A multitude of healthcare professionals provide patient care. With nearly 18 million workers, healthcare providers/professionals are considered among the largest groups of employees in the US and they comprise the fastest growing sector of the US economy. Furthermore, they constitute one of the most gifted, well-educated, highly-compensated, and diverse groups of employees in the nation. In this section, the similarities and differences between the most frequently encountered healthcare professionals will be covered. While many of these providers have traditionally been considered providers of either inpatient or outpatient care; however, many provide direct patient care in both settings.

PHYSICIANS

Physicians are at the center of the healthcare setting and play one of the biggest roles in providing care to patients. Physicians diagnose conditions, examine patients, order and evaluate diagnostic tests, and prescribe medications. Physicians must complete many steps in their training in order to practice. First, they must graduate from an accredited medical school with either a Doctor of Medicine (MD) or Doctor of Osteopathic Medicine (DO) degree. Most complete at least four years of undergraduate study then complete four additional years of medical school to earn this degree. After completing their degree, prospective physicians complete a residency where they gain on-the-job training and may become specialized in certain areas. These residencies typically take between three and eight years. After they complete the residency, physicians then take an examination to become licensed to provide direct patient care in a particular state.

There are many different types of physicians. Generally, physicians are categorized as MDs or DOs. MDs practice allopathic medicine, which focuses on using medical treatment as active intervention to treat and counter an illness or disease. Most MDs are specialists in one particular area, such as cardiology, emergency medicine, oncology, surgery, or urology. DOs practice osteopathic medicine, which focuses on preventative measures and treating the whole patient with a special emphasis on the musculoskeletal system of the body. Most DOs are primary care providers (also known as “generalists”), which means they practice family medicine, general medicine, general internal medicine, or general pediatric medicine.
Psychiatrists and ophthalmologists are medical doctors (MD or DO) who are sometimes confused with psychologist and optometrist respectively. Psychiatrists specialize in mental health, including substance use disorders, are qualified to assess both the mental and physical aspects of psychological problems and can prescribe medication for treatment. Clinical psychologist have a masters or doctorate degree in psychology and specialize in emotional and behavior mental health diseases. In most states, they are only allowed to use talk therapy as treatment. A few states allow psychologists to prescribe some psychiatric medications if they have met the required training. Patients must be seen by a psychiatrist or other medical doctor to receive medication treatment. Ophthalmologists are medical doctors who specialize in eye and vision care whereas optometrist complete an undergraduate degree and four years at a college of optometry obtaining a doctor of optometry (OD) degree. The scope of practice varies by state but in general an optometrist are licensed to provide primary vision care, nonsurgical management of eye diseases including medication treatment.

DENTISTS

Dentistry is a branch of medicine that is involved with the study, diagnosis, prevention, and treatment of diseases, disorders, and conditions of the oral cavity and structures in the jaw area. Dentists are doctors specializing in oral health who have earned either a Doctor of Dental Medicine (DMD) degree or a Doctor of Dental Surgery (DDS) degree. Dentists primarily work in private outpatient practice but some work in the inpatient setting.

PHYSICIAN ASSISTANTS

Another important component of the inpatient care team is the physician assistant (PA). PAs must be associated with and practice under the direction of a physician. The supervision does not need to be direct and the physician may either be on or off site. They may examine patients, diagnose illnesses and injuries, and prescribe medications according to the laws of the state where they practice. Most PAs complete two to three years of training and receive a master's degree. After completing a PA program, a PA must become licensed in order to practice. PAs become certified (PA-C) by passing a national certifying examination and are licensed in the state which they practice.

NURSES

Often considered the front line of inpatient care, nurses are the largest group of healthcare professionals. There are many different types of nurses and the level of care they can deliver depends on their degree. The first type of nurse is a Licensed Practical Nurse (LPN). These nurses provide for the basic needs of patients and are asked to take vital signs (such as blood
pressure, heart rate, pulse, etc.), assist with activities of daily living (ADLs), make observations, and keep records. They typically have a high school diploma, followed by completion of a one year nursing program and passage of a state licensing exam.\textsuperscript{1}

Another type of nurse is a registered nurse (RN). RNs must also be licensed in the state in which they provide care and obtain their level in one of three ways: a 2-3 year hospital diploma program, a 2-3 year associate’s degree in nursing (ADN) from a community college, or a 4 year Bachelor of Science degree in nursing (BSN) from a college or university. After becoming licensed and depending on their level of practice and expertise, nurses may do all or any of the following: administer medications, record progression of a patient’s condition, provide patient education, perform medical procedures, and assist physicians.\textsuperscript{9}

Nurses can specialize in specific fields of nursing. It may take more schooling or training depending on the speciality. Some of the areas of speciality include but not limited to: neonatal, critical care, dialysis, pain management and pediatric nursing.\textsuperscript{10}

**ADVANCED PRACTICE NURSES**

If a registered nurse decides to receive advanced training and education beyond the level of an RN, they may become an advanced practice nurse (APN).\textsuperscript{1} There are four different types of APNs: nurse practitioner (NP), clinical nurse specialist (CNS), certified nurse midwife (CNM), and certified nurse anesthetist (CNA). APNs, as outlined by state laws, are typically allowed to provide direct patient care and often serve as an intermediary between doctors and RNs.\textsuperscript{8}

Comprising the largest group of the APNs, nurse practitioners (NPs) are registered nurses who obtain a master of science in nursing (MSN) degree.\textsuperscript{1} Working closely with physicians under collaborative practice agreements but not necessarily always under their direct supervision, NPs can do many things that a physician can do.\textsuperscript{8} These duties include evaluating patients, diagnosing and treating common conditions, providing patient education and resources, and prescribing most types of medications depending on the laws in their respective states.\textsuperscript{2,8} Along with becoming certified (NP-C), nurse practitioners can also specialize in certain areas, including geriatrics, pediatrics, or family care. NPs and PAs are often favorably viewed by patients due to their increased accessibility and amount of time they spend with their patients. Both NPs and PAs are cost-effective alternatives to physicians in regards to treating common conditions and educating patients about different disease states.\textsuperscript{1}
MEDICAL ASSISTANTS

Some of the fastest growing healthcare-related occupations are the medical assistant (MA), certified medical assistant (CMA) and registered medical assistant (RMA).\textsuperscript{11} MAs are normally found on the “front lines” of physicians’ offices and routinely perform administrative tasks including scheduling appointments, greeting patients, answering phone calls, ordering supplies, and filing medical records. Some may also assist the healthcare professional with clinical duties, such as preparing patients for surgery/examination, recording vital signs, taking medication histories, collecting and preparing lab specimens, and calling prescriptions into pharmacies. MAs may receive formal training by attending vocational-technical high schools or community colleges. Others may attend colleges or universities where they receive either a one-year certificate or a two-year associate’s degree. Still others may have a high school degree or equivalent and receive on-the-job training.

A medical assistant may become certified by passing a national exam. Medical assistants have quickly become crucial members of healthcare teams and their roles are expected to expand with the proliferation of physician’s offices.\textsuperscript{11}

PHARMACISTS

Pharmacists are the health professional most accessible to the public. They have been traditionally perceived as engaged only in the community setting, dispensing medications, counseling patients, and providing medical advice and expertise. However, pharmacists have also been working in hospitals, nursing homes, medical industries and other settings for many years. Roles of the pharmacists have evolved over the years to provide high quality care for patients and the general public. Pharmacists work closely with other members of medical teams to enhance patient care, making drug recommendations based on evidence-based medicine and therapeutic guidelines, monitoring lab results and patient-specific responses to therapies, and educating patients and their families on disease states and their medications.\textsuperscript{12} Pharmacists also participate in health promotion through health-related campaigns, community group education, and health fairs.\textsuperscript{12}

All pharmacists, regardless of setting, must receive a doctor of pharmacy (PharmD) degree from an accredited institution and licensed in their state to practice pharmacy.\textsuperscript{13} After graduation, a prospective pharmacist gains licensure by successfully completing the North American Pharmacist Licensure Examination (NAPLEX) and the Multistate Pharmacy Jurisprudence Exam (MPJE) or an equivalent state-level law exam.\textsuperscript{8}

After receiving licensure, pharmacists may pursue residency programs. Residents are
exposed to different facets of practice and learn about the many career paths available to pharmacists today. During a one-year residency (Post-Graduate Year 1 or PGY1), pharmacy residents are generally trained in a variety of areas within the residency setting. Most pharmacy residency programs are hospital based; however, there is an increasing number of residency opportunities in community and managed care areas. Usually a second year of a residency program (Post-Graduate Year 2 or PGY2) is specialized in a certain area, such as pediatrics, ambulatory care, critical care, infectious diseases, cardiology, and many others.

In addition to residencies, pharmacists can obtain disease-specific multidisciplinary certification. Pharmacists can voluntarily become certified in certain disease states, such as diabetes, asthma, anticoagulation, and dyslipidemia. For example, a pharmacist can become a “Certified Diabetes Educator” in order to help diabetic patients learn about and understand their condition, as well as help them to manage the condition and their medications. Certifications can be obtained through national programs that involves didactic, professional diabetes patient experience and exams. This type of certification is also available to other healthcare professionals.

More specifically, pharmacists can become board-certified in a specialty practice area of pharmacy through The Board of Pharmacy Specialties’ (BPS) post-licensure certification program. BPS board certification is considered the gold standard when it comes to determining a pharmacist’s qualifications and capabilities within a specialty area. The BPS currently offers eight distinct specialty areas, including: Ambulatory Care, Critical Care, Nuclear, Nutrition Support, Oncology, Pediatric, Pharmacotherapy, and Psychiatric pharmacy. Pharmacists must practice at least three to four years in the speciality area and pass a speciality certification examination to become a board-certified pharmacy specialist (BCPS) and must be recertified every seven years. Becoming BPS board certified enables pharmacists affirm their knowledge and skills to provide more comprehensive patient care in a specific area, be recognized for their expertise by other healthcare professional, employers, patients and insurers. With more opportunities to provide direct patient care in inpatient and outpatient settings, pharmacists are seeing their roles expanding and are moving closer to being recognized as providers rather than just “drug experts.”

ALLIED HEALTH PROFESSIONALS

An allied health professional is someone who has received special training and earned a certification or degree in a science related to healthcare and has responsibility for the delivery of health or related services. This does not include anyone who has received a degree in medicine, dentistry, veterinary medicine, optometry, podiatry, chiropractic, pharmacy,
psychology, or equivalent. Allied health professionals can be divided into two categories: technicians/assistants and therapists/technologists. Technicians and assistants generally receive less than two years of postsecondary education and require supervision. Examples are physical therapy assistants, medical laboratory technicians and respiratory therapy technicians. Therapists and technologists receive more advanced training and education and are responsible for evaluation, diagnosis and development of treatment plans and can practice independently from a physician in some states.

Therapists & Technologists

Occupational therapists (OTs) work with individuals who have conditions that are mentally, physically, emotionally or developmentally disabling. A master’s degree is the typical minimum requirement for entry into this field.

Physical therapists (PTs) help injured or ill people improve their movement and manage their pain. These therapists are often an important part of the rehabilitation and treatment of patients with chronic conditions, illnesses, or injuries. A Doctor of Physical Therapy (DPT) degree and license is required to practice.

Respiratory therapists (RTs) care for patients who have trouble breathing, from a chronic respiratory disease, such as asthma or emphysema, or emergency care, such as heart attack or drowning. Patients range from premature infants with undeveloped lungs to elderly patients with diseased lungs. Respiratory therapists typically need an associate’s degree, though some have bachelor’s degrees, and a state license is required in all states except Alaska.

Speech therapists or pathologists assess, diagnose, treat, and help to prevent communication and swallowing disorders in patients. Speech, language, and swallowing disorders result from a variety of causes, such as a stroke, brain injury, hearing loss, developmental delay, Parkinson’s disease, cleft palate, or autism. Speech-language pathologists typically need at least a master’s degree and must be licensed in most states.

Audiologists diagnose, manage, and treat a patient’s hearing, balance, or ear problems. Audiologists need a doctoral degree and all states require a license.

Dietitians and nutritionists are experts in the use of food and nutrition to promote health and manage disease. They advise people on what to eat to lead a healthy lifestyle or achieve a specific health-related goal. Most dietitians and nutritionists have a bachelor’s degree and have completed supervised training through an internship. Many states require dietitians and nutritionists to be licensed.
Social workers help people solve and cope with problems in their everyday lives. Social workers may work with children, people with disabilities, and people with serious illnesses. Their work varies based on the type of client. There are child and family, clinical, school, healthcare, and mental health social workers. Social workers assess clients’ situations, and support networks to determine their needs. They help clients adjust to changes and challenges in their lives, such as illness, divorce, or unemployment by providing community resources, such as food stamps, child care, and healthcare to assist and improve a client’s well-being. Most social workers need a bachelor’s degree in social work, while clinical social workers must have a master’s degree and 2 years of post-master’s experience in a supervised clinical setting. Clinical social workers must also be licensed in the state in which they practice.18

Counselors provide support and advice to people. There are many different kinds of counselors, including substance abuse and behavioral disorder counselors who advise people suffering from alcoholism, drug addiction, eating disorders, or other behavioral problems. Genetic counselors assess individual or family risk for a variety of inherited conditions. They provide information and support to other healthcare providers or to individuals and families concerned with the risk of genetic disorder and birth defects. Most positions require a bachelor’s degree, though educational requirements can vary from a certification to a master’s degree depending on the employer.17

ADVANCED PRACTITIONERS

Centers for Medicare and Medicaid Services (CMS) and the US Department of Justice’s Drug Enforcement Administration (DEA) use different terminology to identify non-physician healthcare providers such as nurse practitioners, clinical nurse specialists, and physician assistants who are authorized to dispense controlled substances by the state in which they practice. The term “mid-level practitioner” is used by the DEA, while CMS uses “non-physician practitioner.” There is a movement to change this nomenclature, as the descriptor “mid-level” does not represent the advanced degrees earned by these health care providers. Patients may feel they will not receive high quality care if they are seen by a “mid-level or non-physician practitioner” instead of by an advanced practitioner or their actual degree title.19,20

HOSPITALISTS

Society of Hospital Medicine defines a hospitalist as a physician, nurse practitioner or physician assistant who is engaged in clinical care, teaching, research, and/or leadership in the field of hospital medicine. Hospitalists coordinate the care of patients in hospital. They
organize the communication between different providers caring for a patient, and serve as the point of contact for other doctors and nurses for questions, updates, and provides safe transitions of care within the hospital and from the hospital to the community. Hospitalist are the main point person for patients and family members to contact for patient care questions.\textsuperscript{22}

**CREDENTIALING AND PRIVILEGES**

Each medical staff member who provides medical services in a hospital setting and for health insurance holders must meet the credentialing and privileging standards of a nationally recognized accrediting/certifying body such as the Joint Commission, the American Association for Ambulatory Health Care, or the Centers for Medicare and Medicaid Services. Medical staff includes physicians (MDs and DOs), dentists, physician assistants and nurse practitioners, and those defined by the hospital’s policies and procedures manual and bylaws.\textsuperscript{23}

Credentialing is the primary source verification of a healthcare practitioner’s education, training, work experience, and license. A variety of resources are used to verify this information, including but not limited to direct communication with educational and training institutions, past and current hospital affiliations and employers, peer reference letters, certification boards and licensing agencies.\textsuperscript{23}

Privileging is granting approval for an individual to provide specific aspects of patient care within a specific institution. Examples of privileges include admitting, prescribing, and performing procedures. In some instances, healthcare providers may be credentialed, trained, and licensed to provide certain care but may have their practice limited by the privileges granted within a hospital.\textsuperscript{23} For example, a physician assistant specializing in pediatrics may only be granted privileges to the pediatric unit and would not be able to admit a patient to other areas of the hospital. Healthcare providers go through similar processes at all hospitals where they want to practice and each hospital makes an independent decision regarding privileges.\textsuperscript{6,24}

**INTERPROFESSIONAL EDUCATION AND HEALTH CARE TEAMS**

According to the World Health Organization (WHO), “inter-professional education occurs when students from two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes. Once students understand how to work inter-professionally, they are ready to enter the workplace as members of the collaborative practice team. This key step moves health systems from fragmentation to a position of
Interprofessional healthcare teams are composed of an array of healthcare professionals who bring their specialized knowledge, experience and skills to work together to provide optimal care for patients. Many organizations interprofessional healthcare teams consist of a nurse, pharmacist, physician, social worker and therapist. Members of an Interprofessional team communicate and work together, as colleagues, to provide quality, individualized care for patients.\textsuperscript{26}

In the United States, an Inter-Professional Education Collaborative (IPEC) was formed in 2009, with five health professional associations represented allopathic and osteopathic medicine, dentistry, nursing, pharmacy, and public health to promote a more consistent approach to inter-professional education (IPE) and improve population health outcomes. By 2017, fourteen additional health care professional associations became members representing over 20 professions including podiatry, physical therapy, occupational therapy, psychological medicine, veterinary medicine, physician assistant, optometry, allied health and social work.\textsuperscript{27} IPEC developed four interprofessional collaborative practice competency domains for future health professionals in training. The four domains with their general competency statement are:

\textit{Values/Ethics for interprofessional Practice}- Work with individuals of other professions to maintain a climate of mutual respect and shared value.

\textit{Roles/Responsibilities}- Use the knowledge of one’s own role and those of other professions to appropriately assess and address the healthcare needs of the patients and populations served.

\textit{Interprofessional Communication}- Communicate with patients, families, communities, and other health professionals in a responsive and responsible manner that supports a team approach to the maintenance of health and the treatment of disease.

\textit{Teams and Teamwork}- Apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan and deliver patient-centered care that is safe, timely, efficient, effective, and equitable.\textsuperscript{27}

The accreditation council for pharmacy education has included Interprofessional Education in its Standards. Schools of pharmacy must include IPE in their curriculum for accreditation.\textsuperscript{28} In an effort to enhance quality and meet the evolving needs of patients, interprofessional team based delivery of health care is used.
Interprofessional teams’ goal is to provide patient-centered care. There is evidence that shows including patient preferences into patient care improves outcomes. Interprofessional or multi-disciplinary teams have been a part of health care delivery in hospitals for a long time. Accountable Care Organizations and Patient-Centered Medical Homes are beginning to utilize interprofessional teams to improve patient care and decrease health care costs. Interprofessional team practice arrangements vary from inpatient to outpatient teams as well as from patient to patient depending on individual needs. The central goal of an integrated health care practice is to provide the most effective, accessible, and efficient care to the patient, based upon clinical and patient-focused outcome measures or assessments.
**Medical Provider Credentialing**
A detailed process that reviews doctors’ qualifications and career history including their education, training, residency and licenses, as well as any specialty certificates.

**Medical Provider Privileges**
Defines a physician’s scope of practice and the clinical services he or she may provide.

**Patient-Centered Care**
Identify, respect, and care about patients’ differences, values, preferences, and expressed needs; relieve pain and suffering; coordinate continuous care; listen to, clearly inform, communicate with, and educate patients; share decision-making and management; and continuously advocate disease prevention, wellness and promotion of healthy lifestyles, including a focus on population health.
REFERENCES


