



# SEED. GROW. HARVEST.

*Understanding the entry-level healthcare  
workforce shortage in rural America*







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# EXECUTIVE SUMMARY

## PROBLEM DEFINITION

Rural America has a stark and growing healthcare workforce (HCW) shortage. This is especially true in the “entry level” positions that are the engines of everyday primary and specialty care. These include medical assistants, certified nursing assistants, and various aide positions. These positions do not typically require experience, certifications, or significant training, and they are often the first step to a more skilled position. Solving the entry-level shortage is essential to solving the larger rural HCW shortage.

A national 2020 Rand Corporation report on the challenges to developing ECHW found that current estimates predict substantial shortages in the HCW in general and among EHCWs specifically, with especially worrying shortages in rural areas, and the supply is forecasted to grow slower than demand, ultimately resulting in a larger workforce shortage (Fischer et al., 2020, p. x). We found there is no standardized path for organizations to identify, enroll, graduate, and hire entry-level healthcare workers, nor for student populations considering entry-level healthcare professions. This lack of clarity has stymied efforts to increase the numbers of students entering and graduating from programs and working in rural areas. As agriculture is a primary industry in rural America, we employed the “Seed! Grow! Harvest!” metaphor to understand the problem. How do we recognize and foster interest in entry-level rural HCWs (seed), place them on the path to being rural HCWs (grow), and help them graduate, employ them, and benefit from their services (harvest)?

Our ALP group represents individuals with firsthand knowledge of the issues facing HCWs in a broad rural range, from New Hampshire to Hawaii. Our team also has experience delivering and managing rural healthcare for a range of constituencies, including small hospitals, rural referral facilities, private and government clinics, and the military healthcare system. All healthcare leaders have a stake in this. The aim of this guide is to:

- Provide a better understanding of the entry-level rural HCW shortage
- Survey the best published practices for addressing the need



- Develop and test a basic method for measuring high school students, interest in rural healthcare work
- Identify actions that will increase that interest
- Assemble this information in useful way for a wide range of stakeholders: students, parents, high school guidance counselors, military transition advisors, clinic and hospital employment offices, and social service organizations.

## RESULTS

- Although there is a growing literature on the scarcity of skilled HCWs, relatively little focuses on entry-level positions.
- The best practices for increasing training, recruitment, hiring, and retention to more skilled positions are mostly also applicable to entry-level positions.
- Surveys of students before and after interventions designed to increase interest in healthcare careers provided some insight into activities that are likely to do so—notably, career fairs and current healthcare professionals speaking about their work. There was also evidence that hands-on and intellectual activities were desired by students.
- Research and individual case studies suggest that military corpsmen returning to rural communities after active duty have skills for and interest in private-sector healthcare careers. However, their training and experience does not often transfer directly into licensed healthcare professions with comparable responsibilities to their active duty experience.

## RECOMMENDATIONS

- The best practices identified for improving seed, grow, and harvest efforts should be broadly available to both potential workers and people in positions of support and influence for the potential workforce.
- The survey yielded interesting and usable data.
- Pre and post surveys of more students in additional activities may provide greater insights into methods for increasing interest in healthcare careers.
- State licensing authorities can consider paths to transfer or accelerate a military corpsman into a licensed healthcare profession upon their entry into the private sector workforce.



## SEED

### INCREASING HIGH SCHOOL STUDENTS' INTEREST IN HEALTHCARE CAREERS

Rural communities often suffer greater healthcare worker shortages than urban settings, due to an uneven distribution of workers. This is a persistent problem for the healthcare system. One starting point for solving the shortage is to inspire middle and high school students' interest in healthcare careers. Part of this project was aimed at identifying activities in which students might be inspired and to measure their interest in healthcare careers before and afterward. Some research and data collection have been conducted on interventions that could increase this interest, and career counseling tools provide assessments of students' aptitudes and interests. A few examples are noted here.

Kadavakollu et al. (2020) researched the impact of a comprehensive 5-week enrichment program' on rural high school students' interest in careers in osteopathic medicine. Select students from rural New Mexico and surrounding areas enrolled in a program at the Burrell College of Osteopathic Medicine, including offering American College Testing (ACT) preparation. The students "gained a realistic perception of the field of medicine and were motivated to attend college and osteopathic medical school" (Kadavakollu et al., 2020). In follow-up inquiries, 96% of the students who graduated from high school were enrolled in college and 73% chose science, technology, engineering, mathematics, or health majors (Kadavakollu et al., 2020).

In a separate study, Ali et al. (2019) evaluated an intervention with an existing program to increase health-care career interest, among

other measures. They focused on Latinx and white rural middle school students. Students participated in a career intervention “developed to facilitate the exploration of health-care occupations among rural students living in immigrant communities.” The study included 94 eighth-grade students. One measure taken before and after the class was the healthcare interest (HCI) scale, which measures “the degree to which students were interested in pursuing health careers.”

Finally Durango High School in Colorado had students use a tool designed to “uncover student aptitudes, then connect these aptitudes to careers and educational pathways” a You Science Aptitude & Career Discovery program (You Science, 2022), and 873 students participated. 201 were found to have an aptitude fit for healthcare support but only 21 had an interest fit.

These findings and previous research informed our seed, grow, harvest action learning project (ALP), which was undertaken to understand how different activities could increase interest in health-care careers among middle and high school students.

We set out to collect information that could be used to improve activities designed to increase students’ interest in healthcare occupations. To accomplish this, we used the same HCI scale used by Ali et al. (2019), with permission from the survey’s author, and with three additional questions asked of students. A list of the survey questions is in Appendix 1.

Several activities were selected for measurement in several communities, most of which were rural. The activities included internships, healthcare speaker presentations, job shadowing, a tour of a health-care facility, and a career fair. They took place in the following communities: Durango, CO; Salida, CO; Traverse City, MI; and San Diego, CA. Before each activity, students were asked to complete an online survey using a Google form. Afterward, they were asked to complete another. 163 students completed the pre-event surveys and 70 the post-event ones. Most respondents were in their junior or senior year of high school and attended a speaking event. However, several participated in other types of events.



*Figure 1. Healthcare Speaker Event*  
(Schermerhorn, 2023)



*Figure 2. Career Fair*  
(Schermerhorn, 2023)

No statistical analysis was conducted, but the students who attended either a career fair or a speaker event had higher average HCI scores afterward than before. Though this was not observed for other events, it is hard to imagine they did not also affect students' interest in health-care careers.

In addition to the HCI measurements, the students also provided text comments to three questions. They cited examples from the activities that increased their interest or did not change their interest and suggestions for improving the activity. All the types of activities were reported to have at least some impact on students' interest, even if this was not represented in the average change in HCI. The individual responses are in Appendix 2.

The most helpful thing to people planning activities may be the suggestions for improvements. Many comments indicated there was nothing to improve, which suggests the activities were of high quality. However, no other feedback was requested to validate this assertion. Other comments showed themes of increasing participation through hands-on activities, increasing the use of visual aids such as photos and videos, providing more examples, and providing more time overall.

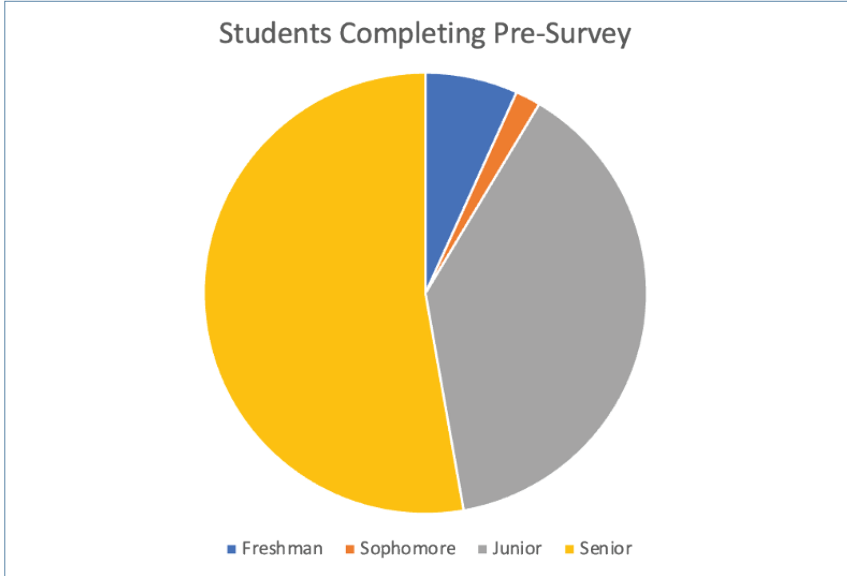


*Figure 3. Healthcare Speaker Event*

Notes: Hands on event with speaker (Schermerhorn, 2023)

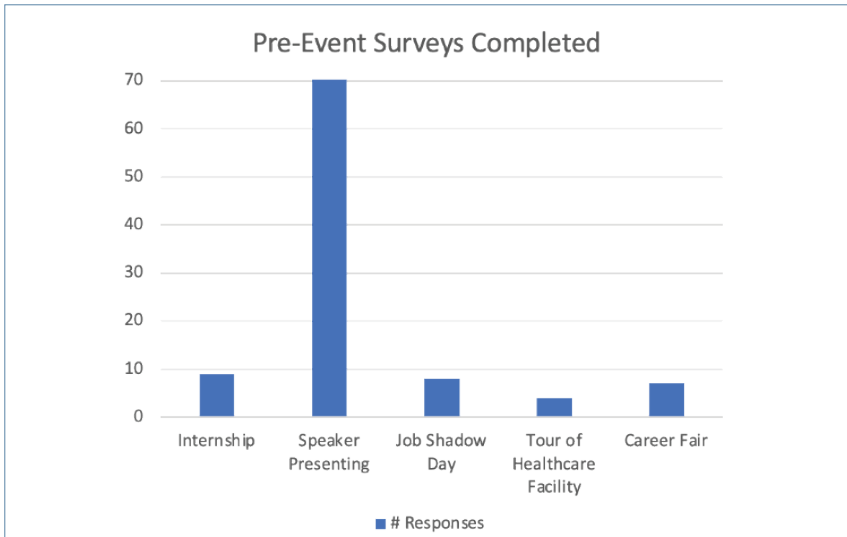
## SURVEY RESULTS SUMMARY

A partial summary of the data collected is presented below.



*Figure 4. Student Survey Completion Data*

Notes: Pre-Survey Data (Theine, 2023)



*Figure 5. Intervention Types*

Notes: Graphical Presentation of interventions. (Theine, 2023)

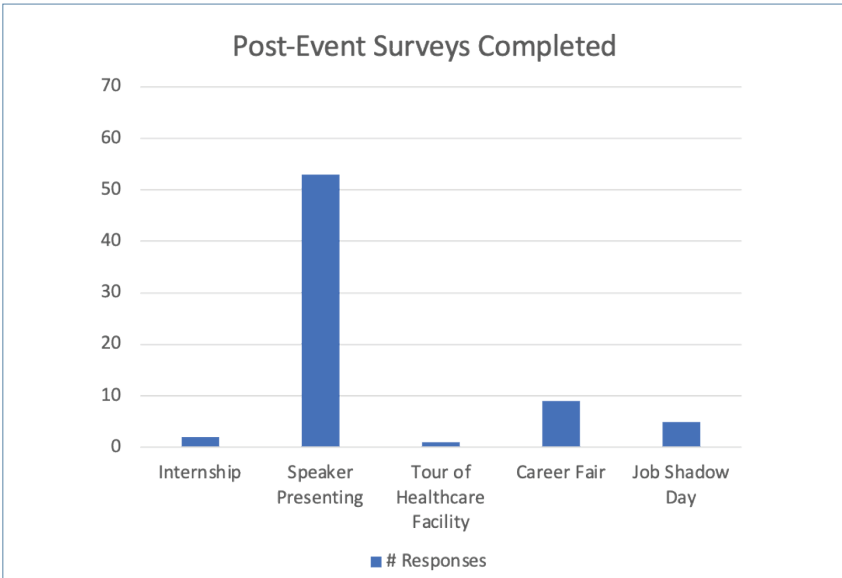


Figure 6. Post-Event Data  
(Theine, 2023)

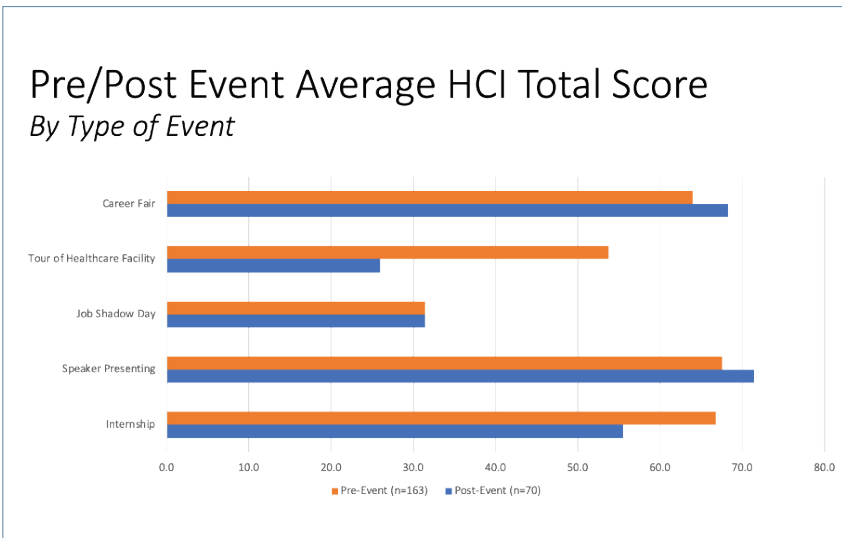


Figure 7. Healthcare Interest Metrics  
Notes: Intervention Success Rates (Theine, 2023)

Members of the ALP working with education and healthcare providers made another observation that could guide efforts in this area. The team members were employees of healthcare organizations, so each had some connection to and influence within one. As the team contacted with high schools and career technical centers, they were able to serve as liaisons between health systems and educational partners. This facilitated access for students and instructors to entry-level jobs, apprenticeships, training, and career exploration events. It also seeded several adjustments to curriculum, and in one case, the adoption of an MA curriculum that resulted in 13 students completing MA coursework before the end of the ALP. Health systems would be well served by employing a high school talent acquisition specialist or a liaison to act as a single point of contact to strengthen connections and communication with local educators and students.





## **GROW**

### **HELPING INTERESTED STUDENTS TAKE THE FIRST STEPS TOWARD HEALTHCARE CAREERS**

Rural and frontier communities have unique healthcare workforce shortages due to their distance from institutions for entry-level training or certification. Nearly 53% of U.S. school districts serve rural communities and students, and according to the Aspen institute, 82% of Americans live in higher education deserts (Burton et al., 2023). The Postsecondary National Policy Institute (2021) reported that rural students are less likely to enroll in college, and their college completion rates are lower than their urban counterparts. The covid-19 pandemic shed light on the disparate supply and demand in the rural workforce and increased awareness of how the pathways from secondary education to employment often fail to equip students with the skills necessary for wage earning or college success. There is a potential at this intersection to develop a new path for the rural entry-level healthcare workforce by joining the movement toward career-connected learning opportunities for secondary-education students.

Employers expect entry-level healthcare workers (EHCWs) be fully trained or credentialed before employment. However, due to the inconsistency and variety of training requirements and the vast array of duties unique to each clinic and community, it is increasingly clear that hiring organizations must take a more active role in training and developing their workers.

One solution to inadequate preparation is to explore collaboration between industry and education with the goal of organically producing

entry-level workers, as is done in the Certified Medical Assistants through a Career Connected Learning (CCL) approach.

In the Student Success and Workforce Revitalization Task Force report for HB21-1330, Colorado Governor Jared Polis argued, “We need to reimagine our approach to higher education and workforce development to foster an environment where our homegrown talent can thrive” (Ambramson & Hughes, 2021, p. 11).

### **The Situation: Healthcare Workforce**

A national 2020 Rand Corporation report on obstacles to developing ECHW found that current estimates predicted substantial shortages in the healthcare workforce in general and among EHCWs specifically, with especially worrying shortages in rural areas, and that the supply was forecasted to grow slower than the demand, resulting in a larger shortage (Fischer, 2020). The report also acknowledged that EHCW workforce candidates “often face substantial financial and logistical barriers to training. These barriers might be especially pronounced for those who live in rural and otherwise underserved communities” (Fischer et al., 2020, p. 58).

A number of programs have addressed the needs of the rural healthcare workforce through a “grow your own” strategy. However, many of these have focused on provider recruitment and retention, with less attention on the support infrastructure in the healthcare system, including allied healthcare professionals and entry-level workers (Coates et al., 2022). For example, the Department of Health and Human Services (HHS) maintains a broad array of health workforce-related programs in its agencies, including the Health Resources and Services Administration (HRSA), the Indian Health Service (IHS), and the Agency for Children and Families (ACF). These programs often take the form of loans and scholarships, frequently contain service obligations, and provide support for educational institutions that train healthcare personnel. They are generally targeted at members of the healthcare workforce who have a bachelor’s degree and often to those with post-baccalaureate training, including physicians and dentists, advanced practice nurses, physician assistants, psychologists, and social workers (Fischer et al., 2020, p. iv).

In 2010, the Administration for Children and Families drew attention to support positions with a program called the Health Professions Opportunity Grant (HPOG), which provided healthcare education and training to recipients of Temporary Aid for Needy Families (TANF) and other low-income individuals and nontraditional students (Office of Family Assistance, 2023). In 2021, the Pathways to Health Careers Act was introduced in Congress, and though it has not yet passed, it would authorize federal grant funding to expand on the success of HPOG (Library of Congress, 2022). In addition to the funding streams under HHS for healthcare workforce development, there is growing momentum from the Department of Education and the Department of Labor. The Department of Labor has expanded the registered apprenticeship program, which has the potential to increase skill levels without high costs, create jobs with higher wages, and reduce the work burden on nurses and doctors (Fischer et al., 2020).

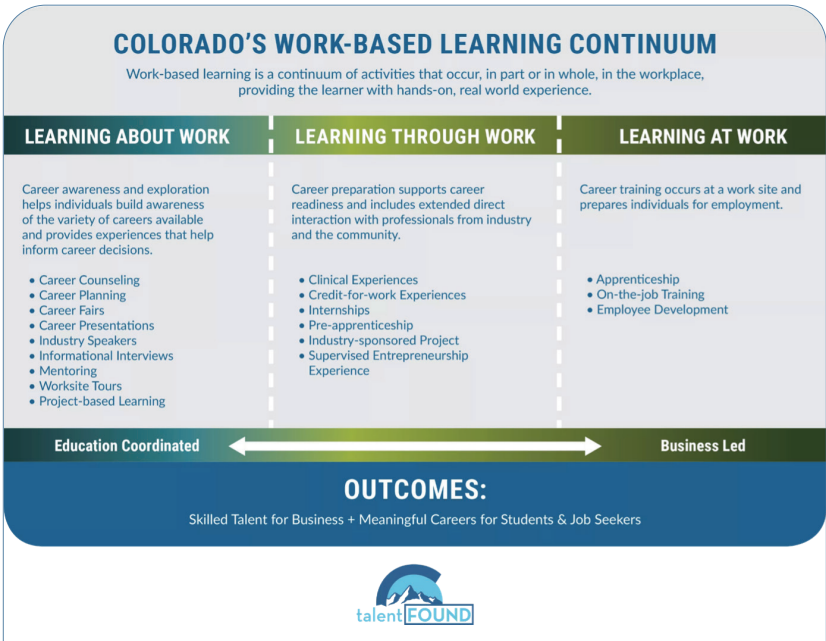


Figure 8. Colorado Work Based Learning Continuum  
 Notes: From *Colorado Work Based Learning Continuum* [Image], by Colorado Workforce Development Council, 2023 ([www.cwdc.colorado.gov/strategies/work-based-learning](http://www.cwdc.colorado.gov/strategies/work-based-learning)).

## Opportunity

Apprenticeships have the potential to improve training in several industries, including healthcare. According to Shana Welch, executive director of talent acquisition and workforce programs at an integrated managed care organization (MCO) in West Michigan, “not only were we filling the need to develop a pipeline of talent because we had a shortage in our region, but it was also important to us to make sure we were reaching into our own colleagues, giving our entry-level colleagues an opportunity to get on a career track to more of a middle-wage job” (Fischer et al., 2020, p. 52). Bringing education out of the classroom and into the workplace allows students and employers to focus on delivering higher-quality health care.

Collaboration between industry and education creates a new educational model that synthesizes workforce needs through a unique personalized training program:

Work-based learning models that help frontline staff gain competencies through a combination of onsite, hands-on, and in-class learning often are best delivered when employers, educational institutions and other community institutions work together. Partner institutions can analyze workforce data and identify gaps, determine the needed skills, recruit candidates, and provide training in coordination to produce the most effective workforce. Employers are especially important participants in such partnerships because they are the most knowledgeable about local workforce needs and challenges. (Fischer et al., 2020, p. 59)

Larger school districts may have the resources to offer parallel education tracks, such as health career academies. However, rural and frontier communities lack the infrastructure to create these offerings. As a result, community colleges play a critical role for entry-level work by expanding clinical training opportunities, developing recruitment efforts to include rural and underserved communities, and engaging post-secondary students before graduation.

The collaboration between community colleges and healthcare industry professionals creates meaningful, rigorous, and relevant experiences:

Most EHCW training curricula are developed and offered by community colleges and technical institutes. In the community college context, professional curricula are determined by committees, often with oversight from a state community college board. Curriculum content therefore largely reflects the competencies perceived at a local level to have the greatest value for entry into the profession. Therefore, there is a potentially fruitful connection between community colleges and health care delivery organizations, the needs of which the curricula are intended to meet. This connection could create a built-in incentive to broaden curricula to respond to the increasingly diverse needs of these employers. For some on-the-job training that attempts to broaden the competencies of the existing workforce, content is determined at the discretion of employers, typically with an emphasis on specific skills that employers need. (Fischer et al., 2020, p. 45)

One niche that can be explored here is increasing collaboration between industry partners and educational institutions in growing the workforce, and specifically engaging community healthcare partners with the work-based learning initiatives that are expected to be the future of secondary and post-secondary education.

### **Why Now? Because There Is Funding**

Internships and apprenticeships can play a key role in workforce development, and the healthcare industry must assume responsibility for accelerating the training of its workforce. Federal and local governments are currently prioritizing workforce development by funding work-based learning and similar initiatives. President Biden's FY2023 budget proposal would invest heavily in career connected high schools by funding partnerships between local educational agencies, community colleges, and employers to encourage students to earn college credit while in high school through dual enrollment in core content and career and technical coursework delivered through work-based

learning opportunities (U.S. Department of Education, 2022). The Biden-Harris administration has launched an initiative supported by the Department of Commerce and Labor to increase access to high-quality training programs to help young Americans pursue jobs in current high-demand fields and prepare for future careers. This effort unites key agencies to strengthen the connections among K-12 education, post-secondary education, and workforce programs. The administration is investing in expanded access to skills-based learning and training pathways. Federal funds are available to programs that expand work-based learning opportunities (U.S. Department of Education, 2022). According to secretary of education Miguel Cardona,

It's time we bridge the divide between our K-12 systems and our college, career, and industry preparation programs, which leave too many students behind and perpetuate inequities in our most diverse, underserved, and rural communities. . . . An education system reimagined for the 21st century engages youths of all ages in the power of career-connected learning and provides every student with the opportunity to gain real-life work experience, earn college credits, and make progress toward an industry credential before they graduate from high school. Today, the Biden-Harris team is raising the bar with new investments and resources to support intentional collaboration between schools, colleges, workforce development agencies and industry partners and build clearer pathways for students to rewarding careers and lifelong success. (U.S. Department of Education, 2022)

Because career-connected learning merges educational standards with industry-recognized certifications, a workforce that meets the needs of rural communities is within reach.

In May of 2023, Colorado governor Jared Polis visited the Colorado Mountain College Salida Campus, where he signed HB23-1246 into law. This bill will support Colorado's workforce by breaking down financial barriers to new, high-demand careers, specifically associate's degrees and industry certificates in critical fields like education, fire-fighting, law enforcement, nursing, and construction (Colorado Senate Democrats, 2023):

“Colorado’s zero-cost credentials and degree program has already offered thousands of Coloradans a free pathway to degrees in critical fields such as nursing and emergency response,” said Speaker Julie McCluskie, D-Dillon. “With the law Gov. Polis just signed, aspiring teachers, childcare workers, nurses, firefighters, law enforcement officers and construction workers will soon have a completely free pathway to the career of their dreams. This law will boost our economy, address Colorado’s workforce shortages, and help fill critical jobs—especially in rural communities.” (Colorado Senate Democrats, 2023)

As a result of this nation-wide effort, Jobs for the Future (JFF), a national nonprofit that promotes transformation of the workforce and education systems to develop scalable approaches to economic advancement, reported argued for a radical restructuring of education for grades 11–14, erasing the line between high school and college to create opportunities for the students the current system leaves behind and making the case for a new institution, neither high school nor college, designed to better meet the needs of young people after 10th grade and prepare them for work (Hoffman, 2021).

According to JFF, Structural barriers to improving college completion rates and career success in the United States is the disconnect between high school, higher education and our workforce systems that are inherently misaligned in their expectations, policies and funding streams and are difficult for students to navigate. The traditional route of high school followed by college followed by career works well for financially secure and well connected, well supported students and families but that trajectory fails most young people in this country. (Hoffman et al., 2021)

### A Pilot Program

First Street Family Health (FSFH) is an independent family medicine clinic in Salida, Colorado, where a rapid increase in housing costs has drastically limited their ability to recruit, hire, and retain entry-level workers to assist at the front desk or work as medical assistants. In

2021, FSFH's physician leaders and clinical nurse manager engaged a key stakeholder in the community, whose role as liaison between Salida HS and Colorado Mountain College was to create an internship program for concurrent enrollment students. This allowed students to work and learn at the clinic for ten hours a week while earning college credit. Salida now has 75 community partners offering internship programs in multiple industries. The student, internship coordinator, and clinic leaders collaborated to develop a curriculum that provides students with meaningful learning tailored to their goals (Appendix 3).

The first class of interns began in the fall of 2021. Three concurrent enrollment students in grades 11 and 12 rotated through the various departments of the clinic, learning the tasks of front office, back office, medical assistant, and RN. Their presence in the office varied, depending on their other formal classes and extracurricular activities. One student expanded the hours into a paid position during internship, as she was able to work nearly 20 hours a week. Upon graduation, she went to a four-year institution in Colorado with the intent of pursuing a career as a paramedic. Another intern worked part-time in the office after her internship semester until she turned 18, at which time she was able to work at the local hospital as a phlebotomist. She will begin college in the fall pursuing a career as a physician assistant.

The third student completed her internship as a junior and continued to work part-time at the clinic through the remainder of the year and the following summer. In her senior year, she began a second-level apprenticeship, the first local student to pursue this level of career-connected learning credit. The apprenticeship has become a paid position and requires at least 20 hours of work per week. The curriculum was co-developed by the student and precepting clinic team and includes more advanced skills that the student will benefit from directly and that will significantly affect the daily functioning of the clinic. One principal role of the apprentice is to tutor the next class of interns. To date there have been three, and this apprentice has mentored their transition into the role. After completing her apprenticeship credit during the academic year, she worked full-time during the summer and sat for her CMA certification before heading off to college. IN 2022-23, two



more interns have rotated through the clinic, and one is poised to seek employment and possible apprenticeship opportunities through the summer and into next year.

In addition, the pilot program has been positively received by parents: We are very grateful for the collaboration between First Street Family Health and Colorado Mountain College in the development of an internship opportunity offered to our daughter. The providers at FSFH have been amazing mentors to our daughter and their patience and enduring desire to share their love of medicine has allowed Charlie the opportunity to get hands-on experience in all aspects of working in a community clinic. The FSFH team has not only encouraged Charlie in her pursuit of medicine, but they have also embraced her as an individual and enabled her to feel what it will be like working within a team of medical professionals. I sincerely hope that this rewarding experience will continue to be offered to future students.

### Why should we try?

Few employees see EHCW roles as long-term employment, so leaders must improve the conditions of the healthcare work force by prioritizing recruitment and retention. For instance, low wages coupled with high stress have made it difficult to retain ECHWs in positions like medical assistants, certified nursing assistants, and receptionists. Consequently, reframing recruitment to target younger audiences is one step toward refilling entry-level positions. Because the current framework has high turnover and intense burnout, fostering excitement in interns by creating a distinct pipeline into higher paying jobs will engage them and renew the energy propelling the ECHW workforce.

High school students, when given the opportunity, often surprise people with their innovation and hard work ethic. It adds to their value that they are locally housed and insured by their parents or caregivers, which makes them less expensive employees. Many are grateful for the opportunity to learn and to contribute to the industry, especially because they are learning skills that can translate into earning wages

while in school. Unforeseen problems can also create opportunities for students to confront real problems in the field. For example,

In 2021 and 2022, our practice experienced the tragedy of a cyber-attack and data loss which nearly crippled the clinic functions for over a year. Without the additional help of our interns, there is no way we would have made it through this adversity the way that we did. The interns have brought a level of energy and excitement to learning and performing the daily activities of a primary care clinic and that infectious spirit has positively influenced our team including our more senior staff members. Our interns have filled into the work schedule and allowed us to see patients on days when we otherwise did not have any support staff available to work. The incremental benefit and improvement in our clinic from an engaged, excited, creative and grateful part time student is often more beneficial than that of a full time, uninspired, burned-out adult employee.” (Grant-Nierman, 2023)

In a perfect world, interns would pursue healthcare careers and return to contribute to their own or other rural communities. In this style of program, young people can feel pride in providing value immediately. They are learning hands-on skills that will serve them throughout their educational and professional journeys.

Another arguable success of the program is letting students find out early that health care is not for them. The third internship cohort included a young woman who came from a long line of healthcare and related professionals, and who always assumed she would work in health care. After interviewing at the doctor’s office, a dentist’s office, and a veterinarian’s office, she realized that none of them captured her attention, and she decided to intern in welding instead. There is tremendous value, financial and otherwise, in her realizing this before incurring educational debt by going into the wrong profession.

Colorado Mountain College internship coordinator Fred Maxwell affirmed the benefits of career-connected learning:

Watching young professionals engage in the workforce has been one of the most impactful things I have ever witnessed in my 17 years in education. The level of confidence and engagement that a young student must contain goes above and beyond what they need in the traditional classroom. First Street Family Health has taken young students interested in the medical field and allowed them to flourish. From basic patient visits to full-on apprenticeships that allow students to be in the room when a baby comes into the world! I believe this is the future of education and workforce development. Allowing us to be a part of the solution that helps create a passionate workforce that gets exposure early on and that can make informed career related decisions based on experience rather than theory.



*Figure 9. Career-Connected Learning*

Note: Intern performs hands-on learning. (Grant-Nierman, 2023)

## Other Successes

### **Rural New Hampshire: A workforce development strategy at Cheshire Community Hospital**

Melissa Gartman was a healthcare recruiter filling entry-level positions at Cheshire Community Hospital in Keene, New Hampshire. She improved recruiting, hiring, and retention of staff in a rural, northern

New England community hospital. In 2020, Dartmouth Health Rural Workforce Institute funded several positions aimed at improving recruiting and retention of healthcare positions in rural communities. Gartman was placed at Cheshire to meet a significant need there.

Gartman found success using several strategies. She worked closely with the career center at Keene High School to establish a visible path for children interested in healthcare careers to job shadow, and established classes towards licensure at Cheshire Community Hospital as part of the high school curriculum. This collaboration is still new but with continued efforts and dedicated resourcing, it can grow. The Keene High School career center now has two healthcare cohorts with 12 students each. These students participate in 2 to 4 hours of job shadowing and academics at the hospital. After graduation, they are hired on with certifications as medical assistants (MAs) or licensed nursing assistants (LNAs).

Gartman evaluated barriers to entry-level hiring and identified long academic pipelines with no salaries as a significant problem. Working with the hospital's human resources, she created unlicensed positions for hiring while candidates awaited their class start times. Patient sitter mobility techs (PSMTs) fill critical needs such as basic supply runs and transportation and movement of patients. These tasks are performed without specific licenses, and Gartman hires PSMTs in advance of academic classes that will lead to licensure. Meanwhile, cultural integration to the community hospital happens immediately, and many of Melissa's hires report positive work environments and the intent to stay on long term. Gartman has reduced LNA and MA openings by 94%.

Gartman reported on future community endeavors, using her skills to partner with Maplewood Skilled Nursing Facility and the local community center to emphasize the need for housing, particularly for Keene State Nursing graduates. She plans to use her knowledge of Cheshire, her enthusiasm for her hometown, and her connection skills to convince graduating students to stay and choose Cheshire Community Hospital.

Gartman attributes her success to two main factors. First, her position is full time and dedicated to recruiting and entry-level hiring in the rural community. She works with the people of Cheshire Community Hospital and loves working there. With every positive contact because of recruiting, especially with young people, she can talk honestly about her enthusiasm for her organization, including ways to start without a lengthy classroom obligation. She is empowered to offer interested and qualified parties a starting salary even without a license, and she has time to collaborate with high schools to offer employment paths to students. Melissa is personable, easily reachable, and dedicated to her organization, and she is paid to hire people with specific skills through a grant dedicated to rural communities. This combination has proven successful in a short time, in a case where the well-being of the hospital and healthcare access for all is critical for the long-term health of this community.



## HARVEST

### SUPPORT NEWLY TRAINED AND RETURNING HEALTHCARE PROFESSIONALS IN RURAL COMMUNITIES

The fruits of rural frontline workforce development can be seen in medical systems and community hospitals across the country. There are also opportunities for licensing authorities to recognize military-trained corpsmen's experiences to transfer their skills to private-sector health care. Here are a few examples.

#### **RN Who Started as a Medical Receptionist**

Animas Surgical Hospital recently welcomed a newly graduated nurse who had been an employee of the hospital since 2015, starting as a medical receptionist. She worked on the customer relations team, coordinating benefits, as a surgery scheduler, and more. In 2019, she entered a nursing program at a local community college, and in 2021 completed her associate's degree in nursing. While in school, she was able to retain part-time positions at Animas. She also completed several of her clinical rotations at the hospital. Upon graduation, she was hired full-time as a nurse in the emergency department. She quickly enrolled in a one-year nurse residency program offered by Animas in collaboration with the Colorado Center for Nursing Excellence: the Colorado Rural New Graduate Nurse Residency (Colorado Center for Nursing Excellence, n.d.). She completed the program in January 2023 and remains an employee of Animas Surgical Hospital.

#### **Meggan: Rural Eastern Colorado**

The University of Colorado Medical School put effort into engaging rural people and building and supporting the rural health care

pipeline, and funded a Colorado rural health scholars program. This program brought 20 rural students from around the state to Denver for a six-week medical summer camp. Students stayed in dorms, attended lectures, and participated in cadaver labs and hands-on learning labs. They also got to volunteer and shadow in different departments of a hospital a few days a week. The leaders and counselors for the program were 1st- and 2nd-year medical students. After completing the program, Meggan pursue a medical degree and now practices family medicine in a rural community in Colorado.

### **Josh: Erie, Pennsylvania, from HOSA to NASA**

Josh's journey into healthcare began when he was 16 and enrolled in a vocational education program at a neighboring high school. The two-year health occupations class was designed to teach fundamental entry-level skills leading toward certification and placement in certified nurse aide positions upon graduation from high school. With a focus on guest presentations, regional competitions, and health fairs, the Health Occupations Students of America (HOSA) club affiliated with the class was instrumental in galvanizing his interest in a healthcare career.

Josh did not enter nursing but instead went to medical school and was selected for commission in the U.S. Navy through the Health Professions Scholarship Program (HPSP), an award that paid for tuition, fees, and living expenses while in school. After completing a general surgery internship at the National Naval Medical Center in Bethesda, Maryland, Josh was selected for flight surgery training. He spent next six months at the Naval Aerospace Medical Institute (NAMI) in Pensacola, Florida, learning to fly fixed and rotary wing aircraft, and received special training in aviation illnesses, injuries, and mishap investigation. After graduating, he was assigned to a P-3 squadron stationed in Brunswick, ME. He spent the next three years going on multiple detachments, and a six-month deployment to the Middle East in support of Operations Iraqi Freedom and Enduring Freedom.

Josh was eventually selected as a space shuttle medical support flight doc for NASA. He was sent to Patrick Air Force Base and Kennedy Space Center for training in space medicine and shuttle recovery and

mishap management. After this, he returned to Maine until August of 2007, when he was assigned as one of four flight docs to provide medical coverage for STS-118, the landing of the Endeavor shuttle upon its return from the International Space Station. Josh believed this experience was only made possible by his work as a Navy flight surgeon, which in turn was only possible because of his high school experience in HOSA, which sparked his pursuit of a career in health-care. Josh currently works as chief of surgery at LECOM Health in Erie, Pennsylvania, and part time treating patients at the Erie Veterans Administration Medical Center.



*Figure 10. Manned Space Flight Support Office Patch*

Notes: (Tuck, 2023)

## Could Veterans Be Important for Addressing the Rural Healthcare Shortage?

Veterans leaving military service largely want to settle in small communities with low costs of living. Almost a quarter of veterans in the United States, 4.7 million, return from active military careers to reside in rural communities. They choose rural communities for a variety of reasons: proximity to family, friends, and community; open space for recreation; privacy; low cost of living; and less crowded towns and schools (VHA Office of Rural Health, 2013). People leaving the military are young and seek careers into which the technical skills learned on active duty can be transferred. In the army and navy, almost 40% of enlisted sailors and soldiers choose a rating in military medicine. Half choose not to reenlist, and leave after four years with medical training that can contribute to



passing the EMT or MA exam. Rural healthcare facilities can benefit by recognizing and recruiting these veterans because of the unique strengths that they can bring to any team or work environment.

### **What Makes Military Members Great Hires?**

Military medical professionals include as army medics, navy corpsman, and air force medics. Enlisted professionals in military medicine perform the functions of MAs and LVNs at military hospitals worldwide. They are trained in first aid buddy care, mirroring EMT functions in the local community. Half of enlisted military medics leave the military after four years, three of which they spent perfecting their medical skills. Many veterans leave the military with technical skills, maturity, work ethics, and character that could benefit any company. Most military medics have the certification to be an MA and the technical background to be hired immediately, especially in rural healthcare settings, where employment certification can be obtained on the job in a short time.

### **What Programs Exist to Ease the Transition for Military Members?**

#### ***United Services Military Apprenticeship Program***

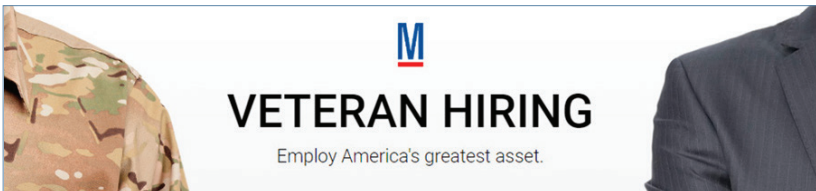
The United Services Military Apprenticeship Program (USMAP) provides active-duty members of the navy, army, marine corps, and coast guard, including the Navy Training and Administration of Reserves (TAR), Active Guard Reserve (AGR) Army, and Active Reserve (AR) Marine Corps Service, the opportunity to improve their job skills and complete civilian apprenticeship requirements while on active duty. The U.S. Department of Labor (DoL) provides a nationally recognized certificate of completion for a trade (USMAP, n.d.). Military medics can enter skills completed on active duty and receive credit toward these certificates, for use on their resumes and for hiring at civilian institutions. On-the-job training may be needed, but the certificate can eliminate a lot of employee education pipelines and lead to quick hiring. Service members can log skills and training and match them to civilian hiring standards.

## ***Navy COOL***

This is a credentialing program in which members of the military can be funded to sit for state-level credentialing exams such as LVN, ENT, and MA (DOD COOL, n.d.). Departing military members are required to attend transition classes and meetings that provide information on Navy COOL. They are ready to work if they pass this exam.

## ***Veteran-Friendly Businesses***

A healthcare facility can attract veterans and learn how to employ them by becoming a veteran-friendly business and educating HR staff on how veterans seek rewarding employment. Veterans seeking employment with veteran-friendly employers can connect with state veteran resources through the National Labor Exchange (National Labor Exchange, n.d.). Employers interested in advertising veteran employment opportunities can also take advantage of the state job banks found there.



*Figure 11. Veteran Hiring Ad*

Note: From Employer Resource Center [Photograph], by Military.com, 2023 (<https://www.military.com/hiring-veterans>).

## ***Skill Bridge Programs***

Skill Bridge is an approved and funded transition program for all active military employees. Each year, approximately 200,000 members of the U.S. Armed Forces, stationed at more than 140 installations worldwide, leave active duty and re-enter the civilian work force or pursue higher education. Through Skill Bridge, industry partners benefit from early access to the experience, skills, and work ethic of these veterans. Employers can craft Skill Bridge programs to meet their specific needs, and match those needs to skills and abilities of veterans at no cost.

The Department of Defense pays salaries and benefits of military members participating in Skill Bridge. The opportunity can last up to the final 180 days of service. The DOD aims to provide not just short-term jobs but careers with good pay and opportunities for advancement, just as they had while in the military.

### Barriers to Military Hires

Military medics often leave with battle-tested technical skills. However, none of the services except, rarely, the air force allow medics to leave with certifications recognized by civilian licensing agencies. This can lead to combat veterans at least 23 years old looking for entry-level healthcare positions with no certificates in hand. To be hired, veterans still must pass through training and hiring pipelines, often 12-14 months in duration just to earn a certificate on material they already know and tasks they have performed for years. Legislation in Colorado and Vermont has been proposed to allow military medical veterans to qualify for licensing without additional schooling, but it has yet to be approved. Because of strict licensing laws nationwide, only small medical clinics would be able to allow on-the-job training without having veterans undergo demoralizing, costly, and repetitive training simply to earn job placement that they could have received immediately upon discharge.

### Barriers Facing Veterans and What Healthcare Organizations Should Consider

According to the Rural Health Information Monitor (Snyder et al., 2016), there are four major barriers between veterans and healthcare careers.

**Navigating educational benefits.** The GI Bill determines educational benefits based on a veteran's period of service, deployments, and disability status. Veterans may need help from a benefits counselor to understand their eligibility (Mead, 2017).

**Translating military training into college credit.** This can save time, reduce training redundancy, and allow veterans to use their educational benefits for needed classes. But not all civilian colleges and

universities recognize military training and classes as meeting academic requirements (Mead, 2017).

**Meeting credentialing requirements.** Different states have different credentialing requirements. Veterans without clear guidance on these requirements may have to retake classes or exams (Mead, 2017).

**Learning about healthcare career opportunities.** Some career services and job programs focus more on helping veterans find work quickly than build careers.

Employers should not underestimate the obstacles faced by military members who must start at the bottom of the training ladder. But rural healthcare organizations can capitalize on hiring veterans who want to return to rural communities by offering careers with progression, a sense of community, and accelerated career growth. Healthcare organizations that recognize military training could mitigate barriers to hiring skilled employees.



*Figure 12. Veteran Hiring Pledge Seal*

Note: From Take the Veteran Hiring Pledge [Photograph], by Military.com, 2023 (<https://www.military.com/hiring-veterans/pledge>).

## EXPANSION

It is important to discuss shifting the paradigm of the entry-level work force away from creating “lifers” in these positions, to recognizing these positions as potential launching points for careers.

This action learning project demonstrated that hospital employers must shift their approach to the rural healthcare workforce shortage, with a focus on filling entry-level positions with employees who may not be interested in long-term commitments. These kinds of jobs are often ideal for paraprofessionals who aspire to healthcare careers beyond the entry level. In these settings, such jobs can serve as a good jumping-off point where employees can gain experience, skills, and networks to advance their careers. Hospitals must pivot to these desires and embrace the idea that even having short-term, rotating personnel in entry-level jobs is better than leaving such positions vacant.

# APPENDIX 1

## HCI SURVEY QUESTIONS (ALI ET AL., 2019)

Respondents indicate how much they like doing each activity on a scale from “Dislike Extremely” to “Like Extremely,” on a six-point scale. The following activities are included on the survey:

- Searching for information about healthcare careers
- Reading about famous people in healthcare careers
- Talking with professionals in my chosen career path
- Asking school counselors or teachers for information about my future career
- Volunteering in a healthcare-related setting
- Thinking about a career in a healthcare setting
- Shadowing a healthcare professional
- Taking classes related to careers in a healthcare profession
- Discussing healthcare professions with my family
- Discussing healthcare professions with my friends
- Watching a healthcare-related program on TV
- Participating in a healthcare career fair
- Listening to a healthcare professional talk about their work
- Taking a field trip to a healthcare-related setting.

These ALP project questions were added to the HCI:

- Provide three examples of things that increased your interest in a healthcare career from the activity or event.
- Provide two examples of things that did not change your interest in a healthcare career from the activity or event.
- Provide one change you would make to improve the activity or event.

## APPENDIX 2

### RESPONSES TO FREE TEXT QUESTIONS ON POST-EVENT STUDENT INTEREST SURVEY

*Question 1: Please provide three examples of something that increased your interest in a healthcare career from the event or activity.*

#### CAREER FAIR

- I liked seeing how people worked in their field and doing hands on work!
- Family members
- Learning from doctors who are in a healthcare career
- Going to a hospital and seeing the different things that they do
- Fun setting, saving lives, good paycheck
- Saving people's life, potentially discovering a new illness, helping people feel better
- \$\$\$
- Cutting people open
- Dealing with dead people
- Saving lives
- Being able to help younger children, drawing blood, sterile environment
- Grey's anatomy, pharmacy practice, checking my veins at event
- Cool tools, models, diagrams
- Radiology, surgery, pharmacy
- Interacting with professionals
- Helping people
- Learning about the career
- Interacting, asking questions, meeting professionals
- Physical therapy, respiratory therapy
- They find bones in the tools
- They have a cool folding technique
- They have a big microscope
- When my grandma had a stroke, my aunt's breast cancer, my grandpa's heart attack
- Family, being able to save lives, money

- The person
- Folding
- The human body and how it works
- Human body

## INTERNSHIP

- The number of options to specialize in your field
- Getting into nursing school, interning, and working as a lifeguard

## JOB SHADOW DAY

- Passion the officers had for their jobs
- How they are serving the country
- Nothing
- Having a sense of purpose or service
- Saving lives
- Active physical work
- Learning about TCCC
- Watching naval corpsmen in training
- Getting guidance from medical professionals

## SPEAKER PRESENTATIONS

- Learning about daily routines, cool surgeries, how the schooling is different from perceptions
- Building relationships, money, activities
- Day in the life, surgery, hours
- Imaging, hands-on, real experience
- The salary
- The different certifications you can get
- The different specialties within the career
- Graphic imaging
- 3-D models
- Explanation of day-to-day tasks
- It helped me zero in on what I want to do, how it is done, and what can happen while doing it.



- Effect of patients, hands-on job
- Surgery
- Working with people
- Animals
- Learning about using the catheter to retrieve blood clots, the variety of what neurosurgeons do, and the daily schedule of a neurosurgeon
- (1) Having a family-like work place. (2) New methods I would get to witness. (3) Getting to diagnose and perform.
- (1) Talking about the day-to-day life. (2) Saying the pros and cons of his job. (3) Telling stories about surgeries that he has done in the past.
- Nothing
- Being able to help patients
- Meeting new people and becoming a family or team
- The spine is very fascinating.
- Learning about their experiences, seeing pictures, learning about how to read x-rays
- Pictures, real life stories and experiences, asking questions
- Helping people, working hard, and waiting with others
- Him talking about the pros and cons of his job
- Talking about the different kinds of sub-specialties
- Him talking about his experiences
- (1) The different kinds of procedures. (2) Learning about the education (3) Learning about the job itself.
- (1) Learning more about patient outcomes and how to react to certain situations. (2) Learning that it is okay to not be 100% set on a specific job (if my mind changes while I'm in school, it's okay to change my job interest). (3) Seeing how excited the speaker was to talk and teach about his career.
- (1) Someone coming in to explain their profession. (2) A good intro of themselves. (3) specific examples.
- Music therapy, psychology, and pharmacology
- Salary
- Surgery
- X-rays
- Seeing images, explaining health
- Talking to a real professional and gaining knowledge

- Having someone who knows what they're talking about explain something
- Working with images
- Pay, technological advances, education opportunities
- Neurology and spine surgery, and surgery in general
- (1) Learning about how the job affects someone's personal life and college. (2) The amount of school needed for the job. (3) Seeing physical demonstrations about related healthcare careers, such as simulations.
- The differences between injuries
- I liked the hands-on toward the end. It helped me understand the structure and what was actual-actually happening in the process with the screw. I also enjoyed the pictures as visuals, along with the personal experience stories.
- He explained that he had trouble getting to his career, which made me feel better about finding a career in healthcare. The pictures and models I got to see and hold. Explanations of helping people made me have empathy and want to help people.
- Explanation of internship
- Case examples
- Other surgical teams' explanations
- Spinal surgery, advancements in technology
- Decreasing recovery time due to invasive technology
- The different broad ranges of specialties
- I'm intrigued and curious to learn more about the advancements in healthcare.
- Nothing really changed.
- (1) The pictures. (2) The explanation of ways to do surgeries. (3) The amount of knowledge one person had.
- The tools, the speakers, the pictures
- The opportunities to expand afterwards, teamwork, and collaboration
- The number of weird things that can be seen, the sense of community, and the fact that the workplace is kind of like a second home
- Learning to stay active, learning about how I want to do things, learning how to work with people
- Three things that have inspired me were how much they help with surgeries and cases, the fact that you can study only stuff you like, and how much studying you have to do.
- Different terms, relationships between coworkers, and blood and guts
- The opportunities, the benefits, and the experience

- The hands-on work, learning about MRIs, and seeing what an OR looks like
- Learning about pay
- Having the opportunity for things I'm interested in
- Having the opportunity to shadow
- Learning about what all they do
- Seeing all the different tools
- Being able to use the tools
- One thing I heard was during the surgical technologist presentation, about some of the tools they use in different procedures. Besides that, nothing else in the presentation increased my interest in healthcare careers.
- Pictures, examples, and day in the life
- Hands-on tools
- The tools used in surgery
- Schooling
- Job responsibilities
- I enjoyed seeing the X-rays. I also liked seeing the surgeries and the stories from the profession.
- The expanders for the spine
- Being able to do a lot more than I thought, like there is more that comes with being a radiologist or a surg tech.
- The stories
- The hourly wage
- The way the job works in detail
- Demonstrations, egg presentation, personal health stories about experience
- Money, the speakers, the presentation
- This presentation
- Brains, benefits, being a part of health care
- Very interesting learning about injections, brain bleeds, and tumors
- The number of places and specialties they can get into
- The variety of options, different experiences, and traveling
- Talking about schooling and day-to-day jobs, being shown that there are many different positions in the field you choose
- The donuts, their stories, and the information they shared
- (1) All the options. (2) Moving around and the go go go program. (3) Paycheck.

- (1) Learning about injections. (2) Learning about procedures on the brain. (3) Learning about the difference between NP and PA.
- The career options
- The examples and pictures from patient cases
- How they presented
- (1) Variety of options. (2) Paycheck. (3) Caring for people.
- Hearing personal examples of how they got into their professions
- The demeanor and attitude people should have and take in the medical field
- Hearing about the variety of options and opportunities there are in the medical field
- (1) Learning about what they do in day-to-day life. (2) Seeing pictures!

## TOUR OF A FACILITY

- Seeing the environment
- Relationships with coworkers, ER, recovery

*Question 2: Provide two examples of something that did not change your interest in a healthcare career from the activity or event.*

## CAREER FAIR

- Nothing! It all made me more interested!
- Seeing blood
- Working with wounds
- Grey's anatomy, the tools
- Long lines
- Checking out mouths
- Talking about examples of health care, being shown pictures of health-related things
- Candy in a bedpan
- Being shown but not able to participate, seeing some pictures
- Prizes and stickers
- Candy, stickers
- The interactive elements
- Lots of blood

- They need it to be clean
- The folding paper
- How to fold, about tools

## INTERNSHIP

- The surgery aspect and what it entails
- Seeing blood and interning

## JOB SHADOW DAY

- Whole bunch of blood and gore
- The blood and the gore
- Seeing blood from an IV
- Dealing with serious injuries on a daily basis

## SPEAKER PRESENTATION

- How much schooling is involved, and the long hours that you work
- Time consuming, time in school
- Schooling, field
- The idea of operating
- The amount of school and how demanding the healthcare system is
- The amount of schooling required
- Time commitment
- The fascination, still being able to serve in military while performing my normal job
- Amount of schooling, time commitment
- Time consuming
- Having someone else's life in your hands
- There was nothing that didn't change my interest in a health care career.
- (1) Hours worked. (2) Negative aspects like losing patients.
- (1) Talking about it just makes me want to go out and do more! (2) Learning about how much each person's job really does matter!
- Almost anything. Honestly! I don't like surgeries.
- A lot of schooling
- A lot of loss from patients

- Seeing surgery examples, learning about new technologies
- Seeing new technology that can help doctors, hearing statistics of people that were helped
- The time commitment
- Talks about AI
- Pharmacy technicians
- I already wanted to go into health care, and I like surgery.
- My direct interest in going into neurology
- The level of word complexity
- Neurology in general, the blood
- People dying, and having to deal with the family
- Surgeries
- I do not want to not have time for my family.
- No example I can think of
- The education requirements
- The amount of time spent and needed in the hospital, as a neurologist or neurosurgeon will be spending most there time there
- It's pretty difficult and anxiety inducing, so I can't say neuro-surgery.
- Cleaning, remembering the instrument names
- The brain and bones. I belong in OB.
- Staying in the career I want to be in. I don't have a second.
- I have my goals set for what I want, and two things that haven't changed my mind were the fact that you're standing and there is so much to set up for.
- Time away from family, holidays on
- The schooling and the hours
- Nothing I heard decreased my interest in a healthcare career.
- Seeing the educational side of the professions, and also the negatives of them
- None
- All the standing and waiting I would have to do
- Not interested in some fields
- Already know what I want to do
- Presentations, facts
- Previous presentation
- The amount of schooling and emotionally demands
- Helping people and being involved in surgery

- Schooling and time
- (1) 24/7 on-call schedule. (2) Bad patient outcomes.
- The pay
- The amount of schooling
- (1) Desk work. (2) Patient deaths.
- The years of schooling required and the salary
- (1) Just learning more about all the different healthcare careers out there. (2) I will always want to do something in medicine.

## TOUR OF HEALTHCARE FACILITY

- No responses.

*Question 3: Provide one change you would make to improve the activity or event.*

## CAREER FAIR

- It was very packed. Maybe less schools
- I like it all!
- Give more examples of what to do in a crisis having to do with health care.
- More stations
- Nothing, I enjoyed it.
- Maybe include more hands-on activities.
- Why was it in a bedpan?
- More things to participate in
- Less people
- More time
- Show what a dirty one looks like
- It was a very good survey

## INTERNSHIP

- Video components
- More hands on experience

## JOB SHADOW DAY

- Nothing, it was great!
- I wouldn't change anything. It was very interesting to watch the military training in action. I'm just not sure if work in healthcare is cut out for me.
- Have the students be more involved and experiencing the activity instead of just watching it

## SPEAKER PRESENTATIONS

- More stories about different cases
- More personal experiences
- More visuals
- More photos
- Make it more hands-on.
- I want more time.
- More engagement
- Example
- I would not make any changes to the event for the next time.
- Hands-on learning activities like models of the brain or something
- More time for him to talk about what exactly he does
- Really just more time in general to talk about how everything thing works and why he likes to do it
- Not sitting for so long
- More interactive portions
- Tell more jokes, get the audience to interact more!
- More pictures
- More pictures, more health effects from if not treated
- More complexity
- Allowing those who don't want to go into the field to leave or not attend
- Add more photos showing what you would be doing.
- Slower pacing
- More models and real photos
- More hands-on
- Warning before any pictures with blood
- More interactive



- More time and more models, maybe of instruments
- Get more sleep beforehand.
- Maybe be less repetitive on topics.
- Nothing, maybe more gruesome pics
- More funny stories
- More pictures
- I don't think I would want anything to change.
- Videos of different procedures
- Overall, it was very good.
- Don't read off the slides.
- More time so everyone can do the hands-on
- I would not change anything about the event.
- Make it a little brighter in the room.
- I think more learning activities would be good.
- More entertainment
- Doing an activity or passing something around
- I enjoyed it and it was good. No changes.
- More demonstration time
- More photos
- More moving around
- None, it was great.
- Hands-on activities
- Absolutely nothing
- Maybe some hands on activities? I don't know.
- More photos
- More pictures in presentation
- I can't think of anything. They did a really nice job.

## TOUR OF FACILITY

- Being able to go in the operating room

# APPENDIX 3

## FIRST STREET FAMILY HEALTH CURRICULUM EXAMPLE 1

### Field Work Proposal: Internship

| Experience Title   | Primary Care   |
|--|--|
| Experience Description   | <p>The student will learn the various roles in a primary-care medical office. Learning objectives include back-office tasks, population health, nurse schedules, medical assisting, charting, and shadowing providers.</p>   |
| How will this experience significantly advance knowledge and skills in your area of the study? | <p>This process will allow the student to gain a working knowledge base of medical terminology, vital signs, charting in medical records, insurance processes, billing for medical visits, referrals to specialists, setting up procedures, and shadowing providers. The proposal at FSFH will set a solid foundation for any career in health care, from administrator to provider.</p> |

## Deliverable Due Date: Week 1-5

*Opportunity for skills may come out of order depending on availability within clinic*

### Major Field Experience Deliverables

Admin set up, Referrals, Billing, Population Health, Pre-visit Planning, Reception

How does each deliverable advance your understanding of the academic course content?

**Day 1:** Administration will be set up with logins and passwords for the scheduling system and the charting system. The student will learn scheduling basics and charting basics. Student will begin online medical terminology (<https://www.dmu.edu/medterms/overview/>)

**Day 2:** The student will sit with the referral team and learn about insurance authorization, specialty tests, and referral process to specialists.

**Day 3:** Learn about medical billing and coding, ICD 10 coding standards, CPD codes, and timeliness of billing.

**Days 4-5:** Learn about population health data, and reporting and reimbursement based on milestones achieved by the clinic. The student will work on population health lists for routine screening outreach and scheduling

**Week 2:** The student will continue to work on pop health data and medical terminology.

**Week 3:** The student will learn the importance of pre-visit planning for the flow of the clinic and begin to develop communication skills for contacting patients during the PVP process. The student will learn to navigate the patient chart. (Medical terminology quiz due by the end of week 3.)

**Week 4-5:** The student will learn the scheduling system and the types of visits from worklists and follow-up appointments, answer phones, learn to check patients out, verify insurance, mark patients as no-shows, sort mail, help with scanning and medical records, take payments, send messages, print orders, and send faxes. (Med terminology circulatory quiz due by the end of week 4; nervous system quiz due by the end of week 5.)

## Deliverable Due Date: Week 6-13

### Major Field Experience Deliverables

Nurse Schedule, Medical Assisting, Rooming Patients, Messages, Procedures

How does achieving each deliverable advance your understanding of academic course content

**Week 6:** Shadow a medical assistant or care manager on the nurse schedule and see how immunizations are determined and given, learn to clean and sterilize equipment, learn to conduct urinalysis, blood pressure checks, and ECGs, and watch suture removals. (Medical terminology quiz on digestive system due by the end of week 6.)

**Weeks 7–8:** Shadow a medical assistant, observe phone calls, rooming patients, tests, and procedures done in the clinic, begin learning to take vitals and the importance of accurate vital signs, shadow immunizations and blood draws. (Medical terminology quiz on respiratory system due by the end of week 7; urinary system quiz by the end of week 8.)

**Weeks 9–11:** The student will begin rooming patients under the supervision of a medical assistant for annual wellness visits, complete physicals, new patients, and follow-ups. Once the medical assistant and the nurse supervisor feel comfortable with the student's competence, other visit types will be authorized for the student to room. The students will learn communication with patients and providers, learn charting and the importance of a health history or chief complaint for the visit, and learn various tasks that arise from these visits. (Student will be allowed to set up for and assist in pap smears, and to perform monofilament exams, microalbumin testing, HgbA1C, and INR under supervision). Medical terminology quiz on the male reproductive system due at the end of week 9; on the female reproductive-system at the end of week 10; on the musculoskeletal-system at the end of week 11.)

**Week 12:** The student will begin to make normal test-result calls and observe staff in making all other types of calls. (Medical terminology quiz on cancer terms due at the end of week 12.)

**Week 13:** Procedures: When the opportunity arises, the student will be allowed to shadow a procedure (vasectomy, nexplanon, IUD, suture, biopsy, nail removal, etc.) and make note of the roles of the medical assistant and provider and of the preparation that goes into that procedure. (Medical terminology wrap-up quiz due at the end of week 13.)

| Deliverable Due Date: Week 14-15  |                     |
|---|---------------------|
| Major Field Experience Deliverables   | Shadowing Providers |
| How does achieving each deliverable advance your understanding of academic course content |                     |

The student will finish their internships by shadowing a provider. The student will observe interactions between physician and patient, including physical assessment of the patient, in a variety of visits from birth to geriatrics. If a provider allows, the student will be able to “scribe” the visits as the provider performs the physical assessment using the medical terminology learned in the course.

## FIRST STREET FAMILY HEALTH CURRICULUM EXAMPLES 2

*Field Work Proposal: Clinical Apprenticeship, paid and for a minimum of 10 hours a week*

| Experience Title   | Primary Care   |
|--|--|
| Experience Description   | The student will learn the various roles in a primary-care medical office. The learning objectives will focus on clinical care, including population health, nurse schedules, medical assisting, charting, and shadowing providers.  |
| How will this experience significantly advance knowledge and skills in your area of the study? | This apprenticeship will allow the student to develop advanced medical assisting skills such as obtaining vital signs, charting in medical records, setting up for procedures, shadowing providers, and scribing medical encounters in medical records. The proposal for FSFH will set a solid foundation for any career in healthcare, from medical assistant to registered nurse or other healthcare provider. |
| <i>Opportunity for skills may come out of order depending on availability within clinic</i>    |  |
| Major Field Experience Deliverables  | Admin set up, referrals, billing, population health, pre-visit planning, reception   |
| How does each deliverable advance your understanding of the academic course content?           |  |

Before the semester, administration will be set up with logins and passwords for the scheduling system and charting system.

The student meets with the preceptor to identify the milestones met in the intern semester and develop a list of competencies desired from the apprenticeship. Clear communication will be made with the precepting team that the student will learn skills while contributing to the efficiency of the care team, helping any medical assistants, nurses, or front admin staff when needed.

The apprentice will be expected to mentor interns who are in their first semester of the program.

**Major Field Experience Deliverables**

Medical assistant, medical scribe skills

**How does each deliverable advance your understanding of the academic course content?**

- CLIA waived lab tests: UA, strep, flu, covid, INR, A1C, urine hcg)
- Set up and assist in women's health procedures (pap, IUD, nexplanon)
- EKG
- Oxygen (portable tank usage, qualifying patient for oxygen)
- Nebulizer treatment
- Prep for and assist in joint injection
- Instrument sterilization/autoclave
- Immunization
- Entering shots in EMR and vax care
- The student will complete a sterile instrument quiz by the end of week 4, before assisting with procedures.

**Major Field Experience Deliverables**

Desired observation when possible

**How does each deliverable advance your understanding of the academic course content?**

- Cesarean section
- Circumcision
- External cephalic version

## REFERENCES

- Administration for Children and Families. (n.d.). *Health Profession Opportunity Grants (HPOG)*. <https://www.acf.hhs.gov/ofa/programs/hpog>
- Ali, S. R., Pham, A., Garrison, Y. L., & Brown, S. D. (2019). Project HOPE: Sociopolitical development and SCCT beliefs of Latinx and white rural middle school students. *Journal of Career Development*, 46(4), 410–42.
- Ambramson, B., & Hughes, S. (2021). *Student success and workforce revitalization task force report HB21-1330*. Colorado Commission on Higher Education and the Student Success and Workforce Revitalization Task Force. [https://higher-ed.colorado.gov/Publications/Reports/Legislative/1330/2021\\_SSWR\\_Task\\_Force\\_Report.pdf](https://higher-ed.colorado.gov/Publications/Reports/Legislative/1330/2021_SSWR_Task_Force_Report.pdf)
- Burton, C., Jennes S., Minty, D., & O'Connor, A. (2023) *Scaling dual enrollment in rural communities: A case study of three rural Texas high schools*. Jobs for the Future. [https://www.luminafoundation.org/wp-content/uploads/2023/05/Scaling\\_Dual\\_Enrollment\\_in\\_Rural\\_Communities.pdf](https://www.luminafoundation.org/wp-content/uploads/2023/05/Scaling_Dual_Enrollment_in_Rural_Communities.pdf)
- Coates, A., Zahnd, W., & Burgin, C., (2022, February). *Toward a sustainable and diversified rural health workforce*. [https://www.ruralhealth.us/NRHA/media/Emerge\\_NRHA/Advocacy/Policy%20documents/NRHA-Toward-a-Sustainable-Rural-Health-Workforce-Policy-Brief-2022.pdf](https://www.ruralhealth.us/NRHA/media/Emerge_NRHA/Advocacy/Policy%20documents/NRHA-Toward-a-Sustainable-Rural-Health-Workforce-Policy-Brief-2022.pdf)
- Colorado Center for Nursing Excellence. (n.d.). *Rural new nurse residency apprenticeship*. <https://www.coloradonursingcenter.org/rural-new-nurse-residency-apprenticeship/>
- Colorado Department of Higher Education. (2021, June 30). *Pathway to affordability: Annual report on dual and concurrent enrollment in Colorado*. <https://eric.ed.gov/?id=ED614231>
- Colorado Senate Democrats. (2023, May 16). *Polis signs bills to save students money on post-secondary degrees and certificate programs*. <https://www.senatedems.co/newsroom/polis-signs-bills-to-save-students-money-on-post-secondary-degrees-and-certificate-programs>
- Colorado Workforce Development council. (2023). *Colorado Work Based Learning Continuum*, [Image]. [www.cwdc.colorado.gov/strategies/work-based-learning](http://www.cwdc.colorado.gov/strategies/work-based-learning)



- DOD COOL. (n.d.). *Credentialing opportunities on-line*. <https://cool.osd.mil/>
- Fischer, S. H., McBain, R. K., Faherty, L. J., Sousa, J. L., Kareddy, V., Gittens, A. D., & Martsof, G. R. (2020, December 15). *Strengthening the entry-level health care workforce*. RAND Corporation. [https://www.rand.org/pubs/external\\_publications/EP68382.html](https://www.rand.org/pubs/external_publications/EP68382.html)
- Grant-Nierman, M.J. 2023. Student intern administers vaccine. [photograph].
- Hoffman, N., Vargas, J., Hartung, K., Barrett L., Cuevas, E., Sullivan, F., Mawhinney, J., & Nahar, A. (2021) *The big blur: An argument for erasing the boundaries between high school, college, and careers, and creating one new system that works for everyone*. Jobs for the Future. <https://archive.jff.org/resources/the-big-blur-an-argument-for-erasing-the-boundaries-between-high-school-college-and-careers-and-creating-one-new-system-that-works-for-everyone/>
- Kadavakollu, S., Shindi, R. S., Nummerdor, H. R., Singh, V. K., Pillai, S. B., Ontiveros, S. J., & Boyanovsky, B. (2020, December). Motivating high school students from rural areas to attend college and pursue careers as osteopathic physicians. *Journal of the American Osteopathic Association*, 120(12), 877–87.
- Kehoe, S. (2015, March 19). *Project hope helps students explore the health sciences*. Iowa Now. <https://now.uiowa.edu/2013/02/project-hope-helps-students-explore-health-sciences>
- Library of Congress. (2022). S.3189: *Pathways to Health Careers Act 117th Congress (2021–2022)*. <https://www.congress.gov/bill/117th-congress/senate-bill/3189/text?s=1&r=6>
- Mead, A. (2022, June 27). Organizations help veterans transition into healthcare careers. *The Rural Monitor*. <https://www.ruralhealthinfo.org/rural-monitor/veterans-in-healthcare-careers/>
- Military.com. (2023). *Employer Resource Center*, [Photograph]. <https://www.military.com/hiring-veterans>
- Military.com. (2023). *Take the Veteran Hiring Pledge*, [Photograph]. <https://www.military.com/hiring-veterans/pledge>
- National Labor Exchange. (n.d.). *National Labor Exchange Veterans Jobs*. <https://veterans.usnlx.com/>

- Networks Northwest*. (2020, August 17). New medical assistant apprenticeship program launches in Kalkaska. <https://www.networksnorthwest.org/news-events/news/new-medical-assistant-apprenticeship-program-launches-in-kalkaska.html>
- Postsecondary National Policy Institute. (2021). *Rural students in higher education*. [https://pnpi.org/wp-content/uploads/2023/03/RuralStudents\\_Mar23.pdf](https://pnpi.org/wp-content/uploads/2023/03/RuralStudents_Mar23.pdf). Accessed 11 June 2023.
- Rural Health Information Hub. (n.d.). *Rural healthcare workforce*. <https://www.ruralhealthinfo.org/topics/health-care-workforce#workforce>
- Snyder, C., Wick, K., Skillman, S., & Frogner, B. (2016, May). *Pathways for military veterans to enter healthcare careers*. [https://depts.washington.edu/fammed/chws/wp-content/uploads/sites/5/2016/05/Pathways\\_for\\_Military\\_Veterans\\_FR\\_2016\\_May\\_Snyder.pdf](https://depts.washington.edu/fammed/chws/wp-content/uploads/sites/5/2016/05/Pathways_for_Military_Veterans_FR_2016_May_Snyder.pdf)
- United Services Military Apprenticeship Program. (n.d.). <https://usmap.osd.mil/>
- U.S. Department of Education. (2022, November 14). *U.S. department of education launches new initiative to support career*. <https://www.ed.gov/news/press-releases/us-department-education-launches-new-initiative-support-career-connected-learning-and-increase-job-pathways-young-americans>
- VHA Office of Rural Health. (2013, November 1). *Va.gov: Veterans affairs*. <http://www.ruralhealth.va.gov/>
- You Science. (2022). *Career aptitude assessment for schools*. <https://www.youscience.com/discovery/>





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