Graduate Medical Education in Medical Genetics
It’s Monday morning in your medical practice. You just got a consult from your neonatal intensive care ward to evaluate a baby born last night with multiple congenital anomalies. Your clinic today includes consultations for a child with PKU, a 38-year old mother with a history of stillbirths, and a 40-year old man with colon cancer. Tomorrow you will be part of the patient care team in the craniofacial clinic. What medical specialty gives you this type of diversity and challenge in your clinical practice?
Medical genetics is a young, vibrant and rapidly growing medical specialty. Medical genetics physicians, also known as clinical geneticists, provide comprehensive diagnostic, management, and genetic counseling services for patients with, or at risk for, genetically influenced health problems. Their approach to patient care is unique in that it includes concern for the health of the individual patient’s family members. Clinical geneticists also plan and coordinate large scale screening programs for inborn errors of metabolism, hemoglobinopathies, chromosome abnormalities, neural tube defects, and other genetically influenced conditions. As the genetic factors underlying many diseases—from diabetes to psychiatric conditions—become better understood, medical geneticists will be increasingly called upon to educate their colleagues and manage complex patient care that cuts across many different specialties.

How Are Medical Geneticists Trained?

Clinical genetics training is acquired through accredited residency programs in medical genetics. Some medical geneticists also complete training in combined residency programs, such as a combined pediatrics/medical genetics residency program or an internal medicine/medical genetics residency program. A combined three-year fellowship in maternal fetal medicine and medical genetics is also available for those who have completed a residency in obstetrics and gynecology. Specialty laboratory training in clinical molecular genetics, clinical cytogenetics, and clinical biochemical genetics is also available through laboratory-based fellowship programs. In addition, those who have completed a residency in medical genetics or pathology are eligible for a one-year fellowship in molecular genetic pathology, which focuses on the laboratory diagnosis of genetic disease.

What Does A Medical Genetics Residency Include?

Medical genetics is a primary specialty and not a subspecialty of another field. Residencies in medical genetics are two-year programs that carry a prerequisite of at least two years of initial residency training in some other Accreditation Council for Graduate Medical Education specialty such as obstetrics and gynecology, pediatrics, or internal medicine. Clinical responsibilities of medical genetics residents include providing patient care in dysmorphology and pediatric metabolic clinics, prenatal diagnosis clinics, and adult genetic disease clinics, such as cancer genetics. Medical genetics residents also participate in graduate level courses in basic genetics, and human and medical genetics, and they complete rotations in molecular genetics, cytogenetics and biochemical/metabolic genetics laboratories. Some institutions include a third year of research as part of their training program.

What do Medical Geneticists do?

- Diagnose, manage and treat patients with genetically influenced health problems
- Elicit and evaluate individual and family medical histories
- Perform genetic risk assessment
- Conduct genetic tests
- Interpret clinical and laboratory information
- Provide patient and family counseling
- Explain the causes and natural history of genetic disorders
- Use our knowledge of genetics in patient care decision making
- Interact with other healthcare professionals in the provision of services for patients and families with genetically influenced disorders
Combined pediatrics/medical genetics or internal medicine/medical genetics residencies are five-year programs that integrate basic pediatric or internal medicine residency training with medical genetics training. Trainees completing combined programs are eligible for certification in both specialties.

Certification

After completion of a residency in medical genetics, trainees are eligible for board certification in Clinical Genetics by the American Board of Medical Genetics (ABMG), which is one of the 24 member boards of the American Board of Medical Specialties.

Where Do Medical Geneticists Work?

Many medical geneticists work in academic settings and are actively involved in teaching as well as the diagnosis, treatment, management, and research of genetically influenced disorders. With the growing recognition of the importance of genetics in disease, medical geneticists are increasingly affiliated with managed care programs; others work in private practice or health care policy. It is the medical geneticists who are expected to lead the integration of new genetics skills and knowledge into health care.

Is Medical Genetics The Right Specialty For You?

If you like the uniqueness of specialty knowledge, but long to apply your knowledge across broad areas of medical practice, medical genetics could be the specialty for you. Likewise, if you would like to be on the front edge of a growing new specialty with a rapidly expanding scientific base and great career flexibility, think Medical Genetics. Medical genetics is a rewarding specialty for smart, inquisitive, patient care centered physicians who are ready to meet the challenge of medicine in the 21st Century!

Medical genetics is a rewarding specialty for inquisitive, patient care centered physicians seeking the challenge of 21st century medicine!

Where Can You Go For More Information?

More than 40 training programs around the United States offer residencies or fellowships in medical genetics. For more information log on to:

The Accreditation Council for Graduate Medical Education: [http://www.acgme.org/acWebsite/navPages/nav_130.asp](http://www.acgme.org/acWebsite/navPages/nav_130.asp)
The American Board of Medical Genetics: [www.abmg.org](http://www.abmg.org)
The American College of Medical Genetics: [www.acmg.net](http://www.acmg.net)
The American Society of Human Genetics: [www.ashg.org](http://www.ashg.org)

Think Medical Genetics.
The American College of Medical Genetics Foundation is the supporting educational foundation of the American College of Medical Genetics (ACMG). The ACMG provides education, resources and a voice for more than 1400 biochemical, clinical, cytogenetic, medical and molecular geneticists, genetic counselors and other health care professionals committed to the practice of medical genetics.

ACMG initiatives include activities to:
- Advance the practice of medical genetics, from promulgating laboratory and practice guidelines to advocating for fair health policies and extending technical assistance to policymaking bodies;
- Increase access to genetic services and improve the public’s health;
- Promote development and implementation of methods to diagnose, treat and prevent genetic disease;
- Educate geneticists, other health professionals and the public about new genetics discoveries and timely genetics issues.

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