

PATRICIA A. GRADY, PH.D., RN, FAAN, DIRECTOR
NATIONAL INSTITUTE OF NURSING RESEARCH
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Mr. Chairman and Members of the Committee:

I appreciate the opportunity to present the Fiscal Year (FY) 2008 President's budget request for the National Institute of Nursing Research (NINR). The FY 2008 budget included \$137,800,000.

INTRODUCTION

The mission of the NINR is to support clinical and basic research that establishes a scientific basis for the care of individuals across the lifespan – from management of patients during illness and recovery to the reduction of risks for disease and disability, the promotion of healthy lifestyles, promoting quality of life in those with chronic illness, and care for individuals at the end of life. NINR's research programs also place special emphasis on eliminating health disparities and on the health issues faced by the underserved.

NINR's research has contributed to improving the health of the American people for more than two decades. In 2006, NINR concluded the year-long observance of our 20th anniversary at NIH. During that period, we took stock of our scientific accomplishments, recognized our contributions to clinical practice, and launched a newly revamped web-site in support of our stakeholders. We also assessed the future role of nursing science in addressing the major health challenges of our Nation: an aging population; a growing racial and cultural diversity and the attendant health disparities; an increasing reliance on technology in health care settings; and a rising demand for nurses. Within this context, NINR developed a new, forward-looking Strategic Plan.

NINR's new five-year Strategic Plan elucidates a unified framework for addressing the dynamic health care landscape. The Plan leverages key strengths of the NINR research community and focuses on areas of critical research opportunity

including: Self-Management, Symptom Management, and Caregiving; Health Promotion and Disease Prevention; Research Capacity Development; Technology Integration; and End-of-Life. Pursuing this strategy, we seek to apply NINR's resources to the areas of public health which have the greatest needs, and in which NINR can have the greatest impact.

Allow me to briefly describe our programs within this framework, highlight recent accomplishments, and share our vision for the future.

NINR RESEARCH PROGRAMS

Self-management, Symptom Management, and Caregiving. NINR's focus on the quality-of-life science continuum comprises three key research concepts: self-management, symptom management, and caregiving. Self-management science explores strategies that empower individuals to be more involved in their own health practices. Symptom management science focuses on biological and behavioral components of health and illness that improve the management of symptoms. Caregiving science addresses the quality-of-life dimensions experienced by care recipients as well as formal and informal caregivers across diverse health care settings.

Improving care of premature infants. According to the Centers for Disease Control and Prevention (CDC), half a million preterm infants are born in the U.S. each year, carrying a significant risk of death and disability, and often requiring care in a neonatal intensive care unit (NICU). In addition, their parents endure high levels of stress, anxiety, and depression (Miles, 1999; Singer, 1999, Wereszczak, 1997).

In one study, NINR-supported investigators assessed the effect of "immediate" (7 seconds) versus "delayed" (32 seconds) umbilical cord clamping on health parameters of preterm infants. Compared to the immediate clamping group, infants in the delayed group had nearly a 10-fold lower rate of late-onset sepsis (LOS), which carries a high risk of morbidity and mortality (IOM, 2006), and nearly a 3-fold lower rate of intraventricular hemorrhage (IVH), which carries a risk of developmental deficits (IOM, 2006).

Another study by NINR-supported investigators assessed the effect of an educational program on the psychological care needs of parents of preterm infants. Utilizing the Creating Opportunities for Parental Empowerment (COPE) educational program, parents were taught about prematurity, infant behaviors, and infant development. As a result, parents demonstrated improved parenting behaviors and reported decreased stress levels. Meanwhile, the infants averaged 3.8 fewer days in the NICU than controls, which translated to a savings of roughly \$5,000 per infant (Melnyk, 2006).

Taken together, these studies demonstrate the significant potential benefits of combining a minor modification to a medical procedure at virtually no cost and an educational program during the care of preterm infants to improve health outcomes while reducing health expenditures. Their adoption into standard practice, and the exploration of additional approaches, could result in a more robust reduction in prematurity-related complications in early childhood, disability, death, and health care costs in excess of the \$2.5 billion in estimated potential savings through the COPE intervention alone (\$5,000 savings per infant multiplied by the estimated 500,000 preterm infants born in the U.S. each year).

Quality-of-life research directly impacts populations across the lifespan from the very early stages of life. In 2007, NINR plans to support research on symptom clusters in cancer and immune diseases, as well as biobehavioral research methods.

Health Promotion and Disease Prevention Within Health Promotion and Disease Prevention, NINR scientists explore dimensions of behavior, health in community settings, patient safety, and the biological factors useful in ensuring long-term positive health outcomes.

Culturally-tailored HIV/AIDS intervention for Hispanic youths. According to the CDC, the incidence of acquired immune deficiency syndrome (AIDS) is up to three times higher among Latino adolescents than among their white counterparts (CDC, 2004). NINR-supported scientists tested a culturally-tailored HIV education program called “¡Cuidate! (Take Care of Yourself)” among Hispanic adolescents. Compared to controls, youths in the program were 34% less likely to report having had sexual intercourse in the past 3 months, 47% less likely to report having multiple partners

across the follow-up period, and reported more consistent use of condoms. This study demonstrates the benefits of a customized, population-specific intervention and highlights its potential to reduce health disparities if applied across a range of settings (Villaruel, 2006; Jemmott 1998).

In 2007 NINR plans to support research that incorporates an in-depth knowledge of cultural factors into HIV prevention studies among young people.

Research Capacity Development NINR is engaged in enhancing the research capacity of nursing science. NINR supports pre- and post-doctoral training through both individual and institutional training grants. NINR also supports Research Centers to establish and maintain hubs of research, such as the NINR Nursing Partnership Centers on Health Disparities, which bring together colleagues from research intensive institutions and minority-serving schools of nursing, with the goals of exploring health disparities research questions and training investigators from underrepresented populations.

In 2008, NINR will support academic research enhancement opportunities in minority-serving institution.

Technology Integration NINR's focus on improving health care and quality of life encompasses the development, use, and adaptation of technologies. Functional technologies that assist patients and those that facilitate reporting of biological indicators of health and disease status form the framework of the technology integration program, including uses of technology for telemedicine, patient education, communication, and patient safety

Radiofrequency identification (RFID) and patient safety. The Institute of Medicine (IOM) estimates the cost of medical errors to be over \$37 billion annually; nearly half is associated with preventable errors; and, up to 98,000 deaths each year are attributable to medical errors (IOM, 1999). Currently, certain medical errors such as the retention of surgical sponges within patients after surgery persist. NINR-supported scientists have demonstrated that a radiofrequency identification (RFID)-tag system for surgical sponges accurately detected the presence of sponges retained at the surgery site after wound closure was simulated. If implemented into practice, this approach may

not only contribute to the reduction of medical errors, but also decrease both the time spent in the hospital as well as health care expenditures.

In 2008, NINR plans to support studies focused on stimulating technological strategies that improve health outcomes through the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs.

End-of-Life The science of end-of-life explores research questions of this complex period for dying persons, family members, and both professional and informal health care providers. End-of-life scientists seek to understand not only biological aspects of dying, but also the needs of dying persons, including symptom relief, decision-making, advance directives, and palliative care. In addition, issues of culture, age, spiritual beliefs, and disease-specific considerations are included in research strategies.

Chronically critically ill and end-of-life care preferences. Patients who are or may become chronically critically ill may benefit from having advance directives in place should they lose the ability to communicate their preferences. NINR-supported investigators examined the frequency of documentation of advance directive choices of 1,128 patients hospitalized with a chronic critical illness. Results indicate that about two-thirds did not have an advance directive to document their care preferences, and may benefit from an educational program in end-of-life care and documenting their preferences.

CONCLUSION

NINR's dedicated investigators act on their clinical experience and insight to develop and test innovative solutions to the major health challenges facing our society. Equipped with a new Strategic Plan, we aim to sustain the pace of nursing science discoveries in the years ahead by bringing together innovation and determination within a strategic framework to improve clinical practice and patient care. With twenty years of research, NINR has garnered expertise for new opportunities to address tomorrow's challenges.

Thank you, Mr. Chairman. I will be happy to answer any questions that the Committee might have.

**PATRICIA A. GRADY, Ph.D., RN, FAAN, DIRECTOR
NATIONAL INSTITUTE OF NURSING RESEARCH**

Dr. Patricia A. Grady was appointed Director, NINR, on April 3, 1995. She earned her undergraduate degree in nursing from Georgetown University in Washington, DC. She pursued her graduate education at the University of Maryland, receiving a master's degree from the School of Nursing and a doctorate in physiology from the School of Medicine.

An internationally recognized stroke researcher, Dr. Grady's scientific focus has primarily been in stroke, with emphasis on arterial stenosis and cerebral ischemia. She was elected to the Institute of Medicine in 1999 and is a member of several scientific organizations, including the Society for Neuroscience, the American Academy of Nursing, and the American Neurological Association. She is also a fellow of the American Heart Association Stroke Council.

In 1988, Dr. Grady joined the NIH as an extramural research program administrator in the National Institute of Neurological Disorders and Stroke (NINDS) in the areas of stroke and brain imaging. Two years later, she served on the NIH Task Force for Medical Rehabilitation Research, which established the first long-range research agenda for the field of medical rehabilitation research. In 1992, she assumed the responsibilities of NINDS Assistant Director. From 1993 to 1995, she was Deputy Director and Acting Director of NINDS. Dr. Grady served as a charter member of the NIH Warren Grant Magnuson Clinical Center Board of Governors.

Before coming to NIH, Dr. Grady held several academic positions and served concurrently on the faculties of the University of Maryland School of Medicine and School of Nursing.

Dr. Grady has published numerous articles and papers on hypertension, cerebrovascular permeability, vascular stress, and cerebral edema. She is an editorial board member of the major stroke journals. Dr. Grady lectures and speaks on a wide range of topics, including future directions in nursing research, developments in the neurological sciences, and federal research opportunities.

Dr. Grady has been recognized with several prestigious honors and awards for her leadership and scientific accomplishments, including being named the inaugural Rozella M. Schlotfeld distinguished lecturer at Case Western Reserve University and receiving the honorary degree of Doctor of Public Service from the University of Maryland. In addition to being named the Excellence in Nursing Lecturer by the American Heart Association, Dr. Grady also received the first Centennial Achievement Medal from the Georgetown University School of Nursing and Health Studies. She has also received Doctor of Science, *Honoris Causa* awards from Thomas Jefferson University and the Medical University of South Carolina, as well as the Second Century Award for Excellence in Health Care from Columbia University.

Dr. Grady is a past recipient of the NIH Merit Award and received the Public Health Service Superior Service Award for her exceptional leadership.