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KEEPERS OF A HEALTHY HEARTLAND: STRATEGIES FOR BUILDING A ROBUST HEALTH CARE WORKFORCE

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ABOUT HEARTLAND FORWARD

Heartland Forward’s mission is to improve economic performance in the center of the United States by advocating for fact-based solutions to foster job creation, knowledge-based and inclusive growth and improved health outcomes. We conduct independent, data-driven research to facilitate action-oriented discussion and impactful policy recommendations.

The views expressed in this report are solely those of Heartland Forward.





EXECUTIVE SUMMARY

As the world emerges from the COVID-19 pandemic, it is keenly aware of the importance of our health care infrastructure to protect and treat disease, and the pandemic particularly worsened the vulnerability of the health care system to a lack of workforce. Several related studies focus on the more educated components of the health care workforce (i.e., doctors and nurses), but little attention has been paid to the allied and supporting health care workers, which captures a major segment of workers in this industry. An insufficient number of allied and supporting health care workers currently exists, and, while this trend is not new, the additional strain and stress brought on by COVID-19 has elevated the visibility of this issue. In this report, Heartland Forward researchers present data, insights and strategies for addressing this critical component of our nation's health care infrastructure.

Several key factors have contributed to growth in our nation's health care industry: increasingly unhealthy lifestyles and subsequent increases in chronic diseases, expanded health insurance coverage provided through the Affordable Care Act (ACA), and a rapidly aging population. It is important to note that an aging population is not just a demand factor because of additional care needs, but also a supply factor: the baby boomer generation, the largest portion of the U.S. population, is at retirement age, and the pandemic pushed some who had planned to continue working to retire. So, in addition to rising demand, retirement of health care workers became a key contributor to the staffing shortfall.

While allied and supporting workers represent a broad segment of the health care workforce, this report focuses on 10 specific occupations (including two

nonphysician positions that are not part of the allied and support occupation categories) that characterize the challenges regions are facing and the solutions they are trying: medical assistants, phlebotomists, home health and personal care aides, licensed practical and licensed vocational nurses (LPNs), health information coders, registered nurses, surgical technologists, diagnostic medical sonographers, radiologic technologists and clinical lab technologists. These are analyzed within the regional contexts of five fast-growing regions in the heartland: Austin-Round Rock-Georgetown, Texas; Fayetteville-Springdale-Rogers, Ark.; Nashville-Davidson-Murfreesboro-Franklin, Tenn.; Durant, Okla.; and Oxford, Miss. The health care workforce crisis seems to be universal; however, fast-growing cities present unique opportunities to contribute to community vitality while seeking new and promising ways to grow its health care ranks.

Four challenges arose across the 10 occupations and five regions:

- 1. Awareness.** Many potential employees don't know about the career and professional growth opportunities in these health care roles.
- 2. Education.** Educational infrastructure isn't sufficient to expand training; specifically, there are not enough instructors and clinical learning opportunities are lacking.
- 3. Incentive.** Inadequate pay, benefits, transportation, child care and job satisfaction make it difficult to attract and retain workers.
- 4. Pipeline.** Coordination is lacking among the fragmented pipelines that supply workers.

Eight policy strategies to overcome these challenges were identified through interviews with experts on the five regions. These strategies are:

1. Create strong partnerships across the entire ecosystem for an inclusive outreach effort that builds awareness about the opportunities in health care.

2. Create comprehensive pathways for opportunity and career growth.

3. Build an adequate supply of qualified health care educators by improving salaries and other benefits.
4. Increase flexibility around training opportunities by utilizing technology and novel educational practices.

5. Provide more clinical opportunities for students and trainees through externships, internships, simulations and coordinated efforts.

6. Provide flexible benefits that are tailored to the needs of targeted recruits.

7. Offer clinical rotations and cross-training with more pay and less monotony.

8. Connect the dots by coordinating efforts.

CHALLENGES & STRATEGIES



BACKGROUND

The health care workforce lacks adequate numbers—from doctors and nurses to allied and support workers¹—and filling those jobs is essential to a properly functioning system.

An aging population² combined with the high prevalence of chronic health conditions³ is driving an overall demand for more health care services in the United States. The annual growth in national health spending is expected to average 5.1% and will reach nearly \$6.8 trillion by the end of the decade.⁴ That's why the health care and social services sector, already one of the largest employers in the U.S., is expected to grow 16% by 2030.⁵

Many of the 2.6 million new jobs that will be created during that time frame, however, will not require an advanced college degree.

And filling those jobs will create unique challenges and opportunities for community leaders.

There's already a shortage of workers in the industry. Physical and mental stress, fatigue, and inadequate compensation cause as many as one in five health care workers⁶ to quit the profession, and the pandemic has only exacerbated the situation. So it is essential that communities in the heartland support efforts to recruit and train a robust workforce across all health care occupations.

To better understand these challenges and how to meet them, we selected 10 health care professions projected to have a high future demand but with educational requirements of either a bachelor's degree or less, or occupational training. We then interviewed 25 industry experts and studied examples from five rapidly growing communities in the heartland⁷ to find the best strategies for reducing shortages within our 10 selected fields.

We found that the existing best practices are grounded in eight strategies that emphasize awareness and training. And, although we focused on 10 specific nonphysician, allied and support health care professions, the strategies apply to other positions within the occupational category.



THE RISING DEMAND: AN AGING AND UNHEALTHY AMERICA

Six in 10 American adults have a chronic disease. This accounts for an estimated 90% of the \$3.8 trillion in annual U.S. health care spending, and that is certain to increase as the baby boomer population grows older amidst the popularity of unhealthy diets and sedentary lifestyles.⁸

The U.S. population age 65 and up doubled from 20 million in 1970 to 40 million in 2010 and is expected to reach 88.9 million by 2050. By 2030, one in five Americans will be 65 or older.⁹

Data suggests that chronic conditions are more prevalent among older adults than the general population and can coexist with cognitive decline. In fact, about 86% of older Americans have at least one chronic condition, as well as cognitive decline.

Addressing the health care needs of a growing elderly population will increase overall demand for health care workers, particularly those in specialized care and caregiving services.

Only one in four adults and one in five high school students meet the amount of physical activity recommended by the Centers for Disease Control and Prevention. This is estimated to contribute \$117 billion in annual health care spending.¹⁰ In addition, the typical American diet is not healthy—it is high in sodium, saturated fat and sugar—and increases risk of chronic diseases. Fewer than one in 10 adolescents and adults eat the recommended amounts of fruits or vegetables, and five in 10 adults drink at least one sugary beverage daily.¹¹



Physical inactivity and unhealthy diets increase the risk of Type 2 diabetes, heart disease, certain types of cancer, and obesity, all of which will increase demand for health care workers.

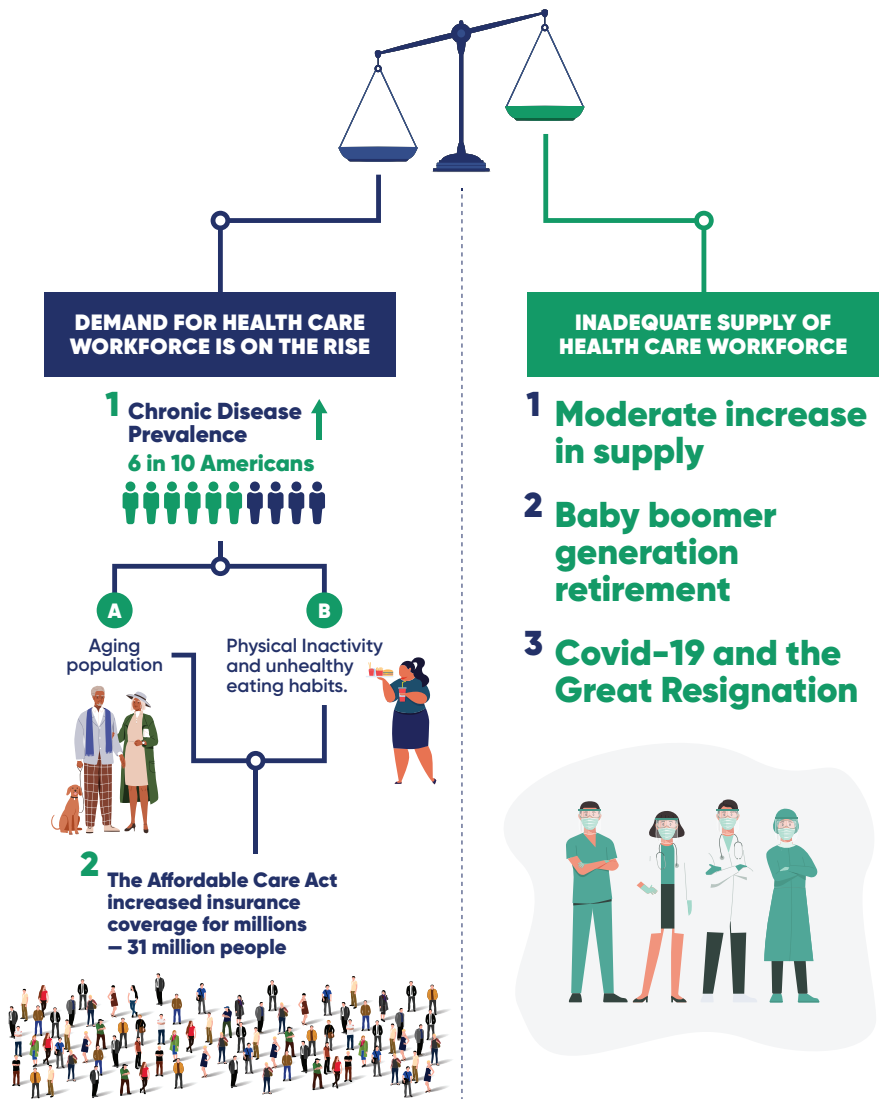
The Affordable Care Act (ACA) of 2010 also could contribute to the demand for more health care workers. The main objective of the act was to bring more Americans under health insurance coverage and

expand Medicaid benefits, and one major provision creates coverage for preventive care without patients paying out of pocket.¹²

In 2021, 31 million Americans had health insurance coverage through ACA or its provision of Medicaid expansion,¹³ increasing the number of those who used their insurance and, thus, the demand for workers to provide the care.

FOR RISE IN DEMAND: CHRONIC DISEASES AND ACA

DEMAND & SUPPLY



FIELDS OF OPPORTUNITY

Professionals who provide or assist in the delivery of health care services or in the operation of health care facilities comprise the health care workforce.¹⁴ This includes physicians, registered nurses, licensed practical nurses, and allied and support health care workers, such as surgical technicians, phlebotomists, medical assistants and home health aides.^{15,16}

While physicians and similar medical professionals need higher education, rigorous training and certification, that is not the case for allied and support workers. Nevertheless, the health care system needs an adequate and reliable supply of all workers to function properly.

An earlier report titled “Heartland of Opportunity”¹⁷ identified several health care occupations that do not require a bachelor’s degree but provide a middle-class income, and then estimated how readily available those jobs are in the heartland. Another study,¹⁸ as well as projections by the U.S. Bureau of Labor Statistics, identified allied health care occupations that will be in high demand for the next decade.

From those studies, we selected 10 health care occupations that require at most a bachelor’s degree and will experience high growth in next decade in the U.S. (and the heartland). The occupations

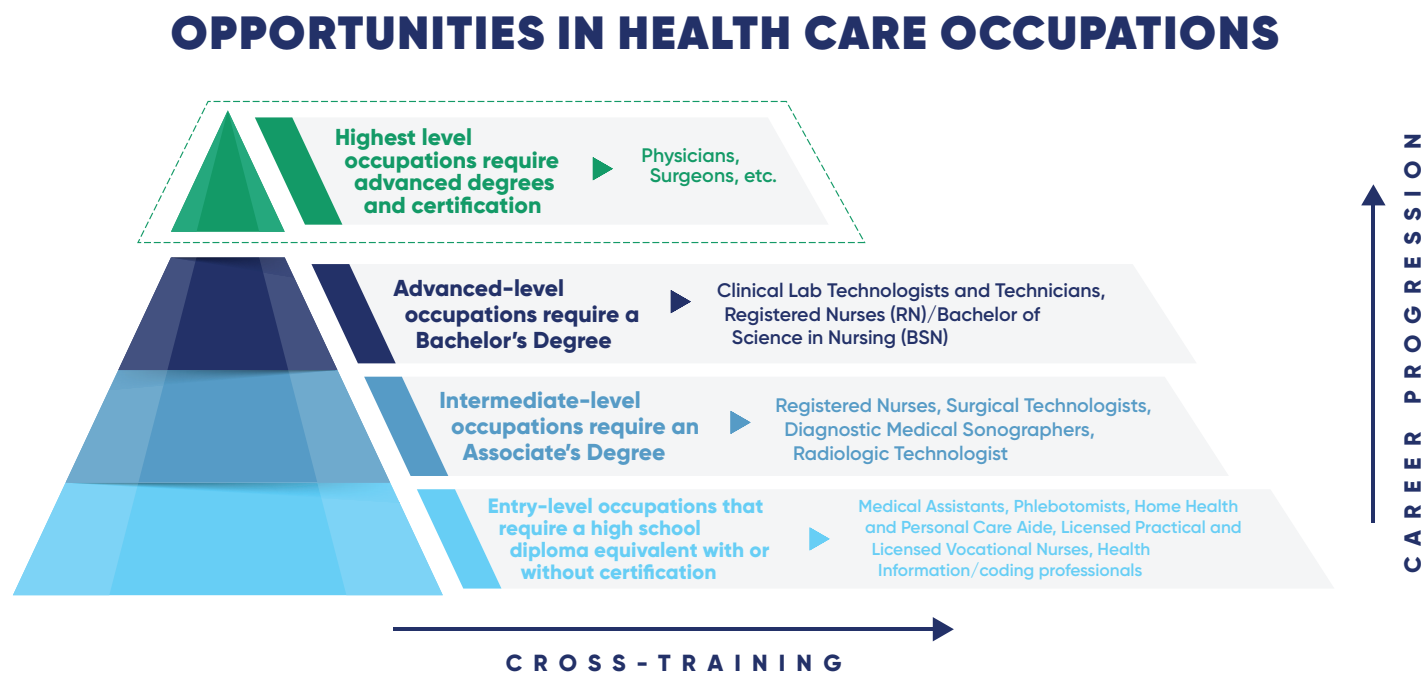
are representative of the nonphysician health care workforce for three broad occupational groups (based on training, experience and pay):¹⁹

- Entry-level occupations require a high school diploma or equivalent, with or without certification. These include medical assistants, phlebotomists, home health and personal care aides, licensed practical and licensed vocational nurses (LPN) and health information coders.
- Intermediate-level occupations require an associate’s degree. Examples include registered nurses, surgical technologists (surg techs), diagnostic medical sonographers and radiologic technologists (rad techs).
- Advanced-level occupations require a bachelor’s degree. These include clinical lab technologists, as well as technicians and registered nurses (RN) who have a bachelor of science degree in nursing (BSN).

Most of these occupations have opportunities for cross-training and are professionally stackable. For instance, a phlebotomist can cross-train and become certified as a medical assistant.²⁰ Similarly, medical assistants may decide to cross over to home health practice for a change in work environment.²¹ (Figure 1)



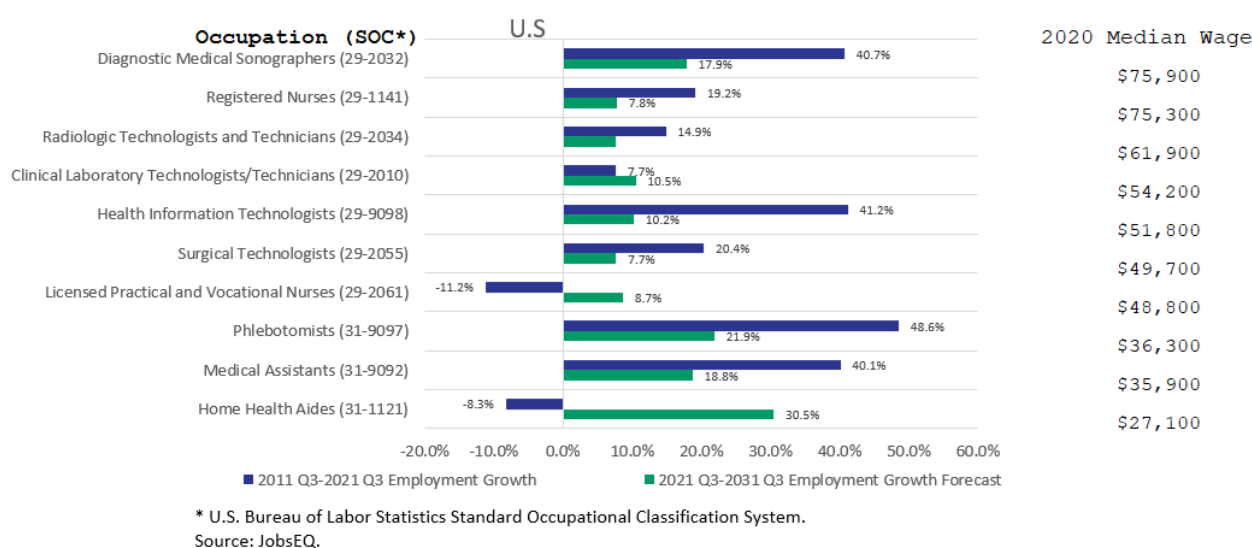
FIGURE 1: OPPORTUNITIES IN HEALTH CARE OCCUPATIONS



Further, with proper education and experience, an entry-level professional can move along a career pathway to gain additional responsibility and earnings. An LPN can pursue the education and experience required to take the national exam for registered nurse licensure (NCLEX-RN); similarly, a radiologic technologist can pursue a bachelor's degree as a step toward becoming a more specialized lab technician.²²

In the past 10 years, eight occupations in this list had strong employment growth, including more than 40% for sonographers, health information technologists, phlebotomists and medical assistants. The employment growth, however, was not uniform across all occupations.

TABLE 1: U.S. EMPLOYMENT FOR SELECTED OCCUPATIONS



Technological advances in the health care system have resulted in fast-growing needs for different types of technologists and technicians.²³ Sonographers require proper training and experience to perform well. Demand also has increased for rad techs, surg techs and clinical lab technologists in the past 10 years, and even more for sonographers.

As previously mentioned, the Affordable Care Act (ACA) increased the number of insured Americans²⁴ and led to higher demand for diagnosticians, like phlebotomists, for preventive care. The need for medical assistants also grew as physicians sought to maintain quality bedside manner while serving high volumes of patients.²⁵ Registered nurse numbers also have grown considerably in the past 10 years.

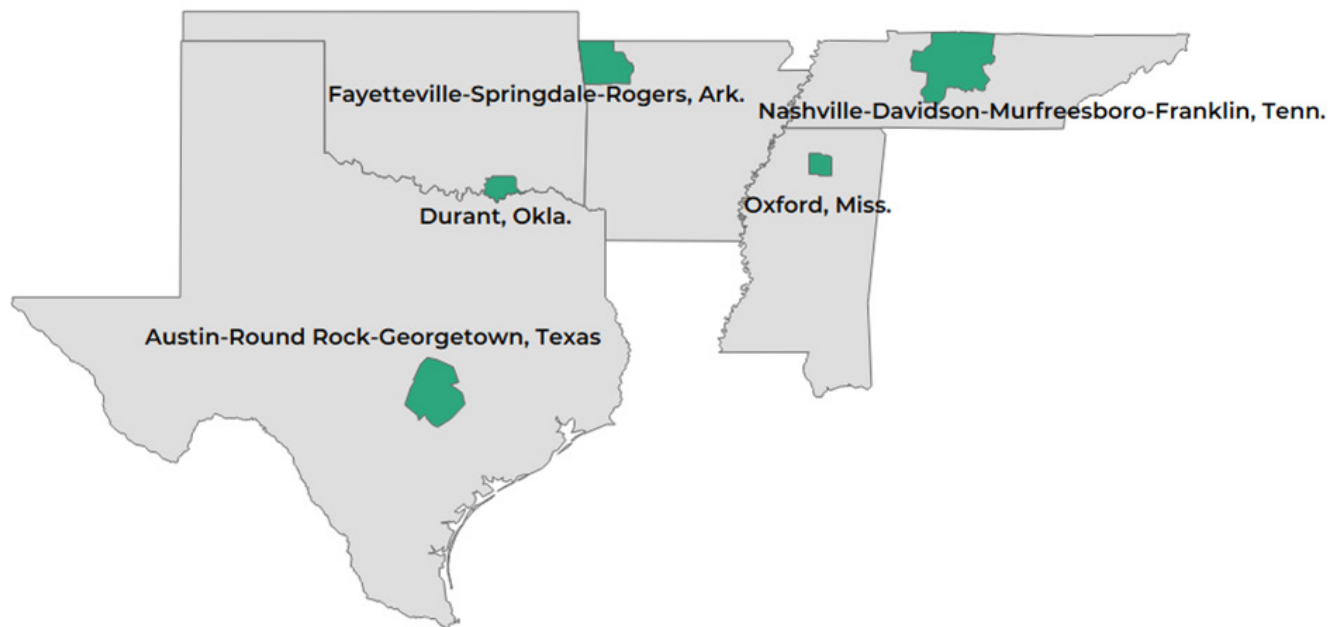
Two occupations, LPNs and home health aides, decreased in number over those 10 years. One possible reason for the LPN decline is that many hospitals are

hiring more RNs to meet new credentialing criteria²⁶ and replacing LPNs with less expensive, entry-level medical assistants.²⁷

Employment for home health aides declined by 8.3% for the past 10 years, even though 81% of home health care users were age 65 and older, and home health care is a covered benefit for Medicare participants. One plausible explanation for this decline is that some Medicare beneficiaries were denied coverage for lack of proper information from providers, failure to get coverage beyond a certain period or an inability to pay the costs not covered by Medicare.²⁸ In addition, low pay, psychological stress and fatigue, perhaps aggravated by COVID-19, may have influenced workers to change career fields.

DEFINING THE CHALLENGES

FIGURE 2: LOCATION OF THE FIVE SELECTED HEARTLAND COMMUNITIES



To gain insight into the reasons behind these trends and their implications for meeting the workforce needs of the future, we interviewed 25 subject matter experts on five fast-growing heartland cities:

- Three metropolitan areas: Austin-Round Rock-Georgetown, Texas; Fayetteville-Springdale-Rogers, Ark.; and Nashville-Davidson-Murfreesboro-Franklin, Tenn.
- Two micropolitan areas: Durant, Okla., and Oxford, Miss.

These regions were selected based on varied strengths and compositions. This cross section of communities of different sizes and locations, but with high population growth, represents a range of issues and solutions related to the health care workforce.

Strong economic growth draws people into a region. Median age and ethnic demographics play a role in health care service needs, but overall population growth leads to higher demand. (For a detailed discussion on selection of these communities, please refer to Appendix II.)

The subject matter experts were a variety of decision-makers who influence the supply of health care workers and who identified the strategies being used to address workforce shortages in their communities.

Their career fields included research, education, training, upskilling, workforce development, provider facilities (both clinics and hospitals) and not-for-profit organizations.²⁹

All of the experts believe that unfilled positions will continue to increase, pointing out that it was difficult to recruit for these jobs even before the pandemic.

They also agreed that high future demand for these workers warrants strategic implementation of programs to address this priority issue.

“I don’t believe we’re training and graduating enough nurses now to backfill those who retire and exit the workforce, and also those that leave for travel assignment jobs,” said Ryan Cork, an expert on health care for the Northwest Arkansas Council.

Four themes emerged from the interviews that summarize the challenges of building a sufficient workforce of nurses and allied health professionals:

- 1. Awareness.** Many potential employees don’t know about the career and professional growth opportunities in these health care roles.
- 2. Education.** Educational infrastructure isn’t sufficient to expand training; specifically, there are not enough instructors and clinical learning opportunities are lacking.
- 3. Incentive.** Inadequate pay, benefits, transportation, child care and job satisfaction make it difficult to attract and retain workers.
- 4. Pipeline.** Coordination is lacking among the fragmented pipelines that supply workers.

Fortunately, the experts we interviewed also had examples of strategies and practices that are helping their communities address these challenges.

1. AWARENESS

One-third of the experts we interviewed mentioned that potential entrants into the allied and support health care professions often are unaware of the available occupations and pathways (training and certifications) for attaining such jobs. They don’t know there are health care professions beyond physicians and nurses or that there are health care jobs offering above-average pay that do not require a four-year college degree.

The lack of proper marketing is a significant challenge to overcoming health care workforce shortages, according to experts such as Joe Rollins, a workforce development specialist for the Northwest Arkansas Council.

“We need to work on what I would consider to be the awareness gap,” Joe Rollins said. “In my opinion, it is a far larger obstacle to overcome than even a skills gap.”



This lack of awareness is particularly prevalent among ethnic minority groups. Such groups, on average, have less access to care and poorer health outcomes, which could be due to a lack of strong patient-physician relationships.³⁰

In addition, even though overall diversity in the health care workforce has increased over the past two decades, ethnic minority groups mostly hold low-paying, entry-level jobs and are underrepresented in training programs. The awareness gap about availability of different types of health care professions and career paths is one reason for those low numbers. In our five studied communities, we identified two strategies that are helping raise awareness and promote health care professions.

Strategy 1: Create strong partnerships across the entire ecosystem for an inclusive outreach effort that builds awareness about the opportunities in health care.

Sydne Enlund, a senior policy specialist for the National Council of State Legislatures, noted that, “Career pathways programs are important to introduce early in middle school/high school so that people are aware of what they can do with a health care career.”

Each of our five communities have programs for high school students. In some cases, such as at Northwest Mississippi Community College (NMCC), high school students can participate in a dual enrollment program that allows them to take college classes while in high school and thereby complete college more quickly and enter the workforce sooner.³¹

HCA Health Care, the largest provider in the Nashville area, has a program that encourages high school students to participate in both nonclinical and clinical experiences. This creates awareness about the breadth of career opportunities in health care while also teaching specific skills like bedside manner and direct patient care.

HCA offers full- and part-time opportunities in direct patient care and noncare roles so that students can choose a workload that’s appropriate to their schoolwork. Students can also earn certification to work in the field of their choice after high school.³² Other critical outreach target areas include low-income populations, women and ethnic minority groups. A few programs across the five communities we examined are attempting to draw needy residents into productive employment. Such programs include creating awareness of health care jobs, educating and providing wraparound services.

In Austin, for instance, programs offered by Capital Idea, Central Texas Allied Health Institute (CTAHI) and Austin Community College (ACC) focus on low-income and ethnic communities.

“As a community college, we’re trying to lift these people out of poverty,” said Samuel Greer, ACC’s director of employer outreach and experiential learning programs. “We have all of the training available to get them into these middle-class jobs in health care, and that’s what we’re doing.”

Upskill NWA also reaches out to disadvantaged and minority communities through a targeted traditional and social media effort in Northwest Arkansas.

Strategy 2: Create comprehensive pathways for opportunity and career growth.

Comprehensive pathways define clear career paths in the health care field through necessary education, training and upskilling opportunities. This helps potential workers understand how they can grow in the health care field in terms of both income-earning potential and responsibility.

When workers know the training and education required to progress along the pathway, they can plan and accurately assess the costs and benefits of pursuing a particular career. This can encourage people to enter the health care workforce.

In Austin, the Workforce Solutions Capital Area (WSCA)³³ is working with organizations to help inform citizens about rewarding career paths. The basic pitch, according to WSCA's Ashley King, is “all roads lead to nursing.”

The organization helps fill entry-level positions and provides upskilling opportunities after two years of work so that students can progress to the next level of their career—mainly to nursing jobs.

“Hospitals have started hiring more entry-level positions, such as medical assistants, patient care technicians (PCT) and certified nursing aides (CNA) in the long-term care facilities to help combat the growing nursing shortages,” Ashley King, director of healthcare partnerships of Workforce Solutions Capital Area, said.



2. EDUCATION

One in six experts we interviewed mentioned challenges related to inadequate educational opportunities.

For starters, as pointed out by Lori Knutson of Whole Health Institute in Bentonville, Ark., many areas lack health care educators. And without available instructors, programs must limit student numbers.

“There’s a dual problem here,” Lori Knutson, senior director of health sector finance and policy at Whole Health Institute, said. “Yes, we have shortages. A part of this issue is not only that people aren’t going into it, but we don’t have faculty to teach these as well.”

Nurses working as instructors in academia often earn substantially less than those in industry, which offers little incentive to teach. The popularity of travel nurses, who are paid even more than their peers working in hospitals or clinics, further worsens the situation. Many allied health care trainees, meanwhile, are unable to find clinical employment despite having the necessary training or education. The supply of trainees often exceeds the job capacity of local institutions;

this happens when training programs respond to growing populations by scaling up before health care institutions respond accordingly.

Also, many long-term facilities are limited in the number of clinical positions they can offer by Medicare and Medicaid reimbursements.³⁷ As a result, there are concerns that not enough workers are coming out of training programs. This is particularly true for surgical techs, phlebotomists and clinical lab technologists, to mention a few.

Featured Program: Capital Idea is an Austin-based, not-for-profit organization that helps low-income, nontraditional students use postsecondary education as a pathway to career advancement and success.

Capital Idea provides access to training, as well as support services needed to ease entry into and ensure completion of the training. About 78% of their trainees are women, while 54% are Hispanics and 22% are Black. Many participants in entry-level positions are able to pursue higher-paying nursing jobs.

Capital Idea works closely with educational institutions, including Austin Community College.



Strategy 3: Build an adequate supply of qualified educators by improving salaries and other benefits.

Potential educators need benefit packages that can compensate for relative wage gaps with clinical positions. In addition, alternative benefits and motivations for teaching—such as the consistent schedule, less stress and the satisfaction of contributing to the future of health care—should be encouraged and promoted.

Although a lack of educators was recognized as a barrier to growing the supply of health care workers, the Nursing Shortage Reduction Program in Texas was the only solution mentioned across the five communities.

The Texas Higher Education Coordinating Board (THECB) in Austin introduced the program to grow the number of registered nurses across the state, including Austin. Among other things, it proposes to graduate and hire more nurse educators and increase salaries to be competitive in the region, providing incentives for nurses with a graduate degree to become part-time instructors.³⁸

Featured Program: Choctaw Nation

Career Development (CNCD) in Durant, Okla., helps the ethnic minority population find profitable career paths. Tribal members receive assistance with academics and tuition, as well as career services. It works primarily with high school students, but also with LPNs who want to upskill to RN. The Choctaw Nation Health Services Authority (CNHSA) is the largest employer of these students in the region, and there is a structured pipeline for advancement: After one year of working in the system, a work-study program is available that includes a loan repayment program for LPNs and RNs. Students get clinical training at one of the system's eight clinics or hospitals to ease their transition into full-time employment.³⁴

Strategy 4: Increase flexibility around training opportunities by utilizing technology and novel educational practices.

COVID-19 changed the mode of delivery for instruction. Technology-based, distance-learning programs existed before COVID-19, but the pandemic made it almost the only mode of delivery.

The University of Arkansas for Medical Sciences (UAMS) has programs that allow medical laboratory technicians to obtain their bachelor's degree in medical laboratory sciences in a few semesters through distance learning.

UAMS is also introducing an accelerated bachelor of nursing (BSN) program so that individuals with a bachelor's degree can attain a BSN in 15 months.³⁹ However, it should be noted that, while online classes and distance-learning programs can reach a greater number of students, experts expressed their concerns about the quality of recent graduates from these programs because of limited clinical opportunities with actual patients.

Strategy 5: Provide more clinical opportunities for students and trainees through externships, internships, simulations and coordinated efforts.

Externships, where students gain hands-on experience while still in training, provide trainees with needed clinical experience while also giving providers extra hands at no or negligible cost.

Large health care employers like Baptist Memorial Hospital-North Mississippi (BMHNM) in Oxford work with regional community colleges and vocational training facilities to offer externships and internships. Similarly, starting in August 2022, Northwest Arkansas Community College (NWACC) will partner with Washington Regional Medical Center in Fayetteville to have nursing students experience clinical opportunities on nights and weekends. The night and weekend hours are designed to help prospective students find a position in nursing while juggling other careers.⁴⁰

Trainees can also gain clinical experience through a simulated clinical opportunity. Many experts believe that, without actual patient care experience, the quality of care provided by health care professionals is compromised; however, simulated clinical experiences may be necessary in times of a pandemic or when it is difficult to provide opportunities for all students.

Simulation can also complement the actual patient care experience. Recently, the University of Arkansas for Medical Sciences Northwest campus received a grant from the Harvey and Bernice Jones Charitable Trust to construct a simulation lab in which nursing students can practice their skills.⁴¹ Austin Community College in Texas also has the technology for simulated clinical experiences.

Sometimes, a little coordination can help make clinical opportunities more accessible. WSCA in Austin recognized the need for more coordination within hospital systems' human resources teams regarding clinical placement. They worked with the hospital systems to make sure that students in training are contacted by the hospital system to offer clinical opportunities and eventual placement.

3. INCENTIVE

Almost every expert interviewed mentioned the challenge of creating the types of incentives that not only stop attrition but lead to growth.

The most obvious aspect of this challenge is that many entry-level jobs don't pay well. In cities like Austin, where the average cost of living is 19% more than the U.S. average,⁴² it is difficult to recruit people to train for low-paying jobs, such as home health aides, medical assistants and phlebotomists. (See Table 1.)

The challenge of transferring licenses across states is another stumbling block to recruiting employees from neighboring regions.

Furthermore, in addition to better pay, travel nurses have great schedule flexibility, which makes it harder for small clinics and hospital systems to recruit and retain an adequate number of registered nurses. Pay is not the only challenge. Even before COVID-19 increased the stress levels of health care professionals,

workers in low-paying occupations often quit to seek higher pay and less stressful jobs in other sectors. Long hours and inflexible work environments contribute to high attrition among health care workers.

“Organizations that do not prioritize employee engagement, mental and physical health, flexibility and working with staff to meet the needs of the organization, as well as the employee, will continue to see struggles with retaining top talent,” said Jamie Lee, chief operating officer of the Nashville Health Care Council.

Strategy 6: Provide flexible benefits that are tailored to the needs of targeted recruits.

Because increasing pay is not easy and sometimes impossible, alternative benefits may help attract quality workers.

As several experts pointed out, employers need to be creative about providing incentives that may not be pay related. Benefits such as a “mental health day” or a “bring your child to work day” can be rewarding, one expert said. Providing child care, as well as transportation and/or meal assistance, are other ways health care providers can support their staff members without directly raising wages.

Featured Program: Central Texas Allied Health Institute (CTAHI) works with low-income communities to train residents in the health care field. CTAHI also reimburses a student's monthly utility bills, provides hot dinners for students and their families, and helps with child care, tuition, book costs and transportation.

Many small clinics struggle to compete with large hospitals because of pay gaps, but one expert has observed a reverse trend: Some professionals who left to work for large hospitals are returning to clinics because they value flexible work hours and being part of a small group, suggesting that these intangible factors matter a lot to health care workers.

“Those kind of soft metrics that go into job satisfaction are becoming increasingly important,” said Winston Collier, chief legal officer of ARcare, a private, affordable care provider.

One of the most important benefits any organization can offer is a culture of compassion. Entry-level professionals should feel accepted and appreciated. A proactive approach of kindness and appreciation is a bold step for ensuring a stronger and increased tenure

of the employee. One of the lessons learned from COVID-19 is that professionals at every level need to be cared for, physically and mentally, by their employers.

“Working conditions can be dictated by a culture that is created within health care institutions,” said Melinda Buntin, chair of the Department of Health Policy for the Vanderbilt University School of Medicine. “Sometimes, health care institutions have a culture that is dominated by physicians and allied health professionals do not feel respected.”



Strategy 7: Offer clinical rotations and cross training for better pay and less monotonous work.

Job satisfaction can be a powerful incentive for workers to remain with an employer, and clinical rotations and cross training can unleash a long and productive tenure.

Even though Baptist Memorial Hospital-North Mississippi is the largest hospital in the greater Oxford region, it is not immune to workforce shortages, specifically for surgical technologists, phlebotomists, LPNs, RNs, radiology technicians and sonographers.

To remain competitive, the hospital is awarding pay raises to existing staff members who cross-train. For example, a phlebotomist can cross-train to become a medical assistant or LPN. A consolidated job with duties over multiple professions helps the employer ease workforce shortages or at least provides flexibility in scheduling as more workers develop additional skills. For employees, it raises wages and potentially reduces monotony.

Relaxing licensing policy restrictions and allowing certain occupations to work across state lines can also provide staffing solutions with minimal changes to pay and benefits structure.

4. PIPELINE

Several programs are trying to address health care workforce shortages, but they often operate in silos, or disconnected fashion. Without a comprehensive pipeline that raises awareness about training, retraining, clinical experience and placement with employers, prospective workers can grow discouraged and programs can fall short of their potential.

Featured Program: Austin Community College (ACC) works with local school districts to develop talent among predominantly low-income and ethnic minority populations from East Austin. Most classes take place in high schools, but students also are transported to the ACC campus for simulated clinical experiences.

For entry-level positions, such as in phlebotomy, high school students graduate with a certificate and can be hired immediately. Encouraging and enabling these students to find a job and career helps many escape poverty.



Strategy 8: Connect the dots by coordinating efforts.

The Workforce Solutions Capital Area in Austin and the Northwest Arkansas Council are industry leaders in creating comprehensive, coordinated pathways. Both coordinate with community organizations, employers and institutions to train, retrain or improve the skills of residents so that they are aligned with job requirements and ready to step into vacancies.⁴³

This type of coordination is an important step in creating a comprehensive pipeline.

Featured Program: Upskill NWA supports upskilling efforts and connects applicants to the health care field. Modeled after Project Quest of San Antonio,³⁵ the aim is to provide training and assistance so that Northwest Arkansas residents can attain the credentials to enter their desired higher-earning fields.

“Many don’t have the opportunity to go to school [or] train because of financial constraints,” said Carol Moralez, president and CEO of Upskill NWA. “They don’t have access to education and they don’t have the funds. They are underemployed, working full time and just one event away from financial instability.”

Upskill NWA focuses on registered nurses, licensed practical nurses, physical therapy assistants, surgical technologists, respiratory therapists, emergency medical technicians, health information management and radiologic imaging sciences.

The program provides tuition, books and transportation for full-time working students and connects them with other organizations that can help meet such needs as transportation, gas cards and child care. A career navigator is assigned to each applicant and walks through every step with them.³⁶





CONCLUSION

Demand for health care workers is expected to continue into the foreseeable future. It may vary in strength from one occupation to another, but a reliable supply of quality workers in all fields is necessary to support and sustain the system.

The 10 nonphysician and allied health care jobs reviewed for this report represent similar occupations grouped by experience, education, training and pay. Secondary data about occupational growth and wages indicate that the current system is understaffed and that the supply gap will continue to widen without intentional efforts to produce more workers.

Communities face four significant challenges in building the portion of the health care workforce that requires no more than bachelor's degree. But the eight strategies identified in this report can help resolve workforce shortages. The solutions reflect programs that already are reshaping certain types of nursing positions, as well as allied and support staff, in five heartland communities. These strategies can be applied to other health care professions not explicitly discussed here.

APPENDIX 1:

OCCUPATIONAL DESCRIPTIONS

OCCUPATION	EDUCATIONAL QUALIFICATION	MEDIAN SALARY (US\$)	JOB DESCRIPTION
Diagnostic medical sonographers	Associate's degree/certification	75,900	Sonographers perform and produce ultrasonic recordings of patients' internal organs and prepare them for physicians.
Registered nurses	Associate's/bachelor's degree; license	75,330	Registered nurses implement patient care and educate the public regarding health conditions. A registered nurse is a healthcare professional who has been licensed by the state to provide and coordinate patient care after receiving specialized education and passing a comprehensive national test (NCLEX-RN).
Radiologic technologists and technicians	Associate's degree/certification or license	61,900	Radiologic technologists and technicians examine a patient's diagnostic images using x-rays and CAT scans.
Clinical lab technologists and technicians	Associate's/bachelor's degree	54,200	Clinical laboratory technologists and technicians collect, examine and analyze body fluids, tissue and other substances in order to perform tests. Clinical lab technologists usually pursue a bachelor's degree, while technicians pursue an associate's degree or a postsecondary certificate. Some states require both positions to be licensed.
Health information technologists, medical registrars, surgical assistants, healthcare practitioners and technical workers, all others	Associate's degree/postsecondary non-degree award	51,800	Health information technologists organize, analyze and manage health information data.
Surgical technologists	Associate's degree/postsecondary non-degree award and certification	49,700	Surgical technologists assist during surgical operations.
Licensed practical and licensed vocational nurses	Postsecondary non-degree award	48,800	LPN/LVNs provide basic nursing care in settings such as nursing homes, hospitals, physician's offices, etc. Typically, they must finish a one-year, state-approved program and must be licensed.
Phlebotomists	Postsecondary non-degree award/certification	36,300	Phlebotomists specialize in drawing blood from patients for tests and research. They pursue postsecondary, non-degree awards. Most employers require them to be certified.
Medical assistants	High school diploma/postsecondary non-degree award	35,900	Medical assistants perform administrative and clinical duties, such as measuring patients' vital signs and obtaining patient records for physicians. Most pursue a postsecondary education. Some enter the field with a high school diploma.
Home health aides	High school diploma or equivalent	27,100	Home health aides specialize in monitoring the conditions of patients with disabilities and chronic illnesses in order to assist them with daily activities.
Sources: Jobs EQ; U.S. Bureau of Labor Statistics.			

APPENDIX 2:

REGIONAL DESCRIPTIONS

The regions selected for this report reflect a variety of strengths and compositions. The logic is that a diverse set of high-growth regions can generally represent the range of issues and solutions related to the nation's health care workforce. Economic growth implies employment growth and an influx of workers and families to a region. As a result, two things will happen to the health care workforce:

1. Strong economic growth implies more job opportunities, some of which would be in health care.
2. Economic growth will also increase migration into these regions, resulting in greater demand for health care. However, infrastructure constraints can prevent the expansion of health care services. For instance, if a large hospital system is the dominant health care provider in a region, and it does not expand patient services in step with the region's population growth, then the number of health care workers might be capped.⁴⁴ Hence, greater demand for health care services does not automatically translate into growth of the health care workforce in the short term. Still, population growth can be a reliable metric to measure long-term demand for health care workers. A caveat to this argument is that the need for better health care services might occur in places where population is falling—specifically, in rural areas.

With these two assumptions that strong overall employment growth will lead to increased health care needs and, hence, a larger workforce, we ranked our five chosen heartland communities by employment percent change over the past five years.

These communities ranked high in the heartland in terms of past five-year (second quarter 2016 to second quarter 2021) overall employment percentage change.⁴⁵

Among the metropolitan statistical areas (MSAs):

- Austin-Round Rock-Georgetown, Texas, topped the heartland MSAs (12th overall in the U.S.) with 11.06% change in employment.
- Fayetteville-Springdale-Rogers, Ark., was second in the heartland (21st overall) with 8.52% change in employment.
- Nashville-Davidson-Murfreesboro-Franklin, Tenn., ranked third in the heartland (22nd overall), with 8.46% employment change.

In addition, Heartland Forward's recently released Most Dynamic Metros 2021 used employment data from the federal Bureau of Labor Statistics for metro rankings. The medium-term annual employment growth (2015-2020) indicator suggests that the Austin, Fayetteville and Nashville metros rank 1-3 within the heartland region and almost similar (12th, 20th and 22nd) nationally.⁴⁶

Among heartland micropolitan statistical areas, Durant, Okla., and Oxford, Miss., were selected for the study.

- Durant, with 19.34% employment change, ranks second among heartland micropolitan areas, trailing only Pecos, Texas.⁴⁷
- Oxford, however, ranks 18th in the heartland at 4.81% employment change (43rd overall in U.S. micropolitan rankings). Even though Oxford did not satisfy the ranking test, we wanted only one community from any state, and all other micropolitan areas ranked above Oxford were mostly in Tennessee and Texas. While a few higher-ranked micropolitan areas were in the northern heartland states, the ease of geographically defining the communities within the southern heartland region was appealing.

TABLE 2: REAL GDP AND POPULATION GROWTH IN SELECT FIVE COMMUNITIES

Region	5-Year Percent Change in Real GDP*	5-Year Percent Change in Population
USA	5.7%	2.7%
Austin-Round Rock-Georgetown, Texas	24.1%	14.6%
Fayetteville-Springdale-Rogers, Ark.	15.4%	11.5%
Nashville-Davidson-Murfreesboro-Franklin, Tenn.	7.2%	8.6%
Durant, Okla.	26.3%	8.7%
Oxford, Miss.	7.0%	3.0%

* Real GDP is in thousands of chained 2012 dollars.

Sources: Bureau of Economic Analysis ; Heartland Forward; JobsEQ.

In the next subsections, the report provides a snapshot of these five communities, including historical and forecasted employment in the 10 health care occupations studied in this report.

A few common themes of similarities and contrasts that emerged from these five communities:

- The occupational data (from the charts) revealed that the metropolitan areas showed higher growth in most occupations for historical employment changes, as compared to the U.S.
- For the micropolitan areas:
 - Oxford, Miss., showed similar trends but with high employment in entry-level positions, including home health aides. In all other regions and the U.S. as a whole, historical employment change for home health aides was negative.
 - Historical employment for Durant, Okla., was in sharp contrast to our other four regions.

AUSTIN-ROUND ROCK-GEORGETOWN, TEXAS

Overview

Austin-Round Rock-Georgetown is one of the fastest-growing metro areas in the nation. Austin has the advantage of being a vibrant tech hub and home to prestigious universities, including the University of Texas at Austin, which spurs research and development, as well as innovation, in the region. Strong economic growth with job opportunities, together with no state income tax, have led to an influx of migrants from other states and regions. The MSA ranks first in the heartland as a dynamic metro area⁴⁸ with a notable 24.1% in real gross domestic product (GDP) growth from 2015 to 2020. Forty-six percent of Austin's population has a bachelor's degree or higher, which provides a talented workforce. This is not surprising, given that Austin is the state capital and home to many bright, young graduates from the University of Texas, Texas State University and other educational institutions in the area, along with a pool of veteran professionals to shepherd them along.⁴⁹

Data

Health care and social assistance sector had one of the highest levels of unfilled jobs in late 2021 for the Austin metro region; 8,388 positions were available as of October 2021, but only 2,503 unemployed and qualified workers were available.⁵⁰ A snapshot of

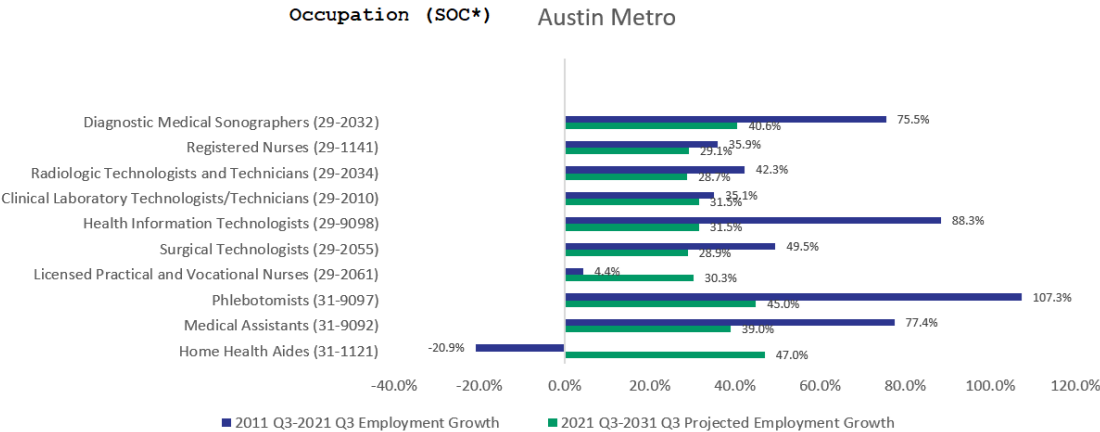
the historical and forecasted employment growth for the 10 occupations in our study reflect similar trends nationally. The only exception is that historical employment for LPNs in the Austin region grew in contrast to the negative national trend.

Austin is growing faster than the U.S., so it is not surprising that historical employment was extremely high for certain occupations, such as sonographers, health information technologists and phlebotomists. Another departure from the U.S. trend was that LPN employment growth was positive in Austin; in contrast to the nation, Austin has continued to hire LPNs in the past 10 years. Perhaps that is because the region greatly lacks RNs and therefore can't move to a more RN-only model. All of our experts from the Austin area mentioned the growing shortages of nurses, as well as severe shortages for surg techs, rad techs and clinical technologists.

Conclusions

The Austin metro is growing rapidly, creating an urgent need for health care workers. However, experts mentioned two major barriers: a lack of educators and few clinical opportunities for trainees/students. WSCA is coordinating with various organizations to create a comprehensive strategy to address health care workforce challenges.

FIGURE 4: EMPLOYMENT IN SELECTED HEALTH CARE OCCUPATIONS IN THE AUSTIN METRO AREA



* U.S. Bureau of Labor Statistics Standard Occupational Classification System.
JobsEQ's Total-All Occupations employment data is used.

DURANT, OKLAHOMA

Overview

The Durant micropolitan area is in the Texoma region and close to Dallas-Fort Worth. Traditionally, its economic anchors are agriculture, manufacturing and tourism. It is home to the Cardinal Glass manufacturing facility,⁵¹ as well as headquarters for First United Bank⁵² and First Texoma National Bank.⁵³ Tourist attractions include the Choctaw Casino & Resort, which draws many visitors from the DFW metroplex.⁵⁴ Durant is also capital of the Choctaw Nation of Oklahoma.

This region has seen its population grow by 15.1% over the past 10 years, partly because of its proximity to Dallas-Fort Worth. Durant has a large minority population: 14.3% are American Indian,⁵⁵ and studies have indicated the need for more health care services is greater for these residents.⁵⁶ Hence, as the Durant economy grows, the demand for health care workers is expected to grow.

Several unique organizations are present, such as the Choctaw Nation Career Development (CNCD) program, to ensure that the American Indian population is well integrated into workforce solution programs.

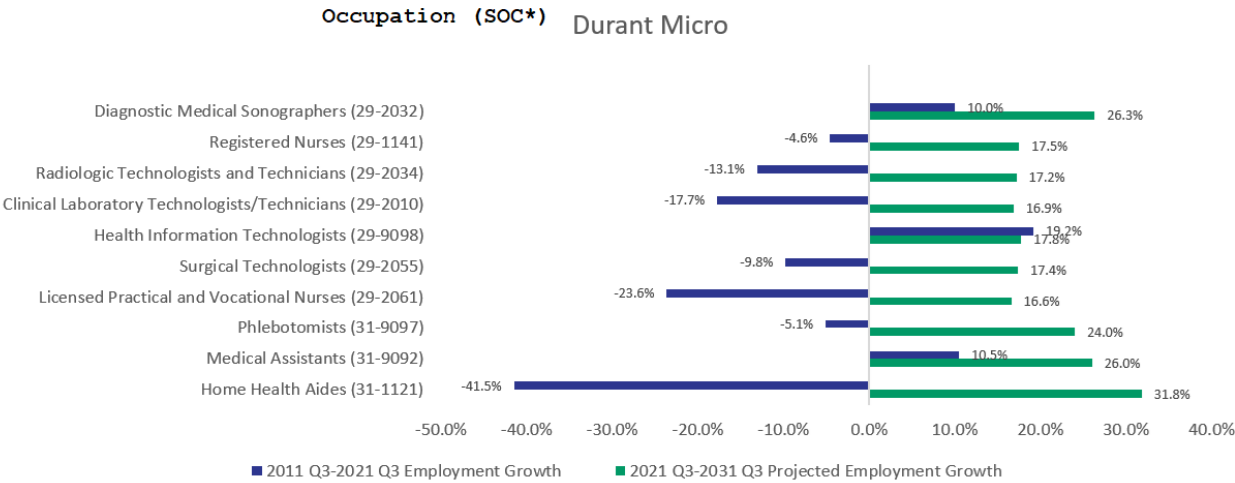
Data

The accompanying chart shows that seven of our 10 health care occupations experienced negative employment growth in the Durant area over the past 10 years. This is in sharp contrast to the nation as a whole or large metro areas, such as Austin. Historical employment changes are closely linked to the infrastructure of the employers. Major health care employers are the Choctaw Health and AllianceHealth Durant systems, and employment availability for most of these occupations depends on their expansion and recruitment plans. As a result, jobs tend to be added at a deliberate pace. However, considerable growth is expected in all of our 10 studied occupations, as demand for health care services swells due to population growth, a growing elderly population and the presence of a large minority population.

Conclusions

Durant is a growing micropolitan area with a mostly middle-class population and a strong share of ethnic minority residents. Most health care services are provided by two major systems and a few other clinics. Choctaw Nation Career Development, Kiamichi Technology Center and Southeastern Oklahoma University (with Murray State College)⁵⁷ are working to address health care workforce needs.

FIGURE 6: EMPLOYMENT IN SELECTED HEALTH CARE OCCUPATIONS IN THE DURANT MICROPOLITAN AREA



* U.S. Bureau of Labor Statistics Standard Occupational Classification System.
JobsEQ's Total-All Occupations employment data is used.

FAYETTEVILLE-SPRINGDALE-ROGERS, ARKANSAS

Overview

Fayetteville-Springdale-Rogers is a region that has bounced back to its pre-pandemic job levels. Corporate headquarters for Tyson Foods, J.B. Hunt Transport and Walmart are all located in this metro region. Professional occupations represent nearly 20% of total employment, and hiring at corporate offices has driven high-wage jobs to nearly double the statewide share.⁵⁸ Walmart, the metro area’s largest employer, hires professionals at different levels, and the University of Arkansas, also located within the region, provides a steady stream of graduates. Population growth is at 24% for the past 10 years, almost four times the U.S. average, and in 2020 was more than six times the national average.

Data

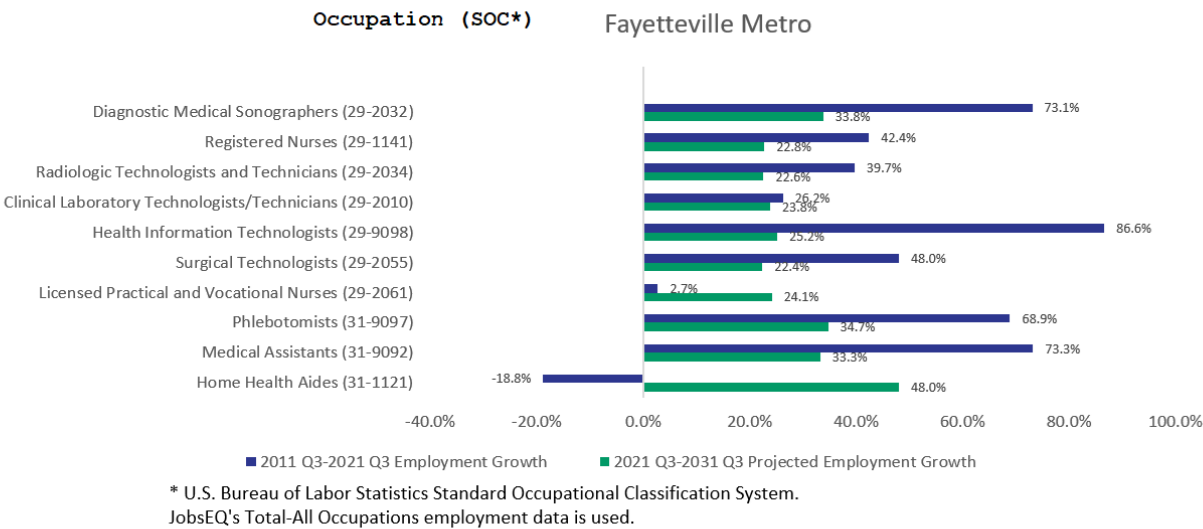
This metro region had been employing 90% of health care professionals available locally in the past 10 years—not much of a variation from the U.S. trend except that LPN employment figures were positive. Positive demand is forecasted for the next decade for all 10 occupations included in our study.

Conclusion

The Northwest Arkansas Council (NWAC) is taking a multiprong approach to address health care staffing shortages that could continue for the next decade. The council has started building the pipeline that will include reaching out to high school students, helping existing staff advance their careers through Upskill NWA, and, finally, assisting with a program to help students get an expedited BSN degree through UAMS. Success of these programs can’t yet be measured since both Upskill NWA and the UAMS nursing program for Northwest Arkansas are new initiatives.

One of the region’s greatest assets is its health care employers, said Rollins of NWAC. “We have a great bank of employers in Northwest Arkansas, certainly in healthcare, that is willing to reinvest in their current employees— help them continue to train, develop and go to school while they’re working now. I think that may be a key ingredient to helping boost our health care system.”

FIGURE 8: EMPLOYMENT IN SELECTED HEALTH CARE OCCUPATIONS IN THE FAYETTEVILLE METROPOLITAN AREA



NASHVILLE-DAVIDSON-MURFREESBORO-FRANKLIN, TENNESSEE

Overview

The Nashville metro area was particularly hard hit by COVID-19, mainly in terms of tourism and supply chain. However, an emerging technological sector and health care firms led to medium-term GDP growth of 7.2% in the “Music City.” The region’s reputation for a business-friendly environment, low cost of living and a healthy mix of cultural and natural amenities make it attractive to businesses and prospective employees alike.

Nashville has a very strong presence of the health care sector, with Vanderbilt University Medical Center and HCA Healthcare, Inc., being major employers. Education and health services account for 15.2% of total employment; average annual earnings are \$93,358.⁵⁹¹

Eighteen publicly traded health care firms are headquartered in Nashville,⁶⁰ earning it the moniker of “health capital of the U.S.” HCA Healthcare, Inc., is one of the largest health care companies in the nation and, in 2021, it announced a multiyear partnership with Google to enhance health information technology.⁶¹

The goal is to utilize health care data analytics to better inform decision-making, identify clinical support across occupations and provide better support for patient care. HCA analyzes health information data for 32 million patients and the partnership with Google only figures to further improve the health care quality in the region.

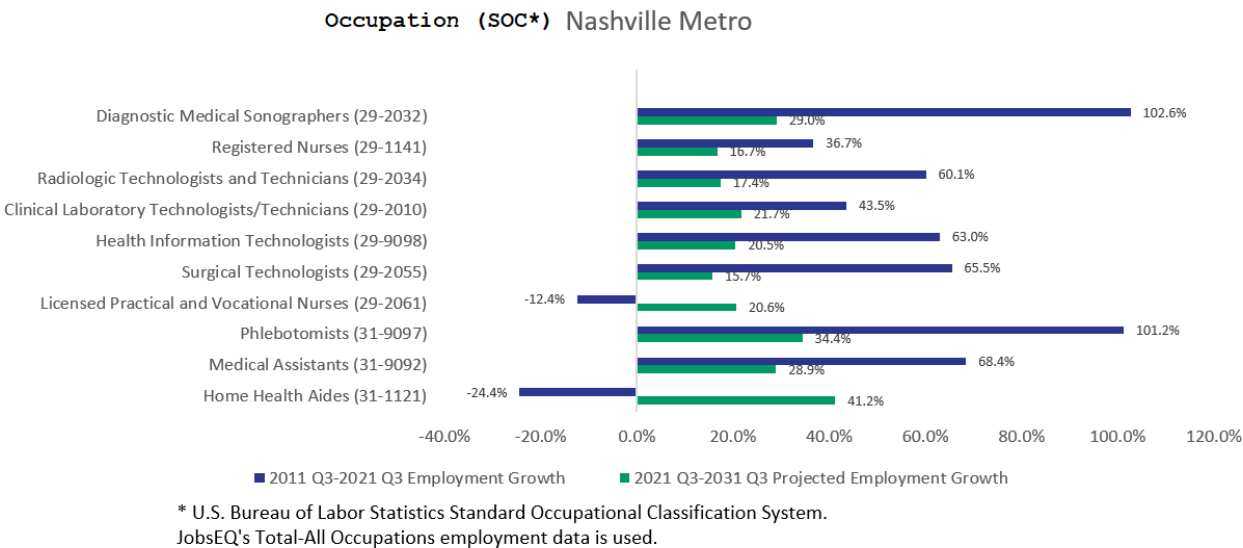
Data

Even though growth rates differ, the Nashville metropolitan area reflects similar national trends. Nashville employment change for sonographers and phlebotomists was staggering.

Conclusions

Nashville is the health care capital of the country, serving as home to many publicly traded health care companies. In addition, the strong presence of a medically affiliated university combined with one of the largest health care companies make this metropolitan quite attractive for health care-related industries.

FIGURE 10: EMPLOYMENT IN SELECTED HEALTH CARE OCCUPATIONS IN THE NASHVILLE METROPOLITAN AREA



OXFORD, MISSISSIPPI

Overview

The Oxford micropolitan area is in Lafayette County and is home to the University of Mississippi. The area’s population has grown by 14.4%⁶² in the past 10 years. Being a university town, there is a considerable number of young residents, yet 11.7% of population (6,600 people) are 65 and older and 20% (more than 11,000) are Black.⁶³ As mentioned earlier, studies have indicated that health care needs rise with aging and minority populations. So, the demand for health care services in this micropolitan community of about 56,470 is high and expected to rise with population growth.

University Health Services⁶⁴ (UHS) and Baptist Memorial Hospital-North Mississippi are the two major health care providers. UHS serves the Ole Miss students, faculty and staff; BMHNM is a multispecialty, large hospital with a staff of more than 1,000 that caters to residents outside of Lafayette County, too.⁶⁵

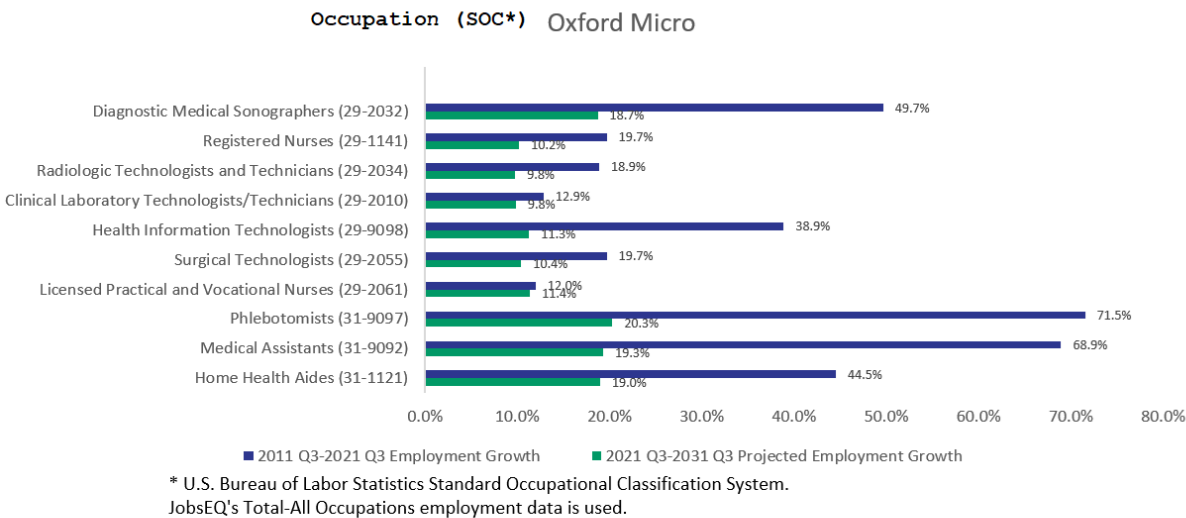
Data

Historical data shows tremendous growth for sonographers, as well as entry-level positions including home-health aides, medical assistants and phlebotomists. According to our experts, the area in general lacks for surgical technologists, phlebotomists, LPNs, registered nurses, radiology technicians and sonographers.

Conclusions

Oxford is a university town where health care for residents not connected with Ole Miss is dominated by a very large hospital system. With even BMCNM battling health care workforce shortages, smaller clinics face severe threats of closure because they cannot match pay with the large hospital. However, one of the experts mentioned that many nurses that have left smaller clinics to work for large hospitals returned to the clinics after a short while, as they appreciate the soft metrics in job satisfaction.

FIGURE 12: EMPLOYMENT IN SELECTED HEALTH CARE OCCUPATIONS IN THE OXFORD MICROPOLITAN AREA



ENDNOTES

¹ Medical Group Management Association. (2018, July 18). New MGMA Data Shows Medical Practices Utilizing More Non-Physician Providers are More Profitable, Productive. <https://www.mgma.com/news-insights/press/new-mgma-data-shows-medical-practices-utilizing-mo>

² The Census Bureau. (2020, June 25). 65 and Older Population Grows Rapidly as Baby Boomers Age. <https://www.census.gov/newsroom/press-releases/2020/65-older-population-grows.html#:~:text=The%2065-and-older%20population%20grew%20by%20over%20a%20third,according%20to%20the%20Census%20Bureau%E2%80%99s%202019%20Population%20Estimates>

³ Centers for Disease Control and Prevention. (accessed on 2022, April 18). Chronic Diseases in America. <https://www.cdc.gov/chronicdisease/resources/infographic/chronic-diseases.htm>

⁴ Centers for Medicare & Medicaid Services. (2022, March 28). CMS Office of the Actuary Releases 2021-2030 Projections of National Health Expenditures. <https://www.cms.gov/newsroom/press-releases/cms-office-actuary-releases-2021-2030-projections-national-health-expenditures>

⁵ U.S. Bureau of Labor Statistics (accessed on 2022, February 4). Healthcare Occupations. <https://www.bls.gov/ooh/healthcare/home.htm>

⁶ Galvin, Gaby. (2021, October 24). Nearly 1 in 5 Health Care Workers Have Quit Their Jobs During the Pandemic. Morning Consult. <https://morningconsult.com/2021/10/04/health-care-workers-series-part-2-workforce/>

⁷ DeVol, R., (2018, May 4). Perspectives on Defining the American Heartland. Bentonville, AR. Heartland Forward. <https://heartlandforward.org/case-study/perspectives-on-defining-the-american-heartland/>

⁸ Centers for Disease Control and Prevention. (accessed on 2022, April 18). Health and Economic Costs of Chronic Diseases. <https://www.cdc.gov/chronicdisease/about/costs/index.htm>

⁹ United States Census Bureau.

¹⁰ Centers for Disease Control and Prevention. (accessed on 2022, April 18). Lack of Physical Activity. <https://www.cdc.gov/chronicdisease/resources/publications/factsheets/physical-activity.htm>

¹¹ Centers for Disease Control and Prevention. (accessed on 2022, April 18). Poor Nutrition. <https://www.cdc.gov/chronicdisease/resources/publications/factsheets/nutrition.htm>

¹² Department of Health and Human Services. (accessed on 2022, April 18). What is the Affordable Care Act? <https://www.hhs.gov/answers/health-insurance-reform/what-is-the-affordable-care-act/index.html>

¹³ Department of Health and Human Services. (2021, June 5). New HHS Data Show More Americans than Ever Have Health Coverage through the Affordable Care Act. <https://www.hhs.gov/about/news/2021/06/05/new-hhs-data-show-more-americans-than-ever-have-health-coverage-through-affordable-care-act.html>

¹⁴ Center for Health Workforce Studies. (accessed on 2022, February 25). What is the Health Workforce? <http://www.chwsny.org/the-health-workforce/what-is-the-health-workforce/>

¹⁵ IAHPCC Pallipedia. (accessed on 2022, February 25). Allied health personnel. <https://pallipedia.org/allied-health-personnel/>

¹⁶ Associated Press. (2018, November 21). The Centers for Medicare and Medicaid Approved New Codes For Telehealth Patient Visits. <https://apnews.com/press-release/globe-newswire/technology-health-business-ewellness-healthcare-corp-medicare-92e865688a462af496ff6b8ac4311e72>

¹⁷ Kotkin, Joel., & Trivitt, J. (2021, July 22). Heartland of Opportunity. Heartland Forward. <https://heartlandforward.org/case-study/heartland-of-opportunity/>

¹⁸ Mercer. (accessed on 2022, January 4). Healthcare Labor Market Analysis. <https://www.mercer.us/our-thinking/career/demand-for-healthcare-workers-will-outpace-supply-by-2025.html>

¹⁹ For a detailed list of these ten occupations, please refer to Appendix 1.

²⁰ Arizona College. (Accessed on 2022, February 23). How to Become a Medical Assistant with Phlebotomy Skills. <https://www.arizonacollege.edu/healthcare-careers/medical-assistant-with-phlebotomy/how-to-become-a-medical-assistant-with-phlebotomy-skills/>

²¹ Best Accredited Colleges. (Accessed on 2022, February 23). Can a medical assistant work as a home health aide? <https://bestaccreditedcolleges.org/articles/careers-and-education/can-medical-assistants-work-in-home-health-care.html>

²² Nursing License Map. (Accessed on 2022, February 23). LPN to RN Programs. <https://nursinglicensemap.com/nursing-degrees/rn-programs/lpn-to-rn/>

²³ Carlton, C., & Singhal S. (2019, May 14). The era of exponential improvement in healthcare? McKinsey & Company. <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/the-era-of-exponential-improvement-in-healthcare>

²⁴ Blumenthal, D., Collins, SR., & Fowler, E. (2020, February 26). The Affordable Care Act at 10 Years: What's the Effect on Health Care Coverage and Access? The Commonwealth Fund. <https://www.commonwealthfund.org/publications/journal-article/2020/feb/aca-at-10-years-effect-health-care-coverage-access>

²⁵ Frogner, K. B., Jacobs, K., Lucia, L., & Spetz, J. (2014, April 1). The Impact of the Affordable Care Act on New Jobs. University of California, Berkeley. <https://laborcenter.berkeley.edu/the-impact-of-the-affordable-care-act-on-new-jobs/>

²⁶ American Nurses Credentialing Center. (accessed on 2022, February 25). <https://www.nursingworld.org/organizational-programs/magnet/>

²⁷ Practical Nursing. (accessed on 2022, February 25). LPN in the Inpatient vs. Outpatient Setting. <https://www.practicalnursing.org/lpn-inpatient-vs-outpatient-setting>

²⁸ Center for Medicare Advocacy. (2021, April 7). Issue Brief | Medicare Home Health Coverage: Reality Conflicts with the Law. <https://medicareadvocacy.org/issue-brief-medicare-home-health-coverage-reality-conflicts-with-the-law/>

²⁹ It is to be noted that retail providers are an important stakeholder, but it was out of scope for this study, and no expert from retail provider community was interviewed.

³⁰ M.J. Shen, E.B. Peterson, R. Costas-Muñiz, et al. The effects of race and racial concordance on patient-physician communication: a systematic review of the literature. *J Racial Ethn Health Disparities*, 5 (1) (2018, February), pp. 117-140. 10.1007/s40615-017-0350-4

³¹ Northwest Mississippi Community College. (accessed on 2022, January 26). <https://www.northwestms.edu/programs/early-college/dual-enrollment>

³² HCA Healthcare. (accessed on 2022, May 10). Programs. <https://careers.hcahealthcare.com/pages/high-school-student-programs>

³³ Workforce Solutions Capital Area. (accessed on 2022, February 25). Overview. <https://www.wfscapitalarea.com/about/overview/>

³⁴ Choctaw Nation. (accessed on 2022, January 26). <https://www.choctawnation.com/tribal-services/education/post-secondary>

³⁵ Upskill NWA. (accessed on 2022, January 26). <https://www.upskillnwa.com/>

³⁶ Upskill NWA. (accessed on 2022, January 26). <https://www.upskillnwa.com/>

³⁷ Vesoulis, A., & Abrams, A. (2022, February 23). Contract Nurse Agencies Are Making Big Money in the Age of COVID-19. Are They 'Exploiting' the Pandemic? *TIME* <https://time.com/6149467/congress-travel-nurse-pay/>

³⁸ Texas Higher Education Coordinating Board. (2020, October). Evaluation of the Nursing Shortage Reduction Program. <https://reportcenter.highered.texas.gov/meeting/committee-supporting-documents/10-20-evaluation-of-nursing-shortage-reduction-program-report/>

³⁹ Watson, S (2021, July 12). UAMS College of Nursing Adds New Programs. University of Arkansas for Medical Sciences. <https://news.uams.edu/2021/07/12/uams-college-of-nursing-adds-new-programs/#:~:text=This%20full%2Dtime%2C%2015%2D,as%20anatomy%2C%20physiology%20and%20biochemistry.>

⁴⁰ Gordon, A. and Sparkman, W. (2022, May 19). Axios Northwest Arkansas. www.axios.com/newsletters/axios-nw-arkansas-c65a52d8-c2bd-4c51-8bed-6abc25abd314.html?chunk=0&utm_term=emshare#story0

⁴¹ Golden, A. (2020, October 26). Grant to help expand UAMS nursing programs. *Arkansas Democrat Gazette*. <https://www.arkansasonline.com/news/2020/oct/26/grant-to-help-expand-uams-nursing-programs/>

⁴² BestPlaces. (accessed on 2022, April 18). Cost of Living in Austin, Texas. https://www.bestplaces.net/cost_of_living/city/texas/austin

⁴³ Work Force Solutions Capital Area. (2017, June). Austin Metro Area Master Community Workforce Plan. <https://www.wfscapitalarea.com/wp-content/uploads/2020/09/AustinMetroAreaMasterCommunityWorkforcePlanExecutiveSummary.pdf>

⁴⁵ Data Source: JobsEQ.

⁴⁶ Crews, J., DeVol, R., Shideler, D., & Li, J., and Chatterjee, A. (2022, April). Most Dynamic Metropolitans 2021. Bentonville, AR. Heartland Forward.

⁴⁷ Data Source: JobsEQ.

⁴⁸ Crews, J., DeVol, R., Shideler, D., & Li, J., and Chatterjee, A. (2022, April). Most Dynamic Metropolitans 2021. Bentonville, AR. Heartland Forward.

⁴⁹ Austin Chamber. (accessed on 2022, February 3). Educational Attainment. <https://www.austinchamber.com/economic-development/austin-profile/population/educational-attainment>

⁵⁰ Work Force Solutions Capital Area. (2021, October). Labor Force Supply and Demand. [Labor Force Supply & Demand \(October 2021\) — Workforce Solutions Capital Area \(wfscapitalarea.com\)](https://www.wfscapitalarea.com/Labor-Force-Supply-and-Demand-October-2021-Workforce-Solutions-Capital-Area)

⁵¹ Brandes, H. (2021, September 28). Cardinal Glass nears completion on \$25M Durant plant expansion. The Journal Record. <https://journalrecord.com/2021/09/28/cardinal-glass-nears-completion-on-25m-durant-plant-expansion/>

⁵² First United Bank. (accessed on 2022, February 3). <https://www.firstunitedbank.com/locations/durant-main>

⁵³ First Texoma National Bank. (accessed on 2022, February 3). <https://www.ftnb.net/About-Us>

⁵⁴ Stafford, Jim. (2021, April 8). Choctaw Nation is an economic driver for southeastern Oklahoma. The Oklahoman. <https://www.oklahoman.com/story/special/2021/04/08/choctaw-nation-makes-billions-creates-thousands-jobs-oklahoma-economy/4694177001/>

⁵⁵ United States Census Bureau. (accessed on 2022, February 3). <https://www.census.gov/quickfacts/durantcityoklahoma>

⁵⁶ Davis, J., Penha, J., Mbowe, O., & Taira, DA. (2017, October 19). Prevalence of Single and Multiple Leading Causes of Death by Race/Ethnicity Among People Aged 60 to 70 Years. Preventing Chronic Disease. 2017; 14:160241. <http://dx.doi.org/10.5888/pcd14.160241>

⁵⁷ Southeastern Oklahoma State University. (accessed on 2022, January 26). <https://www.se.edu/ccps/health-information-systems/>

Kiamichi Technology Center. (accessed on 2022, January 26). https://www.ktc.edu/467009_3

Southeastern Oklahoma State University. (2021, December 16). <https://www.se.edu/2021/12/murray-at-southeastern-nursing-program-established-with-agreement/>

⁵⁸ Moody's.com

⁵⁹ Moody's.com

⁶⁰ Nashville Area Chamber of Commerce. (accessed on 2022, January 19). Major Employers. <https://www.nashvillechamber.com/explore/work/major-employers>

⁶¹ HCA Healthcare. (2021, May 26). HCA Healthcare Partners With Google Cloud to Accelerate Digital Transformation. <https://investor.hcahealthcare.com/news/news-details/2021/HCA-Healthcare-Partners-With-Google-Cloud-to-Accelerate-Digital-Transformation/default.aspx>

⁶² Data Source: JobsEQ.

⁶³ United States Census Bureau. (accessed on 2022, February 3). <https://www.census.gov/quickfacts/fact/table/oxfordcitymississippi/PST045221>

⁶⁴ The University of Mississippi. (accessed on 2022, February 25). <https://healthcenter.olemiss.edu/>

⁶⁵ Baptist Memorial Hospital-North Mississippi. (accessed on 2022, February 25). <https://www.baptistonline.org/locations/north-mississippi>



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