

Medical Geneticists: Education, Practice, and Professional Societies

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Education

- 48 ACGME accredited residency training programs in Medical Genetics
 - 2year programs with prerequisite of 2 prior years of initial residency training in some other specialty such as Peds,OB/GYN, Int Med
 - Also combined Peds/Gent and Int Med/Gent (5 yrs)
 - Fellowships
 - Mat Fet Med/Genetics (4 years)
 - Molecular Genetic Pathology (1 year)

Medical Genetics Residencies

- 196 available positions for training
 - 47% filled
- Lower fill rate than other specialties
 - Ex: Family Medicine: 93% filled

Korf BR, Feldman G, Weisner GL. Report of Banbury Summit meeting on training of physicians in medical genetics. *Genet Med* 2005 7(6):433-8

- Summit, Oct, 2004 in Cold Spring Harbour
- Included representatives of major genetics professional organizations in the US and Canada
- Recognition of declining numbers of trainees in medical genetics sufficient to meet future needs

Summit recommendations

- Increase recruitment of trainees
 - Position medical genetics as ideal for students seeking academic career
 - Seek NIH funding to develop centers of excellence in medical genetics training
 - Enhance visibility of medical genetics by working with medical students/residents advisory groups
- Strengthen core training of generalist medical geneticists
- Partner with other medical specialties
 - Encourage combined genetics residency training program
 - Pursue joint subspecialty fellowships with other specialties

Ongoing summit issues

- Banbury II summit recently held (report in press)
 - Redefine training requirement
- Banbury III summit planned
 - For new curriculum development

Ongoing Practice Concerns: 3 R's

- Recognition by other professionals
 - Typical referrals from pediatrics or OB/GYN for dysmorphology/prenatal
 - Actual availability of genetic professionals in non-academic hospital settings often not advertised or marketed
- Referrals
 - Lack of awareness of need
 - Provider may feel genetic services can be handled without referral
- Reimbursement
 - Lack of Medicaid reimbursement for genetic testing may strongly influence choice for referrals

Evolving Practice Pattern for Family History

- Ongoing resolution for integration of family history information in all specialties
 - For experienced genetic providers, obtaining family history is difficult and incomplete
 - May reflect socioeconomic and cultural limitations
 - Minimal information from immigrant populations
 - » May also have literacy and language limitations
 - Patients may lack information on parentage
 - Medical issues are not discussed
 - Key area to focus on development of tools and education across demographics

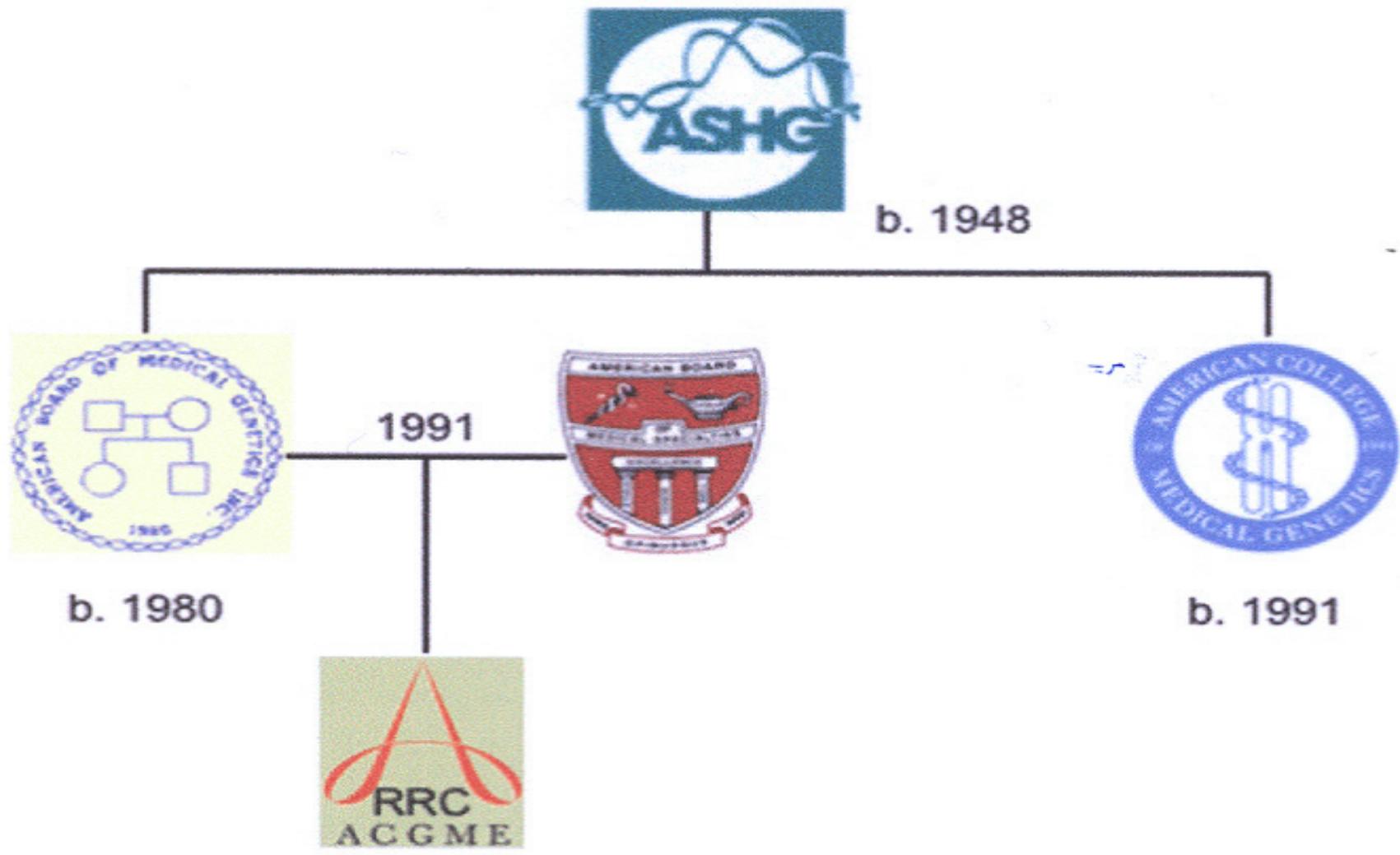


Figure 1. Pedigree of the organizations that constitute the medical genetics establishment.

Professional Societies in Genetics

- American College of Medical Genetics (ACMG)
 - education, resources, and voice for the medical genetics profession to make genetic services available to and improve the health of the public
- American Society of Human Genetics (ASHG)
 - Information and Education committee to identify and promote educational opportunities designed to increase the understanding of human genetics in North America
- American Board of Medical Genetics (ABMG)
 - Certifying organization of medical genetics and accredits training programs

Ongoing ACMG initiatives

- Increase in genetics questions on USMLE exams
 - Questions reviewed 4 times in 12 years in conjunction with ASHG and Professors of Human Genetics

ACMG activities

- Audits of questions shows improvement in basic science genetics in USMLE part 1
 - Waggoner DJ Assessing Knowledge of Genetics by the USMLE Abstract 834, ASHG meeting, Oct, 2007
- Significant increase in clinical genetics in USMLE part 2/3
 - Family history still often not provided as part of clinical scenario questions
- Improvement seen with use of virtual patient and clinical scenarios

ACMG initiatives

- Expansion of clinical genetics exposure
 - Video/telecast of ongoing clinical consultations with geneticist and patients
 - Model: Neurofibromatosis: “Understanding NF1.org”
 - Plan for at least 10 other video/telecasts
 - Intended to expand knowledge of clinical genetics in medical schools and model behavior of clinical geneticists

ACMG initiatives

- Revision of current medical genetics residency curriculum
 - Collaborative effort with RRC, ABMG
 - Promotes medical geneticist as the “Medical Home” for lifelong care for those with congenital anomalies and genetic conditions
 - May require modifications to increase transitional care knowledge

ACMG activities

- Expansion of “point of care” reference systems
 - ACT sheets for metabolic conditions from NBS
 - CF, Fragile X, hemoglobinopathies
 - Ongoing development of information
 - W/u of child with MR/DD
 - FmHx of cancer
 - Transition of care from pediatric to adult
- Ongoing role to include these in EMR systems

ASHG activities: K-12

- High School students/teachers workshop in conjunction with annual meeting
- Biosciences Education Network Partnership
- Development of GenEdNet.org
 - Database of genetics standards for education at k-12 level in all states
- DNA Day (April 15) activities and Essay contest
- Genetics Education and Outreach Network
 - ASHG members mentoring classrooms
- Geneticist-Educator Network of Alliances Grant
 - Pairing of geneticist and educator for training and education

ASHG activities

- Undergraduate education workshop
 - Undergrad educators training program at National ASHG meeting
- Biosciences Education Network Partnership
- ASHG member education programs and awards for education during annual meeting

ABMG

- Active program in maintenance of certification for diplomates
 - Part 1: Professional licensing
 - Part 2: Regular literature review and CME requirements
 - Part 3: Written examination once in a 10 yr cycle
 - Part 4: Practice improvement modules
 - May overlap with other specialties

Conclusions

- Recent improving trend in educating Medical Geneticists but inadequate to meet needs
 - Research needed on choices for residencies
 - May benefit from sponsorship program
- Medical geneticists at present largely at academic centers
 - Practice pattern may reflect initial specialty training
 - Improvement needed in recognition of geneticists and role
 - Reimbursement issues may drive referral pattern
- Enhanced education focus in all professional societies
 - Emphasis on patient/public education