



The Health Professions - An Overview

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Content

[Advanced Practice Registered Nurse](#)

[Athletic Trainer](#)

[Dental Hygienist](#)

[Diagnostic Medical Sonographer](#)

[Dietitian](#)

[Exercise Science](#)

[Nurse \(Registered Nursing\)](#)

[Occupational Therapist](#)

[Paramedic](#)

[Pharmacist](#)

[Physical Therapist](#)

[Physical Therapist Assistant](#)

[Physician](#)

[Physician Assistant](#)

[Radiographer](#)

[Speech-Language Pathologist](#)

[Surgical Technologist](#)

Advanced Practice Registered Nurses (APRNs), including Nurse Practitioners, Clinical Nurse Specialists, Certified Nurse Mid-Wives, and Certified Nurse Anesthetists are prepared in master's-degree programs. APRN's are licensed independent practitioners who practice in ambulatory, acute and long term care as primary and/or specialty care providers. According to their practice specialty they provide nursing and medical services to individuals, families and groups. In addition to diagnosing and managing acute episodes and chronic illness, APRN's emphasize health promotion and disease prevention. The Doctorate in Nursing Practice (DNP) is designed for nurses seeking a terminal degree in nursing practice and offers an alternative to research-focused doctoral programs. PhD programs in nursing prepare graduates to master the breadth of the discipline, as well as the depth of a particular area of related science. These programs provide an understanding of the practice environments and prepare graduates to further the scholarship of the discipline. The core of the PhD program is an understanding of nursing and the development of competencies to expand science that supports the discipline and practice of nursing.

Athletic Trainers (ATs) are health care professionals who collaborate with physicians to optimize patient and client activity and participation in athletics, work and life. The practice of athletic training encompasses the prevention, examination and diagnosis, treatment, and rehabilitation of emergent, acute, subacute, and chronic neuromusculoskeletal conditions and certain medical conditions in order to minimize subsequent impairments, functional limitations, disability, and societal limitations. ATs work under the direction of physicians but on-site supervision is not required. Professional, or entry-level athletic training education, uses a competency-based approach in both the classroom and clinical settings. Using a medical-based education model, ATs are prepared to provide comprehensive client/patient care in five domains of clinical practice: injury/illness prevention and wellness protection; clinical evaluation and diagnosis; immediate and emergency care; treatment and rehabilitation; and organizational and professional health and well-being. A minimum of a bachelor's degree is required to become an AT but more than 70 percent of ATs have a master's or doctoral degree. Work settings for an AT can include secondary schools, colleges and universities, professional sports teams, amateur and recreational athletics, hospitals, rehabilitation clinics, physicians' offices, corporate and industrial workplaces, the military, public safety, and the performing arts. Regardless of their setting, ATs practice athletic training and provide athletic training services according to their state practice act.

Dental Hygienists (RDH) are oral healthcare specialists with professional goals centered on the prevention and control of oral disease and maintenance of oral and general health. The range of services performed by dental hygienists varies from state to state, but minimally includes: patient assessment procedures, oral cancer screening, radiographs, removal of hard and soft deposits from teeth, local anesthesia administration, oral health education, nutritional counseling, tobacco cessation, and office management. As primary health care professionals, dental hygienists can apply their knowledge and skills in a wide variety of areas related to clinical practice, education, research, public health, and advocacy for health promotion and disease prevention. Dental hygienists collaborate with dentists and members of other health

professions to provide oral health care that links with total body health care. New emphasis on the effect of oral health on systemic health challenges dental hygienists to widen their scope of practice. Dental Hygienists may gain entry into the profession with an associate degree, but a greater number of hygienists are earning advanced degrees at the bachelor's and master's degree levels. The primary employer for dental hygienists is in private practice dental offices and specialty offices emphasizing care in periodontics or pediatric dentistry. Dental Hygienists may also provide services for patients in hospitals, nursing homes, and public health clinics. Alternative career opportunities also exist in management, education, research, and dental sales/marketing.

A **Dietitian** (registered dietician, RD) is a food and nutrition expert who has met stringent academic and professional requirements that include an earned a bachelor's degree with course work approved by the Academy of Nutrition and Dietetics' Accreditation Council for Education in Nutrition and Dietetics (ACEND). Coursework typically includes food and nutrition sciences, foodservice systems management, business, economics, computer science, sociology, biochemistry, physiology, microbiology and chemistry. Additionally, RDs must complete an accredited, supervised practice program at a health-care facility, community agency or foodservice corporation, pass a national examination administered by the Commission on Dietetic Registration, and complete continuing professional educational requirements to maintain registration. Approximately 50 percent of RDs hold advanced degrees. Some RDs also hold additional certifications in specialized areas of practice, such as pediatric or renal nutrition, nutrition support and diabetes education. The majority of registered dietitians work in the treatment and prevention of disease (administering medical nutrition therapy, as part of medical teams), often in hospitals, HMOs, private practice or other health care facilities. In addition, a large number of registered dietitians work in community and public health settings and academia and research. A growing number of registered dietitians work with food and nutrition industry and business, journalism, sports nutrition, corporate wellness programs and other non-traditional work settings (Academy of Nutrition and Dietetics, 2012).

Exercise Science is the study of movement and the associated functional responses and adaptations. In this context, an exercise scientist must understand the scientific basis underlying exercise-induced physiological responses. The field of exercise science involves a range of disciplines similar to those in sports medicine; consequently, it is common for exercise science professionals to work in sports medicine facilities. The field of exercise science, however, is typically much broader than sports medicine, ranging from the study of how organ systems work at the cellular level when confronted with disease, to improving the biomechanical efficiency of an employee working on an assembly line. As such, an exercise scientist studies the acute and chronic physiological responses and adaptations resulting from physical activity. They can apply this knowledge to improve or maintain health, fitness or performance. Traditionally, exercise physiologists worked and studied only with athletes to improve performance. Today, however, exercise physiologists also work and study in commercial, clinical, and workplace settings to increase health, fitness, and quality of life of the general population. For example, an exercise

physiologist may work as a cardiopulmonary rehabilitation specialist, a personal trainer, or direct an employee fitness program. At least an undergraduate degree is required.

A **Nurse (Registered Nurse)** provides care to patients and families focusing on the promotion, maintenance, and/or restoration of health and well-being. Nurses observe and assess patient and family needs; assist with testing; administer medications and treatments; implement treatment plans and monitor responses to those treatment plans; provide patient and family education; establish and implement discharge plans; and help both patients, families, and communities deal with healthcare issues. Nurses establish plans of care in collaboration with other members of a healthcare team in all areas of healthcare. An individual may choose to become a registered nurse via three routes: a 3-year diploma program typically administered in hospitals; a 2-3-year associate degree usually offered at community colleges; and the 4-year baccalaureate degree offered at senior colleges and universities. Graduates of all three programs take the same NCLEX-RN® licensing examination. Baccalaureate nursing programs encompass all of the course work taught in associate degree and diploma programs plus a more in-depth treatment of the physical and social sciences, nursing research, public and community health, nursing management, and the humanities. The additional course work enhances the student's professional development, prepares the new nurse for a broader scope of practice, and provides the nurse with a better understanding of the cultural, political, economic, and social issues that affect patients and influence health care delivery.

Diagnostic Medical Sonographer are allied health professionals who utilize high frequency sound waves to generate diagnostic images. More commonly referred to as ultrasound technologist, vascular technologist or cardiac sonographer, depending on their specialty, all are responsible for acquiring high quality images to assist the interpreting physician to formulate an accurate diagnosis. Ultrasound imaging is being utilized in a variety of settings. Sonographers usually work in departments under the supervision of a specialty physician. Diagnostic areas are abdominal, superficial structures (thyroid, breast), male and female pelvis, obstetrics, vascular and cardiac. They image from the unborn to the geriatric patient and can assess anatomy and circulation from the head to the toe. Sonographers possess strong patient care skills and communicate with several healthcare providers. They are ultimately responsible for differentiating a normal from abnormal examination, prior to communicating with the interpreting physician. Physicians and other health providers are also using ultrasound imaging for targeted examinations for clinical management, such as but not limited to, the emergency room, operating room, nerve anesthesia, rheumatology and midwives.

Occupational Therapy (OT) practitioners contribute to improving independence and quality of life for people of all ages in a diversity of settings concerned with health care, education, community and social services. They serve individuals or groups who experience impairment, loss of activity, or the ability to participate fully in meaningful occupations secondary to genetic disorders, chronic conditions, illness, trauma, mental impairment, or social conditions such as poverty and violence. "Occupations" refer to all the things people do in their daily living that

reflect their cultural value, provide structure to routines and roles, and give meaning to their lives. These are all the activities that people engage in that meet the needs for self care, enjoyment, and participation in society. The occupational therapy process includes assessment of the strengths, limitations, and challenges that people experience in doing the things they need, want or are expected to do. Intervention focuses on the remediation of skills to regain independent function, or the modification of the tasks or of the environment to facilitate one's ability to perform occupations and ensure their maximal productivity. Occupational Therapists earn a Master's Degree and Occupational Therapy Assistants an Associate Degree. There are also Doctoral Degrees in Occupational Science for therapists seeking roles in research or education. Occupational therapists may seek Board Certification through the American Occupational Therapy Association in specialty areas including Gerontology, Mental Health, Pediatrics, or Physical Rehabilitation. Specialty Certifications can also be awarded for specialized training and experience in driving and community mobility, feeding eating and swallowing, environmental modification, and low vision.

A **Paramedic** is recognized as an allied health professional that responds and provides immediate treatment to victims of illness or injury within the respective community. As the highest level "out-of-hospital" healthcare provider, the paramedic acts as a team leader during an ambulance response to medical emergencies, rescue operations, mass casualty situations, and crime scenes. The Paramedic's scope of practice includes invasive and pharmacological interventions to reduce the morbidity and mortality associated with acute out-of-hospital medical and traumatic emergencies. The Paramedic provides care designed to minimize secondary injury and provide comfort to the patient and family while transporting the patient to an appropriate health care facility. Most paramedics are hired by private service, fire department, municipal/governmental, or hospital-based ambulance companies. Opportunities to specialize include tactical medicine with police departments, critical care inter-facility transport including aeromedical services, disaster management with technical rescue teams, primary healthcare within the federal prison system, and industrial medicine including oil rigs. Becoming a paramedic begins with the training. Standards for training vary from state to state, but generally begin with EMT-1, which is first responder training. EMT's-1s can provide limited patient interventions, take vital signs, and offer basic life support including administration of oxygen and cardiopulmonary resuscitation (CPR). EMT's-1s cannot administer injected medications. EMT-2s and EMT-3s Advanced EMT's can offer more life support services, as well as offering injected and oral medications. A paramedic, or EMT-4, has the highest level of training.

Pharmacists (registered pharmacist, RPh) are health professionals who are responsible for the safe and effective use of medications. Traditionally, pharmacists have been trained to compound and dispense medications to the patient. Most pharmacists practice in community pharmacies. Community pharmacies can be independent (privately owned), chain (CVS, Walgreens, etc), grocery store or "big box" (Target, etc). Historically, most pharmacies were independent but the numbers of privately owned pharmacies have decreased over the last few decades. A significant number of pharmacists are employed in hospitals. In particular in larger

hospitals, pharmacists can specialize in areas (pediatrics, critical care, etc). A smaller, but growing number of pharmacists work in outpatient clinics but they can also be found in the pharmaceutical industry, the armed services, public health and other settings. Pharmacists must earn a 4-year Doctor of Pharmacy (PharmD) Degree (after at least two years of pre-professional college level work). Nearly one-third of pharmacists enter into post-graduate residency training programs to prepare them for advanced practice areas. The profession of pharmacy is rapidly changing as more pharmacists are taking on direct-patient care activities (medication management, immunization) and are moving away from the simple role of dispenser. In Pennsylvania, pharmacists can enter into collaborative practice agreements with physicians that allows them to manage medication regimens and disease states. Pharmacists are important members of the health care team as they can provide important contributions to patient care regarding medication use.

Physical Therapists (PTs) are healthcare professionals who diagnose and treat individuals of all ages, with impairments, functional limitations, and disability associated with the musculoskeletal, neurological, cardiovascular, and integumentary systems. (I.e. Sprain/strain, stroke, cerebral palsy, and burns) PTs are licensed in all 50 states, and the majority of PTs graduating today have a 3 year graduate clinical doctoral degree. PT education programs include foundational science courses, such as anatomy, physiology, neuroscience, biomechanics, pharmacology, and pathology, as well as clinically-based courses such as medical screening, examination tests and measures, diagnostic process, therapeutic interventions, outcomes assessment, and practice management. PTs examine each individual and develop a treatment plan using interventions to improve mobility, reduce pain, restore function, prevent disability, and promote fitness/wellness. These interventions may include therapeutic exercise, functional training, manual therapy techniques, assistive and adaptive devices/equipment, and/or physical agents/electrotherapeutic modalities. Some PTs focus in a particular area of clinical practice, while many are board certified clinical specialists in one of the following areas: cardiopulmonary, clinical electrophysiology, geriatrics, neurology, orthopaedics, pediatrics, sports, and women's health. PTs work in a variety of settings including, hospitals, outpatient clinics, skilled nursing/rehabilitation facilities, home health, and school systems. 48 states, including Pennsylvania, allow physical therapists to practice without a physician referral. Consultation with a variety of other professionals, such as physicians, dentists, physician assistants, nurse practitioners, nurses, educators, social workers, occupational therapists, and speech-language pathologists, is often an integral part of PT practice in order to provide comprehensive care for the individuals they serve.

Physical Therapist Assistants (PTAs) work as part of a team to provide physical therapy services under the direction and supervision of the physical therapist. PTAs implement selected components of patient/client interventions (treatment), obtain data related to the interventions provided, and make modifications in selected interventions either to progress the patient/client as directed by the physical therapist or to ensure patient/client safety and comfort. PTAs assist the physical therapist in the treatment of individuals of all ages, from newborns to the very oldest, who have medical problems or other health-related conditions that limit their abilities to move and perform functional activities in their daily lives. PTAs provide care for people in a variety of settings, including hospitals, private practices, outpatient clinics, home health agencies, schools, sports and fitness facilities, work settings, and nursing homes. PTAs must graduate from a CAPTE-accredited PTA program and licensure or certification is required in most states in which a PTA works. From: <http://www.apta.org/PTACareers/RoleofaPTA/>

A **Physician** is an individual who has graduated from either an allopathic (Medical Doctor) or osteopathic (Doctor of Osteopathic Medicine) four year medical school program. In most cases, this four year medical school experience follows successful completion of an undergraduate Bachelor's degree. Although there is some variation in study between different medical schools, the basic medical school education will involve two years of pre-clinical course work consisting of primarily basic science but also early patient experiences and two years of

clinical study. Osteopathic medical school has the same basic courses as allopathic medical school with the addition of a course involving Osteopathic Principles and Practices (OPP). During this distinctively osteopathic course the students are taught the relationship between human structure and function and the hands on manipulative medicine techniques. After graduation from medical school, the physician begins postgraduate work as an intern (one year rotating internship) or resident physician. Almost all graduates of medical school in the United States complete a residency program. The amount of time spent in postgraduate training varies according to the specialty chosen. Residency requirements may be from a minimum of three years or up to six years in length. It is possible to complete a further specialty fellowship after residency if desired. A physician is responsible for: diagnosing disease, creating a treatment plan, and patient education. The physician works with the other members of the healthcare team to create the best possible outcomes for the patient, whether it is in health improvement or health maintenance. Physicians, because of their unique role on the healthcare team, have an obligation to understand all the roles of members of the healthcare team and include appropriate members in the care of the patient.

Physician Assistants (PA) are healthcare providers who are nationally certified by the National Commission of Certification of Physician Assistants (NCCPA) and state licensed to practice medicine. PAs are educated in intensive medical programs accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA). The average PA program curriculum runs approximately 26 months. PA are educated at the graduate level, with most PAs receiving a Master's degree or higher. In order to maintain national certification, PAs are required to recertify as medical generalists every 10 years and complete 100 hours of continuing medical education every two years. PAs deliver a broad range of services in every medical and surgical specialty to diverse populations in rural and urban settings. PAs collaborate with physicians and all members of the healthcare team. As part of their comprehensive responsibilities PAs conduct physical exams, diagnose and treat illnesses, order and interpret tests, counsel on preventative health care, assist in surgery, and prescribe medications. All fifty states, the District of Columbia and all U.S. territories with the exception of Puerto Rico authorize PAs to prescribe. PAs' scope of practice is determined by their education and experience. Scope of practice is also subject to state laws and facility policy.

A **Radiographer** (diagnostic imaging professional) uses ionizing radiation to image the human body. Medical radiographers provide patient services using imaging modalities, as directed by physicians qualified to order and/or perform radiologic procedures. Radiographers provide patient care essential to radiologic procedures; this includes exercising judgment when performing medical imaging procedures. When providing patient services, the radiographer adheres to the principles of radiation protection for the patient, self, and others. Radiographers accurately demonstrate anatomical structures on a radiograph by applying knowledge of anatomy, positioning, and radiographic techniques. Additional duties include maintaining equipment, processing digital images, keeping patient records, and performing various administrative tasks. The graduate will join other health science professionals educated and experienced in the latest technical procedures requiring the use of x-rays and other

imaging modalities for the diagnosis of medical conditions in hospitals, clinics, physician's private practice offices, as well as government agencies. Radiography is also the gateway to furthering the graduates' professional possibilities in other radiography related imaging modalities such as: Magnetic Resonance Imaging MRI, Computerized Tomography CT, Radiation Therapy Technology, Diagnostic Medical Ultrasound, Nuclear Medicine Technology, Interventional Radiology, and Mammography.

Social Workers have either a Bachelor of Social Work (BSW) or Masters Degree in Social Work (MSW). Social Workers work as part of the healthcare team in Hospitals, Hospices, Home Health Care, Rehabilitation settings, Primary care or Specialty practices, Nursing Homes etc. Often referred to as medical social workers, they take a *holistic and strength based approach* to provide individuals, families, and groups with the biopsychosocial support needed to cope with chronic, acute, or terminal illnesses. Working directly with the patient and his/her family or support system, to access and address the current and future needs. Medical social workers provide a variety of services which include but are not limited to, advising the patient and family care givers on transitioning home or to alternative levels of care, brief counseling, providing patient education, making referrals for other services, identifying resources such as social security or insurance, contacting local private and non-profit services to meet needs, helping the family and the consumer to understand the nature of the care needed, and providing emotional support. Medical social workers can also provide care and case management or interventions designed to promote health, prevent disease, and address barriers to access to healthcare. Social workers are compassionate, multi-tasking professionals who advocates for policy change, assess patient needs, and communicate needs with healthcare team and vice versa that enhances the healthcare experience.

A **Speech-Language Pathologist (SLP)** is responsible for the assessment and treatment of language, voice, cognitive, swallowing, and mastication (chewing) deficits. These problems often arise after traumatic injury, stroke, or as a part of degenerative conditions. Therapy for cognitive and language deficits allows patients to maximize their recovery of these abilities. Swallowing and mastication difficulties in the hospital or nursing home often leads to food and drink falling into the lungs which sets up a patient to develop aspiration pneumonia, a serious medical situation. Quick assessment and therapy for swallowing and mastication difficulties allows medical facilities to minimize risk of aspiration pneumonia in their patients and increase the likelihood of their overall recovery and survival. Also, as changes in cognition, language, and speech are often early signs of many acute and long-term illnesses, the SLP plays an important role in early identification of degenerative conditions and illnesses such as Alzheimer's, Parkinson's, and autism. In acute care, SLPs also use their expertise to localize lesions within the CNS and PNS that are not visible on imaging studies. To become an SLP students must complete a bachelor's and master's degree in speech-language pathology. To become licensed and nationally certified students complete their first year working professionally alongside a mentor SLP. Speech-language pathologists work in private practices, schools, acute care hospitals, long-term care facilities, inpatient and outpatient rehabilitation, and hospice care.

Surgical Technologists are allied health professionals who are a vital part of the surgical team and provide surgical care and expertise to patients. These *scrubs* or *surgical technicians*, assist in surgical operations under the supervision of surgeons, registered nurses, or other surgical personnel. Before an operation, surgical technologists help prepare the operating room by setting up surgical instruments and equipment, sterile drapes, and sterile solutions. They assemble both sterile and non-sterile equipment, as well as check and adjust it to ensure that it is working properly. Technologists also get patients ready for surgery by washing, shaving, and disinfecting incision sites. They transport patients to the operating room, help position them on the operating table, and cover them with sterile surgical drapes. Technologists also observe patients' vital signs, check charts, and help the surgical team put on sterile gowns and gloves. During surgery, technologists pass instruments and other sterile supplies to surgeons and surgical assistants. They may hold retractors, cut sutures, and help count sponges, needles, supplies, and instruments. Surgical technologists help prepare, care for, and dispose of specimens taken for laboratory analysis and help apply dressings. Some operate sterilizers, lights, or suction machines and help operate diagnostic equipment. After an operation, surgical technologists may help transfer patients to the recovery room, clean, and restock the operating room. Educational programs last 9 to 24 months and lead to a certificate, diploma, or associate's degree. Hospitals continue to be the primary employer, although outpatient care centers, ambulatory surgical centers, physician offices, dentist/oral surgeon offices, and central processing areas are other areas for employment.