Physician Assistant Education Association (PAEA)

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PAEA
PHYSICIAN ASSISTANT EDUCATION ASSOCIATION
Scholars. Leaders. Partners.

Follow-up

- Published summary of March Genetics Meeting in PAEA *Networker,* April 2007
- Confirmed Dr. Collins' presentation, "Physician Assistants and Personalized Medicine" at PAEA Annual Education Forum, October 2007
- Identified primary leadership contacts:
  - Anita Duhl Glicken, MSW, Genomics Workgroup
  - Connie Goldgar, MS, PA-C, NCHPEG

Education and Promotion

Summer 2007

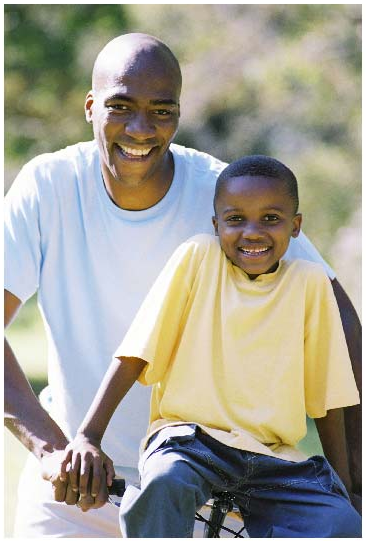
- Published results of PAEA member program genetics survey in the *Journal of Physician Assistant Education,* vol. 18, no. 2, July 2007
- Published editorial, “What Should Physician Assistants Know About Genetics and Genomics”, Bruce R. Korf, MD, PhD, *Journal of Physician Assistant Education*, vol. 18, no. 2 July 2007

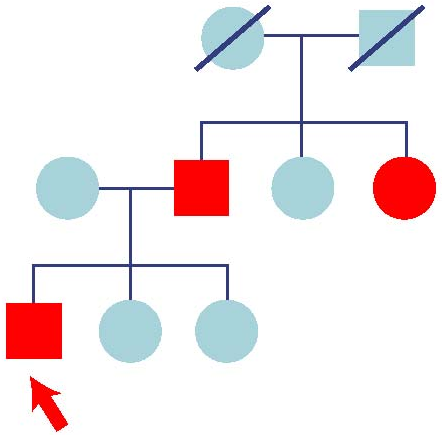
Education and Promotion

Fall 2007

- Plenary and workshop presentation, “Genomics and the Future of Medicine,” Dr. Francis Collins, scheduled for October 2007 PAEA Annual Education Forum
- Coordinated “Put a Face on Genetics Campaign” for October 2007 PAEA Education Forum
- Announced and scheduled launch of NCHPEG PA Web site link for educators, October 2007
- Workshop presentation scheduled, “Developing Instruction in Genetics and Genomics: A Workshop for PA Educators,” October 2007 PAEA Education Forum

Are YOU John's primary care provider?





Why did John, who is 35, have a colonoscopy?

John and his son bike 5 miles a day. He eats a low fat diet. John has a great job, loves his kids, and next Spring plans to hike the Appalachian Trail. John has one more reason to smile. He had a normal colonoscopy yesterday.

Why was he happy to have a colonoscopy? Because John's primary care provider took a thorough family history at his physical last fall. This history revealed that John's father was diagnosed with colon cancer when he was only 45, and that John's paternal aunt had endometrial cancer at 30. John's primary care provider realized that this put his patient at increased risk for a condition known as hereditary non-polyposis colorectal cancer syndrome (HNPCC), or Lynch syndrome.

This condition causes about 3-5% of all cases of colorectal cancer and greatly increases the risk of early onset colon and endometrial cancer in affected individuals. John's primary care provider referred John to a specialist familiar with this disorder. John and his family underwent genetic counseling and had testing that revealed that John and several of his relatives carry the gene alteration causing HNPCC. Armed with this knowledge, John and the others in his family with this gene alteration now get regular cancer screening beginning at an early age. Early and frequent colon cancer screening for people with HNPCC has been shown to save lives, and it may save John's.

U.S. Surgeon General's
Family History Initiative
www.surgeongeneral.gov/familyhistory

EDITORIAL

What Should Physician Assistants Know About Genetics and Genomics?

Bruce R. Korf, MD, PhD
Wayne H. and Sara Crews Finley Professor of Medical Genetics
Chair, Department of Genetics, University of Alabama at Birmingham

It is 54 years since the structure of DNA was discovered and 4 since the complete sequence comprising the human genome was elucidated. The driving force for this massive scientific undertaking was the promise of improving human health by providing tools to understand the genetic factors that contribute to both rare and common disease. The pace of discovery — and of translation to clinical practice — is rapidly accelerating, raising the critical question across all of health professional education: What does the practicing professional need to know about this new area of medicine? This question is especially relevant for physician assistant (PA) education, in part because it raises the usual question of how can more and more curriculum content be crammed into a training program of fixed size? The relevance to PAs, though, goes deeper, and reframes a challenge into an exciting opportunity: How can a profession that is on the front lines of clinical care help to serve as the fulcrum that changes the course of medical practice?

Genetics is not new to the PA curriculum — molecular genetics has long been taught as the basic science underpinning of cell biology. What is new is a major shift in focus — from genetics as a basic science of clinical relevance only for rare disorders to a major driver in our approach to common diseases. What is needed, then, is not so much the addition of new content to the curriculum, but rather a shift in emphasis. I believe that the overall goal of education of PAs about genetics should be the creation of a "genetics dashboard" to help PAs recognize where genetics fits into medical practice, how to wisely use the new tools that genetics is providing, and how and when to call on medical genetics specialists for help. We can build this dashboard by recognizing three overarching principles of how genetics is likely to be integrated into routine medical practice.

First, family history can be a clue to genetic risk assessment, and therefore a gateway to recognizing the genetic factors that create risk of disease. Family history has long been part of the PA armamentarium; it is used, for example, in identifying patients who should be screened for risk of cardiovascular disease or diabetes, and for interpretation of abnormal laboratory values such as in the lipid profile. Now we can go farther, however. Family history is the key to recognizing individuals who are at risk of breast and ovarian cancer or colon cancer, for example, leading to genetic testing of those at high risk.

This is far from an academic exercise: identification of individuals who are carriers for *BRCA* gene mutations, for example, can lead to life-saving interventions, including surveillance and prophylactic surgery. Individuals at risk for hemochromatosis based on family history can be offered monitoring of iron stores and phlebotomy to reduce those stores if they reach a level that would otherwise cause irreversible cirrhosis or cardiomyopathy. The list of not-so-rare disorders in which a significant proportion of individuals is at high risk on the basis of family history and can be diagnosed by genetic testing is increasing. The Surgeon General has championed a Web-based tool for gathering family history information. The PA is in an ideal position to move this effort to the next step by helping patients to gather family history information, recognizing major red flags, and referring those who are eligible for further testing to appropriate specialists.

Second, clinical decisions will increasingly rely on the results of genetic tests. Most common disorders, such as diabetes or hypertension, are the result of an interplay of multiple factors, including genetic and environmental. With recent advances in understanding the structure of the human genome, we are entering a golden age of discovery of genes that contribute to risk for common disorders. Identification of these genes will open a new era in disease prevention, helping providers to recognize those at high risk and opening the door to strategies of risk reduction — including both avoidance of environmental exposures that are particularly harmful to specific individuals and use of medications that target disease pathways to either prevent disease or reduce its burden.

Moreover, the manner by which drugs are absorbed and metabolized, as well as the manner in which they interact with their targets, are all under some degree of genetic control. Many of these genes are already known and can be tested to avoid harmful side effects in at-risk indi-

PA Genetics Lab

- PA Education: A place to innovate
  - Flexibility and Adaptability
  - Shorter Curriculum, rapid transfer to clinical practice
  - Connections with Other Professions: medical schools, schools of allied health, schools of health professions, community colleges

Evaluation and Outcomes

- Developing Educational/Curriculum Resources
  - Faculty Development
  - Curriculum Resources
  - Resource Sharing
- Defining Outcomes
- Collecting Data
  - When to get started
  - What are the data points
- Evaluation