SHORTAGE *OR* MALDISTRIBUTION

Shifting the Conversation About Oregon's Nursing Workforce

Oregon Center for NURSING

Shortage or Maldistribution: Shifting the Conversation About Oregon's Nursing Workforce

The prospect of a nursing shortage causes great concern for health officials and healthcare industry leaders. Nursing shortages are problematic for healthcare leaders and workforce planners as there are simply not enough nurses to fill vacant positions. This creates significant effects on healthcare delivery, as nurses make up the largest sector within the healthcare industry and they provide the highest percentage of patient care (Oulton, 2006).

At the turn of the millennium, it was evident that the U.S. and other countries were experiencing a severe shortage of registered nurses (RN), especially in hospitals (Berliner & Ginzberg, 2002; Oulton, 2006; Sochalski, 2002). By the end of the decade, the situation was improving as signs of a strengthening nursing labor market emerged, younger nurses began to enter the workforce in larger numbers (Buerhaus, Staiger, & Auerbach, 2004), and older nurses delayed retirement due to the recession of 2007-2009 (Buerhaus, Auerbach, & Staiger, 2009). However, Buerhaus and his colleagues warned that despite improvements in the supply of the nurses, large shortages were expected to continue (Buerhaus, Auerbach, & Staiger, 2009).

As data availability improved, and projections of the supply and demand of RNs became available (U.S. Department of Health and Human Services, 2014), researchers began to focus on variations in the nursing workforce both regionally (Buerhaus, Auerbach, Staiger, & Muench, 2013) and by employment setting (Skillman, Palazzo, Keepnews, & Hart, 2007). These findings showed marked differences in the supply and retention of RNs across geographic and employment settings, particularly affecting rural communities and non-hospital practice settings (LaSala, 2000; Skillman, et al., 2007). As these findings surfaced, it was clear the nursing workforce was maldistributed, meaning the supply of nurses was not evenly distributed (LaSala, 2000).

Mirroring the national workforce, Oregon is struggling with a maldistribution of its nursing workforce. While the U.S. Department of Health and Human Services projects a small surplus of nurses in Oregon by 2030 (U.S. Department of Health and Human Services, 2017), there is growing evidence that geographic shortages (Bushy & Leipert, 2005; Oregon Office of Rural Health, 2016) and shortages in specific healthcare settings, such as long term care and nursing education, may be occurring (Oregon Center for Nursing, 2017c; 2018b). Compounding the problem of maldistribution, the nursing workforce faces several other challenges, including the aging of the population, increased retirements among the nation's registered nurses, a projected shortage of physicians, and the ongoing debate about healthcare reform (Buerhaus, Skinner, Auerbach, & Staiger, 2017).

After fifteen years of providing independent analysis of Oregon's nursing workforce, the Oregon Center for Nursing's (OCN) latest study examines recently released nurse licensing data (OHA, 2018) for evidence of a nursing shortage, or lack thereof, and describes the current distribution of the nursing workforce in Oregon. Additionally, these analyses aim to provide further understanding of the dynamics affecting the distribution of nurses across practice settings and geography, the relationship between current nursing workforce trends and the challenges nurses face in the coming years.

Current State of the Nursing Workforce

During 2018, about 83,500 combined nursing professionals were licensed to practice in the state of Oregon. Of these, approximately 66,000 nursing professionals were practicing in Oregon (Table 1).

Table 1: Number of Licensed and Practicing Nurse Professionals in Oregon, 2018

	Certified Nursing Assistants (CNA)	Licensed Practical Nurses (LPN)	Registered Nurses (RN)	Advanced Practice Registered Nurses (APRN)
Licensed	18,101	5,246	55,316	4,829
Practicing	15,500	4,300	42,500	3,780

Source: OHA, Public Use Nursing Workforce Data File, 2018

In Oregon, nurses renew their licenses every two years, and a demographic/workforce survey is conducted during renewal. Because of the timing of the survey, little is known about the employment setting of newly licensed nurses who obtain their first licenses and do not take the workforce survey. To understand the total supply of nurses in Oregon and take into consideration newly licensed nurses, OCN developed a method to estimate the number of practicing licensees (OCN, 2017a). The employment rate of licensees completing the survey is applied to the newly licensed individuals (and those who did not complete the survey) to estimate the number of practicing individuals. As can be seen, about 80 percent of licensed professionals practice in Oregon.

Table 2: Number of Licensed and Practicing Nurse Professionals in Oregon, 2010-2018

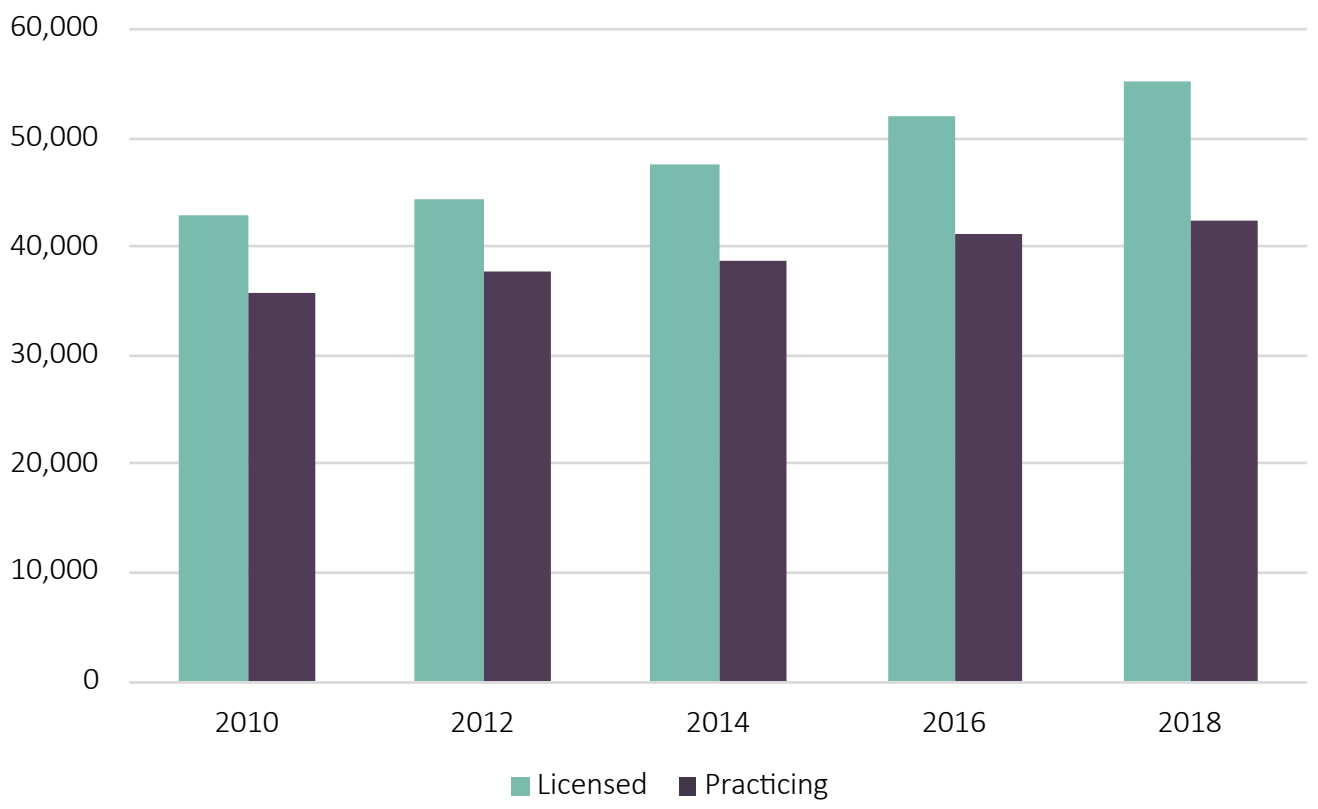
	2010	2012	2014	2016	2018	Average Annual Growth
CNA						
Licensed	18,331	18,872	18,414	18,025	18,101	-0.1%
Practicing	16,700	16,600	16,200	15,600	15,500	-0.9%
LPN						
Licensed	4,081	4,283	4,660	4,934	5,246	3.2%
Practicing	3,300	3,500	3,700	4,000	4,300	3.4%
RN						
Licensed	43,015	44,481	47,456	51,926	55,316	3.3%
Practicing	35,800	37,700	38,800	41,100	42,500	2.2%
APRN						
Licensed	2,908	3,142	3,591	4,290	4,829	6.8%
Practicing	2,410	2,720	2,950	3,490	3,780	6.0%

Source: OHA, Public Use Nursing Workforce Data File, 2010-2018

Generally, the number of licensed and practicing nurses has been growing since at least the beginning of the decade (Table 2). Except for CNAs, which have been stable over time, LPNs, RNs, and APRNs have all show marked growth since 2010. Licensed LPNs and RNs have both grown at a little over three percent each year, and the number of licensed APRNs has grown on average about seven percent each year. Observed growth for nurses practicing in Oregon follow the growth trends for licensure, except for RNs. This shows growth for practicing RNs to be about a third of that seen for licensed RNs (Figure 1). However, **growth for practicing RNs in Oregon is still twice the rate of population growth, which is projected to increase a little over one percent per year (Oregon Office of Economic Analysis, 2017).**

Oregon has witnessed a large influx of RNs obtaining their Oregon nursing license through a process called endorsement, by which a RN licensed in another state can obtain their Oregon nursing license. While all types of licensed nursing professionals may obtain an Oregon nursing license via endorsement, more than 86 percent of endorsed licensees are RNs (OCN, 2017b).

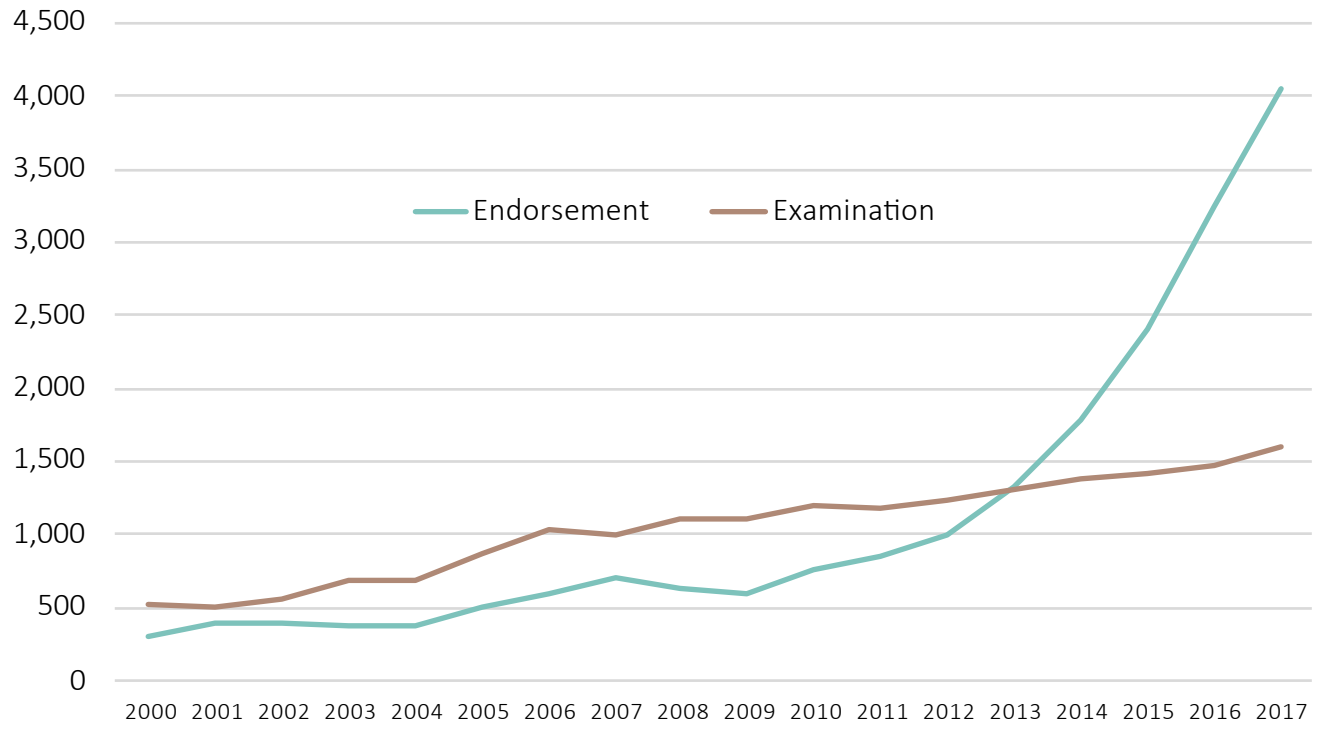
Figure 1: Trends for Licensed and Practicing RNs in Oregon, 2010-2018



Source: OHA, Public Use Nursing Workforce Data File, 2010-2018

Growth in the number of RNs endorsing into Oregon started in about 2010, but showed remarkable growth in 2013, which continues to this day (Figure 2). From 2000 to 2010, about 37 percent of all new licenses for RNs were approved via endorsement. From 2013 to present, the rate has increased to 62 percent of newly licensed RNs. Between 2013 and 2017, more than 12,820 RNs were licensed via endorsement, while only 7,190 were licensed via examination after graduating from a nursing program in Oregon. While this sounds like good news for healthcare organizations struggling to recruit and hire qualified RNs, it may not help these employers for two reasons. First, an OCN study examining this phenomenon showed that about 60 percent of endorsing RNs neither work nor live in Oregon (OCN, 2017b). In many instances, these RNs obtained their Oregon license as a requirement for employment in neighboring states or for companies/organizations with a national scope (e.g., health insurance companies, large, multi-state healthcare systems, and pharmacy benefit management firms). Secondly, the rate of growth of endorsing nurses is unsustainable over the long term, as the exponential growth observed since 2013 cannot continue unabated.

Figure 2: Number of RN Licenses Approved by Year of Licensure



Source: OCN (2017b). Licensed by endorsement: Why are nurses obtaining Oregon nursing licenses? Presentation to the Oregon State Board of Nursing. Nov 2017. Portland OR

An examination of the aging trends provides an insight into the long-term sustainability of the nursing workforce (Table 3). OCN (2017a; 2018a) reports on the 2016 RN workforce showed the workforce was younger that it had been in the past, as there were more RNs in their 20s and 30s, and fewer RNs in the mid-40s and 50s. These analyses showed more younger nurses were entering the workforce, and there were ample younger nurses to potentially replace retiring nurses.

RNs aged 25-34 and 35-44 show steady growth as a proportion of RNs over time, while RNs age 45-54 and 55-64 are steadily declining. In 2010, RNs between the ages of 25 and 44 represented about 33 percent of the RN workforce, but by 2018 RNs in this age group accounted for almost half (48 percent) of licensed RNs. Conversely, RNs aged 45-64 accounted for about 60 percent of licensed RNs in 2010. By 2018, this had fallen to about 43 percent.

Table 3: Age Distribution of RNs from 2010-2018

	2010	2012	2014	2016	2018
AGE GROUP					
<25	1.3%	1.0%	0.9%	0.8%	1.1%
25-34	14.6%	17.6%	17.4%	18.7%	20.6%
35-44	18.8%	20.9%	23.0%	23.1%	24.1%
45-54	28.0%	24.3%	22.6%	20.1%	19.9%
55-64	31.1%	30.2%	29.3%	25.0%	22.8%
65+	6.2%	6.0%	6.8%	12.2%	11.4%

Source: OHA, Public Use Nursing Workforce Data File, 2010-2018

The change in the age distribution of RNs from 2012 to 2018 can be seen in Figure 3. This clearly illustrates how younger cohorts of nurses have steadily increased over the last decade. It also suggests younger RNs have entered the workforce in sufficient numbers to potentially counterbalance mass retirements among older RNs.

Figure 3: Age Distribution of RNs for 2012-2018

Source: OHA, Public Use Nursing Workforce Data File, 2012-2018

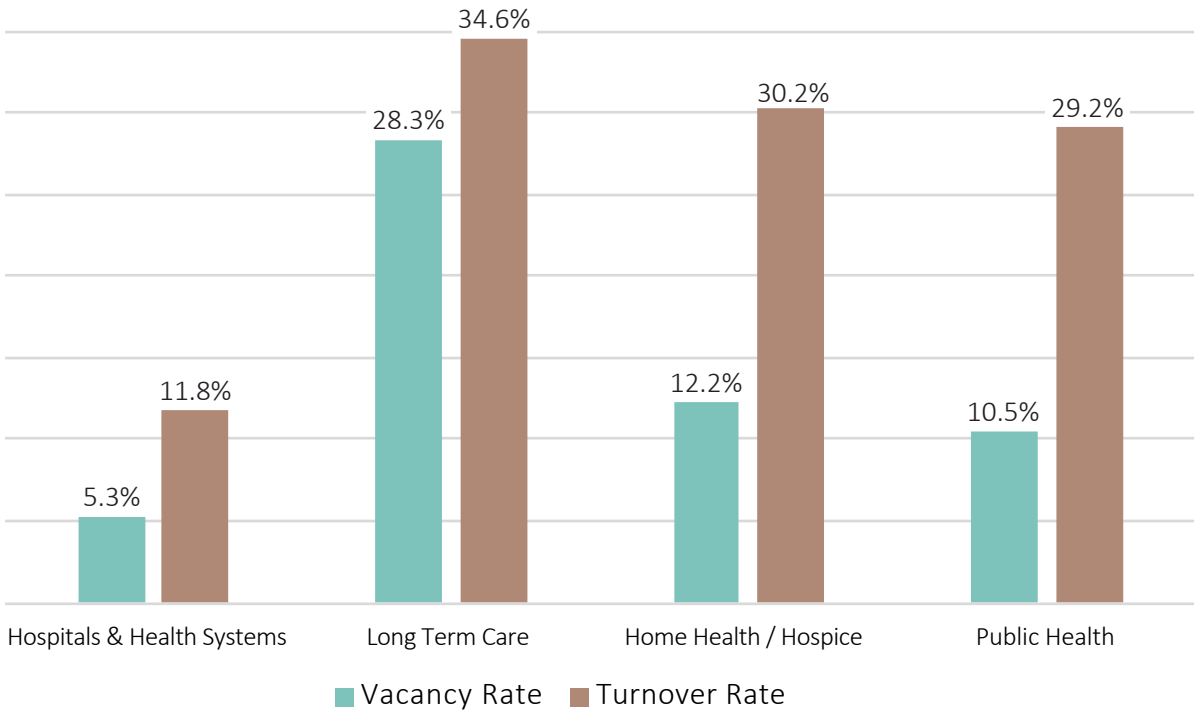
Evidence for a Maldistribution of Oregon's Nursing Workforce

Evidence presented thus far suggest worries about a statewide nursing shortage in Oregon are likely overblown. Continued, high growth among licensed and practicing nurses, coupled with data showing the continued influx of young RNs run counter to arguments of an ongoing shortage.

However, ample evidence exists that employers in some practice settings experience much more difficulty recruiting, hiring, and retaining RNs. Findings from OCN's 2018 Survey of Nurse Employers found that vacancy rates and turnover rates among RNs vary widely across practice settings (OCN, 2018b) (Figure 4).

It is clear both vacancy and turnover rates for hospitals and health systems are markedly lower than in other practice settings. Public health and home health hospice employers experienced vacancy rates twice as high as hospital and health systems. Long term care employers reported the highest vacancy rates, with more than a quarter of RN positions vacant when the survey was completed. Turnover rates in public health, home health/hospice, and long term care were about three times as high as the turnover rate in hospitals and health systems.

Figure 4: RN Vacancy and Turnover Rates by Setting



Source: OCN (2018b). The demand for nursing professionals in Oregon – 2018. Portland OR

It could be argued the high vacancy and turnover in non-hospital settings could be due to these employers attempting to recruit and retain highly specialized RNs, and the rarity of these specialists making it difficult for employers to hire. However, additional data collected by the 2018 Survey of Nurse Employers show the opposite is true. In long term care, home health/hospice, and public health, the most difficult positions to fill were staff RNs. In hospitals and health systems, the most difficult positions to fill were nurse managers and highly specialized RNs, such as labor and delivery, and intensive care. These data provide direct evidence the nursing workforce is maldistributed across practice settings in Oregon (OCN, 2018b).

Another type of maldistribution of the nursing workforce is geographic. However, unlike practice setting, where there is direct evidence of a maldistributed workforce, such direct evidence for geographic maldistribution of the nursing workforce is often lacking. Instead, most measures of geographic maldistribution are indirect, but may provide a glimpse of a workforce maldistribution at play.

One of the best examples of geographic maldistribution comes from the Health Resources and Services Administration (HRSA) with the U.S. Department of Health and Human Services (2017). HRSA researchers argue that there is and will be large variation across states in the supply of RNs and licensed practical nurses (LPN). These findings suggest that a large deficit of RNs could occur in California, Texas, New Jersey, and South Carolina, while surpluses of RNs could occur in Florida, Ohio, Virginia, and New York. They argue that these differences across states are due, in part, to current and future nursing school graduation rates, and workforce participation (U.S. Department of Health and Human Services, 2017).

Another common method of measuring geographic maldistribution is to examine local provider-to-population ratios (Bigbee, 2008). The provider-to-population ratio compares the number of providers available to serve specific populations. Bigbee (2008) found higher nurse-to-population ratios are significantly associated with better health outcomes and higher overall health rankings. Others argue the ratio can be influenced by factors that are not directly related to access to care. These factors include, but are not limited to, the presence or absence of large employers of nurses, such as a hospital or long term care facility, economic and social factors, and physical environment (University of Wisconsin, Population Health Institute, 2018).

Despite these limitations, it is common to identify geographic regions that lack an adequate number of healthcare providers. In that light, RN-to-population ratios for each county in Oregon are presented in Table 4. These data show marked variation in these ratios across counties. Generally, urban counties have lower RN-to-population ratios than rural counties, but there are exceptions. For instance, Multnomah County is the largest urban county in Oregon and it also has the lowest RN-to-population ratio of 68 persons for every RN. The second lowest ratio at 89 persons for each RN was seen for Wasco County, a large rural county in north-central Oregon. So, while the RN-to-population measure is not perfect, it does illustrate the marked variation in the number of RNs in each county and provides evidence for the existence of geographic maldistribution.

Table 4: RN-to-Population Ratios by County

COUNTY	Number of Practicing RNs	County Population	RN-to-Population Ratio	COUNTY	Number of Practicing RNs	County Population	RN-to-Population Ratio
Baker	99	15,980	161.4	*Lake*	59	7,807	132.3
Benton	883	88,249	99.9	*Lane*	3,130	363,471	116.1
Clackamas	2,589	399,962	154.5	*Lincoln*	309	47,307	153.1
Clatsop	318	38,021	119.6	*Linn*	648	121,074	186.8
Columbia	55	50,207	912.9	*Malheur*	243	30,421	125.2
Coos	639	62,921	98.5	*Marion*	3,075	330,453	107.5
Crook	87	21,717	249.6	*Morrow*	34	11,153	328.0
Curry	95	25,377	235.5	*Multnomah*	11,639	788,459	67.7
Deschutes	1,917	175,321	91.5	*Polk*	175	79,666	455.2
Douglas	793	107,576	135.7	*Sherman*	1	1,635	1,635.0
Gilliam	1	1,910	1,910.0	*Tillamook*	147	25,840	175.8
Grant	43	7,209	167.7	*Umatilla*	457	76,736	167.9
Harney	41	7,195	175.5	*Union*	208	25,810	124.1
Hood River	182	22,938	126.0	*Wallowa*	49	6,864	140.1
Jackson	2,146	212,070	98.8	*Wasco*	290	25,687	88.6
Jefferson	117	22,707	194.1	*Washington*	4,497	572,071	127.2
Josephine	535	84,514	158.0	*Wheeler*	4	1,415	353.8
Klamath	435	66,018	151.8	*Yamhill*	597	102,366	171.5

Sources: OHA, Public Use Nursing Workforce Data File, 2018; Census Bureau, American Community Survey, 5-Yr Estimates, 2017

Another indirect line of evidence comes from reports examining the healthcare workforce in rural communities. The Oregon Office of Rural Health (ORH) conducts onsite discussions with healthcare leaders in rural communities. Through these discussions, mostly with local hospital representatives, ORH attempts to document major issues constraining local employers from being able to recruit, hire, and retain enough RNs. These factors include the absence of nursing educational opportunities in rural communities, which includes insufficient faculty and scarce clinical training sites (ORH, 2016). Issues such as lack of housing and employment opportunities for the RN's spouse/partner further constrain a rural healthcare facility's ability to recruit and hire RNs.

Taken together, these lines of evidence strongly indicate that a geographic maldistribution of RNs exist. However, these data also suggest the factors leading to the observed maldistribution are complex and it is the result of many different factors and influences unique to each local community. Unfortunately, these findings do not present an obvious solution and more research is necessary to fully understand the local circumstances that trigger or enhance RN maldistribution.

Conclusions

While concerns about a statewide nursing shortage continue, current data strongly suggest that these worries will probably not come to fruition. Evidence of high growth within the nursing workforce, enough younger RNs entering the workforce to replace older nurses leaving practice, and a large influx of nurses from other states indicate that a **statewide nursing shortage in Oregon is very unlikely in the near future.**

That is not to say local areas or certain practice settings will not face difficulties in recruiting, hiring, and retaining qualified RNs. **Converging lines of evidence reveal the likely presence of maldistribution across practice settings and geographic areas.** Markedly higher vacancy and turnover rates among long term care and home health/hospice employers and substantial variation in measures of nurse density (provider-to-population ratios), and anecdotal evidence all point to the presence of potential maldistributions which may affect access to care.

Data showing maldistribution across practice settings is fairly direct and could point to specific interventions aimed to reduce observed maldistribution. This could include implementing strategies designed to increase job retention among RNs that could overcome high turnover among RNs practicing in long term care and home health organizations.

Unfortunately, findings of geographic maldistribution are much more nebulous. **While the evidence leads one to conclude that geographic maldistribution is happening, it does not clearly point to an overall strategy to reduce its impact.** Instead, it is likely that the factors impacting maldistribution in one region may not be the same as those impacting another area. The absence of major employers or educational institutions likely exert pressure on communities to the relief of communities where they are present.

The presence of multiple factors impacting geographic maldistribution is a strong indication that a single intervention in unlikely to be successful in all instances of geographic maldistribution. Instead, additional research is needed to identify local conditions that result in maldistribution so policy, programmatic, or infrastructure changes can be tailored to meet the specific needs of the community. A more complete understanding of local conditions is critical to identifying solutions to local nursing workforce needs.

Taken together, these findings indicate health officials and nurse leaders should move away from discussing a statewide nursing shortage. Instead, efforts to understand and reduce the maldistribution of RNs across practice settings and in certain geographic areas should be given serious focus and consideration. Only by eliminating or significantly reducing the impact of this maldistribution can health officials be assured that every Oregonian has access to high quality health care.

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