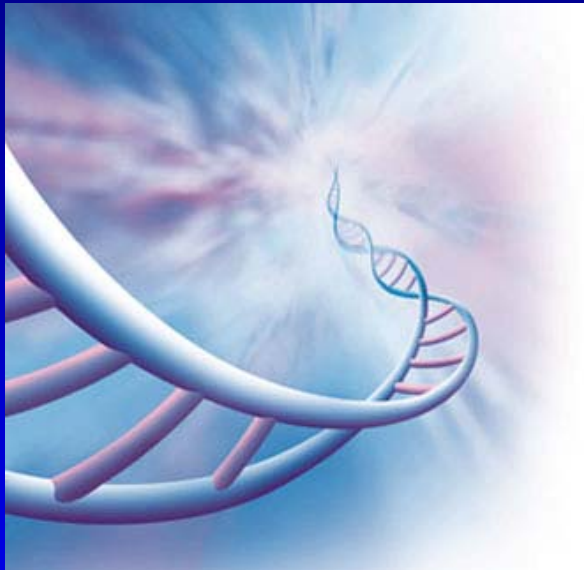


Current Genetic/Genomic Education Priorities and Progress in Nursing



Jean Jenkins, PhD, RN, FAAN
National Human Genome Research Institute

Goal: Multi-phased National Effort

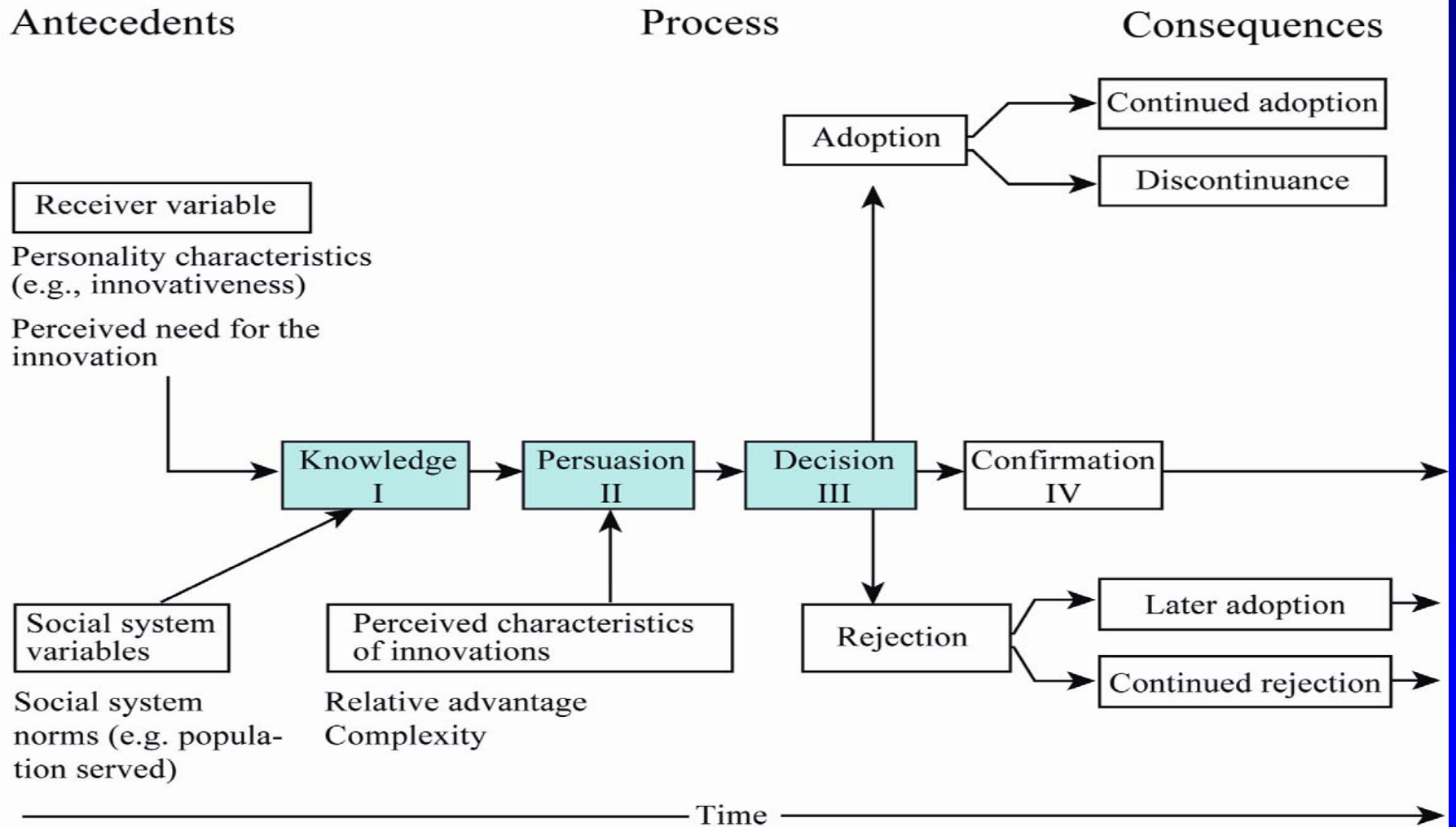
Prepare US nurses for:

- The genetic/genomic healthcare needs of today
- Utilization of genetic/genomic healthcare advances of tomorrow



Figure 1. Stages of innovation-decision process

Adapted from: Diffusion of innovations (5th ed.). Rogers, E. Copyright © 2003 by E. Rogers.
Copyright © 1962, 1971, 1983, 1995 by the Free Press.



Challenge-Knowledge

- 2.9 million practicing nurses as of 2004
- The average age of the US registered nurses has increased substantially
 - 1980-52.9% of RNs were <40
 - 2004-26.6% of RNs were <40
- Most faculty AND practicing nurses have had no genetics or genomic education or training
- Genetic and genomic content is inconsistently incorporated into entry level nursing programs and licensing exams





“All patients have genes.”



Genetics and Genomics in Nursing

NHGRI's Dr. Jean Jenkins is currently editing 15 articles for the *Journal of Nursing Scholarship* as part of a two-year nursing series on genetics and genomics. An expert panel of NIH reviewers assisted in providing oversight and editing of this series, including Kathleen Calzone, Dr. Suzanne Feetham, Dr. Elizabeth Thomson, and Dr. Melinda Tinkle.

All articles are published by [Blackwell Synergy](#) [blackwell-synergy.com], a part of Blackwell Publishing, Inc.

Current articles include:

- [Genomics, Tsunamis, and Other Frontiers of Knowledge](#)
Sue Thomas Hegwary. *Journal of Nursing Scholarship*, 37(2):95. June 2005.
- [Nurses and the Genomic Revolution](#)
Jean Jenkins, Patricia A. Grady, Francis S. Collins. *Journal of Nursing Scholarship*, 37 (2):98. June 2005.
- [Nursing Leadership in Genomics for Health and Society](#)
Suzanne Feetham, Elizabeth J. Thomson, Ada Sue Hinshaw. *Journal of Nursing Scholarship*, 37(2):102. June 2005.
- [The Interface of Genomic Technologies and Nursing](#)
Lois J. Loescher, Carrie J. Merkle. *Journal of Nursing Scholarship*, 37(2):111. June 2005.
- [Genomics in Nursing Education](#)
Cynthia A. Prows, Merlyn Glass, M.J. (Nick) Nicol, Heather Skirton, Janet Williams. *Journal of Nursing Scholarship*, 37(3):196. September 2005.
- [Promoting Children's Health Through Understanding of Genetics and Genomics](#)
Carole Kenner, Agatha M. Gallo, Kellie D. Bryant.. *Journal of Nursing Scholarship*, 37(4):308. December 2005.
- [Genomics and Cardiovascular Disease](#)
Lorraine Frazier, Rolanda L. Johnson, Elizabeth Sparks. *Journal of Nursing Scholarship*, 37(4):315. December 2005.
- [Genomic Influences on Schizophrenia-Related Neurotransmitter Systems](#)
Norman L. Keltner. *Journal of Nursing Scholarship*, 37(4):322. December 2005.

Genetic and Genomic Nursing Competency Initiative

Limited Nursing Competency in Genetics/Genomics

No Nursing Specific Competencies

Multidisciplinary NCHPEG Competencies

UK Competency Initiative Successful

Established The Essential Nursing Competencies
and Curricula Guidelines in Genetics and Genomics

Established a Strategic
Implementation Plan

Implementation

GGNCI Advisory Group

Co-Chairs:

Jean Jenkins, PhD, RN, FAAN

Kathleen Calzone, MSN, RN, APNG, FAAN

National Human Genome Research Institute

National Cancer Institute

Members:

Laurie Badzek, RN, MS, JD, LLM

Annette Debisette, DNSc, ANP, RN

Suzanne Feetham, PhD, RN, FAAN

Joanne Hickey, PhD, RN, BC, ACNP, FAAN

Mary Krugman, PhD, RN, FAAN

Jennifer Loud, MSN, RN, CRNP

Rosario-May Mayor, MA, RN

Kathleen McGuinn, MSN, RN

Judith Lewis, PhD, RN, FAAN

Carole Kenner, DNS, RNC, FAAN

Dale Halsey Lea, MS, RN, MPH, FAAN

Cynthia Prows, MSN, RN

Elizabeth Thomson, DNSc, RN, CGC, FAAN

Martha Turner, PhD, RN

Michael Weaver, PhD, RN, FAAN

Janet Williams, PhD, RN, FAAN

American Nurses Association

Health Resources and Service Administration

American Academy of Nursing

American Nurses Credentialing Center

National Nurse Staff Development Organization

Oncology Nursing Society

National Coalition of Ethnic Minority Nurses Association

American Association of Colleges of Nursing

National League for Nursing

National Association of Neonatal Nurses, and Council of International Neonatal Nurses

National Human Genome Research Institute

Cincinnati Children's Hospital Medical Center

National Human Genome Research Institute

American Nurses Association

American Academy of Nursing

University of Iowa

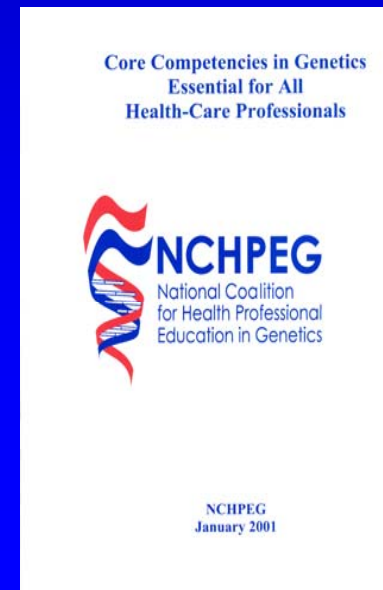
Organizational Partnerships

- Established partnership with key organizations
 - Health Resources and Services Administration
 - American Nurses Association
 - Centers for Disease Control
 - National Institute of Nursing Research
 - Office of Rare Diseases, NIH



Competency Development

- Identified, analyzed, reviewed and compared published practice-based genetic and genomic competencies, guidelines, and recommendations.
- Nursing competencies drafted, reviewed, modified, and approved by nurse representatives to NCHPEG and Steering Committee 2005.
- Public comment was solicited with revisions incorporated.



Consensus Meeting September 21-22, 2005



<http://www.nursingworld.org/ethics/genetics>

The Essential Nursing Competencies and Curricula Guidelines in Genetics and Genomics

- Define essential genetic and genomic competencies for **ALL** nurses regardless of level of academic preparation, practice setting or specialty.
 - Guide curriculum content
 - Provide the basis for evaluating nurse competence in genetics and genomics
 - <http://www.genome.gov/17517146>

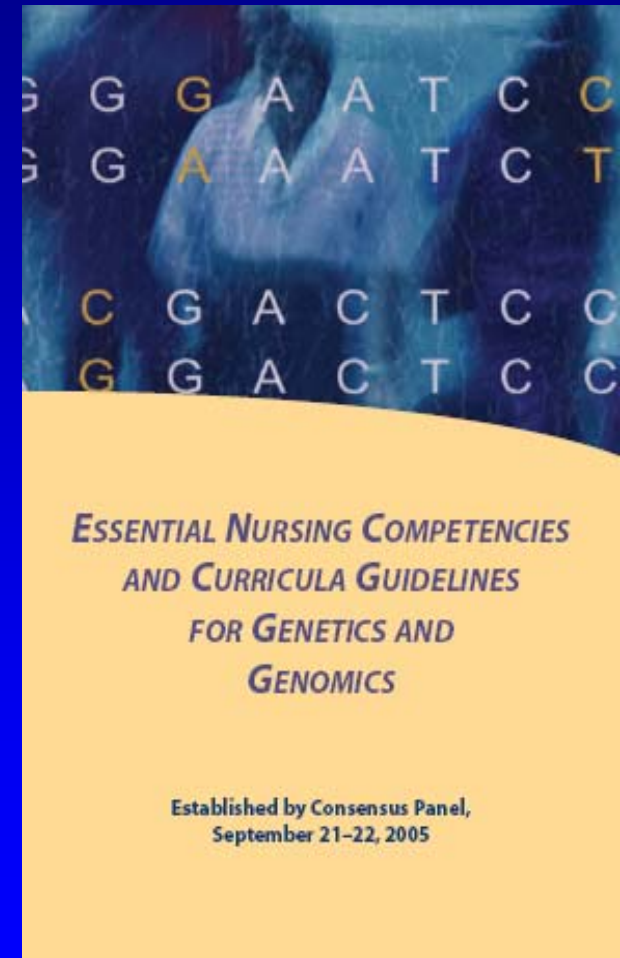


Endorsement Status

- 49 organizations have endorsed including
 - American Academy of Nursing
 - American Association of Colleges of Nursing
 - American Nursing Association
 - American Nurses Credentialing Center
 - National League for Nursing
 - National League for Nursing Accrediting Commission
 - Oncology Nursing Society
 - Sigma Theta Tau
- Unsolicited, endorsements have been received from schools of nursing

Education Priorities

- Strategic Implementation Plan Meeting October 22-24, 2006
 - Stakeholders from educational institutions, professional associations, certifying bodies and regulatory agencies developed a 5 year strategic plan
- Strategic Plan Activities Focus
 1. Infrastructure
 2. Practicing Nurses
 3. Academics
 4. Regulation/Quality Control



Outcomes-Infrastructure

- Developed a framework for a US Center of Genetic/Genomic Nursing Education
- Established a Competency Activity Matrix to track all activities
- Established and maintain a Competency Initiative Listserve
- Developed a Newsletter titled *Competency Focus* with updates on this initiative



Outcomes-Practicing Nurse

- Established a Core Slide Set for dissemination of the Competency information
- National Nursing Survey (pilot done)
 - To determine the current state of the nursing workforce competency in genetic and genomics
 - Pre and post competency endorsement assessments with the collaboration of the American Nurses Association and other potential target organizations

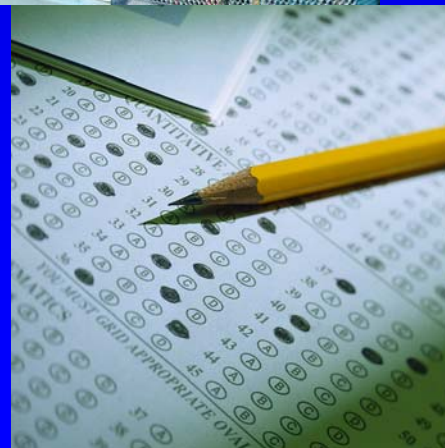


Nursing School Curriculum Content

- Two surveys 15 years apart show no increase in curriculum content
- In 2005, 29% of schools reported no genetic or genomic curriculum content
- Barriers
 - Insufficient knowledge of most nursing faculty
 - Limited number of faculty who view genetics and genomic as relevant to nursing practice
 - Perceived inability to add more content to an already dense nursing curriculum



Academics



- Prepare faculty to teach genetics and genomics
 - Faculty Champions
- Integrate genetics and genomic into all levels of nursing educational curriculum
 - Establish Clearinghouse of Educational Resources and tools
- Establish requirement to include genetic/genomic principles as a component of accreditation
- Develop genetic and genomic publications targeted for nursing faculty

Outcomes-Academics

- Distributed the Competencies to all 1,626 Schools of Nursing in the U.S. and Territories
- Spoken at the national meetings about genetics/genetics and the Competencies including the American Association of Colleges of Nursing (AACN) Faculty conferences
- Participated and presented at a meeting of held by AACN to revise the Baccalaureate Nursing Essentials
- Have partnered with the Human Resources and Services Administration Bureau of Nursing to identify funding options

Faculty Tool Kit

Invitational Meeting held September 14, 2007 in collaboration with AACN

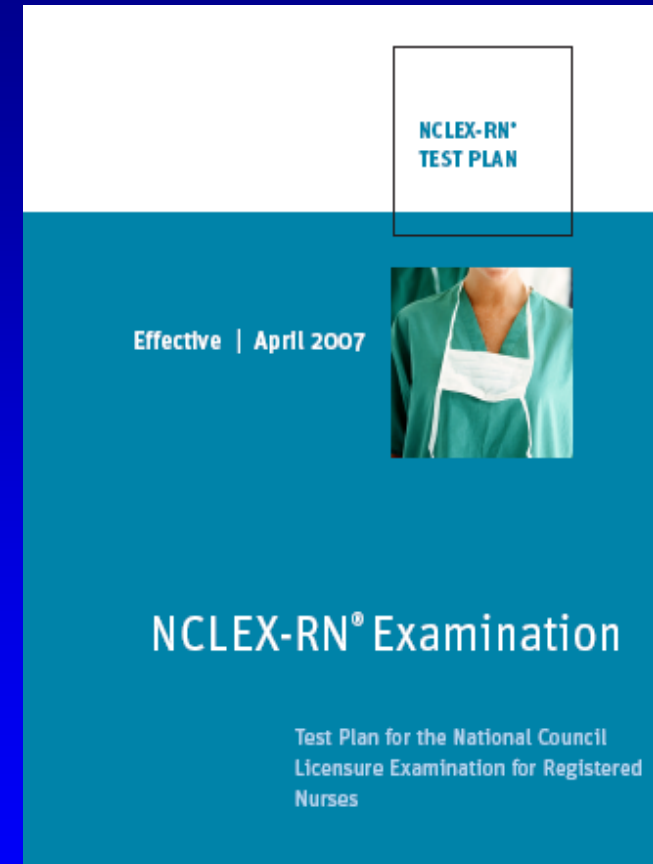
- Aim is to achieve consensus on:
 - Learning outcomes and practice indicators.
 - Develop recommendations for content, format, and method of dissemination of materials to be included in a Genomics competency tool kit for nursing faculty utilization in the classroom and clinical setting.
 - Recommendation
-centralized education site.



**NEW June
23-24, 2008**

Regulatory Strategies

- Distributed the Competencies to all 59 US State Boards of Nursing
- ◆ Advocate for policy that reimburses nurses for delivery of genetic/genomic services
- ◆ Identify genetic/genomic experts to apply as item writers for licensing exams



PHASE TWO: INTERPRETATION



Outcomes-Persuasion

- Developed a State of the Science meeting proposal to establish research priorities that will serve as the underpinning for the development of research that produces the essential outcome data needed to incorporate genetics and genomics into licensing and accreditation.





Questions

Jean.Jenkins@nih.gov

301-496-4601

