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# Competency focus

UPDATING THE NURSING COMMUNITY ON THE IMPLEMENTATION OF THE ESSENTIAL NURSING COMPETENCIES AND CURRICULA GUIDELINES IN GENETICS AND GENOMICS.

## Essential Genetic and Genomic Competencies for Nurses With Graduate Degrees

The advancement of genomic information and technology continues to merge into the fabric of healthcare, transforming how healthcare services are defined and delivered. Consequently all nurses must have the fundamental genomic competencies necessary to provide competent genomic health care. In addition, nurses educated at the graduate level need to be prepared to assume clinical and leadership roles in healthcare systems in translating these genomic advances into effective healthcare.

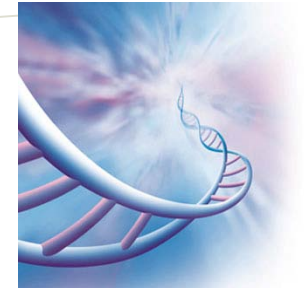
The *Essential Nursing Competencies and Curricula Guidelines for Genetics and Genomics* for all nurses were established by consensus in 2005, published in 2006 and a second edition published in 2009 with the addition of outcome indicators. In 2008, these competencies served as a foundation for facilitating the integration of genomics into the Association of Colleges of Nursing (AACN) *Essentials of Baccalaureate Education for Professional Nursing Practice*. In early 2009 AACN was preparing for the revision of *The Essentials of Masters Education for Advanced Nursing Practice* and the Genetic/Genomic Nursing Competency Initiative leaders recognized the need to facilitate the integration of genomics into the revised *Masters Essentials (Competency Focus, 2010, issue 2, vol 4* at

<http://www.genome.gov/Pages/Health/HealthCareProvidersInfo/CompetencyNewsletter10-29-2010.pdf>). It became evident that genetic/genomic competencies that build on the essential genetic/genomic competencies and inform the education and practice of nurses with graduate degrees were needed.

This led to the development of the "Essential Genetics and Genomics

Competencies for Nurses With Graduate Degrees," finalized by consensus panel in September 2011. These competencies are in the process of being published on the American Nurses Association's NursingWorld website under the Ethics, Genetics & Genomics section. The primary purpose of these graduate level competencies is to establish essential genetic and genomic competencies for individuals prepared at the graduate level in nursing. The overarching goal is to improve the genetic/genomic competence of nurses in advanced clinical, educational, academic and research leadership roles. These competencies apply to all individuals functioning at the graduate level in nursing, including but not limited to advanced practice registered nurses (APRNs), clinical nurse leaders, nurse educators, nurse administrators, and nurse scientists. These graduate level competencies build upon and are complimentary to the 2009 *Essentials of Genetic and Genomic Nursing: Competencies, Curricula Guidelines and Outcome Indicators (2nd Ed)* and assume that nurses functioning at the graduate level have already acquired those competencies. **Development Process:** In the Spring of 2009 a Steering Committee comprised of Karen Greco, Sue Tinley, and Diane Seibert was formed to develop these graduate level competencies. Development of the initial draft competencies included review and analysis of the following documents:

- published literature concerning what nurses prepared at the graduate level need to know about genetics/genomics



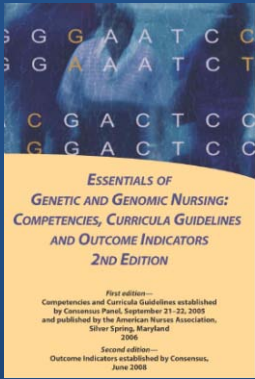
- genetic/genomic content on eleven APRN credentialing exam materials
- other key nursing documents

Based on the above review and analysis, the Steering Committee identified common themes among key documents and created an initial draft of 51 competencies. An advisory board of nursing leaders and genetics experts was created to review and revise the draft document. Representatives from a diverse number of nursing and advanced practice nursing organizations were later added to create a Consensus Panel, consisting of 31 genetics experts and other nursing leaders representing diverse nursing communities and APRN organizations. The draft competencies document was posted on the American Nurses Association website for public comment in the Fall of 2010. The competencies were revised based on the feedback received and the revised competencies were sent out to the Consensus Panel for validation December of 2010 using Survey Monkey. Based on the survey feedback the competencies that did not achieve consensus were revised, consolidated or deleted due to duplication. A second survey was sent out in 2011 for

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## Pharmacist Education in the Era of Genomic Medicine

Grace M. Kuo, PharmD, MPH, PhD, FCCP



**DO YOU NEED A COPY OF THE 2<sup>ND</sup> EDITION OF THE COMPETENCIES?**

**DOWNLOAD AT:**

<http://www.genome.gov/27527634>

OR EMAIL

[CALZONEK@MAIL.NIH.GOV](mailto:CALZONEK@MAIL.NIH.GOV)

The meeting, "Pharmacist Education in the Era of Genomic Medicine", sponsored by the National Human Genome Research Institute (NHGRI), was convened on November 30 and December 1, 2011 in Rockville, Maryland. The meeting brought together a diversity of stakeholders in the education of pharmacists to discuss the future of genomic education for the profession. During the meeting, stakeholders discussed plans for strategically addressing pharmacist education based on pharmacist interest, disseminating educational resources available for all healthcare professionals, and identifying needs for genetic/genomic competencies.

Representatives from the following pharmacy organizations attended the meeting: American Association of Colleges of Pharmacy, American Association of Pharmaceutical Scientists, American College of Clinical Pharmacy, Accreditation Council for Pharmacy Education, Academy of Managed Care Pharmacy, American Pharmacists Association, American Society of Consulting Pharmacists, American Society for Clinical Pharmacology and

Therapeutics, American Society of Health-System Pharmacists, and National Alliance of State Pharmacy Associations.

Attendees working in federal agencies included representatives from the Centers for Medicare & Medicaid Services, Department of Human and Health Services, Food and Drug Administration, Health Resources and Service Administration, NHGRI, National Cancer Institute, and NIH Office of the Director. Other participants were representatives from the National Coalition for Health Professional Education in Genetics, American Medical Association, IMS Health, physician assistant programs, nursing programs, and academic pharmacy programs. Participants shared about opportunities and initiatives for genomics education available at their organizations.

Topics discussed during the meeting also included the following:

- 1) Current landscape of pharmacist education in genomics from the perspective of genetics, pharmacist care, pharmacy practice, and academic pharmacist communities.
- 2) Core genomic educational needs for pharmacists in the next five years.
- 3) Potential facilitators and barriers that face efforts to enhance pharmacist genomic literacy.
- 4) Concrete strategies to take advantage of existing opportunities for genomic education, including interdisciplinary collaborations, at various stages of health professional education. Strategies identified for next steps in addressing pharmacist genomic education include developing peer-reviewed resources, mapping pharmacogenomics to expected learning outcomes, designing cases for simulation learning, diffusing pharmacogenomic information to pharmacy preceptors and residents, encouraging use of electronic resources with pharmacogenomic information, and incorporating pharmacogenomics in the pharmacy act.

Resulting from the meeting was a high level of enthusiasm among attendees, evidenced by their active contributions to the discussions and sharing of organizational perspectives. Meeting discussions were productive in identifying future opportunities. We truly appreciate the support from NHGRI in bringing pharmacists to the interdisciplinary team and exploring collaborative efforts in moving genomic education forward!

### Publication Update

Howington, L., Riddlesperger K, Cheek DJ. (2011). Essential nursing competencies for genetics and genomics: Implications for critical care. *Crit Care Nurse*. 31(5):e1-7.

Johnson, V.A., Powell-Young, Y.M., Torres, E.R., Spruill, I.J. (2011). A systematic review of strategies that increase the recruitment and retention of African American adults in genetic and genomic studies. *ABNF J*. 22(4):84-8.

Katapodi, M.C., Northouse, L., Pierce, P., Milliron, K.J., Liu, G., Merajver, S.D. (2011). Differences between women who pursued genetic testing for hereditary breast and ovarian cancer and their at-risk relatives who did not. *Oncol Nurs Forum*. 38(5):572-81.

Lyon, D.E., McCain, N.L., Pickler, R.H., Munro, C., Elswick, R.K. Jr (2011). Advancing the biobehavioral research of fatigue with genetics and genomics. *J Nurs Scholarsh*. 43(3):274-81.

Quevedo Garcia SP, Greco KE, Loescher LJ. (2011). Teaching strategies to incorporate genomics education into academic nursing curricula. *J Nurs Educ*. 50(11):612-9.

Seeleang, K. (2011). Genetic disparities in the development of type 2 diabetes among African Americans. *J Am Acad Nurse Pract*. 23(9):473-8.

## NEW OPPORTUNITY

### ARE YOU INTERESTED IN PROVIDING TRANSFORMATIONAL LEADERSHIP WITHIN YOUR MAGNET HOSPITAL FOR GENOMIC NURSING COMPETENCY?

We are inviting you to apply to participate in a research project\* designed to strengthen your nursing department's ability to translate the benefits of the latest scientific discoveries to the bedside and document innovative practice across your Magnet Hospital. The National Council of State Boards of Nursing (NCSBN) has funded this project, *Expanding RN Scope of Practice: A Method for Introducing a New Competency into Nursing Practice (MINC)*, to support Magnet Hospital awareness, integration and utilization of genomic information in nursing healthcare delivery. This program will build Champion dyad teams consisting of an Administrator and an Educator from only 25 select Magnet Hospitals. Participation lasts one year and includes ongoing support, education, resource access, and consultation with exemplars to facilitate excellence in professional nursing practice. There are no risks, penalties, or costs for your participation. Reimbursement for project travel (airfare limited to \$400) will be provided.

**LEARN HOW TO BE A MODEL PROGRAM FOR GENOMICS COMPETENCY** and strengthen your ability to translate new innovations into nursing practice through leadership, education, and nursing research. Lead the way for others in the use of evidence based genomic information which can influence quality patient care! To learn more about the program and the application process visit <http://www.hsc.wvu.edu/son/MINC.aspx>. Applications are due **February 13, 2012.**

#### For questions please contact the Principle Investigator:

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\*The West Virginia University Institutional Review Board approval is on file.



## Educational Highlight

**Telling Stories Understanding Real Life Genetics published its 100<sup>th</sup> story in December 2011!**

Visit the website

<http://www.tellingstories.nhs.uk>

*Telling Stories* was developed to help health professionals understand the impact genetics has on people's lives by using real-life stories from individuals with, or at risk of, a genetic condition, their family members, carers and healthcare professionals. The 100<sup>th</sup> story describes Siobhan's experiences of living with two complex genetic conditions, type 2-diabetes and ankylosing spondylitis, caused by a combination of genetic and environmental factors.

Stories are free, cover a range of genetic conditions, are linked to educational frameworks for healthcare professionals and include an educational toolkit.

## PharmGenEd™

"Pharmacogenomics Education Program: Bridging the Gap between Science and Practice" (*PharmGenEd™*) is an evidence-based pharmacogenomics education program designed for pharmacists and physicians, pharmacy and medical students, and other healthcare professionals including nurses. The UCSD Skaggs School of Pharmacy and Pharmaceutical Sciences has developed this resource for pharmacogenomic interdisciplinary education.

PharmGenEd™ is designed to increase awareness about current validity and utility of pharmacogenomic tests and the potential implications of their therapeutic use. PharmGenEd™ offers continuing education courses and shared curriculum materials to teach others to apply pharmacogenomic concepts into clinical practice.

The curriculum related to pharmacogenomics concepts and clinical applications are disseminated using:

- Web-based or live CPE/CME presentations delivered by experts
- Evidence-based pubcasts and videocasts
- A shared curriculum platform to "Train-the-Trainer"

There currently is no cost for using PharmGenEd™. The only requirement is to register for access to the programs and resources.

For more information on PharmGenEd™ please visit: <http://pharmacogenomics.ucsd.edu/home.aspx>

## Journal of Nursing Scholarship Completes 2011 Special Series: Genetics/Genomics and Nursing Education

This article series highlights the relevance and importance of genetics and genomics for nurse educators and nursing education worldwide. The series consists of 5 manuscripts and includes an editorial that highlights the role of nurse educators in preparing nurses for genetics and genomics.

### March 2011 Issue

- Bridging the Gap Between Genomics Discoveries and Clinical Care: Nurse Educators are Key (editorial)
- Implications for Educating the Next Generation of Nurses on Genetics and Genomics in the 21st Century

### June 2011 Issue

- Genetics/Genomics Competencies and Nursing Regulation

### September 2011 Issue

- Strategies to Prepare Faculty to Integrate Genomics into Nursing Education Programs
- Integrating Genomics into Undergraduate Nursing Education

### December 2011 Issue

- Genomic Education Resources for Nursing Faculty



DNA day was created to educate students, teachers, and the public about genetics and genomics. This day commemorates the unearthing of DNA's double helix and the completion of the Human Genome Project in April 2003. The next National DNA day will occur, April 20, 2012. To learn more about National DNA day visit <http://www.genome.gov/10506367>.

### New England Journal of Medicine Series on Genomic Medicine

This series of articles is focused on reviewing the state of the evidence on efforts to screen, prevent, and treat common disease in the era of genomics.

Full text of these articles can be found at: <http://www.genome.gov/27541912>

### Resource Update

Talking Glossary of Genetics Terms  
**Launches mobile app**  
<http://www.genome.gov/27545338>

### Office of Public Health Genomics:

As part of the Center for Disease Control (CDC) the Office of Public Health Genomics (OPHG) continues to create new podcasts available free from experts in genomics that provide the latest research and education in areas of specific disease, genetics, family history, newborn screening, direct to consumer testing, pharmacogenomics, and much more.

These videos are updated regularly and are available at

<http://www.cdc.gov/genomics/resources/video/index.htm>

The latest podcast:

Pharmacogenomics and Your Practice (11/7/2011)  
Scott Bowen, MPH, Deputy Director of CDC's Office of Public Health Genomics, speaks about pharmacogenomics.

### NCHPEG and the NIH Office of Behavioral and Social Science Research announce the release of Genetics and Social Science: Expanding Transdisciplinary Research

[www.nchpeg.org/bssr](http://www.nchpeg.org/bssr)

This free, web-based educational program is for social and behavioral science researchers interested in genetics and its implications for research questions. The goal of the program is to increase users' familiarity with genetics concepts applicable to social science in order to facilitate collaboration, inspire research imagination, integrate genetics into current research, and evaluate applicability of genetic research to their outcomes of interest.

### Essential Genetic and Genomic Competencies for Nurses With Graduate Degrees, continued from page 1

validation of the competencies that did not achieve 100 percent agreement in the first survey. Ultimately, the consensus process resulted in 38 competencies organized under the following categories: Risk Assessment and Interpretation, Genetic Education, Counseling, Testing, and Results, Interpretation, Clinical Management, Ethical, Legal and Social (ELSI) Issues, Professional Role, Leadership and Research. These competencies will inform and guide the practice of nurses prepared at the graduate level.

Although achieving consensus on these graduate level genetic/genomic competencies is an important milestone, endorsement, dissemination and implementation of these competencies are necessary next steps to help assure nurses with graduate degrees are prepared to deliver competent genomic care. Several nursing organizations have endorsed these competencies. Next steps include developing performance indicators and identifying genomic educational resources for each competency to assist educators with teaching these competencies. This process will be modeled after the one used for the *Essentials of Genetic and Genomic Nursing: Competencies, Curricula Guidelines and Outcome Indicators* (2009). Long term plans also include dissemination of the competency document, outcome indicators, and genomic resources through the Genetics/Genomics Competency Center (G2C2) website (<http://www.G-2-C-2.org>).

For further information about how your organization can endorse the Essential Genetics and Genomics Competencies for Nurses With Graduate Degrees contact Karen Greco at [karen.greco@nih.gov](mailto:karen.greco@nih.gov).