



THE NURSING AND HEALTH CARE WORKFORCE IN COLORADO

DRIVER OF PROSPERITY OR
AN ECONOMIC ROADBLOCK?

A BRIEFING BOOK | MARCH 2010



Colorado Center for Nursing Excellence



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Colorado Center for Nursing Excellence

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The Colorado Center for Nursing Excellence is dedicated to ensuring that our state has adequate numbers of highly-qualified nurses and other health care employees. The Center's vision is to support innovation and build partnerships to enhance the Colorado nursing and health care workforce. The Center contributes to the promise for health by developing an excellent nursing and health care workforce that meets the needs of all Coloradans. Through collaboration and innovation, we are a catalyst for change and advocates for health, education and policy.

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Dear Community Leader:

Colorado's nursing and health care workforce is at a crossroads.



The promise of nationwide reform, an aging labor pool, a growing and graying population and a restricted number of nursing school graduates due to shortages of faculty and lack of space for clinical experiences have led many to question whether Colorado is on the verge of a tsunami – a tsunami that could dramatically affect the quality of care for our citizens.

In this briefing booklet, the Colorado Center for Nursing Excellence presents a detailed picture of the economic, social and lifestyle issues shaping our industry. Key demographic changes, industry trends and national comparisons shed light on Colorado's precarious nursing and health care workforce.

We hope this report will rally nurses, policy leaders, academic officials, health care providers and patients to start working on Colorado's mounting dilemma. Section six outlines a framework for change. Here, we begin the dialogue on the transformation of Colorado's nursing and health care workforce.

In good health,

Handwritten signature of Jean Scholz, MS, RN in black ink.

Jean Scholz, RN
President and CEO

Handwritten signature of Jerry Spicer in black ink.

Jerry Spicer, RN, MPA
Board Chair
Vice-President, Patient Services
Chief Nursing Officer
St. Mary's Hospital and Medical Center

Introduction

Underlying the national debate about health care insurance reform is the much less visible but very significant issue of the health care workforce.

Colorado's economy and quality of life is powerfully affected by the availability, quantity and quality of its health care workforce. As of June 2009, the health care and social assistance sector employed one in nine Colorado employees and provided \$11 billion in annual wages. With 253,000 employees, health care and social services is a major contributor to the state's economy, with average wages that are 60 percent greater than the retail sector. The health care and social assistance sector is projected to grow by an additional 56,000 employees by 2018 (not including the 50,000 individuals needed to replace retirees).

The balance between supply and demand of the health care workforce may ultimately have a more enduring impact on Colorado residents' access to health care services than their ability to obtain health care insurance. In 1993, 9 percent of Colorado's hospital workforce was older than 55; today it is 20 percent. In contrast, the 22-44 year old group dropped from 71 percent in 1993 to 53 percent in 2008. This demographic pattern ensures a high volume of retirements during a time when the demand for health care services will be increasing.

The health care workforce "pipeline" must be sufficient during the next decade to replace retiring health care employees as they shift from providers to consumers of health care services, support



an additional one million Colorado residents, and provide health care for an additional 500,000 over-65 residents. For a mobile and aging population, one danger is that the lack of a viable health care system will diminish the historically strong attraction of Colorado's other assets.

In the past, Colorado has been heavily dependent on importing health professionals from out of state. Based on a 2005 Colorado Health Institute survey, 80 percent of the state's physicians and dentists were educated outside of Colorado. Similarly, more than 60 percent of the state's pharmacists, dental hygienists and registered nurses were also educated outside of Colorado. Given the growing national demand for health care and the constrained capacity of higher education in all states, Colorado's continued ability to recruit a large percentage of its health care professionals from out of state is highly questionable.

Lacking a concerted public and private sector leadership focus, the health care workforce shortage issue will become increasingly serious. The shortage of health care workers will threaten Colorado residents' access to health care, resulting in a decreased quality of life and a negative impact on the state's economy.

1. The Employment and Economic Impact of Colorado's Health Care Sector

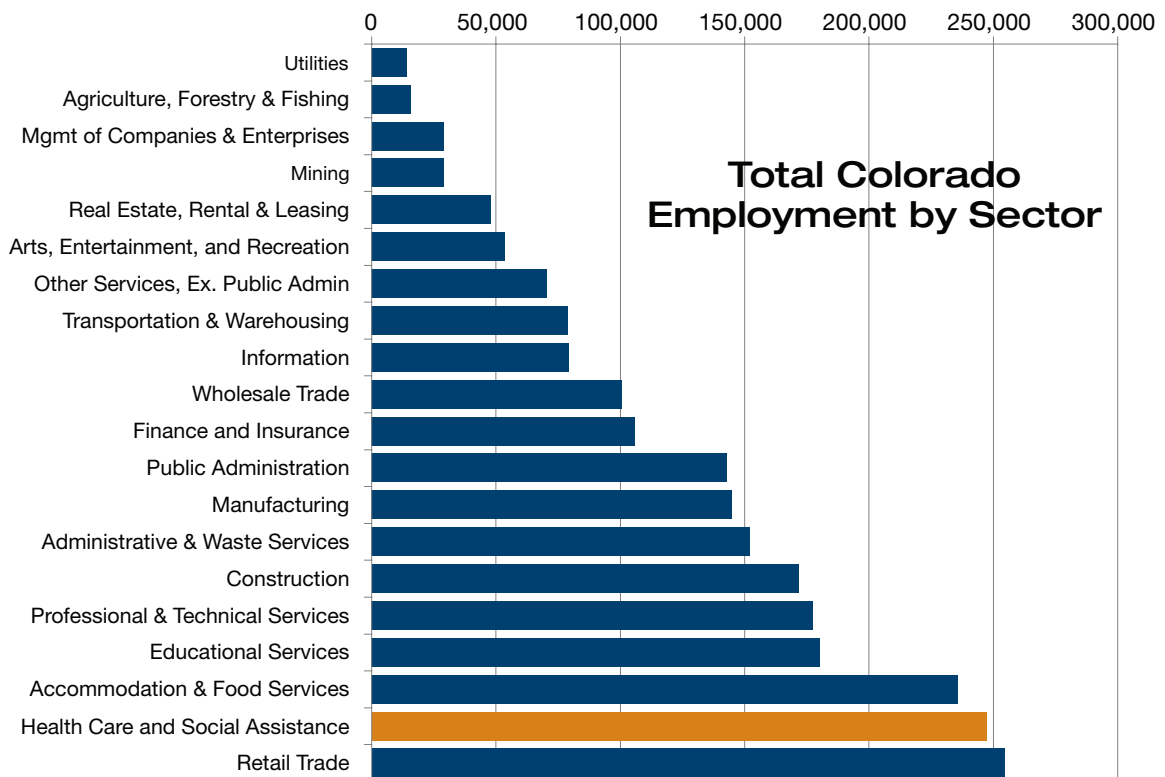


Figure 1 Source: CDLE

As illustrated by Figure 1 above, Colorado's Health care and Social Assistance sector employs more individuals than all other economic sectors except for retail trade.¹

For the state as a whole, the health care and social assistance sector employs 11 percent of the state's working population; in seven counties, this sector is responsible for more than 17 percent of the county's employment base. As indicated by Figure 2, within the health care sector, 37 percent of individuals are employed by ambulatory health care facilities (e.g., doctors offices, outpatient services and clinics), 31 percent are employed by hospitals, and 16 percent each for nursing and residential care and social assistance.

Percent of Healthcare Sector Employment

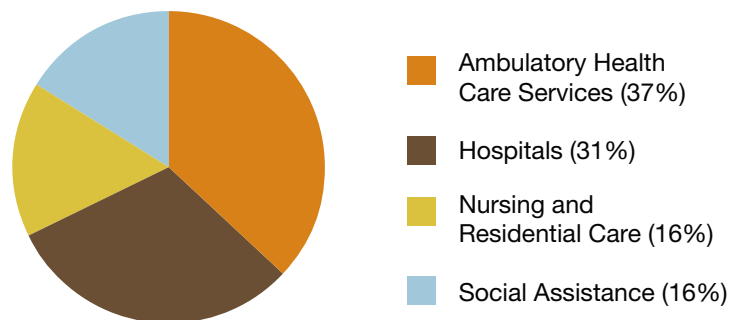


Figure 2 Source: CDLE

¹Colorado Department of Labor and Employment (CDLE).

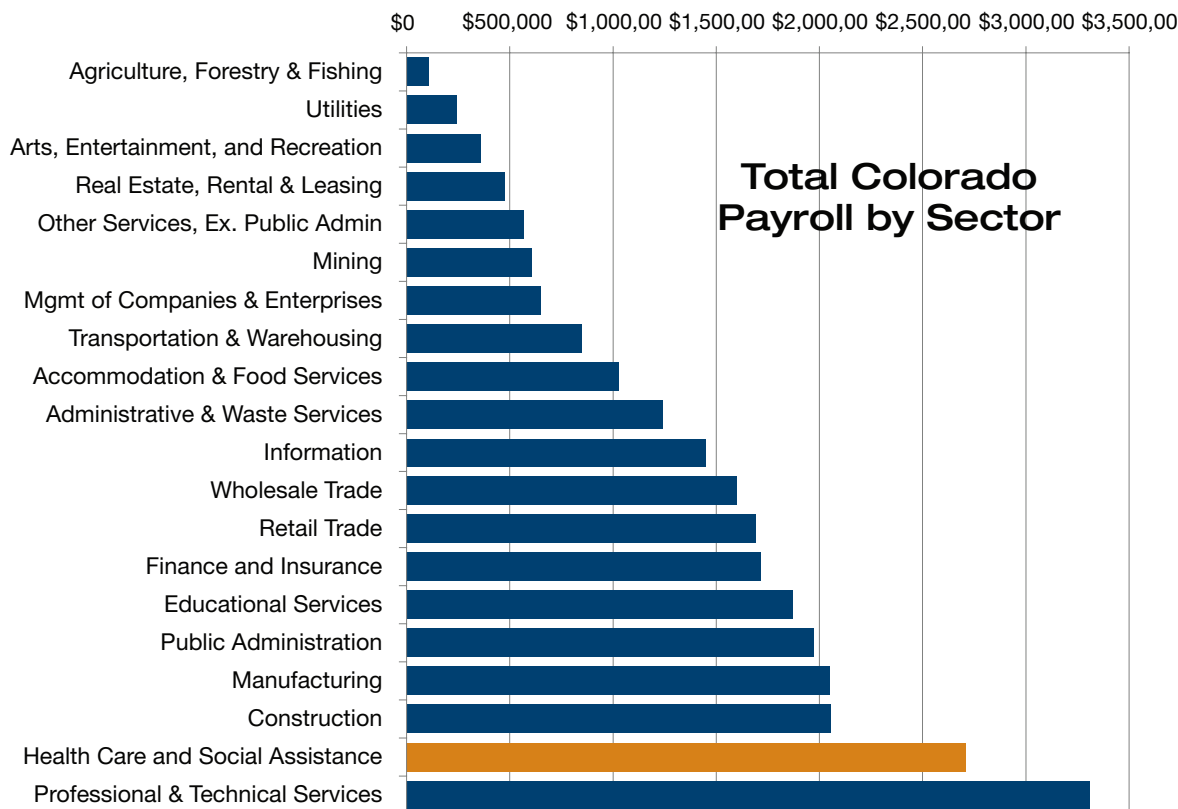


Figure 3 Source: Colorado Department of Labor and Employment

The economic and community impact of the health care sector is perhaps better understood when viewed through the perspective of wages and payroll rather than employment volume (see Figure 3). Due to the different average wage amounts paid by the various employment sectors, the retail sector falls to eighth in total economic impact due to its relatively low pay scale (\$502 per week), while the health care sector remains a strong second with

its higher average weekly wage (\$826), trailing only the professional and technical services sector in terms of total payroll.² Within the health care sector, the ambulatory health care sector (doctors' offices, public health and clinics) is responsible for nearly half of the sector's payroll, followed closely by hospitals at 35 percent (see Figure 4).

Another important perspective on the health care workforce is the uneven distribution of the health care workforce across Colorado, relative to the total employed workforce in each county. Seven counties have up to 26 percent of their total county employment and payroll in the health care and social assistance sector, in contrast to the 28 which have 8 percent or less of their payroll base in the health care sector (see Figure 5).

Percent of Healthcare Sector Payroll

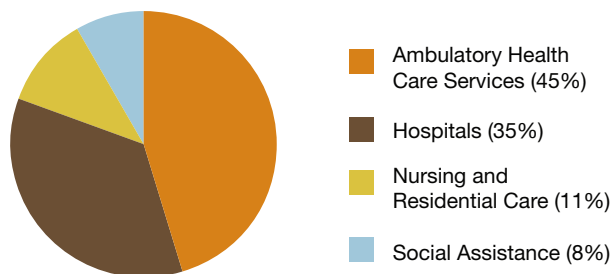
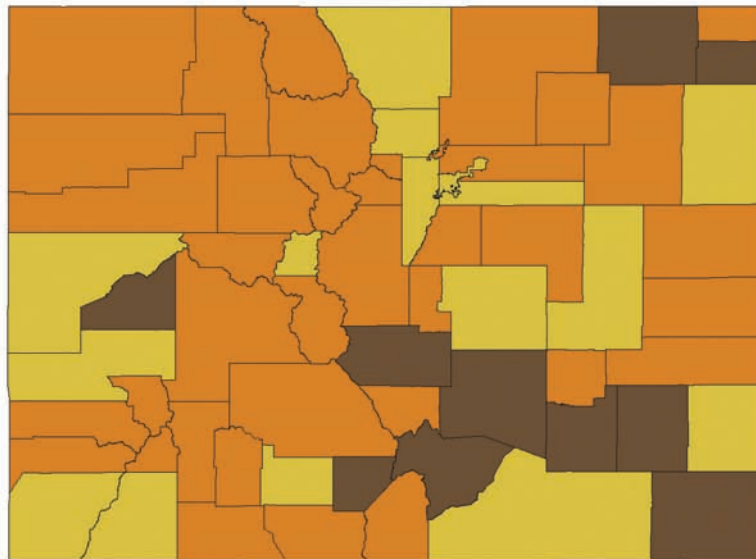


Figure 4 Source: CDLE

²Colorado Department of Labor and Employment, Labor Market Information.



**Healthcare/Social Assistance
Employees as a % of Total**

- 16 to 25
- 11 to 15
- 0 to 10

Figure 5 Source: Colorado Department of Labor and Employment

The uneven distribution of the health care workforce across the state has significant implications for access to health care services, as well as the importance that this sector holds for the economic health of each county's economy. Without an adequate health care sector in Colorado's many rural counties, it will be difficult to maintain the other elements of a viable economy in these regions, let alone attract new residents and employers.

With more than 253,000 employees, Colorado's Health Care and Social Assistance sector is responsible for 1 out of every 9 Colorado employees and an annual payroll of more than \$11 billion.

2. The Demographic Challenges Facing Colorado's Health Care Workforce

The aging of Colorado's health care and nursing workforce may become a tsunami that, if not addressed, will significantly impact Colorado's health care system's ability to provide adequate health care services to its residents. For example, as indicated in Figures 6 and 7, the percent of hospital sector employees that are 55 years and older has been steadily increasing since the early 1990s, and there is no indication that this trend will change.

Figure 6 shows how the age composition of hospital employees has changed since 1993. Overall, the hospital workforce has grown from 44,198 in 1993 to 71,332 in 2008. The graph illustrates the growth in the 55+ age group from 9 percent in 1993 to 20 percent in 2008. Figure 7 indicates that the 45-54 year old age group has grown from 20 percent to 28 percent during the same time period. In contrast, the 22-44 year old group has dropped from 71 percent in 1993 to 53 percent in 2008. In the 3rd quarter of 2008, there were 11,802 hospital employees age 55-64 and 1,829 age 65+. The powerful shift in the age composition of the hospital workforce (similar age profiles exist in the other health care sectors) will have significant short- and long-term implications on access to health care.

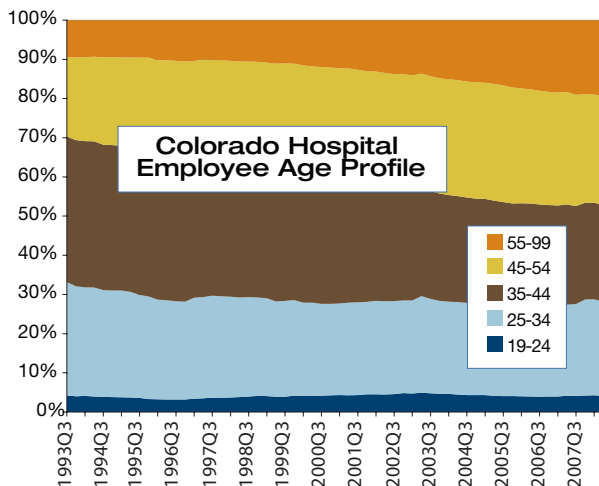


Figure 7 Source: US Census LED Data

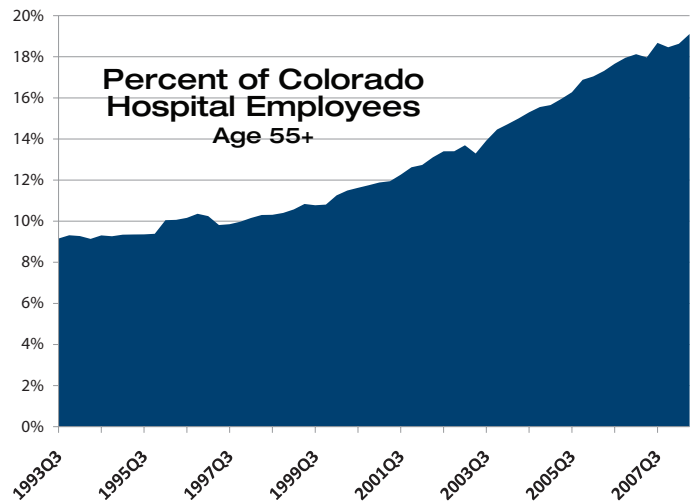


Figure 6 Source: US Census LED Data

This supply-demand workforce mismatch is not a problem that is self-correcting. Complicating a resolution to this issue are the disconnected nature of the health care workforce pipeline, the stressed and underfunded status of public education and the time lag required to develop health care professionals. All of the health care occupations share many of the same challenges: shortage of classroom and clinical faculty; overall education program cost; shortage of clinical training sites; and faculty salary and retirement issues.

Based on anecdotal information, the current economic recession has slowed down the retirement of older hospital and health care sector employees from the workplace and shifted some part-time employees to full-time status. However, the fundamental demographics of the health care and hospital workforce have not changed.

At a minimum, the recession has only insured that when health care employees retire from the workforce, they will now retire over a shorter timeframe than they would have under more normal economic circumstances. The retirement slope will become more and more a retirement "cliff" that will create skilled health care sector workforce shortages

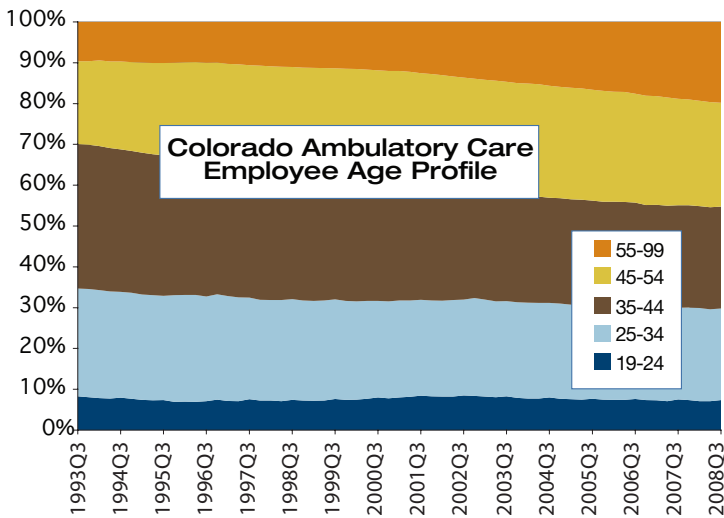


Figure 8 Source: US Census LED Data

during a shorter time period. Given the 4-12 year time period that it takes to develop health care professionals, this steeper retirement “cliff” will create an even more difficult workforce challenge.

While the hospital sector employs 35 percent of the health care sector employees, the ambulatory care sector (medical offices, clinics, outpatient facilities, etc.) employs an even larger amount (45 percent) of Colorado’s health care workforce. The workforce challenges facing this sector will become more intense as the overall population ages and as health care delivery increasingly shifts from an emphasis on acute/inpatient care to ambulatory/outpatient care.

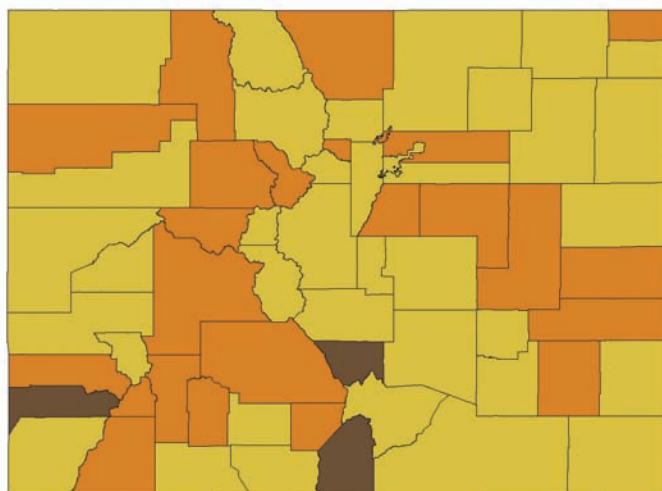


Figure 9 Source: US Census LED Data

Overall, the ambulatory care workforce has grown from 56,800 in 1993 to 92,600 in 2008. In the 3rd quarter of 2008, there were 15,250 ambulatory care employees age 55-64 and 1,040 employees age 65+. As Figure 8 illustrates, the age profile of ambulatory care employees shows a very similar demographic shift as that seen in the hospital sector, with the 55+ age segment increasing from 10 percent in 1993 to 20 percent in 2008, and the 22-44 age group dropping from 69 percent in 1993 to 54 percent in 2008.

In 1993, only 9 percent of Colorado’s health care workforce were over the age of 55; today it is 20 percent.

The employee base of long-term and residential care sector mirrors this age profile.

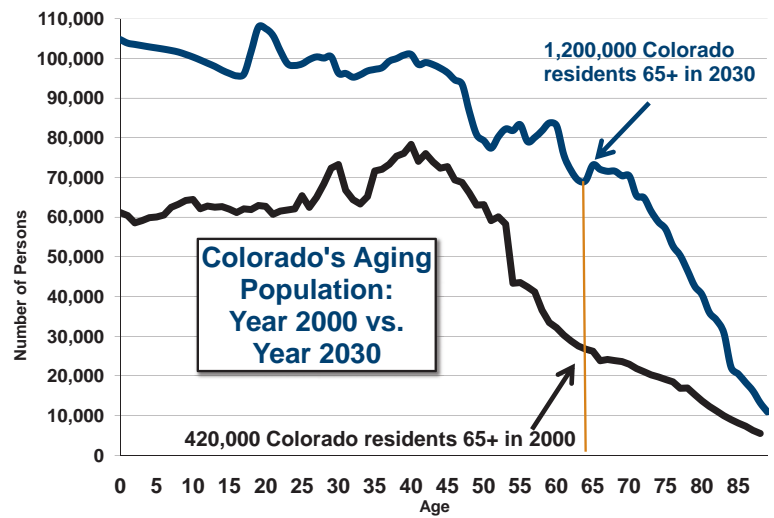
The geographic distribution by age of the health care workforce across Colorado counties reveals an even more serious community-specific demographic challenge that will be created when current health care employees retire. Figure 9 illustrates on a county-by-county basis the distribution of health care sector employees over the age of 55, indicating a significant variation among counties.

Three counties have a health care workforce with more than 30 percent over the age of 55, while 37 counties have between 20 percent and 30 percent of their employees in this age group. Given that rural counties have access to a much smaller labor market, recruiting a replacement workforce presents much more serious challenges. Solutions will require proactive and early community leadership and innovative solutions.

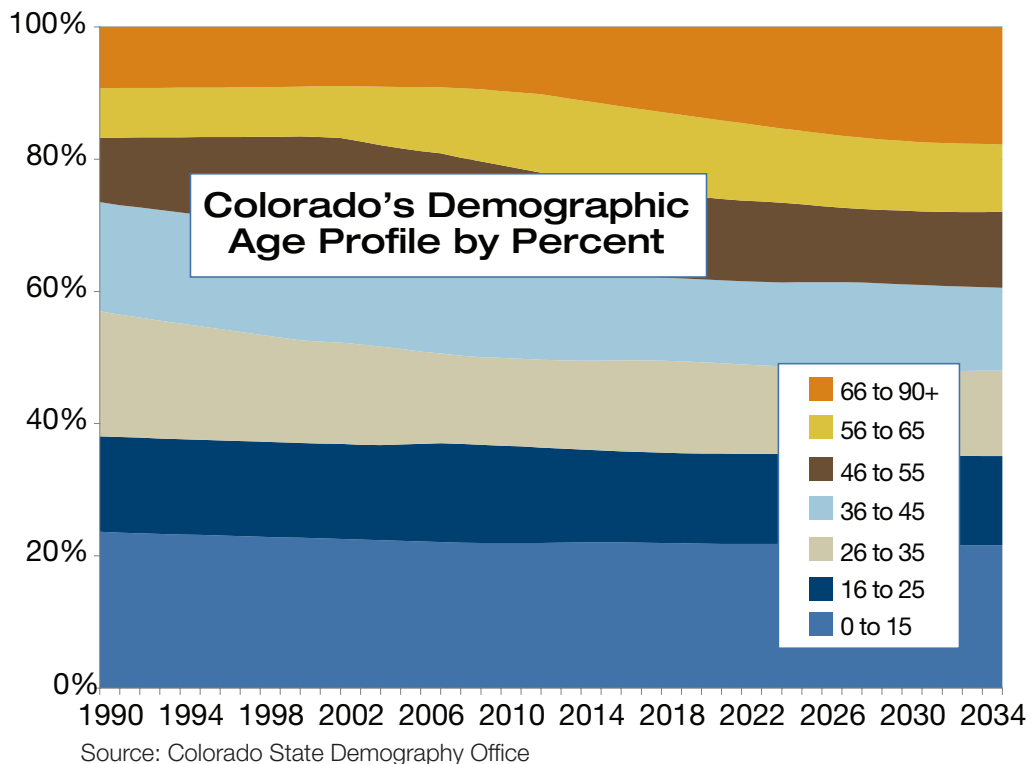
3. The Projected Demand for Health Care in Colorado

Projecting the demand for health care services, especially given the current national dialogue on health care reform, is more art than science. It is clear that under any scenario, however, Colorado will experience a strong increase in the demand for health care services, driven by two key factors: a state population projected to grow by one million during the coming decade and a considerable increase in the average age (demographic profile) of its population.

As illustrated by the two graphs on this page from the Colorado Demography Office, by 2030 Colorado's population 65 and over will be three times the size it was in 2000 (lower line), increasing from 400,000 to a total of 1.2 million (upper line). Similarly, the 55-64 age group will grow at 5.9 percent per year until 2030, in strong contrast to the projected growth of Colorado's total population of only 1.7 percent per year. Between 2008 and 2020, the state's working age population (20-65) will grow by only 1.3 percent per year.



Source: Colorado State Demography Office



Source: Colorado State Demography Office

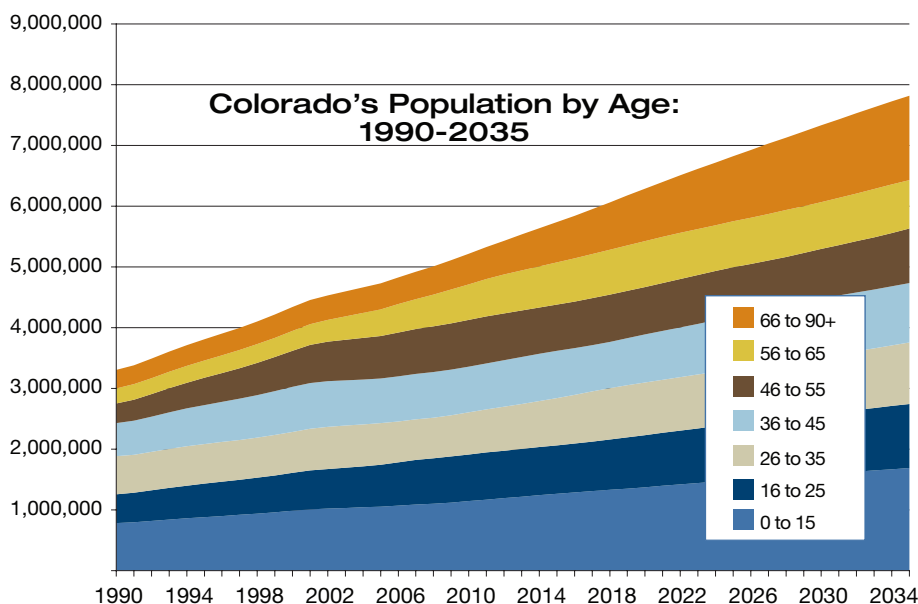


This massive shift in the demographic composition of the state is a natural result of the years of strong in-migration of residents from the “baby boom” generation. Overall, the percent of Colorado residents over 65 will increase from 9 percent (419,000) in 2000 to 18 percent (1.2 million) in 2030. These residents will be leaving the workforce and requiring more health care.

In addition to this shift in the age composition of the state’s population, the continuing growth of the

population to 7.8 million residents in 2035 will itself fuel the continued increase in the demand for health care services.

For the health care workforce, the powerful shift in the state’s demographic composition over the coming decade will have a double impact: 20 percent (50,000) of employees will leave the workforce and they will turn from being providers to consumers of health care services.



Source: Colorado State Demography Office

Colorado will face a significant increase in the demand for health care during the coming decade because the state’s population will increase by one million and there will be more 389,000 more adults 65+ who will need health care.

4. Colorado's Nursing Workforce

As the largest single occupation within the health care delivery system, Colorado's 61,000 nurses (RNs, LPNs and Advanced Practice Nurses) are a critical element defining the capacity and nature of health care delivery practices in the state. Fifty-nine percent of Colorado's registered nurses are employed by hospitals; 21 percent are employed by ambulatory health care facilities (doctors' offices, clinics, public health, etc.), and 6 percent are employed by nursing and residential care facilities.

Colorado's nursing workforce is an increasingly mature workforce and is facing a significant retirement "cliff" over the coming decade. Thirty-two percent (22,000) of the nursing workforce is over 55. (Figure 10).

Four thousand five hundred registered nurses are already over the age of 65 and 2,000 nurses are expected to retire annually over the next 10 years. In addition to this annual replacement requirement, the need for additional nurses due to population growth is projected to be 1,300 per year,⁶ for an annual total need of 3,300 new nurses. In 2007-08, there were 2,400 Colorado nursing school

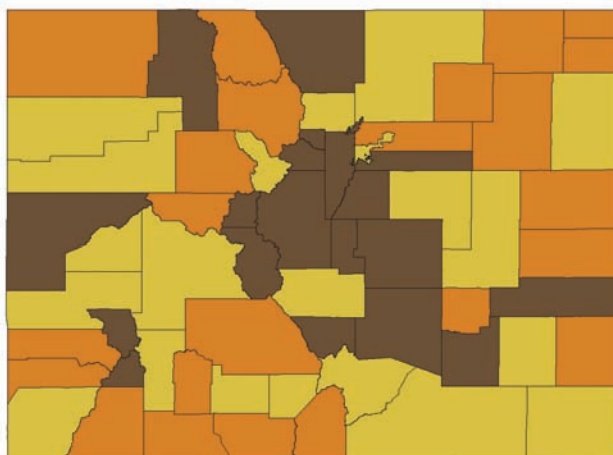


Figure 11 Source: Kaiser Family Foundation, StateHealthFacts.org

Age Distribution of Colorado's Licensed Registered Nurses (October 2009) Median Age = 49

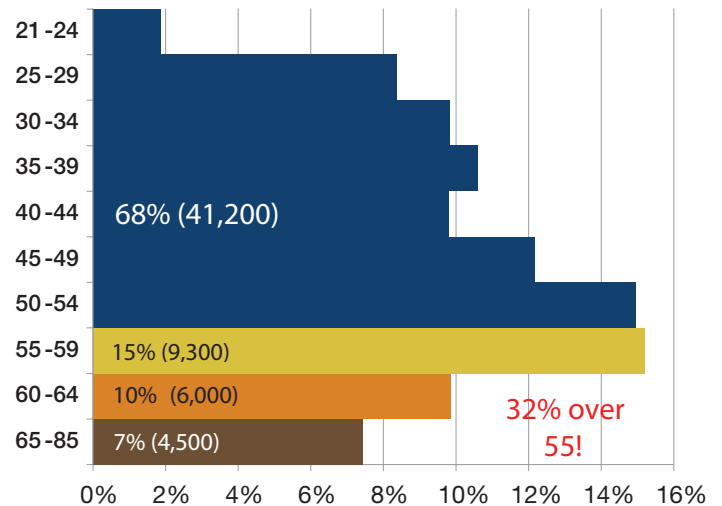


Figure 10 Source: State Board of Nursing

graduates, or (at a minimum) about 900 short of what will be required. If the state is to maintain its current capacity to deliver health care services, let alone expand it to meet a growing and aging population and the demands of health care reform, we must expand the pipeline of new nurses. Colorado can no longer rely on other states to educate our nurses, as it has in the past, but must develop sufficient internal capacity to meet the needs of Colorado residents.⁷

Another way to understand Colorado's nursing workforce is in terms of nurses per 1,000 population in a region or a county. Figure 11 illustrates the

⁴Colorado Health Institute

⁵Kaiser Foundation ~ www.healthfacts.org

⁶Colorado Department of Labor and Employment, LMI information

⁷60 percent of Colorado's nurses received their education out-of-state (CHI 2005 study)

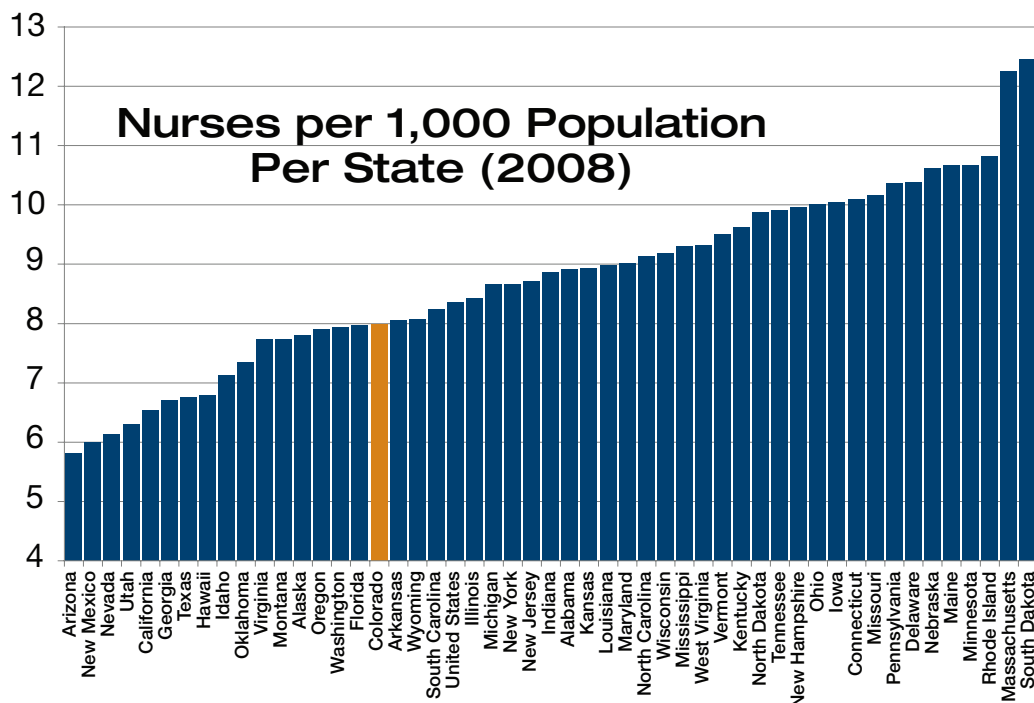


Figure 12 Source: Kaiser Family Foundation, StateHealthFacts.org

distribution of nurses relative to Colorado's per county population. On a county-by-county basis, the nursing distribution rate ranges from 1 per 1,000 population to 15 per 1,000 population.⁴

Colorado's overall nurses per 1000 rate is 7.98, as compared with a national average of 8.36 (see Figure 12).⁵ Colorado needs an additional 1,780 nurses to reach the national average nurse to population ratio. As Figure 11 indicates, 23 Colorado counties have less than 7.3 nurses per 1,000 population.

Between 2010 and 2020, Colorado's over 65 population will increase 72 percent from 536,000 to 925,000, with powerful implications for health care demand. In 2009, there were more than 12 nurses to every over 65 Colorado resident (see Figure 13). Absent meaningful change in the nursing workforce, this ratio will drop by 50 percent to six nurses for every older Colorado resident in 2025.

The essential point is that the state's need for nurses to support health care services will continue to outstrip the supply of nurses, unless concerted action is taken by public, private and educational institutions.

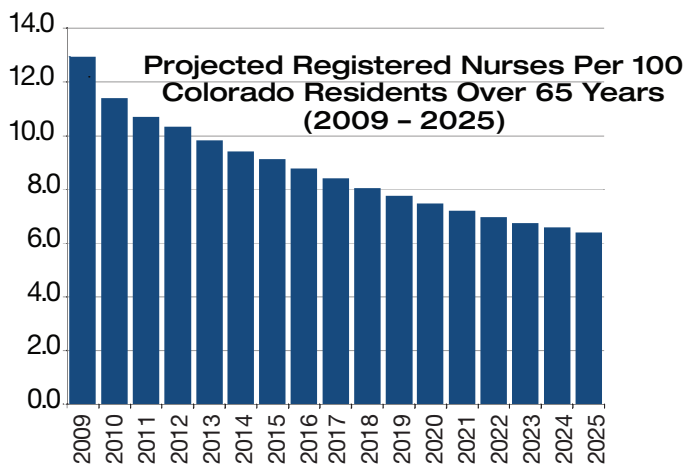


Figure 13 Source: Center Analysis

Thirty-two percent (21,000) of Colorado's Registered Nurse workforce is 55 or older, creating a retirement "cliff" for a large volume of nurses over the coming decade (see Figure 14). Given the importance of the nursing workforce to the delivery of health care services, the question of how the current nursing graduate "pipeline" compares to the future RN workforce demand is an important issue.

By combining known facts with some reasonable assumptions, it is possible to construct an estimated RN workforce supply/demand projection. The age of Colorado's registered nurses is known, as is the growth of Colorado's older population and the number of Colorado nursing school graduates. Less clear are number of licensed nurses employed, full-time vs. part-time employment, the volume of nurse in-and out-migration and age of retirement. On balance, most of the unknown factors will tend to increase rather than reduce the nursing shortage.

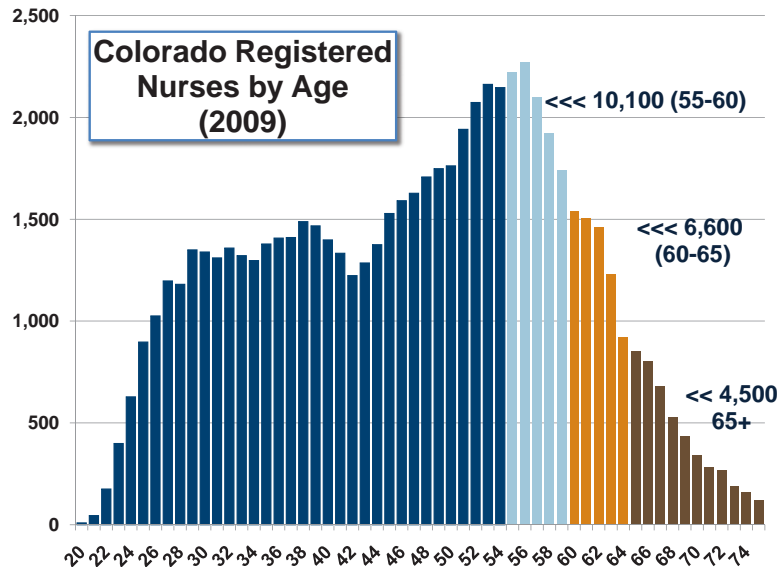


Figure 14 Source: Colorado State Board of Nursing

However, with conservative assumptions that 80% of the nursing workforce will retire by age 65, that Colorado will retain all of its nursing school graduates, that nursing school capacity will not increase, and there is no significant influx of nurses from outside of the state, the result is a growing shortage of nurses (see Figure 15). Based on these assumptions, Colorado will be short 6,300 Registered Nurses by 2018. This shortage will

increase if: health reform increases access to health care, creating a higher demand for nurses and advanced practice nurses; the aging of Colorado's population results in a faster than anticipated growth for health care; nurse graduation rates drop due to fiscal or lack of faculty pressures; or a higher percentage of nurses retire earlier than 65. If, for instance, all nurses retire by the age of 65, the nursing shortage will increase to 10,350. Historically, nurses begin to retire at age 58.

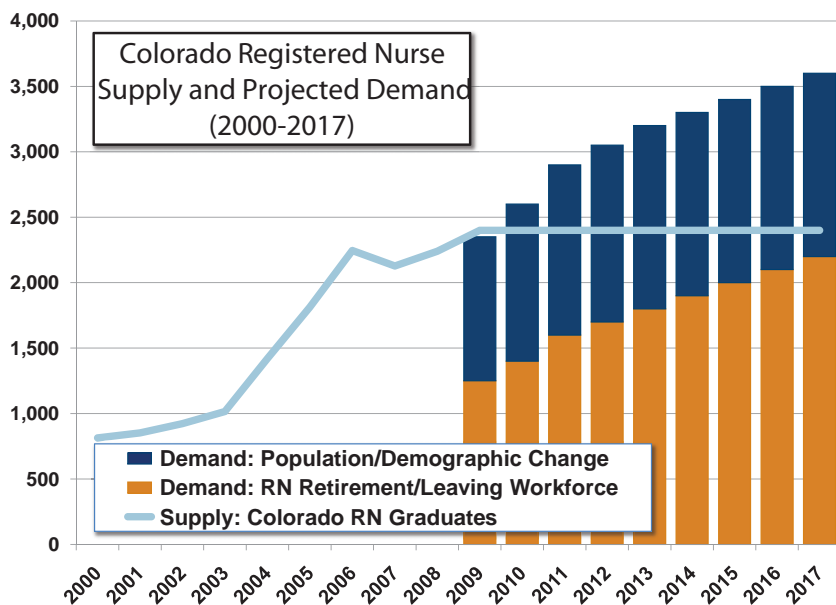


Figure 15 Source: Center analysis based on multiple data sources

5. Colorado's Allied and Other Health Care Occupations

Effective and accessible health care is a “team sport”; it requires a wide range of health care professionals working together. Just one missing medical lab technician, physical therapist, home health care provider or pharmacist can bring the health care delivery process to a halt. Accordingly, the over 140,000 individuals working in more than 60 allied health care occupations (see Appendix 1) are essential elements of Colorado’s health care system.

Health care workforce demand is defined by three factors: (a) net occupation growth needed to provide services to a growing population; (b) changes in the demand for health services driven by demographic changes or health care reform and; (c) the replacement of current employees that are retiring. Taken together, these factors indicate the demand for current and future health care workforce.

While it is beyond the scope of this document to analyze the workforce challenges of each of these many health care occupations, many face the same challenges as does the nursing workforce: a retiring current workforce, shortage of faculty and insufficient clinical placement sites. Given the much smaller size of these occupations than the nursing workforce, however, detailed workforce information is less available.

The following section briefly reviews eight health care occupations, Colorado’s existing employees and recent graduates in these fields and the Colorado Department of Labor and Employment’s projections for future workforce demand for these occupations.¹

¹The source of graduation data is U.S. Department of Education, National Center for Education Statistics. Occupation projections are from the Colorado Department of Labor and Employment.

These projections do not assume that there will be any change in the historical demand for these occupations, so health care reform could change the projected need for these and other occupations as more people have access to health care or the staffing patterns for health care delivery transforms to a different model.

This analysis assumes no significant out–or in–migration of people working in these occupations, and does not project an unusually high retirement rate by individuals currently working in these positions. Given the significant concentration of soon-to- retire employees in the health care workforce, and the continued drive for increased health care coverage, we believe that the estimates of future workforce demand are very conservative. It should also be noted that this analysis is for Colorado as a whole; the supply/demand situation for rural vs. urban areas is often quite different.



Dental Hygienists and Assistants

Dental Hygienists and Assistants work in dentists' offices in a range of roles, from removing deposits from teeth, to teaching patients how to practice good oral hygiene, and providing other preventive dental care. They examine patients' teeth and gums, recording the presence of diseases or abnormalities.

There were 8,820 Dental Assistants and Dental Hygienists employed in Colorado in 2008; this is projected to grow by 25 percent (2,240) to 11,060 by 2018 (see Figure 16). By adding this net growth of 2,240 to the anticipated retirement of 1,580 individuals during this decade, the total job openings during this period increases to 3,820, or 382 annually. On the supply side, Colorado programs produced 492 Dental Assistant and Dental Hygienist graduates in 2008. Assuming that graduation trend continues and no significant retirement shift occurs, it would seem that current graduation pipeline will meet projected demand.

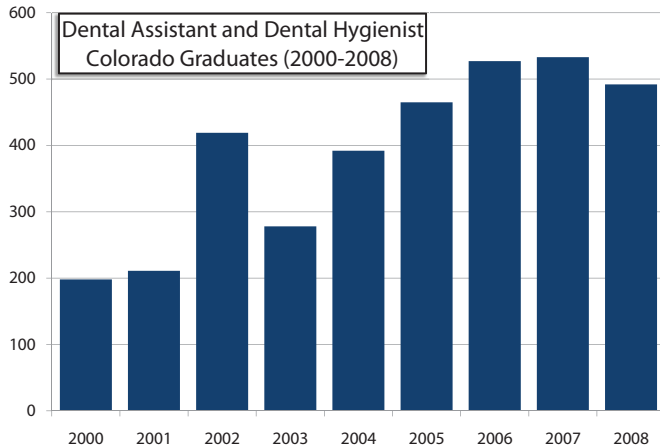


Figure 16 Source: U.S. Department of Education IPEDS Program

The projected shortage of lab technicians may have significant ripple effects on the state's ability to grow the bioscience sector and its ability to support the needs of the health care system.

Medical Technologists and Clinical Laboratory Technicians

Colorado reflects the national shortage of Medical Technologists and Clinical Laboratory Technicians. Individuals working in these occupations examine and analyze body fluids and cells. They look for bacteria, parasites, and other microorganisms; analyze the chemical content of fluids; match blood

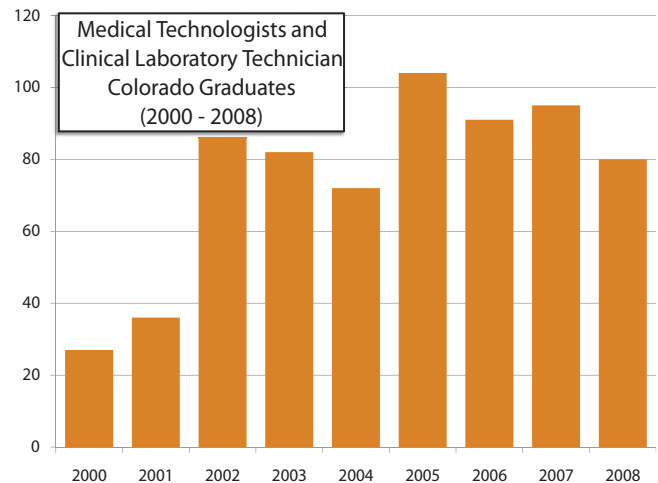


Figure 17 Source: U.S. Department of Education IPEDS Program

for transfusions; and test for drug levels in the blood that show how a patient is responding to treatment. They use microscopes, cell counters, and other sophisticated laboratory equipment.

In 2008, Colorado employed 5,000 individuals in these two occupations, with a need to fill 1,700 (new and replacement) positions over the coming decade, or 170 per year. While the growth rate for all Colorado occupations is projected to be 0.6 percent, the net growth rate of Clinical Laboratory Technicians will be 1.8 percent per year. In strong contrast to the projected annual statewide need of 170 Technologists and Technicians, Colorado's academic institutions only graduated 80 in 2008 and 95 in 2007 (see Figure 17). These individuals work for hospitals, testing laboratories, and bioscience companies, and provide essential technical and medical services. This projected shortage of lab technicians may have significant ripple effects on the state's ability to grow the bioscience sector and its ability to support the needs of the health care system.

Pharmacy Technicians

In 2008, Colorado hospitals and pharmacies employed 4,250 Pharmacy Technicians. Pharmacy Technicians work to help licensed pharmacists prepare medications, provide customer service, and perform administrative duties within a pharmacy setting. Pharmacy Technicians are responsible for receiving prescription requests, counting tablets, and labeling bottles.

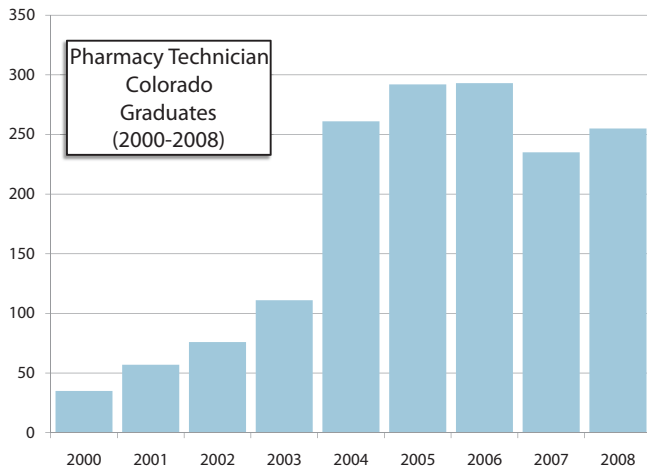


Figure 18 Source: U.S. Department of Education IPEDS Program

During the next decade, to support population growth and retiring employees, there will be a demand for 2,900 Pharmacy Technicians (290 per year). The net growth rate for Pharmacy Technicians will be 3.3 percent per year (see Figure 18), much greater than the projected statewide job growth rate of 0.6 percent. In 2008, academic institutions in Colorado graduated 255 Pharmacy Technicians; in 2007, the state graduated 235. Assuming no change in the 2007-2008 trend, the resulting Technician shortage may require that Colorado import Pharmacy Technicians from out of state if it wishes to respond to the projected workforce demand.

Physical Therapists and Physical Therapist Assistants

In 2008, Colorado institutions employed 1,100 Physical Therapist Aides and Assistants, and 3,604 Physical Therapists. Physical therapists provide care to people of all ages who have functional problems resulting from, for example, back and neck injuries, sprains/strains and fractures, arthritis, burns, amputations, stroke, multiple sclerosis, conditions such as cerebral palsy, and injuries related to work and sports. Physical therapists often consult and practice with a variety of other health care professionals.

Over the next decade, to support occupational demand generated by population growth and retiring employees, there will be a demand for 470 Physical Therapist Aides and Assistants, and 1,420 Physical Therapists, for a total of 190 individuals per year for these three occupations. The recent graduation pipeline data seems to indicate that the state should have an adequate supply of these health care occupations in the near future (see Figure 19).

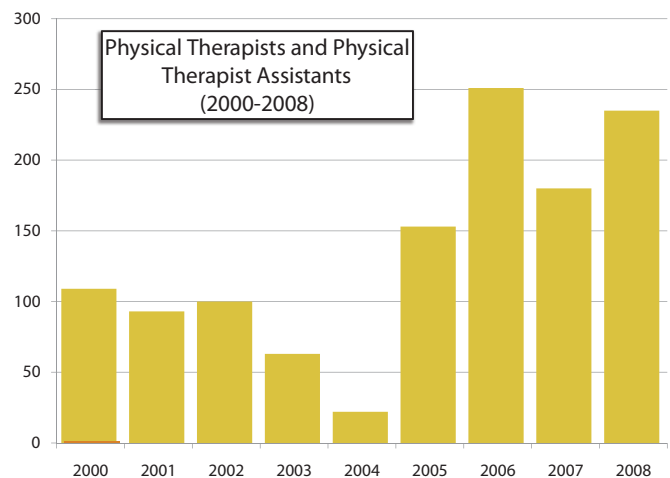


Figure 19 Source: U.S. Department of Education IPEDS Program

6. Summary and Solutions

The information in this briefing booklet points to the significant need for Coloradans to create solutions that will respond to health care access and workforce pipeline issues. For example, work is needed in the following areas:

New Models of care and health care delivery systems

- Explore new models of care that maximize the skills and abilities of care givers across the continuum of health occupations
- Maximize the use of technology to decrease the human resource demand and improve patient care
- Help providers work effectively in teams to best serve consumers
- Eliminate unnecessary regulatory and administrative burdens that slow down and increase the cost of providing health care delivery
- Support the creation of an all-payer database that includes data from payers that reflects payments and cost savings from caregivers such as nurses and other health care workers

Health care education system capacity and design

- Assure that schools preparing nurses and other health care disciplines have resources to grow our future workforce, including but not limited to: nurses, nurse practitioners, and nursing and other clinical faculty
- Develop seamless and integrated nursing and other health care occupation education and career ladders to reduce redundancy of coursework and speed the development of primary care providers and faculty
- Build collaboration among professionals and more effectively integrate students into practice

Open up the increasingly tight health care workforce bottlenecks

- Offer increased scholarships for nurses and other health professionals willing to return to school for the advanced education needed for primary care and faculty credentials
- Work with community and primary care providers to increase the number of clinical sites for educating nurses, advanced practice nurses, nurse midwives and other health care occupations
- Help employers quickly assimilate new graduates and ramp up efforts to prepare nurses for positions in demand including case managers, home health and long term care

Both the number and demographic profile of Coloradans will change dramatically during the coming decade. We have to anticipate these changes and adapt our models of health care delivery and education capacity now, so that Colorado residents in the future will have access to a viable health care system. Without these changes, we will not have enough nurses and health care workers to meet the demands of the state's population. We must act now in a collaborative manner to assure that all Coloradans have access to a talented and dedicated nursing and health care workforce.



Appendix 1



Appendix 1:

Top 54 Colorado Health Care Occupation Growth Profiles (2008-2018)

Occupation	2008 Employment	Occupation Growth Plus Replacement Needs (2008-2018)	Percent Growth (2008-2018)
Registered Nurses	40,884	18,990	46%
Nursing Aides, Orderlies, and Attendants	18,583	5,240	28%
LPN Nurses	7,271	3,050	42%
Medical Assistants	7,076	3,210	45%
Dental Assistants	5,729	2,440	43%
Massage Therapists	4,875	1,460	30%
Pharmacists	4,297	1,910	45%
Pharmacy Technicians	4,250	2,910	68%
Medical Records and Health Information Technicians	3,065	1,440	47%
Physical Therapists	3,604	1,420	39%
Medical and Clinical Laboratory Technologists	2,980	1000	34%
Dental Hygienists	3,091	1,380	45%
Radiologic Technologists	3,072	1,040	34%
Emergency Medical Technicians / Paramedics	3,292	1,070	33%
Surgeons	1,338	350	26%
Speech-Language Pathologists	2,537	780	31%
Medical and Clinical Laboratory Technicians	2,019	700	35%
Health Care Support Workers, All Other	2,291	710	31%
Occupational Therapists	2,126	780	37%
Physician Assistants	1,356	590	44%
Health Diagnosing and Treating Practitioners, All Other	807	250	31%
Family and General Practitioners	2,309	660	29%
Respiratory Therapists	1,571	710	31%
Medical Transcriptionists	1,311	430	33%
Dentists, General	2,821	710	25%
Dietitians and Nutritionists	800	270	34%
Opticians, Dispensing	1,291	460	36 %

CONTINUED

Occupation	2008 Employment	Occupation Growth Plus Replacement Needs (2008-2018)	Percent Growth (2008-2018)
Occupational Health and Safety Specialists	924	270	29%
Medical Equipment Preparers	761	210	28%
Surgical Technologists	1,570	950	61%
Diagnostic Medical Sonographers	761	270	38%
Physical Therapist Aides	409	150	37%
Psychiatric Technicians	575	190	33%
Optometrists	873	230	26%
Physical Therapist Assistants	740	320	45%
Internists, General	447	130	29%
Anesthesiologists	516	190	37%
Health Care Practitioners and Technical Workers, All Other	420	160	38%
Cardiovascular Technologists and Technicians	652	300	46%
Athletic Trainers	241	100	41%
Pharmacy Aides	406	50	12%
Dietetic Technicians	354	170	48%
Obstetricians and Gynecologists	675	250	37%
Audiologists	444	80	18%
Nuclear Medicine Technologists	223	80	36%
Pediatricians, General	354	90	25%
Recreational Therapists	142	30	21%
Respiratory Therapy Technicians	97	40	41%
Occupational Health and Safety Technicians	134	30	22%
Radiation Therapists	230	100	43%
Podiatrists	88	40	45%
Veterinary Assistants and Laboratory Animal Caretakers	625	110	18%
Orthotists and Prosthetists	72	20	28%
Veterinary Technologists and Technicians	2,626	1,480	56%
Total	149,902	60,000	40%

Source: Colorado Department of Labor and Employment, Labor Market Information. 2010.



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