

CAREER GUIDE

HEALTH SCIENCES: THE MODERN HEALTHCARE FIELD



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WHY COLLEGE?

When most people consider the value of a college education, the first thought is economic advantage. And indeed, that benefit is widely documented. A 2013 report in the *Washington Post* estimates that an individual with a bachelor's degree is likely to earn a million dollars more over the course of a lifetime than their companions who have only completed high school. Using those calculations, the study estimates that the value of a college degree is somewhere in the environs of \$970,000.¹

The financial benefits aren't just for those with a bachelor's or more advanced degree. When a student completes just a year or two of college, earnings increase accordingly.² During the 2007 – 2009 recession, the population that suffered the greatest job loss was that group with no post-secondary education, followed by the group with some post-secondary education. The group that suffered the least was that with college degrees and advanced college degrees. According to the study, 86 percent of college graduates find their college education worth the money they put into it.³

A college education offers benefits far beyond those of financial comfort and increased job security. A report from the Institute for Higher Education Policy indicates that college graduates enjoy greater savings, a wider range of personal and professional options, a better quality of life and more leisure activities.⁴ A study by the Carnegie Foundation indicates that college educated citizens tend to become more open-minded, cultured, rational, more consistent and less authoritarian.⁴

Studies also show that higher education is better for families. The same study by the Carnegie Foundation shows a correlation between higher education and health, not only for graduates, but also for their children. For working mothers the news is especially good as another study shows that college-educated women tend to spend more time with their children with the aim of better preparing them for the future. Another benefit: college graduates tend to have a more optimistic view of both the past and the future.⁵

MORE BENEFITS OF A COLLEGE EDUCATION

HEALTH SCIENCES

Why pursue a degree in health sciences?

Healthcare is the largest industry in the United States⁶ and is comprised of highly skilled, well-trained professionals that are drawn to help others. The field is expanding, and no matter how the greater economy fluctuates, those that choose a career in healthcare continue to be in demand, garnering good salaries, flexible schedules and outstanding benefits. It is a field that incorporates science, technology and caring in a range of positions at virtually any level of education and experience.

Healthcare is an exciting field that is advancing at a rapid pace and adapting as populations increase and community behaviors change. The current focus of healthcare in the U.S. is changing as the population ages, with statistics indicating that by the year 2030, 20 percent of Americans will be 65 or older.⁷ Add to that the nation's climbing obesity rates, where it is estimated that currently one-third of adults are obese,⁸ and the healthcare system is evolving from tending to acute cases to a system with increasing focus on the management of chronic illnesses and ailments that include cardiovascular disease, stroke, diabetes, hypertension, arthritis and cancer.

Another significant change in U.S. healthcare is the advent of the Affordable Care Act (ACA), which promises high-quality, accessible and affordable healthcare to all Americans. Although it's impossible to predict all the changes the ACA will bring, it is expected to change the way healthcare is delivered to communities around the nation in a way that provides greater access for all. This sets the stage for new and innovative healthcare delivery systems, like different types of convenience clinics, evening office hours and mobile health clinics. In order to keep healthcare costs from soaring, there will also be an increased focus on preventive medicine and public health initiatives to encourage healthy lifestyles.

As well as providing access to healthcare to every citizen, thus increasing the number of people who will seek medical treatment, the act states that financial incentives will be offered to hospitals and other care facilities that perform well. Performance will be determined through a combination of clinical outcomes and patient satisfaction surveys. This means that healthcare profes-

sionals and healthcare delivery systems will soon be rewarded for the quality of care provided rather than the volume of patients treated. Treatment will correspondingly be provided in a more holistic way, with successful outcomes becoming the most important measure of performance.⁹

To meet these new demands there is a growing need for a new kind of healthcare professional, and modern college curricula is prepared to provide these professionals with the latest in health sciences education. Whether you are just entering the field of healthcare or are a seasoned professional looking to advance your credentials and upgrade your skills, it's important you get your education from a college that recognizes the field is changing and is positioned to be in the vanguard of this change.

What is the job outlook for health science professionals?

- **Clinical laboratory scientists** conduct research, often using results of clinical trials, aimed at improving overall human health. Employment of medical scientists is expected to increase by 13 percent between 2012 and 2022.¹⁰
- **Healthcare administrators or executives** plan, direct, and coordinate medical and health services within a hospital, physician practice or medical system. Employment of medical and health services administrators is expected to grow by 23 percent (with five percent growth for those reaching CEO-level) from 2012 to 2022, faster than the average for all occupations.¹¹
- **Healthcare informatics professionals** organize and manage health information data by ensuring quality, accuracy, accessibility, and security in both paper and electronic systems. The job outlook for these professionals is expected to increase by 22 percent from 2012 to 2022, faster than the average for all occupations.¹²
- **Healthcare analysts** apply statistical methods to solve real-life health and life science analytics problems. Operations research analysts use advanced methods of analysis to help organizations solve problems and make better decisions. Employment of these professionals is expected to grow by

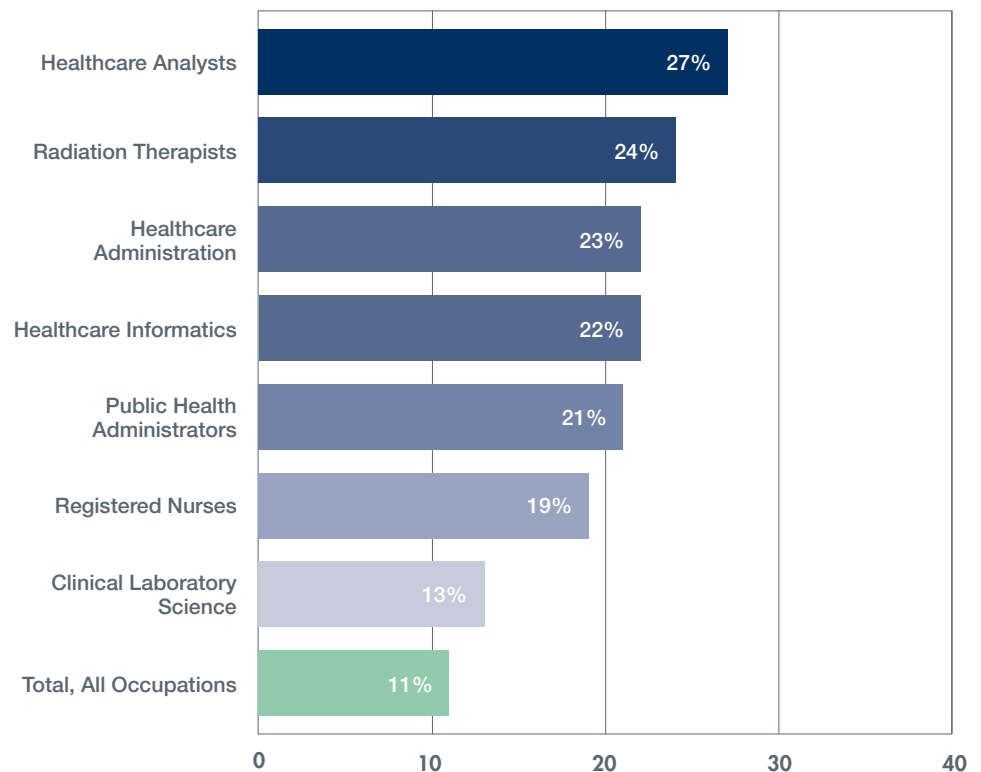
EMPLOYMENT
OF MEDICAL SCIENTISTS
is expected to
INCREASE by **13%**
between 2012 and 2022.¹⁰

27 percent between 2012 and 2022, faster than the average for all occupations.¹³

- **Registered nurses** perform exams, administer care, document health history, collaborate with physicians and the entire interprofessional team in order to deliver a wide variety of hands-on patient care. Nurses will continue to occupy a significant and wide range of roles in healthcare and health maintenance in the future. The field of nursing is expected to grow 19 percent from 2012 to 2022, faster than the average for all occupations.¹⁴
- **Public health professionals**, also called healthcare educators, teach people behaviors that promote wellness and develop programs and materials to encourage people to make healthy decisions. The field of public health is expected to grow by 21 percent from 2012 to 2022, faster than the average for all occupations.¹⁵

Healthcare Workers

Projected percent change in employment growth in selected healthcare occupations, 2012-2022



Employment in the field of health sciences is projected to grow steadily in coming years.

Note: All Occupations includes all occupations in the U.S. Economy
 Source: U.S. Bureau of Labor Statistics, Employment Projection program

- **Radiation therapists** treat cancer and other diseases in patients by delivering radiation treatments. Employment of radiation therapists is expected to grow by 24 percent between 2012 and 2022, also faster than the average for all occupations.¹⁶

Who hires health sciences majors?

A major in health sciences is a versatile one as the field of health-care is large and expanding. Those with degrees in health sciences may find employment in:

- Hospitals
- Hospital systems
- Private physician practices
- Physician groups
- Business and industry
- Community agencies
- Detoxification centers
- Emergency/urgent care
- Health centers/organizations
- Hospice care
- Laboratories
- Medical clinics
- Mental health clinics
- Nursing homes
- Private homes
- Recreational facilities
- Rehabilitation facilities
- Schools
- Trauma centers

A person with a
BACHELOR'S DEGREE
can expect to earn
\$2.27 million
over a lifetime, compared to
\$1.30 million
for those with just a
HIGH SCHOOL EDUCATION!

CLINICAL LABORATORY SCIENCE

Why pursue a degree in clinical laboratory science?

Clinical laboratory scientists may also be known as medical scientists. They conduct research aimed at improving overall human health using clinical trials and other investigative methods to reach their findings.

Medical scientists typically plan and direct studies to investigate human diseases, preventive methods, and the treatment of disease. They work to develop methods, instruments, and procedures for medical applications and data analysis, and prepare and analyze medical samples to identify toxicity, bacteria or microorganisms or to study cell structure. They may standardize drug doses and immunization methods for manufacturing drugs and other medicinal compounds and work closely with health departments, industry personnel, and physicians to develop programs that improve health safety standards, following safety procedures to avoid contamination. As funding is a key part of clinical trials, clinical laboratory scientists will prepare research grant proposals to get funding from government agencies.

Medical scientists study biological systems to understand the causes of diseases and other health problems. For example, medical scientists who do cancer research might put together a combination of drugs that could slow the progress of the disease. They would then study that combination in a clinical trial. Physicians may work with the medical scientists to try the new combination with patients who are willing to participate in the study.

In a clinical trial, patients agree to help find out if a particular drug, or combination of drugs, or other medical intervention works. Without knowing which group they are in, patients in a drug related clinical trial either receive the trial drug or receive a placebo, a drug that looks like the trial drug but does not have specific ingredients. Historically, clinical trials have been performed on young, college-aged, Caucasian males. With the ACA mandating that insurance companies be required to provide coverage for individuals participating in clinical trials that treat cancer or other life-threatening diseases¹⁷, this profile will change. Also, as the population has become more diverse, science has realized that people of different ages and genders, ethnicities and socio-economic backgrounds may react to medical treatments in different

ways and are now broadening the scope of these trials. Research suggests that greater diversity in clinical trials will ultimately save more lives.¹⁸

Medical scientists analyze the data from all the patients in the clinical trial to see if the trial drug did better than the placebo, for whom it worked better and to answer other research questions. They then write up and report their findings. Medical scientists do research both to develop new treatments and to try to prevent health problems.¹⁰

People who hold a degree in clinical laboratory science often pursue careers in:

- Federal government, conducting research on human diseases and on exploratory methods of solving medical problems.
- Universities, medical scientists do research and investigate new medicinal methods of improving health.
- Private industry, focusing on the development of products such as pharmaceutical drugs and medical instruments.

Who hires clinical laboratory scientists?

Many clinical laboratory scientists, especially in universities, work with little supervision, forming their own hypotheses and developing experiments accordingly. They often lead teams, technicians, and students who do support tasks. A medical scientist working in a university laboratory may have undergraduate assistants take measurements and observations for the scientist's research.¹⁰

Employers that seek out clinical laboratory scientists include:

- Universities
- Teaching hospitals
- Research facilities
- Pharmaceuticals testing labs
- Biotech labs

HEALTHCARE ADMINISTRATION

Why pursue a degree in healthcare administration?

Healthcare administrators are the top executives in healthcare and are often given a CEO (chief executive officer) title. This is a position that requires education and experience, as well as certain leadership traits. Since the business model for healthcare is always changing, individuals who pursue a career in healthcare administration are expected to be visionary, out-of-the-box thinkers. They should be willing to consider non-traditional solutions and eager to discover new avenues for bringing healthcare to the community. They are high-level planners and managers.

Healthcare management must view the organization as a whole, incorporating the financing and delivery of services to prevent and treat illness and disease and include programs that serve the public and private sectors at all levels—local, state, and federal. A degree in healthcare administration will provide the education needed for entry-level and middle-management roles in healthcare organizations. Coursework in these programs touches on diverse fields such as management, economics, law, medicine, public health, planning, sociology, and statistics—all with a common commitment to solving problems and developing innovations related to the access, cost, and quality of healthcare.

Successful healthcare administrators will have developed their conceptual and analytical skills in order to understand and manage today's healthcare organization and prepare for tomorrow's challenges. They must be adept in project management, teamwork and leadership. They may initially pursue a bachelor's degree; and, depending upon their goals, will often go on to pursue a master's degree in healthcare administration.

Who pursues a career in healthcare administration?

Typically, candidates fall into three groups:

- Those preparing to advance their careers from middle to upper middle management
- Those looking for a career transition into healthcare administration from another profession
- Those looking to advance from clinical or technical roles to management roles

Who hires healthcare administrators?

Top executives in every field are essential for running companies and organizations. Their work—formulating strategies and policies—is central to the success of a company. However, as a business grows, the number of top executives does not grow as quickly as the number of employees. Therefore, top executives are not expected to experience as much employment growth as the employees they oversee and applicants should face very strong competition for jobs.¹⁹

Employers that seek out healthcare administrators include:

- Hospitals
- Hospital systems
- Business and industry
- Detoxification centers
- Hospice care
- Medical laboratories
- Medical clinics
- Mental health clinics
- Nursing homes

HEALTHCARE

is the largest industry in the United States⁶ and is comprised of HIGHLY SKILLED, WELL-TRAINED professionals that are DRAWN TO HELP OTHERS.

HEALTH INFORMATICS

Why pursue a degree in health informatics?

Health informatics is a relatively new field that is expected to grow as health records increasingly become digitized to improve efficiency. This is also a mandate of the ACA; as of January 1, 2014, all public and private healthcare providers and other eligible professionals must have put into place electronic health record systems (EHR) in order to maintain their existing Medicaid and Medicare reimbursement levels.²⁰ This is a significant change for many providers, with smaller practices likely to be hit the hardest as the current price tag for many EHR software systems is upwards of \$50,000.

An electronic health record is a digital version of a patient's paper chart. It constitutes a real-time, patient-centered record that makes information available instantly and securely to authorized users. While an EHR does contain the medical and treatment histories of patients, an EHR system is built to go beyond standard clinical data collected in a provider's office and can be inclusive of a broader view of a patient's care. One of the key features of an EHR is that health information can be created and managed by authorized providers in a digital format capable of being shared with other providers across more than one health care organization. EHRs are built to share information with other health care providers and organizations—such as laboratories, specialists, medical imaging facilities, pharmacies, emergency facilities, and school and workplace clinics—so they contain information from all clinicians involved in a patient's care.²¹

EHRs are just beginning to be used in medical facilities and the systems for using them and managing them are still developing. This is why the need for health informatics professionals is growing. These individuals are interested in the effective use of information technologies and systems to improve the quality, safety, and efficiency of healthcare. They are the people who will set up these much needed electronic medical records and information systems. Once fully implemented, EHRs promise to improve the quality and delivery of healthcare, reduce medical errors and healthcare costs, increase efficiency and expand access to affordable care.

Although the U.S. Bureau of Labor Statistics (BLS) has yet to publish data on health informatics, due to the field's relative youth, it does anticipate about a 22 percent rate of growth in employment opportunities for similar positions like medical records/health information technicians, medical/health managers, computer support specialists, and computer systems managers in the decade from 2012 to 2022.¹²

Healthcare informatics professionals may find themselves working in the following areas:

- Bioinformatics/medical informatics
- Health information/medical records
- Administration/administrator
- Technology/technician

Who hires healthcare informatics professionals?

- Hospitals: state, local, and private
- Nursing care facilities
- Home health care services
- Clinics

AS OF JANUARY 1, 2014,
all public and private
healthcare providers and
other eligible professionals
must have put into place
**ELECTRONIC
HEALTH RECORD
SYSTEMS.**²⁰

HEALTHCARE ANALYTICS

Why pursue a degree in healthcare analytics?

By its nature, healthcare is a field that generates large amounts of data. As 2014 is the federal deadline for healthcare entities to have health records stored electronically, data is expected to increase accordingly. Healthcare analysts, a position much like operations research analysts but with a unique focus on healthcare, are professionals trained in the effective use of information technologies and systems to improve the quality, safety and efficiency of healthcare.

Healthcare analysts use data to identify and define healthcare problems, collecting and organizing data from a variety of sources. To analyze the data, they gather input from workers involved in all aspects of the problem or from others who have specialized knowledge that can help solve the problem. They then examine the data to figure out what is relevant to the problem and what methods should be used to analyze it. In the course of their work they use statistical analysis, simulation, and optimization to analyze information and develop practical solutions to business problems. Based on their findings, they may advise managers and other decision makers on the appropriate course of action in order to solve problems, and write memos, reports, and other documents that outline their findings and recommendations for managers, executives, and other officials.

Healthcare analysts are involved in all aspects of an organization. For example, they help allocate resources, develop production schedules, manage the supply chain, and set prices. Healthcare analysts use sophisticated computer software, to manage databases and conduct statistical modeling to analyze and solve problems. Analysts break down problems into their various parts and analyze the effect that different changes and circumstances would have on each of these parts.

There is no single way to solve a problem, and analysts must weigh the costs and benefits of alternative solutions or approaches in their recommendations to managers. Because the problems are complex and often require expertise from many disciplines, most analysts work on teams. Once a manager reaches a final decision, these teams may work with others in the organization to ensure that the plan is successful.¹³

Who hires healthcare analytics professionals?

Healthcare analysts deal with data that is directly related to the fields of medicine, operational efficiency, medical supply chain management, insurance claims processing and quality of treatment. Healthcare analysts may find employment in:

- Medicare and Medicaid services
- Healthcare systems
- Healthcare groups
- Medical centers
- Hospitals
- Insurance companies
- Non-profit charitable organizations
- County Health Departments

HEALTHCARE ANALYSTS
USE DATA to
identify and define
healthcare problems.

Why pursue a degree in nursing?

The need for registered nurses is strong and growing, encouraged in part by a 2010 Institute of Medicine landmark report on *The Future of Nursing*.⁷ The report, initiated by the Robert Wood Johnson Foundation, calls for increasing the number of baccalaureate-prepared nurses in the workforce to 80 percent and doubling the population of nurses with doctorates. The expert committee charged with preparing the evidence-based recommendations contained in this report state that to respond “to the demands of an evolving health care system and meet the changing needs of patients, nurses must achieve higher levels of education.”²² With the influx of new patients expected to enter the healthcare system as the ACA gains footing, nurses at every skill level will be required to assist in their care.

The job of a registered nurse can vary, but typically includes recording patient medical histories and symptoms, giving patients medicines and treatments and setting up plans for patient care or contributing to existing plans. Registered nurses carefully observe patients and record their observations to share with doctors and other healthcare professionals. They may operate and monitor medical equipment, assist in performing diagnostic tests and analyzing results and often teach patients and their families how to manage illnesses or injuries.

Some registered nurses oversee licensed practical nurses, nursing aides, and home care aides, or work to promote general health by educating the public on warning signs and symptoms of disease. They might also run general health screenings or immunization clinics, blood drives, or other outreach programs.

Most registered nurses work as part of a team with physicians and other healthcare specialists. Some nurses have jobs in which they do not work directly with patients, but they must still have an active registered nurse license. For example, they may work as nurse educators, healthcare consultants, public policy advisors, researchers, hospital administrators, salespeople for pharmaceutical and medical supply companies, or as medical writers and editors.¹⁴

Advanced Practice Nurse Specialties

- **Nurse anesthetist** – Advanced Practice Nursing has many specialties and one option is that of a nurse anesthetist. These are uniquely skilled, educated, and professionally certified nurses that command a high degree of autonomy and professional respect. Certified registered nurse anesthetists (CRNAs) provide anesthetics to patients in every practice setting, and for every type of surgery or procedure. Sixty five percent of all anesthesia care is delivered by a CRNA, and in rural areas they provide ninety percent or greater of the anesthesia services. CRNAs are the sole anesthesia providers in two-thirds of all rural hospitals, and the main provider of anesthesia to expectant mothers and to men and women serving in the military. The academic programs to become a CRNA are rigorous master's and doctoral level curricula of study.
- **Nurse midwife** – Certified nurse-midwives (CNMs) are advanced practice registered nurses who provide counseling and care during pre-conception, pregnancy, childbirth and the postpartum period. CNMs and their colleagues, certified midwives (CMs), also provide family-centered primary healthcare to women throughout their reproductive lives. Skilled midwifery can reduce the need for high-tech interventions for most women in labor, and midwives also are trained in the latest scientific procedures to assist in normal deliveries. CNMs/CMs are skilled health professionals who practice in a wide variety of clinical settings, diagnosing and treating patients as well as referring them to a specialist, if required.²³
- **Clinical Nurse Specialist** – Clinical Nurse Specialists (CNSs) are advanced practice registered nurses who provide direct patient care in a variety of settings, focusing on addressing healthcare needs at the macro or systems level. Working in interprofessional settings, CNSs improve patient outcomes through expert consultation and communication, care coordination, and monitoring healthcare quality indicators. They diagnose and treat acute and chronic conditions, and often provide sub-specialty care for a specific medical disorder.

- **Nurse Practitioner** – Nurse Practitioners (NPs) are advanced practice nurses who diagnose, prescribe medications, treat a wide variety of illnesses, and manage the care of patients and their families across the lifespan. NPs work in collaboration with physicians and other healthcare providers in interprofessional settings to improve patient outcomes. They interpret x-rays, electrocardiogram data, laboratory tests, and counsel and educate patients and families regarding nutrition, exercise, smoking, weight management and other health promotion and disease management lifestyle choices.

Other Nursing Specialties

- **Psychiatric nurse** – Psychiatric mental health nursing is a specialty within nursing. These registered nurses work with individuals, families, groups, and communities, assessing mental health needs. The PMHN develops a nursing diagnosis and plan of care, implements the nursing process, and evaluates it for effectiveness. Psychiatric mental health advanced practice registered nurses (PMH-APRNs) offer primary care services to the psychiatric-mental health population assessing, diagnosing and treating people with psychiatric disorders or the potential for such disorders using their full scope of therapeutic skills, including the prescription of medication and administration of psychotherapy.²⁴
- **Geriatric nurse** – Nurses who work in the field of geriatrics, also known as gerontology, focus on caring for older adults. This is a high-demand practice area, because older people are more likely to require health services. Geriatric nurses are educated to understand and treat the complex physical and mental health needs of older people. They try to help their patients protect their health and cope with changes in their mental and physical abilities, so older people can stay independent and active as long as possible.²⁵

RNs, CRNAs and other nurses may find employment in facilities like these:

- Hospitals
- Physician offices
- Home healthcare services
- Community clinics
- Nursing care facilities
- Correctional facilities
- Schools
- Summer camps
- With the military

Advanced practice nurses that attain a CRNA certification may find employment in:

- Hospitals, ambulatory surgery centers, dental offices, plastic surgery centers
- Physicians' offices, pain clinics
- Community clinics
- The military, and academic and university education settings

Who hires registered nurses?

As the largest healthcare occupation, registered nurses held about 2.7 million jobs in 2012. The industries that employed the most registered nurses in 2012 include private general medical and surgical hospitals, physician's offices, local general medical and surgical hospitals, home health care and skilled nursing facilities. The remainder worked mainly in government agencies, administrative and support services, and educational services.¹⁴

Most registered nurses work in healthcare facilities. Home health and public health nurses travel to patients' homes, schools, community centers, and other sites. Some may work in correctional facilities, schools, summer camps, and nurses often work with the military. Others move frequently, traveling in the United States and throughout the world to help care for patients in places where there are not enough healthcare workers.

THE FIELD OF NURSING is expected to grow **19%** from 2012 to 2022, **FASTER THAN THE AVERAGE** for all occupations.¹⁴

PUBLIC HEALTH ADMINISTRATION

Why pursue a career in public health administration?

Public health administration is a diverse, dynamic and growing field of service professionals working to improve the health and well being of the public. Public health administrators are challenged with finding solutions to complex health issues facing their communities on a local, national, and even international level. These issues can be as varied as improving access to quality healthcare and epidemic and pandemic management, to tackling environmental hazards and reducing substance abuse, violence and injuries.

One of the changes expected with the Affordable Care Act is a greater focus on preventive health and public education about healthy lifestyle choices. Public health departments will be charged with showing demonstrable improvements in healthcare outcomes within specific geographical groups, such as a measurable reduction of chronic ailments like diabetes, cardiovascular disease and hypertension. As the nation ages and if obesity numbers continue to climb, the healthcare industry as a whole will see an increase in the demand for education provided by public health administrators and medical services. Public health professionals will provide valuable direction in changing behaviors to better the health of the overall community in the coming years.

Public health education can be a fulfilling career that can significantly benefit the population. Public health professionals have been influential in helping to decrease infectious disease because of cleaner water and improved sanitation; reduce deaths from coronary heart disease and stroke due to smoking cessation programs and blood pressure control education; improve access to family planning with healthier mothers and babies; and provide a healthier, safer food supply.

A bachelor of science in public health degree is required for entry-level positions, with many employers requiring the Certified Health Education Specialist (CHES) credential. The courses to fulfill the degree should include a broad-based foundation in the liberal arts and sciences and an ecological perspective of public health and the role that public health professionals play in preventing disease while maintaining or increasing quality of life.

Some public health positions require a graduate degree like a master's in public health administration (MPH). An MPH gives public health professionals a competitive edge, with expanded knowledge of the factors that influence local, national, and global legislative and social policies. They will also learn broad-based, state-of-the-art quantitative and qualitative skills needed for problem solving. A person who pursues an MPH will develop multi-disciplinary and collaborative strategies for solving health-related problems with enhanced communication skills to aid in working with diverse populations. This person will be positioned to take on a leadership role in health promotion and disease prevention.²⁶

Generally, people who hold a degree in public health administration pursue careers in:

- Behavioral and social science
- Biostatistics
- Environmental health
- Epidemiology
- Health services administration
- International/global health
- Maternal and child health
- Nutrition
- Public health laboratory practice

Who hires public health administrators?

Public health educators held about 58,900 jobs in 2012.¹⁵ They work in a variety of settings, including hospitals, non-profit organizations, government, doctors' offices, private businesses and colleges. Although most public health educators work in an office, they may spend a lot of time away from the office to carry out programs or attend meetings.

The following industries employed the most public health educators in 2012¹⁵:

- Healthcare
- Religious, grant making, civic, professional and similar organizations
- Government
- Social assistance
- State, local and private education service

An MPH gives public health professionals a **COMPETITIVE EDGE**, with expanded **KNOWLEDGE** of the factors that influence local, national, and global legislative and social policies.²⁶

RADIATION THERAPY

Why pursue a degree in radiation therapy?

Radiation therapy is the use of targeted radiation to kill cancer cells, shrink tumors and relieve other medical ailments. Skilled radiation therapists use advanced technologies to deliver measured radiation doses to tumors while avoiding damage to healthy tissues and organs.

Like so many aspects of modern medicine, the application of radiation therapy is rapidly advancing, and today is used as a tool for both diagnosing and treating diseases other than cancer. Radiation therapy has a number of applications in non-malignant conditions, such as the treatment of some neuralgias, neuromas, eye diseases, prevention of scar growth and others.

Radiation therapists are not nurses or doctors, but are highly educated and trained professionals. Most work in hospitals or cancer treatment centers and are responsible for seeing that the machines they use are working properly and are in good condition. They discuss treatment plans with patients and ensure that proper safety procedures are followed throughout the course of treatment. They use x-rays to identify exact treatment targets and computer technology to ascertain that the correct dosage of radiation is delivered. They carefully record every treatment and observe patients carefully for unexpected reactions.

Newer imaging technologies, like magnetic resonance imaging (MRI) and positron emission tomography (PET) have broadened the field for these professionals and resulted in better treatment outcomes with fewer side effects for patients.

Students who earn a degree in radiation therapy often find themselves as part of an oncology team that treats patients with cancer, working side by side with the following specialists¹⁶:

- **Radiation oncologists** – physicians who specialize in radiation therapy
- **Oncology nurses** – nurses who specialize in patients with cancer

- **Radiation physicists** – physicists who calibrate linear accelerators
- **Dosimetrists** – workers who calculate the correct dosage of radiation to use in the treatment

Who hires radiation therapy professionals?

Employment of radiation therapists is expected to grow by 24 percent between 2012 and 2022, faster than the average for all occupations. However, because this is a small occupation, the fast growth will result in only about 4,500 new jobs over the 10-year period.¹⁶

The risk of cancer increases as people age, so an aging population will increase demand for radiation therapists. Early diagnosis and the development of more sophisticated treatment techniques will also increase employment.

Experienced radiation therapists may advance to manage radiation therapy programs in treatment centers or other healthcare facilities. Managers generally continue to treat patients while taking on management responsibilities. Other advancement opportunities include teaching, technical sales, and research. With additional training and certification, a radiation therapist also can become a medical dosimetrist and determine exactly how to deliver the prescribed radiation dose.

Employers who seek out radiation therapists include:

- Medical and diagnostic laboratories
- Specialty hospitals
- Medical employment services
- Private physicians
- Outpatient care centers
- General medical and surgical hospitals

About National University

Since 1971, National University has been dedicated to making lifelong learning opportunities accessible, challenging, and relevant to a diverse student population. As a nonprofit institution, National University invests in its students by providing them with quality educational instruction and learning technologies, superior faculty, and exemplary student services.

National University has five schools and one college, including:

- School of Business and Management
- School of Education
- School of Engineering, Technology and Media
- School of Health and Human Services
- School of Professional Studies
- College of Letters and Sciences

Dedicated to educational access and academic excellence, National University provides challenging and relevant programs that are student-centered, success-oriented, and have a proven balance of theoretical and practical attributes.

National University offers the following health sciences degree programs:

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- [Bachelor of Science in Allied Health](#)
- [Bachelor of Science in Clinical Laboratory Science](#)
- [Bachelor of Science in Healthcare Administration](#)
- [Bachelor of Science in Public Health](#)
- [Bachelor of Science Major in Radiation Therapy](#)
- [Bachelor of Science in Nursing - RN Completion](#)
- [Bachelor of Science in Nursing - Accelerated Post-Bachelor Degree](#)
- [Bachelor of Science in Nursing - \(California\)](#)
- [Bachelor of Science in Nursing - Generic Entry](#)
- [Licensed Vocational Nurse to Bachelor of Science in Nursing](#)
- [Master of Healthcare Administration](#)
- [Master of Public Health](#)
- [Master of Science in Clinical Affairs](#)
- [Master of Science in Clinical Regulatory Affairs](#)
- [Master of Science in Health and Life Science Analytics](#)
- [Master of Science in Health Informatics](#)

- [Master of Science in Nurse Anesthesia](#)
- [Master of Science in Nursing](#)

National University also offers certificate programs in:

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- [Graduate Certificate in Nursing Administration](#)
- [Graduate Certificate in Nursing Informatics](#)

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- **Phone:** 855.355.6288
- **Email:** advisor@nu.edu
- **Visit us online:** <http://www.nu.edu/OurPrograms/SchoolOfHealthAndHumanServices.html>

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