Anesthesiology

An anesthesiologist is trained to provide pain relief and maintenance, or restoration, of a stable condition during and immediately following an operation, obstetric, or diagnostic procedure. It is the anesthesiologist's foremost purpose and concern to protect the patient's well-being and safety just prior to, during, and after surgery. Anesthesiologists have many responsibilities: preoperative evaluation of patients to determine conditions that may complicate surgery; management of pain and emotional stress during surgical, obstetrical, and medical procedures; provision of life support under the stress of anesthesia and surgery; immediate postoperative care of the patient; and knowledge of drugs and their interactions with anesthetic agents. Their functions also include long-standing and cancer pain management; management of problems in cardiac and respiratory resuscitation; application of specific methods of inhalation therapy; and emergency clinical management of various fluid, electrolyte, and metabolic disturbances.

Subspecialties

Adult Cardiothoracic Anesthesiology
Critical Care Medicine, Anesthesiology
Obstetric Anesthesiology, Anesthesiology
Pain Medicine, Anesthesiology
Pediatric Anesthesiology, Anesthesiology

Cardiology

Cardiovascular disease, or cardiology, is the subspecialty of internal medicine concerned with diseases of the heart, lungs, and blood vessels. Cardiology involves the prevention, diagnosis, and management of disorders of the cardiovascular system, including ischemic heart disease, cardiac dysrhythmias, cardiomyopathies, valvular heart disease, pericarditis and myocarditis, endocarditis, congenital heart disease in adults, hypertension, and disorders of the veins, arteries, and pulmonary circulation. Management of risk factors for disease and early diagnosis and intervention for established disease are important elements of the specialty. The specialty is relatively high-tech in its approach to diagnosis and treatment and is also on the cutting edge of preventive health and noninvasive treatment modalities. Cardiologists deal primarily with adults, many of whom are elderly. The practice involves a wide scope of patient care activities, ranging from basic physical exams to sophisticated interventions in life and death emergencies.
Subspecialty of Internal Medicine

Child Neurology**

Child neurology, also known as pediatric neurology, specializes in the diagnosis and management of neurologic conditions during the neonatal period, infancy, early childhood, and adolescence. Child neurologists have special competence in the genetic and metabolic problems, malformations, and developmental problems of childhood, including epilepsy, cerebral palsy, muscular dystrophy, mental retardation, autism, Tourette's syndrome, Batten's disease, neurofibromatosis, learning disabilities, complex metabolic disorders, and a host of nerve and muscle diseases. Child neurologists act as consultants to primary care physicians as well as provide continuing care for chronic neurological conditions. Like other pediatric specialties, it is a specialty that requires the ability to work with patients who may have limited or nonexistent verbal skills.

Subspecialty of Neurology

Critical Care**

A physician who diagnoses, treats and supports patients with multiple organ dysfunction. This specialist may have administrative responsibilities for intensive care units and may also facilitate and coordinate patient care among the primary physician, the critical care staff, and other specialists. Critical Care medicine is also a subspecialty of internal medicine.

Subspecialty of Anesthesia

Cytopathology**

A cytopathologist is an anatomic pathologist trained in the diagnosis of human disease by means of the study of cells obtained from body secretions and fluids, by scraping, washing, or sponging the surface of a lesion, or by the aspiration of a tumor mass or body organ with a fine needle. A major aspect of a cytopathologist's practice is the interpretation of Papanicolaou-stained smears of cells from the female re-productive systems, the "Pap" test. However, the
A cytopathologist's expertise is applied to the diagnosis of cells from all systems and areas of the body. He/she is a consultant to all medical specialists.

**Subspecialty of Pathology-Anatomic and Clinical**

**Dermatology**

A dermatologist is trained to diagnose and treat pediatric and adult patients with benign and malignant disorders of the skin, mouth, external genitalia, hair and nails, as well as a number of sexually transmitted diseases. The dermatologist has had additional training and experience in the diagnosis and treatment of skin cancers, melanomas, moles, and other tumors of the skin, the management of contact dermatitis, and other allergic and nonallergic skin disorders, and in the recognition of the skin manifestations of systemic (including internal malignancy) and infectious diseases. Dermatologists have special training in dermatopathology--the diagnosis of skin diseases including infectious, immunologic, degenerative, and neoplastic--and in the surgical techniques used in dermatology. The care of the dermatology patient may entail both topical and systemic medical therapeutics and a variety of surgical and cosmetic procedures, including excisions, sclerotherapy, laser surgery, liposuction, hair transplants and tissue augmentation therapies, anti-aging treatments, injectable and implantable soft tissue fillers, correction of acne scarring, chemical peeling, vein therapy, skin cancer treatment, and reconstructive flaps and grafts. In addition, dermatologists have a role in the care of normal skin, skin cancer prevention, and sun protection.

**Subspecialties**

Clinical & Laboratory Dermatological Immunology

Dermatological Immunology

Dermatopathology, Dermatology and Pathology

Pediatric Dermatology
Emergency Medicine

Emergency medicine focuses on the immediate decision making and action necessary to prevent death or any further disability both in the pre-hospital setting by directing emergency medical technicians and in the emergency department. The emergency physician provides immediate recognition, evaluation, care, stabilization, and disposition of a generally diversified population of adult and pediatric patients in response to acute illness and injury. A high-pressure, fast-paced, and diverse specialty, emergency medicine requires a broad base of medical knowledge and a variety of well-honed clinical and technical skills. The practice is primarily hospital emergency department-based, but with extensive pre-hospital responsibilities for emergency medical systems. The care provided by the emergency physician is episodic in nature and involves a full spectrum of physical and behavioral conditions.

Subspecialties of Emergency Medicine

- Emergency Medical Services
- Medical Toxicology, Emergency Medicine
- Pediatric Emergency Medicine, Emergency Medicine
- Sports Medicine, Emergency Medicine
- Undersea & Hyperbaric Medicine

Endocrinology

An internist who concentrates on disorders of the internal (endocrine) glands such as the thyroid and adrenal glands. The principle problems endocrinologists encounter include goiter, thyroid nodules, thyroid dysfunction, diabetes mellitus, hyper- and hypocalcemia, adrenal cortex dysfunction, endocrine hypertension, gonadal disorders, disorders of sodium and water balance, manifestations of pituitary disorders, disorders of bone metabolism, and hyperlipidemia. While not strictly an endocrine disorder, obesity is considered part of the spectrum of endocrinology because it often enters into the differential diagnosis of endocrine disease and is a major element in the management of type 2 diabetes. Prevention focuses on the complications of obesity, diabetes, hyperlipidemias, thyroid disease, and the iatrogenic effects of
glucocorticoids. Endocrinologists are called on to treat problems concerning subnormal growth, early or late puberty, excess hair growth, high blood glucose or calcium levels, osteoporosis, pituitary tumors, and reproduction. They provide consultation for postoperative and chronic disease patients who require special nutritional support, and often participate in basic or clinical research.

Subspecialty of Internal Medicine

Family Medicine

Family medicine is concerned with the total health care of the individual and the family, and is trained to diagnose and treat a wide variety of ailments in patients of all ages. Family medicine physicians receive a broad range of training that includes internal medicine, pediatrics, obstetrics and gynecology, psychiatry, and geriatrics. Although the scope and practice of family medicine is broad, it is a precise discipline, integrating a unique blend of biomedical, behavioral, and social sciences. Family physicians possess unique attitudes, skills, and knowledge that qualify them to provide continuing and comprehensive medical care, health maintenance, and preventive services. These specialists are best qualified to serve as each patient's advocate in all health-related matters. Special emphasis is placed on prevention and the primary care of entire families, utilizing consultations and community resources when appropriate. Family physicians employ a diverse range of cognitive and procedural skills and coordinate care with other specialists when necessary.

Subspecialties
Adolescent Medicine
Geriatric Medicine, Family Medicine
Sports Medicine, Family Medicine

Gastroenterology

A gastroenterologist is an internist who specializes in diagnosis and treatment of diseases of the digestive organs including the esophagus, stomach, bowels, liver, pancreas, and gallbladder. This specialist treats conditions such as abdominal pain, ulcers, diarrhea, cancer, and jaundice and performs complex diagnostic and therapeutic procedures using endoscopes to visualize
internal organs. Gastroenterology also includes the discipline of hepatology—the diagnosis and treatment of liver and biliary tract diseases. Additional areas of focus include nutrition and nutritional deficiencies as well as prevention and screening, particularly for colorectal cancer. Gastroenterology requires increasingly complex decision-making; mastery of a growing number of endoscopic techniques, both diagnostic and therapeutic; an understanding of the sensitivity, specificity, risk-benefit, and cost-benefit of a broad array of diagnostic techniques and therapeutic options; and knowledge of the increasingly complex science that underlies gastroenterological practice. It is a procedure-intense specialty that requires some manual dexterity and the ability to solve problems analytically.

Subspecialty of Internal Medicine

Hematology/Oncology

Internal Medicine-Pediatrics (Med-Peds) training and practice synthesizes the disciplines of both internal medicine and pediatrics. Med-Peds physicians tend to the care of patients throughout their life span. Caring for multiple generations of the same family requires an understanding of family dynamics, epidemiology and the impact of acute or chronic illness at all ages, all in the context of family systems. Med-Peds physicians draw from the knowledge and skills of pediatricians and internists to bring breadth and flexibility in their approach to clinical medicine. This adaptability provides the versatility to follow many paths throughout their career, including patient care as generalist, hospitalist, emergency room physician or subspecialist; research; administration; public health; and education.

Internal Medicine

Internists are personal physicians who provide long-term, comprehensive care in the office and the hospital, managing both common and complex illnesses in adolescents, adults, and the elderly. Internists are trained in the diagnosis and treatment of cancer, infections, and diseases affecting the heart, blood, kidneys, joints, and digestive, respiratory and vascular systems. They are also trained in the essentials of primary care internal medicine which incorporates an understanding of disease prevention, wellness, substance abuse, mental health, and effective
treatment of common problems of the eyes, ears, skin, nervous system, and reproductive organs. An internal medicine physician's primary responsibilities include health maintenance and disease screening, the diagnosis and care of acute and chronic medical conditions, management of patients with multiple, complex medical problems, and serving as consultants to other disciplines such as surgery, obstetrics, and family medicine. An internist's work is characterized by extensive knowledge and skill in diagnosis and treatment

Subspecialties

Adolescent Medicine

Advanced Heart Failure & Transplant Cardiology, Internal Medicine
Cardiovascular Disease, Internal Medicine
Clinical Cardiac Electrophysiology, Internal Medicine
Critical Care Medicine, Internal Medicine
Endocrinology, Diabetes, & Metabolism, Internal Medicine
Gastroenterology, Internal Medicine
Geriatric Medicine, Internal Medicine
Hematology, Internal Medicine
Hematology & Oncology, Internal Medicine
Infectious Disease, Internal Medicine

Internal Medicine-Pediatrics **

Internal Medicine-Pediatrics (Med-Peds) training and practice synthesizes the disciplines of both internal medicine and pediatrics. Med-Peds physicians tend to the care of patients throughout their life span. Caring for multiple generations of the same family requires an understanding of family dynamics, epidemiology and the impact of acute or chronic illness at all ages, all in the context of family systems. Med-Peds physicians draw from the knowledge and skills of pediatricians and internists to bring breadth and flexibility in their approach to clinical medicine. This adaptability provides the versatility to follow many paths throughout their career, including patient care as generalist, hospitalist, emergency room physician or subspecialist; research; administration; public health; and education.
Medical Genetics**

The job of the medical geneticist is to recognize genetic disorders and birth defects, to understand the significance of these with respect to the well-being of the patient, to arrange for proper treatment, and perhaps most important, to help the patient and/or the patient's family understand and cope with the disorder. This specialist uses modern cytogenetic, radiologic, and biochemical testing to assist in specialized genetic counseling, implements needed therapeutic interventions, and provides prevention through prenatal diagnosis. A medical geneticist plans and coordinates large scale screening programs for inborn errors of metabolism, hemoglobinopathies, chromosome abnormalities, and neural tube defects. Some medical geneticists work primarily with infants and children. Other medical geneticists, often those who are first trained as obstetricians, concentrate on the genetic problems of fetuses. Internists with training in medical genetics work with adult patients who may have familial forms of heart disease, cancer, or neurological disease. There are also ophthalmologists, dermatologists, and pathologists who are medical geneticists. Great strides are being made in many areas of human genetics, leading to deeper understanding of the basic functions of genes. Such technologic advances also give rise to new methods of diagnosis and treatment. An increasingly important role of the medical geneticist is to act as the link between scientists who are making these technologic advances and patients who may benefit from them.

Subspecialties

Biochemical Genetics
Clinical Biochemical Genetics
Clinical Biochemical - Molecular Genetics
Clinical Cytogenetics
Clinical Molecular Genetics
Molecular Genetic Pathology
Ph.D. Medical Genetics
Neonatal- Perinatal Medicine**

Neonatal-perinatal medicine is a subspecialty of pediatrics concerned with the care of critically ill newborn and premature infants. Neonatologists diagnose and treat newborns with conditions such as breathing disorders, infections, or birth defects; coordinate care and medically manage newborns born prematurely, critically ill, or in need of surgery; stabilize and treat newborns with any life-threatening medical problems; attend a delivery after which the infant may require medical intervention; and consult with obstetricians, pediatricians, and family physicians about conditions affecting newborn infants and caring for mothers who have high-risk pregnancies. Neonatologists work mainly in the special care nurseries or newborn intensive care units of hospitals, primarily children's hospitals, university medical centers, and large community hospitals. In addition, a neonatologist may provide short-term care on an outpatient basis after the infant has been discharged from the unit.

Subspecialty of Pediatrics

Neurological Surgery**

A neurological surgeon provides the operative and non-operative management (i.e., prevention, diagnosis, evaluation, treatment, critical care, and rehabilitation) of disorders of the central, peripheral, and autonomic nervous systems, including their supporting structures and vascular supply; the evaluation and treatment of pathological processes which modify function or activity of the nervous system; and the operative and non-operative management of pain. A neurological surgeon treats disorders of the nervous system; disorders of the brain, meninges, skull, and their blood supply, including the extracranial carotid and vertebral arteries; disorders of the pituitary gland; disorders of the spinal cord, meninges, and vertebral column, including those which may require treatment by spinal fusion or instrumentation; and disorders of the cranial and spinal nerves throughout their distribution. Neurosurgeons diagnose problems through physical examination using tools such as magnetic resonance imaging and cranial taxonomy scans. Some have a special interest in operative and nonoperative pain management. Neurosurgery requires manual dexterity and intense concentration when dealing with delicate parts of the nervous system. Not only must neurosurgeons be skilled surgeons, but many of them divide their time between the research lab and operating room.

Subspecialties
Cerebrovascular & Skull Base Surgery

Endovascular Surgical Neuroradiology, Neurological Surgery
Nephrology

Nephrology is a subspecialty of internal medicine concerned with diagnosing and managing diseases of the kidneys and urinary system. Nephrologists commonly encounter conditions such as hypertension; fluid, electrolyte, acid-base, and mineral imbalances; glomerulonephritis; and polycystic kidney. Patients with end-stage renal disease, often caused by diabetes or hypertension, may require hemodialysis or peritoneal dialysis. Physicians in this specialty also consult with surgeons about potential kidney transplant recipients and help manage their immunosuppressive regimen after transplantation. This is a focused specialization requiring a broad knowledge of internal medicine. Nephrologists usually practice in partnerships or groups with other nephrologists, because the care of patients with renal disease often involves intensive, around-the-clock professional service.

Obstetrics and gynecology

Obstetrics and gynecology is a diversified specialty concerned with the delivery of medical and surgical care to women. This field combines two specialties: obstetrics, which focuses on the care of women before, during, and after childbirth; and gynecology, which involves the diagnosis and treatment of disorders of the female reproductive system, breasts, and associated disorders. Relationships with patients are long-term and are often maintained through the postmenopausal stage of a patient's life. Obstetrician-gynecologists (Ob-Gyn) often serve as consultants to other physicians. In many cases, the Ob-Gyn is the primary care physician, with whom female patients have regular contact and obtain medical advice and counseling. The
specialty also offers opportunities to practice other skills such as laparoscopic surgery, endocrinology, and preventive medicine.

Subspecialties
- Critical Care Medicine
- Female Pelvic Medicine & Reconstructive Surgery
- Gynecologic Oncology
- Maternal & Fetal Medicine
- Reproductive Endocrinology & Infertility

Oncology

Oncology is a subspecialty of internal medicine concerned with diagnosing and treating benign and malignant tumors and other forms of cancer. It was originally a part of hematology and, in some training programs, these two disciplines are still taught together. Oncologists typically identify individuals at risk for malignancy and counsel them regarding risk reduction and screening, investigate clinical symptoms and syndromes suggestive of underlying malignancy, undertake the palliative care of patients with solid and hematologic tumors, identify neoplasms with a potential for cure, and manage appropriately. They administer chemotherapy for malignancy and work with surgeons and radiotherapists on other treatments for cancer. They often see patients who are seriously ill and require extensive treatment. Although the specialty is mainly office-based, oncologists provide a significant amount of consultation and primary inpatient care.

Subspecialty of Internal Medicine

Ophthalmology**

Ophthalmology deals with the structure, function, diagnosis, and treatment of the eye and the visual system. This includes problems affecting the eye and its component structures, the eyelids, the orbit, and the visual pathways. Ophthalmologists are medically trained to provide patients with total eye care using medical, surgical, and rehabilitative services. In so doing, an ophthalmologist prescribes vision services, including glasses and contact lenses.
Orthopaedic surgeons are trained in the preservation, investigation, and restoration of the form and function of the extremities, spine, and associated structures by medical, surgical, and physical means. An orthopaedic surgeon is involved with the care of patients whose musculoskeletal problems include congenital deformities, trauma, infections, tumors, metabolic disturbances of the musculoskeletal system, deformities, injuries, and degenerative diseases of the spine, hands, feet, knee, hip, shoulder, and elbow. The orthopaedic surgeon manages special problems, diagnoses the injury or disorder, and establishes the treatment plan using surgery, medication, exercise, and/or physical therapy. They are also concerned with primary and secondary muscular problems and the effects of central or peripheral nervous system lesions of the musculoskeletal system. Orthopaedic surgeons treat patients of all ages, mostly on a short-term basis. Since many of their patients have been involved in accidents, orthopaedic surgeons also assess disability in legal actions. The field has undergone notable improvements in techniques and equipment, such as microsurgery and joint replacements. Their practice may be broad or limited to an area of special interest, such as hand surgery or sports medicine.
Otolaryngology**

An otolaryngologist surgeon provides comprehensive medical and surgical care for patients of all ages with diseases and disorders that affect the ears, nose, throat, the respiratory and upper alimentary systems, and related structures of the head and neck. The specialty encompasses cosmetic facial reconstruction, surgery of benign and malignant tumors of the head and neck, and the diagnosis and management of allergic, sinus, laryngeal, thyroid, and esophageal disorders. With the exception of visual and eye-related disorders (the province of ophthalmologists) and lesions of the brain (managed by neurologists and neurosurgeons), otolaryngologists treat diseases and lesions above the shoulders—the ears, the respiratory and upper alimentary systems, and the head and neck. Specialists are trained in otology, rhinology, laryngology, allergy, head and neck surgery, facial plastic and reconstructive surgery, and bronchoesophagology. They also have an understanding of the communication sciences (audiology and speech/language pathology), endocrinology, and neurology.

Subspecialties

Otolaryngology

Pathology**

The discipline of pathology forms the basis of every physician's thinking about the patient. Modern pathology applies the latest advances in the biological sciences to traditional morphological methods of studying disease. A consulting specialist, the pathologist is truly the doctor's doctor, with expertise in one or more fields of anatomic pathology and laboratory medicine. A pathologist deals with the causes and nature of disease and contributes to diagnosis, prognosis, and treatment through knowledge gained by the laboratory application of the biologic, chemical, and physical sciences. A pathologist uses information gathered from the microscopic examination of tissue specimens, cells, and body fluids as well as from clinical laboratory tests on body fluids and secretions for the diagnosis, exclusion, and monitoring of disease. Anatomic pathologists usually work in hospitals, investigating the effects of disease on the human body via autopsies and microscopic examination of tissues, cells, and other specimens. Medical laboratory directors are responsible for the sophisticated laboratory tests on samples of tissues or fluids and the quality and accuracy of the tests. The practice of pathology is most often conducted in community hospitals or in academic medical centers, where patient care, diagnostic services, and research go hand in hand. Creation of new knowledge is the
lifeblood of pathology and many academic pathologists devote significant time in their career to research.

Subspecialties
Anatomic Pathology
Blood Banking-Transfusion Medicine, Pathology
Chemical Pathology, Pathology
Clinical Pathology
Cytopathology, Pathology
Forensic Pathology, Pathology
Hematology, Pathology
Immunopathology
Medical Microbiology, Pathology
Neuropathology, Pathology
Pediatric Pathology, Pathology
Radioisotopic Pathology
Selective Pathology

Pediatrics

Pediatrics is primarily concerned with the physical, emotional, and social health of children from birth to young adulthood. Concerned with more than just the physical well-being, pediatricians are involved with the prevention, early detection, and management of behavioral, developmental, and functional social problems that affect their patients. Depending on the patient's age, the measurements associated with these parameters can be quite different. A pediatrician deals with biological, social, and environmental influences on the developing child as well as with the impact of disease or dysfunction on development. The pediatrician also interacts with parents or guardians to define the health status of patients and to educate and provide anticipatory guidance about the child's normal health and growth. Pediatricians can be active at the community level by helping to prevent or solve problems in child health care and be a public advocate for children's causes. Pediatricians work to reduce infant and child morbidity and mortality, control infectious disease, foster healthy lifestyles, and the day-to-day difficulties of children and adolescents with acute and/or chronic conditions.

Subspecialties
Physical medicine and rehabilitation, also referred to as rehabilitation medicine**

Physical medicine and rehabilitation, also referred to as rehabilitation medicine, is the medical specialty concerned with diagnosing, evaluating, and treating patients with physical disabilities. These disabilities may arise from conditions affecting the musculoskeletal system such as birth defects, neck and back pain, sports injuries, or other painful conditions affecting the limbs, for example carpal tunnel syndrome. Alternatively, the disabilities may result from neurological trauma or disease such as broken hips, spinal cord injury, head injury, or stroke. A physician certified in physical medicine and rehabilitation is often called a physiatrist. Physiatrists often coordinate the services of an interdisciplinary rehabilitation team that may include neurologists, psychiatrists and orthopaedic surgeons as well as allied health care professionals. The physiatrist takes a holistic approach to patient diagnosis by considering the physical and psychological aspects of a patient's condition. A high degree of patient contact and long-term
care are common in this field. Physiatrists use medical history, physical examination, x-rays and other imaging techniques, laboratory studies, and other diagnostic tools in patient management. The primary goal of the physiatrist is to achieve maximal restoration of physical, psychological, social, and vocational function through comprehensive rehabilitation. The physiatrist not only treats the person with medications but also treats patients with modalities such as heat, cold, massage, traction, electrical stimulation and biofeedback, as well as selective types of therapeutic exercises. Pain management is often an important part of the physiatrist's role. For diagnosis and evaluation, a physiatrist may include the techniques of electromyography to supplement the standard history, physical, X-ray, and laboratory examinations. The physiatrist has expertise in the appropriate use of therapeutic exercise, prosthetics (artificial limbs), orthotics, and mechanical and electrical devices.

**Subspecialties**

- Neuromuscular Medicine, Physical Medicine and Rehabilitation
- Pain Medicine, Physical Medicine and Rehabilitation
- Pediatric Rehabilitation Medicine
- Spinal Cord Injury Medicine, Physical Medicine and Rehabilitation
- Sports Medicine, PM and R

**Plastic Surgery**

A plastic surgeon deals with the repair, reconstruction, or replacement of physical defects of form or function involving the skin, musculoskeletal system, craniomaxillofacial structures, hand, extremities, breast and trunk, and external genitalia or cosmetic enhancement of these areas of the body. Cosmetic surgery is an essential component of plastic surgery. The plastic surgeon uses cosmetic surgical principles to both improve overall appearances and to optimize the outcome of reconstructive procedures as well. Special knowledge and skill in the design and surgery of grafts, flaps, and free tissue transfer and replantation is necessary. Competence in the management of complex wounds, the use of implantable materials, and in tumor surgery is required. Plastic surgeons have been prominent in the development of innovative techniques such as microvascular and craniomaxillofacial surgery, liposuction, and tissue transfer. Anatomy, physiology, pathology, and other basic sciences are fundamental to the specialty. Competency in plastic surgery implies an amalgam of basic medical and surgical knowledge, operative judgment, technical expertise, ethical behavior, and interpersonal skills to achieve problem resolution and patient satisfaction. Plastic surgeons also need to hone their ability to
think in three dimensions, as well as have good aesthetic sense, creativity, and appreciation for
detail. Subspecialty certifications include craniofacial surgery and surgery of the hand.

**Subspecialties**

- Craniofacial Surgery, Plastic Surgery
- Hand Surgery, Plastic Surgery
- Plastic Surgery-Integrate

**Preventive Medicine**

A preventive medicine specialist focuses on the health of individuals and defined populations in
order to protect, promote, and maintain health and well-being, and to prevent disease, disability,
and pre-mature death. The distinctive components of preventive medicine include: 1) Biostatistics and the application of biostatistical principles and methodology; 2) Epidemiology and its application to population-based medicine and research; 3) Health services management and administration including: developing, assessing, and assuring health policies; planning, implementing, directing, budgeting, and evaluating population health and disease management programs; and utilizing legislative and regulatory processes to enhance health; 4) Control of environmental factors that may adversely affect health; 5) Control and prevention of occupational factors that may adversely affect health safety; 6) Clinical preventive medicine activities, including measures to promote health and prevent the occurrence, progression, and disabling effects of disease and injury; and 7) Assessment of social, cultural, and behavioral influences on health. Practitioners work in many settings, including the armed forces, general and family practice, government, international health agencies, hospitals, health centers, health maintenance organizations, and industry. They are heavily involved in influencing public policy, public health, and designing health care systems to prevent and control the spread of diseases. A preventive medicine physician may be a specialist in general preventive medicine, public health, occupational medicine, or aerospace medicine. This specialist works with large population groups as well as with individual patients to promote health and understand the risks of disease, injury, disability, and death, seeking to modify and eliminate these risks.

**Subspecialties**

- Aerospace Medicine
- Medical Toxicology, Preventive Medicine
- Occupational Medicine
- Public Health
- Undersea & Hyperbaric Medicine
Psychiatry

A psychiatrist specializes in the prevention, diagnosis, and treatment of mental, behavioral, addictive, and emotional disorders such as schizophrenia and other psychotic disorders, mood disorders, anxiety disorders, substance-related disorders, sexual and gender identity disorders, and adjustment disorders. They understand the biological, psychological, and social components of illness. Most psychiatrists use some form of discussion (individual or group therapy, psychoanalysis, or behavior modification) to evaluate and treat problems, in addition to using pharmacological treatments. Psychiatrists generally use a holistic approach, since every aspect of humans affects their psychology. They work with individuals and families who are coping with stress, crises, or other problems. They need to use their entire base of knowledge and values when assisting and treating their patients.

Subspecialties

Addiction Psychiatry, Psychiatry
Child and Adolescent Psychiatry, Psychiatry
Forensic Psychiatry, Psychiatry
Geriatric Psychiatry, Psychiatry
Pain Medicine
Psychosomatic Medicine

Pulmonary/critical care medicine**

Pulmonary/critical care medicine is a broad subspecialty of internal medicine that includes the diagnosis and management of disorders of the lungs, upper airways, thoracic cavity, and chest wall as well as the management of patients in intensive care units. The pulmonary specialist has expertise in neoplastic, inflammatory, and infectious disorders of the lung parenchyma, pleura, and airways; pulmonary vascular disease and its effect on the cardiovascular system; and detection and prevention of occupational and environmental causes of lung disease. Other specialized areas include respiratory failure and sleep-disordered breathing. Critical care physicians generally work in the intensive care units of hospitals and focus on critical illnesses and conditions (e.g., acute and chronic pulmonary disorders, trauma, and heart attacks). Most are internists specializing in pulmonary medicine and manage mechanical ventilators, place
pulmonary artery catheters, and perform bronchoscopies; however, some intensivists specialize in anesthesiology, pediatrics, or surgery. The specialty spans the various phases of treatment, from the ambulance to the emergency room, surgical suite, and intensive and cardiac care units. Critical care physicians must be familiar with the surgical and medical problems that put patients in the intensive care unit. They must also know the cardiovascular, fluid, and respiratory management that is required to maintain critically ill patients. The care of critically ill patients raises many complicated ethical and social issues, and the intensivist must be competent in such areas such as end-of-life decisions, advance directives, estimating prognosis, and counseling of patients and their families. Pulmonologists treat a diverse clinical population and can work in private practices or in various hospital settings, including the respiratory therapy department, the pulmonary function laboratory, or the intensive care unit. An in-depth knowledge of internal medicine is useful to these physicians because pulmonary medicine touches upon other subspecialties.

Subspecialty of Internal Medicine

Radiation oncology**

Radiation oncology is concerned with the generation, conservation, and dissemination of knowledge concerning the causes, prevention, and treatment of cancer with particular emphasis on the role of ionizing radiation. Radiation oncologists employ a variety of treatment modalities, including external beam radiotherapy (photons, electrons, protons, neutrons), radioactive implantations, hyperthermia, and combined modality therapy such as surgery and radiotherapy, chemotherapy and radiotherapy, biological modifiers and radiotherapy. Radiation therapy is employed for both the curative and palliative treatment of cancer. As a medical specialty that is modality- rather than age- or gender-based, radiation oncologists treat both children and adults, woman and men, and tumors at a wide variety of sites. The most commonly treated cancers are lung, breast, head and neck, prostate, cervix and uterus, and colorectal. There are also a limited number of benign conditions treated with radiotherapy.

Subspecialties -Therapeutic Oncology

Radiology**

Radiology is a medical specialty in which a variety of radiologic methodologies are used to diagnose and treat diseases. Diagnostic radiology encompasses a variety of diagnostic and image guided therapeutic techniques, including all aspects of radiological diagnosis (nuclear
radiology, diagnostic ultrasound, magnetic resonance, computed tomography, interventional procedures, and the use of other forms of radiant energy). Physicians studying diagnostic radiology are primarily hospital based and can specialize in a number of areas, including: vascular interventional; neuroimaging and intervention; abdominal imaging and intervention; nuclear medicine; chest and cardiac imaging; pediatric imaging; and mammography. The radiologist's role has grown not only through great improvements in diagnosis, but also through the technological developments that permit numerous interventional radiology procedures. A diagnostic radiologist is the eye of medicine, helping the primary care physician diagnose and treat diseases.

Subspecialties

Abdominal Radiology, Radiology-Diagnostic
Cardiothoracic Radiology, Radiology
Diagnostic Radiology
Endovascular Surgical Neuroradiology, Radiology
Musculoskeletal Radiology, Radiology-Diagnostic
Neuroradiology, Radiology-Diagnostic
Nuclear Radiology, Radiology-Diagnostic
Pediatric Radiology, Radiology-Diagnostic
Radiologic Physics
Vascular & Interventional Radiology, Radiology-Diagnostic

Sports medicine

A physician with special knowledge in sports medicine is responsible for continuous care in the field of sports medicine, not only for the enhancement of health and fitness, but also for the prevention and management of injury and illness. A sports medicine physician has knowledge and experience in the promotion of wellness and the role of exercise in promoting a healthy lifestyle. Knowledge of exercise physiology, biomechanics, nutrition, psychology, physical rehabilitation and epidemiology is essential to the practice of sports medicine. The sports medicine physician requires special education to provide the knowledge to improve the health care of the individual engaged in physical exercise (sports) whether as an individual or in team participation. Sports medicine is a subspecialty of emergency medicine, family practice, internal medicine, or pediatrics.

Subspecialty of Family Medicine, Internal Medicine, Rehabilitation Medicine, Pediatrics
Thoracic Surgery

A thoracic surgeon provides the operative, perioperative care, and critical care of patients with pathologic conditions within the chest. Included is the surgical care of coronary artery disease, cancers of the lung, esophagus and chest wall, abnormalities of the trachea, abnormalities of the great vessels and heart valves, congenital anomalies, tumors of the mediastinum, and diseases of the diaphragm. The management of the airway and injuries of the chest is within the scope of the specialty. A general thoracic surgeon treats emphysema, swallowing problems, and gastroesophageal reflux. A congenital heart surgeon performs surgical corrections of heart defects and furnishes cardiovascular support to infants and children. Any of these subspecialists may perform heart, lung, and combined heart-lung transplantations. Thoracic surgeons have the knowledge, experience, and technical skills to accurately diagnose, operate upon safely, and effectively manage patients with thoracic diseases of the chest. This requires substantial knowledge of cardiorespiratory physiology and oncology, as well as capability in the use of heart assist devices, management of abnormal heart rhythms and drainage of the chest cavity, respiratory support systems, endoscopy, and invasive and noninvasive diagnostic techniques.

Subspecialties
- Congenital Cardiac Surgery, Thoracic Surgery
- Thoracic Surgery-Integrated

Urology

Urology focuses on the medical and surgical treatment of the male genitourinary system, female urinary tract, and the adrenal gland. Urologists treat patients with kidney, ureter, bladder, prostate, urethra, and male genital structure disorders and injuries. They often coordinate care with nephrologists for patients with kidney disease and may perform kidney transplantations. Urologists may also investigate and treat infertility and male sexual dysfunction. Diagnostic procedures are very important for urologists. They use endoscopic, percutaneous, and open surgery to treat congenital and acquired disorders of the reproductive and urinary systems and related structures. These specialists see male and female patients of all ages and work in both hospital and clinic settings. Excellent surgical skills, manual dexterity, and good hand-eye coordination are important to this specialty.

Subspecialties
- Pediatric Urology, Urology