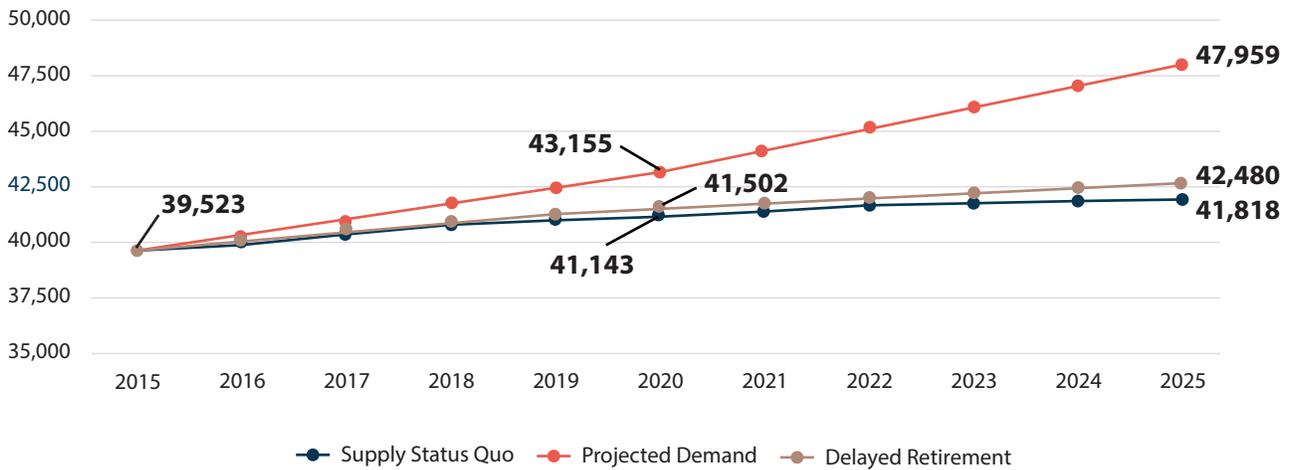


Figure 24: Influence of Delayed Retirement on the Gap in Supply versus Demand for Registered Nurses Registered nurses remaining in the workforce longer will not result in a sufficient increase in supply to match the projected increase in demand in Oregon.

Another way in which the supply of RNs can increase is a change in the number of new graduates entering the workforce. In Oregon, a moderate (5%) increase in the number of new graduates entering the workforce would result in eventual gains over the status quo but would fail to meet the increasing demand for nurses at any point in the next decade. In fact, the number of new graduates entering the workforce would need

to increase by 8.3% annually to eventually match the expected demand for RNs by the year 2025 (**Figure 25**). Hence, **a significant change in the output from nursing programs would be necessary to increase the supply of RNs** to eventually match the projected increase in demand.

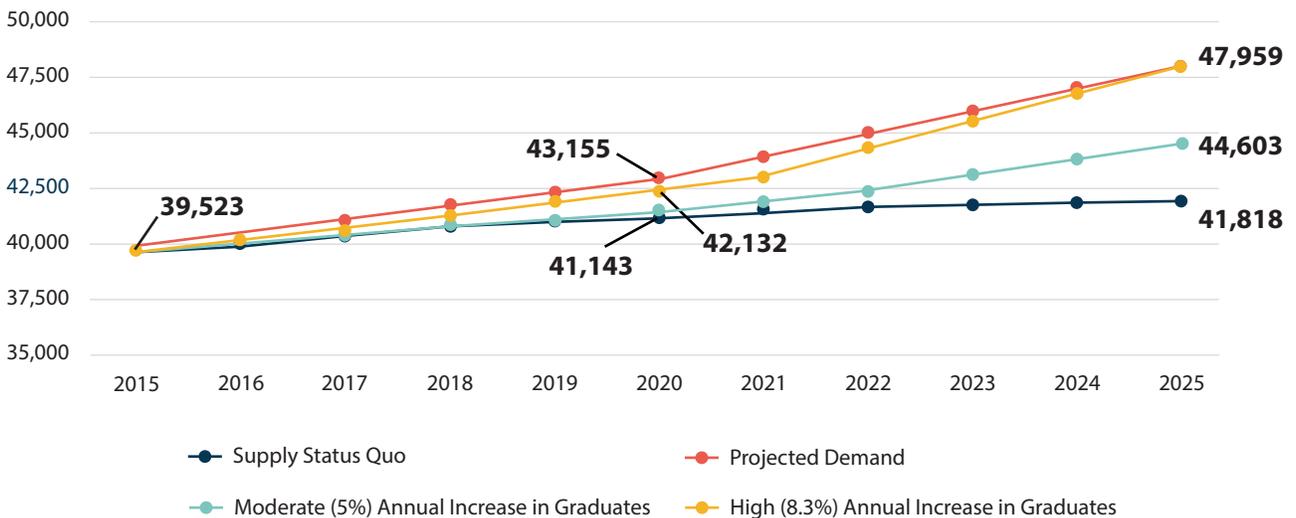


Figure 25: Influence of Increased Graduates on the Gap in Supply versus Demand for Registered Nurses A moderate (5%) annual increase in the number of new graduates entering the workforce would not result in a sufficient increase in the supply of registered nurses to match the projected increase in demand in Oregon.

It is likely that a combination of delayed retirement and increased output from nursing programs will be necessary to increase the supply of nurses sufficiently to match the projected increase in demand. Specifically, that means that nurses

would need to remain in the workforce longer (by approximately 2 years) and at the same time the number of graduates from nursing programs who become active nurses in Oregon increases by 5% annually (*Figure 26*).

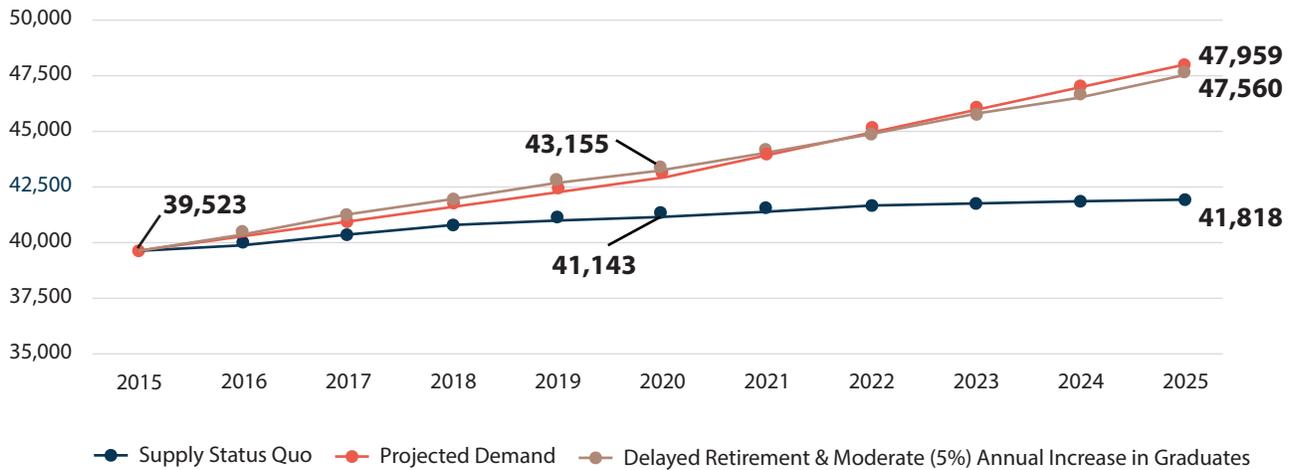


Figure 26: Matching Supply with Demand for Registered Nurses Registered nurses remaining in the workforce longer and a moderate (5%) annual increase in the number of new graduates entering the workforce would result in a sufficient increase in the supply of registered nurses to match the projected demand in Oregon.

It is likely that a combination of delayed retirement and increased output from nursing programs that will be necessary to increase the supply of nurses sufficiently to match the projected increase in demand.

DISCUSSION AND RECOMMENDATIONS

The goal of this report is to provide insight into the changing landscape of the demand for nurses in Oregon. Specifically, this report looks at nursing workforce demand from the perspective of employers as opposed to demand based on utilization of services. Through the employers' lens, a clearer picture emerges of the challenges to the state's nursing workforce. Given the added complexities of shifting national and state health policy, more people living with complex health conditions, and the aging population, ensuring a quality nurse for every Oregonian who needs one is more important than ever.

Oregon is currently faced with difficulties in filling budgeted positions and instability in the workforce

due to high rates of nurse turnover. Though nationally there is an anticipated surplus of RNs by 2025, Oregon has a projected deficit in the nursing workforce that, left unattended, will leave the state unable to meet the nursing needs of its population.

As demonstrated, Oregon should rely on numerous strategies to avoid a significant shortfall of RNs in the future, including identifying creative ways to recruit and retain nurses in all settings, recruit and retain qualified and diverse nurse faculty, and increase education opportunities for students. The following recommendations may help ensure Oregon has the right nurse in the right place in the future:

Recruit and Retain Nurses in All Settings

1. **Provide incentives**—financially and otherwise—to hire and retain nurses with all levels of experience. Residency or transition to practice programs, which have been shown to yield nurse retention rates from 88 to 96%, can be instrumental to retain new nurses (*Twibell & St. Pierre, 2012*). In a recent survey of newly-licensed Oregon nurses, only 38% employed nurses participated in transition to practice programs indicating this is a growth area to explore (*Oregon Center for Nursing, 2016*). At the other end of the spectrum, employers can provide incentives for experienced nurses and nurse faculty to delay retirement. Recent studies on the nursing workforce suggest that it is possible to retain nurses past traditional retirement age (*Gnadinger, 2014*). While some nurses may continue in their current positions, other nurses could be encouraged to remain in the workforce by allowing flexible scheduling, moving to less physically demanding jobs, or sharing their expertise as educators (*Robert Wood Johnson Foundation, 2014*).
2. Identify and implement **improvements in the work environment** that foster greater job satisfaction and autonomy. This will be particularly important in hospitals, which will see the largest volume of positions, and long term care where nurse turnover rates are highest.
3. **Examine nursing program curricula** to determine whether the future workforce is prepared for employment in sectors with the greatest impending needs. This will entail preparing nurses primarily to meet the increasing acute and long term care needs of Oregonians as this is where more than 70% of nurses will work in 2025.
4. **Expand recruitment endeavors** to other areas of the country likely to experience a nursing surplus. According to published research, the southern and eastern United States should experience nursing surpluses by 2024 (*U.S. Department of Health and Human Services, 2014*). Though recruiting from out of state may provide temporary relief in a nursing shortage, it is unclear whether nurses recruited from other regions will remain in the Oregon workforce long term, or whether nationwide recruitments will be more expensive for employers.

Recruit and Retain Qualified and Diverse Nurse Faculty

1. Develop **strategies to retain** experienced and qualified faculty. OCNs has done numerous research on nurse faculty in Oregon, and found many current challenges to both recruiting and retaining nurse faculty (*Oregon Center for Nursing, 2015*). Another recent OCN study showed more than half (56%) of RNs working as nurse educators in 2011 no longer worked as educators in 2014 (*Oregon Center for Nursing, 2015*). OCN's faculty report found that nurse faculty left considered leaving their positions because of a desire for higher pay, a more manageable workload, and a desire to return to patient-focused practice. Efforts to alleviate pay disparities, as well as the creation of education/practice partnerships may help retain experienced nurse faculty.
2. Use sound talent management strategies to enable recruitment and retention of the nursing faculty from a **variety of practice settings and specialties** to prepare a growing workforce. Nurse faculty with experience working in non-hospital settings, such as long term care or public health, can encourage students to pursue career paths outside of a hospital.
3. Coordinate efforts to **promote teaching** as a profession among registered nurses. OCN's recent research on nurse faculty also provided evidence that 50% estimated they planned to retire by 2024 (*Oregon Center for Nursing, 2015*). Recruitment efforts to replace retiring faculty and also increase nursing program capacity will result in increased need to identify new nurse educators to meet the demand for nurses. Incentives, including scholarships and faculty loan repayment programs, may encourage new nurses to explore careers in teaching.

Increase Clinical Placement and Education Opportunities for Students

1. Continue partnerships between clinical sites and schools of nursing to **maximize clinical placement opportunities**. Building on established partnerships, and creating new partnerships, will allow nursing students the opportunity for quality educational experiences.
2. Facilitate opportunities for students to experience **placements in a variety of settings** and practice areas to increase exposure to settings employers report to be most in demand.
3. Explore **innovative education models**, such as high-fidelity simulation, virtual clinical learning exercises, and skills lab training to complement clinical placement opportunities.

REFERENCES CITED

- DerSimonian, R., Laird, N. Meta-analysis in clinical trials. *Control Clinical Trials*, 1986; 7(3):177-188.
- Gnadinger, T. (2014, July 16). Health Affairs Web First: More US RNs Retire Later, Causing A Larger Workforce. Available at: <http://healthaffairs.org/blog/2014/07/16/health-affairs-web-first-more-us-rns-retire-later-causing-a-larger-workforce/>
- Hayes, L.J., O'Brien-Pallas, L., Duffield, C., Shamian, J., Buchan, J., Hughes, F., Spence Laschinger, H.K., North, N., Stone, P.W. (2006). Nurse turnover: a literature review. *International Journal of Nursing Studies*, 43(2): 237-63.
- Hayes, L.J., O'Brien-Pallas, L., Duffield, C., Shamian, J., Buchan, J., Hughes, F., Laschinger, H.K., North, N. (2012). Nurse turnover: a literature review - an update. *International Journal of Nursing Studies*, 49(7): 887-905.
- Kroese, D.P., Brereton, T., Taimre, T. Botev, Z. I. (2014). "Why the Monte Carlo method is so important today". *WIREs Computational Statistics* 6: 386–392.
- Oregon Center for Nursing. (2005). When, Not If... A Report on Oregon's Registered Nurse Workforce. Available at: http://oregoncenterfornursing.org/wp-content/uploads/OCN_Publications/2005-When-Not-If-Report.pdf
- Oregon Center for Nursing. (2011). Nurses Wanted: The changing demand for registered nurses in Oregon. Portland, Oregon: Oregon Center for Nursing. Available at: http://oregoncenterfornursing.org/wp-content/uploads/OCN_Publications/2011-Nurses-Wanted.pdf
- Oregon Center for Nursing. (2016). Oregon's Newly-Licensed Nurse Workforce. Portland, OR: Oregon Center for Nursing. Available at: http://oregoncenterfornursing.org/wp-content/uploads/OCN_Publications/Oregon-Newly-Licensed-Nurse-Workforce.pdf
- Oregon Center for Nursing. (2015). Oregon's Nurse Faculty Workforce: 2014 Update. Portland, OR: Oregon Center for Nursing. Available at: http://oregoncenterfornursing.org/wp-content/uploads/OCN_Publications/OCN_Nurse_Faculty_Workforce_20141.pdf
- Oregon Center for Nursing. (2015). Where Are They Now? A Retrospective Analysis of Churn Among Registered Nurses in Oregon. Portland, OR: Oregon Center for Nursing. Available at: http://oregoncenterfornursing.org/wp-content/uploads/OCN_Publications/Where-Are-They-Now_RN_Final.pdf
- Oregon Health Authority. (2015). Oregon Health Professions: Occupational and County Profiles-2014. Portland, OR: Oregon Health Authority. Retrieved from: <https://apps.state.or.us/Forms/Served/le8120.pdf>
- Population Research Center, Portland State University College of Urban and Public Affairs (2015). Oregon population estimates and report. Available at: <http://www.pdx.edu/prc/population-reports-estimates>
- Reinier, K., Val Palumbo, M., McIntosh, B., Rambur, B., Kolodinsky, J., Hurowitz, L., Ashikaga, T. (2005). Measuring the nursing workforce: clarifying the definitions. *Medical Care Research and Review*, 62 (6), 741-755. Available at: <http://mcr.sagepub.com/content/62/6/741>
- Robert Wood Johnson Foundation. (2014, December 14). Older Nurses Push Retirement Envelope. Available at: <http://www.rwjf.org/en/library/articles-and-news/2014/12/older-nurses-push-retirement-envelope.html>
- Twibell R, St. Pierre J. (2012). Tripping over the welcome mat: Why new nurses don't stay and what the evidence says we can do about it. *American Nurse Today*, 7(2). Available at: <https://americannursetoday.com/tripping-over-the-welcome-mat-why-new-nurses-dont-stay-and-what-the-evidence-says-we-can-do-about-it/>
- U.S. Department of Health and Human Services Health Resources and Services Administration, Bureau of Health Workforce, National Center for Health Workforce Analysis (2014). The Future of the Nursing Workforce: National- and State-Level Projections, 2012-2025. Available at: <http://bhw.hrsa.gov/healthworkforce/supplydemand/nursing/workforceprojections/nursingprojections.pdf>
- U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis. Technical Documentation for HRSA's Health Workforce Simulation Model. Rockville, Maryland: U.S. Department of Health and Human Services, 2014. Available at: <http://bhw.hrsa.gov/healthworkforce/supplydemand/simulationmodeldocumentation.pdf>



Oregon Center for
N U R S I N G

5000 N Willamette Blvd., MSC 192 · Portland, OR 97203

www.oregoncenterfornursing.org