GUEST EDITORIAL

Genetics and Nursing Science

Realizing the Potential

Advances in genetics are revolutionizing our understanding of the foundations of biomedical science and its clinical application. Through the media, consumers are increasingly well informed about these advances, and are questioning nurses about the meaning of genetic screening and the uses of genetic information and genetic therapy. These consumer questions are just one of many indicators of a need for integration of nursing science and the science of genetics.

The future of healthcare will see many benefits from genetics, as genetic knowledge facilitates (a) identifying specific disease mechanisms, (b) targeting of diagnostic tests, and (c) tailoring of therapies to specific underlying causes rather than symptoms. This genetic knowledge is becoming essential to delivery of effective healthcare for everyone. For example, genetic polymorphisms may soon be useful predictors of the risk for many common disorders. Because of its powerful implications, this and related genetic information will be transformed rapidly into clinical guidelines with recommendations for delivering care to targeted subpopulations. Nurses are currently familiar with integrating multiple sources of risk information. Nurses must now develop a strong working knowledge of genetic information as the first step toward integrating genetics into clinical nursing practice.

Nurses can already take steps to capitalize upon current genetic knowledge by becoming familiar with the publications of the growing number of scientists and clinicians who are describing the opportunities presented by genetics to nursing science, research, education, and practice. In addition, other ventures are showcasing exemplars of collaboration between genetic science and nursing. For example, in 2003, the National Institute of Nursing Research (NINR) will convene the 4th Summer Genetics Institute (NINR, 2003a), an intensive educational endeavor enriched by the resources of the National Human Genome Research Institute and the National Institutes of Health at large. The NINR also will convene a symposium in April: *Linking the Double Helix With Health: Genetics In Nursing Research* (NINR, 2003b). Consistent with its mission, the NINR supports studies that incorporate genetic biomarkers, along with a number of research training and career development awards in which genetic advances are integral to the research questions. The NINR has also funded the first T32 institutional training award in genetics, the Postdoctoral Fellowship in Clinical Genetics Research (University of Iowa, n.d.).

Other steps being taken by nurse investigators and nurse clinicians include (a) exploring the ethical, social, and legal aspects of genetic information, (b) learning how to assist individuals in making decisions about genetic information, and (c) developing guidelines such as the competencies developed by the National Coalition for Health Professional Education in Genetics (NCHPEG, n.d.). Nurses can contribute significantly as part of an interdisciplinary approach to translate genome-based knowledge into benefits for healthcare and society.

As we celebrate this progress, we encourage each of you to take your own steps toward enriching the collaboration between genetics and nursing research, practice, and education.

References

National Coalition of Health Professional Education in Genetics (NCHPEG) (n.d.). Retrieved 01/03/03 from http://www.nchpeg.org

National Institutes of Nursing Research. (2003a, June). Retrieved 01/03/03 from http://www.nih.gov/ninr/research/dir/sgi.html

National Institutes of Nursing Research (2003b, April). Abstract retrieved 01/03/03 from http://www.nih.gov/ninr/news-info/geneventposter.pdf

University of Iowa, College of Nursing. (n.d.). Retrieved 01/03/03 from http://www.nursing.uiowa.edu/centers/gnirc/clingenet.htm

Dr. Patricia A. Grady
Director, National Institute of Nursing Research
gradyp@mail.nih.gov

Dr. Francis S. Collins
Director, National Human Genome Research Institute
jean.jenkins@nih.gov