



COLORADO CENTER
FOR NURSING EXCELLENCE

*Transforming Healthcare
Through Workforce Innovation*

Colorado's Direct Care Healthcare Workforce

September 2023
Snapshot

Mission

Building upon a foundation of evidence, the Center advocates for and provides professional education, leadership development, coaching and data analysis to continually strengthen a diverse nursing and healthcare workforce. Our defining strategy is to convene and engage the right people, at the right time, to develop and implement innovative solutions to emerging healthcare challenges.

Vision

Transforming healthcare through workforce innovation.

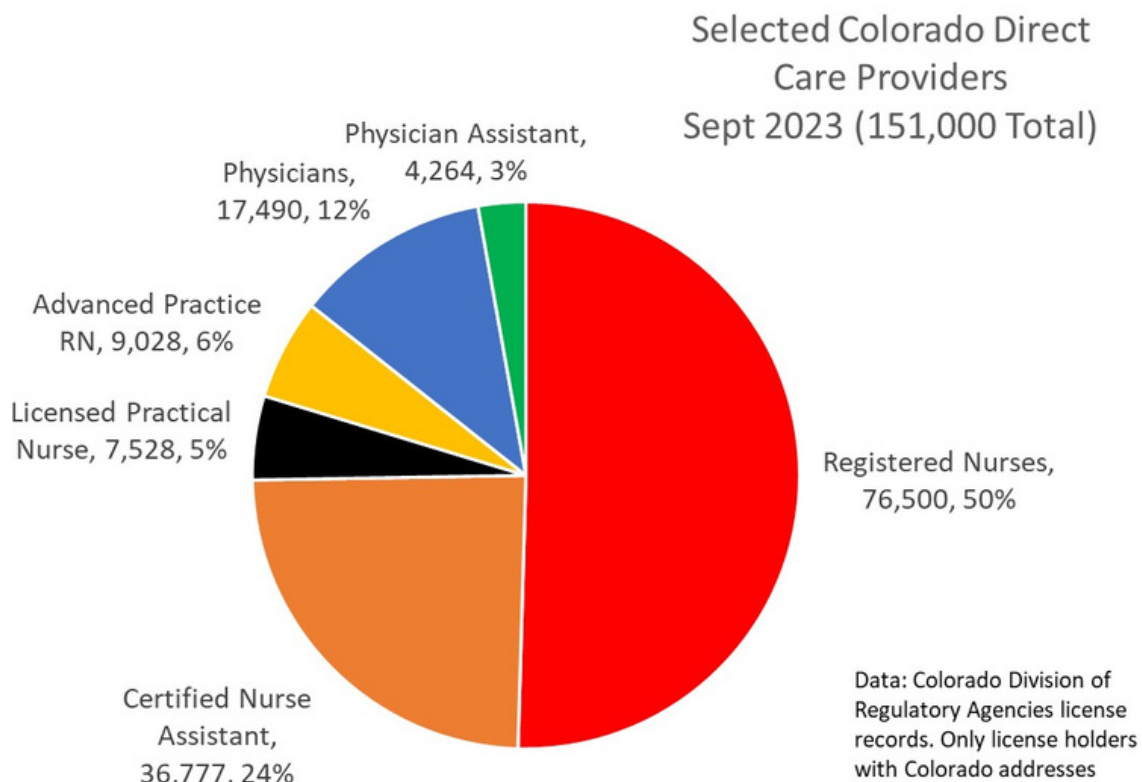
Our Commitment

The Center's journey to create a more diverse and inclusive workforce began when we convened a group of key stakeholders to begin the conversation. Our commitment today, and always, is to address health disparities in our diverse and underserved communities by actively working to build a more diverse healthcare workforce.

Our commitment goes beyond the Colorado healthcare workforce and is a part of our core principles. We know we must walk the talk.

Colorado’s Direct Care Healthcare Workforce September 2023 Snapshot

Colorado’s direct care healthcare workforce is changing. The purpose of this report is to provide a snapshot of the current and expected future supply of direct care workers in the state with the intention of identifying barriers to creating actionable solutions to present and future shortages.



***Executive Summary:** Workforce issues comprise an increasingly complex set of challenges limiting the ability of Colorado’s health care employers to provide equitable healthcare to all residents. The focus of this report is a snapshot of six key Colorado direct care providers: Advanced Practice Registered Nurses, Certified Nurse Assistants, Licensed Practical Nurses, Physician Assistants, Physicians, and Registered Nurses.*

The two most pressing challenges are **demographics & geographic distribution**.

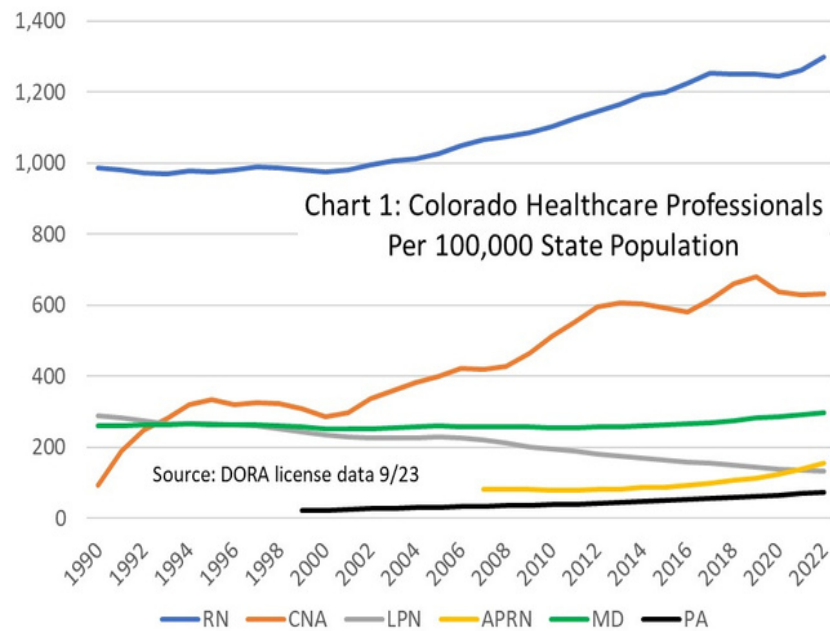
- **Demographics** - Aligned with the rest of the state population, the healthcare workforce is aging and there is an increase in the number of healthcare providers retiring. Additionally, many communities do not have healthcare providers that mirror the communities in which they serve. This has been shown to have a direct impact on health outcomes.

- **Geographic Distribution** – Colorado is experiencing a significant and increasing rural healthcare workforce shortage. A few examples show this clearly: Colorado’s 42 most rural counties contain 8% of the state’s population, but only 4% of Physicians. 46% of the 69 Physicians in Colorado’s 18 most rural counties are over the age of 60. In contrast, only 26% of the Physicians in Colorado’s 10 most urban counties are over 60.

This report reflects a point in time based on available data. Changing demographics in Colorado make providing any complete healthcare workforce analyses challenging when there is a significant limitation on access to key data including but not limited to race, ethnicity, work status, nursing, and other faculty related data.

Although there are over 370,000 employees in the Healthcare and Social Assistance business sectors¹, this report focuses on six selected direct care providers: Advanced Practice Registered Nurses (APRN), Certified Nurse Assistants (CNA), Licensed Practical Nurses (LPN), Physician Assistants (PA), Physicians (MD), and Registered Nurses (RN) (151,000 in total ²). Assuming that at least 15% of license holders are not working but just maintaining their licenses³, the effective workforce for these 6 occupations is estimated to be no more than 128,500. As

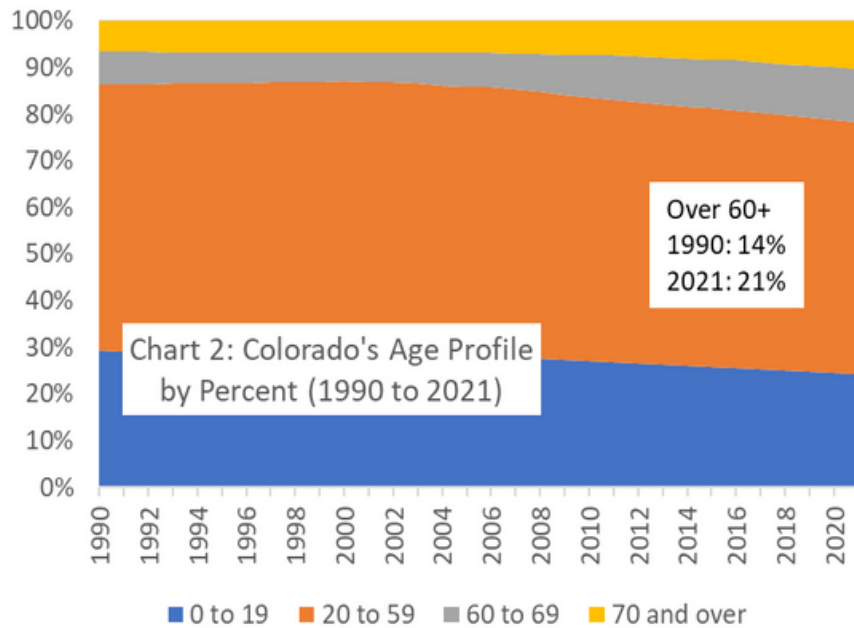
illustrated by chart 1, with the exception of the LPN workforce, these occupations have grown slowly but steadily on a per capita basis since 1990.



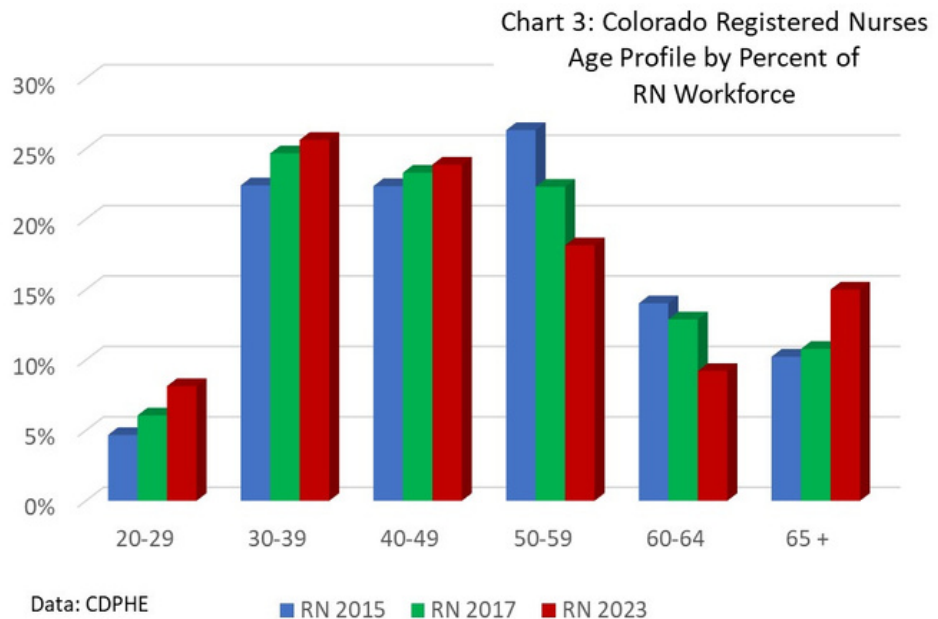
Another perspective is that on average in 2022 there was 1 RN for every 77 Colorado residents, 1 CNA for every 158 residents, 1 LPN for every 751 residents, 1 APRN for every 643 residents, 1 MD for every 338 residents and 1 PA for every 1,356 residents statewide. This statistic, however, is statewide and doesn't accurately measure the distribution of workers across defined areas of the state. Rural/underserved communities continue to have limited access to health providers per capita compared to urban, indicating a maldistribution of workforce.

Two of the most significant drivers affecting the need for these healthcare occupations are the increase and age of Colorado’s population. Since 1990, Colorado’s population has grown on

average by 75,000 residents per year. At the same time, the percentage of residents over 60 years of age has increased from 14% in 1990 to 21% in 2021 (an increase of over 400,000). State projections indicate that this percent will grow for at least the next 20 years.⁴ Chart 2 illustrates these ongoing and powerful trends.



At the same time the general population is getting older, so too is the healthcare workforce. Focusing on the nursing profession, charts 3 and 4 show in detail how the RN workforce age profile has changed over time (2015 to 2023).⁵

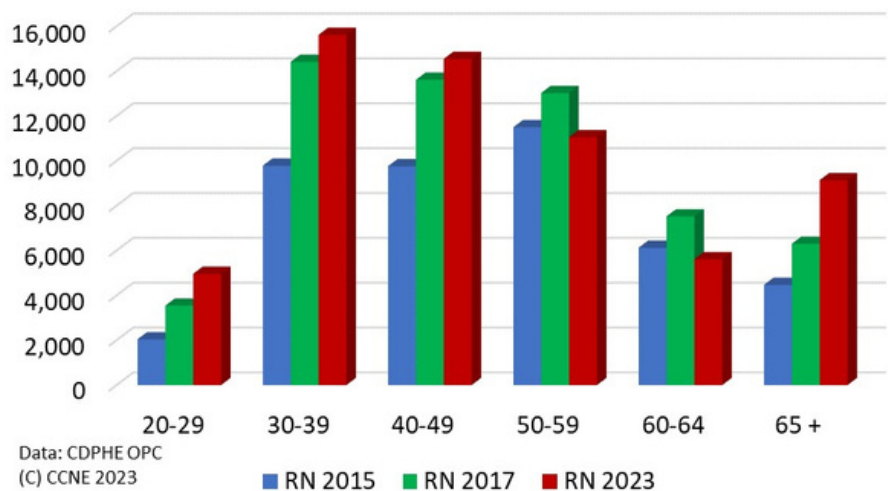


Taken as a whole, the RN workforce is older than the total state population. While the percentage of younger nurses in the RN workforce has been increasing. A very substantial 24% (14,700) of RNs are over the age of 60 as of 2023.

As indicated by chart 4, should the age 65+ RNs leave the field, that would remove over 9,000 expert RNs (15% of RN workforce) from the labor force. Additionally, those retiring RNs not only leave gaps in the number of available workers but also leave a gap in the knowledge, wisdom, and experience of

the nursing workforce. Such a loss of expertise can negatively impact patient care and outcomes. The retiring nurses will be replaced by less experienced RNs. This is the case for all professions when the experts retire, however, in this case the volume of expected

Chart 4: Volume of Colorado Registered Nurses By Age (2015/2017/2023)



retirements is of concern and quality and safety must be addressed by ensuring knowledge gained through experience is passed on from one generation of RNs to the next.

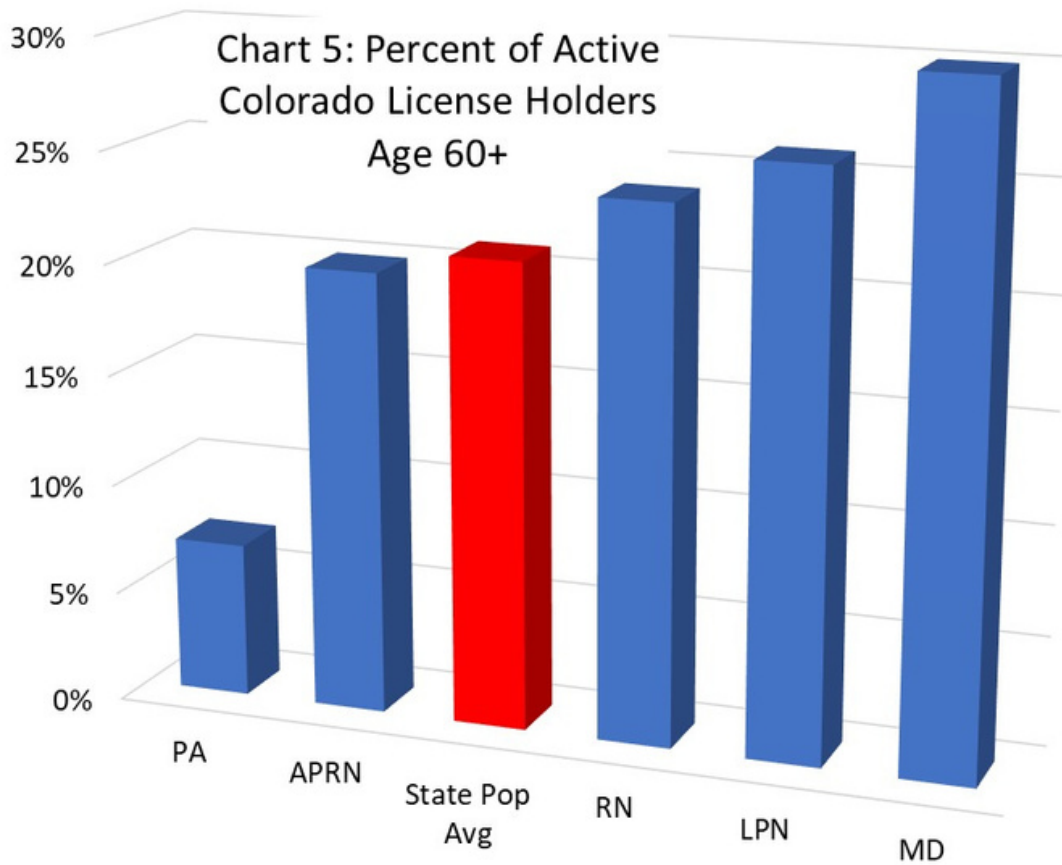
The good news from a demographic perspective is that RN workforce aged 20-39 has increased from around 12,000 (27%) in 2015 to over 20,000 (34%) in 2023.

As illustrated by chart 5, the same aging dynamic affects the other 5 direct care occupations, though for some occupations the impact is less significant. One challenge related to measuring professional licensure relates to the reality that many licensed RNs are no longer providing direct care but continue to maintain their license. The exact number is not available; therefore, it is not clear exactly how many of the licensed providers in the state are still providing direct care to Colorado residents.

The aging/retirement issue is most serious for physicians, with 30% of current license holders over the age of 60. Age data is not available for CNAs. Given that the PA occupation was created more recently, it is not surprising that 60+ percentage is lower than the other occupations.



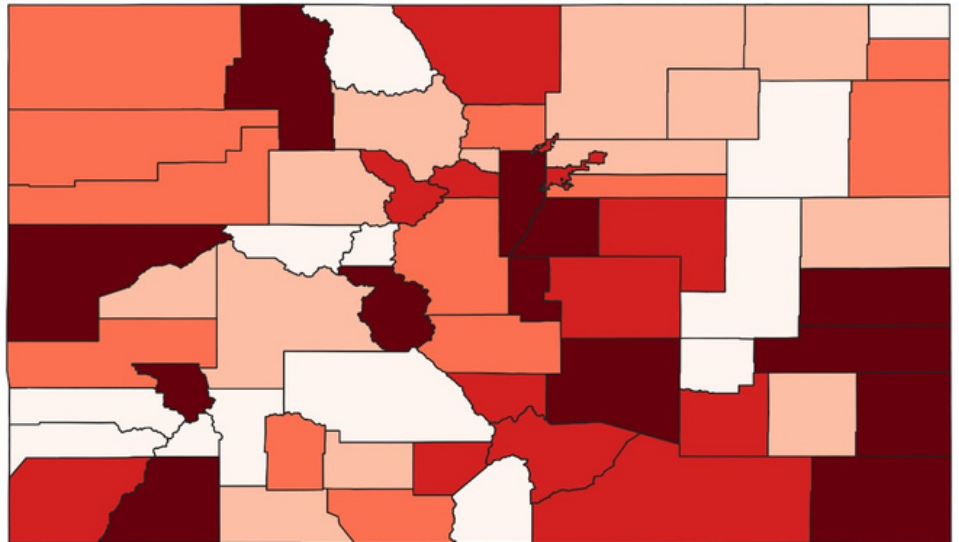
As illustrated in chart 5, the issue of workforce age and retirement is not distributed evenly throughout the state. In general, urban professionals are younger than rural professionals. Some rural counties have 90%+ of their professionals over 60 years old.



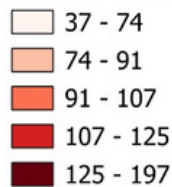
Perhaps the issue that is most difficult to resolve, and yet often most invisible, is the issue of the maldistribution of the healthcare workforce and significant differences in Colorado residents' health access. The statewide average healthcare workforce statistic conceals the reality that many parts of the state have a significant and growing healthcare workforce shortage.

As map 1 illustrates, 22 rural counties have only 37-74 Registered Nurses for every 10,000 residents, while 10 urban counties have 125-197 RNs per 10,000 residents.

This is a 300% difference between many rural and urban counties in terms of access to support by RNs. This maldistribution and access issue is significantly worse for physicians. 4 rural counties have no physicians and 7 counties have only 1 or 2 physicians. 38 rural counties have less than 1.5 physicians for every 1,000 residents, while 6 urban counties have more than 3 physicians for every 1,000 residents.

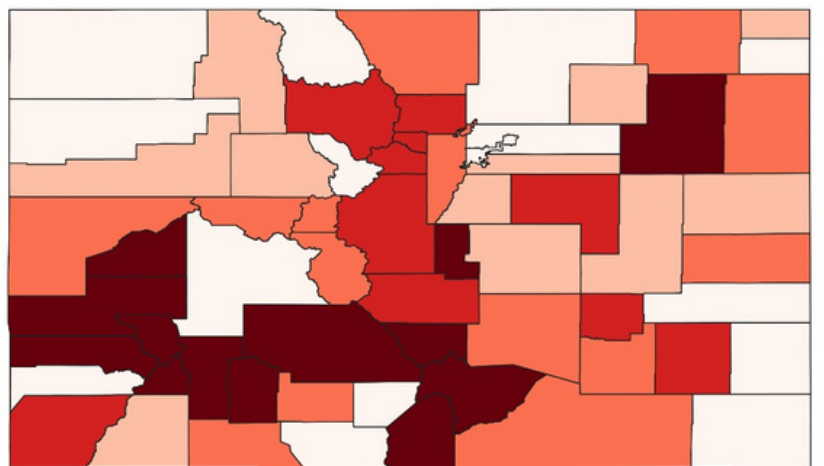


RNs Per 10,000 Residents

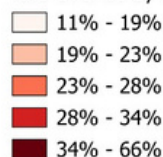


Map 1

Source: DORA License Data
 State Office of Demography
 (c) Colorado Center for Nursing Excellence



RNs Over 60 by Percent

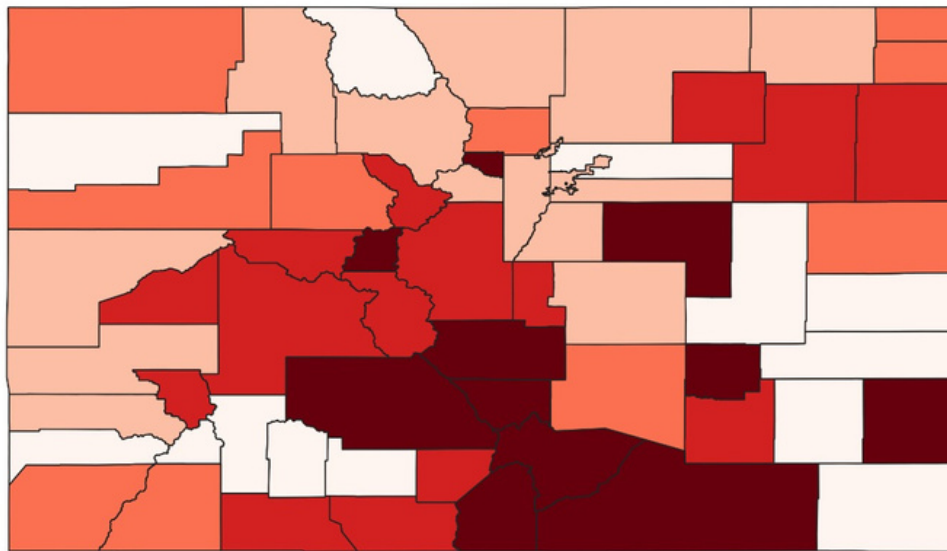


Map 2

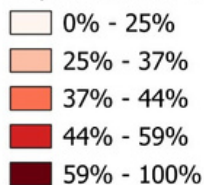
Source: CDPHE Office of Primary Care
 DORA License Data

(c) Colorado Center for Nursing Excellence 2023

Combining the two issues of an aging and maldistributed workforce creates added challenges for parts of the state. As illustrated by map 2, 15 rural counties have 34-66% of their RNs over the age of 60.



Physicians Over 60 Years Old by Percent



Map 3

Source: CDPHE Office of Primary Care
 DORA License Data
 (c) Colorado Center for Nursing Excellence 2023

As illustrated by map 3, 15 rural counties have 59-100% of their physicians over the age of 60. 4 rural counties have 50-100% of their APRNs over the age of 60. The retirement exposure for these counties is potentially devastating.

Furthermore, it isn't possible to manage what is not measured. Colorado's private and public sector policy and decision makers are limited by the issue of significant missing healthcare workforce data. The lack of comprehensive workforce data creates a serious barrier to being able to understand key workforce issues.

Long-standing research indicates a strong linkage between the ethnic and racial makeup of the healthcare workforce and health outcomes. When the healthcare workforce ethnic and racial diversity mirrors that of the populations served, quality and health outcomes improve. Therefore, diversity in the workforce creates significant benefits in terms of equitable individual

and public health. Unfortunately, Colorado does not actively track the ethnic and racial composition of its healthcare workforce. Some surveys indicate that the RN workforce, for instance, is only about 10% diverse, far short of a state population that is more than 30% diverse. The Colorado Department of Labor and Employment indicates that the RN workforce is only 9% Hispanic while the census bureau indicates the state population is comprised of over 21% of people identifying as Hispanic. Colorado is not even close to mirroring the population served.

Additionally, while it is useful to know that there are 76,000 Colorado residents with active RN licenses, it is a certainty that not all those individuals are actively working in the workforce, but the ratio of licensed to direct care provision is unknown. The actual number of licensed healthcare professionals actively working is at best an estimation, and that is not a useful basis for policy making or workforce development. Requiring this data for licensure applications and renewals for all licensed healthcare professionals would vastly improve the validity and reliability of healthcare workforce data available to policymakers and workforce researchers.

It is important for decision makers to have the voice and representation of the workforce when making decisions that impact that workforce. Anecdotally, nurses often express concerns that policy makers create solutions around the workforce shortages, clinical placement challenges, faculty shortages, and general need for expansion of the workforce without having a nursing voice at the table. Bringing the insights of the professionals in a field to create solutions will improve the success of those solutions.

Conclusion

Colorado is facing both an aging population and workforce. The state continues to have a maldistribution of providers with rural and underserved communities continuing to struggle to both attract and retain qualified health workers. Additionally, there is limited data on the racial and ethnic diversity of the workforce. It is impossible to adequately address the challenge of workforce diversity without measuring it. All data that is available strongly suggests that the state's workforce, specifically at the MD, APRN, PA, and RN levels, is neither racially nor ethnically diverse. Creating a requirement for licensed healthcare professionals to provide their full demographic information, including age, geographic location, race, ethnicity, specialty, place of employment, and direct care status would provide much stronger data to support building a workforce that is better equipped to ensure full community representation and health equity.

The good news is that the needed data is available, but it is not accessible beyond agency silos or is in a single repository for easy access. The Primary Care Office of the Colorado Department of Public Health and Environment (CDPHE) has developed over the past several years the

necessary tools to integrate that data and a security system that far surpasses many other agency's data security systems. Requiring state agencies to work with CDPHE to bring the needed data into a single and appropriately accessible location would aide policymakers and healthcare leaders in clarifying both the challenges and solutions to build a strong, qualified, equitable, and effective healthcare workforce for the future.

A strong survey on workforce demand would be powerful as solutions are identified to fill shortage gaps. Additionally, a better understanding of the nursing faculty shortage, limitations on clinical education placements, and identification of solutions to impact both will also be important.

¹ Colorado Department of Labor Employment LMI Gateway data.

² Based on Colorado Department of Regulatory Agencies licensure data as of September 2023. These six occupations have 189,000 active licenses, only 80% have Colorado mailing addresses (a low of 66% MD license holders have Colorado addresses to a high of 93% of LPNs with Colorado addresses). The 151,000 number represents active license holder with Colorado mailing addresses.

³ This 15% non-working assumption is based on a 2002 HRSA national survey, so may be out of date and low.

⁴ Colorado State Office of Demography

⁵ Significant thanks are due to the multi-year effort led by CDPHE's Office of Primary Care; the OPC has been an invaluable source of data, and is the source of the age-related data in this report.



Scan this QR code to view the **Healthcare Workforce At-A-Glance**, which includes additional graphs and maps.