



**THE  
COLORADO  
TRUST**

ACHIEVING ACCESS TO HEALTH FOR ALL COLORADANS

**SOLVING COLORADO'S SHORTAGE  
OF HEALTH PROFESSIONALS:**

*final evaluation findings and recommendations*



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## ACKNOWLEDGEMENTS

*Solving Colorado's Shortage of Health Professionals: Final Evaluation Findings and Recommendations* was prepared for The Colorado Trust by Kaia Gallagher, PhD, Center for Research Strategies and Tanya Beer, Assistant Director of Research, Evaluation & Strategic Learning, The Colorado Trust.

### » ABOUT THE COLORADO TRUST

The Colorado Trust has worked closely with nonprofit organizations in every county across the state to improve health and well-being. To build on these efforts and address growing needs to expand health coverage and care, The Colorado Trust committed to a 10-year goal to achieve access to health for all Coloradans by 2018.

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**Graphic Design:** Twist Design Group, Inc.

**Printer:** Sprint Press

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## I. INTRODUCTION

### » COLORADO'S SHORTAGE OF HEALTH CARE PROFESSIONALS

Colorado has a serious shortage of health care professionals. From doctors to nurses, pharmacists to physical therapists, there are not enough health care providers to meet the demand for health care services. This shortage has resulted in longer wait times for fewer services, and – in some communities – it has meant a total lack of primary care services.

Growing demand for health care services, particularly among retiring Baby Boomers, will further increase the numbers of health care professionals needed, which – in turn – is projected to expand job openings for health workers by 20% over the next 10 years.<sup>1</sup> Colorado is expected to experience shortfalls in the numbers of physicians, nurses, physical therapists, physician assistants and occupational therapists<sup>2</sup> as 17% of all its health care workers retire over the next 10 years.<sup>3</sup>

This mirrors the need across the United States. According to the U.S. Department of Labor, health care is one of the nation's largest industries and one of the top 20 fastest growing occupation areas. Between 2006 and 2016, the health care industry will require an additional 3 million workers, more than any other industrial category.<sup>4</sup> The Colorado Department of Labor and Employment is projecting an average annual growth rate of 3.5% in jobs for health care practitioners, technicians and support staff.<sup>5</sup>

Workforce shortages are anticipated across a range of health professions, with nurse training capacity being particularly critical. Colorado's current shortage of nurses stands at 11% and is projected to triple by 2020. Between 2004 and 2014, statewide employment opportunities for registered nurses are projected to increase by 46%.<sup>6,7</sup> Despite Colorado's current and projected nursing shortage, about 5,000 qualified applicants are turned down each year from undergraduate nursing programs, partly because of nursing faculty shortages.<sup>8</sup> Waiting lists are common for other health professions training programs, as well. According to the Colorado Health Institute (CHI), 23 health professions educational programs, including nursing schools, reported waiting lists in 2006-2007.

There are no clear and simple solutions to these shortages. Development of a health workforce requires interventions at all stages of the career pipeline – from generating

interest in health careers among school children, to training new and existing health professionals, to recruiting and retaining professionals in underserved areas.

To help address the shortage of health care professionals, The Colorado Trust's Health Professions initiative – a three-year (2005-2008), \$10.2 million effort – provided funding to increase the number of health professionals in Colorado across all disciplines, including primary, mental and dental health care, as well as pharmacy.<sup>9</sup> Rather than targeting a particular health discipline, type of institution, or training approach, The Trust issued a competitive Request for Proposals (RFP) of programs in any institutional or community setting that emphasize any stage of the health career development pipeline. This approach enabled grantees to test new ideas, learn what works best for their target populations and geographic locations, and develop promising practices that could be applied in other areas. The initiative stimulated partnerships among training programs, community-based organizations and health professionals to strengthen the training infrastructure and identify strategies to address the long-term need for health professionals across the state.

The Trust made grants to 22 organizations (see Health Professions Grantees section) across Colorado – including hospitals, clinics, universities, community college foundations and others – to support and expand existing programs and to develop new programs that increase education, training and advancement opportunities, especially for individuals from disadvantaged backgrounds and in rural areas. Grantees received training and technical assistance from Colorado's Area Health Education Centers (AHEC), and participated in networking opportunities to share strategies and identify opportunities for collaboration. Additionally, The Trust funded the Colorado Rural Health Center to support a variety of rural health career programs, including the Colorado Rural Outreach Program which focuses on recruitment and retention of primary health care practitioners in rural Colorado communities; as well as CHI to collect, analyze and disseminate Colorado workforce data through its Health Professions Database Project.<sup>10</sup>

The Center for Research Strategies (CRS) conducted an evaluation of this initiative to provide grantees, The Trust and other health care workforce stakeholders a better understanding of what cross-sector approaches might work best to solve Colorado's shortage of health professionals.

## II. EVALUATION APPROACH

The broad and exploratory nature of the Health Professions initiative required a similarly exploratory evaluation design. Grantees represented different types of organizations, focused on a variety of health professions and addressed varying dimensions of the workforce shortage. Accordingly, CRS used a range of evaluation strategies to capture the full scope of funded activities, and to evaluate their effectiveness in expanding the breadth and depth of Colorado's health professions workforce. In particular, CRS sought to answer these questions:

1. Did the number of health professionals in Colorado increase as a result of this initiative?
2. What are the barriers and facilitators to increasing the numbers of health professionals in Colorado communities?

Between 2005 and 2008, CRS collected data from several sources using such data collection methods as:

- A student tracking system that aggregated information on the age, gender, race, ethnicity and training status of students
- Student surveys at the start and end of training programs to understand factors that influence students' selection of specific health careers and future career plans

- Individual interviews with select students and communities to understand their training program experiences, and plans for future training and employment
- Semi-annual and final grantee progress reports detailing individual program successes, challenges and program sustainability planning efforts
- Annual site visits to assess factors that influence program growth and sustainability
- A program sustainability survey administered to all grantees at the conclusion of the initiative's second year.

The following findings of the evaluation are organized by three main components of the health care workforce pipeline: students, training programs and community partners. The report describes a framework for connecting these components, and strategies for strengthening each one; as well as the impacts of the grantee programs and lessons learned along the way. Specifically, the evaluation looked at whether the impacts of grantee programs are likely to be sustained, with a particular emphasis on the long-term training capacity of health professions education programs. This report also includes recommendations for continuing and building on grantee strategies to bolster Colorado's health professions workforce.



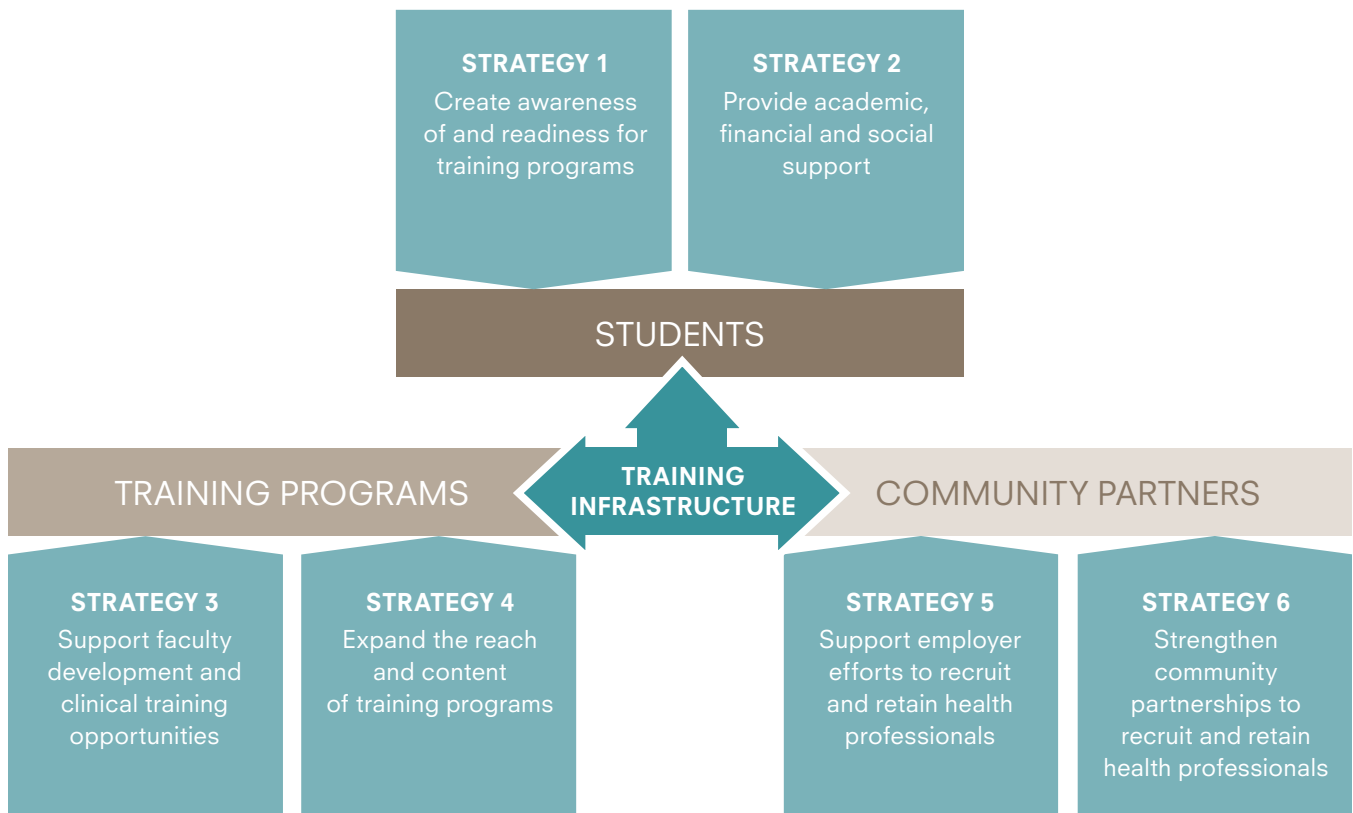
### III. HEALTH PROFESSIONS TRAINING INFRASTRUCTURE

A previous report on the Health Professions initiative – *Solving Colorado’s Health Professionals Shortage: Initial Lessons Learned from the Health Professions Initiative Evaluation*<sup>11</sup> – summarized the scope of grantee strategies along a training continuum that highlights three components of the health professions training infrastructure: students, training programs and community partners. Building Colorado’s health care workforce training infrastructure requires strengthening and expanding all three of these areas. Individual students benefit from various forms of support (e.g. scholarships, mentoring, etc.) to prepare for, select and complete training programs; training programs must expand their reach and capacity; and communities in need of health professionals must improve their ability to invest in, recruit and retain them.

These elements of the training infrastructure are interconnected; any intervention aimed at only one aspect is insufficient to create a long-term solution to the

workforce shortage. Recognizing this interdependence, grantee training programs partnered with K-12 school systems to promote health careers and prepare students academically to meet the rigors of health professions training programs. Employers who received Trust grants subsidized local residents and current employees to pursue health professions training. And communities stimulated the training cycle by promoting health care career awareness programs among local residents, subsidizing students who have an interest in health careers, offering local training and clinical rotation experiences, and developing active recruitment and retention programs for health professionals.

The grantees’ work and lessons from the broader health professions field are illustrated below as a framework of six strategies that show promise for strengthening Colorado’s health professions training infrastructure:



Several grantees implemented programs that address more than one strategy, and – in some cases – more than one of the three components. As a result, these

grantees increased the numbers of health professionals and reinforced the overall health professions training capacity in Colorado.

## IV. STRATEGIES TO INCREASE THE HEALTH PROFESSIONS WORKFORCE

The evaluation determined that, over the three years of the initiative and across all grantees, 2,942 health professions students advanced their careers by participating in training programs. Health professionals were trained in 27 disciplines, including physicians, dentists, pharmacists, nurses and allied health fields (e.g., audiology, occupational therapy, radiology, etc.). Three-quarters of the grantee programs were located in rural areas, or focused on training professionals who will work in rural areas. More than half of the students connected to grantee programs grew up in rural, underserved areas and 35% intend to work in a rural area when they complete their training.

Through the Health Professions initiative, training programs in Colorado have strengthened their capacity to train students in needed health care disciplines. All grantees will sustain or increase the number of health professionals trained in coming years. For example:

- Training programs for nurses and allied health professionals will increase their training capacity over the next three years (2008-2011), resulting in an estimated 1,605 additional trained nurses and an estimated increase of 2,180 allied health professionals who will receive certificate degrees
- Grantees permanently expanded training locations and developed more flexible training options, thereby increasing access to health professions training opportunities – especially in rural areas – and training more students
- The reach of health professions training expanded to include a diverse student body, consisting of those who are returning to school to advance their careers, students specifically recruited from rural communities and students from diverse backgrounds.

The following lessons learned from these efforts to grow Colorado's health professions workforce include evaluation findings and their implications for a statewide workforce investment strategy.

### » A. STUDENTS

As detailed in *Solving Colorado's Health Professions Shortage: Initial Lessons Learned from the Health Professions Initiative Evaluation*,<sup>11</sup> grantees implemented these student-focused strategies:

1. Creating awareness and readiness for health professions training
2. Providing academic, financial and social support for students.

Grantees grew and diversified the health professions workforce by attracting students into health careers, supporting them financially (e.g., through scholarships, loan repayments, etc.) and developing new training programs to address shortages in particular health professions fields.

As shown in Table 1, among the individual students supported through the Health Professions initiative, 242 out of 2,942 enrolled in more than one training program, resulting in 3,184 total student enrollments. Examples of multiple program participation include nurses who progressed from Licensed Practical Nurse (LPN) to Associate Degree in Nursing (ADN) training, and students who enrolled in multiple certificate programs. With Trust support, grantees funded eight career categories. As shown in Table 1, students enrolled in training programs within these categories represented 27 health professions fields.

### ALL PARTICIPANTS IN THE HEALTH PROFESSIONS INITIATIVE

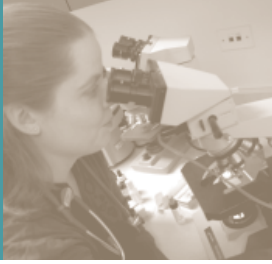
*will sustain or increase the number of health professionals trained in coming years.*

» **TABLE 1: STUDENTS SUPPORTED THROUGH THE HEALTH PROFESSIONS INITIATIVE**

Health Career Category	Health Professions Field	Total Enrollees by Health Professions Field	Total Enrollees by Health Career Category
<b>Career Awareness</b>	Medical Preparation Classes	41	<b>61</b>
	Pre-career Training	20	
<b>Allied Health</b>	Childbirth Educator	1	<b>186</b>
	Dietician/Nutritionist	4	
	Electrocardiogram (EKG) Technician	40	
	Lab/Med Technician	24	
	Lab Assistant/Phlebotomist	82	
	Medical Assistant	6	
	Medical Records	2	
	Physical Therapy Assistant	2	
	Promotora	10	
	Sonographer	15	
<b>Dental Careers</b>	Dental Assistant	14	<b>67</b>
	Dental Hygienist	1	
	Dentist	52	
<b>Medical Careers</b>	Physician Assistant	38	<b>191</b>
	Pre-med	1	
	Physicians in Training	152	
<b>Mental Health</b>	Counselor	6	<b>9</b>
	Social Worker	3	
<b>Nursing</b>	Certified Nurse Assistant (CNA)	437	<b>2,048</b>
	Licensed Practical Nurse (LPN)	200	
	Associate Degree in Nursing (ADN)	1,184	
	Bachelor of Science in Nursing (BSN)	216	
	Master of Science in Nursing (MSN)	2	
	Faculty Development	9	
<b>Emergency Medical Services</b>	First Responder	11	<b>226</b>
	Emergency Medical Technician (EMT)	210	
	Paramedic	5	
<b>Pharmacy</b>	Pharmacy Technician	2	<b>342</b>
	Pharmacy Preparation <sup>a</sup>	137	
	Doctor of Pharmacy (PharmD)	203	
<b>Other</b>	Spanish Language Training for Health Professionals	54	<b>54</b>
<b>TOTAL ENROLLMENT</b>			<b>3,184</b>

<sup>a</sup>Pharmacy preparation included academic enrichment and English as a Second Language (ESL) training for minority and disadvantaged students, and students from rural areas; as well as students interested in – and accepted by – the University of Colorado School of Pharmacy.





Ten of the 22 grantee programs supported career awareness and readiness programs to promote interest in health professions, as well as academic enrichment to help students transition into health professions training. Nineteen grantees offered student support programs, including academic, financial and social support – among these, financial assistance was the most common, followed by academic enrichment. Grantees also found that social support programs, while less common, were effective in increasing student retention rates. Following are examples of grantee approaches to recruit and support students:

### **Provide Flexible Training Options**

To recruit older students and enable them to advance their careers, innovative training programs were designed to include more flexible and accessible training options, including part-time, evening and weekend class schedules, and distance learning classes via telecommunications technology. More than half of the students who participated in grantee programs were “non-traditional” or older students – 32 years old, on average – who had returned to school to advance their training while balancing work and family responsibilities. Eighty-one percent of these students were women and 64% received nursing-related training.

### **Focus on Rural Students**

Grantees supported both health professions training programs located in rural communities, and programs focused on training professionals for careers in rural and underserved areas. These efforts build on research showing that increasing the number of health professionals who live and work in rural communities is most effective when rural residents are recruited for health careers and when training is tailored to rural practice.<sup>12</sup>

In the Health Professions initiative, 51% of all students served by grantees grew up in a rural or underserved area. One-third of students who completed their training expressed interest in living in a rural or underserved area, and two-thirds felt prepared to live in a rural or underserved area at some point in their careers.

### **Diversify the Workforce**

Students supported through the Health Professions initiative were ethnically diverse with one-fifth (20%) being Latino/a. Among all students, 69 were recruited from diverse cultural backgrounds to provide culturally competent health care services in English and other languages. These students were trained as dentists, mental health counselors, social workers and Licensed Practical Nurses (LPNs).

## **STRATEGIES TO SUPPORT STUDENTS**

Grantees identified a variety of promising options for student recruitment, preparation and training, including proactive efforts to interest students in health careers, prepare them for clinical training programs and support them while they complete these programs. In particular, employers and other community-based groups with shortages of health professionals recognized that an effective strategy for recruiting health care workers is to create interest in health care careers among elementary, middle and high school students.<sup>13</sup> To cultivate an interest in pursuing a health profession, students need to be exposed to the wide array of health careers at an early age. Survey data indicate that the mean age at which students may decide to pursue health careers is 19, although some may show interest in the field as early as age two.

Students must be prepared to meet the academic rigors of training programs by having a strong foundation in reading, math and science. Positive role models should also be available to encourage students in these academic and career pursuits.<sup>13</sup> Without early career exposure to health professions, proper academic preparation and guidance, students are less likely to pursue health careers.<sup>13</sup> Rural and disadvantaged students especially benefit from exposure to, and preparation for health careers as a means of expanding the pool of health professionals available to serve all segments of Colorado’s population.

Most grantees conducted some type of career awareness program as part of their workforce development activities. The most promising strategies for recruiting students into health careers and sustaining their ability to pursue this type of training are:

- **Creating career awareness in elementary and middle school settings**  
Elementary school students benefit from various career awareness events, including “Career Days,” hospital tours and First Aid training. To stimulate interest in health careers, similar events and programs for middle school students may include job fairs, job shadowing and medical track courses.
- **Offering medical track programs in high schools**  
High school programs focused on medical careers can help prepare students academically, as well as provide them with specific training opportunities. Students can benefit from internships, scholarships and mentoring programs as they make decisions



regarding their careers. Career organizations and social support networks can also guide students who are interested in health professions.

- **Improving math and science courses**

Various industry sectors – such as engineering, science and technology – require strong foundations in math and science. Engaging local leaders across these sectors to invest in education improvements (e.g., curriculum, tutoring, mentoring, etc.) helps strengthen math and science training in schools, concurrently benefiting students who are interested in health careers.

- **Funding, educating and empowering K-12 career counselors**

Stronger support and training of career counselors enables them to take a more active role in providing career guidance to students.<sup>14</sup> Providing counselors with information about the need for health professionals can help them motivate students to pursue a health career.

- **Offering medical preparation courses to college-bound students**

Students transitioning from high school to college benefit from being able to complete dual credit courses (i.e., courses taken in high school for both

high school and college credit) and certificate training programs. These programs provide a foundation for further training and can be a first step into a health career.

- **Offering “gateway” programs**

The health field offers a number of entry-level job opportunities. Community colleges can ensure access to skills training and certificate programs for entry-level health jobs, particularly for first-time workers and those displaced from other fields.

- **Developing local “grow-your-own” programs**

Students from rural and underserved areas should be locally recruited since these candidates are more likely to return to their home communities upon completing their training.

- **Marketing health careers**

Recruitment efforts should more effectively tap prospective health professionals by emphasizing factors that draw students to these jobs, such as the opportunity to help others, competitive salaries, career advancement opportunities and flexible work hours.



## » ADAMS STATE COLLEGE: FACULTY MENTORING PROGRAM

Nurse instructors at Adams State, a college in south-central Colorado, are paid lower salaries than nurses of equal training who work in clinical settings, as is the case in other communities across Colorado and the country. This inequity – and a new national requirement that nurse faculty have masters degrees in nursing – severely limits the ability of nurse training programs to sustain their current capacity to train new nurses, let alone serve an increasing number of students on long waitlists.

To help meet this challenge, Adams State College developed a mentoring program to nurture and train junior faculty members. Faculty are offered paid leave

to pursue graduate training, and new faculty are paired with experienced faculty for support – including troubleshooting concerns related to teaching or working with students. As an example among participants, a faculty member at Adams State earned a master’s degree in nursing while teaching, and is currently pursuing a doctoral degree. A reciprocal learning-teaching environment has also been established through the mentoring program, in which faculty members work together to meet the changing demands of the field and the increasing diversity of their students.

Such faculty retention efforts that include professional advancement and mentoring support are particularly important to strengthen the training capacity of nursing schools in rural communities.

## » B. TRAINING PROGRAMS

In addition to implementing programs that are focused on student needs, grantees also worked to support and expand their ability to train more health professions students. As noted in *Solving Colorado’s Health Professions Shortage: Initial Lessons Learned from the Health Professions Initiative Evaluation*,<sup>11</sup> grantees strengthened training capacity across 27 health professions fields and implemented innovations related to faculty recruitment, curriculum development, training site reform and teaching modalities (e.g., web-based distance learning programs) that expand access to health professions training in rural and underserved areas of Colorado. In particular, grantees focused on these strategies to strengthen training capacity:

1. Supporting faculty development and clinical training opportunities
2. Expanding the reach and content of training programs.

Several grantees used their funding to improve training programs by strengthening their faculty’s credentials, creating networks of clinical preceptors (i.e., practicing clinicians who train students in clinical settings) and scholars, and developing community-based training programs. Grantees also expanded access to training programs to nontraditional students (e.g., individuals

seeking a second career, single parents, etc.) and working students, and created new training programs based on adult learning principles that acknowledge students’ experiences and preferences for hands-on learning. Other innovations included evening, weekend and distance-learning formats that accommodate students’ schedules; mannequin simulation experiences; and mentoring to students to help prepare them for accreditation exams. Combined, these strategies resulted in better prepared nursing students who successfully completed their training and who achieved high grades on national nursing exams.

As shown above in Table 1, over the three years of the initiative, grantees increased the current supply of health professionals among rural and other underserved populations in the following areas:

- 57 physicians were recruited through the University of Colorado’s School of Medicine to be trained through the Rural Track program to provide medical care to rural populations
- 203 pharmacy students were supported through the University of Colorado’s School of Pharmacy, 92 of whom were trained to provide care management services in rural or underserved community-based settings

- 52 dentists from foreign countries received additional training to qualify for U.S. licensure and to serve diverse populations
- 2,039 nurses were trained across a career continuum – including Certified Nurse Assistants (CNAs), Licensed Practical Nurses (LPNs), associate’s degree nurses (ADNs), bachelor’s degree nurses (BSNs) and master’s degree nurses (MSNs) – while nine nurse faculty pursued advanced, doctoral-level training
- 203 students received training in an allied health care field
- 226 students were certified to work in the emergency medical field as first responders, Emergency Medical Technicians (EMTs) and paramedics.

### Create New or Expanded Programs

Grantees created new or expanded community college certificate programs, additional allied health training programs, expanded distance education and employer-based nursing programs, broader clinical rotations and specialized training opportunities. For example:

- Aims Community College created health professions certificate programs in the following categories: CNA, EKG technician, EMT technician, first responder, promotora and laboratory assistant/phlebotomist
- Pueblo Community College created a new diagnostic sonography program to extend this training to residents in southern Colorado
- Red Rocks Community College established a community health center in Idaho Springs to provide needed primary care services to the local community – particularly to un- and under-insured area residents – and to serve as a training site for physician assistant students
- Morgan Community College developed a distance learning center to train ADNs in Wray through a polycom connection
- The Southeastern Colorado Area Health Education Center offered specialized types of training for promotoras, or community health educators
- North Range Behavioral Health trained bilingual and bicultural mental health providers.

### Introduce Innovations in Rural Areas

Grantees implemented the following innovative training programs with rotations to rural or other underserved areas, a strategy previously shown to increase the likelihood of students choosing to practice in a rural location:<sup>15</sup>

- The University of Colorado’s School of Medicine developed a Rural Track program through which medical students from rural areas received rurally focused training and clinical experiences. The program, a first for Colorado, has been replicated in other rural states.
- To expand the scope of practice of pharmacy students, the University of Colorado’s School of Pharmacy refocused its training program to place pharmacists in rural or other underserved communities where they can provide care management services for patients suffering from such chronic conditions as diabetes.
- The University of Colorado’s School of Dentistry recruited and retrained foreign-trained dentists to provide care to underserved populations, thereby expanding the reach of the school to serve the medically underserved – particularly non-English speaking patients.
- Red Rocks Community College established a community health center in Idaho Springs to provide needed primary care services to the local community and serve as a training site for physician assistant students – this model collaboration between a training program and a community brings health care services where none previously existed.
- The Commission on Family Medicine expanded its emphasis on rural rotations for second- and third-year residents in Colorado’s nine family medicine residency programs.

Based on interviews, health professions students responded positively to these training innovations. Rural immersion experiences were popular among nearly all students, regardless of their intent to practice in a rural area. Those students who were undecided about rural practice reported that an immersion experience – including participation by their spouses, as relevant and appropriate – was critical to their decision on whether to settle in a rural area. Immersions were enhanced and more effective when host communities engaged students and their families in such community activities as attending local sporting events or participating in nearby recreational activities. Across all disciplines, students welcomed the clinical challenges of such experiences, and felt adequately prepared and mentored to fully engage therein.

Overall, partnerships with local health care communities expanded clinical training experiences and preceptor sites for students across several career tracks, including doctors, nurses, physician assistants, pharmacists, dentists, counselors and social workers. By recruiting

health care providers in communities throughout Colorado to serve as preceptors, the health professional schools expanded the number of students trained, and increased the number and types of clinical sites where this training could occur (e.g., hospitals, clinics, schools, nursing centers, pharmacies, mental and behavioral health facilities, substance abuse treatments centers, etc.) As a result, students broadened their skills and abilities to serve in diverse settings in rural and other medically underserved communities.

### **Strategies to Increase Training Program Capacity**

The Health Professions initiative strengthened the ability of several training programs to train more students. To sustain and expand this capacity, grantees reported that a variety of approaches are needed, including:

- **Distance learning technologies**  
Distance learning technologies increase the number of health professionals trained in a cost effective manner, particularly for class-based learning delivered to remote sites and self-paced learning modules that students complete on an individualized timeline.
- **Simulations-based training**  
Simulation mannequins provide a cost efficient way to enhance clinical trainings for health professions students, enabling them to practice their clinical skills before conducting hands-on work with patients.
- **Financial incentives**  
Scholarships and loan repayment options enable practicing health care professionals to advance their skills, especially if they are simultaneously working to support themselves.
- **Coordinated clinical training placements**  
As the capacity of training programs increases, adequate numbers of clinical placement sites must also be available. Improved coordination of existing placement sites through state clinical placement registries will help meet this requirement.
- **Geographically dispersed training sites**  
To enable students across the state to have access to appropriate health professions training, programs should be strategically located statewide, building on the existing training infrastructure. Each state professional organizational (e.g., Colorado Nurses Association, Colorado Dental Association, etc.) can help ensure that training sites are geographically dispersed.
- **Meeting the needs of underserved communities**  
Rural practitioners require generalist skills and the ability to perform procedures that, in urban areas, are offered in specialty settings (e.g., Caesarian sections, colonoscopies, intubation and minor surgeries). Students anticipating a rural career can benefit from exposure to – and practice in – these skill areas through clinical experiences offered by specialists. For example, students in the CU School of Medicine’s Rural Track program were trained at suture and intubation clinics to be able to employ these procedures in rural practice environments, if needed.
- **Multidisciplinary, team training experiences**  
Multidisciplinary training – including joint rotations – offers benefits to all health professions students, particularly those who will be working in rural environments. Providing students with “on-the-job” clinical experiences as part of a health care team can help advance their abilities to work in rural and other underserved communities.

### **OVER THE THREE YEARS OF THE HEALTH PROFESSIONS INITIATIVE,**

*2,039 nurses were trained across a career continuum – including Certified Nurse Assistants (CNAs), Licensed Practical Nurses (LPNs), associate’s degree nurses (ADNs), bachelor’s degree nurses (BSNs) and master’s degree nurses (MSNs) – while nine nurse faculty pursued advanced, doctoral-level training.*



## » UNIVERSITY OF COLORADO, SCHOOL OF MEDICINE: “RURAL TRACK” CURRICULUM

Given that health professions students from rural areas are likely to return to rural communities as practitioners, the University of Colorado’s Rural Track within the School of Medicine recruits qualified students from rural Colorado, offering them opportunities to explore and plan for a rural health career.

The Rural Track program supplements regular coursework with bimonthly seminars that teach students the clinical skills they’ll need to respond to the unique needs of rural practice sites. Students are matched with a rural preceptor and participate in a four- to six-week preceptorship in a rural setting – often in communities that are interested in recruiting new physicians and using this training experience to get to know physicians-in-training.

To date, the Rural Track program has admitted 15 to 18 students annually. Fifty-seven students are enrolled in – or have completed – the program. Although the impact of the program on the workforce shortage will not be realized until more students have completed their education and training, the program is deemed successful in creating enthusiasm in – and preparation for – rural practice.

The program is being expanded to include a multidisciplinary approach to also benefit nursing, pharmacy, dentistry, physician assistant and physical therapy students, and that can be replicated at other universities. Building on accomplishments achieved through the Health Professions initiative, this unique program offers an innovative training paradigm by which to recruit, train and retain health care practitioners who seek careers in rural areas.

## » C. COMMUNITY PARTNERS

In addition to supporting students and building training program capacity, grantees also invested in community partnerships. Ten grantees of the Health Professions initiative were community-based organizations, including employers, an association of community health centers and a regional Area Health Education Center – all of which demonstrated the proactive role that communities play in recruiting and retaining health care professionals. Strategies that strengthened these grantees’ roles in addressing the workforce shortage are:

1. Supporting health employer efforts to recruit and retain employees
2. Strengthening community partnerships for recruitment and retention of health professionals.

By engaging the business community, health care providers and educators, these grantees tailored their programs to meet the needs of their individual communities. Their collective experiences demonstrate a range of possible collaborations within local communities to educate and finance students, and establish partnerships in which health care is delivered as part of health professions training programs.

### **Engage Partners Outside the Health Sector**

Community-based grantees used several cross-sector strategies to help develop the health professions workforce, including establishing a state-level scholarship program to finance health professions training for community health center employees, and local career awareness and entry-level training programs for high school students.



### **Include Health Employers**

Partnerships between health employers and health training programs required the use of provider settings (e.g., community health clinics as clinical rotation and training sites), and included employer-based “grow-your-own” programs and employer-sponsored financial incentives for health professions training. For example, the Heart of the Rockies Regional Medical Center in Salida stopped using temporary nurses and minimized its recruitment efforts by implementing a “grow-your-own” program that offers financial scholarships to hospital employees while providing onsite training for ADN students. Delta County Memorial Hospital implemented a comprehensive employee scholarship program for emergency workers, nurses and other hospital workers; as well as offering promotions and salary increases to encourage employees to continue to advance their skills. As a result, the hospital has also eliminated its use of temporary nurses. In Eads, Weisbrod Memorial Hospital and Nursing Home offered scholarships to high school students who showed an interest in a health professions career, including one local resident who intends to return as a practicing physician.

Health employers reported that – due to such recruitment and retention strategies – their organizations are perceived as desirable places to work. Other incentives provided to their employees include clear opportunities for job and salary advancement, flexible work schedules to manage job and education responsibilities, and employee recognition.

### **STRATEGIES TO INVOLVE COMMUNITY PARTNERS**

Community-based grantees recognized the economic and social benefits to ensuring access to quality health care for all. Adequately staffed health care systems provide local community residents with needed health services, while also providing employment opportunities.

While community leaders are often unaware of the ways in which they can collaborate with others to ensure a sufficient supply of health professionals, grantees learned that community partnerships are critical in addressing health care workforce issues. Community leaders provide direction and facilitate communication among businesses and community-based organizations, and help integrate health professionals and their families into the community. Additional community-based strategies may include:

- **Providing job training and career advancement opportunities**

To recruit and retain a diverse pool of qualified health professionals, health care providers may offer scholarships, flexible schedules and other incentives to advance health workers’ earning potential and skills in needed job categories.

- **Developing local training sites and distance learning options**

In rural settings with few community colleges and medical training programs, partnerships with regional educational institutions provide local training and distance learning options for students who would not otherwise be able to advance job skills.

- **Creating a long-term workforce investment strategy**

To promote health careers to youth, career awareness opportunities may include job shadowing and employment opportunities in hospital settings, as well as scholarship support.

- **Partnering with local educational institutions**

By collaborating with local health care employers, community colleges can develop allied health certificate programs that simultaneously provide entry-level jobs to area residents and meet employers’ needs for specific skills sets among employees.

### **THE HEART OF THE ROCKIES REGIONAL MEDICAL CENTER**

*stopped using temporary nurses and was able to decrease its recruitment efforts by implementing a “grow-your-own” program that offers financial scholarships to hospital employees while providing onsite training for ADN students.*

## » HEART OF THE ROCKIES REGIONAL MEDICAL CENTER: NURSING SCHOLARSHIPS

Prior to The Colorado Trust's Health Professions initiative, the Heart of the Rockies Regional Medical Center (HRRMC) was spending approximately \$50,000 per month for temporary or traveling nurses. In an attempt to "grow their own" nurses and cut costs, HRRMC collaborated with the Colorado Mountain College to offer an ADN training program for residents in Chaffee, Lake, Fremont, Park and Saguache counties.

Scholarships were offered to nursing students enrolled in its hospital-based training program and to applicants from the local area. In return, scholarship recipients were required to work 1,040 hours for each \$1,500 received, or repay that amount if they withdrew from the program. Over the three-year initiative, 21 ADN nurses and three BSN nurses received scholarships from the hospital's foundation.

Students receiving scholarships commented that the funds helped to alleviate the financial burden of school expenses. One student made the following comment when asked about her training experience and whether she would have pursued her nursing education without a scholarship:

*"I would have, but it would have taken longer. I probably would have only been able to take one class per semester. Nursing is something I always wanted to do. The scholarship helped me get through."*

According to another student:

*"The scholarship was almost essential. I would have had to find money elsewhere – I can't work while going to school. In a rural hospital, you get support from everyone, not just the clinical instructors. If you're looking for support, it's always there. ... The availability of employment opportunities was part of my decision, the financial security, creating a lifestyle, bringing meaning into my life."*

As a result of these efforts, HRRMC filled all of its nursing vacancies without bringing on temporary nurses – a savings of more than \$400,000 per year. The hospital's foundation also provided scholarships to other local residents who demonstrated interest in practicing health careers in rural Colorado. Other rural hospitals that face nursing vacancies and high costs associated with temporary or traveling nurses can use a similar collaborative training and scholarship model to "grow their own" workforce.

## BY COLLABORATING WITH LOCAL HEALTH CARE EMPLOYERS, COMMUNITY COLLEGES CAN DEVELOP ALLIED HEALTH CERTIFICATE PROGRAMS

*that simultaneously provide entry-level jobs to area residents and meet employers' needs for specific skills sets among employees.*





## V. SUSTAINING THE HEALTH PROFESSIONS WORKFORCE

As described above, grantees of the Health Professions initiative demonstrated success in expanding Colorado's health care workforce through several programmatic strategies. At the same time, demographic shifts, rising demands for health services and technological advances continue to strain training programs trying to meet the state's needs for qualified health professionals.

This section explores whether the short-term outcomes of the Health Professions initiative, including increased training capacity, are likely to be sustained. Factors that will facilitate or challenge this initial investment in strengthening Colorado's health professions workforce are:

### » A. TRAINING PROGRAM CAPACITY

All grantees intend to maintain their efforts begun through the initiative to some degree, and more than a quarter of the 22 grantee sites expect to continue to increase the number of students they train. Each of the three Trust-funded training programs for physicians, dentists and pharmacists will increase the number of students they train over the next three years.

Through a subsequent grant from The Colorado Trust, the University of Colorado's School of Medicine has expanded its Rural Track program to offer interdisciplinary training for students in five professional schools: medicine, dentistry, pharmacy, nursing and public health. During the Health Professions initiative, 15 to 18 medical students were trained per year, resulting in a total of 57 medical students enrolled in the program; over the next three years, the school will recruit 12 to 15 new students per year, resulting in 36 to 45 medical students being trained per year. The school anticipates that 70% of these students will enter a specialty related to rural health and 50% will eventually practice in a rural area. Other continuing programs include:

- The University of Colorado's School of Dental Medicine currently supports 52 students through its International Student Program – over the next three years, 24 additional students will participate in this program

- Through subsequent Trust funding, nearly all medical and pharmacy students at the University of Colorado's School of Medicine will complete a four- to six-week rural rotation
- The University of Colorado's School of Pharmacy will establish an additional six clinical rotation sites in rural or other underserved communities for fourth-year pharmacy students to complete six-week rotations. The number of fourth-year students enrolled in these rotations will expand from 64 to approximately 80 per year over the next three years.

### Growth in Nurse Training Capacity

Between 2005 and 2008, 1,611 participants were enrolled in nurse training programs through the Health Professions initiative, including:

- 165 LPNs
- 1,198 ADNs
- 237 BSNs
- 10 MSNs
- One PhD

Eighty-nine percent (1,436) of these nurses were trained in traditional college nursing programs while 11% (175) participated in employer-based programs (see Table 2.)

Over the next three years, the number of nurses trained in college programs is anticipated to grow 7% (1,543), primarily due to recruitment of clinical scholars to serve as part-time nursing faculty and the use of simulation mannequins.

By contrast, the number of new nursing graduates trained through employer-based programs during the Health Professions initiative is expected to decline 65% over the next three years, resulting in only 62 new nursing graduates among these grantees. The decline can be attributed to the lack of employer-based nurses with graduate degrees who can serve as nursing faculty, constraints on the availability of in-house staff support, and limited available financial support for scholarships and training programs.

In all, grantee programs anticipate 1,605 new nursing graduates between 2008 and 2011 (see Table 2). This three-year projection is based on information provided by the grantees at the conclusion of the

Health Professions initiative – actual future increases or decreases in nursing student production per grantee site may vary.

» **TABLE 2: ACTUAL AND PROJECTED NURSING CAPACITY**

Actual Nursing Student Graduates, 2005-2008						
Grantee	LPN	ADN	BSN	MSN	PhD	Subtotal
College Programs (5)	125	1,104	198	8	1	1,436
Employer Programs (6)	40	94	39	2		175
<b>Total</b>	<b>165</b>	<b>1,198</b>	<b>237</b>	<b>10</b>	<b>1</b>	<b>1,611</b>
Projected Nursing Student Graduates, 2008-2011						
Grantee	LPN	ADN	BSN	MSN		Subtotal
College Programs (5)	155	1,142	245	1		1,543
Employer Programs (6)	17	28	9	8		62
<b>Total</b>	<b>172</b>	<b>1,170</b>	<b>254</b>	<b>9</b>		<b>1,605</b>

**Growth in Allied Health Training Capacity**

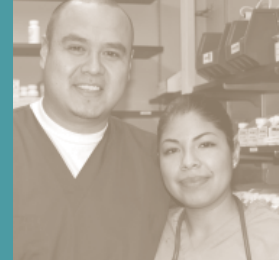
By 2011, the 10 grantees that provided training in allied health careers expect to double the numbers of students trained in the following programs: CNA, childbirth educator, dietitian/nutritionist, dental assistant, dental hygienist, EKG technician, EMT, first responder, laboratory medical technician, laboratory assistant/ phlebotomist, medical assistant, medical records clerk, paramedic, pharmacy technician, physical therapy assistant, promotora and sonographer. Other related training included online Spanish language training for health care professionals.

Between 2005 and 2008, 920 enrollees completed allied health career programs through the Health Professions

initiative. The number of enrollees is expected to increase 137% (2,180) by 2011 (see Table 3). This growth is driven by the:

- Increased need for CNAs, EKG technicians, EMTs, laboratory medical technicians and sonographers
- Promotion of allied health careers by hospitals, community colleges, and allied health care occupation and certificate programs
- Availability of scholarships and other student support for these professional categories in colleges, hospitals and high schools.





» **TABLE 3: ACTUAL AND PROJECTED ALLIED HEALTH CAPACITY**

Allied Health Careers							
	CNA	EKG Technician	EMT	Laboratory Medical Technician	Sonographer	Other	Total
<b>Actual 2005-2008</b>	437	40	210	24	15	194	<b>920</b>
<b>Projected 2008-2011</b>	1,153	120	600	243	28	36	<b>2,180</b>

» **B. FACTORS ASSOCIATED WITH PROGRAM SUSTAINABILITY**

Grantees expect to continue the programs implemented through the Health Professions initiative, and remain committed to playing a key role in developing Colorado’s health care workforce.

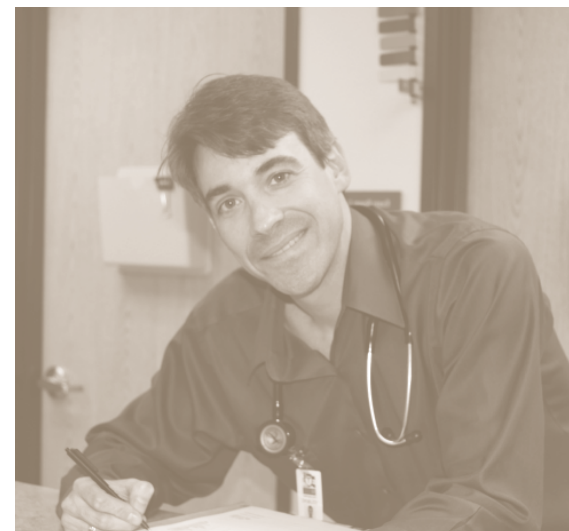
Through interviews and survey data, factors that facilitate the sustainability of grantee programs were revealed, including strong leadership, and institutional commitment and support. As well, grantees developed organizational and community resources, recruited program champions, implemented new staff recruitment and retention strategies, and overcame financial constraints and program challenges. Involvement by community partners, local employers and health care providers also helped to sustain their efforts.

Factors that support ongoing workforce development activities from the perspectives of students, training programs, employers and communities are described in Table 4, organized across the health career continuum – from entry into the health field to recruitment and retention of professionals in health practice settings. Facilitating factors vary, depending on the perspective from which they are viewed:

- Students benefit from career awareness programs, academic preparation, program accessibility and clinical training experiences on their way toward a career in health care

- Training programs benefit from partnerships, flexible and responsive program structures and resource development strategies
- Employers and other community-based stakeholders value community- and state-level partnerships, student financial aid programs, and locally-based training programs that expand students’ exposure to the specific health care needs in rural and other underserved community settings.

During the third year of the Health Professions initiative, grantees benefited from training and technical assistance to strengthen their ability to sustain program efforts, as well as opportunities to network with peers.



» **TABLE 4: FACILITATING FACTORS IDENTIFIED BY GRANTEES**

	<b>Entry into Health Careers</b>	<b>Preparation for/Retention in Training Programs</b>	<b>Access to Training Programs</b>	<b>Capacity of Training Programs</b>	<b>Inclusiveness of Training Options</b>	<b>Recruitment and Retention of Health Professionals</b>
<b>Factors Related to Students</b>	<p>K-12 career awareness programs provide exposure to health careers.</p> <p>Medical preparation courses stimulate preparation for health careers.</p> <p>Certificate training programs are gateways into the health field.</p>	<p>Student support programs increase program retention.</p> <p>Community colleges provide students entry into health careers.</p> <p>Student liaisons help facilitate student retention.</p>	<p>Scholarships and other financial incentives enable students to access health professions training.</p>	<p>Local student recruitment increases program capacity and enrollment.</p> <p>Students seek out Rural Track programs in medical schools.</p>	<p>Exposure to rural settings encourages students to consider rural practice options.</p> <p>Rural clinical sites provide students with clinical procedures experience.</p> <p>Students benefit from on-the-job experiences and gain professional skills.</p>	<p>Health career incentives provide opportunities to diverse student candidates.</p>
<b>Factors Related to Training Programs</b>	<p>Training programs inform teachers and counselors about health career opportunities.</p>	<p>Partnerships with other training programs enable programs to build faculty capacity.</p> <p>Salary increases and faculty mentoring help address recruitment and retention issues.</p>	<p>Flexible course schedules and distance learning options accommodate students' training needs.</p>	<p>Collaboration with community stakeholders and the media increase training program exposure.</p>	<p>Clinical nurse coordinators enhance hospital-based clinical experiences.</p> <p>Increasing lab and simulation experiences in-house decreases requirements for external clinical placements.</p> <p>External partners provide educational experiences and financial incentives to support training efforts.</p>	<p>Collaborations and faculty development increases the number of family practice residents who select rural rotations.</p> <p>Training students with diverse cultural backgrounds expands services to foreign-born patients.</p>

» **TABLE 4: FACILITATING FACTORS IDENTIFIED BY GRANTEES - *continued***

	<b>Entry into Health Careers</b>	<b>Preparation for/Retention in Training Programs</b>	<b>Access to Training Programs</b>	<b>Capacity of Training Programs</b>	<b>Inclusiveness of Training Options</b>	<b>Recruitment and Retention of Health Professionals</b>
<b>Factors Related to Employers</b>	<p>Employers can promote health careers in local schools and offer scholarship support.</p> <p>Employers can host career fairs, training activities, internships and work-study opportunities.</p>	<p>Employers can offer career preparation programs for entry-level employees.</p> <p>Onsite coordinators can troubleshoot student and training program issues.</p>	<p>Employer incentives offer flexible schedules and financial support to employees seeking additional training.</p>	<p>Employer partnerships enable students to obtain cross-cultural clinical experience.</p>	<p>Employers provide training sites, and encourage and support employees to advance their skills through career-ladder programs.</p>	<p>Employer advisory groups help tailor scholarship programs to employer needs.</p> <p>Employee incentive programs can significantly reduce the use of temporary nurses.</p>
<b>Factors Related to Community Settings</b>	<p>Community giving programs promote student educational goals.</p> <p>Community health clinics provide internship opportunities for high school students.</p> <p>Local scholarships enable training for local residents or those interested in working in rural communities.</p>	<p>Community boards support scholarship programs.</p> <p>Perkins funding supports medical preparation programs in high schools.</p> <p>Local investment in health care workforce development is critical.</p>	<p>Training programs must be geographically close and accessible.</p> <p>Availability of tuition reimbursement programs must be widely promoted.</p>	<p>Community partners support expansion of health training program.</p> <p>Regional surveys identify allied health program needs.</p>	<p>Community partnerships with clinical agencies provide positive learning experiences for students.</p> <p>Partnerships with community-based organizations develop and sustain newly formed clinical training sites.</p>	<p>State-level partnerships, as well as networks of community stakeholders and health care champions, can enhance recruitment and retention efforts.</p> <p>Students can help to expand health care workforce development efforts in local community settings.</p>



## » C. CHALLENGES OF PROGRAM SUSTAINABILITY

Through site visits and progress report reviews, the challenges that grantees experienced in expanding or developing new training programs was documented (see Table 5). Collectively, these factors influence the ability to create responsive workforce development efforts at the local, regional and state levels.

From the student perspective, challenges relate to limited health career awareness, a lack of academic preparation, insufficient financial aid, inaccessibility of training programs and – in some cases – disinterest in working in rural settings.

Challenges of training programs to sustain current levels of training capacity include insufficient funding, inadequate faculty recruitment and retention, student remediation requirements and difficulties in securing adequate clinical placements.

Community-based partners, including employers in the health field, often work in isolation and find it difficult to create training opportunities that meet their needs to recruit and retain health professionals. Employers are

challenged by the inaccessibility of training programs, the costs of maintaining employee advancement programs, and difficulties in attracting and keeping trained workers. Broadly, Colorado's capacity for training health professionals is limited by:

- The high cost of training health professionals
- Difficulties in recruiting and retaining faculty
- Limits in classroom size and training program capacity
- The length of time required to train health professionals, particularly those who require advanced skills
- The reliance on private dollars and tuition payments to fund college-level training.

A long-term investment to train health professionals requires a concerted commitment by education, business and health care stakeholders to ensure that Coloradans have access to high quality and accessible health services.



» **TABLE 5: CHALLENGES IDENTIFIED BY GRANTEES**

	<b>Entry into Health Careers</b>	<b>Preparation for/Retention in Training Programs</b>	<b>Access to Training Programs</b>	<b>Inclusiveness of Training Options</b>	<b>Recruitment and Retention of Health Professionals</b>
<b>Challenges Related to Students</b>	Limited counseling or mentoring re: health careers in middle and high schools.  Lack of awareness of health career options.	Insufficient financial aid and other incentives.  Reluctance of students to be obligated to practice in rural settings  Student attrition due to lack of academic preparation and/or other support.	Geographically inaccessible and/or waitlisted programs.  Inflexible training programs that don't meet the needs of nontraditional, working students.	Multiple curricular requirements compete with rurally-focused training opportunities.	Students who accept scholarships decide to pay back support rather than return to rural settings.
<b>Challenges Related to Training Programs</b>	Difficulty in attracting students for some health professions training programs.	Difficulty in screening qualified students.  Remediation challenges.	Program closures due to insufficient funding.  Challenges in creating online and distance learning programs.	Difficulty in securing clinical placement sites.  Dealing with a shift away from training content appropriate for rural settings.	Challenges of faculty recruitment, retention and turnover.
<b>Challenges Related to Employers</b>	Difficulty in attracting candidates for training programs.	Difficulty in maintaining employer-based training programs.	Training programs are inaccessible to employees.	Shortages in clinical slots and instructors limits employees' career advancement options.  Insufficient funding for employee advancement.	Difficulty in recruiting and retaining health professionals in certain communities, including rural areas.  Insufficient jobs available for newly trained health professionals who often must go out of state to gain experience, before being hired in Colorado.

» **TABLE 5: CHALLENGES IDENTIFIED BY GRANTEES - *continued***

	Entry into Health Careers	Preparation for/Retention in Training Programs	Access to Training Programs	Inclusiveness of Training Options	Recruitment and Retention of Health Professionals
<b>Challenges Related to Community Settings</b>	Challenges in engaging schools in health career awareness programs.	Challenges in enabling schools to offer career preparation programs.	Difficulty in creating community-based incentives and endowment programs.  Inaccessible and/or unaffordable training programs.	Loss of clinical preceptors.  Insufficient incentives for rural sites to enhance educational experiences.  Constraints of rural communities to provide advanced EMS training.	Difficulty in promoting recruitment and retention programs.  Difficulty in recruiting and retaining health professionals in certain communities, including rural areas.  Difficulty in retaining volunteer staff (e.g., EMS).

## VI. RECOMMENDATIONS

Grantees of The Colorado Trust’s Health Professions initiative demonstrated that concerted efforts to meet Colorado’s current and future needs for health professionals have an immediate impact on the number of health professionals trained across the spectrum of health careers. Grantees have further demonstrated their ability to sustain and expand this training capacity.

Yet trends show that Colorado has an ever-increasing need for highly trained health professionals. The grantee innovations and demonstrated successes described below form a basis for further developing the state’s health care workforce.

### IDENTIFY AND MONITOR THE SCOPE OF THE PROBLEM

Workforce shortages can be identified as follows:

1. Within health professions disciplines (e.g., nursing)
2. According to specific specialty and competency areas (e.g., gerontology)

### 3. Within geographic health professions shortage areas

### 4. In terms of language and cultural competency skills.

But until the scope of the health professions workforce shortage is determined, it is difficult to mobilize policymakers, health providers, health educators and others to address this challenge. Although there are some data on the magnitude of the nursing shortage, in particular, comprehensive data on the distribution and workforce shortages of other health occupations in Colorado are still forthcoming.

CHI is conducting an assessment of other health care workforce needs by estimating statewide demand and supply requirements.<sup>7</sup> Additional efforts are underway to develop job forecasts in the health care industry and assess employer-defined workforce shortages.

Information on current and projected workforce needs should be broadly disseminated to community and regional organizations to help inform leaders throughout the state.





## BUILD PUBLIC AWARENESS

While health care employers, providers and rural or other underserved communities must confront increasing shortages of health care workers, the general public is mostly unaware of the many dimensions of the problem – yet the public will increasingly suffer the effects of the shortages as health services become harder to access. Until issues related to workforce shortages are more commonly acknowledged, efforts to solve the shortage will continue to be piecemeal and limited to within the health care sector.

Optional strategies include advocating for health professions workforce issues among policymakers and other decisionmakers, business and community leaders, and the public at large. Coordinated public awareness and marketing campaigns can help engage public interest in – and commitment to – solving the state’s shortage of health professionals. Awareness among the voting public and policymakers can serve to increase state and local investments in health workforce development, as well as encourage concomitant policy changes. Increased awareness may also encourage local stakeholders to participate in the kinds of partnerships described above.

## ENCOURAGE COLLABORATION

Solutions to health professions workforce shortages are most likely to come from health care employers, insurers and patient coalitions who have a stake in ensuring that the health care system is staffed by a sufficient number of adequately trained professionals. Schools, colleges and universities are also working to meet this need, but few partnerships connect educational institutions to other stakeholders to serve their mutual interests. For example, better collaboration between health training programs and health care employers could streamline efforts to place newly-trained health professionals in areas of need.

Community-based programs can bring together schools, health care employers and workforce centers to expose local students to health careers. As well, local employers, government entities, businesses and others can jointly fund loan repayment programs, student scholarships or other workforce development strategies. In-house career training programs and other incentives – developed in partnership between health

care employers and local colleges and universities – can further enable employers to offer career advancement opportunities to established health workers.

## IDENTIFY POLICY OPTIONS TO IMPROVE HEALTH WORKFORCE DEVELOPMENT

Policy reviews can help identify programmatic or regulatory barriers that limit the ability of programs to meet the state’s growing need for trained health workers. These reviews can be conducted per individual health profession, and consider changes in laws and regulations related to workforce planning and development. To determine appropriate changes for Colorado, areas for examination may include:

- Requirements that limit who can qualify as clinical faculty or clinical preceptors within health professions training programs
- Requirements that limit the amount of previous education or experience credentials that can be transferred or recognized to assist students’ ability to complete health professions training
- Requirements that limit students’ access to financial support, depending on whether they are full- or part-time students
- Requirements that limit the ability of students to complete health professions training through distance learning or online formats
- Requirements that limit the amount of simulation training that can be provided within health professions clinical training programs.

## INCREASE STATEWIDE INVESTMENT IN HEALTH PROFESSIONS TRAINING PROGRAMS

Colorado’s higher education system is substantially underfunded, ranking 48th in its funding of health sciences programs.<sup>16, 17</sup> This limited investment restricts faculty recruitment, development of adequate research facilities and, ultimately, the number of qualified health professionals available to meet the state’s health care needs.



Systematic efforts to reinforce and expand the state's higher education system are critical, including the following strategies:

1. Increasing the enrollment capacity of health professions training and education programs
2. Developing new sites for clinical training experiences, particularly in shortage areas

3. Providing incentives to promote innovative strategies designed to increase the capacity of clinical training programs (e.g., distance learning, simulation labs)
4. Providing incentives to recruit and retain adequate numbers of faculty.

## VII. LOOKING AHEAD

In Colorado, 31 out of 64 counties are designated as primary care health professional shortage areas.<sup>18</sup> Additionally, 15 counties have two or fewer physicians who provide patient care and 25 counties have two or fewer dentists.<sup>18</sup> Such uneven distribution of health professionals has a profound impact on access to quality care – especially in rural areas.

Statewide, a range of programs and policies to address recruitment and retention, career awareness and preparation, and health workforce planning are moving forward – but, until recently, none of these efforts took into consideration cross-sector concerns related to the supply and demand for health professionals, both now and in the future.

Additionally, the severity of the health professionals shortage requires public policy changes, such as more effective student loan programs; optimized scopes of practice for health care professionals to ensure patients' safety and access to care; increased capacity of the state's health professions schools; and a statewide plan for how Colorado will secure the health care professionals it needs in the future.

Building on the Health Professions initiative, the Colorado Health Professions Workforce Policy Collaborative was established with a three-year (2008-2011) grant from The Colorado Trust to define the complex nature of the state's health care workforce public policy, and develop and support effective changes thereto. In 2008, the Collaborative – comprising some 40 individuals representing hospitals, government

agencies, research and policy organizations, educational institutions and health education centers, among others – studied the issues and began to develop a flexible policy agenda that offers new opportunities for action. Looking ahead, the Collaborative will work to ensure integration of primary, mental and dental provider needs to develop systemic improvements, emphasizing both the quantity and quality of primary care, and addressing the challenges of rural and medically underserved communities.

As well, Colorado Governor Bill Ritter's Jobs Cabinet is working to align the goals and needs of the state's business, education and workforce development communities. With health care widely considered a high growth employment area, concerted efforts by the Jobs Cabinet, the Colorado Health Professions Workforce Policy Collaborative and other statewide partnerships are focused on closing the gap between the increased demand for health care services, and the number and accessibility of health care providers.

*For more information about the Colorado Health Professions Workforce Policy Collaborative, please contact Laurel Petralia, Program Officer, The Colorado Trust, 303-837-1200, [laurel@coloradotrusted.org](mailto:laurel@coloradotrusted.org).*

## » HEALTH PROFESSIONS GRANTEES

Adams State College

Aims Community College Foundation

Arapahoe Community College Foundation, Inc.

Colorado Community Health Network

Colorado Rural Health Center

Commission on Family Medicine

Delta County Memorial Hospital Foundation

Denver Health and Hospital Foundation

Front Range Community College Foundation

Heart of the Rockies Regional Medical Center Foundation

Kiowa County Hospital District

Mesa State College

Morgan Community College

North Range Behavioral Health

Otero Junior College

Pueblo Community College

Red Rocks Community College

Shalom Park

Southeastern Colorado Area Health Education Center

University of Colorado, School of Dentistry

University of Colorado, School of Medicine

University of Colorado, School of Pharmacy

*For detailed program information, please refer to The Colorado Trust's report – Solving Colorado's Health Professionals Shortage: Initial Lessons Learned from the Health Professions Initiative Evaluation – available at [www.coloradotrust.org](http://www.coloradotrust.org).*

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