

Educating Health Professionals about Genetics:

Framing the Issues and Reviewing Prior National Efforts

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The Challenge

- Genetics knowledge and technologies are being rapidly generated
- Integration of genetics into health care and public health practice driven by three main forces:
 - Scientific and Technological Advances
 - Consumer/Patient Demand
 - Cost Considerations/ Emphasis on Prevention
- These forces create challenges for health professionals in incorporating genetics into health care and public health practice

The Challenge (cont'd)

- Health professionals are the ultimate arbiters of how and when (and if) new technologies and practices are integrated into health care and public health
- Major gaps exist in health professionals' knowledge of and education and training in genetics
- Gaps in knowledge, education, and training will limit the appropriate integration of genetics into health care

Key Stakeholders

- Genetic Specialists
 - Medical Geneticists, Genetic Counselors
- Physicians
 - Peds, Ob/Gyns, Internists, Fam Practitioners
- Public Health Professionals
- Nurses
- Allied Health Professionals
- Patients, Consumers, General Public

Prior National Efforts

- National Academy of Sciences, *Genetic Screening Programs, Principles and Research* – 1975
- Institute of Medicine, *Assessing Genetic Risks* – 1994
- NIH-DOE Task Force on Genetic Testing, *Promoting the Safe and Effective Use of Genetic Testing in the United States* – 1997
- Institute of Medicine, *Who Will Keep the Public Healthy? Educating Public Health Professionals for the 21st Century* – 2002
- Secretary's Advisory Committee on Genetic Testing Education Work Group – 2001-2002

National Academy of Sciences 1975

- Medical school curricula and continuing education should emphasize genetics, especially population genetics
- Physician knowledge of genetics should increase orientation toward preventive medicine (role in screening)
- Schools of medicine, public health, and allied health should be provided support for programs to:
 - Set standards
 - Train personnel

Institute of Medicine

1994

RECOMMENDATIONS	PROGRESS
Train more genetics professionals	Genetic counseling programs ABMG Training Programs Programs to 'Teach the Teachers'
Maintain/provide funds for GC Develop programs for single gene disorder educators/counselors	Tuition support for GC programs Science has shifted emphasis
Consider genetic counseling & education part of standard of care for all who offer/interpret tests	Professional guidelines Changes in curriculum
Expansion of CME programs in clinical genetics	Federal programs Professional programs

Institute of Medicine (cont'd)

1994

RECOMMENDATIONS	PROGRESS
Reform education -- genetic point of view; ELSI training; lab personnel about test complexities & attendant social issues; research on knowledge; establish basic proficiencies for physicians, nurses, social workers	ASHG, ACMG, ABMG, APHMG, NCHPEG, ASCO, NHGRI, CDC, HRSA, DOE, CLIA, etc. Professional standards & guidelines NCHPEG core competencies
Develop formal CME for genetic counselors and other professionals	Maintenance of certification CME programs
Recruit more minorities	Federal programs (e.g., NHGRI, HRSA, BHPPr)
Develop/evaluate on-line systems	NHGRI, NLM, OMIM, GeneTests, Genetic Alliance

Institute of Medicine (cont'd)

1994

RECOMMENDATIONS	PROGRESS
Develop genetic curricula; add genetics to licensure & certification and CME; require demonstrations of provider competence to offer certain predictive tests	APHMG curriculum ACMG guidelines ABMG collaborative programs ABPath, ABP, ABIM ABPN, ABOG
Develop tools to enable professionals to acquire competence	NCHPEG, ASCO, etc.
Strengthen genetics training programs in schools of nursing, social work, and public health	NCHPEG guidelines and programs

NIH-DOE Task Force 1997

RECOMMENDATIONS	PROGRESS
Increase genetics curricula in medical school/residency	APHMG, ABMG and other ABMS Boards
Enhance licensure and certification	States, Boards, Professions
Increase CME	Federal programs Professional programs
Develop competence of physician/laboratorian	CME curriculum Maintenance of certification Professional standards CLIA

Institute of Medicine

2002

- Schools of Public Health must teach students to “think genomically” and apply genomics to all areas of public health
- ELSI must be a basic component of the genomics curriculum
- NCHPEG and CDC core competencies should guide curricular development

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Education Work Group

2001-2002

- Innovative approaches to integrating genetics into continuing care are critical
- Genetics must be integrated across all the traditional departments and disciplines in healthcare
- Federal funding could be directed to the training of genetic specialists and general genetics education for all health professionals

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Education Work Group

- Ultimate goal is an educated public
- Creative, interactive & accessible programs
- Collaborations (examples):
 - Outreach (NCHPEG, Genetic Alliance, ASHG/NHGRI Mentor Network)
 - Web based (plus NLM, GeneTests)