2009-10 Colorado Nurse Faculty Supply and Demand Study

Survey Findings

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April 2011

Acknowledgments

This study provides an update to the Colorado Health Institute's *2004 Nursing Faculty Supply and Demand Study*. In addition, it reports on primary data collected in Colorado in 2009 regarding the supply of nurse educators and characteristics of the state's nursing education programs.

CHI acknowledges the substantial contributions of the following individuals and organizations for their participation in the initial planning of this study, their insight in identifying key issues and their guidance in developing the survey questions.

- Key informants
- Nurse program directors
- Colorado Center for Nursing Excellence
- Colorado Board of Nursing

CHI extends its thanks to The Colorado Trust for funding this nurse faculty study and for its ongoing support of workforce research and analysis.

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CHI also thanks the former CHI staff members who contributed to this project.

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Foreword

Nurses make up the largest profession in the health care sector with more than 51,000 licensed registered nurses (RNs) and more than 9,300 licensed practical nurses (LPNs) in Colorado.[1, 2] RNs alone hold almost four times as many jobs as physicians.[3] Among Colorado's nurses, a previous CHI survey found that 83 percent of licensed RNs were actively employed in nursing. Almost one-third of the state's RNs and LPNs, however, are 55 years of age or older. Since nurses, on average, retire before age 60, a significant portion of the state's nursing workforce is nearing retirement age.

At the same time, federal and state health care reforms are adding individuals to the ranks of the insured, which likely will increase the need for nursing services. When combined with expected retirements, this means Colorado will need 1,919 RNs and 305 LPNs every year for the next 10 years to fill its nursing vacancies.[4]

In 2004, the predecessor to this report, the *Colorado Nurse Faculty Supply and Demand Study*, reported: "…Colorado educators, clinical training sites and policymakers face substantial challenges related to the current supply of nursing faculty and the methods available to increase the overall capacity of the state's nursing education system." The 2009-10 sequel to the 2004 report, finds that in the past five years concern about the supply of nurse faculty has not diminished and has likely increased due to significant nursing program expansion which in turn has increased the demand for faculty. The current study found:

- In 2010, Colorado's nurse faculty shortage remains at least comparable to, and may be higher than, national faculty shortages.
- The average age of Colorado's nurse faculty is 50; 42 percent are 55 or older and the national average retirement age for nurse faculty is 63.
- By the 2014-15 academic year (AY), both pre- and post-baccalaureate nursing education programs can expect that at least 25 percent of their current faculty will have retired.
- By the 2019-20 AY, nursing education programs will have lost almost half of their current faculty, and doctoral programs will have lost three-quarters.
- Educating nurse faculty is a lengthy process. It takes more than 10 years from entry into a master's program to completion of a doctorate in nursing; half of all graduates are 45-54 years old.
- The career of nurse faculty is relatively short, ranging from nine to 18 years.
- Nursing leadership has argued that educational programs must not only maintain or increase the absolute number of students they graduate, but they must also increase the competencies of new nurses entering the profession.

This update examines these and other issues related to the supply of nurse faculty in Colorado, including economic and non-economic factors that affect the choices of individual nurses to become nurse educators. It also looks at existing and projected faculty vacancy rates in Colorado's nursing education programs.

Colorado leaders have many questions to answer with respect to the dwindling supply of nurse faculty: What do the retirement rates and shortage forecasts mean for Colorado? What is being done to prepare for the expected return of a serious nursing shortage in the coming decade? Is the recent expansion in nursing education programs sustainable? Are the state's programs adequately preparing

nurses to practice in today's complex, technological clinical settings? Innovative thinking in nursing education will be needed if Colorado is to have the nursing workforce it needs.

Key Findings

Barriers to educating, recruiting and retaining faculty

New strategies are needed to eliminate economic and non-economic barriers to faculty education, recruitment and retention so it is financially feasible and professionally attractive for individuals to serve in a faculty role.

- Colorado's current nurse faculty shortage is at least comparable to, and may be higher than, the national levels reported in the American Association of Colleges of Nursing's (AACN) "2010-2011 Faculty Vacancy Survey."[5]
- Expected nurse faculty retirements are likely to increase faculty attrition, especially in programs at the baccalaureate-degree level and above. At the time of the survey, 42 percent of Colorado's nurse faculty was either beyond or within eight years of 63, the national average retirement age of nurse faculty.
- In response to the nursing workforce shortage in the first part of the decade, nursing education in Colorado experienced significant, rapid program expansion from 2004-07, with the greatest increase in two-year associate degree in nursing programs (ADN). This expansion of ADN programs may have an unintended negative side-effect. While ADN graduates may go on to obtain a bachelor's degree in nursing (BSN), few complete master's or doctorate degrees.
- Although Colorado has seven colleges and universities that offer graduate-level nurse education, many programs focus on preparing RNs for advanced nursing practice rather than for faculty roles.
- Faculty salaries are neither competitive with clinical nurse salaries nor the salaries offered by nursing schools in other states. As a result, faculty recruitment and retention has become increasingly difficult.
- Improved loan and loan repayment programs could help recruitment. A bill passed in the 2011 Colorado legislative session combines the nursing teacher loan repayment program with the health services corps and authorizes the Colorado Health Services Corps program to repay loans for other health care professional faculty who teach in institutions of higher education.

The relationship between quality and capacity

Given the expected reemergence of a nursing shortage in the coming decade, it is understandable that nurse educators, program administrators, policymakers and the health care industry would focus on producing an increased number of highly qualified nurse graduates. The study findings illustrate some of the unintended effects of rapid program expansions in Colorado, revealing the tension between quality and capacity.

- Increased class size has added to faculty workload and increased dissatisfaction, and threatens to erode quality.
- Nursing programs vary in the scope and quality of the educational curriculum offered. This is reflected in the significant variability in standardized NCLEX[6] pass rates among graduates of the state's nursing programs.

- The retirement of senior nurse faculty represents not only the loss of their educational expertise but also the loss of mentors for new, less experienced faculty.
- Clinical facilities report that nurses straight out of school are not prepared well enough to take on the responsibilities of complex patient care. Concerns over the quality of patient care require facilities to spend from four weeks to more than three months providing orientation programs to new graduates – a step they say is necessary but expensive.

Redesigning the system of training nurses

Colorado's nursing education programs are largely publicly funded and rely heavily on the community college system. The need to respond to the nursing shortage at the beginning of the 21st century generated rapid program growth and innovative programmatic changes aimed at putting practical and professional nurses in the workplace as soon as possible. The study shows that these expansions have strained existing resources, both human and physical, and contributed to the faculty shortage. Nonetheless, there are opportunities to achieve greater efficiency that have the potential to expand and strengthen nursing education.

- The use of interdisciplinary faculty teams and course cross-listing can help extend faculty resources.
- Utilizing technology to enhance existing teaching methods and the overall educational experience can serve a similar function.
- Identifying and using non-traditional sites can expand the range of clinical rotations.
- Building sustainable collaborative approaches may help strengthen the competencies of new nurse graduates.
- Development and inclusion of technological advances can help enable nurses to function in an increasingly complex clinical environment.

Re-examining state policy to ensure both educational capacity and quality

The professional standards of nursing education and practice are established in state statute, regulation and licensure requirements. The profession itself maintains accountability standards for the practice of nursing. Current requirements and incentives present challenges to moving forward with the redesign of nursing education. Regulatory and institutional policies warrant re-examination to ensure Colorado is making the best use of its teaching resources, including the pool of retiring nurse educators.

The current state budget crisis is an important backdrop framing all efforts to address the nurse faculty shortage. To help recruit and retain nurse faculty successfully, the 2007 Governors' Task Force on the Current Nurse Educator Shortage recommended increasing state funding for faculty positions. Achieving this objective, however, will require the state to revisit its willingness to invest in higher education.

Developing mechanisms for ongoing data monitoring and educational research

Reliable, longitudinal data are needed to monitor efforts at improving faculty supply. Routine collection of nurse workforce data would enable nurse educators, the health care industry and policymakers to understand the nature and degree of the nurse workforce shortage and make strategic policy and resource decisions to avoid unintended consequences. This data collection capacity does not currently exist, however. This study helps refine the core data elements that need to be developed and tracked to better inform decision-making.

The survey findings provide a starting point for understanding both the contributing factors and potential solutions for Colorado's nurse faculty shortages. They also point to the necessity for coordinated action to address Colorado's overall long-term nursing workforce needs and, in particular, the need for an adequate supply of qualified nurse faculty. To engage in comprehensive and strategic nursing education planning, Colorado must first answer key questions:

- To what extent is Colorado willing to compete with other states for its supply of nurses?
- What percentage of Colorado's future nursing workforce does it need to educate in state?
- What mix of nursing education programs is needed to yield the right balance of practical, professional and advanced practice nurses in Colorado?
- What are the numbers and qualifications of nurse educators needed to sustain a comprehensive system of nursing education?

A solid foundation of public and private sector collaboration already exists upon which to build a sustainable action plan and expand institutional collaborations. Using data to establish priorities and goals and adopting strategies to meet those goals is the next step.

Introduction and Background

According to the Institute of Medicine's (IOM) 2010 *Future of Nursing* report, the nursing profession, with more than 3 million members, accounts for the largest segment of the nation's health care workforce.[7] In Colorado, the Department of Labor and Employment (CDLE) reported that in 2009 RNs and LPNs represented 25 percent of all health care practitioners employed in the state.[8] In 2010, the Colorado Department of Regulatory Agencies had 50,934 registered nurses and 9,340 practical nurses licensed in Colorado.[9]

Historically, shortages of nurses have peaked and then subsided. A decade ago, concern was mounting about a growing shortage of nurses in the United States, especially registered nurses. In 2001, the most recent shortage of RNs reached its peak, resulting in an average nationwide hospital nurse vacancy rate of 13 percent.[10] From 2003-06, RN hospital employment actually declined. In 2007-08, however, employment grew rapidly, with most of the increase coming from RNs age 50 and older returning to the workforce.[11] This surge in employment helped alleviate fears of an immediate, acute nursing shortage. Despite recent increases, however, experts predict an RN shortage will re-emerge by 2018 and grow to roughly 260,000 nationwide by 2025.[12]

The federal Health Resources and Services Administration (HRSA) projects that converging conditions in the U.S. population and health care system will contribute to increasing demand for nurses: population growth and aging, increased health insurance coverage and the introduction of new medical technology. To have the nursing workforce Colorado needs in this decade and beyond, the state must ensure it has the capacity to educate the next generation of nurses.

Accompanying this increase in demand is the expected retirement of a significant proportion of the nursing workforce within the next 10 years. A recent HRSA national sample survey shows that over the past 20 years the RN workforce has included an increasing number of older nurses. As of 2008, the median age of all licensed RNs had risen to 46, compared to 1988 when half of working RNs were 38

years old or younger. In 2008, nearly half (45%) of RNs were at least 50 and 29 percent were 55 years of age and above.[13] Similarly, in two recent CHI surveys of Colorado RNs and LPNs, one-third of the state's working RNs and slightly more than one-third of working LPNs were age 55 and above.

In the next decade, CDLE projects the number of working RNs and LPNs in Colorado to grow by 26 percent, from 50,523 nurses in 2009 to 63,697 in 2019. To fill these positions, the state will need to add 1,205 RNs to its existing workforce annually, along with 112 LPNs.[14]Colorado will also need to replace 716 RNs and 195 LPNs expected to leave the workforce each year. To account for both new and replacement positions, CDLE estimates Colorado will need to fill approximately 1,919 RN positions and 305 LPN jobs statewide every year for the next 10 years.[15]

To enable Colorado to meet this demand, the state must have nursing education programs of the appropriate type and of adequate size and quality. This entails a sufficient complement of well-trained faculty, who are able to prepare nurses to function in an increasingly complex and technological environment. Yet there is concern that Colorado's nursing education programs may not have the faculty they need as just under half of Colorado's current nursing faculty plans to retire over the next decade.

At the same time, a larger nurse faculty workforce may be required if the state is to sustain the expansion of both associate and baccalaureate nursing degree programs that occurred in the last eight years. Faculty vacancy rates in Colorado for academic year 2008-09 were considerably higher than national rates in some types of programs, with 17 percent vacancy rates reported for doctorate in nursing (DNP) programs and 15 percent vacancy rates reported for licensed practical nurse and associate degree in nursing programs.

Nurse leaders argue that educational programs not only must increase the absolute number of students they graduate, but must also increase the competencies of new nurses entering practice.[16] This view was echoed in the IOM *2010 Future of Nursing* report which recommended that 80 percent of the RN workforce should have a baccalaureate in nursing degree (BSN) by 2020.[17] This view was reinforced by key informants to this survey who pointed to a lack of clinical competencies in new graduates.

Among Colorado's registered nurses, CHI's 2008 RN survey found that approximately 62 percent of Colorado's RNs had completed at least a BSN degree at the time of the CHI survey. Reaching the IOM's goal of 80 percent of RNs being BSN-trained won't add to the nursing workforce; those nurses simply assume more advanced nursing roles when they graduate.

Recognizing that this goal cannot be met without an increase in nursing faculty, the IOM recommended doubling the number of nurses with doctorates in nursing over the next 10 years. This last recommendation is particularly challenging since in Colorado, the average age for nurse faculty holding a doctorate degree is 62 years of age.[18] This situation is likely to present a serious challenge as the number of existing doctoral programs is limited and a significant proportion of their faculty is nearing retirement age.

National nursing faculty shortages

Nationwide, the number of vacant faculty positions is expected to increase dramatically over the next decade. According to the National League of Nursing, in 2007 there were 1,900 unfilled full-time nursing faculty positions, affecting more than one-third of all nursing schools.[19] The AACN *Special Survey on Vacant Faculty Positions* reported a nurse faculty vacancy rate of 6.9 percent for the 2010-11 academic year, down from 7.4 percent in 2000,[20] with the majority of vacancies in faculty positions requiring or preferring a doctorate degree.[21]

This decline in the faculty vacancy rate is likely only a transient response to the most recent recession, however, which caused some current faculty members to postpone their retirement. It is expected that as economic conditions improve in the United States, 20 percent of nurse faculty will retire in the next five years and as many as one-half of today's nursing faculty may retire within the next 10 years.[22, 23]

Nurse faculty shortages result from a combination of conditions, of which retirement is only one. Others include: 1) younger faculty leaving academic life, 2) non-competitive salaries, 3) tuition and loan burden of graduate study, 4) diminishing pipeline of master's and doctoral-prepared graduates, 5) age of doctoral students and time to degree completion, and 6) faculty workload and role expectations.[24] Although the mix of conditions may vary depending on a state's nursing educational system, fiscal health, policy environment and geography (rural versus urban states), the underlying causes of faculty shortages remain the same.

One reason for the current limited number of younger nurse faculty is the change in focus of nursing graduate programs. According to a recent analysis, in the 1990s graduate nursing education programs increasingly shifted their focus away from preparing nurse educators and administrators in favor of training nurse practitioners.[25] In 1968, one-third of master's-degree nursing students were in nurse educator programs. Less than 10 years later, that figure dropped to 25 percent.[26] By 1995, less than 2 percent of master's students were enrolled in a nurse educator program.[27]

Whether it is the cause or the effect of this shift in nursing program focus, student interest in nurse educator tracks took a downward turn for almost 20 years. Students may have selected nurse practitioner and administrator roles over that of educators because of the salary differentials between them.[28] According to AACN's 2008 faculty salary survey, a nurse practitioner faculty member at the instructor level, with a 12-month appointment, earned an average $73,765, while a nurse practitioner with the same level of education earned $100,000 to $120,000 annually.[29]

Attitudes toward becoming a nurse educator have improved in the last 10 years, however. In 2000, more than 1,200 students nationwide were enrolled in nurse educator programs at the master's-degree level, and by 2009 this number had increased to 13,833 students.[30] This renewed interest in the role of nurse educator may be due in part to the growing number of accessible online/distance learning programs. While this trend is encouraging, it won't solve the entire nurse faculty shortage for at least two reasons.

First, while nurses with a master's degree in education frequently teach in baccalaureate programs and below, they serve a more limited role in higher-level nursing education, where a large proportion of the

faculty hold doctorate degrees and where retirements are expected to be the greatest. Second, given the coming retirement of these faculty members, it may be difficult to sustain the growth in master's-degree programs. It is important to determine the extent to which nurses are enrolling in and graduating from nursing doctorate programs and the kind of doctorate degrees they are completing (e.g., research and teaching versus advanced nursing practice).

Doctoral program graduation rates remain low partially because over half of these students pursue their education part time. As a result, the average time from entry into a master's program to completion of the doctorate in nursing is more than 10 years[31]; almost half of 2009-10 graduates were 45 to 54 years of age, according to the AACN. This advanced graduation age provides a further barrier to maintaining an adequate faculty workforce, as the time from graduation to the average retirement age can be short.

Colorado Nursing Faculty Survey

The Colorado Health Institute (CHI) conducted two surveys for this study. The first, the Nurse Faculty Survey, was sent in January 2010 to 934 nurse educators from Colorado nursing programs. Of these, 786 people were eligible to participate in the survey, which received a 46 percent response rate (n=361).[32] The findings provide a demographic and employment profile of Colorado nurse educators and point to a number of issues related to the supply and demand of nurses in the state. Additional information on nurse faculty and the survey questions are available at www.ColoradoHealthInstitute.org/workforce.

Demographic profile of nurse faculty

- Average age: 50 years
  - 34 and younger (11%)
  - 35-44 yrs (20%)
  - 45-54 yrs (27%)
  - 55-64 yrs (35%)
  - 65 and older (7%)
- 95% Female
- 94% White, non-Hispanic

Much of the Colorado nurse population is approaching retirement.

At the extreme ends of the age spectrum are Colorado nurse faculty members who are either age 34 and younger or age 65 and older. The 55-64-year-old age group made up the largest percentage (35%). Given that nationally the average age of nurse faculty retirement is 63 years,[33] 42 percent of Colorado's nurse faculty was either beyond or within eight years of average retirement age at the time of the survey.

Not surprisingly, only a small percentage of nurse faculty work past retirement age. Also not surprisingly, few nurse faculty are younger than 34 years of age. Most nurse faculty members have completed a master's degree in nursing or higher, and the Colorado State Board of Nursing requires a

minimum of two years clinical experience to be eligible for a faculty appointment. Combined, nurse faculty education and experience take a minimum of eight years to complete for individuals with a master's degree and longer for those with a doctorate. Since the pipeline to educate and train new nurse faculty is lengthy, advance planning is crucial to maintaining or increasing faculty size.

After those age 34 and under, nurse faculty who are 35-44 years of age make up the next smallest percentage. The relatively small size of this group may be attributable to the decline in nursing education programs throughout the 1980s and 1990s, when this age group likely would have been completing its graduate education. The size of this cohort also may be explained by the fact that Colorado's nurse educators spend, on average, 15 years in a clinical role as RNs or advanced practice nurses (APNs) prior to assuming their role as educators. Given this average, even with a completely uninterrupted education and career path, the earliest age at which many nurses would be likely to assume an educator role is 39.

Colorado's nurse faculty is racially homogeneous and not reflective of the state's population.

Ninety-four percent of Colorado's nurse educators are white, non-Hispanic females in a state whose Hispanic population is 20 percent. The Institute of Medicine supports the goal of achieving a health care workforce that reflects the diversity of the population.[34] Like nurse faculty, nursing students across all programs continue to be predominantly white females.[35] This is significant in the context of creating a more diverse nursing workforce, which is believed to improve cultural competency and concordance between patients and their health care providers.[36] Research has indicated that to increase the diversity of the student body, it is important to have a diverse faculty to provide role models for under-represented students.[37] Therefore, greater diversity among nurse faculty may help promote a more diverse nursing student body and, later, nursing profession.

Most nurse educators are not employed as tenured or tenure-track faculty.

As the box below shows, only 18 percent of nurse educators work at institutions granting tenure. This, in part, may be explained by the fact that almost 40 percent of all nurse faculty work as part-time educators.

Employment characteristics of nurse educators

- 83% are employed at only one institution
- 82% are not tenure-track faculty
- Of the 18% who are tenure-track, 48% are tenured
- Educational setting
  - 26% classroom instruction
  - 29% clinical instruction
  - 45% both classroom and clinical instruction
- 57% work full time as educators
- 38% work part time as educators
- 5% have shared appointment with school and clinical organizational partner

Another reason so few nurse faculty hold tenured or tenure-track positions may be related to the kind of institutions at which they teach. Community and junior colleges, which are the home to LPN and most ADN programs, offer far fewer tenure-track positions than do four-year colleges and universities.

Colorado has a limited supply of nurse educators with doctoral degrees.
Among Colorado's nurse faculty, the majority have completed a master's degree in nursing, while only 14 percent have completed a doctoral degree (Table 1). It is important to recognize the limited supply of doctorally educated nurse faculty in Colorado, given that baccalaureate, master's degree and doctoral nursing degree programs all require that a proportion of their faculty have an earned doctorate degree.

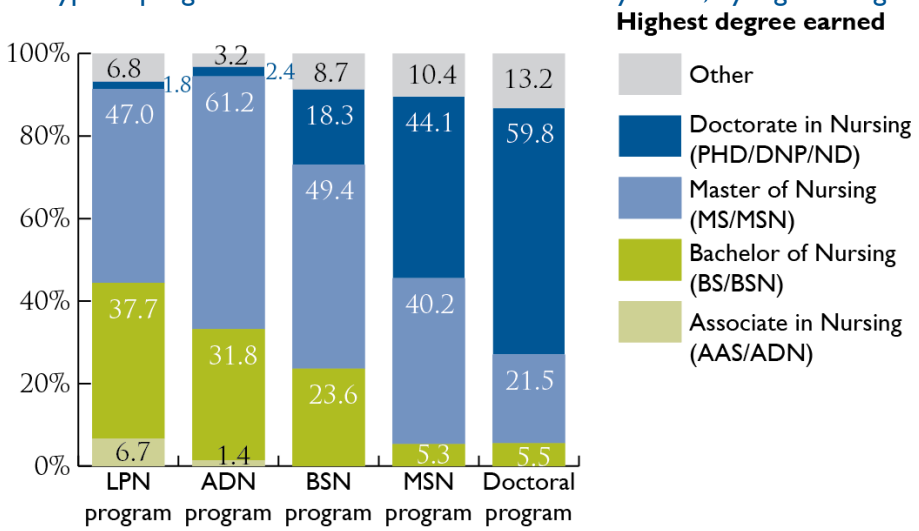
Table 1. Highest degree earned by Colorado nurse faculty

Type of degree	Percent
Associate degree in nursing (AAS/ADN)	1.3%
Bachelor of nursing (BS/BSN)	27.2%
Master of nursing (MS/MSN)	50.1%
Doctor of philosophy in nursing (PhD)	11.8%
Doctor of nursing practice (DNP)	1.5%
Doctor of nursing (ND)	0.9%
Other	7.2%

SOURCE: 2009-10 Nurse Faculty Survey Q4

Master's degree nursing program faculty is divided almost equally into educators holding a master's degree and those holding a doctorate degree (Graph 1). As nursing programs endeavor to increase the number of doctorally trained faculty teaching in master's-degree programs, the demand for faculty with doctorates will increase. Perversely, the ability to meet this demand will require more doctorally trained nurse faculty as they make up the majority of faculty teaching in doctoral degree programs.

Graph 1. Type of program in which Colorado nurse faculty teach, by highest degree earned



SOURCE: 2009-10 Nurse Faculty Survey Q4, Q14
NOTE: Faculty members may be teaching in more than one program category.

Few Colorado nurse educators are enrolling in doctoral programs.
The Nurse Faculty Survey also revealed that one in four nurse educators is enrolled in advanced education programs. While this is encouraging, Table 2 shows, however, that almost half of this group is completing a master's degree. Twenty-three percent of those pursing more advanced education are in nursing doctoral programs, but this amounts to only six percent of Colorado's nurse faculty overall. Of the nurse faculty who are pursuing additional education, 45 percent indicated they are required to complete a higher degree to remain in their current faculty position.

Table 2. Nurse faculty pursuing additional education, by type of degree pursued

Type of degree pursued	Percent
Bachelor of nursing	2.9%
Master of nursing	49.3%
Doctor of philosophy in nursing	13.8%
Doctor of nursing practice	9.3%
Doctor (other discipline)	9.1%
Other	15.6%

SOURCE: 2009-10 Nurse Faculty Survey Q7, Q8
NOTE: Data in Table 2 reflect only the 24 percent of nurse faculty members who are pursuing further education.

Many Colorado nurses have incurred significant debt for their nursing education.
As Table 3 demonstrates, a large percentage of nurse educators incurred significant debt to complete their master and doctorate degrees. Thirty-five percent borrowed between $10,000 and $50,000 for their master's education and 30 percent borrowed between $50,000 and $100,000+ for their doctoral education. When survey participants were asked what solutions they would propose to alleviate Colorado's nursing faculty shortage, they mentioned expanded loan programs and loan forgiveness opportunities numerous times.

Table 3. Loan amount by Colorado nurse faculty graduate degree

Total dollar amount	Master's	Doctorate
$0	44.4%	33.5%
$1 - $10,000	11.3%	11.4%
$10,001 - $25,000	19.3%	11.3%
$25,001 - $50,000	15.5%	13.5%
$50,001 - $75,000	7.0%	16.0%
$75,001 - $100,000	2.1%	10.8%
More than $100,000	0.5%	3.6%

SOURCE: 2009-10 Nurse Faculty Survey Q4, Q6

Other monetary and non-monetary costs are also associated with completing a graduate degree, such as the loss of wages while a student and the loss of time with family. Such sacrifices might be worth the costs were there significant long-term gains to be realized. Nurse faculty, however, earn substantially

less than their clinical counterparts. Survey participants and key stakeholders alike said there was insufficient return on investment, given the balance between education costs and faculty compensation, to motivate nurses to pursue the additional education necessary for assuming a faculty role.

Although debt is high, income for teaching is relatively low.

As summarized in Table 4, the majority of part-time faculty earns $30,000 or less in their roles as nurse educators. While two-thirds of full-time nurse faculty earn between $40,000 and $70,000, the U.S. Bureau of Labor Statistics reported that in May 2008, the average annual wage for an RN working in a hospital was $66,490 per year.

Table 4. Faculty pre-tax income as Colorado nurse educator by full-time/part-time status

Pre-tax income	Part time	Full time
Up to $30,000	62.7%	1.0%
$30,001 - $40,000	6.4%	4.3%
$40,001 - $50,000	3.7%	23.5%
$50,001 - $60,000	4.6%	20.4%
$60,001 - $70,000	1.4%	22.8%
$70,001 - $80,000	0.0%	3.5%
$80,001 - $90,000	0.7%	13.4%
$90,001 - $100,000	0.0%	4.3%
More than $100,000	1.5%	5.6%
Not applicable*	19.0%	1.4%

NOTE: *Pre-tax income for educational activities is included in income as clinical nurse.
SOURCE: 2009-10 Nurse Faculty Survey Q23, Q26

Variation in faculty salary is due to a number of factors, including:

- The level of nursing program in which a faculty member teaches
- The institutional setting of the nursing program (community college, four-year college, university)
- Whether the faculty member is tenured or tenure-track
- The number of years a faculty member has taught and faculty rank (instructor, adjunct, assistant, associate or full professor).

Salaries decrease when nurse clinicians move to faculty positions.

The Nurse Faculty Survey asked respondents about changes in their salaries when they moved from a clinical to educator role. As Table 5 shows, 58 percent of clinical nurses reported a decrease in salary when they moved to a faculty position. This factor demonstrates the challenge nursing programs face in recruiting new faculty. Among those whose salaries decreased, two-fifths experienced a decrease of 10-20 percent and one-fifth experienced a salary decline of more than 30 percent.

Table 5. Change in salary from clinical position to Colorado nurse educator role

Change in salary	Percent
Salary decreased	57.8%
Salary increased	19.5%
Salary stayed the same	17.5%
Not applicable (clinical scholar)	5.0%

SOURCE: 2009-10 Nurse Faculty Survey Q33

Some RNs or APNs experienced even greater than average reductions in their income when moving from clinician to educator depending on factors such as:

- The kind of previous clinical practice(primary versus specialty care) and the particular specialty of the practice
- The extent of the RN's or APN's clinical experience
- The nursing education program level (LPN, ADN, BSN, MSN, DNP)
- The institutional setting of the program (community college, four-year college, university)
- Whether the faculty member is tenured or tenure-track faculty.

Among nurse faculty teaching at community or junior colleges, more than 80 percent said their salary decreased when they assumed a faculty position, while slightly less than 70 percent of nurse faculty teaching at four-year colleges or universities reported a similar income decline.

Important differences stood out even among faculty at educational institutions awarding tenure. The percentage of faculty reporting a decline in income was highest among full-time, tenured associate professors. Among this group, almost 90 percent reported a decrease in income when they assumed their faculty role. Tenure-track faculty who had not yet been awarded tenure reported a slightly lower decline in their income. Those least likely to experience an income reduction were tenured full professors; just over 40 percent of them reported a salary decrease when they moved from clinical roles to faculty positions.

Nurse educators are motivated by love of teaching.

The Nurse Faculty Survey also explored reasons why current faculty members pursued a career in nursing education. As Table 6 shows, the overwhelming majority of educators chose this career path because they enjoy the teaching role and having influence on students, education and the nursing profession.

Few nurse faculty members pursued a teaching career because it is less stressful than a clinical career (18%), nor did they choose teaching for salary and benefits (24%) or the desire to engage in research (22%). As noted above, many faculty members accepted reduced compensation when they moved from a clinical role to that of an educator – factors the survey identified as central reasons for faculty dissatisfaction and attrition.

Table 6. Ranking of factors influencing decision to become a Colorado nurse educator

Factor	Percent*
Enjoyment of teaching students	93.8%
Having influence on students, education and nursing profession as a whole	87.6%
New career opportunity at right time	74.7%
Encouragement from existing faculty members/mentors	61.7%
Flexible and family-friendly schedule	55.9%
Autonomy and prestige of the educator role	46.9%
Salary and benefits	23.7%
Desire to conduct research	21.6%
Belief that teaching was less stressful than clinical work	18.1%

*Percent who indicated 4 or 5 on a scale of 1 to 5 with 5 representing "very important"
SOURCE: 2009-10 Nurse Faculty Survey Q12

Top teaching specialty areas are becoming increasingly important.
The top three teaching specialties (identified in Table 7) are central components of any nursing education program, and the bottom two will become increasingly important areas of education as more nurses are called upon to fill leadership roles and as the general population ages.

Understanding the distribution of nurse faculty among these teaching specialties is important for several reasons. It allows health workforce planners to identify specialties such as gerontology that may need expansion due to the changing demographics of the patient population. It provides a baseline to determine whether some specialties are gaining or losing faculty at different rates than others. And, it aids in identifying those specialties that are in greatest need of recruitment and retention efforts.

Table 7. Top 5 Colorado nurse faculty teaching specialty areas

Specialty	Percent
Medical/surgical	64.2%
Adult health	59.6%
Fundamentals of nursing	52.8%
Leadership/management/ administration	44.8%
Gerontology	38.0%

SOURCE: 2009-10 Nurse Faculty Survey Q15

Half of nursing faculty has taught five years or fewer.
More than 50 percent of nurse faculty members have been in the role of educator for five or fewer years (Table 8). Among existing faculty, the average number of years in a nurse faculty position is nine. Less than one-third have been in the field for more than 11 years.

One reason for these findings is that nursing education programs have been expanding rapidly over the past five to 10 years, which accounts for a significant increase in the number of new nurse faculty.

Another reason is the limited average teaching career length of a large proportion of doctorally educated faculty.

Table 8. Number of years as nurse educator

Number of years	Percent
0-2 years	24.1%
3-5 years	26.8%
6-10 years	18.3%
11-15 years	12.6%
16-20 years	6.2%
20+ years	12.0%

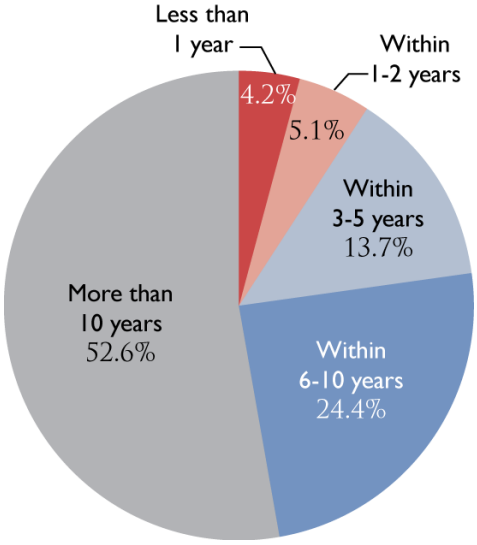
SOURCE: 2009-10 Nurse Faculty Survey Q13

Half of nursing faculty plan to retire in the next 10 years.

Impending retirement is a common concern among workforce planners. Graph 2 summarizes faculty members' retirement plans.

- Half plan to stay longer than 10 years, and half plan to retire within a decade.
- Just slightly less than 25 percent of the nurse faculty who were teaching in the 2008-09 academic year indicated they plan to retire within the next five years.
- Within the next 10 years, just under 50 percent of nurse faculty who were teaching in the 2008-09 academic year plan to retire from their nurse educator role.

Graph 2. Colorado nurse faculty retirement plans



SOURCE: 2009-10 Nurse Faculty Survey Q42

The weak economy of the past few years, however, has mitigated retirement rates by causing many faculty members to postpone their retirement plans (Table 9). Many nurse faculty members who reported that they planned to retire in the next 12-24 months either temporarily re-entered the teaching workforce or postponed retirement. The delay in retirement among nurse faculty age 55 and older is significant, as 42 percent of nurse faculty is among this age group.

Table 9. Effect of 2007-09 economic recession on Colorado nurse educator retirement plans, by age

Effect of recession	54 or younger	55 or older
Previously retired but re-entered workforce	0.6%	4.7%
Delayed retirement	15.0%	37.1%
Retirement plans did not change	84.4%	58.2%

SOURCE: 2009-10 Nurse Faculty Survey Q41, Q49

To demonstrate that retirements will not be uniform across all faculty and will not affect all nursing education programs to the same degree, CHI analyzed retirement rates by highest degree earned (Table 10). The highest percentage of educators who plan to retire within the next 10 years are those with doctorate degrees. These faculty members tend to be older on average than those with master's degrees.

In addition, the survey showed:

- Almost half of the master's degree nurse faculty plan to retire within the next 10 years. This factor not only will create numerous faculty vacancies in BSN and MSN programs, but it also will present a further challenge for replacing retiring faculty with doctorate degrees. Current master's degree faculty members are in the best position to complete further education and assume this advanced role.
- While the number of BSN-educated faculty is smaller than faculty with master's degrees and the pipeline for preparing them is shorter, they are relied upon in LPN, ADN and BSN education programs.

Table 10. Percentage of Colorado nurse educators planning to retire,* by highest degree earned

Degree	Percent in 2 yrs	Percent in 5 yrs	Percent in 10 yrs
Bachelor of science in nursing (BSN)	4.9%**	18.0%	42.1%
Master of science in nursing (MSN)	8.8%	22.4%	47.2%
Doctorate in nursing (PhD/DNP/ND)	19.9%	33.3%	60.9%

*Nurse educators planning to retire within 2 years, 5 years and 10 years

**Frequency of BSNs who plan to retire within 2 years is too small for reliable extrapolation.

SOURCE: 2009-10 Nurse Faculty Survey Q15, Q42

It is equally important to know whether retirements will affect certain types of nursing programs more than others (Table 11).

- During the first two years following the nursing faculty survey, DNP degree programs are expected to experience three times the faculty retirements of LPN, ADN and BSN programs.
- Five years after the survey, half of all nurse faculty members currently teaching in Colorado DNP programs plan to retire. This is problematic given the small faculty size in DNP programs. In the 2008-09 academic year, Colorado DNP programs had only six authorized full-time

equivalent (FTE) nurse faculty positions. Combined with the percentage of those who plan to retire in five years, this means that three of the six DNP program FTEs will need to be filled. In 10 years, five of the six current DNP FTEs will need replacement faculty.

Table 11. Percent of Colorado nurse educators planning to retire,* by type of nursing program**

Nursing program	Percent in 2 yrs	Percent in 5 yrs	Percent in 10 yrs
Licensed practical nurse (LPN)	8.4%	24.5%	46.3%
Associate degree of nursing (AAS/ADN)	8.1%	20.5%	44.0%
Bachelor of nursing (BS/BSN)	8.4%	23.4%	50.4%
Master of nursing (MS/MSN)	10.8%	25.1%	55.5%
Doctor of philosophy in nursing (PhD)	10.7%	35.0%	78.8%
Doctor of nursing practice (DNP)	25.4%	49.3%	83.8%

*Nurse educators planning to retire within 2 years, 5 years and 10 years

**Faculty program affiliation does not reflect a full-time teaching appointment, and faculty may teach in multiple programs.

SOURCE: 2009-10 Nurse Faculty Survey Q14, Q42

Tracking retirement plans based on specialty area is important to ensure that specialty areas have adequate numbers of faculty. Table 12 summarizes the percentage of educators planning to retire by specialty area.

- Retirement among those with a specialty in leadership, management and administration and/or a specialty in mental and behavioral health is the highest across all specialties and across all time periods.
- The former may prove problematic for hospitals that rely on trained nurse managers and administrators, and for the expansion of nurse-managed clinics. The latter may further increase the difficulty in meeting the behavioral health needs of rural and urban underserved populations.
- The significant rate of retirement in the teaching specialty of gerontology may be troublesome, given the need to increase the number of nurses with expertise in this area to care for the growing elderly population.

Table 12. Percentage of Colorado nurse educators planning to retire* by specialty area

Specialty area	Percent in 2 yrs	Percent in 5 yrs	Percent in 10 yrs
Fundamentals of nursing	4.7%	15.8%	41.2%
Gerontology	5.9%	21.1%	46.2%
Medical/surgical	7.0%	18.4%	41.3%
Adult health	7.3%	21.4%	43.4%
Family Health	7.9%	23.1%	46.1%
Pediatrics	9.3%	18.8%	45.0%
Leadership/management/administration	11.3%	27.8%	53.7%
Mental health/behavioral health	13.8%	29.5%	61.1%

*Nurse educators planning to retire within 2 years, 5 years and 10 years
SOURCE: 2009-10 Nurse Faculty Survey Q15, Q42

Despite the large proportion of faculty who plan to retire over the next two years, some might consider postponing their retirement if certain changes occurred. Table 13 summarizes the top changes that nurse faculty said could play a significant role in their decision to postpone retirement.

- Since most nurse faculty members earn less than their clinical counterparts, an increase in salary could provide an appealing incentive to defer retirement.
- Many individuals approaching retirement age may have sustained significant losses to their retirement savings as a result of the recent recession. Increased salary would also provide a means to accelerate retirement savings.
- The option of part-time teaching might be attractive to those who no longer want to work full time, but who might be willing to continue to teach a reduced course load or part of the academic year.

Table 13. Top 5 changes that might lead to a postponement of retirement*

Factor	Percent**
Increased salary	72.3%
Modified work schedule/teaching load	58.9%
Improved benefits (health care coverage, pension, etc)	57.7%
Recognition from administration and colleagues	54.6%
Career advancement	38.6%

*Nurse educators planning to retire in 2 or fewer years
**Percent who indicated 4 or 5 on a scale of 1 to 5 with 5 as "very effective"
SOURCE: 2009-10 Nurse Faculty Survey Q42, Q47

Retirement is only one cause of faculty loss; another important cause is resignation. Among the 91 percent of nurse faculty who indicated they did not plan to retire within the next one to two years, nine percent reported they plan to resign from their current nurse educator position within the next 12 months. Among these educators, 63 percent said they would seek a position outside nursing education, either in a clinical nursing practice or outside nursing entirely (Table 14).

- The 2008-09 nursing program survey found that leaving for a higher salary was one of the top reasons for faculty resignations across all program types.
- Dissatisfaction with salary may well be on the increase, as the recent recession severely limited annual salary increases at state educational institutions.
- With respect to workload issues, 70 percent of educators who indicated a faculty shortage in their institution said their workload had increased as a result.

Table 14. Reasons nurse faculty* members gave for planning to resign from their current teaching positions within next 12 months

Top 5 Reasons	Percent** (N=83)
Desire higher salary	79.1%
Desire more or better benefits	58.5%
Work environment issues	49.6%
Limited professional development opportunities	45.0%
Workload issues	40.1%

* Reflects views of faculty who did not plan to retire from nursing education in 1-2 years but did plan to leave their current position in the next 12 months.
**Percent who indicated 4 or 5 on a scale of 1 to 5 with 5 representing "very important"
SOURCE: 2009-10 Nurse Faculty Survey Q42, Q43, Q46

2008-09 Colorado Nursing Program Survey

The second part of this study gathered information from all 31 of Colorado's nursing schools, representing 54 programs (12 LPN programs, 22 ADN programs, 12 BSN programs, 6 MSN, 2 PhD and 2 DNP).

Summary of findings, AY 2008-09

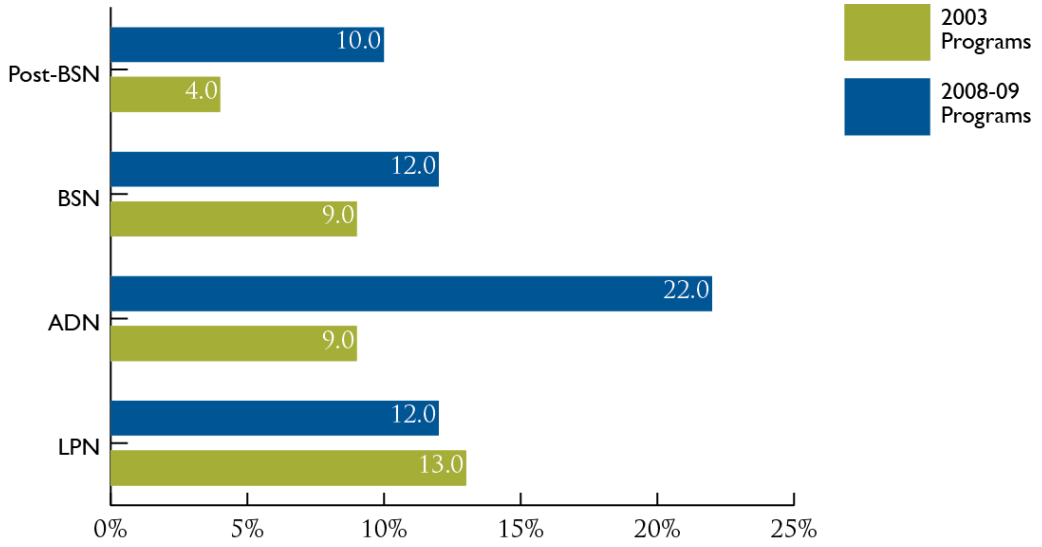
- 62 FTE nurse faculty vacancies
- 76 FTE clinical nurse instructor vacancies
- 20 clinical rotations canceled due to clinical nurse instructor vacancies
- 27 clinical rotations canceled due to unsecured clinical placement sites
- 3,579 applicants that met admission requirements were not admitted to at least one program

Graph 3 compares the number of nursing education programs in 2003 and 2008-09.

- With the exception of LPN programs, the number of programs increased in every other program type.

- The number of ADN programs more than doubled between the 2003 academic year and the 2008-09 academic year.
- Among programs preparing students for RN licensure in 2008-09, 63 percent were associate degree programs, while the remaining 37 percent were baccalaureate degree programs.

Graph 3. Number of nursing education programs by program type and academic year



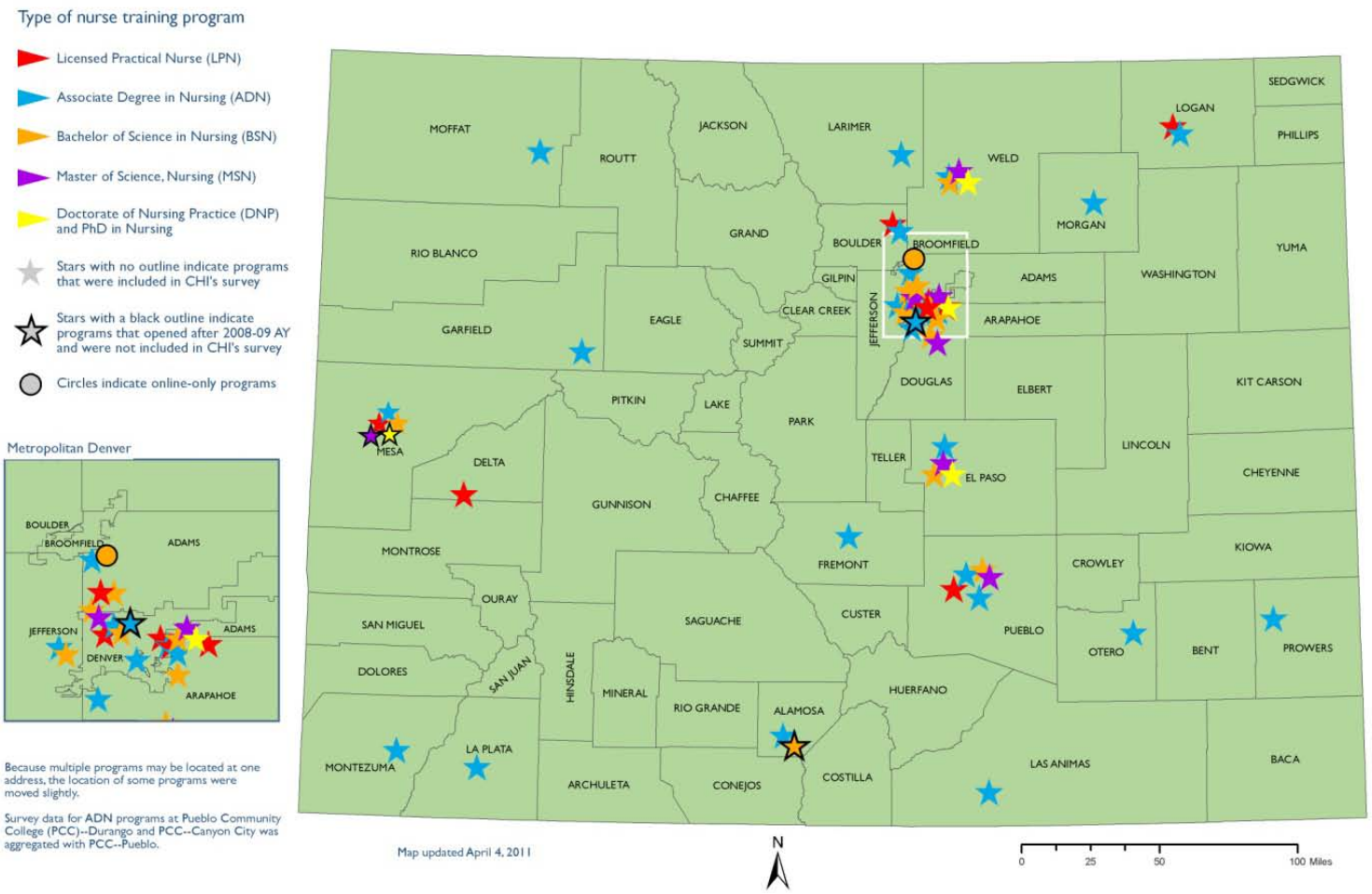
SOURCE: CHI 2009 Colorado Nursing Program Survey, Q1 and 2004 Colorado Nursing Program Survey

Map 1 summarizes the geographic distribution of nursing programs in Colorado.

- Associate degree nursing programs were the only campus-based programs available throughout Colorado.
- Only a single bachelor of science in nursing and a single master of science in nursing program were located at a campus outside of the I-25 corridor.
- Until 2010, campus-based PhD or DNP programs were only available in metro Denver, Greeley and Colorado Springs. Recently, Mesa State's Health Sciences Department added a campus-based DNP program to its existing nursing programs. Several Colorado schools also offer PhD and DNP programs online, but these are not included in the map.

The limited geographic distribution of programs offering advanced nursing education makes it challenging for RNs in many parts of the state to complete higher nursing education. Online programs, which were not part of the 2008-09 program survey, are beginning to help address this problem. One concern often noted, however, is that program quality not be sacrificed for program accessibility.

Map 1. Geographic distribution of Colorado nursing schools

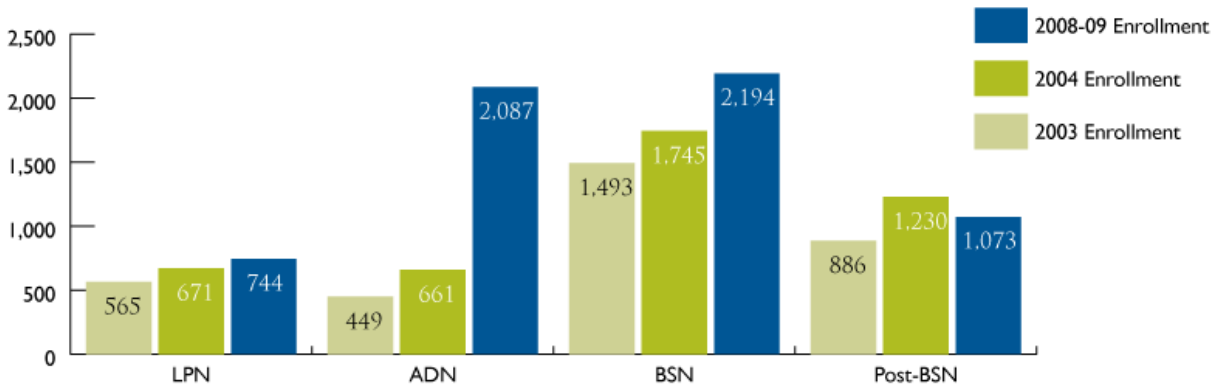


Student enrollment

From 2001 through 2007, significant investments were made to increase the number and capacity of nursing programs.

- As shown in Graph 4, student enrollment in LPN programs remained relatively flat in academic years 2003, 2004 and 2008-09. At the same time, there was steady, moderate growth in enrollment in BSN programs and substantial growth in enrollment in ADN programs, due to significant program expansion.
- Enrollment in practical nursing (LPN) programs in 2008-09 lagged far behind enrollment in professional nursing (ADN and BSN) programs, with one-fifth the number of practical nursing students compared to professional nursing students.
- While the total student enrollment in BSN programs in 2008-09 was slightly higher than in ADN programs, all but the accelerated BSN programs take longer for students to complete. For this reason, ADN programs can graduate more students than BSN programs.
- Post-baccalaureate program enrollment at the masters-degree level in 2008-09 was just under half that of baccalaureate degree programs, demonstrating that many RNs prepared at the BSN level are pursuing more advanced nursing degrees.

Graph 4. Student enrollment by program type and academic year



*Due to rounding, the number of programs and the average enrollment may not equal the total enrollment.

SOURCE: CHI 2009 Colorado Nursing Program Survey, Q20 and 2004 Colorado Nursing Faculty Supply and Demand Study

Academic faculty positions

The 2008 program survey collected data on the number of authorized positions in nursing programs (Table 15). In general, associate degree programs had more authorized FTEs than BSN programs, which is not surprising since there were nearly twice as many ADN programs as BSN. ADN programs, however, relied much more heavily on part-time faculty than did BSN programs.

The proportion of part-time to full-time FTE positions in master's degree nursing programs was just slightly less than in ADN programs.

Table 15. Authorized nurse faculty positions by program type, AY 2008-09

Program	Full-time positions (FTE)	Part-time positions (FTE)	Total positions (FTE)
LPN (N=12)	40.0	26.1	66.1
ADN (N=22)	129.5	107.5	237.0
BSN (N=12)	111.0	41.6	152.6
MSN (N=4)	19.1	13.1	32.2
PHD (N=1)	1.8	0.4	2.2
DNP (N=2)	6.0	n/a	6.0

SOURCE: CHI 2009 Colorado Nursing Program Survey, Q2

Although programs may have an allotted number of authorized positions, they do not necessarily have the faculty members to fill them. This leads to vacancy rates as summarized in Table 16.

- ADN programs had 3.5 times the number of total authorized FTEs of LPN programs, yet the faculty vacancy rates for these two kinds of programs were virtually identical.
- The total faculty vacancy rate was nearly double in ADN than in BSN programs. According to the Department of Regulatory Agencies (DORA), between 2004 and 2009, eight new associate degree programs in nursing began admitting students, while only three new BSN programs opened.
- Colorado's two DNP programs have a combined total of six FTE faculty members. As a result, a single faculty vacancy results in a faculty vacancy rate of nearly 17 percent.

Table 16. Faculty vacancy rates and number of vacancies by program type, AY 2008-09

Program	Full-time vacancy rate (FTE) and number of vacancies	Part-time vacancy rate (FTE) and number of vacancies	Total vacancy rate (FTE) and number of vacancies
LPN (n=12)	12.5% (n=5)	19.2% (n=5)	15.1% (n=10)
ADN (n=22)	14.7% (n=19)	15.3% (n=16.5)	15.0% (n=35.5)
BSN (n=12)	7.2% (n=8)	9.6% (n=4)	7.9% (n=12)
MSN (n=5)	15.7% (n=3)	3.8% (n=0.5)	10.9% (n=3.5)
PhD (n=1)	0.0%	0.0%	0.0%
DNP (n=2)	16.7% (n=1)	n/a	16.7% (N=1)

SOURCE: CHI 2009 Colorado Nursing Program Survey, Q3/Q2, Q3

The three primary reasons given for faculty vacancies were retirement, resignations and insufficient funding for the number of positions required (Table 17). Retirement was most problematic for post-baccalaureate programs. This is likely due to the age of current nurse faculty with doctorates and the scarcity of comparably educated faculty available for replacements. Almost unanimously, program representatives identified the lack of available funding to support desired faculty salaries as an important factor contributing to faculty vacancies.

Most frequently cited as strategies for filling current faculty vacancies were: increasing salary offers, professional networking and instituting flexible work schedules.

Table 17. Importance of factors contributing to faculty vacancies, by program type, AY 2008-09

Reasons	LPN	ADN	BSN	MSN	PHD	DNP
Retirements	22.2%	40.0%	66.7%	100.0%	100.0%	100.0%
Resignations	75.0%	60.0%	37.5%	0.0%	50.0%	50.0%
Program expansion	57.1%	25.0%	50.0%	25.0%	0.0%	100.0%
Insufficient funding for desired salary levels	87.5%	68.8%	37.5%	100.0%	50.0%	100.0%
Insufficient funding for number of positions required	50.0%	52.9%	28.6%	66.7%	50.0%	100.0%
Insufficient resources (infrastructure)	12.5%	37.5%	28.6%	33.3%	50.0%	0.0%
Insufficient time for family responsibilities, health	71.4%	31.3%	62.5%	33.3%	0.0%	50.0%
Applicants seeking part time rather than full time	28.6%	5.9%	33.3%	0.0%	0.0%	0.0%
Addition of new degree programs	0.0%	7.1%	14.3%	33.3%	0.0%	50.0%

SOURCE: CHI 2009 Colorado Nursing Program Survey, Q6

Clinical instructors

As Table 18 shows, ADN programs have the highest utilization of clinical instructors. This is due to the number of ADN programs in Colorado compared to other types of nursing education programs, the number of students enrolled in ADN programs compared to other types of programs, and the limited duration of these programs. Although ADN programs use a high number of part-time faculty, the proportion of part-time to full-time clinical faculty is highest in BSN programs.

Table 18. Authorized clinical nurse instructor positions* by program type, AY 2008-09

Program	Full-time positions (FTE)	Part-time positions (FTE)	Total positions (FTE)
LPN (N=12)	20.0	26.7	46.7
ADN (N=22)	63.0	195.5	258.5
BSN (N=12)	5.0	66.7	71.7
MSN (N=4)	10.0	0.0	10.0

*Clinical nurse instructors are not applicable to PhD and DNP programs

SOURCE: CHI 2009 Colorado Nursing Program Survey, Q9.

While the highest vacancy rate (60%) occurs for full-time clinical nurse instructors teaching in a BSN program (Table 19) , the actual number of full-time clinical nurse instructors needed to meet this need is

small. ADN programs will need more than twice as many full- and part-time clinical instructors as BSN programs, even though the vacancy rate for ADN programs is slightly more than 25 percent.

Table 19. Clinical nurse instructor* vacancy rates and number of vacancies

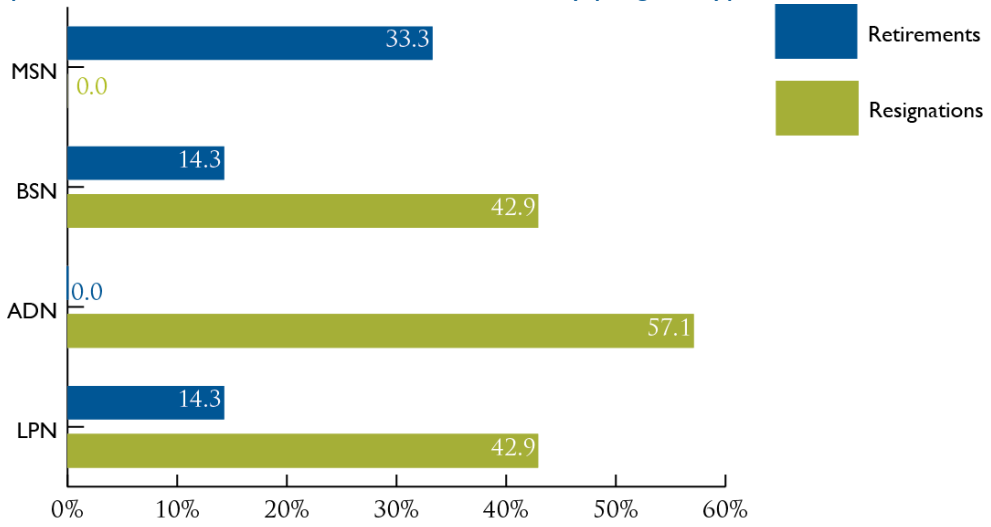
Program	FT vacancy rate (FTE) and number of vacancies	PT vacancy rate (FTE) and number of vacancies	Total vacancy rate (FTE) and number of vacancies
LPN (n=12)	15.0% (n=3)	3.7% (n=1)	8.6% (n=4)
ADN (n=22)	25.4% (n=16)	17.9% (n=35)	19.7% (n=51)
BSN (n=12)	60.0% (n=3)	25.5% (n=17)	27.9% (n=20)
MSN (n=5)	10.0% (n=1)	0.0% (n=0)	10.0% (n=1)

NOTE: Clinical nurse instructors are not applicable to PhD and DNP programs.
SOURCE: CHI 2009 Colorado Nursing Program Survey Q12/Q9, Q12

Unlike nurse faculty vacancies, which are in large measure due to retirements, a high proportion of clinical instructor vacancies are due to resignations, except in the case of MSN programs. Reasons cited for resignations of clinical instructors during the 2008-09 academic year (Graph 5) include the desire for higher salary and better benefits and workload issues.

Difficulties in finding clinical rotations for students in specific clinical areas were also reported and are displayed in Figure 7.

Graph 5. Reasons for clinical instructor vacancies by program type, AY 08-09



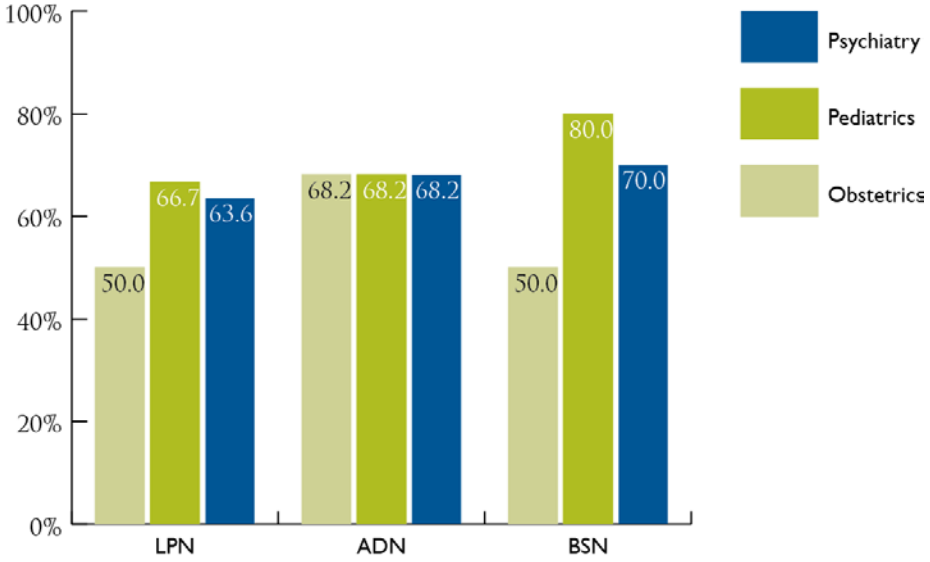
SOURCE: CHI 2009 Colorado Nursing Program Survey, Q14

Graph 6 displays responses about which clinical rotations were most difficult to secure.

- When asked about level of difficulty in hiring qualified clinical instructors for obstetrics in a timely manner during the 2008-09 academic year, nearly 64 percent of LPN programs, 54 percent of ADN programs and 50 percent of BSN program respondents said it was either difficult or very difficult.

- When asked about level of difficulty in hiring qualified clinical instructors for pediatrics in a timely manner during the 2008-09 academic year, 80 percent of LPN programs, 68 percent of ADN programs and 80 percent of BSN program representatives reported it was either difficult or very difficult.
- In the 2008-09 academic year, 20 clinical rotations were canceled because of an inability to fill instructor's positions. Specifically, 14 rotations were canceled for ADN programs and six clinical rotations were canceled for BSN programs.

Graph 6. Most difficult clinical rotations to secure,* AY 2008-09



NOTE: *Percent of program directors who rated these 4 or 5 on a scale of 1 to 5, with 5 representing "Very Difficult"
SOURCE: CHI 2009 Colorado Nursing Program Survey, Q29

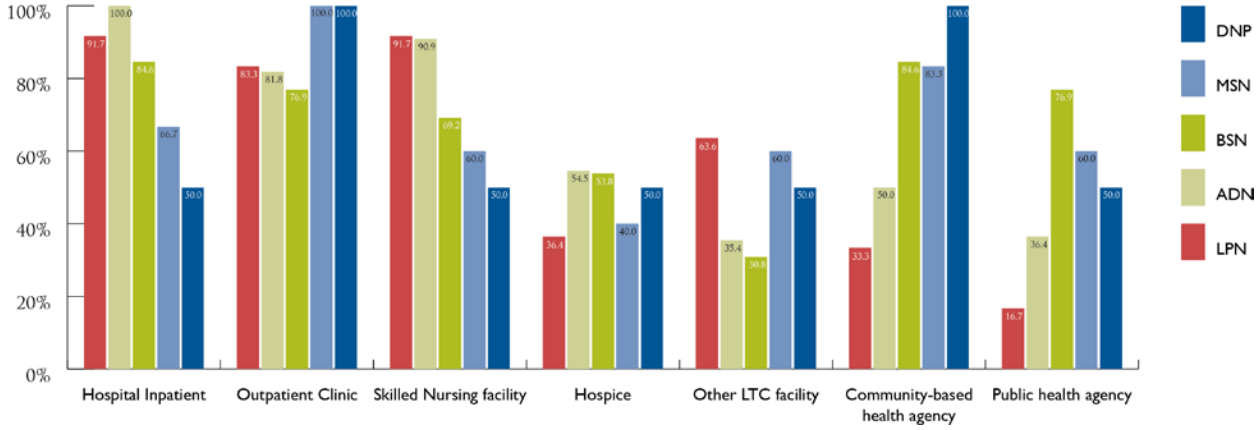
Survey respondents were asked which clinical placement sites they use (Graph 7).

- Hospital inpatient facilities and outpatient clinical are most heavily utilized across all programs.
- While LPN and ADN programs utilize skilled nursing facilities almost as much as they use hospital inpatient facilities, other nursing programs use skilled nursing facilities to a lesser extent.
- Hospice has the lowest utilization across all program types.
- Some clinical rotations were canceled due to unsecured clinical placement sites. ADN programs canceled 17 rotations for this reason and BSN programs canceled 10.

Nursing programs sometimes face barriers to securing clinical sites. Those sites include:

- Competition between nursing programs for hospital sites at desired times
- Difficulty finding faculty for evening and weekends
- Limits to total number of students an agency/institution will take
- Limited sites that must be shared among nursing programs throughout the state.

Graph 7. Clinical placement site* usage by program type



*Clinical placements not applicable to PhD programs
SOURCE: CHI 2009 Colorado Nursing Program Survey, Q27

Key Informant Perspectives

Twelve interviews were held with nursing leaders representing both nurse education programs and clinical facilities that contribute to nurse education and hire new graduates. Their views echo many of the findings of the two surveys.

Nurse educators supported survey findings regarding current and projected faculty and clinical instructor vacancies and offered insights into the factors affecting faculty supply and demand.

Clinical training site informants offered information on the extent to which clinical training sites are called upon to support the nurse education process, including the high cost to hospitals and clinics in terms of staff, resources, time and money. They also noted the importance of collaboration between nursing education and clinical practice sites and the development of innovative practices.

Factors influencing faculty supply and demand

Nurse educators explained that the nature of the shortage varied as a function of nursing program type, location and age, whether it was privately or publically funded, and the relationships that existed between clinical training sites and educational institutions.

Program expansions

Since the 2004 Nurse Faculty study was written, program size and types have expanded rapidly and class sizes have increased. Informants confirmed that rapid program expansions have exacerbated faculty and clinical instructor shortages by creating additional demands on faculty which contribute to faculty attrition. According to those interviewed:

- The addition of new nursing programs has led to an expansion in faculty size but is creating concern about the coming wave of faculty retirements and the ability of nursing programs to meet the demand these retirements will create.
- Increased class size and the need to incorporate technological advances have increased workloads for faculty and clinical instructors without a concomitant increase in pay or benefits.

- Faculty members are concerned about securing clinical placements for students. Said one, "The number of students seeking clinical placements has increased. The education infrastructure has not increased to capacity to fulfill placements, and the industry is saturated."

Effects of the nationwide nursing faculty shortage

Program informants identified the national nurse faculty shortage as a compounding factor that affects recruitment and retention of qualified nursing faculty within Colorado.

- Some nursing program informants reported being vulnerable to recruitment efforts by private and out-of-state schools offering higher salaries, better benefits or a lower cost of living.
- Informants reported that recruitment has been particularly difficult in some specialty areas, including psychology and mental health. Lengthy timeframes and failed searches are common in filling a faculty position.

Resource constraints and non-competitive work environment

Informants from state schools described the consequences of current state budget constraints on their ability to fund and recruit adequate numbers of faculty and clinical instructors.

- State-supported schools have a limited ability to add new faculty FTEs to accommodate increased student enrollments.
- Colorado has ranked near the bottom in the amount of money spent per student for higher education. From 2009 to 2010 the state's higher education appropriations per FTE actually declined by five percent, even though 46 percent of the educational appropriations funding came from stimulus money.[38]
- The prevailing faculty shortage and increased enrollments mean many faculty work long hours.
- Some informants reported that while they have been able to expand programs with adequate faculty, access to classroom space and clinical sites are inadequate.

Key informants, along with faculty survey respondents, agreed that significant wage gaps exist between nurse faculty and nurses in clinical practice, creating a major barrier to faculty and clinical instructor recruitment and retention. Salary and benefits are even more non-competitive given the high cost of living in parts of Colorado.

Barriers to obtaining post-baccalaureate degrees

Informants reported that nurses who may be interested in teaching encounter barriers to obtaining their graduate nursing degree. It takes an extended period of time to complete an advanced degree, if done on a part-time basis. One informant noted it could take as long as seven years.

- Nurse training funds primarily support master-level nurse preparation as opposed to PhD education. More scholarship and loan forgiveness programs are needed.
- There is a limited return on investment since compensation is often lower in faculty than in clinical positions and that the average length of a nurse faculty member's career is relatively short.

Infrastructure and resources for clinical education

Informants noted significant challenges in attracting and keeping qualified clinical instructors in coordinating a sufficient number of clinical rotations for students. One reason securing clinical

placement has become more difficult is the decrease in the number of students allowed per rotation from nine to six. Other specific issues include:

- Placements are insufficient to meet current student demand.
- Collaborative relationships exist, but not in enough places. Many schools are competing for clinical slots in the same facilities.
- Programs are continuously scrambling to find clinical rotations. It is getting worse because everyone is trying to increase capacity.

Impacts of faculty shortages identified

According to those interviewed, there has been an increasing interest in nursing as a career, but programs cannot accommodate student demand, in part because of faculty shortages. The reported effects of faculty shortages fall into several categories.

Expansion of the number and size of nursing programs is limited.

- Existing program expansion may not be sustainable.
- Qualified applicants are being turned away from nursing programs.

Compromises quality of educational outcomes

Informants were concerned that recent nursing school graduates may not be sufficiently well-prepared. While the NCLEX exam measures a graduate's knowledge, it does not measure skills. Other comments included:

- The recent and rapid expansion of nursing programs has resulted in increased faculty-to-student ratios, while quality clinical education requires relatively low student- to-instructor ratios. As one informant put it, "students are not getting what they need."
- Programs have both waiting lists and high attrition rates, pointing to the need for re-visiting nursing school entrance requirements.
- Lack of qualified faculty leads to uneven curriculum standards within and between programs as demonstrated by the variation in NCLEX pass rates.

Promising practices in faculty recruitment and retention

Informants cited strategies that appear to be producing positive results in faculty recruitment and retention.

- Use of clinical scholars and clinical teaching assistants
- Joint appointments between a school and a health care facility
- Tuition support programs
- Creating more supportive work environments
- Mentoring programs for new clinical faculty
- Early exposure to the nurse educator role.

Clinical training site perspectives

Clinical site representatives expressed concern about the lack of clinical readiness among new graduates. This results in a high rate of turnover among nurses and requires considerable investments by facilities to provide needed clinical training to newly graduated nurses.

Clinical site informants reported many positive aspects of providing clinical rotations and the fact that they work with multiple schools to provide clinical training opportunities.

Gaps in the clinical competence in new graduates

Clinical site informants emphasized that clinical competence among nurses must include technical skills, critical thinking and strong interpersonal skills. A nurse must be able to manage a caseload in a fast-paced environment and function effectively as part of an interdisciplinary team. Facility informants raised concerns about the deficits they experience in new graduates that must be addressed before an individual can assume an independent role within the clinical setting: problem-solving, delegating and prioritizing.

Barriers to expanding clinical training opportunities

Most clinical site informants reported that "clinical sites are maxed out" in terms of clinical training slots. Several factors are limiting further expansion:

- A significant number of staff members already serve as preceptors.
- "The amount of resources needed for rotations are underestimated. . . Rotations are extremely expensive in terms of staff, resources, time and money."
- Facilities are already bearing the costs of re-educating new graduates because of what they see as the education/practice gap.

Managing competing demands for clinical education

Clinical site informants reported they were increasing called upon to provide resources for multiple educational institutions. Facility representatives emphasized that their choices about affiliations with particular schools related to whether the program or school complied with requirements and whether it offered the potential to recruit new graduate nurses who were "the cream of the crop."

Promising strategies for clinical education

Facility representatives felt some sites were shouldering a greater share of the costs of clinical education. This included student education, as well as orientation costs for new graduates unprepared to assume independent roles immediately post-graduation. Strategies for reducing this burden include utilization of clinical scholars, residency programs and simulation technology.

Summary and Conclusions

This study points to the need for additional human, financial and institutional resources to support all levels of nursing education. The study's findings, however, affirm that contributing factors and promising strategies to address the faculty shortage are complex and multifaceted, including both economic and non-economic factors. Achieving an adequate supply of clinically competent nurse graduates capable of critical thinking and applying knowledge and technical skills in a fast-paced environment will require a critical re-evaluation of the education system and the development and adoption of strategic plans to utilize existing resources effectively and identify and deploy new resources where they are needed.

To develop a comprehensive nursing education system for the 21st century, Colorado must determine

- To what extent it is willing to compete with other states for its supply of nurses

- What percentage of Colorado's future nursing workforce it will commit to educating in-state
- What mix of nursing education programs it needs to produce the right balance of practical, professional and advanced practice nurses in Colorado
- How nursing education programs can be redesigned to use existing resources more creatively and effectively
- What training and how many nurse faculty will be needed to educate enough well-trained nurses to meet the needs of Coloradans.

Colorado has already built a solid foundation of public and private sector collaboration. The next step is using data to establish priorities and goals and then developing a sustainable action plan.

Please see additional information about the nurse faculty study and other nurse faculty issues on the CHI website – http://www.ColoradoHealthInstitute.org/workforcewww.ColoradoHealthInstitute.org/workforce, including:

- Methodology
- The Context: Nurse Education in Colorado
- 2009-10 Nurse Faculty Survey
- 2009 Colorado Nursing Program Survey
- National and State Strategies to Address Faculty Shortages
- Colorado Nursing Programs

Endnotes

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[2] Colorado is one of 23 states participating in the Nurse Licensure Compact. This agreement between states permits recognition of nurse licensure between compact states and allows nurses who are licensed in one compact state to work in any of the other compact states. The Colorado Board of Nursing does not have a way to determine how many nurses are working in Colorado with a license from another compact state.

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