SUMMARY

Long-term care for older adults has become an increasingly significant part of the health care system in the United States. Greater numbers of individuals are reaching old age; concomitant with advanced years is the increased likelihood of one or more chronic conditions that require the services of the health care system. In addition, long-term-care services for older adults consume a large part of the total dollars available for health care for all ages. Thus, more older persons requiring more care and therefore more dollars have increased the visibility of the issues associated with long-term care for older adults. Several reasons account for the fact that more individuals are reaching advanced years. In addition to progress in the control of infectious diseases that allows more individuals to reach adulthood, the explosion of technology in health care and increasing knowledge of the importance of healthier life styles have combined to lengthen the life span and improve health well into the later years. Although more individuals are entering older age, they are also likely to have one or more chronic conditions that hinder their ability to live independently and, thus, require assistance from the long-term health care system.

With the passage of Title 18 (Medicare) of the Older Americans Act in 1965, health care for older adults has become a major component of the health care system. In 1963, before Medicare, the total per capita medical cost was $419 for people 65 years of age and older. By 1984, the total per capita medical cost was $4202 (U.S. Senate Special Committee on Aging, 1986). Out-of-pocket costs for health services not covered by Medicare average about 15 percent of the older person's income. Older adults account for approximately 31 percent of all hospital stays and, once admitted to a hospital, older adults stay an average of 3 days longer than younger people; the rate of hospitalization for persons over age 65 is two to three times that of those under age 65. The nursing home industry has exploded in recent years stretching the Medicaid budget to the limit. Also, in the past decade, the increase in family responsibilities for caregiving has produced both financial and personal distress for many. These factors have combined to heighten awareness that long-term care for older adults is a substantial component of the total health care system.

Even with the significant improvements in the care of older adults, the long-term-care system is not without problems. Issues include: cost (as noted above), access, quality, in both institutional and community-based care, inequities in rural and urban distribution of care, and care for ethnic people of color and other special populations. In addition, there are increasing concerns for the health and well-being of family caregivers and a growing recognition of the need for an adequately trained and stable work force in long-term care. Long-term care is recognized widely as a complex concept that, although targeting health services, is set within a social, political, and economic context. The clinical aspects of long-term care are not easily addressed without addressing broader societal factors at the same time. With this in mind, the definition of long-term care for older adults offered by Kane and Kane (1989) was endorsed by the Panel and provided the broad framework for its deliberations. Long-term care is a range of services that addresses the health, personal care, and social needs of individuals who lack some capacity for self care. Services may be continuous or intermittent but are delivered for a sustained period to individuals who have a demonstrated need, usually measured by some index of functional dependency (Kane & Kane, 1989; p.4). The magnitude and complexity of the issues debated by the Panel, which served as a basis for recommendations to the National Center for Nursing Research (NCNR), are reflected in the following remarks. Each topical area encompasses a broad range of significant issues, both clinical and organizational, and all represent important foci for future nursing research.

Confusion is a significant problem for many older persons. It is estimated that 1.5 million Americans suffer from severe dementia; in addition, between 1 and 5 million have mild or moderate dementia (Office of Technology Assessment, 1987). Confusion is associated most often with the dementias, particularly dementias of the Alzheimer's type. Confusion and the behavioral problems associated with it create significant care problems for both families and health care professionals. Acute confusional states often are reversible with appropriate nursing assessment and care. Clinical research is beginning to focus on nonpharmacological and restraint-free management of chronic confusion, but much more needs to be done, particularly with controlled clinical trials.

Affective states, particularly depression, are recognized as important deterrents to quality of life in the later years and may be a primary factor in the high rate of suicide in older men. Both exogenous and endogenous depressions may be present in later years. Exogenous, or situational depression, results from the frequent losses incurred with advancing age. Losses due to deaths, diminished income, illness, relocation, and other situations are common and increasingly are being recognized as amenable to brief therapies. Endogenous depression, which is not more prevalent in later years, is treatable with a variety of therapies, including carefully prescribed and monitored drug therapy.

Mobility is one of the most important functional abilities of the older adult. Mobility determines the degree of independence and, indirectly, the health care needs of the elderly population. It is estimated that major activity limitations are present in 46 percent of community dwelling persons 65 years of age and older. Similarly, impaired mobility is among the most frequent nursing diagnoses of older adults residing in nursing homes. Age itself is not a cause of impaired mobility. Associated factors such as chronic illness, sedentary life style, diminished visual acuity, hearing impairments, and social isolation may directly or indirectly affect mobility. One of the most important consequences of impaired mobility is falls. Falls are both an outcome and a predisposing factor of impaired mobility and are significantly related to mortality. Prolonged immobility has potentially serious physical, emotional, and socioeconomic outcomes for older adults. Bone demineralization, protein imbalance, decreased muscle strength, and compromised coordination are serious physical outcomes of impaired mobility. Emotional sequelae of impaired mobility are likely to be seen in depression and decreased self-esteem. For individuals with diminished mobility, there is the likelihood of reduced social contacts that may feed into depressed moods. Society is affected also through increased cost of care for the health problems that result from impaired mobility. Researchers only recently are recognizing the need to investigate programs and strategies that will decrease the likelihood of falls as well as ensure recovery when falls occur. Studies of the role of exercise and aggressive rehabilitation efforts are just beginning to show promise.

Closely related to impaired mobility is the problem of skin breakdown and the resulting risk of infection. The presence of pressure ulcers has been identified as one of the major indicators of quality (lack of quality) care by the Joint Commission for the Accreditation of Health Care Organizations. Although pressure ulcers are recognized as a serious problem for immobilized older adults, the extent of the problem is not well-known. Problems with study design and data measurement in existing studies make it difficult to generalize. Much work needs to be done in the area of instrument development. Descriptive studies are needed to categorize information for systematic measurement.

With the implementation of the Omnibus Reconciliation Act of 1987 (OBRA 1987), the use of physical and chemical restraints has been significantly curtailed in long-term-care settings. There are still situations, however, in which this method of management is appropriate, and effective ways to manage the behaviors that once led so swiftly to the use of restraints remain to be determined. Behaviors leading to the use of restraints can be classified as those that result either in

harm to the patient or in harm to others. Common reasons for restraining patients are to prevent falls, maintain therapies, and manage violent behaviors. Negative outcomes of restraint use include immobilization with concomitant pressure sore development, contractures, and decreased socialization. In addition, nurses report feeling guilty, frustrated, and anxious about placing a patient in a restrained situation. In addition, there are both legal and ethical issues to be considered in the use of restraints. The health care system and health professionals, in particular, are only now coming to grips with the many aspects of restrained environments. Research on appropriate ways to maintain restraint-free environments in long-term care is essential.

Infections are the most common cause of death in nursing homes. The problem is likely to increase as greater numbers of older individuals require hospitalization or nursing home placement. Nosocomial (institution-acquired) infections are a significant risk for older adults in both hospitals and long-term-care facilities. The high rate of nosocomial infections calls into question infection control programs practiced in health care facilities. Further, because there is considerable transit among hospitals, nursing homes, and home, the spread of infection is of concern. Infection control programs often are directed by nurses who are in key positions to initiate and conduct research in this area.

Urinary incontinence is a significant health problem for older adults and has serious physical, psychological, and social consequences. The economic costs of urinary incontinence are estimated at $10.3 billion; $3.3 billion for nursing home residents, $4.8 billion for elderly persons in the community, and $2.2 billion for female adults between the ages of 25 and 64 (Hu, 1988). Urinary incontinence is a devastating experience. Among the most common sequelae of this condition are restricted social involvement and self-imposed social isolation, resulting in a situation with high probability for depression. Intervention studies are beginning to appear in the literature. The most common interventions are behavioral, drugs, electrical stimulation, surgery, and palliative/supportive therapies. Most research in this area has been conducted in older white female populations. Little is known about the prevalence of incontinence in nonwhite or male populations.

Quality of life has many facets, but one of the most important aspects is restful and refreshing sleep. The process of aging has a significant effect on the quality of sleep. However, there is beginning evidence that some sleep problems are amenable to treatment and therefore should be investigated. The quality of sleep is associated with two of the most common neuropsychiatric disorders of late life, depression and dementia. Depression is potentially treatable; treatment may result in positive effects on sleep quality. Although most chronic dementias are not treatable, methods to manage the symptoms may result in better sleep for the affected individual and for the family caregiver.

Quality of care in nursing homes is a national concern. The public image of the nursing home is a place to await death for persons who have no one to care for them. Most problems of quality care are related directly to situations in which good nursing care could make a difference, for example, dehydration, pressure ulcers, falls, infection, overmedication, and depression. With the advent of prospective payment, the acuity level of nursing home residents has increased. The nursing care needs of residents require a high level of skill and knowledge. This situation is compounded by the exceptionally high rate of turnover among both professional and supporting staff. In addition to clinical and organizational issues in nursing homes, there is the problem of image within the profession. Nurses who choose to work in nursing homes often are characterized as less capable than nurses who work either in the community or acute-care settings. There are many topics for research in this area of long-term care and, given demographic trends, the need for this research is urgent.

Home health care is a burgeoning industry. According to recent figures there are approximately

6,000 home health agencies in the United States certified to provide Medicare and Medicaid services. However, the total figure for home health agencies approximates 11,000, suggesting that about one-half of these agencies are uncertified and unlicensed. Older adults are major consumers of these services and, with early hospital discharges, the persons requiring care are often very ill. Home health care rarely is delivered by professional nurses; often, less skilled and even unlicensed persons are responsible for this care. Issues concerning quality of care are numerous and very little research has been directed at this major segment of the health care system. Because nursing care is a paramount service in home care, it is appropriate and even critical that nurses take a leadership role in research on the quality of home care.

The long-term-care system would not be able to meet the needs of older adults without the services provided by family and other lay caregivers. There is evidence to support the fact that family and friends are the sole care providers for three-fourths of all community-dwelling older adults. Caregiving responsibilities may extend over many years, but the critical factor is the type of care provided. The current knowledge base on informal caregivers has not been developed by nurses. However, it identifies the importance of the elder-caregiver dyad as a focus for nursing research. Studies of the processes and outcomes of caregiving, the efficacy of behavioral management strategies, the role and function of various types of respite care, and studies of caregiving among minorities and those living in rural settings are important areas for nursing investigation.

Hospital care is a major setting for the delivery of care to older adults. It is generally not considered a part of the long-term-care system; however, care delivered in the hospital is frequently a determinant of the type of long-term-care services that will be required post-discharge. And, unfortunately, it is not unlikely that the older adult will need nursing home care because of problems arising in the hospital, for example, falls. Although there is growing evidence of the risk involved in moving older sick adults from one health care setting to another, the circuit of home, hospital, and nursing home movement is very common. There is a need for nurses to document the problems inherent in care transitions and to develop research-based strategies to reduce the problems associated with these transitions.

There is a wide range of other services that the older adult may need. Some are related more directly to health than others. With the growing variety of these services, it is becoming increasingly important for nurses to take on a case-management function to ensure timely and appropriate care. Innovative programs such as the long-term-care demonstration projects, teaching nursing homes, and social health maintenance organizations are promising opportunities for nurses to make a difference in the care of older adults. There is very little research to show the effect of nursing care in these settings. Program Structure

During the course of deliberations, the Panel organized its approach around two very broad areas for nursing research: clinical problems for which nursing interventions could make a difference; and organizational and structural factors in the delivery of care to older adults. The Panel recognized the inherent relationship between these two areas, but elected to keep the distinction for the purpose of clarity of presentation. Individual investigators are encouraged to link organizational and clinical issues in their research programs. In considering potential areas for nursing research, the Panel recognized the need for all levels and types of research from basic description to controlled clinical trials. Further, it was recognized that some topics are studied best by a multidisciplinary team of investigators, and that this kind of research should be supported by the NCNR and other funding bodies at the National Institutes of Health (NIH). The thirteen areas considered by the Panel were:

Clinical Problems and Issues

- Behavioral Problems and Affective States

- Confusion
- Mobility
- Skin Integrity
- Restraints
- Infection
- Urinary Incontinence
- Sleep

Organizational and Structural Factors

- Quality in Nursing Home Care
- Quality of Home Care F
- amily Caregiving
- Transitions in Long-Term Care
- Hospital and Other Services in Long-Term Care

Organization of the Report

Each chapter in this report covers one of the identified topical areas. An introduction points out the significance of research in the area. This is followed by a review of the literature that describes the state of the science. A section that focuses on research needs and opportunities follows from the state of the science. Each chapter ends with specific recommendations for research in the area. These may include recommendations for training in specific research areas or techniques.

Program Goals

The Panel deliberated at length on the relative merits of research on the various topics. All of the identified areas were recognized as important in long-term care. However, given limited funds for research, it was necessary to rank the recommendations made by the Panel to the NCNR. The following overall goals were established and are presented in rank order within the categories of clinical problems and issues and organizational and structural factors.

Clinical Problems and Issues

- Behavioral Problems and Affective States

  To conduct descriptive studies of treatment models for cognitively and/or psychologically impaired older adults and for the aging mentally retarded and developmentally disabled, to be followed by controlled clinical trials of the most promising models.

  Special consideration should be given to studies that examine wandering, physically and verbally abusive behaviors, depression and suicidal ideation, anxiety, and communication problems among both institutionalized and community-dwelling populations.

- Confusion

  To conduct clinical trials of nursing intervention models for both acute and chronic confusion.

  To evaluate the effectiveness of Special Care Units (SCU) and other environmental interventions for persons with dementia.

Studies should address both acute and chronic confusion states, rural and urban populations, and institutionalized and community-dwelling populations. Special consideration should be given to studies that focus on prevention of cognitive and functional decline, prevention and management of excessive disability, and rehabilitation.

- Mobility

  To describe the physiological and psychological sequelae of altered mobility using longitudinal research designs.

  To test treatment models designed to maintain independence and prevent declining mobility.

- Skin Integrity

  To develop and test multifactorial models for prevention of pressure ulcers building upon the existing knowledge base for predicting pressure sore risk.

  To test multifactorial treatment models for pressure sores.

  To establish quality standards for prevention and treatment of pressure sores.

- Restraints

  To test alternative approaches to the use of both physical and psychological restraints.

  To establish standards for the therapeutic use of restraints.

  Special consideration should be given to studies that examine ethics, values, and attitudes of both formal and informal caregivers; that consider alterations in the environment as alternatives to restraints; and that evaluate both physical and psychological aspects of restraints. Infection

  To develop and test nursing models for the prevention, detection, and treatment of infection.

  Special consideration should be given to studies that examine the problem of infection in institutional settings.

- Urinary Incontinence

  Continue the conduct of controlled clinical trials for the most promising treatment models.

  Special consideration should be given to studies that focus on strategies with potential for continuation after the study is completed, and for multisite, interdisciplinary projects.

- Sleep

  To develop practical tools to assess problems and quality of sleep.

  To develop and test nursing interventions to promote sleep.

Organizational and Structural Factors

- Home Health and Nursing Home Care

  To define and develop valid and reliable client or resident assessment tools that identify indicators of quality of care, and effective nursing interventions that improve quality of care in nursing homes and home settings. In particular, the emphasis should include clinical areas described in this report.

  To examine the relationships among structural factors, including staffing levels or ratios, education and training, salary and benefits, turnover and retention, and innovative models of long-term-care delivery on the nursing care process and client and resident care outcomes.

  To examine longitudinally the natural history of the long-term-care experience of older persons with chronic illnesses, including health care service utilization and the consequences and meaning of the experience.

- Caregiving

  To develop and evaluate nursing interventions with informal caregivers that are based on an understanding of the processes and outcomes of caregiving, and that give special emphasis to personal care, behavior, and environmental management.

- Transitions

  To describe and evaluate nurse-managed care designed to: 1) promote the transfer of practical technologies among long-term-care settings and acute-care hospitals; 2) reduce preventable complications across long-term-care settings and hospitals; and 3) reduce or eliminate unnecessary transfers among home, nursing home, and acute hospital settings.

  To examine the processes through which nurses deliver direct and indirect care, focusing on care delivered by case managers, cooperative care planners, discharge planners, clinical nurse specialists, and geriatric nurse practitioners.

- Hospitals

  To develop and test innovative models (including but not limited to structural factors) for managing the nursing care problems of chronically ill older adults in acute-care settings.

  To describe the effect of hospitalization on older persons and to evaluate the effectiveness of innovative nursing practice strategies designed to reduce negative consequences (iatrogenic problems) of hospitalization.

  To examine the costs and benefits of highly technical care at the end of life to effectively target such services to those who are most likely to benefit from them.

- Other Services in Long-Term Care

  To define and develop valid and reliable nursing interventions and indicators of quality care for clients who use services such as adult day health care, hospice, respite care, residential care services, and continuing care retirement communities.

Overview of Current Research Support

The National Center for Nursing Research has been active in supporting investigator-initiated research into the clinical and care delivery problems related to long term care. In addition, studies that have focused on promoting health and decreasing disabilities associated with chronic illness and aging have been encouraged. NCNR has also worked collaboratively with the National Institute of Aging, other components of NIH, and other agencies to support research and research training in scientific areas related to long term care. Three NCNR research programs relate to long term care: Acute and Chronic Illness Program, Health Promotion and Disease Prevention Program, and the Nursing Systems Program.

The Acute and Chronic Illness Program supports research on patient and family responses to acute and chronic illness and disability, on biological and behavioral factors that contribute to these conditions, and on ways to improve or remedy them. The long term care focus includes patient care issues related to Alzheimer's disease, chronic obstructive pulmonary disease, urinary incontinence, pressure ulcers, rheumatoid arthritis, and confusion. Examples include testing of nursing interventions to deal with dyspnea, effective methods to deliver oxygen to ambulatory respiratory patients, management of sleep-activity disruption in Alzheimer's patients, functional benefits of aerobic training after stroke, and methods involved in the prevention and treatment of pressures ulcers.

Other studies deal with improving the functional independence of cognitively impaired residents in long term care settings. Examples include interventions that deal with improving behavior of impaired elderly residents, dealing with disruptive behaviors in the cognitively impaired, and improving meal-time behaviors and nutritional status. Another category of studies focuses on family caregiver issues particularly related to patients with Alzheimer's disease and stroke. Examples include testing of various interventions which can be used by family members to enhance the functioning of the patient, decrease the health risks, and enhance the quality of life of caregivers.

The Health Promotion and Disease Prevention Program supports research designed to decrease the vulnerability of individuals and families to illness and disability across the life span. Such research related to long term care focuses on developing reliable and valid methods of health risk assessment in older persons, designing and testing strategies to maintain or improve health and functional status, and clarifying the meaning of health and care to elders and their caregivers. Examples of studies supported by this program include examinations of the effect of exercise and biofeedback on lower urinary tract dysfunctions in older women, the relationship between balance and the risk of falling in older people, the effects of intervention strategies, such as protective devices or regular exercise programs on the risk of fractures, and fluctuations of blood pressure and heart rate in older adults with cardiovascular disease.

Another category of studies includes an emphasis on the setting in which the subjects are located. Examples include investigation of changes in the physical and mental health of non-institutionalized Hispanic older persons as a basis for developing strategies to facilitate them remaining in their homes, the influence of admission to a nursing home on older persons' health status, and the dynamics of family caregiving overtime and across ethnic groups.

The Nursing Systems Program supports research into the delivery of health care which includes the study of the structural, organizational, and economic context of clinical practice and the processes of care delivery in relation to the assessment of clinical endpoints of appropriate care which encompasses quality, efficacy, and effectiveness. Research in this area examines the clinical practice environment in which health care is provided, factors underlying the process of nursing care, relationships among aspects of clinical practice and the influence of that practice on

outcomes of care, such as studies that link nursing management and quality of care delivery. Examples of nursing systems research related to long term care include an examination of the effectiveness of a nursing home intervention strategy designed to prevent decline in residents' functional and mental status; the influence of a gerontological clinical specialist on the quality and effectiveness of hospital discharge planning and home follow up; and the experience of home health care by older rural residents including the process of continuity of care from hospital to home and the existence of community support systems.

Research Needs and Opportunities

Specific needs and opportunities for research are included in each chapter in this report. An overview is provided here. In recommending a research agenda for the 1990's, the Panel wished to emphasize the need for diversity in gerontological studies and to recommend that consideration be given to those studies that include or focus on older adults of color, rural settings, and underserved populations, and a range of socioeconomic conditions in the populations studied. Further, nearly all of the research problems addressed in this report are apparent in community-based settings, homes, and nursing homes, and research should be encouraged in each of these settings. Efforts should be made to determine differences among these populations wherever relevant and to distinguish nursing interventions appropriate for each.

Significant advances have been made in understanding the health and nursing care needs of older adults, yet much more remains to be done. Although there is an urgent need for controlled clinical trial designs, there is still a need for descriptive studies on a wide variety of phenomena of interest and importance to nursing. For example, exploratory, descriptive studies should be done to determine the nature of the skilled nursing services delivered by family caregivers; to describe the natural history of urinary incontinence and identify early risk factors; and to specify in detail the nursing processes used by nurse clinicians/practitioners to achieve what appear to be very positive outcomes for nursing home residents.

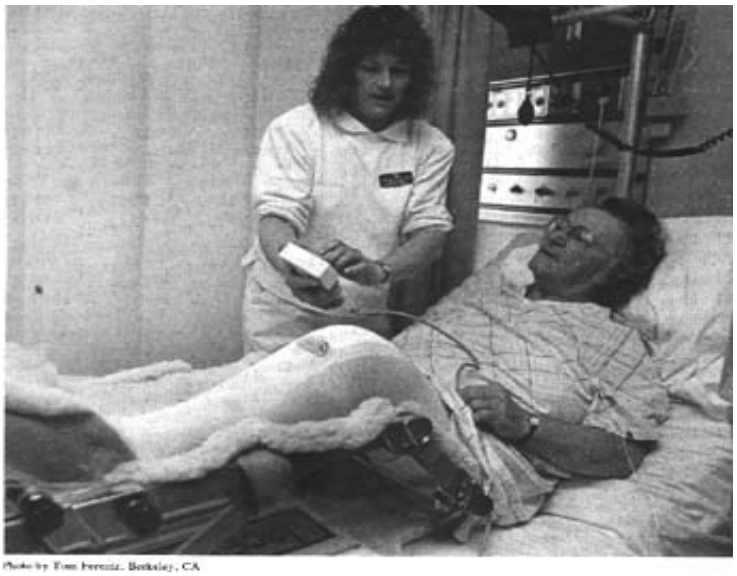

Photo by Tom Ferentz, Berkeley, CA

Correlational studies should be supported that examine the relationships between factors such as: 1) "sundowning" and sleep/wake cycles in cognitively impaired persons; 2) staff educational level, case-mix, and incidence of infections and/or pressure sores in skilled nursing facilities (SNF's); 3) nursing models (e.g., primary nursing) and selected resident outcomes, including discharge, use of emergency services, falls, infections, and drug use; 4) family caregivers, the formal long-term-care system, and client outcomes; 6) use of the Minimum Data Set and quality of care in SNF's; and 7) discharge planning by gerontological clinical nurse specialists (GCNS) and outcomes for

hospitalized older adults (e.g., iatrogenic complications, length of stay, placement post-discharge).

There is a sufficient knowledge base in some areas for the conduct of controlled clinical trials, and research should be supported that uses this approach. Examples of controlled clinical trial research would be: 1) investigation of nursing interventions for management and treatment of pressure sores; 2) use of biofeedback and electrical stimulation for urinary incontinence; 3) strategies for controlling/managing agitation in the cognitively impaired; 4) effect of selected staff development on staff burnout (or family caregiver burnout) and subsequently on nursing home resident (or home care patient) quality of care; and 5) the evaluation of models of managed care in SNF's on resident outcomes.

The following general comments are directed to the NCNR for consideration as part of its deliberations in responding to the recommendations of the Priority Expert Panel on Long-Term Care. 1) The growth of knowledge in a given area will be more likely if a concerted approach to the issue is taken; therefore, multiple related studies on a given topic should be supported rather than single studies over many areas. 2) Replication of the most promising study outcomes should be supported. 3) Strategies to link new investigators in a given area with experienced investigators who have ongoing research in the same or related area should be considered. 4) Studies that require collaboration between nursing and other disciplines should be requested. In gerontological research, as in gerontological practice, it is rare to find a health care problem that is not addressed better with a multidisciplinary effort. 5) Support of multisite projects should be considered in instances where findings from single site studies have been unequivocal. Multisite research provides the opportunity to test interventions under a variety of different conditions (e.g., rural settings, minority populations, and in different components of the long-term-care system such as home, hospital, nursing home). 6) Findings from research are of no value unless incorporated into practice. Studies that demonstrate the successful utilization of research findings should be supported.

Training and Personal Needs

The achievement of the scientific effort in long-term care for older adults recommended by the Panel will depend on the caliber of scientist prepared to undertake the necessary research. The existing cadre of nurse scientists in gerontology are doing excellent work in the field, but there are far too few of them. Two factors contribute to this shortage: 1) insufficient numbers of investigators prepared in the scientific inquiry methods necessary for the task; and 2) too few nurse investigators who elect to focus their careers on gerontological research. Incentives are needed to attract nurse scientists to this field. In response to these personnel shortage issues, the Panel recommends that the NCNR consider providing support for three geographically distributed centers of excellence in gerontological nursing research. Support for these centers would be for no more than 5 years and would be awarded on the basis of the scientific soundness of proposed research programs, the quality and proven gerontological research expertise of the center faculty, and on demonstrated ability to sustain their efforts beyond the funding period. The centers would serve as sites for predoctoral and postdoctoral training in research methods, particularly those most critical for the conduct of gerontological research, both clinical and organizational. The centers would provide a stimulating climate for sabbatical leave for nurse scientists (including international colleagues) who wish to hone their methodological skills, or who wish to redirect their scientific activities to the field of gerontological research. The centers would serve as foci for scholarly exchange and debate on research issues and findings. These activities could develop into international forums and attract colleagues from around the world. The centers would facilitate collaborative efforts among nurse scientists and between nurse scientists and scholars from other disciplines.

A common theme that arose during the Panel's deliberations was the need for instrument

development. The development and testing of instruments can be done as an independent effort apart from specific clinical or organizational research projects or it can be part of these studies. The Panel debated both perspectives and did not achieve consensus. The discussions pointed out, however, both the critical importance of valid and reliable measures and the importance of having skilled investigators to administer and interpret the findings from such measures. The Panel recommends that the NCNR consider providing funding for instrument development that supports the research agenda recommended by the Panel. Examples include: 1) biotechnical knowledge and skill in the objective measurement of sleep (polysomnography) in older adults with various chronic conditions (e.g., dementia and depression); 2) development and testing of noninvasive ways to measure sleep objectively; 3) skill and knowledge in the measurement and interpretation of overall nutritional status; 4) skill and knowledge in methods to measure interface pressure between skin and mattress or chair; 5) development and testing of an instrument to measure depression in the confused or demented older adult; and 6) development and testing of valid and reliable measures of quality of care for both home and nursing home settings.

Summary

The Report presented here is the outcome of efforts that began in April 1989. It is the hope of panel members that these efforts will result in research that will contribute significantly to a scientific body of knowledge in long-term care that can be translated into research-based practice and ultimately improve the quality of care for older adults.

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