

## Medical Technologist

Medical technologists/clinical laboratory scientists are baccalaureate level laboratorians. They are educated as generalists in the areas of chemistry, hematology, microbiology, immunology, urinalysis and other body fluids. They may choose to specialize in any one of the above areas. With experience they will move into positions of management, supervision, teaching, quality assurance, marketing, consulting and clinical research. They may choose to receive graduate degrees in any of the sciences, business, education or management. They often use sophisticated laboratory equipment to perform tests and statistical skills to evaluate new procedures.

### Specializations

Bacteriology - the study of bacteria as it relates to the field of medicine.

Blood Bank Serology – the study of blood serums and related diseases or organisms.

Chemistry – the study of atomic and molecular systems.

Hematology – the study of blood and blood producing organs of the body.

Immunology – the study of the human immune system and its reaction to foreign bodies.

Microbiology – the study of bacteria and other microorganisms.

### Work Activities/Environment

Typical duties may include conducted testing procedures, trouble shooting sophisticated laboratory instruments, planning, scheduling, determining budgets, teaching, consulting with physicians and other health care providers concerning laboratory results. As group leaders, technical managers and administrators they will make critical decisions and will be responsible for the work of those they manage and teach. They will be employed in hospital laboratories, clinics, public health laboratories, research facilities, technical college and university programs, pharmaceutical companies, industrial laboratories and the military. They must have excellent critical thinking skills, attention to detail, communication skills, people skills, analytical skills and organizational skills.

### Academic/Special Requirements

High school students should study biology, chemistry, mathematics and related courses. Students should seek universities that offer degrees in clinical or medical laboratory technology. Three to four years will be spent on the campus followed by a 6-12 month clinical rotation at an affiliated hospital laboratory.



## **Phlebotomist**

Phlebotomists are trained to draw blood from patients or blood donors for medical tests and/or blood donations. They assemble equipment such as needles, disposable containers for needles, blood collection devices, tourniquets, and other items needed for drawing blood.

### **Work Activities/Environment**

Phlebotomists are usually employed by hospital laboratories, private laboratories, clinics, large medical offices, and blood banks. They are supervised by medical technologists and are trained to apply tourniquets, locate veins and insert needles to draw blood. Some phlebotomists are also trained to conduct interviews, take vital signs and draw and test blood samples to screen blood donors.

### **Academic/Special Requirements**

A high school diploma or equivalent is required before entering training as a phlebotomist. Technical college programs are available all around the state. Some hospitals have on-the-job training. Training programs can vary. Certification, although voluntary, may be required for employment.



## Dental Assistant

Dental assistants work under the direct supervision of a dentist. They perform a variety of duties including: chair side assisting, dental office procedures, and dental radiography.

### Work Activities/Environment

Dental assistants work primarily in general dental offices or specialty dental offices. There is some opportunity to work in dental labs, hospitals, and insurance companies. The duties of a dental assistant are among the most comprehensive and varied in the dental office. The dental assistant performs many tasks requiring both interpersonal and technical skills. The chair side dental assistant assists the dentist during patient care. Duties performed in this role may include, but are not limited to: operatory maintenance, oral evacuation, identification and transfer of dental instruments, matrix band assembly, anesthetic syringe assembly, fluoride application, exposure and processing of radiographs, and mixing dental materials. In the role of receptionist/office assistant, duties may include recall systems, appointment scheduling, filing, maintaining patient records, dental insurance, financial arrangements and collection, and answering telephones. Dental assistants may work full or part-time.

### Academic/Special Requirements

Formal programs are offered at technical colleges. A high school diploma or equivalent is required for admission. In addition, some schools require that students complete high school science courses and take college entrance exams. It is highly recommended that individuals check with the school for specific admission requirements. Programs vary in length from three to nine months. Students receive either a certificate or diploma upon completion of the program. Individuals who complete a dental assistant program accredited by the Commission on Dental Accreditation are eligible to take the Dental Assisting National Boards (DANB) and become a Certified Dental Assistant (CDA).



## Dental Hygienists

Dental hygienists work with dentists and provide educational, clinical, and therapeutic services. They are responsible for providing treatment to prevent oral diseases including applying fluoride, cleaning teeth, examining gums for signs of disease, and performing X-rays.

### **Work Activities/Environment**

Dental hygienists work with a dentist in private dental offices, public health departments, hospitals, and nursing homes. Some are employed by private business, correctional facilities or the military. Dental hygienists may teach dental hygiene for education programs, community groups, and schools. A dental hygienist's hours are usually flexible and can vary from part-time to full-time. Dental hygienists sometimes work for more than one dentist, working a few days at each office. Dental hygienists assist the dentist by performing supportive duties such as teeth cleanings, fluoride applications, examining gums, and charting patient information. They are trained to use a variety of dental instruments, to take X-rays, to examine the teeth and mouth for abnormalities or disease, and to administer local anesthetics.

### **Academic/Special Requirements**

High school students should study biology, chemistry and mathematics. Dental hygienist students may complete an associate (2-3 year) degree, or bachelor's degree (4-year) in an accredited program. Upon graduation, students must pass a written and clinical exam to qualify for a license. Course work includes studying the sciences, anatomy, physiology, psychology, histology (study of tissue and cells), nutrition, dental materials, sociology, public health, and pathology.



# Dentist

Dentists diagnose, prevent and treat problems of the teeth, gums and tissues of the mouth. They examine patients to determine conditions and diseases using X-rays and a variety of dental instruments. They clean, fill, extract and replace teeth and provide preventive dental services such as instruction on proper diet, brushing and flossing as well as placing protective plastic sealants on teeth, straightening teeth, and performing corrective surgery of the gums and supportive bones to treat gum diseases.

## Work Activities/Environment

Most dentists are in private practice and usually work with a dental hygienist, dental assistant or nurse. Dentists also may be a part of a dental or medical group, or they may work in a hospital, public health department or the military. Dentists usually work 4 or 5 days a week during regular business hours and a few work evenings and weekends to accommodate patients. Most dentists become general practitioners, handling a variety of dental needs; however some dentists obtain additional training in one of the listed specialties.

## Academic/Special Requirements

High school students should study biology, chemistry, physics, health, and mathematics. Dental students should have a bachelor's degree with an emphasis on courses in the sciences. Students wishing to enter dental school must take the Dental Admissions Test (DAT). Their overall Grade Point Average (GPA) and their GPA in the science courses will also be considered. Dental school lasts 3 or 4 years with course work in clinical sciences, anatomy, microbiology, biochemistry, and physiology followed by working in a dental clinic under the supervision of a licensed dentist. Upon completion of an accredited dental school, students receive the degree Doctor of Dental Surgery (DDS) or Doctor of Dental Medicine (DMD). To acquire a license, graduates must pass written and practical exams. Specialty licenses require post graduate education.



# Dietitian

Clinical dietitians assess the nutritional needs of patients after consulting with physicians and other health care professionals. They plan patient menus and meals as well as instruct patients on proper nutrition and/or dietary restrictions.

## Specializations

Administrative – Manages dietary department and implements policy and procedure.

Consultant – Works under contract in private and public institutions counseling staff on proper nutrition.

Research – Studies and researches nutrition and dietetics.

Teaching – Plans and teaches dietary and nutritional programs.

Community – Counsels individuals and groups on good nutrition to stay healthy and prevent diseases.

## Work Activities/Environment

Clinical dietitians work in health care settings such as hospitals, clinics, nursing homes, health maintenance organizations (HMO's), government departments, home health care agencies and public health organizations. They create menus and plan meals and nutritional requirements, based on an individual's dietary needs and restrictions. They also provide education on proper nutrition. In a hospital setting, they consult with physicians and other health care personnel to assess the needs of patients. Dietitians may specialize in certain areas and their duties may vary based upon the setting in which they work. Dietitians work in various settings which may include working in cafeterias or kitchens. They also may be on their feet often during a regular work day. Dietitians may work part-time or full-time, although most work about 40 hours a week. Some dietitians may be required to work weekends and holidays.

## Academic/Special Requirements

High school students should study home economics, health, biology, chemistry and mathematics. A bachelor's degree with a major in dietetics, nutrition, food service systems management, or related field is required. Course work may include nutrition, chemistry, biology, business, mathematics, statistics, computer science, psychology, sociology, and economics. Upon graduation from a program accredited by the American Dietetic Association (ADA), individuals must also have completed a dietetic internship in a hospital and passed an examination to earn the Registered Dietitian credential approved by the Commission on Dietetic Registration of the American Dietetic Association (ADA). Students may also choose to complete a Master of Science (MS) degree in Dietetics.



# Health Educator

Health educators present information about how to improve health, prevent disease, and modify behaviors to individual patients as well as community groups. Health educators create and write educational materials, conduct meetings, and plan informative programs.

## Specializations

School health educators — teaches personal hygiene and the impacts of tobacco, alcohol, and drugs.

Community health educators — uses employers, media, and workshops to send the message of prevention and wellness.

Public health educators — works with public health issues as liaison between governmental agencies and the public.

## Work Activities/Environment

Health educators partner with community organizations, hospitals, clinics, schools, government agencies, and businesses which require frequent visits and phone calls to set up health education programming based on a needs assessment. Subjects of programs can include tobacco cessation, cultural diversity in health care, healthy living styles, and even pollution protection in a factory.

## Academic/Special Requirements

High school students should take math, science, and English. Health educators must have a bachelor's degree in health education or another health-related subject. A master's degree in health education is also offered by many universities. If teaching in the schools, health educators must have a teaching certificate.



## Medical Writer

Medical writers, often called health writers and editors, analyze and interpret complex medical issues in order to present them in understandable and concise publications such as newspaper health columns, journal articles, brochures, radio and television scripts, and instruction manuals.

### **Work Activities/Environment**

Medical writers can spend their time writing articles for newsletters and journals or writing scripts for television or radio advertisements or assisting with medical textbooks and educational courses. Medical writers work for publishing companies, hospitals, academic institutions, government agencies, pharmaceutical companies, medical equipment companies, advertising agencies, and radio and television stations.

### **Academic/Special Requirements**

High school students should take classes in biology, chemistry, math, and English. Medical writers need to know the same terminology as health providers. Many employers prefer hiring a medical writer who has at least a bachelor's degree in any type of science, but are willing to hire a graduate with a degree in journalism or English who has a minor in the science field or has taken several science courses.



## Medical Coding Specialist

The coding specialist reviews medical documentation provided by physicians and other health care providers and translates this into numeric codes. The coding specialist assigns and sequences diagnostic and procedural codes using universally recognized coding systems.

### Work Activities/Environment

The coding specialist is a key member of the health care team. Reimbursement to the health care provider is often dependent on the diagnostic and procedural codes assigned. Knowledge of both the medical and business sides of health care make this an interesting profession. Medical coding specialists should possess the ability to be precise and detail-oriented and the ability to adhere to standards and guidelines.

Coding specialists work in health care facilities such as hospitals, clinics, physician practice groups, surgery centers, long-term care facilities, and home health care agencies. Coding specialists are also employed by consulting firms, coding and billing services, insurance companies, governmental agencies and computer software companies. Medical coding specialists work in an office environment using medical records and computers. Full- and part-time employment opportunities are available.

### Academic/Special Requirements

High school students should study health, biology and computer courses. A high school diploma or equivalent is required. Formal programs are offered at vocational/technical schools. Course work may include medical terminology, body structure and function, pathophysiology, and medical coding. Individuals may become certified by passing examinations offered by the American Health Information Management Association (AHIMA) and the American Academy of Professional Coders (AAPC).



# Medical Transcriptionist

Medical transcriptionists perform typing and word processing duties to record medical information from physicians and/or other health professionals.

## **Work Activities/Environment**

Medical transcriptionists work in health care type settings such as hospitals, clinics, physician's offices, health maintenance organizations (HMO's), public health agencies, home health care agencies, and nursing homes. They often listen to recorded data from physicians and other medical professionals and type information into a computer system. They also edit information for grammar and proper medical terms used in a patient's medical records. They are sitting at a computer terminal most of the time. Medical transcriptionists may work part-time or full-time and may work evenings and weekends.

## **Academic/Special Requirements**

High school students should study English, typing, computer courses, health and biology. A high school diploma or equivalent is required and students must complete a program or associate degree in medical transcription. Course work includes English composition and grammar, computer applications, medical terminology and medical transcription. Upon completion of a program, individuals can earn the designation Certified Medical Transcriptionist (CMT) if they pass written and practical examinations provided through the American Association of Medical Transcription.



## Health Care Facility Administrator

Health care facility administrators manage the operations of a health care facility such as a hospital or nursing home, develop policies, and coordinate procedures and planning.

### **Work Activities/Environment**

Health care facility administrators work in health care settings such as hospitals, nursing homes, home health care agencies, clinics, public health agencies, or health maintenance organizations (HMO's). They supervise other administrators and oversee all activities and areas of the health care facility. They participate and direct strategic planning activities, budget planning, facility upgrades and improvements, development of new programs, and general operations and duties of the medical and administrative staff.

### **Academic/Special Requirements**

High school students should study mathematics, social sciences, health, and business related courses. No matter what area of specialization a student chooses, a bachelor's degree is the minimum requirement. Colleges and universities usually offer bachelors, masters and doctoral degrees in health administration. One-year programs offering a certificate or diploma in medical office management or health services administration are also available. While a bachelor's degree is satisfactory for entry level positions, a master's degree in the field is considered to be a standard credential depending upon a student's goals and aspirations. One-year of residency in an approved hospital is also required.



# Mental Health Counselor

Counselors in mental health or behavioral medicine advise individuals about how to deal with and overcome emotional, mental and social problems.

## Specializations

Substance Abuse/AODA (Alcohol & Other Drug Abuse) Counselor - Substance abuse counselors work with individuals and families dealing with substance abuse problems.

## Work Activities/Environment

Mental health counselors work in hospitals, behavior medicine facilities, prisons, rehabilitation centers, clinics, and other institutions. They work closely with other specialists including psychiatrists, psychologists, and social workers. They provide individual and group therapy sessions and monitor the patient's activities and progress during treatment. They also may refer patients to other resources and support services. Counselors may work evenings to accommodate clients' schedules.

## Academic/Special Requirements

Mental health counselors usually need a master's degree in mental health counseling or in psychology or social work. To become certified, counselors must earn their master's degree and complete certain requirements including: acquiring post master's experience, passing a written exam, and confirmation of supervised clinical experience.



# Psychologist

Psychologists, or clinical psychologists, evaluate, diagnose and treat individuals with mental and/or emotional disorders and assist medical or surgical patients in coping with illness or injury. Psychologists may also specialize in different areas.

## Work Activities/Environment

Psychologists work in hospitals, clinics, schools, prisons, rehabilitation centers, and mental health facilities as well as in government or private industry. They diagnose and treat psychological disorders following interviews and observations of a patient's activities. They may consult with psychiatrists to develop treatment programs for patients. They are trained to perform various psychological tests to diagnose mental or emotional disorders and plan and implement appropriate treatment(s).

## Academic/Special Requirements

Students must obtain a master's and a doctoral degree to practice as a clinical psychologist. Students with a bachelor's degree in psychology can assist psychologists or work in the mental health profession; however their opportunities are more limited. There are two types of doctoral degrees – a Ph.D. (Doctor of Philosophy) and a Psy.D. (Doctor of Psychology). Psychologists with a Ph.D. generally qualify for a number of teaching, research, clinical or counseling positions, while those with a Psy.D. often work in clinical positions. At least 2 years of study are required to earn a master's degree in psychology, while 5 to 7 years of graduate study are needed for a doctoral degree. Upon earning an advanced degree from an accredited school, students must meet proper certification requirements which may include completing an internship and passing an examination.



## **Social Worker, Medical**

Medical social workers, sometimes referred to as clinical social workers or health services social workers collaborate with physicians and health care professionals to help individuals cope with social and emotional factors related to a medical condition or problem.

### **Work Activities/Environment**

Medical social workers work in hospitals, clinics, rehabilitation centers, substance abuse facilities and other health care settings. They work directly with patients and families and counsel them on how to deal with emotional and social problems that are related to the patient's medical disorder or disability. They are trained to link the patient with community resources. They advise patient and family on following medical recommendations and teach them to use community resources to resume a normal or active lifestyle - without being inhibited by their medical condition.

### **Academic/Special Requirements**

The recommended minimum requirement for most positions is a bachelors degree in social work, psychology, sociology or a related field. A master's degree in social work (MSW) is usually required for social workers seeking positions in the health and mental health fields. Social workers must also adhere to certification, licensing and registration laws in the state of Wisconsin.

## **Social Worker, Psychiatric**

Psychiatric social workers, also referred to as clinical social workers or mental social workers, help individuals with mental or emotional disorders deal with social problems such as substance abuse or child neglect.

### **Work Activities/Environment**

Psychiatric social workers perform most of their work in hospitals, clinics and other health care centers. They help mentally or emotionally disturbed individuals adapt to outside environments and help them develop their social skills. They act as a resource to patients to help them settle into their lifestyle after being discharged from a treatment program or facility. Psychiatric social workers consult with psychiatrists and psychologists and other health care workers. Most social workers work 40-hours a week, but occasionally may work evenings and weekends. While social work can be difficult because of emotional strain, it is also challenging and rewarding.

### **Academic/Special Requirements**

The recommended minimum requirement for most positions is a bachelors degree in social work, psychology, sociology or a related field. A master's degree in social work (MSW) is usually required for social workers seeking positions in the health and mental health fields. Social workers must also adhere to certification, licensing and registration laws in the state of Wisconsin.



## **Certified Nurse Midwife**

A certified nurse-midwife (CNM) provides care to a woman during pregnancy, manages labor, delivers the baby, and cares for the newborn and mother. Currently, approximately five percent of all births in the United States are conducted by a certified nurse-midwife. CNMs generally take patients who, after a pre-screening, are not likely to have complications. An obstetrician is often used as a consultant for emergencies.

### **Work Activities/Environment**

A nurse-midwife provides education on nutrition, breast feeding, child care, and other information needed for a healthy mother and child. A CNM supervises the labor, provides pain medication if needed, and performs the delivery. The baby is evaluated for its health and then shortly thereafter released to a pediatrician's care.

CNMs are generally self-employed, and work in clinics, hospitals, or independent birthing centers. Hours vary since CNMs are always on call for the expectant mothers.

### **Academic/Special Requirements**

High school students should study health, mathematics, biology, chemistry, social sciences and related courses. Nursing education includes classes in anatomy, physiology, chemistry, microbiology, psychology and related courses. Health and wellness subjects are emphasized, such as nutrition and basic care as well as gynecological care.

CNMs are registered nurses with a bachelor's degree who have completed a certification program which usually involves approximately twelve months of training. A master's degree program is also available, taking about 16 to 24 months. For those who are not already registered nurses, a 3-year combined RN/master's degree program is available in some areas where the nursing degree is obtained along with nurse-midwifery certification.



## Home Health Aide

Home health aides, or home attendants, assist in the personal and daily care for elderly, handicapped, or recuperating patients in their homes.

### **Work Activities/Environment**

Home health aides work in private homes and are usually employed by hospitals, home health care agencies, visiting nurse associations, public health departments and volunteer agencies. They assist patients with daily activities such as getting in and out of bed, going out of the house, dressing, bathing, eating, shopping, and cleaning. Home health aides also provide companionship to patients by talking to them, reading, or just playing games. Performing miscellaneous duties for patients is an ongoing part of a home health aide's job. Home health aides are supervised by a registered nurse, physical therapist or other health professional.

A related occupation is a Home Care Aide – someone who takes care of cooking, cleaning and other jobs around the home – usually for an elderly person.

### **Academic/Special Requirements**

Home health aides usually must pass a competency test that covers different areas of skill and care including communication skills, observation, reading and recording vital signs, basic elements of body function, emergency procedure awareness, basic nutrition and personal hygiene and grooming. Classroom and practical training programs are offered through vocational/technical colleges, or by the employer. Certification is offered through the Foundation for Hospice and Home Care.



## **Licensed Practical Nurse**

Licensed practical nurses or LPNs, under the direction of a physician or registered nurse, give both personal and medicinal care to patients who are sick, injured, or unable to care for themselves.

### **Work Activities/Environment**

LPNs may work in a variety of settings, including: hospitals, clinics, nursing homes, private homes, or institutions. They are trained to administer prescribed medications, draw blood and other fluids, and care for injuries or surgical incisions. In addition, their responsibilities can include developing care plans and providing personal care such as dressing, bathing or feeding patients. LPNs may also be responsible for cleaning and straightening patient rooms. In addition, they keep daily records on a patient's progress and activities. LPNs typically work 40 hours a week, but may work day, evening or night shifts.

### **Academic/Special Requirements**

High school students should study health, mathematics, biology, chemistry, social sciences and related courses. A high school diploma or equivalent is required. In addition, individuals must complete a state-approved practical nursing program which is usually offered through a vocational/technical school, community college, universities or hospitals. Training programs typically last one year and include course work in anatomy, physiology, nursing, pediatrics, obstetrics, first aid, nutrition, and instruction in a clinical setting. Individuals who have successfully completed a training program must pass a licensing examination to earn the designation of Licensed Practical Nurse (LPN).



## **Nurse Assistant**

Nurse assistants, sometimes referred to as nursing aides, perform a variety of duties to help care for patients under the supervision of nurses and physicians.

### **Specializations**

Geriatric Nurse Assistant - assists in the personal and daily care of geriatric patients.

Psychiatric Nursing Assistant - assists psychologists, psychiatrists and other staff to care for mentally or emotionally disturbed patients.

### **Work Activities/Environment**

Nurse assistants work in hospitals, nursing homes, clinics, rehabilitation centers, or psychiatric facilities. They accomplish a number of tasks to assist nursing and medical staff in the care of patients. Nurse assistants are responsible for attending to a patient's everyday needs which may include turning or repositioning a patient in their bed, bathing or dressing, transporting a patient by gurney or wheelchair, taking blood pressures and temperatures, serving food, feeding, and maintaining patients' hygiene.

### **Academic/Special Requirements**

Nursing assistant training is offered in vocational/technical schools, colleges, and by some employers. Training includes instruction in anatomy, physiology, communication skills, emergency procedure awareness, basic nutrition and personal hygiene and grooming. They must pass a competency evaluation program in order to work in most practice settings. Those who complete the program are included in the state directory of nursing aides.



# Nurse Practitioner

Nurse practitioners (NPs) are registered nurses who have greater autonomy, in many states able to practice independently and prescribe medications. Similar in nature to physician assistants, nurse practitioners take a patient load themselves, enabling primary care physicians to provide care to more complex cases.

## Specializations

Adult health  
Acute care  
Geriatrics  
Family health  
Pediatrics  
School health  
Women's health

## Work Activities/Environment

Nurse practitioners work in hospitals, clinics, community centers, public health departments, and a number of other health organizations. They follow a patient's progress — taking the medical history, conducting physical exams, making diagnoses, and implementing treatment plans. NPs also have the ability to order and interpret lab tests and x-rays.

## Academic/Special Requirements

High school students should study health, mathematics, biology, chemistry, social sciences and related courses. Nursing education includes classes in anatomy, physiology, chemistry, microbiology, psychology and related courses. Health and wellness subjects are emphasized, such as nutrition and basic care.

Nurse practitioners begin their education as registered nurses with a bachelor's degree. The master's level NP program takes approximately 18 months to 2 years to complete, and involves classroom and clinical work. Nurse practitioners are nationally certified by four national certifying groups: the American Nurses Credentialing Center (ANCC), National Certification Board of Pediatric Nurse Practitioners (NCB/PNP), American Academy of Nurse Practitioners (AANP), and the National Certification Corporation (NCC).



## Registered Nurse

Nursing is a profession that combines physical science, social science, nursing theory and technology in the care of others. The RN is educated to provide care to all individuals who are sick or healthy through one-on-one hands-on care or to groups of patients. RNs coordinate care and thorough patient education.

### Specializations

Nurses can specialize in their area of practice which include hospital, home, academic, government, business, industry, medical service, and the community at large. Nurses can obtain on-going education through masters degrees or doctorate degree preparation. Infection Control Nurse - distributes information to hospital personnel on communicable diseases and coordinates hospital infection control program. Community Health Nurse - applies nursing skills in the community by instructing individuals and families about health education and disease prevention. Public Health Nurse -- applies knowledge from nursing, social science and public health to promote and protect the health of individuals, families and communities. School Nurse -- contributes to the development of health plans and school health programs to protect and promote the health of students and persons who work with students. Correctional/Jail Health Nurse -- contributes to the development of health plans and programs to protect and promote the health of inmates and persons who work with inmates. Occupational Health Nurse - applies nursing skills in the work environment by caring for and offering education to employees. Nurse Practitioner - gives general care and treatment to patients and consults with physician on patient care. May specialize, in particular area such as neonatal care. Nurse Midwife - delivers babies and gives medical care and treatment to pregnant mothers under supervision of an obstetrician. Nurse Anesthetist - administers anesthetics to patients as prescribed by an anesthesiologist.

### Work Activities/Environment

Registered nurses perform numerous duties including observing and assessing patients' health, and providing for a patient's physical, mental, and emotional needs. They are educated to perform a variety of clinical tasks, develop and carry out a patient plan of care, and educating patients on getting and staying healthy. Nurses may work in a specific area including surgery, maternity, pediatrics, geriatrics, emergency room, intensive care, orthopedics or psychiatry. Other specialty nursing areas may require additional training or education. Nurses' jobs are physically and emotionally challenging. They need to be physically active and able to provide patients with assurance and time for listening to their needs. Nurses work part-time or full-time and their hours vary depending upon the specialty and where they work. They may be on call and may work evenings, weekends and holidays.

### Academic/Special Requirements

High school students should study health, mathematics, biology, chemistry, social sciences and related courses. Students must graduate from an accredited nursing school and receive an Associate Degree in Nursing (ADN), which usually takes 2 years, or a Bachelor of Science Degree in Nursing (BSN), which takes 4-5 years to complete. Nursing education includes classes in anatomy, physiology, chemistry, microbiology, nutrition, psychology and related courses. Nursing students also receive instruction and training in a clinical setting. Successful completion of a program and licensure exam earns one the credential of Registered Nurse.



# Chiropractor

Chiropractors, also referred to as chiropractic doctors, believe that many health problems are linked directly to problems of the muscular, nervous and skeletal systems. By using manipulations concentrated on the spinal column and vertebrae, chiropractors try to alleviate any stresses that may be affecting the nervous system.

## Specializations

Orthopedics – specializing in problems with skeletal system, muscles, joints and ligaments. Neurology – specializing in disorders of nervous system. Sports injuries – specializing in treatment of sports related injuries. Occupational Health – practicing or teaching in business or industry environment. Nutrition – specializing in nutrition. Radiology – specializing in using radiologic technology. Thermography – specializing in using infrared technology to measure temperature variations on the surface of the body which produces images of abnormal tissue growths.

## Work Activities/Environment

Chiropractors work in private practice, hospitals, health maintenance organizations (HMO's), and chiropractic colleges. They are trained to understand problems of the musculoskeletal system which includes the muscles, ligaments, bones, nerves and spine. Chiropractors take a holistic approach when treating their patients. Holistic medicine is based on the principle of focusing on all aspects of a person's health including diet, exercise, stress level, heredity, and environment. Chiropractors perform diagnostic procedures and use natural, non-surgical treatments and they do not prescribe or recommend medications. They also analyze and perform alignments and adjustments to improve or correct problems with posture and the spinal column. When needed, chiropractors may consult with and refer patients to other health practitioners. Chiropractors typically work between 40-45 hours a week, although some may set their own hours and may work evenings or weekends. They are often assisted by a chiropractor assistant or technician.

## Academic/Special Requirements

Students must complete at least 2 years of undergraduate study (although some states require 4-year degrees). To become licensed, students must also complete a 4-year chiropractic college course. Licenses are administered upon the successful completion of a test administered by National Board of Chiropractic Examiners. State exams may supplement national board tests. To maintain their license, chiropractors must complete continuing education each year. Programs are also available to receive specialty certification called "diplomate" certification.



# Pharmacist

Sometimes referred to as druggists, pharmacists mix and dispense drugs that are prescribed by physicians or other health practitioners. They offer instruction to patients and physicians on usage and side effects of medications.

## Specializations

Radiopharmacist – dispenses radioactive drugs used for patient diagnosis and therapy.

Pharmacotherapist – specializes in drug therapy.

Nutrition support pharmacist – specializes in preparing drugs needed for nutrition.

## Work Activities/Environment

Pharmacists work in hospitals, drug stores (retail), health maintenance organizations (HMOs), and home health care agencies. They are trained in the proper use of medications and advise patients and physicians about selection, proper dosages, side effects and possible interactions with other medications. Pharmacists keep computerized records of patients' drug usage. Pharmacists who work in retail stores may order supplies, buy and sell non-health related items and may supervise staff. Most pharmacists spend a lot of time standing and work approximately 50 hours a week. Some pharmacists work irregular hours which can include evenings, weekends and holidays. Pharmacists may also work part-time or full-time.

## Academic/Special Requirements

High school students should study mathematics, chemistry, biology, physics, humanities and social sciences. A Doctor of Pharmacy degree requires at least 6 years of study and does not include a bachelor degree. Students wishing to apply for entry into a College of Pharmacy must have 1 or 2 years of pre-pharmacy education at a college or university that may require the student take the Pharmacy College Admissions Test (P-CAT). Graduates of pharmacy colleges may also receive a Master of Science (MS) degree or Ph.D. degree. To obtain the required license, pharmacists must graduate from accredited college of pharmacy, pass a state exam and complete an internship under a licensed pharmacist.



## Pharmacy Technician

Pharmacy technicians assist in the technical, non-judgmental functions related to pharmacy such as processing of prescription orders and performing inventory management under the direct supervision of a pharmacist. Pharmacy technicians are essential to the workflow of a pharmacy. With the increased activities of the pharmacist, pharmacy technicians are taking on more responsibility in the pharmacy. Many of the technical, non-judgmental functions of a pharmacist (such as counting medicine and running a cash register) are being given to pharmacy technicians. This allows pharmacists to focus on patient care and service.

### Work Activities/Environment

Pharmacy technicians work in retail pharmacies (drug stores), clinic pharmacies (in HMOs) and hospital pharmacies. Similar to the pharmacist, pharmacy technicians' jobs depend on their work location. In community and clinic pharmacies, technicians are often the first people the patients see or speak to on the telephone. These technicians may spend much of their time entering prescription and patient information into a computer. They also spend much of their time selecting and counting medicine, answering telephone calls and dealing with insurance companies. A community pharmacy technician may also run a cash register, order drugs and put them away, check for drug outdates and repackage medications into unit-dose packaging for nursing homes.

Technicians who work in hospitals enter prescription orders into a computer database, fill the medication carts, deliver the carts to the floor pharmacies and clean and sterilize pharmaceutical instruments and equipment. A hospital technician may also prepare IV bags (training required) and perform drug calculations per physicians' orders.

Technician work is often fast paced and mentally challenging. A pharmacy technician must be understanding of patients' needs, be open-minded and have a great deal of tolerance. Pharmacy technicians spend a lot of time standing, work full or part time and may work irregular hours, which can include evenings, weekends and holidays.

### Academic/Special Requirements

High school students should study mathematics, chemistry, biology and data entry. Completion of a pharmacy technician program at a community college or vocational/technical school is recommended but not required. A technician may also voluntarily become certified through the Pharmacy Technician Certification Board. Certification requires a high school diploma or GED and passing a written exam.



# Physician

Physicians provide the services of prevention, diagnosis and treatment to individuals suffering from mental illness or physical ailments, injuries, or diseases.

## Specializations

Physicians may choose to pursue a career in primary care (family medicine, general internal medicine, or general pediatrics) or may choose to train more intensely in one of the medical subspecialties as a surgeon or in one of several other fields. Some of these fields are listed below.

Allergy and immunology - immunization specialist.

Anesthesiology - giving anesthesia for surgical procedures.

Cardiology – study of the structure, function, disorders and treatment of the heart.

Dermatology – the study of diseases of the skin.

Family Practice Medicine – the study of general, comprehensive health care for patients of all ages and genders.

Forensic Pathology – the study of tissues and body fluids to determine the cause of sudden, questionable, or unexpected death.

Gerontology – study of the aging process, and health and diseases of the elderly.

Gynecology – the study of diseases and disorders affecting the female reproductive organs.

Internal medicine – study of the diagnosis and treatment (non-surgical) of diseases of the internal organs.

Neonatology – treatment of diseases and care of newborn infants.

Nephrology – study of the functions and diseases of the kidneys.

Neurology – the study of the nervous system and the diagnosis and treatment of diseases and injuries that affect it.

Neuropathology – the study of diseases of the nervous system.

Neurosurgery – nervous system surgery.

Nuclear Medicine - radioactivity used in disease diagnosis  
Obstetrics – the study of pregnancy, childbirth and associated functions.



Ophthalmology – the study of the diagnosis and treatment of eye diseases and injuries.

Orthopedics – the study of correction and prevention of injuries and disorders of muscles, joints and ligaments.

Otolaryngology – the study of the diagnosis and treatment of diseases and injuries of the ear, nose and throat.

Pathology – the study and diagnosis of health problems by examining body fluids, tissue and secretions.

Pediatric – the treatment of injuries, illness and diseases of infants and children.

Physical Medicine and Rehabilitation - rehabilitation of people who have suffered from stroke, heart attack, spinal chord injury, or similar conditions.

Plastic Surgery – corrective and cosmetic surgery.

Preventive Medicine – disease prevention.

Psychiatry – the study of the diagnosis, treatment and prevention of mental and emotional disorders.

Radiology – the study of X-rays and radioactive substances to examine the structure and function of the human body and to diagnose and treat disease.

Surgery – using manual or surgical instruments to treat injuries, illness and conditions of the human body.

Urology – the study of disease and disorders of the male and female urinary tract and the male reproductive organs.

### **Work Activities/Environment**

Physicians work in variety of settings including private offices, hospitals, clinics, research facilities, laboratories, government agencies, public health or home health care agencies, colleges or universities. They may specialize in a number of different areas. They are trained to properly examine patients and their medical history, assess the patient's needs, and then perform and evaluate diagnostic tests and appropriate treatment(s). Physicians may become an M.D. (Doctor of Medicine), or a D.O. (Doctor of Osteopathic Medicine). M.D.s and D.O.s are fully trained and licensed physicians who can specialize in family practice or in any other specific field of medicine. D.O.s have additional training in Osteopathic Manipulative Treatment (O.M.T.), a hands-on treatment tool that focuses on the body's structure and function, and its ability to help heal itself. A physician's work can be emotionally and physically demanding, but also challenging and rewarding. Physicians have the opportunity to help heal patients but also face the stress of caring.



They usually work 60 hours a week or more. Their hours are often irregular, and sometimes include evenings and weekends. Some physicians are frequently on-call in the event of an emergency situation; however, more and more physicians are joining networks or groups which allow them to share in the responsibilities of on-call duties.

### **Academic/Special Requirements**

High school students should study biology, chemistry, mathematics, health and related courses. Premedical students should complete undergraduate coursework in physics, biology, mathematics, English and chemistry. Courses in humanities and social sciences are also recommended. After obtaining an undergraduate degree, students apply for medical school. Medical school acceptance is competitive and students must submit transcripts, scores from MCAT (medical college admission test), and letters of recommendation. Medical school includes classes in anatomy, biochemistry, physiology, pharmacology, psychology, medical ethics and related courses. Medical students work with patients under the supervision of physicians, and do rotations in various specialties including family practice, pediatrics, gynecology, psychiatry and surgery. Following medical school, individuals must complete a residency program and apply for a license. Again, this may vary depending upon an individual's area of specialization.



# Podiatrist

Podiatrists, or doctors of podiatric medicine (DPM), diagnose and treat ailments, injuries, and diseases of the foot and lower leg.

## Specializations

Orthopedic Podiatrist – treats bone, muscle and joint ailments.

Podopediatrician – specializes in foot diseases in children.

Podiatric Surgeon – performs foot surgeries.

## Work Activities/Environment

Podiatrists work in a variety of health care settings including working in their private offices, hospitals, clinics, health maintenance organizations (HMOs), public health agencies, and nursing homes. They are trained to understand problems of the human foot, perform diagnostic tests, and administer treatment for foot injuries, abnormalities and disorders or diseases. They may perform surgery, give medications, and may fit artificial foot devices (prosthetics) or corrective support devices (orthotics) to the foot and lower leg. Podiatrists consult with patient's physician as well as refer patients to specialists for diagnosis and treatment of symptoms related to the foot disorder or disease. Podiatrists usually can set their own hours and they may also work evenings and weekends. They are often assisted by a podiatric assistant.

## Academic/Special Requirements

High school students should study the sciences including biology, chemistry and related health courses. Students should complete a bachelor's degree and must have completed the required semester hours in biology, inorganic chemistry, organic chemistry, physics and English. Students then may apply to an accredited college of podiatric medicine and must submit a grade point average (GPA) and scores from their MCAT (medical college admission test). The 4-year program includes classroom instruction in anatomy, chemistry, pathology and pharmacology as well as clinical rotations in hospitals and clinics. Graduates receive a Doctor of Podiatric Medicine (DPM) degree and go on to complete a 1-3 year residency depending upon specialization. Graduates must also complete required training and pass a written and oral exam to receive a license.



# Public Health

Public health is a system of public, private and voluntary agencies that are focused on the health of the population as a whole. The system seeks to prevent epidemics and the spread of disease, protect against environmental hazards, prevent injuries, promote and encourage healthy behaviors, respond to disasters and assist communities in recovery, and assure the quality and accessibility of health services.

## Specializations

### 2 Year Specialties

Environmental Science Technician – Assists with the assessment, control, elimination and prevention of environmental health hazards.

Occupational Safety and Health Technician – Assists with the assessment of risks and implementation and evaluation of programs to limit chemical, physical, biological and ergonomic risks to workers.

Public Health Dental Hygienist – Assists in the development and implementation of programs and services to promote oral health, deliver preventive services, and counseling and teaching about disease prevention.

Public Health Field/Outreach Worker – Assists other public health professionals to plan and implement health promotion and protection programs and services.

Public Health Laboratory Technician – Performs testing procedures, monitors quality of tests, reports results and works under the direction of a Laboratory Scientist. (See also Clinical Laboratory Services.)

### 4 Year Specialties

Infection Control/Disease Investigator - Assists epidemiologists with the location, prevention and control of infectious diseases in communities, using investigation, treatment and educational services for individuals, families and the community.

Environmental Health Specialist/Registered Sanitarian – Applies biological, chemical and public health principles to control, eliminate, improve, and/or prevent environmental health hazards, in areas including food processing and service, sanitation, and water, air and soil contamination. (Also Advanced Degree)

Environmental Engineer – Applies engineering and public health principles to control, eliminate, improve, and prevent environmental health hazards in areas including water supply, sanitation, and water, air and soil pollution. (Also Advanced Degree)

Occupational Safety and Health Specialist – Reviews, evaluates, and analyzes workplace environments and exposures and designs programs and procedures to control, eliminate, improve, and prevent disease and injury caused by chemical, physical, biological, and ergonomic



risks to workers. (Also Advanced Degree)

**Public Health Educator** – Designs, organizes, implements, communicates, provides advice on and evaluates the effect of educational programs and strategies designed to support and modify health-related behaviors of individuals, families, organizations and communities. (Also Advanced Degree)

**Public Health Laboratory Scientist** – Applies biological, chemical and public health principles to perform analyses, develop new test methods, conduct research and training, and use biostatistics and epidemiological skills to support public and environmental health programs. (Also Advanced Degree) (See Also Clinical Laboratory Services.)

**Public Health Nurse** – Applies knowledge from nursing, social science and public health to promote and protect the health of populations through community assessment, development of intervention plans with community partners, and assuring the implementation of program and policy interventions to improve the health of individuals, families, and the community. (Also Advanced Degree)

**Public Health Nutritionist** - Provides assessment, counseling, teaching and program development for individuals, groups and facilities on nutritional practices for health promotion and disease prevention, in areas including nutrition and eating behaviors, food preparation, and food service. (Also Advanced Degree)

**Public Health Planner/Analyst** – Analyzes population and community health needs, analyzes and evaluates program and policy alternatives, and develops plans for programs, facilities, and resources. (Also Advanced Degree)

**Public Health Social Worker** – Identifies, plans, develops, implements, and/or evaluates programs designed to address the social and interpersonal needs of populations in order to promote the health of individuals, families and communities. (Also Advanced Degree)

### **Advanced Specialties**

**Epidemiologist** – Investigates and describes the causes and distribution of disease, disability, injury and other health conditions, and develops programs and strategies for their prevention and control.

**Public Health Supervisor/Manager** – Plans, organizes, directs, controls, and/or coordinates public health services, education, and policy in public health agencies, health facilities, managed care organizations, and industrial settings.

**Public Health Physician** – Plans, directs, coordinates, and/or evaluates the medical component of public health services, education, and policy in public health agencies, health facilities, managed care organizations, and industrial settings.

**Public Health Dentist** – Assesses, plans, implements, coordinates, and/or evaluates dental services and programs for individuals, families and communities in areas including oral health



promotion, disease prevention, and health protection.

### **Work Activities/Environment**

Public health professionals work in a wide variety of settings including: state and federal government (health, human service, agriculture, natural resources, and laboratory services), local health departments and human service agencies, corrections and jail facilities, private organizations (hospitals, clinics, managed care organizations, businesses), voluntary organizations (non-profit, foundation, religious), schools and university health settings, and academic and research institutions.

### **Academic/Special Requirements**

High school students should study health, mathematics, biology, chemistry, social and behavioral sciences, and related courses. For entry-level technician positions, students must graduate from an accredited technical school in the field of interest. For professional positions, students must graduate from an accredited university/college with a baccalaureate degree in the field of interest. For advanced level positions, students must complete advanced education at the graduate or post-graduate level in the field of interest. Certain professions require state licensure or certification (i.e., nurses, physicians, environmental health specialists, and nutritionists). Many employment settings encourage the 4-year and advanced professionals to pursue certification from a national professional organization.



# Radiation Therapist

Radiation Therapy involves the use of radiation to treat disease, primarily cancer. Along with surgery and chemotherapy it plays an important role in helping patients combat and deal with their disease. Radiation Therapy depends on the expertise of a team of professionals, which also includes Radiation Oncologists (M.D.s), physicists, dosimetrists, nurses and other support staff. Radiation Therapists, in their daily interactions with patients, provide the essential functions of treatment delivery, patient education and assessment, treatment planning and quality assurance of the treatment equipment. This field offers great satisfaction in working with patients during a difficult time in their life. It is more often uplifting and enjoyable than depressing. Because radiation therapists are never in the treatment room during radiation delivery, the field is also very safe.

## Work Activities/Environment

Most radiation therapists work in Radiation Oncology departments in hospitals or in free-standing Radiation Oncology Centers. Radiation treatments are generally scheduled during day shift hours Monday-Friday. Some nights and weekends may occasionally be required to handle emergency treatment situations.

## Academic/Special Requirements

The preferred entry-level education for Radiation Therapists is a bachelor's degree. This involves a four-year program, including a 14 month internship. Students take general education and pre-requisite courses during their first two years (such as biology, chemistry, physics, anatomy and physiology, math, psychology and sociology). They then take professional courses both on campus and at the internship site. These include: Radiation Physics, Pathology, Biology of Cancer, Radiobiology, Patient Care, Imaging, Health Communications, Health Economics, Principles and Practice of Radiation Therapy, Treatment Planning and Quality Management. Clinical Practicum courses involve students in working alongside radiation therapy professionals with real patients in real treatment situations. Programs that offer an associate degree in radiation therapy or a certificate to radiographers who continue their education may be available in some areas of the country. Graduates are eligible to apply to the American Registry of Radiologic Technologists to take the certification exam. High school students who are interested in pursuing and education in radiation therapy are advised to get a good background in science and math courses during high school. Observation or job shadowing in a radiation therapy department can be very helpful for a student determine his/her level of interest in the field.



# Radiologic Technologist

Radiologic Technologists, sometimes known as radiographers, X-ray technologists, or imaging technologists are responsible for producing images of the human body by operating radiologic equipment. These images are viewed by a radiologist and/or physician to assist in the diagnosis of disease and injury.

## Specializations

Ultrasound Technologists/Sonographers - use ultrasound equipment to produce recordings of functions of the body to study, view and/or diagnose diseases or disorders. Radiation Therapy Technologists - give radiation therapy to patients for treatment of disease such as cancer.

## Work Activities/Environment

Radiologic technologists work in hospitals, imaging centers, and physician's offices or clinics. They position patients on the radiographic table, adjust and operate X-ray and other imaging equipment to produce and develop films of the human body. Radiographers work directly with physicians and patients, are responsible for the health and safety of the patient during the procedure, keep patient records, prepare work schedules, and maintain equipment. Technologists work part-time or full-time. They usually work 40 hours a week which may include some evenings and weekends.

## Academic/Special Requirements

High school students should study mathematics, physics, chemistry and biology. A high school diploma or equivalent is required for entry into a radiography program. Formal training is offered through hospitals, colleges, universities, vocational/technical institutes and the military. While 2-year programs are most common, students can enroll in programs that last from 1 to 4 years, and receive a certificate, associate degree or bachelor's degree. Individuals with prior experience in the health field usually enroll in the 1-year programs. Course work in a radiologic technology program covers anatomy, physiology, radiation physics and protection, the principles of imaging, medical ethics and terminology, and other related courses in both the classroom and clinical setting. Hospitals and most facilities require technologists to be certified by the American Registry of Radiologic Technologists (ARRT).



## **Biological/Research Scientist**

Biological/Research scientists study reproduction, growth and development, function, structure, behavior and other aspects of living organisms to develop medicines, prevent disease, and promote health.

### **Specializations**

Anatomist – studies organ structure in animals and applies to human medicine. Biochemist – researches how various substances affect living organisms and their functions. Biophysicist – studies and analyzes mechanical and electrical energy in living cells and tissues. Epidemiologist – studies the causes and spread of diseases among populations and determine ways to prevent or control diseases. Geneticist - studies characteristics and inherited traits of humans and animals. Histopathologist - studies how disease affects human and animal tissues. Microbiologist - examines and studies characteristics of bacteria and other microorganisms. Pharmacologist - analyzes the effects of drugs and other materials on human and animal tissue and functions of the biological system. Physicist - researches physical phenomena and applies the theory and laws of physics to industry, medicine and other areas.

### **Work Activities/Environment**

Biological Research Scientists work as consultants, or they are employed by private companies such as chemical or pharmaceutical, research facilities, the government, and laboratories. Some scientists may work in management positions. They may work in laboratories, hospitals or depending upon the specialty, outside of a laboratory, in classrooms, or offices. They work regular hours, 40-hours a week, although if working in field research, hours can vary and the work may be physically demanding.

### **Academic/Special Requirements**

High school students should study biology, chemistry, mathematics, and related courses. Students who successfully complete a bachelor's degree can usually work in non-research positions, or as biological, science or engineering technicians. Other graduate students continue their education in a health professions school or specialized field. An advanced degree such as a Ph.D. is usually required for college teaching, independent research or advancement.



# Biomedical Engineer

Biomedical engineers research and study functions and systems of humans and animals to design life-support devices and other medical equipment to assist health care personnel in observing, repairing or treating various health conditions.

## Specializations

Clinical Engineering - designing and developing medical equipment.

## Work Activities/Environment

Biomedical engineers work in laboratories, industrial plants, universities, or private corporations. They research the functions and systems of the human body to create life-support devices such as artificial organs, pacemakers, imaging devices and other medical equipment and may specialize in the design and development of medical equipment. They apply engineering principles, use mathematical equations and their knowledge of the human system to collect information for measuring and maintaining functions of the human body. Biomedical engineers, like most engineers, work 40 hours a week, although some may work longer hours.

## Academic/Special Requirements

High school students should study mathematics, the physical sciences, and computer application courses. Students are required to complete a bachelor's degree in engineering, although some college graduates with a degree in physical science or mathematics may qualify for some jobs. Biomedical engineering is one of many engineering branches. While some colleges offer degrees in engineering, others offer 2 or 4-year programs in engineering technology. A standard 4-year program provides course work in mathematics, physics, and chemistry as well as introductory engineering, humanities, social sciences and courses specific to biomedical technology. Graduates of accredited programs, can earn the required registration by acquiring 4 years of work experience consistent with their field of study, and passing an examination. Some students pursue a graduate degree if they wish to work in research or teaching.



## **Perfusionist**

Perfusionist set up and operates equipment that controls and regulates the functions of the heart and lungs during surgery or respiratory failure.

### **Work Activities/Environment**

Perfusionists work in hospitals, in physician's private practices, and in health maintenance organizations (HMO's). They consult with surgeons and physicians to assess a patient's needs. Perfusionists set up, monitor and maintain equipment during surgery which regulates the functions of the patient's heart, lungs, blood circulation, body temperature, and administers medications.

### **Academic/Special Requirements**

High school students should study health and the sciences. A high school diploma or equivalent is required. Individuals must complete a bachelor of science degree in a medical background followed by a master's degree in academic or clinical study.



# Surgical Technologist

Surgical technologists, sometimes referred to as operating room technicians, assist the surgical team by preparing a patient for surgery, placing equipment and supplies in operating room, arranging instruments, and handing instruments to the surgeon during surgery and performing other supportive tasks.

## Work Activities/Environment

Surgical technologists work in hospitals and clinics. They are responsible for preparing the operating room for surgery including monitoring supplies, arranging equipment and instruments, assisting the surgical team with sterile gowns and gloves, handing instruments and supplies to the surgeon and counting sponges and other instruments before, during and after surgery. Surgical technologists are also responsible for sterilizing equipment and cleaning the operating room. They must be alert throughout operations and usually work a 40-hour work week. Technologists are sometimes on call and may work evenings, weekends and holidays on a rotation basis. Some surgical technologists may specialize in an area of surgery or they may work as a circulating technologist, who assists as an "unsterile" member of the surgical team. Circulating technologists perform a variety of tasks during surgeries including helping open packages and monitoring and assisting the needs and activities of the surgical team. Surgical technologists work under the supervision of an RN, and set up before surgery, pass instruments, cut sutures, maintain supplies and dispense fluids.

## Academic/Special Requirements

High school students should study health and the sciences. A high school diploma or equivalent is required for entry into training programs. Individuals receive training at accredited community and junior colleges, vocational and technical institutes or hospitals. Formal post secondary programs last 9 months or 2 years and lead to a certificate, diploma, or associate degree. Course work includes classes on anatomy, physiology, pharmacology, microbiology, ethics, medical terminology, instruction on instrument handling and sterilization, and infection control. Students who have successfully completed a formal training program may earn certification as a Certified Surgical Technologist (CST) after passing a national certification exam.



## **Audiologist**

- Audiologists evaluate and treat individuals with a hearing impairment or hearing disorder by planning and implementing prevention and rehabilitation treatments.
- Audiologist work in hospitals, rehabilitation centers, physicians' offices, speech language and hearing centers, home health care agencies, schools, colleges, and universities.
- Few audiologists are in private practice or contract out their services. They often consult with speech pathologist, families, teachers, and other professionals.
- They are trained to conduct tests with hearing devices and other equipment to determine type and degree of hearing impairment and to assess communication problems.
- Audiologist provide instruction in speech or lip reading, hearing aid fittings, testing noise levels in workplaces and teaching hearing loss prevention programs.
- Some audiologist conduct research on hearing, or they design and develop techniques for diagnosing and treating hearing problems.

### **Work Activities/Environment**

Audiologists work in hospitals, rehabilitation centers, physicians' offices, speech language and hearing centers, home health care agencies, schools, colleges, and universities. A few work in private practice or contract out their services. They often consult with speech pathologists, families, teachers and other professionals. They are trained to conduct tests with hearing devices and other equipment to determine type and degree of hearing impairment and to assess communication problems. Audiologists provide instruction in speech or lip reading, hearing aid fittings, testing noise levels in workplaces and teaching hearing loss prevention programs. Some audiologists conduct research on hearing, or they design and develop techniques for diagnosing and treating hearing problems. Audiologists may work part-time or full-time, although most work 40 hours a week.

### **Academic/Special Requirements**

- Students should take a college preparatory curriculum.
- Helpful high school courses would include anatomy & physiology, chemistry, foreign language (minimum of two years), public speaking, and statistics and probability.



## **Certified Athletic Trainer**

Certified athletic trainers assess sports injuries, providing appropriate treatment, and educating athletes on injury-prevention programs as well as healthy lifestyles. Trainers help with rehabilitation after an injury. Kinesiology is closely related, focusing on human movement and physical activity.

### **Work Activities/Environment**

Athletic trainers work with school sports teams, professional sports, or in sports medicine clinics or health clubs. Trainers work in collaboration with physicians and coaches, insuring that treatment plans are followed and athletes are not returned to the game prematurely. Trainers can work full-time year round or on a seasonal basis which varies with each sport.

### **Academic/Special Requirements**

Students should study biology, chemistry, and physics as well as basic first-aid. Some coaching or experience as a team captain is preferable. Bachelor's and master's degrees are available in athletic training or kinesiology. An accredited program includes courses such as human anatomy and physiology, psychology, nutrition, and physical education plus extensive field experience. Athletic trainers are certified by the National Athletic Trainers' Association after earning a college degree plus 800 hours of experience and an examination.



# Occupational Therapist

Occupational therapists use therapeutic activities and programs to help individuals with disabling conditions to regain their abilities in the home and work environment. Occupational therapists help individuals learn the necessary skills to live an independent and productive lifestyle.

## Work Activities/Environment

Most occupational therapists work in hospitals, schools, rehabilitation centers, nursing homes, adult day care programs and home health agencies. A small number of occupational therapists are in private practice. Therapists work with patients suffering from physical, emotional, psychological or a developmental disabling condition. They prepare activities to help patients learn or re-learn how to conduct daily activities, while also increasing the patient's strength and coordination. Individuals may need assistance with daily living activities such as dressing or preparing a meal or help regaining skills for work activities such as using a computer or operating machinery. Occupational therapists also chart their patients' activities and progress to provide ongoing evaluations, and to report to physicians. Occupational therapists usually work in rooms equipped with machines, and other devices that assist in a patient's recovery. Because of the activities and work involved, occupational therapists are on their feet a lot during a regular work day. If they are working for a home health agency, occupational therapists must travel between appointments and have the ability to adapt to various environments.

## Academic/Special Requirements

High school students should study biology, chemistry, physics, health, art, and social sciences. Students must complete at least a bachelor's degree in occupational therapy. Six months of clinical internship is required in addition to course work on physical, biological, behavioral sciences and the application of occupational therapy theory and skills. Upon completion of their undergraduate degree from an accredited program, students must pass an examination from the American Occupational Therapy Certification Board. Successful completion will result in the title of registered occupational therapist (OTR).



# Physical Therapist

Physical therapists provide therapy treatment to patients with physical disabilities. They teach patients proper exercises and use a variety of equipment and activities to help patients strengthen muscles and improve mobility, restore function and to relieve pain.

## Work Activities/Environment

Physical therapists often work in hospitals, clinics, physician offices, nursing homes, home health agencies, rehabilitation centers, adult daycare programs, schools or private companies. Some work in private practice and contract with these agencies. Their work includes lifting, bending, standing, and other mobile activities while working with patients. Physical therapists are trained to test and measure a patient's motor abilities, strength, coordination, and respiratory and circulatory efficiency. They instruct, encourage and help patients to complete a variety of activities. Physical therapists are trained to provide treatment with equipment, exercises, massage, whirlpool baths, and other mediums while evaluating the success of each treatment and modifying therapy as needed. Physical therapists review a physician's recommendations and the patient's medical record to determine most appropriate physical therapy treatment. Physical therapists typically work 40 hours a week and may include evenings and weekends. This work can be both rewarding and frustrating for a physical therapist depending upon how their patient's condition progresses during therapy.

## Academic/Special Requirements

High school students should study biology, chemistry, physics, health, and social sciences. Students must complete a master's degree in physical therapy. Because entry into physical therapy programs is competitive, it is recommended that students focus on obtaining exceptional grades in high school and college as well as performing some volunteer work in the field. Supervised clinical experience is provided in physical therapy educational programs, as well as course work on the basic sciences, biomechanics, neuroanatomy, studies in disease, and research and rehabilitative procedures. Upon completion of their undergraduate degree from an accredited program, students must pass an examination to become a licensed physical therapist.



## **Physical Therapy Assistant**

Physical therapist assistants work under the direction and supervision of physical therapists to assist in providing therapy treatment to patients with physical disabilities.

### **Work Activities/Environment**

Physical therapist assistants support physical therapists in their daily activities which include assisting patients during rehabilitation. Assistants are trained to conduct therapeutic exercises, provide therapeutic massage, observe patients and evaluate data on a patient's progress. Physical therapist assistants may fit or adjust supportive devices such as leg braces or crutches. Assistants may also perform clerical duties such as answering phones, ordering supplies, and completing forms. They may work full-time or part-time depending upon where they are employed.

### **Academic/Special Requirements**

High school students should study biology, chemistry, physics, health, art, and social sciences and perform some volunteer work at a local nursing home or with a physical therapist. An associate degree is required from an accredited community college or technical school. Course work includes mathematics, anatomy and physiology, biology, chemistry, psychology and supervised clinical experience. Physical therapy assistants are required to become licensed or certified. They are also required to be certified in CPR and First Aid, and must have completed a required number of hours in the clinical field.



# Respiratory Therapist

Respiratory therapists, also referred to as respiratory care practitioners, provide care, treatment, diagnosis, and rehabilitation for patients with breathing problems. Disorders such as asthma and emphysema, and emergency care for victims of stroke, heart failure, drowning, or shock are but a few of the types of problems seen by respiratory therapists.

## Work Activities/Environment

Respiratory therapists may work in hospitals, nursing homes, home health agencies, or private companies. They work with patients of all ages - from premature infants to elderly patients. Respiratory therapists work under the supervision of a physician. Respiratory therapists are trained to evaluate a patient's condition and recommend therapies for treatment. They operate breathing devices to test the function of the lungs and they are trained to monitor their patient's responses to therapy by checking vital signs and performing blood tests. Respiratory therapists teach proper breathing exercises to aid in a patient's recovery. They evaluate and maintain patient charts. Respiratory therapists typically work 35-40 hours a week, which may include evenings and weekends. Because of the nature of their work, respiratory therapists may experience emergency type situations, and often perform duties while standing.

## Academic/Special Requirements

High school students should study health, biology, mathematics, chemistry and physics. Accredited training programs for respiratory therapists may either be a 2-year program leading to an associate degree or a 4-year program leading to a bachelor's degree. Course work focuses on mathematics, human anatomy and physiology, chemistry, physics, microbiology, and career specific classes. Upon completion of a 2-year or 4-year accredited program, graduates must receive a license as a respiratory care practitioner. They may take the exam to become a Certified Respiratory Therapist (CRT). Wisconsin mandates a license to practice, such as a CRT. If a CRT meets education and experience requirements, and passes a separate examination, they are eligible to become a Registered Respiratory Therapist (RRT).



# Speech-Language Pathologist

Speech-language pathologists, sometimes referred to as speech clinicians or speech therapists, diagnose, evaluate, and provide treatments for persons who have speech, voice, language as well as eating and swallowing problems.

## Work Activities/Environment

Speech pathologists work in hospitals, rehabilitation centers, physicians' offices, speech language and hearing centers, home health care agencies, schools, colleges, and universities. A few work in private practice or contract out their services. They treat patients who experience speech and language problems as a result of hearing loss, stroke, brain injury or other debilitating conditions. Speech pathologists work with individuals who may suffer from eating and swallowing problems and/or speech and language difficulties. They are trained to evaluate and test a patient's skill level in speech and language, to create and implement proper treatment programs, to operate audio-visual equipment for patient treatment, and monitor each patient's progress. Speech pathologists may work part-time or full-time, although most work 40 hours a week.

## Academic/Special Requirements

High school students should study the sciences, health and related courses. A master's degree in speech-language pathology is required. Course work includes study in speech, language, hearing, and communicative disorders as well as clinical training in the treatment of these disorders. Graduates with a master's degree in the field must then complete a required number of hours in supervised clinical work, pass a written exam and finish a postgraduate internship to earn a Certificate of Clinical Competence (CCC) offered by the American Speech-Language-Hearing Association.



# Veterinarian

Veterinarians provide medical diagnoses and treatments for pets, livestock and other animals. They are trained to examine animals for disease and injury, perform surgery, prescribe medicines and vaccinations, and treat wounds and broken bones. Veterinarians advise animal owners about proper care and breeding to keep their animals healthy. They may specialize in a particular area of care.

## Specializations

Veterinarians that study various aspects of disease, structure, form and function of animals are divided into the following categories: anatomist, microbiologist, epidemiologist, parasitologist, pathologist, pharmacologist, toxicologist and physiologist. Specialization titles may include: Zoo Veterinarian – Poultry Veterinary Livestock Inspector Veterinary Virus – Serum Inspector Veterinary Meat Inspector

## Work Activities/Environment

Veterinarians are usually in private practice, although some are employed by government agencies, private industries, medical colleges and universities, zoos, research laboratories, public health agencies and pharmaceutical companies. Veterinarians may have a general practice which treats all types of animals or more selective practices which treat pets such as dogs, cats and birds – or livestock animals such horses and cattle. Veterinarians usually have the ability to calm animals and get along with animal owners.

## Academic/Special Requirements

High school students should study mathematics, biology, chemistry and related courses. It is recommended that students complete at least 2 years of pre-veterinary study, although most have completed a 4-year undergraduate degree before applying to an accredited veterinary school. Admission into a 4-year veterinary program is competitive and applicants must have experience working with animals and take the Veterinary Aptitude Test, Medical College Admission Test (MCAT) or Graduate Record Examination. Course work in the program includes classroom and clinical and laboratory experience. Graduates receive a Doctor of Veterinary Medicine degree (DVM or VMD) from an accredited college and must pass a state board examination to become licensed



# Veterinary Technician

Veterinary technicians, known also as veterinary assistants, animal health technicians, or animal technicians, perform support duties to the veterinarian.

## Specializations

Lab Animal Technician – specializes in the testing of biomedical advancements and product safety. Biotechnology Technician – can specialize in animal breeding, forensics, gene therapy, fermentation, bioremediation, or DNA reagents and products.

## Work Activities/Environment

Veterinary Technicians may be employed by veterinarians in a private practice, they may work in research laboratories, or assist with research projects in private industry or public health. Technicians prepare the examination room for animals and assist in restraining animals during exams. Under the supervision of a veterinarian, technicians may also perform laboratory tests, give injections, take vital signs, change bandages, bath or groom, or clean an animal's teeth.

## Academic/Special Requirements

High school students should study mathematics, biology, chemistry and related courses. A high school diploma or equivalent is required. Technicians are usually required to complete an associate degree.



# Optician

Opticians or Dispensing Opticians adjust eyeglass lenses according to prescriptions and fit them into frames. Some opticians may manufacture lenses for optical instruments such as telescopes or microscopes.

## **Work Activities/Environment**

Opticians usually work in the retail trade such as optical goods stores selling lenses and frames. Others are employed by eyewear manufacturer laboratories, or by optometrists or ophthalmologists. Opticians fill prescriptions, make recommendations for frames and lenses, and fix or replace broken lenses. Although they are trained to operate machinery that grinds and polishes eyeglass lenses, some opticians have an ophthalmic laboratory technician perform this portion of the work. Some opticians specialize in fitting contact lenses. They can work part or full-time and may work evenings and weekends.

## **Academic/Special Requirements**

High school students should study mathematics, physics, basic anatomy or even mechanical drawing. A high school diploma or equivalent is preferred. Programs in optical technology are usually offered at community colleges. Some employers require completion of an optician program, while others may hire an individual with no formal background in the optician profession. Individuals may get on-the-job training or training in the form of an apprenticeship. Certification, which must be renewed every 3 years, can be applied for through the American Board of Opticianry and the National Contact Lens Examiners.



# Optometrist

Optometrists, known as doctors of optometry (O.D.'s), examine and test eyes to detect vision problems, abnormalities and diseases. They prescribe corrective lenses and/or procedures to fix or improve vision problems.

## Specializations

Geriatric optometry Pediatric optometry Primary care optometry Low-vision rehabilitation  
Vision therapy Contact lenses Hospital-based optometry

## Work Activities/Environment

Optometrists typically work as a salaried employee in a private practice, health maintenance organization (HMO), retail store, as a consultant, or in public health. They may work for an ophthalmologist, as a college instructor or in research. Optometrists examine eyes to detect vision problems and prescribe eyeglasses, contact lenses or other procedures. They also may prescribe medications to treat diseases of the eye. In some cases, optometrists consult with and refer patients to ophthalmologists or other health care practitioner. Optometric assistants or technicians assist in preparing patients for examination, performing vision tests, cleaning instruments, repairing frames and modifying contact lenses.

## Academic/Special Requirements

High school students should study mathematics, chemistry and biology. A bachelor's degree with 2-3 years of pre-optometric study is recommended at an accredited college or university. It is recommended that students take the Optometry Admissions Test (OAT) during their sophomore or junior year to gain admission into a 4-year program at an accredited optometry school\*. Courses will include pharmacology, optics, vision science, biochemistry, laboratory and clinical training. Upon completion of the 4-year program, students receive their Doctor of Optometry Degree. They also must pass written and clinical state board examinations to become licensed. Optometrists wishing to specialize must complete postgraduate residency programs.

