

## BACKGROUND

Nurses must be knowledgeable in current scientific discoveries related to health care in order to practice effectively. Recent genomic advances include novel drug therapies, more nuanced reproductive counselling and reproductive options, enhanced risk assessment, and expanded clinical laboratory testing. Genomic discoveries are expected to transform future health care and nurses are 'key' to this transformation. The shift to precision health care makes it clear that genomics must be fully integrated into nursing curricula. Nursing faculty continue to have low comfort and knowledge levels with teaching genetics/genomics (Maradiegue, Edwards & Seibert, 2013; 2014). Although most nurses agree that genomics is important, integration into education programs is inconsistent across the globe, even though credentialing and genetic nursing education is available in programs in the United States, Canada, Japan, the United Kingdom, Canada, Japan, South America, Australia, New Zealand, Israel and others (Thompson & Brooks, 2011).

## PURPOSE

To provide nursing faculty with strategies and resources to be able to integrate genomic information into their existing curriculum.

## REFERENCES

Thompson, H. & Brooks, M. (2011). Genetics and genomics in nursing. *Nursing Education Today*, 31(6), 623-27.  
Maradiegue, A., Edwards, Q., & Seibert, D. ( 2013). 5-Years Later – Have Faculty Integrated Medical Genetics into Nurse Practitioner Curriculum? *International Journal of Nursing Education and Scholarship*, 10(1) 245–254.

## STRATEGIES

COURSE	GENETIC/GENOMIC CONCEPTS	NURSING APPLICATIONS
Pathophysiology	Genetic/Genomic Basics	Case studies covering different genomic mechanisms in diseases
Pharmacology	Pharmacogenomics	Identification of new generation of drugs requiring genetic testing
Health Assessment	Three Generation Pedigree  Physical Clues	Students explore their own family history and identify any red flags Case studies and physical exams
Integration into Clinical Courses	Newborn Screening, Prenatal Counseling Adult Health	Obstetrics/Newborn Pediatrics Chronic Conditions
Community	Population Health	Apply Population Screening to Community site
Professional Role	Organizational Genetic/Genomic Resources	Identify role of Genetic Specialists within organizations
Research	Ethics of Genetic Testing	GINA, consent for testing

## RESOURCES

Cincinnati Children's

<http://www.cincinnatichildrens.org/education/clinical/nursing/genetics/default/>

Telling Genetic Stories

[http://www.tellingstories.nhs.uk/about\\_us.asp](http://www.tellingstories.nhs.uk/about_us.asp)

City of Hope Cancer Genetics

<http://www.cityofhope.org/cancer-genetics-education-program>

## U.S. GENETIC COMPETENCIES

### Registered Nurse (RN)

- Applying/integrating genetic/genomic knowledge (i.e., three-generation-pedigree, relating to the treatment and management of illness, uses nursing process to integrate genetic/genomics into care).
- Identification of clients and appropriate resources.
- Referral to specialized services
- Provision of Education, Care and Support (i.e., risk factors, health promotion)

### Nurses with Graduate Degrees

- Risk Assessment and Interpretation
- Genetic Education, Counseling, Testing and Results Interpretation
- Clinical Management

## CONCLUSIONS

More training is warranted for nursing faculty so they are knowledgeable and comfortable with genetic/genomic topics to prepare future generations of nurses to address the public's health, and to be comfortable with advanced technologies.