Healthcare Workforce Evaluation Report Summary – 2021 Update

Key Points

The current supply of healthcare workers is inadequate to meet the projected need across Oregon.

The COVID-19 pandemic is making it more difficult for employers to recruit and retain critical healthcare workers, as they must compete with other states to meet their need.

The need for healthcare professionals is most acute for Registered Nurses, Nurse Practitioners, Clinical Laboratory Technologists, and Mental Health Counselors.

Oregon's education capacity alone will not meet the future need for healthcare workers regionally or across the state.

Healthcare education opportunities are not equally accessible by all Oregonians, as most of the educational institutions for these occupations are in the Portland Metro area.

Unless education capacity can be increased, employers will continue to rely on sources of healthcare workers outside the state to fill the gap, such as travelers and staffing agencies.

Extensive, long-term use of travel nurses is financially unsustainable for many hospitals and other healthcare facilities and may worsen existing issues of frustration and burnout among staff nurses.

Over the past decade, public debate and new policies about access to healthcare have focused on ensuring all residents can pay for quality care when and wherever needed. However, this is only one element of a complex puzzle. Ensuring a sufficient workforce is another important component to consider when working to ensure adequate access to care. Multiple studies have shown an inadequate supply of healthcare workers decreases access to high-quality healthcare (MacDowell, Glasser, Fitts, Nielsen, & Hunsaker, 2010) and increases the risk to patient safety (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002). Other studies demonstrated higher patient loads are associated with higher hospital readmission rates (Lasser, Hanchate, McCormick, Manze, Chu, & Kressin, 2014) and increased mortality rates among the elderly in nursing homes (Akosa-Antwi & Bowblis, 2016).

Like other states, Oregon faces challenges to bolster its healthcare workforce. The population of Oregon is aging, health care workers are retiring, and the expanded health care coverages mean

more patients are seeking care. Employers, educators, and lawmakers have been experimenting with solutions to provide a high-quality workforce to meet the healthcare needs of all Oregonians in the future.

In early 2018, the Rural Medical Training Workgroup approached staff at the Oregon Center for Nursing (OCN) to conduct an evaluation of the nursing and allied healthcare workforce across Oregon as part of their efforts to determine the feasibility of locating a new school of allied health in Southern Oregon. The evaluation examined select healthcare occupations by region across Oregon, with geographic regions defined by the Oregon Employment Department (OED) (Table 1). In the fall of 2021, the Umpqua Valley Development Corporation requested an update to the 2018 study.

This evaluation study examined three different components of specific healthcare workforce: current supply, future need, and educational opportunities and capacity. Understanding these three factors is crucial to ensuring an adequate supply of well-trained healthcare professionals is present in each Oregon community.

The healthcare occupations studied include: Registered Nurse, Nurse Practitioner, Physical Therapist, Mental Health Counselors, Mental Health/Substance Abuse Social Workers, Medical Clinical Laboratory Technologist, and Radiological Technologist.

Table 1 – Oregon Employment Department Regions

OED Region	Counties
East Cascades	Crook, Deschutes, Gilliam, Hood River, Jefferson, Klamath, Lake, Sherman, Wasco, Wheeler
Eastern Oregon	Baker, Grant, Harney, Malheur, Morrow, Umatilla, Union, Wallowa
Lane	Lane
Mid-Valley	Linn, Marion, Polk, Yamhill
Northwest Oregon	Benton, Clatsop, Columbia, Lincoln, Tillamook
Portland Tri-County	Clackamas, Multnomah, Washington
Rogue Valley	Jackson, Josephine
Southwestern Oregon	Coos, Curry, Douglas

As the current COVID-19 pandemic continues, many hospitals and healthcare facilities are struggling with staffing shortages. In order to bolster the strained nursing workforce, healthcare facilities across the nation, and in Oregon, are increasing their use of travel nurses. One medical staffing company claims the demand for travel nurses has increased by over 280% since the same time last year (Advisory Board, 2021). While the utilization of travel nurses to fill staffing gaps during a public health emergency is reasonable, it is not a long-term solution for the maldistribution of nurses. The high utilization of travel nurses has several downside effects for hospitals and other healthcare facilities. First, travel nurses are not economically sustainable as some travel nurse positions can pay up to ten times more than a staff nurse's salary. The use of travel nurses can have a deleterious effect on employees, as the pay disparities between staff

nurses and travelers are exacerbating existing frustration over working conditions and staffing shortages, causing many nurses to leave their positions (Advisory Board, 2021). Additionally, the reliance on travel nurses is also worsening existing nursing shortages in rural and underserved areas, where care is needed the most. In short, the extensive, long-term use of travel nurses is financially unsustainable for many hospitals and other healthcare facilities and may worsen existing issues of frustration and burnout among staff nurses.

Current Supply

To understand the future need for healthcare workers, it is necessary to first identify the current workforce across the state. Data from the Oregon Employment Department (2021) occupation projections report was used to illustrate the current supply of nursing and allied health workers (Table 2). As these figures are based on wage information, healthcare workers employed by Veteran's Administration healthcare facilities within Oregon are included in the analyses presented in this report. However, due to limitations with the data, it is not possible to breakout the number of healthcare workers employed by any single entity.

Table 2 – Statewide Supply of Healthcare Workers in 2020

Occupation	Number of Workers
Registered Nurse	40,997
Nurse Practitioner	2,378
Physical Therapist	3,140
Radiologic Technologist	2,304
Med/Clinical Laboratory Technologist	3,331
Mental Health Counselor (MH Counselor)	6,255
Mental Health/Substance Abuse (MHSA) Social Worker	1,706

The number of workers in each occupation across all OED regions was tabulated and normalized by dividing each count by the region's population, allowing a direct comparison of the supply of each occupation across all OED regions. The use of population-to-healthcare provider ratios is commonly used by researchers to assess the relative density of the healthcare workforce compared to the population it serves. The results (Table 3) highlight regions where the deficit for each occupation is at least 20 percent lower than the statewide supply.

Table 3 – Occupation Deficits by OED Region

Occupation	OED Regions with 20% Deficit
Registered Nurse	East Cascades, Eastern Oregon, Lane, Mid-Valley, Northwest Oregon, Southwestern Oregon
Nurse Practitioner	Eastern Oregon, Lane, Mid-Valley, Northwest Oregon
Physical Therapist	Eastern Oregon, Mid-Valley, Southwestern Oregon
Radiologic Technologist	East Cascades
Med/Clinical Lab Technologist	East Cascades, Lane, Mid-Valley, Northwest Oregon
MH Counselors	East Cascades, Mid-Valley, Northwest Oregon, Rogue Valley, Southwestern Oregon
MHSA Social Worker	Northwest Oregon, Southwestern Oregon

Some of the data used in these calculations are estimates as 2020 data for registered nurses, radiologic technologists, and mental health counselors in the Eastern and Southwestern Oregon regions were unavailable. To address this issue, data for these occupations from 2019 were projected by applying annual growth rates to estimate 2020 employment figures. Deficit calculations were based on the estimated 2020 employment numbers and showed significant deficits for registered nurses and mental health counselors in the Southwestern Oregon region. Analysis of the other occupations did not yield significant deficits.

These data clearly show the current supply of healthcare occupations is not uniformly distributed across the state. For example, the Mid-Valley Region shows a healthcare workforce deficit for all occupations except Radiologic Technologists and MHSA Social Workers, while the Portland Tri-County area shows no significant deficit in any of the occupations studied. While these data do not indicate whether a workforce shortage exists, it does show where fewer per capita healthcare workers are located. In this case, some regions tend to have fewer healthcare workers, and in many cases, have fewer workers across multiple occupations.

The use of population-to-provider ratios tends to show where there are fewer healthcare workers. However, this ratio alone does not shed light on the nature of the deficit as many factors can influence the ratio, such as the presence of hospitals or other healthcare facilities that employ large numbers of healthcare workers. For more information about the use of population-to-provider ratios, see Fields, Bigbee, & Bell (2016) or Oregon Center for Nursing (2019).

Future Need

Two data sources were used to assess the future need of the nursing and allied healthcare workforce. These are the 2021 Oregon Employment Projections report and the 2020 Job Openings Survey, both prepared by the OED. The Employment Projections report shows the projected number of workers for each occupation by 2030, while the Job Openings Survey presents the annual number of job openings for each occupation. These reports also project the number of workers needed due to growth in the occupation and the number due to attrition (Table 4). For the purposes of this evaluation, this section will focus on the job openings survey. Also, for purposes of this study, "demand" is used to describe the demand by employers for

workers, while "need" is used to describe the societal need for an occupation to be present in the community.

Table 4 – Estimated and Projected Employment and Job Openings by Occupation (2020 – 2030)

Program	2020 Employment	2030 Employment	Total Openings	Openings Due to Growth	Openings Due to Attrition
Registered Nurse	40,997	45,976	25,818	4,979	20,839
Nurse Practitioner	2,378	3,843	3,001	1,485	1,536
Physical Therapist	3,140	3,885	2,050	745	1,305
Radiologic Technologist	2,304	2,563	1,434	259	1,175
Med/Clinical Lab Technologist	3,331	3,697	2,387	366	1,921
MH Counselor	6,255	7,943	7,909	1,688	6,221
MHSA Social Worker	1,706	2,011	1,889	305	1,584

The Job Openings Survey categorizes each occupation based on the entry-level education needed for the occupation, as defined by the OED (Table 5).

Table 5 – Occupations by Typical Entry-Level Education Category

Education Category	Occupations
Graduate Degree	Nurse Practitioner, Physical Therapist, MH Counselor, MHSA Social Worker
Bachelor's Degree	Registered Nurse, Med/Clinical Laboratory Technologist
Associate Degree	Radiologic Technologist

Note: The typical entry-level education is according to OED designation for each occupation.

Within each entry-level education category, the number of job openings was ranked against all occupations, including non-healthcare-related occupations, so a qualitative assessment can be made for each occupation within and across regions. The results of this analysis show nurse practitioners, physical therapists, MH counselors, and MHSA social workers consistently ranked high in the relative number of annual job openings (Table 6). Additionally, medical/clinical laboratory technologist openings ranked consistently low across all regions.

Table 6 – Number of Regions* with a Top 10 Ranking

Occupation	Number of Regions
Registered Nurse	7
Nurse Practitioner	4
Physical Therapist	4
Radiologic Technologist	7
Med/Clinical Laboratory Technologist	0
MH Counselor	5
MHSA Social Worker	5

*There are eight OED regions in the state.

Many of the occupations included in this study had a median ranking across all eight OED regions that fell within the top 10 for all job openings (Table 7). Taken together, these two lines of evidence strongly indicate a high level of need exists for these occupations.

Table 7 – Median Job Opening Ranking

Occupation	Median Ranking
Registered Nurse	3
Nurse Practitioner	12
Physical Therapist	9.5
Radiologic Technologist	6
Med/Clinical Laboratory Technologist	33.5
MH Counselor	8.5
MHSA Social Worker	9

National studies examining the geographic distribution of registered nurses across states imply they are evenly spread within a state. However, when looking within a state nurses are maldistributed, where some counties have more nurses than expected based on the population, while other counties have fewer than expected. This is undoubtedly true for other health care occupations, and Table 3 presents evidence of a maldistributed healthcare workforce for most occupations across regions. Because the current workforce is maldistributed, it stands to reason the need for healthcare workers is also maldistributed, partly to make up for existing deficits in the number of practitioners, but also due to differential growth of the healthcare industry (Tables 6 and 7).

Educational Opportunities and Capacity

The educational pipeline is considered a key element in ensuring an adequate, qualified workforce is present across the state or within local communities. If educational opportunities are limited, either by the number of schools or enrollment capacity, it is difficult to graduate enough potential workers to meet the projected need for those occupations. For this evaluation, three metrics were used to determine an adequate educational pipeline for each occupation: the number of schools or programs within the state to meet the projected need, the number of

graduates from each program within the occupation, and the program's acceptance rate or percent of applicants admitted. Taken together and combined with other measures, such as the number of annual job openings, it is possible to assess whether adequate capacity exists in the current educational system to meet the need for allied healthcare occupations.

Table 8 – Number of Schools, Admission, and Applicants (2019-2020 Academic Year)

Program	Number of Schools	Number Admitted	Number of Applicants	Acceptance Rates
Registered Nurse*	23	1,720	6,227	29%
Nurse Practitioner	2	29	81	53%
Physical Therapist	2	96	1,173	8%
Radiologic Technologist	1	55	100	55%
Med/Clinical Lab Technologist	1	50	100	50%
MH Counselor	10	200	847	36%
MHSA Social Work	5	153	438	35%

*Note: Data from the 17 associate degree nursing programs in Oregon are included.

Applicants for many occupations have few choices of where to study (Table 8). Four of the seven fields of study have only one or two schools available in Oregon, and admission for many is extremely competitive . Low acceptance rates indicate education programs are operating at or near capacity, as there are more applicants than available seats within healthcare educational programs. While this provides one way to look at the adequacy of the education system, it does not provide a gauge as to whether the schools are graduating enough potential healthcare workers to meet the need for those occupations. By examining the relationship between the number of graduates and the annual job openings, it can be determined if the current system is adequate to meet future needs.

Table 9 – Number of Annual Graduates and Job Openings

Occupation	Annual Graduates (2019-2020)	OED Estimated Annual Job Openings
Registered Nurse*	1,237	2,582
Nurse Practitioner	89	301
Physical Therapist	94	205
Radiologic Technologist	48	143
Med/Clinical Lab Technologist	46	239
MH Counselor	180	791
MHSA Social Worker	77	189

*Note: Data from the 17 associate degree nursing programs in Oregon are included.

For all occupations examined, Oregon's education system is not matriculating enough graduates to meet projected needs alone (Table 9). This would indicate many job openings will not be filled, and employers and the community must rely on other means to meet their needs, either by migration from other states (recruitment strategies) or the use of non-permanent workers (temporary or staffing agency support).

However, this does not tell the whole story, as these data do not address the distribution of schools across the state. Most of the schools examined as part of this evaluation are in the Portland metro area, which limits the likelihood of graduates moving to other parts of the state for employment (Table 10). The lack of local educational capacity in many regions of the state may be a factor in the inability to find and retain allied healthcare workers.

Table 10 – Number of Schools by Location

Program	Schools	Portland Metro	Willamette Valley	Rest of State
Registered Nurse (BSN)	6	5	1	0
*OHSU		1	1	3
Registered Nurse (ADN)	17	4	3	10
Nurse Practitioner	2	2	0	0
Physical Therapist	2	2	0	0
Radiologic Technologist	1	0	0	1
Med/Clinical Lab Technologist	1	1	0	0
MH Counselor	10	5	4	1
MHSA Social Worker	5	3	2	0

*Note: OHSU has four satellite campuses; Ashland, Klamath Falls, La Grande, and Monmouth, plus the main campus in Portland. OHSU enrollment figures are aggregated across all campuses.

Summary of Findings and Conclusions

Unsurprisingly, the findings from this study closely mirror findings from the original 2018 study. Thus, the conclusions laid out in the previous study are very much like those reached in the current study despite the ongoing COVID-19 pandemic that began to impact Oregon in March 2020. While the full impact of the pandemic is yet to be known, it is clear the employment picture across the state is being impacted as employees choose to leave their jobs in high numbers. While this pandemic is affecting all sectors, not just healthcare, the pandemic has exacerbated the already limited supply of the healthcare workers evaluated in this study. While Oregon relies on healthcare workers coming from other states to fill needed healthcare jobs, the COVID-19 pandemic is causing healthcare facilities in Oregon to compete with employers in other states across the country for a limited supply of healthcare workers. This is driving up costs for staffing (e.g., travel nurses), and making retention of current healthcare workers much more difficult as they leave for more lucrative employment opportunities elsewhere.

The results of these analyses show the current supply of healthcare workers is inadequate to meet the projected need across Oregon, with some regions showing evidence of an acute lack of healthcare workers. While these data do not directly address whether a statewide shortage of healthcare workers exists, it does point to a maldistribution of healthcare workers across the state. That is, the current supply of healthcare professionals is not uniformly spread across the state, and many regions show a deficit of qualified workers.

Projections of future industry growth and current job openings strongly suggest a need for more healthcare workers. For each occupation examined, the OED projects continued job growth and reports healthcare as one of the fastest growing industries. Additionally, most of the occupations included in this study have relatively more job openings. When the number of job openings is directly compared with openings from all other occupations, healthcare ranked high in most regions. The need for healthcare professionals is most acute for registered nurses, nurse practitioners, clinical laboratory technologists, and mental health counselors. These lines of evidence suggest a need for more healthcare workers, but more importantly, that the level of need varies across regions and varies across occupations. These findings should also caution policymakers that rapid growth in the number of licensed healthcare workers, such as that currently seen with registered nurses (four percent annual growth) and nurse practitioners (nine percent annual growth), does not prevent or diminish the need for even more healthcare professionals across Oregon.

Ample educational opportunities are critical to ensuring an adequate supply of qualified healthcare workers. However, the data presented in this study indicate the opportunity to gain the required healthcare education is not equally available to all Oregon residents. There are few schools in Oregon providing the necessary education for most of the studied healthcare occupations, and consequently, admission to these schools is very competitive. These data also show almost all programs examined are located within urban centers of the state. For example, of the two schools in Oregon that educate physical therapists, both have acceptance rates of less than 10 percent, and both schools are in the Portland Metro area.

Lastly, and maybe most importantly, schools are simply not graduating enough qualified healthcare workers to meet the current and projected need. Based on the current supply, projected need, and a limited educational pipeline, Oregon's current educational capacity alone will not meet the need for healthcare workers regionally or across the state. Unless capacity can be increased, employers will continue to rely on sources outside of the state to fill the gap, such as travelers and staffing agencies. The inability to meet this demonstrated need will affect everyone in the state seeking healthcare and will likely have a more significant impact on older residents and those who live in rural areas of Oregon.

References

Advisory Board (2021). Helpful or hurtful? The 'double-edged sword' of travel nursing. Advisory Board, Washington D.C. https://www.advisory.com/daily-briefing/2021/09/20/travel-nurses

Aiken, L.H., Clarke, S.P., Sloane, D.M., Sochalski, J., & Silber, J.H. (2002). Hospital nursing staffing and patient mortality, nurse burnout, and job dissatisfaction. *Journal of the American Medical Society*, 288, 1987-1993.

Akosa-Antwi, Y. & Bowblis, J.R. (2016). The impact of nurse turnover on quality of care and mortality in nursing homes: Evidence from the Great Recession. Upjohn Institute Working Paper, No. 16-249, W.E. Upjohn Institute for Employment Research. Kalamazoo MI. DOI: 10.17848/wp16-249

Fields, B.E., Bigbee, J.L., & Bell, J.F. (2016). Associations of provider-to-population ratios and population health by county-level rurality. *The Journal of Rural Health*, 32, 235-244. DOI: 10.1111/jrh.12143

Lasser, K.E., Hanchate, A.D., McCormick, D., Manze, M.G., Chu, C., & Kressin, N.R. (2014). The effect of Massachusetts health reform on 30 day hospital readmissions: retrospective analysis of hospital episode statistics. *BMJ*, 348, 1-13. DOI: 10.1136/bmj.g2329

MacDowell, M., Glasser, M., Nielsen, K., & Hunsaker, M. (2010). A national view of rural health workforce issues in the USA. *Rural Remote Health*, 10, 1531-1547.

Oregon Employment Department (2021). Oregon Occupational Employment Projections, 2020-2030. Salem OR. https://www.qualityinfo.org/documents/10182/92203/Oregon+Occupational+Employment+Projections+2020-2030?version=1.13

Oregon Center for Nursing (2019). Shortage or maldistribution: Shifting the conversation about Oregon's nursing workforce. Portland OR. https://oregoncenterfornursing.org/wp-content/uploads/2019/06/ShortageOrMaldistribution_Report2019.pdf