



American Academy of Nursing

*Transforming healthcare policy
and practice through
nursing knowledge*





Advancing Health Policy and Practice Through Nursing Knowledge

The Academy serves the public and the nursing profession by advancing health policy and practice through the generation, synthesis and dissemination of nursing knowledge. Every day across America, the Academy and its members create and execute knowledge-driven and policy-related initiatives to drive reform of America's health care system.

AAN's 1,500 members — known as Fellows — are nursing's most accomplished leaders in education, management, practice and research. They have been recognized for their extraordinary nursing careers and are among the nation's most highly-educated citizens; more than 80 percent hold doctoral degrees, and the rest have completed masters programs.

The Academy is governed by a 10-member Board of Directors, elected by the Fellows. Board members oversee the Academy's strategic planning and financial management.

In 2006, the Academy established a Washington, DC, office in keeping with its strategic goals and recognizing the pivotal role of public policy in reforming American health care. Academy staff identifies key policy issues in which the Academy can mobilize its Fellows — along with allied individuals and organizations — to support the Academy's policy agenda and affect change. In addition, the staff oversees outreach to lawmakers, the White House and relevant federal agencies, and to the media and other key audiences as AAN strives to assure that nurses and their frontline knowledge are integrated into the quest for a system that delivers high-quality, affordable health care to all Americans.

Reflecting its growth and focus, the Academy in 2007, consolidated the operational office and policy office into a single headquarters in Washington, DC.

The Academy's Annual Meeting and Conference, held each November, offers Fellows and other interested parties (attendance is not limited to Fellows) an opportunity to share ideas and help develop new strategies for nurses to drive the transformation of America's health care system. Meetings during the conference also create opportunities for emerging nurse leaders to learn more about the Academy and its work, and to exchange ideas. A new slate of Fellows is inducted each year and a variety of awards are presented, including citations for exemplary work in the field.

At the conference, an award is given for recent mass media coverage that has done the most to highlight the contributions nurses make to quality patient care.

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Nursing Outlook, a bi-monthly journal, provides innovative ideas for nursing leaders through peer-reviewed articles and timely reports. Each issue examines current issues and trends in nursing practice, education and research, offering progressive solutions to the challenges facing the profession. The journal provides nursing educators, policy makers, administrators and practitioners with practical advice, new teaching methods and recruiting techniques, curriculum and health policy developments, and information on proposals that will affect the profession. *Nursing Outlook* is included in MEDLINE, CINAHL and the Journal Citation Reports Social Science Edition. For more information, visit www.elsevierhealth.com.

Founded in 1973 under the aegis of the American Nurses Association, the Academy now is an independent affiliate of the ANA.



The American Academy of Nursing's approximately 1,500 Fellows are nursing leaders in education, management, practice and research. They include: association executives; university presidents, chancellors and deans; state and federal political appointees; hospital chief executives and vice presidents for nursing; nursing consultants; and researchers and entrepreneurs.

Invitation to Fellowship represents more than recognition of one's accomplishments within the nursing profession. AAN Fellows also have a responsibility to contribute their time and energies to the Academy, and to engage with other health care leaders outside the Academy in transforming America's health care system by

- Enhancing the quality of health and nursing care;
- Promoting healthy aging and human development across the life continuum;
- Reducing health disparities and inequalities;
- Shaping healthy behaviors and environments;
- Integrating mental and physical health care; and
- Strengthening the nursing and health care delivery system, nationally and internationally.

Honorary Fellows

Each year, by awarding Honorary Fellowship in the Academy, AAN recognizes individuals — not eligible for regular fellowship — who are making outstanding contributions to health care and/or nursing.

In 2007, the four Honorary Fellows were:

- Senator Barbara Mikulski
- Jack Needleman, PhD; Associate Professor in the Department of Health Services, University of California, Los Angeles, School of Public Health
- Dennis O'Leary, MD; Immediate Past-President of The Joint Commission
- Donna E. Shalala, PhD; President of the University of Miami and former U.S. Secretary of Health and Human Services

Living Legends

Since 1994, the Academy each year has named outstanding Fellows "Living Legends." The program recognizes extraordinary lifetime achievement and provides an opportunity for all Fellows to meet and learn from their distinguished peers. A "Living Legend" must have been an Active or Emeritus Fellow for at least 15 years and made extraordinary and sustained contributions to nursing and health care throughout their career. They also must continue to influence the profession.

For 2007, AAN's Living Legends were:

- Marie J. Cowan, PhD, FAAN ~ Fellow since 1986
- Phyllis G. Ethridge, DS, MSN, RN, FAAN ~ Fellow since 1990
- Carrie B. Lenburg, EdD, RN, FAAN ~ Fellow since 1978
- Margaret L. McClure, EdD, RN, FAAN ~ Fellow since 1976
- Sister Callista Roy, PhD, RN, FAAN ~ Fellow since 1978
- Gloria R. Smith, PhD, MPH, RN, FAAN ~ Fellow since 1978



Diana J. Mason, PhD, RN, FAAN

Secretary

Diana J. Mason, PhD, RN, FAAN, DHL (Hon.), is the Academy's Secretary and also Editor-in-Chief of the *American Journal of Nursing*, the oldest and largest circulating nursing journal in the world. Under her leadership, the journal has become the nursing publication most frequently cited by public media and has received grants for print and video series on nursing care of older adults (funded by Atlantic Philanthropies), palliative care (Robert Wood Johnson Foundation), chronic kidney disease (National Kidney Foundation), and assessing older adults (John A. Hartford Foundation).

During her tenure, *AJN* has received numerous awards including Clarion Awards for Best Overall External Magazine, Best Regular Editorial, and Best Feature Series from the Association for Women in Communications; the Publication Management Magnum Opus Gold and Bronze Awards for Editorials, Best News Story, and Best Feature Series; Sigma Theta Tau's Pinnacle Award for the Palliative Nursing series; and awards for public dissemination of its work from the American Academy of Nursing.

Dr. Mason is the lead co-editor of the award-winning book, *Policy and Politics in Nursing and Health Care*; now in its fifth edition.

Since 1986, she has been one of the Producers and Moderators of "Healthstyles," a weekly, live radio program in New York City that focuses on health and health policy that has received media awards from the Public Health Association of New York City, American Academy of Nursing, the Center for Nursing Advocacy, and the National Association of Childbirthing Centers. She was project director for the WBAI-Global Kids' Sound Partners for Community Health Initiative (funded by the Benton and Robert Wood Johnson Foundations) to train New York City youth in producing radio programs on preventing teen substance abuse.

Dr. Mason is the recipient of numerous awards and honors, including an Honorary Doctorate of Humane Letters from Long Island University; Fellowship in the American Academy of Nursing, the New York Academy of Medicine, and the West Virginia University Academy of Distinguished Alumni; and the Pioneering Spirit Award from the American Association of Critical Care Nurses.

She is a graduate of West Virginia University School of Nursing (BSN, 1970), St. Louis University (MSN, 1977), and New York University (PhD, 1987).



Patricia S. Yoder-Wise, EdD, RN, CNAA-BC, ANEF, FAAN

Treasurer

Patricia Yoder-Wise, Treasurer of the Academy, is author of several articles and two award-winning texts in nursing leadership and administration: *Leading and Managing in Nursing* (now in its fourth edition) and *Beyond Leading and Managing* (co-authored with Dr. Karren Kowalski). Dr. Yoder-Wise is Editor-in-Chief of *The Journal of Continuing Education in Nursing: Continuing Competence for the Future*.

Her research focuses on continuing competence, especially as it relates to continuing education. As past president of the American Nurses Credentialing Center, she was instrumental in creating collaborative work between the Academy and the Magnet Recognition Program[®], which had its origins in the Academy.

In addition to her Academy Fellowship, Dr. Yoder-Wise is the recipient of numerous awards and honors, including Inaugural Fellow of the Academy of Nursing Education, Outstanding Teacher of the Year and Outstanding Faculty Award (Student Senate-TTUHSC), President's Award for Excellence in Teaching (TTUHSC), selection for Leadership Texas and Leadership America, YWCA Women of Excellence (Medicine), Matrix Award (Women in Communication) and Sigma Theta Tau Founders Award.

Dr. Yoder-Wise is a graduate of The Ohio State University (BSN), Wayne State University (MSN), and Texas Tech University (EdD).



Pat Ford-Roegner, MSW, RN, FAAN

Chief Executive Officer

Pat Ford-Roegner was appointed CEO of the Academy in July 2006. Pat has more than 20 years experience in national health policy and governmental affairs.

She combines her clinical nursing experiences with the community organizing training to advocate for common sense health care. Pat is known for her work to engage nurses, physicians and other health professionals to be heard by policy makers at the national, state and local levels, including the White House and Congress. Pat builds effective coalitions to reach consensus on issues and demonstrates her commitment to diversity by active engagement with individuals and groups.

Pat joined AAN from the American Institute for Medical and Biological Engineering (AIMBE), where she was Executive Director. She was credited with pumping new life into AIMBE's membership service programs and, particularly, its public policy initiatives. She built new and stronger relationships with Members of Congress, administration officials and the leadership of key institutions such as the National Institutes of Health and the National Science Foundation.

She was a founding member of the National Health Policy Council, a non-profit group that hosted presidential candidate forums on health care for the past 20 years. Pat is co-founder of the Nightingale Policy Group, which promotes nursing's expertise on a wide range of health issues and has a major goal of putting a human face on the health care debate.

Pat's career included service as Atlanta regional director for the U.S. Department of Health and Human Services from 1993–1999, overseeing more than 500 employees and more than 20 percent of the agency's national budget. One of the few nurses who has held a presidential appointment, she led that region to become the first to successfully implement Children Health Initiative Programs in each of its eight states.

Earlier in her career, Pat led a behavioral health care organization where she built new alliances with business and the Republican-led Congress. She added prescription drug use and misuse, parity for mental health and substance use disorders and prevention of these diseases to her repertoire of knowledge on complex health issues. Pat was one of three Americans to testify to a joint committee of Britain's Parliament on addiction policy and politics in 2003.

Pat holds a keen interest in health care coverage for the uninsured, Medicaid coverage and costs, the management of chronic diseases in special populations, children and women's health and the future health care workforce. She translates science and research to practice concepts to new audiences.

Pat is a frequent contributor to the *Journal of Policy, Politics and Nursing Practice*. Pat was inducted as an AAN Fellow in 1998. She received the 1995 Distinguished Alumni Award from the University of Pennsylvania's Graduate School of Social Work and Social Policy. Pat holds a Master's Degree in Social Work and Public Policy from the University of Pennsylvania, a Bachelor's Degree in Public Policy from West Chester State University in Pennsylvania and an Associate's Degree in Nursing Science from Gwynedd Mercy College in Pennsylvania.



Edge Runners



Making Transitional Care More Effective & Efficient *APNs Ensure Smooth Transition From Hospital to Home, Cutting Re-Hospitalization Rates for Geriatric Patients*

The Challenge:

High rates of poor post-discharge outcomes that put elderly patients back in the hospital soon after their release following earlier treatment. Up to one-third of those hospitalizations are considered preventable.

The Goal:

Improve post-discharge outcomes – lowering rates of re-hospitalization and thereby reducing health care costs.

An Innovative Solution:

Focus on transitional care lead by master's-prepared advanced practice nurses (APNs) in conjunction with the patient's entire healthcare team, targeting high risk patients at risk for poor post-discharge outcomes.

What It Is

- An evidence-based innovative model of hospital-to-home care in which APNs work to ensure a smooth transition from hospital care to home care.

What It Does

- Assures that APNs: establish a relationship with patients and their families soon after hospital admission; design the discharge plan in collaboration with the patient, the patient's physician, and family members; and implement the plan in the patient's home following discharge, substituting for traditional skilled nursing follow-up.
- Reduces the incidence of poor communication among providers and health care agencies; inadequate patient and caregiver education and poor quality of care; enhances access to quality care.

How It Stands Out

- Findings from three clinical trials funded by the National Institute of Nursing Research consistently demonstrate that the APN Transitional Care Model improves quality of care and substantially decreases health care costs.
 - Compared to standard care there are longer intervals before initial re-hospitalizations, fewer re-hospitalizations overall, shorter hospital stays and better patient satisfaction.
 - Following a four-year trial with a group of elderly patients hospitalized with heart failure, the APN Care Model cut hospitalization costs by more than \$500,000, compared with a group receiving standard care – for an average savings of approximately \$5,000 per Medicare patient.

With the support of the Commonwealth Fund, Jacob and Valeria Langeloth Foundation, the John A. Hartford Foundation, Inc., the Gordon & Betty Moore Foundation, and the California HealthCare Foundation., efforts are underway to test the “real world” application of this model in collaboration with Aetna, Inc., and Kaiser Permanente.

Where To Learn More

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Edge Runners



The University of St. Francis Health and Wellness Center: *Assuring Affordable, Quality Care*

The Challenge:

A comprehensive community needs assessment showed health care – including mental health care – was among the top 10 needs in Will County, IL. Access to affordable care was a particular concern for households with annual incomes below \$50,000.

The Goal:

Improve access to quality primary health care services for the poor and uninsured, and develop/implement a model of nurse-managed primary health care integrating both physical and mental health assessment, treatment and follow-up services.

An Innovative Solution:

The University of St. Francis Health and Wellness Center (HWC) – the first nurse-managed primary health care center in Joliet

What It Is

- Model program demonstrating integration of mental health and physical treatment and follow-up into the traditional primary health care services of a nurse-managed center. Exemplifies new nursing model of affordable holistic primary care services, with integration of mental/physical primary care regardless of employment status or income.
- Founded and managed by a team of advanced practice nurses—nurse practitioners and clinical nurse specialists—who, through weekly team meetings, provide input and share perspectives on case management and approaches to care.
- Patient base are the place-bound elderly and disabled, victims of domestic violence, the working poor and uninsured. Most common health problems are hypertension, major depressive disorder, anxiety, diabetes, obesity and adult asthma.

What It Does

- Offers walk-in scheduling and evening hours for greater accessibility. Uninsured patients pay on a sliding scale based on income. Special arrangements are made for residents of local homeless and domestic violence shelters.
- In a “one-stop” approach to meeting health needs, a psychiatric mental health clinical nurse specialist provides follow-up on mental health screenings, onsite psychotherapy, psychiatric evaluations and assessments, prescriptive services, consultation and medication monitoring services; a social worker offers a full array of social services.

Where To Learn More

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How It Stands Out

- Clinical outcomes:
 - In first year of operation, it provided care to more than 500 patients, with approximately 1,600 patients' visits/encounters.
 - 100% of HWC patients receive clinical depression screening at intake; mental health screening algorithm created by one of the founders guides additional mental health screening for anxiety, eating disorders, child abuse and domestic violence and substance abuse, as indicated.
 - Provides breast exams, women's health counseling, asthma screenings, immunizations, flu shots, parenting education, exercise classes, grief, diet and nutrition counseling, mental health counseling, episodic illness care, school and sports physicals, chronic disease management, well baby and well child examinations.
 - Patient surveys indicate 100% satisfaction with treatment.

- Financial outcomes:
 - Five-year Nursing Education, Practice and Retention grant of \$2.1 million provides funding to manage, staff, and operate the HWC. It has also received a \$50,000 grant for clinic equipment from Harrah's casino, a \$10,000 grant from Kiwanis international to stock and open a satellite clinic at a domestic violence shelter, and a \$9,955 grant from the Will County Community Foundation to provide hearing and vision screenings.
 - Long-term goal is financial sustainability. HWC is a recognized Blue Cross and Blue Shield, Humana, Medicare and Medicaid provider – receiving 5% of income from private insurance, 10% from Medicare, 13% from cash payment and 72% from the State of Illinois.
 - All uninsured patients needing expensive medications are helped to apply for prescription assistance through pharmaceutical companies. This represents projected cost-savings of \$2,880 annually for a patient taking one tablet daily of a medication such as Quetapine (\$8.00/tablet).
 - The social worker enrolls HWC child patients who are uninsured in the State of Illinois "All Kids" insurance program for the 250,000 children in Illinois without health insurance.
 - The HWC has evaluated and treated 83 patients with mental health diagnosis in its first year of operation, 12 of them were treated for severe mental illness. Since the average charge per discharge from a hospital's psychiatric unit for one episode of psychosis is \$12,890 (Tommy G. Thompson Report to Congress, 2002), this represents a projected cost savings of \$154,680 for helping these patients maintain function and avoid hospitalization.

- Recognized by the Illinois Nurses Association (INA) for implementing an innovative model of health care delivery that increased access while promoting high quality, cost-effective health care.



Edge Runners

RAISE
the Voice

California Nursing Outcomes Coalition: *Leveraging Enhanced Quality-of-Care Data To Improve Outcomes*

The Challenge:

Improved quality of care in hospitals requires more sophisticated development and management of information about the quality of nursing care.

The Goal:

Develop high-quality data on acute care nursing quality and outcomes, and use it to enhance performance of the health care system and to study the impact of nurse staffing on patient care outcomes.

An Innovative Solution:

The California Nursing Outcomes Coalition (CalNOC) – a self-funded, joint venture between the Association of California Nurse Leaders (ACNL) and the American Nurses Association-California (ANA/C), under the direction of the California Nursing Outcomes Coalition (CalNOC) Steering Committee and its Operations Team.

What It Is

- A regional/national database for nursing quality indicators with a robust research/operations team and more than 11 years experience conducting groundbreaking projects exploring the relationship of unit-level nurse staffing to patient care outcomes.

Where To Learn More

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What It Does

- In response to the growing demand for nursing quality data from hospitals in California, the American Nurses Association (ANA) Nursing Care Report Card for Acute Care indicators has been used to standardize metrics, ensure comparability and examine linkages between nursing care and patient outcomes.
- Experts in the areas of hospital patient care management, skin integrity, medication errors, patient falls and staffing management developed coding specifications for the ANA indicators, along with a plan for testing indicator feasibility.
- Initially launched with funding from ANA as a pilot project, CalNOC's sustained vision has been the ultimate aim of "advancing patient care" excellence.
- CalNOC's mission, since its inception in the mid-1990s, has been to:
 - Build and sustain the CalNOC statewide nursing staffing and quality database repository;
 - Conduct research to advance evidence-based administrative and clinical decision-making; and
 - Synthesize and disseminate data to shape public policy, practice and education with respect to the quality of patient care delivery.



- CalNOC focuses efforts in these areas:
 - Developing, testing, refining and implementing new nurse sensitive performance indicators.
 - Conducting research with CalNOC partners; analyzing, synthesizing and disseminating findings to CalNOC members and the larger research and public policy community. Publications and presentations by the CalNOC team have led to the adoption of CalNOC methods by the National Quality Forum, Joint Commission on Accreditation of Healthcare Organizations, and the California Hospital Association CHART initiative.
 - Engaging hospitals in data capture and building the capacity of hospital sites to use CalNOC data to drive performance improvement and evaluate the impact of innovation on patient care quality, cost, safety and outcomes.

How It Stands Out

- CalNOC has evolved in a volatile health care marketplace driven by value-achieving quality outcomes in the most efficient and cost effective method. CalNOC examines links between nursing processes and patient care outcomes.
- The ability of providers to reliably measure both patient care quality and patient outcomes is the first step toward understanding the effectiveness of services for both individuals and populations. The effect of hospital nurse staffing on patient care safety, outcomes, and quality is an emerging public policy issue and a critical health care concern.
- The CalNOC nursing quality database is a unique source of evidence for the nation. Through CalNOC, unit level hospital data are captured about acute care nurse staffing and nurse-related patient outcomes. CalNOC has continuously improved the sophistication and strategic utility of its data reports provided to participating hospitals, initially by mail, then email and currently via secure Web access that has resulted in a virtual dashboard reporting system. Early adopters of CalNOC measures have been able to translate their benchmarking data into information to guide decisions for providing and improving patient care.



Edge Runners



The Chicago Parent Program: Teaching Better Ways to Address Difficult Children's Behavioral Problems

The Challenge:

Most programs to enhance parenting skills and reduce behavior problems in young children are designed for white, middle-class parents – yet minority parents and those in low-income neighborhoods may not share the same values or face the same childrearing challenges. Consequently, many parenting programs are less relevant and effective in promoting positive parenting behavior and reducing problem behaviors in those families.

The Goal:

Help low-income and ethnic minority parents improve their childrearing skills and effectively manage their children's difficult behaviors; counter the trend in which prevention programs seldom lead to long-term behavior improvement.

An Innovative Solution:

Using a program developed in partnership with ethnic minority parents, bring parents together in a group setting to watch and discuss videotaped vignettes of typical but challenging parenting situations and discuss the best ways to handle them.

What It Is

- A 12-session parenting program, developed and tested by staff at the Rush University College of Nursing through grants supported by the National Institutes of Health, to reduce behavior problems in young children by strengthening parenting skills.

Where To Learn More

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What It Does

- In weekly meetings, employs a series of 157 videotaped vignettes of real parents and children filmed in various settings to stimulate discussion and problem-solving among a group of parents on how to manage difficult, real-life child behaviors.

How It Stands Out

- Developed in collaboration with an advisory group of African American and Latino parents from a range of economic backgrounds, to ensure that the content was culturally and contextually relevant for families.
- A randomized trial of seven day care centers serving low-income families in Chicago showed significant decreases in child behavior problems (based on parent and independent observer ratings) and parent reliance on corporal punishment.
- Parents say they are more confident and more consistent in their discipline.
- All effects were maintained up to one-year post-intervention. (Most brief prevention programs rarely show long-term benefits for observed child behavior.)
- Relatively inexpensive to deliver, costing as little as \$292 per child, with a return on investment exceeding 900 percent.
- Concept now adopted the Mayo Clinic, numerous agencies across the country, and in Chicago Head Start.



Edge Runners

RAISE
the Voice

On Lok Senior Health Services: A "Place of Peace and Happiness" For San Francisco Bay Area's Frail Seniors

The Challenge:

Many among the rapidly growing senior citizen population prefer to receive home care, but still need comprehensive health care and other services.

The Goal:

Help seniors to live and be part of their communities, enjoying the comforts of home and family, for as long as possible.

An Innovative Solution:

A fully-integrated, licensed health plan delivering medical and long-term, community-based services to those seeking an alternative to entering a nursing home.

What It Is

- A network of centers combined with clinics for seniors in San Francisco and Fremont, CA, launched in 1971 as one of the nation's first senior day health centers. Begun as a modest day health program for homebound seniors in San Francisco's Chinatown and North Beach areas, it was transformed during the 1980s into a national model for an alternative to nursing home care. Leading the effort was Jennie Chin Hansen, MS, RN, FAAN – an Academy Fellow, now retired as On Lok's executive director, who serves as President of the 39 million member-AARP.

Where To Learn More

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What It Does

- Provides comprehensive medical and health care, prescription drugs, bilingual case management, home-cooked meals and opportunities to socialize to more than 1,000 elders in seven San Francisco and Bay Area locations.
- An interdisciplinary team of physicians, nurses, physical and occupational therapists, social workers, dietitians, recreational therapists, home care and health workers, and drivers formulates, coordinates and provides the services and activities.



How It Stands Out

- Since the early 1980s, federal and state waivers have been provided from Medicare and Medicaid to use a new financing method for long-term care: a form of risk-based capitation. In exchange for fixed monthly payments from Medicare and Medicaid for each enrollee, On Lok is responsible for delivering all health care services, including hospital, community and nursing home care – bearing the full financial risk. The program is the prototype for an actual change in Medicare and Medicaid law (1997), thus a new Medicare program type – the first such change since the Hospice Medicare benefit in the mid-1980s. This has allowed the program to be replicated throughout the United States.
- Cost of care has been cited as being 15 percent lower than under the traditional fee-for-service care system. On Lok has had no cost overruns and has been able to self insure for future needs.
- Since 1986, On Lok's ground-breaking model of coordinated service delivery and innovative financing have been replicated nationwide as the Program of All-inclusive Care for the Elderly (PACE). Today, more than 70 organizations in 30 states are in various stages of the PACE model. In the Balanced Budget Act of 1997, PACE became a permanent provider under Medicare and states gained the option of paying a capitation rate for PACE services under Medicaid. Nationwide – as of April 2007 39 organizations operated under dual capitation, seven sites delivered service under Medicaid-only capitation and approximately 25 entities were moving forward with PACE planning and development.
- Concepts and tools such as electronic medical records (implemented since 1993 by all professions), continuity of care, care coordination, geriatric teamwork and training, consumer/participant decision making, benchmarking best practices, culturally competent care, use of protocols, and end of life preparation are intrinsic to the On Lok/PACE model.



Edge Runners

RAISE
the Voice

Nurse-Managed Health Centers and National Nursing Centers Consortium: *Meeting the Needs of Underserved Patients*

The Challenge:

More than 46 million Americans lack health insurance coverage and are underserved by the conventional health care system.

The Goal:

Provide primary health care, health promotion and disease prevention services to underserved populations in urban and rural communities across the United States where there are large percentages of the underserved and uninsured.

An Innovative Solution:

Provide community-based care in a holistic, patient-centered way through the services of nurses, nurse practitioners and other professionals.

What It Is

- A national network of 200 Nurse-Managed Health Centers (NMHCs) nationwide, many of them associated with schools of nursing, serving 2.5 million patients across the U.S.

What It Does

- Provides accessible affordable quality health care and critical health services to underserved populations while also educating nurses and nurse practitioners for the future.
- Seeks to strengthen the capacity, growth and development of NMHCs to provide quality care to vulnerable populations and to eliminate health disparities in underserved communities.
- According to a Centers for Medicare and Medicaid Services evaluation, NMHCs meet the criteria for safety-net providers, as defined by the Institute of Medicine and an essential part of the health care safety net in the U.S.

How It Stands Out

- Provides leading-edge, evidence-based care, particularly via affiliations with nursing schools.
- Serves homeless, low-income, elderly, immigrant and very young populations – all with their own special challenges and vulnerabilities – in their own communities (some centers are based in schools).
- Produces equal or better outcomes at equal or lower costs when compared with health outcomes and costs in the aggregate.
- Have higher rates of generic medication fills, lower rates of hospitalization than similar providers and lower emergency room usage population.
- Unfortunately, NMHCs currently do not have access to cost-based reimbursement from Medicare and Medicaid, making their futures very uncertain. Efforts are underway to have Congress change that status. In the meantime, government funding is sporadic, relatively small and unreliable.

Where To Learn More

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Edge Runners



Health InterConnexions: Reducing Health Care Costs by Encouraging Healthier Lifestyle Choices

The Challenge:

Employees and their family members who make poor lifestyle choices and are generally less physically fit require additional health care that drives up costs for employers providing insurance coverage.

The Goal:

Focus on teaching employees/families the consequences of their decisions and arm them with information that supports thoughtful, healthier lifestyle choices.

An Innovative Solution:

The Health InterConnexions Personal Health Management Program – a dynamic partnership among employer, employee and a health care coach that results in employees making healthier lifestyle choices.

What It Is

- A free-standing for-profit company established in 2001 operating three pilot programs in South Dakota.
- A dynamic partnership among a major community employer (Home Federal Bank), its employees and health care coaches that craft health management strategies and program implementation based on the profile and needs of each employer's unique population.
- An initiative involving a major employer commitment of time, energy and incentives to achieve desired outcomes. Creation of employee program, "Bank Your Health At Home."
- A voluntary program that identifies specific and unique ways to address the lifestyle and health status for each group, leading to healthier lifestyle choices across a diverse array of organizations (e.g. Home Federal Bank) where 60 percent of the employees are women, a hydraulics company where 90 percent of the workers are men, and a community-based charitable organization where 95 percent of the staff are women).
- Targets the 60-80 percent of individuals who are considered "less fit" (i.e., those who do not visit a gym regularly and exhibit other behavior less focused on maintaining good health).

Where To Learn More

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What It Does

- Informs and empowers employees to improve their health – with a demonstrated record of lowering health care costs in four dimensions:
 - Risk reduction
 - Reduction in actual health claims
 - Reduced employee monthly health care costs
 - Reduced use of paid time off.
- Participating employees undergo an on-line health (not medical) assessment, have blood drawn to identify cardiovascular and diabetes risk factors, and meet with a Health Enhancement Coach (an advanced practice nurse) for weight, blood pressure and Body Mass Index (BMI) measurements. The assessment is used to cooperatively develop annual health goals, based on risk factors and health/psycho-social issues that employee/spouse. The participant may then see or communicate with the coach one-to-four times each year.
- Enrollees receive an Internet-based health tracking program, *HealthTracker: Know As You Go!*[™] that includes:
 - Snapshots to record frequent blood pressure, weight, BMI.
 - Lab and diagnostic results records
 - Prescription and refill reminders
 - History of medical events
 - Lists of all important health providers and services
 - Exercise record and ongoing report
 - Trends of recurring events: blood sugars, heart rates, etc.
- The HealthTracker also features a confidential “back-end” seen and used only by the Health Coach to record all visit information, risk factors, and HEC recommendations – all of which can be downloaded into a data base for outcome and trend analysis.
- The Health Management model contains other features, such as annual risk/health screenings, a relationship with a primary care physician or nurse practitioner (as an alternative to emergency room use), and other screenings based on age-related recommendations, education programs, etc.
- Addresses the needs of the entire family by helping parents see how their own personal health decisions impact those of their children and coaching them toward improved health choices/lifestyles.



How It Stands Out

- Can be replicated anywhere where advanced practice nurses (and other nurses) can serve as health coaches. It is unique in its:
 - Reliance on advanced practice nurses as coaches for face-to-face interactions/assessments and feedback.
 - Use of well-developed software for participants to manage their own health data.
 - Adaptability to a three way partnership between employee, employer, and health insurance company.
 - Rewards employee/family for educating selves and changing health behaviors versus penalizing.
 - Extensive pilot program showing dramatic outcomes in reducing health care costs and improving participants' health.
- Specific outcomes with Home Federal Bank's *Bank Your Health At Home* (BYHH) program have included:
 - Reduction of major risk factors including cholesterol, blood sugar, blood pressure, activity level, weight and smoking – with 14 percent of employees moving from a risk category to one of optimal good-health practices.
 - Reduced employee share of health insurance costs by up to \$90 per individual and up to \$340 per family per month – passed on to employees by reducing their level of risk.
 - Reduced use of sick leave.
 - Early identification health risks. Multiple participants under age 40 were identified high cholesterol, high blood pressure etc (*BYHH Data*).
 - Lower increase in health plan expense than national trends for three consecutive years, 2005 HIC Client 4.4 percent compared to nationally reported 12.2 percent (*HFED Data compared to Mercer Report*).
 - Lower total annual health care costs per employee than national trend: bank \$5,252, including program costs, compared to \$7,811 (*Mercer Report*).
 - Paid claims lower by \$200,000 than expected over two-year period based on bank's previous experience (*HFED Data*).



Edge Runners



The Nurses for Newborns' Bridge to the Future Program: Helping Low-Income Parents Learn to Meet Infants' Needs

The Challenge:

Many medically fragile infants discharged from the neonatal intensive care unit (NICU) are rehospitalized and/or go to the emergency department for various reasons, including neglect and other preventable conditions. Parents often lack the physical, mental and financial resources to adequately care for these children.

Neonatal status is a key predictor of child maltreatment early in life among low-income families. Parents typically see NICU nurses as experts in their babies' care and doubt their own ability as sole caretaker after discharge. Caring for these infants puts physical, emotional, and financial strains on parents, increasing the potential for neglect and maltreatment. Parents of medically fragile infants often lack the experience to observe the warning signs of infections and weight loss.

The Goal:

Prevent child abuse, neglect and developmental disability by creating a supportive, nurturing environment and increasing parents' understanding of their infants' needs and confidence in their own ability to support infant development.

An Innovative Solution:

The "Bridge to the Future" program, developed in 1991 by the Nurses for Newborns Foundation, in collaboration with the Missouri Bureau of Special Healthcare Needs and St. Louis Children's Hospital

What It Is

- **A public/private partnership that provides nurse home visits to low-income families with medically fragile infants who have been discharged from the NICU, ensuring a smooth transition to long-term care in the home.**
- **Now expanded to serve hospitals throughout eastern Missouri and Middle Tennessee.**
- **Founded by Sharon Rohrbach, RN, a former NICU nurse who was alarmed that infants who left the NICU often returned to the hospital within a month, and that many readmissions were caused by easily preventable conditions.**
- **Funded through contracts and grants from federal and state government, a variety of foundations, hospitals and individual donors.**

Where To Learn More

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What It Does

- Through various partnerships with area NICUs and community-based organizations, the program receives referrals from social workers, nurses, abuse shelters and others who identify high-risk families. The families are matched with nurses who live nearby and who are of the same ethnic background, when possible.
- Specially-trained nurses identify potential problems in the home and provide intensive training and support to parents of very-low-birth-weight or special needs infants.
- Key features include:
 - Investing in technology; cell phones and laptop computers for nurse home visitors to remotely exchange data are important to the program's success.
 - Addressing clients' basic needs first: creating a safe and nourishing home environment for special needs babies.
 - Giving nurses flexibility in scheduling home visits: program leadership allows nurses to make as many visits as they believe necessary to produce the desired outcomes.
 - Encouraging formation of a bond between nurse and client: strong bonds are critical to the program's success, as they allow the nurse to learn things about the home environment that would otherwise go unnoticed.
 - The program also provides essential items such as diapers, formula, baby items, cribs and related items to low-income clients to aid them in achieving the outcomes above.

How It Stands Out

- Sixteen years of data shows:
 - Infants receiving six or more postpartum visits have a less than 2% chance of being rehospitalized for preventable causes or have preventable ED visits. (A sign of progress is that, in the early 1990s at St. Louis Children's Hospital, 20% of NICU babies were readmitted within one month of discharge. Many mothers were teenagers, were mentally limited or addicted to drugs).
 - Infants receiving six or more postpartum visits are more likely to be up to date on immunizations (90% for program participants vs. 84% in Missouri and 77% national average) and have access to a health home (99% vs. 48% in Missouri and 46% national average).
 - Independent analysis of data from 2003 to 2006 found that infants served by the program were less likely to be abused or placed in foster homes than were infants in a matched control group. Furthermore, the analysis showed that the incidence of abuse declined as the number of home visits increased. On average, less than 1% of children completing Nurses for Newborns programs experience a substantiated incident of child abuse and neglect.



Disparities in Health Care Initiative

GOAL Create reliable processes for decreasing health disparities at the community level

Several highly-influential federal government reports have identified stark differences in the quality of health care provided to America's racial and ethnic minorities, as contrasted to care provided to non-minorities. Minorities suffer from disparities in the prevalence of clinical conditions and in their access to health care services across varied health settings.

In 2003, the Academy formed the Health Disparities Task Force to seek out new ways of addressing those disparities. The task force's work led, in November 2006, to the establishment of "Calling the Circle: A Program to Address Health Disparities Within Communities," funded by the W.K. Kellogg Foundation. That initiative's overall goal has been to reduce health disparities associated with childhood asthma and diabetes and increase health insurance coverage for children.

Phase One of the grant allowed the Academy to identify eight community health centers across the United States willing to participate in a partnership designed to reduce childhood asthma and diabetes disparities, and to increase the number of children enrolled in State Children's Health Insurance Program (SCHIP) or other insurance plans. The project aims to: improve access to health care and health insurance; improve health outcomes such as better controlled asthma and diabetes; and reduce emergency department and hospital admissions for these conditions.

During Phase Two, the Task Force and Advisory Council will provide ongoing technical assistance and leadership training to the eight community centers and act as a central resource of information on disparities and reduction efforts. Support will also be provided for the centers' efforts to design and implement evaluation processes. Program tools include community education forums, creation and dissemination of action plans that communities can follow to eliminate disparities and development of a compendium of effective, evidence-based models that address health disparities through the education and clinical practice arenas, particularly in community-based settings.

Both the private sector and state and federal governments continue to recognize and respond to disparities in the access and quality of health care. Throughout Phase Two, 10 major health plans will implement pilot programs to enhance language services for members whose primary language is not English and to make a business case for reducing disparities.

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More recently, the Southern Institute on Children and Families published the Third Edition of *Uninsured Children in the South*, a report examining the insurance coverage of children and pregnant women in 17 states and the District of Columbia. The report revealed that the combination of SCHIP and expansion of Medicaid eligibility regulations has extended coverage to millions of children and pregnant women, though some states have witnessed a reversal in this trend. In response to this long-established and nationwide problem, the W.K. Kellogg Foundation, the National Assembly on School-Based Health Care and nine state school affiliates are implementing school-based health care centers so that children who otherwise lack access to primary health services can receive the care they need, with or without insurance.

Finally, The Henry J. Kaiser Family Foundation released a compendium of bills introduced by the 110th Congress to specifically address disparities and minority health issues. The 177 bills introduced as of the date of the report include a wide range of proposed legislation affecting environmental health, health technology, and measures for specific populations as well as conditions.



Building Academic Geriatric Nursing Capacity

GOAL Improve the nation's capacity to provide quality nursing care to older persons

The nation's rapidly aging population is creating unprecedented demands for health care services. The expanding population of elders with their specific health care needs magnifies America's already critical nursing shortage.

Recognizing this landmark shift, the John A. Hartford Foundation of New York City pledged \$67 million over the past decade to strengthen and expand geriatric nursing. The Academy has been at the forefront of this effort, starting with a major five-year grant from the Hartford Foundation in 2000 — the success of which led to its renewal in 2005, and expansion in 2007. Two additional partners, The Atlantic Philanthropies and the Mayday Fund, have supported the Building Academic Geriatric Nursing Capacity (BAGNC) program since 2004.

This initiative funds an array of scholarships and fellowships, as well as investments in schools of nursing and, as of 2007, a total of nine Hartford Centers of Geriatric Nursing Excellence (HCGNE). Each piece of the initiative is dedicated to better research, better education, better practice and leadership development.

This multi-pronged approach is building national collaboration and excitement about geriatric nursing care. Scholars and fellows currently are located in 33 states and the District of Columbia, and a total of 151 awardees (60 fellowships and 91 predoctoral and nurse MBA scholarships) have been awarded since 2001.

The nine Hartford Centers of Geriatric Nursing Excellence are located strategically across the nation at top-tier universities — Arizona State University, Oregon Health & Science University, Pennsylvania State University, University of Arkansas for Medical Sciences College of Nursing, University of California San Francisco School of Nursing, University of Iowa College of Nursing, University of Minnesota, University of Pennsylvania School of Nursing, and University of Utah.

The HCGNEs are engaged in a wide range of policy actions designed to improve access, enhance nursing home quality, develop new models of care delivery and improve safety and consumer information systems about quality care. These efforts have been carried out in conjunction with state governors, purchasers, regulators, providers and consumers.

Ultimately, the Building Academic Geriatric Nursing Capacity program will prepare a workforce capable of providing quality care to all older citizens. However, important public policy changes — financial and regulatory, at the state and national levels — are needed to fuel and sustain this momentum.

For more information about the Academy's Building Academic Geriatric Nursing Capacity Program and its transformational role in meeting the needs of America's aging population, visit www.geriatricnursing.org



GOAL Improve health care quality through the dissemination and utilization of nursing science

The Academy has been a leader in the national effort to develop standards and practices that assure the highest possible levels of health care, with an emphasis on nursing's contribution to that effort.

Numerous studies have demonstrated how good quality of care improves health outcomes. For example, evidence shows that the right person giving the right care will reduce adverse effects — meaning fewer falls, fewer infections and, ultimately, lower mortality rates. A landmark 2003 study by the Institute of Medicine — “Keeping Patients Safe: Transforming the Work Environment of Nursing” — identified the quantity and quality of nursing care as key to patient safety, which in turn is a critical element in defining quality health care.

Over the past decade, the Academy brought together multiple health care disciplines at a series of high-level meetings organized around the Quality Health Outcomes Model. This model is being used as a research framework in many universities and research facilities, recognizing that feedback among patients — as well as the system or context in which care is provided — can affect eventual health outcomes.

The Academy and its Fellows have been partners with major government and private institutions that provide both funding and expertise in this area — including the federal Agency for Health Care Quality, the Institute of Medicine and the Robert Wood Johnson Foundation (RWJF), to name a few.

Since 2004, the Academy has been an active member in the National Quality Forum (NQF), providing nursing experts to comment on diverse quality performance measures and voting on voluntary consensus standards. An Academy Fellow is the nurse representative on the NQF's 25-member board of directors.

In 2007, the RWJF awarded a grant to The George Washington University Department of Nursing Education, School of Medicine and Health Sciences, to design and promote national policies that reflect nursing's contribution to quality. Ellen T. Kurtzman, MPH, RN, assistant research professor at GW, directs this project, “Nursing Engagement in Performance Measurement and Public Reporting.” The initiative will develop and advocate public policies that support nursing-related quality measurement, extend public accountability to nurses and reward nursing's essential contribution to quality through a value-based purchasing model. Through a unique and essential alliance with the Academy, the project will strategically engage the nursing profession in national policy setting related to performance measurement, public reporting and pay-for-performance and build knowledge capacity among nursing leaders of developments in these areas.



A New Approach to the Nursing Shortage

GOAL Develop models for the creation of technology-enhanced practice environments to improve nursing efficiency and effectiveness

For years, America has experienced a nursing shortage — caused, over time, by both an increased demand for nursing services and a general decline in the number of people entering the profession. Today, the shortage is estimated at 150,000; by 2020, various estimates show, it could range between 500,000 and 800,000.

Recognizing this long-term challenge, the Academy in 2002 formed a Workforce Commission to develop strategies for dealing with the shortage. Members include nursing executives, deans, faculty and managers at esteemed organizations and institutions.

The Commission's work focuses on:

- Identifying practice environment changes that will enable nursing to meet the demand for care despite an increasing shortage of personnel.
- Developing a model for workflow process analysis as the first step for creating future practice environment states.
- Finding better ways to use medical technology, so that the health care system makes the most efficient use of the nurses it does have, and so that nurses' workloads are manageable (job-related stresses being a major factor in the loss of experienced nurses). The Commission works closely with technology manufacturers, educators, clinicians and researchers in this regard.
- Building up the faculties of America's nursing schools to ensure there are enough knowledgeable, experienced nurse educators to prepare the next generation of nurses for frontline work. In recent years, applications to nursing schools have grown substantially, but many prospects have been turned away because there were not enough faculty to teach them. The Commission has, among other things, encouraged development of additional accelerated programs to prepare new faculty members.

In December 2005, the Robert Wood Johnson Foundation awarded a grant to the Academy for a project called "Technology Targets: A Synthesized Approach for Identifying and Fostering Technological Solutions to Workflow Inefficiencies on Medical/Surgical Units."

A major component of "Technology Targets" is a process called Technology Drill Down (TD2), which represents an opportunity to develop an improved process for identifying technological solutions to medical/surgical unit workflow inefficiencies. Twenty-five hospitals and health care systems participated.

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as a TD2 site between March of 2006 and May of 2007. All of the sites found the process beneficial in identifying workflow issues and areas most ripe for technological fixes as well as process improvements. The Workforce Commission continues to look at the big picture — identifying public policies, health care industry practices, institutional characteristics and other factors that can be altered to assure a steady flow of more well-prepared people into nursing, and to gain the commitment of those people to a full career in the profession.

For more information, visit www.aannet.org/committees/workforce.asp.



The *Raise the Voice* Campaign

GOAL Transforming America's health care system through nursing solutions

Health care in America today is inaccessible to many, expensive for most and fragmented for all. Enabling the system to deliver the best possible care at an acceptable cost requires not just reformation but *transformation* — moving American health care away from its current hospital-based, acuity-oriented, physician-dependent paradigm toward a patient-centered, convenient, helpful and affordable system. America needs a system that keeps people as healthy as possible, treats the patient promptly, comprehensively and effectively.

Through its *Raise the Voice* campaign, the Academy is mobilizing its 1,500 Fellows, partner organizations and health leaders to ensure that Americans hear and understand the exciting possibilities for transforming the health care system — and also that they see how nurses are leading the way. Due to the successes during the first year of the campaign, in 2007, the Academy received a grant from the Robert Wood Johnson Foundation to scale up activities and provide a platform to inform policymakers, the media, health providers and consumers about nurse-driven solutions for an ailing health care system — and to highlight the successes taking place every day.

As part of *Raise the Voice*, the Academy is showcasing stories of nurse “Edge Runners” — the practical innovators who have led the way in bringing new thinking and new methods to a wide range of health care challenges. Edge Runners have developed care models and interventions that demonstrate significant clinical and financial outcomes. Many of the stories underscore the courage and fighting spirit of nurse leaders who have persevered despite institutional inertia or resistance.

Raise the Voice is a platform for the nursing community to press for new thinking in the health care debate. The initiative helps the Academy take its call for change to Congress, the administration, the medical community and every other group engaged in that debate. *Raise the Voice* spokespersons will appear in newspapers and on TV and radio, telling the story of nurses who are changing America's approach to health care and, in doing so, helping our citizens live healthier and longer lives.

The Academy's Advisory Council for *Raise the Voice* is chaired by Donna E. Shalala, PhD, President of the University of Miami and formerly the U.S. Secretary of Health and Human Services. Joining her on the Board are some of the nation's foremost health care champions — including foundation executives and former federal lawmakers and administrators.

Raise the Voice tells a powerful story: how nurses are creating new, transformational options that help people stay healthy and cope better with illness. It's a story that Americans need to hear.

For more information, visit www.aannet.org/raisethevoice/.



AMERICAN ACADEMY OF NURSING

202.777.1170
202.777.0107 fax888 17th Street, NW • Suite 800 • Washington, DC 20006 • www.aannet.org**Nurses Helping Americans Cross the Quality Chasm**
A Position Paper from the American Academy of Nursing
Executive Summary

Over the past decade, numerous reports have addressed problems with health care quality in the United States (U.S.). To help remedy these problems, the Institute of Medicine (IOM) proposed six aims for improving quality care—health care should be: safe, effective, patient-centered, timely, efficient, equitable. Despite these ambitious goals, the lack of progress in many aspects of health care quality remains a concern.

Many solutions to the problems with health care quality and patient safety reside in the underused talent found in the nation's nurses—a workforce of more than three million. The American Academy of Nursing (AAN), a professional organization of selected nurse leaders, initiated the *Raise the Voice* campaign. Supported by a grant from the Robert Wood Johnson Foundation, *Raise the Voice* showcases nurses who have developed and tested innovations in health care delivery. These nurses, known as "Edge Runners," demonstrate that nurses are vital to achieving the goals set forth by the IOM; they are architects of solutions to improve health care quality.

The innovative features of the Edge Runner initiatives have demonstrated success in advancing the quality of care for Americans.

- Avoiding patient injury—as well as staff harm—is at the core of work being done by Audrey Nelson, PhD, RN, FAAN. Dr. Nelson's work has been implemented throughout the Veteran's Administration. She is on the vanguard of making care **safe**.
- The Transitional Care Model (TCM), developed by Mary Naylor, PhD, RN, FAAN, supports the growing needs of elders at a vulnerable point in their care—when care is transferred from hospital to home, from inpatient providers to primary care providers and family caregivers. She is on the vanguard of providing **effective** care.
- Involving front line staff in redesigning hospital care is the essence of the Transforming Care at the Bedside (TCAB) project guided by Susan Hassmiller, PhD, RN, FAAN and Patricia Rutherford, MS, RN. Funded by the Robert Wood Johnson Foundation, TCAB is ensuring that care is **timely** by more swiftly making good ideas for change in care practices become reality.
- Providing a full range of integrated services to frail elders in their homes, thereby avoiding the use of nursing homes, Jennie Chen Hansen, MSW, RN, FAAN contributed to changing Medicare and Medicaid Laws, creating care that is **efficient**.
- Taking care to an underserved, largely uninsured community rather than making the patients cross a major thoroughfare for care that was already in place is Kay Roberts', EdD, FNP-BC, FAAN, creative approach to problem solving and providing **equitable** care.
- Each of the Edge Runner initiatives is **patient and family centered**. They also represent cost-effective way to improve **access** to care.

These innovative models illustrate how the unevenness and haphazardness of health care quality can be smoothed out, thereby fulfilling the decade old promise to remedy quality problems and narrow the chasm between the care that we have and the care we could have. The Edge Runners are creating care as it needs to be to help Americans across the quality chasm. Although these five Edge Runners illustrate that solutions existing within the nursing workforce for improving health care quality, the potential impact of these solutions will not be realized unless barriers to innovative programs such as these are removed.



Nurses Helping Americans Cross the Quality Chasm A Position Paper from the American Academy of Nursing

A decade ago, the President's Advisory Commission on Consumer Protection and Quality in the Health Care Industry reported there was "unevenness" in health care quality throughout the United States (U. S.) (President's Commission, 1998). The Commission called for a national commitment to improve quality care for all citizens of the U.S.

The Institute of Medicine (IOM) quickly responded to the call from the President's Commission by establishing a Committee on the Quality of Health Care in America. The Committee's charge was to identify ways to achieve substantial improvements in health care quality within 10 years. The work of the Committee is reflected in two landmark reports. The first, *To Err is Human. Building a Safer Health Care System* (1999), received enormous attention from the press, propelling concerns about patient safety into widespread public awareness. The second report, *Crossing the Quality Chasm. A New Health System for the 21st Century* (2001), was broader in focus; it addressed ways to redesign the health care delivery system to improve the quality of care. The *Chasm* report is also the source of six aims to guide the entire U.S. health care system in achieving improvements in quality care (see Box 1).

Box 1

The IOM aims indicate health care should be:

- Safe—avoiding patient injury
- Effective—providing services based on scientific knowledge to all who could benefit, but not to those who are unlikely to benefit
- Patient-centered—providing care based on individual patient preferences, needs, and values to include their opinions about clinical decisions*
- Timely—reducing waits and delays for those who receive and give care
- Efficient—avoiding waste of all sorts (equipment, supplies, ideas, energy)
- Equitable—providing the same quality of care regardless of individual characteristics such as gender, ethnicity, geographic locations or socioeconomic status

Despite these ambitious goals, the lack of progress in many aspects of health care quality remains a concern. Articles in both the *AARP Magazine* (Brownlee, 2008) and the *Journal of the American Medical Association (JAMA)* (Jost & Emanuel, 2008) address ways in which the U.S. continues to fall short of desired improvements in health care quality. The authors of the *JAMA* article noted that "The current health care delivery system is dysfunctional, is *excessively* costly, and provides haphazard quality" (Jost & Emanuel, 2008, p. 2563). This statement reflects conditions reminiscent of those that led to the convening of the President's Advisory Committee in 1996. The *JAMA* commentary also points out problems with the current delivery system such as fragmentation of care and barriers to innovations for improving the delivery system. These conditions are not new.

What the *JAMA* commentary does *not* do is illustrate how many solutions to problems with health care quality and patient safety reside in the underused talent found in the nursing workforce. This point, however, was not lost on the IOM in its 2004 study that focused on nurses [who]:

"are the largest component of the health care workforce, and are . . . critical elements of stronger patient safety defenses" (Page, 2004, p. 31).

* The IOM aims address patient-centered health care. The American Academy of Nursing (AAN) seeks to expand this aim to reflect the broader concept of patient- and family-centered care.



The American Academy of Nursing's (AANs) *Raise the Voice* campaign is underway to showcase nurses who have developed and tested innovations in health care delivery. These nurses, known as "Edge Runners," exemplify the IOM's finding that nurses are vital to strengthening patient safety, access, efficiency, and timeliness of care. Supported by a grant from the Robert Wood Johnson Foundation, *Raise the Voice* helps to promote solutions to fix the U.S. health care system. The *Raise the Voice* campaign shows how nurse Edge Runners are helping Americans cross the quality chasm.

To heighten policy maker's awareness about these nurse led innovations, five Edge Runners are highlighted to illustrate the profound influence of these programs on improving access, containing cost, and reducing the fragmentation of health care in America. These five innovative programs are diverse, representing different geographic locations (e.g., rural, urban), populations served (e.g., federal, underserved), and service settings (e.g., hospital, home, community). With wider adoption and sustainment of these programs, it will be possible to realize improvements in the health care system that are consistent with the IOM's vision. Rapid advancements in quality will be more likely if these programs, and others that have demonstrated similar achievements, become expected features of health care delivery. Additional information about these groundbreaking initiatives may be found through sources listed in the selective bibliography.

Nurses: Architects of Solutions to Improve Health Care Quality

Supporting the Growing Needs of Elders

The number of older Americans is growing at a staggering rate. Between 2005 and 2030, the number of adults ages 65 and older will nearly double—from 37 million to more than 70 million (IOM, 2008). As Americans live longer, they have more chronic health problems that create demands on a health care system designed to deal with acute care needs. Consequently, health care resources will continue to be stretched, if not exceeded, as the number of older and chronically ill Americans increases. Programs spearheaded by nurses offer creative solutions to meet these needs. These innovative solutions are exemplified by two patient-centered approaches to improving access to care for elderly individuals. One is community based; the other bridges the transition from hospital to home.

The Program of All-inclusive Care for the Elderly (PACE). PACE uses a prevention and health promotion model of community care that anticipates the health care needs of frail, chronically ill elders while containing costs. PACE participants live at home in their communities while getting integrated acute and long term care services at a day hospital. PACE providers assume full financial risk for acute and long term care services for their enrollees in exchange for a bundled capitated payment. While the financing model and integration of services are hallmarks to PACE, it is the individualized and comprehensive approach that enables each enrollee to remain as independent as possible for as long as possible. In the words of a participant's son, "PACE did the impossible for my mother. I never thought she would be able to live with us again."

PACE originated in 1971 as On Lok Senior Health Services, a culturally sensitive program designed to meet the needs of aging Chinese, Filipino, and Italian communities in the San Francisco Bay area. These individuals, all on Medicaid, were unable to get into nursing homes. On Lok was founded to meet the needs of these individuals. In 1980, Jennie Chin Hansen, MSW, RN, FAAN, joined On Lok as a research nurse. Ultimately, she spent 11 ½ years as the Executive Director/Chief Executive Officer of On Lok before joining the Center for the Health Professions at the University of California San Francisco (UCSF). She is currently President of AARP.

During Ms. Hansen's tenure, On Lok was transformed into a national model as an alternative to nursing home care. For example, in 1990 the first Medicare and Medicaid waivers were granted to operate PACE. Since then, PACE has achieved provider status under Medicare and expanded into 22 states serving approximately 15,000 elders. By the end of 2008, it is likely that PACE



sites will exist in five more states. What developed as an urban-based program is now being tested in 15 rural areas using the same principles of community care to keep frail elders in their homes.

The outcomes of PACE are extraordinary, pointing to how nurses are leading the way to improvements in access to safe, high quality, and affordable health care:

- The success of the risk-based capitation program was the prototype for a 1997 change in the Medicare and Medicaid law—the first such change since the Hospice Medicare benefit in the mid-1980s.
- The cost of care is 15 percent lower than care for enrollees with similar conditions under traditional fee-for-service programs.
- Turnover of nursing aides involved with PACE is about 12 percent compared to 70-100 percent in nursing homes nationally, reflecting a high level of staff satisfaction.

Despite these notable successes, PACE is still confronted with a number of barriers that interfere with its more widespread adoption. Financing is a sizable barrier, particularly for acquiring capital funding for start up and expansion. A sluggish approval process at the state and federal levels is another major obstacle. For instance, it typically takes 24 to 30 months to get approval for the PACE provider application. The various steps in the application process include two 90-day review periods at the Centers for Medicare & Medicaid Services (CMS). These roadblocks limit the development of new sites. Yet, as the population ages, there is a greater need for PACE programs. Without these barriers, the expansion of PACE could be accelerated to better meet the needs of older adults.

"Using the day hospital idea was a pivotal paradigm change from the way care of frail elders had been provided. [We] realized they needed services and care but not necessarily at night."

Ms. Jennie Chin Hansen

The Transitional Care Model (TCM). In the mid-1980s, Mary Naylor, PhD, RN, FAAN, worked as a staffer to the Senate Committee on Aging. She was profoundly influenced by what was happening to elders as a consequence of the introduction of Medicare's Inpatient Prospective Payment System. This experience became the catalyst for the work she has done ever since, all with an eye to improving quality while reducing cost. The successes of her innovative *Transitional Care Model (TCM)* have been reported in the medical and nursing literature and print media. These successes illustrate how TCM supports the growing needs of elders at a vulnerable point in their care—when care is transitioned from the hospital to the home, from inpatient providers to primary care providers and family caregivers.

The transition from hospital to home is often characterized by adverse clinical events, serious unmet needs, and poor satisfaction with care. For example, elderly who are confronted with frequent care transitions are more likely to experience medication errors, rehospitalizations, and longer hospital stays. TCM is able to reduce the vulnerability of this move from hospital to home because the foundation of the model lies in understanding what is important to the people who need the care and the family caregivers who often provide it.

The heart of TCM is the Transitional Care Nurse (TCN); typically a master's prepared advanced practice nurse (APN), who works with elderly patients and their family caregivers to ensure a smooth transition from hospital care to the care that continues into the home well after discharge. The TCN—in collaboration with patients, families, physicians, along with other clinicians and providers—assesses the patient at the time of hospital admission, follows the patient during his or her hospital stay, designs a personalized discharge plan, and implements that plan of care once the patient leaves the hospital. This implementation involves regular home visits by the TCN and telephone access seven days a week. The TCN assists the patient and his or her family



caregivers by providing patient education and support as well as accompanying the patient to physician visits to serve as an advocate for the patient and to help patients understand the plan of care.

The Transitional Care Model, developed and refined over the last 20 years by Dr. Naylor and a team of multidisciplinary colleagues at the University of Pennsylvania, has achieved impressive results for patients with common medical and surgical conditions. Building on this success, the use of the model has expanded into other populations with chronic health problems and is being tested with patients with cognitive impairment. In addition, adjustments to the intervention are being studied to determine the impacts on patient outcomes and cost. An example of this is using baccalaureate-prepared nurses as alternatives to or in consultation with advanced practice nurses. These refinements are being made to ensure that TCM is widely available. The wide availability is important given that the size of the elderly population will almost double in the next 25 years.

A personalized, longitudinal approach to care is the hallmark of TCM. There is a growing body of evidence that reflects how TCM can affect the lives of people and the health care system. The outcomes from this intervention, led and implemented by nurses, illustrate important improvements in health care quality and patient safety:

- Communication among providers, health care agencies, patients and families is improved which enhances patient education, increases patient and family caregiver satisfaction and reduces caregiver burden.
- With TCM, there are longer intervals between re-hospitalizations, fewer re-hospitalizations overall, shorter hospital stays, and better patient satisfaction.
- Findings from three consecutive National Institute of Health (NIH)-funded randomized controlled trials are consistent: TCM effectively reduces total and average costs per patient. In the most recent of these studies, at 52 weeks following hospitalization, there was an average savings of approximately \$5,000 per Medicare patient for a group of elderly patients hospitalized with heart failure.

Despite the strong evidence demonstrating the effectiveness of TCM as a viable solution for overcoming problems with health care quality, barriers to its implementation persist. These include: (a) regulatory and reimbursement obstacles including inadequate reimbursement for transitional care services and care coordination; (b) inadequacies in health professionals' education and training to provide transitional care for the chronically ill, (c) gaps in family caregivers' knowledge and resources to provide care for this population at home, (d) lack of performance measures, (e) lack of analyses assessing the effectiveness and efficiency in TCM as compared to other models of care, (f) clinical information systems that do not document care across and between providers, and (g) misaligned financial incentives.

The issue is not just when to pay for performance but to whom . . . and for what kinds of services. Because TCM looks at high risk people from the point they get in trouble until they are stable, our work can help guide programs that should be creating incentives aimed at promoting quality throughout acute episodes of care."

Dr. Mary Naylor

Crossing a Thoroughfare to Bring Health Care to a Community in Need. On one side of a large thoroughfare, there is a well-resourced university that includes education for health care providers, outpatient clinics and a hospital; on the other side is an underserved community. Despite their proximity, these neighbors are worlds apart socio-economically—70 to 80 percent of the community members are uninsured.



Being aware of the unmet health care needs of the community, health care personnel from the university took steps to get members of the community to cross the thoroughfare for care. These efforts failed. Not willing to accept this situation, a nurse, Kay Roberts, EdD, FNP-BC, FAAN, spearheaded building a nurse-led health center within the community on their side of the thoroughfare. She crossed the barrier created by the thoroughfare, taking the care to those who needed it.

Thus began the *Harambee Nursing Center* (HNC), named by members of the community. Harambee is an African tribal term that means "let's pull together." The HNC, which opened in 2003, is operated by the University of Louisville School of Nursing in partnership with several religious and non-profit groups. In addition, the local hospital provides laboratory tests free of charge for people seen at the HNC; the University Physicians' Association provides billing and credentialing support. Currently, about 1,900 community members are established primary care patients in the HNC, with about 300 new patients added each year. More than 500 persons are served through outreach screening and education as well on an annual basis.

Nurses solved the problem of access to care by bringing health equity resources to a community in need. Nurses had the clinical expertise, they were able to develop relationships with the patients, they had skills related to health promotion and disease prevention, and they engaged the people of the community in the context of their jobs, schools, and other life circumstances. Through these efforts, community isolation has decreased and access to new health services has been established. Five major health care organizations now "pull together" with the HNC to bring screening for HIV and cancer, courses in self-management of chronic illnesses, immunizations, diabetes care, and other health services to the community. Through funding from a state foundation, a practice model was established within the HNC primary care clinic that includes mental health services.

Outcomes of this patient-centered, culturally sensitive program reflect how nurses can lead efforts that contribute to early problem identification, increased access, and ultimately improved health care quality and patient safety. In particular, the Harambee Nursing Center has realized these achievements:

- About 150 students at two middle schools are able to stay in school because they have the required school physical examinations and their immunizations are up-to-date. This seemingly simple intervention reflects the extent of the community's unmet health needs.
- The relationship between the HNC and a local emergency department (ED) has yielded a reciprocal benefit—at least 50 percent of the HNC patients avoid one or more emergency department visits annually because they now have a place where health problems can be found and treated early or prevented; the ED refers four to six patients/week to the HNC for follow-up care which previously would not have been realized
- A 14-week parenting program has reached 250 parents who are at risk for being abusive to their children. The program has been conducted 9 times at 6 different sites. It has also become an established, regularly occurring program at a center for abused women and families.
- About 50 health professional students, including future nurses, have clinical experiences at the HNC each year, helping them to understand the needs of underserved communities, teaching them to "pull together" and preparing them to practice in similar communities in the future.

This community-based model of care, grounded in partnership and collaboration, is making progress into reversing long-standing health disparities in a community of need. The rate of improvement, perhaps even its sustainability and survival, are thwarted by barriers that are embedded in the traditional health care system. Among these are restrictive policies for nurse practitioners (NPs) related to credentialing, reimbursement and prescribing. These policies should be revisited and adjusted to better support nurses' essential contribution to quality health care. In addition, and as evidenced by HNC's achievements, national policies to protect the uninsured must be established to reduce disparities and ensure equity within the health delivery system. A final barrier concerns financing. The HNC operates on a very small, very tight budget;



volunteers provide much of the Center's work. If a cost-effective way of treating the underserved is truly a goal of health care in the U.S., then successes such as HNC should have a more stable funding stream from federal, state, and local revenue, rather than rely primarily on donations.

"We were so moved by the needs of the community and the amazing number of problems that were there in such a very close proximity to our university that had so many rich resources. . . . It's a common experience for people to have their hearts captured when they come to this community."

Dr. Kay Roberts

Making Hospitals Healthier for Patients and Staff

Although care has shifted to other settings, the hospital continues to be the hub of health care. Despite the centrality of hospital care to quality care, concerns about patient safety and staff satisfaction. These concerns are being addressed in very direct and effective way by two national organizations—one philanthropic and the other a federal entity. Both initiatives underscore how critical it is to have front line staff meaningfully involved in designing changes to the care process.

Transforming Care at the Bedside (TCAB). The Robert Wood Johnson Foundation (RWJF) is funding an initiative project focused on *Transforming Care at the Bedside (TCAB)*. The project, launched in 2003, was initially considered to be "one big experiment," according to Susan Hassmiller, PhD, RN, FAAN, a senior program officer at RWJF who helped to conceive TCAB—a structured approach to changing and reforming care delivered in hospitals. TCAB is the first multistate initiative in which changes in the care environment and nursing processes are being examined in relation to patient and nursing outcomes. It has been implemented in small rural hospitals and large academic health care institutions. TCAB involves engaging nurses and other providers at the front line of hospital care to determine how care delivery ought to be altered to improve efficiency, create a collaborative work environment, and improve patient outcomes.

The Institute for Healthcare Improvement (IHI) led the work for the first wave of TCAB; three hospitals were involved. IHI selected Patricia Rutherford, MS, RN, to direct the initiative. Both Dr. Hassmiller and Ms. Rutherford are the innovators responsible for the enormous success of TCAB. The program quickly expanded to 13 hospitals. Word rapidly spread about the success of TCAB resulting in a partnership with the American Organization of Nurse Executives (AONE) to bring an additional 68 hospitals into the program. In addition, a new virtual toolkit, will enable hospitals across the country to have electronic access to TCAB best practices and provide vital resources, expertise, and training for hospitals seeking these transformational changes.

Although numerous initiatives have been tried as part of restructuring efforts over the last 15 years, this project has clearly struck a chord with nurses at the bedside. In speaking to what is so different about TCAB, Dr. Susan Hassmiller noted that staff nurses and other front line workers, along with patients and family members, are full participants in reforming care rather than bystanders and recipients of decisions made at higher levels in the organizations. In addition, the change process at TCAB hospitals avoids the often long and seemingly endless series of committee approvals before innovations can be implemented. Instead, front line staff is directly involved in decision-making by developing, testing, and evaluating ideas for improving care and teamwork. This improves staff morale as well as retention because they see quick results from their decisions.

Measuring the outcomes of TCAB is challenging for a number of reasons. For example, definitions are not standardized for the outcomes (e.g., staff turnover, patient falls). This makes it difficult to compare the participating hospitals. In addition, the initial hospitals were already among some of the nation's top-performing hospitals. This made the evaluation very



challenging—it was more difficult to show improvement because the outcomes for these hospitals were already well above national averages. That said, this strongly suggests that if TCAB is successful among hospitals that are already strong performers, it will very likely yield even more impressive results with hospitals that have more room to improve. Although the evaluation of TCAB hospitals, including the AONE 68 is ongoing, the notable improvements in the quality of care realized in the top performing TCAB hospitals include:

- An overall increase in the time nurses spend with patients during their hospital stays from 52 percent to 71 percent.
- A reduction in patient falls, pressure ulcers and other adverse events.
- An increase in patient and staff satisfaction.
- A reduction in voluntary turnover from 5.83 percent to 3.38 percent.

Advancing the TCAB initiative will require the reduction if not complete removal of numerous barriers. Among these are the need for standardized measures to allow appropriate comparisons among participating hospitals, the need to secure commitment from leaders and managers throughout the organization to adopt this transformative care model, and adequate implementation resources. For example, implementation of TCAB requires time for the staff to learn about the TCAB principles and become comfortable using them. It also requires familiarity with a variety of tools, most of which will be available electronically. This will pose a problem for those facilities that have fewer technology resources. Overcoming the computer access barrier alone could allow a leap forward in the health care quality for inpatients throughout America by enabling them to implement this nurse-led innovation.

"If hospital leaders are serious about improving quality in their organizations . . . [they must] get engagement at the front lines. . . . When you engage people at that level [the front lines], therein lies the greatest opportunity for change!"

Dr. Susan Hassmiller

The Veteran's Administration (VA) Patient Safety Center of Inquiry. The other hospital-based initiative involves doing research to improve patient safety and moving the results of that research to front line workers for practical application. Based at the James A. Haley Veteran's Health Administration (VA) Medical Center in Tampa, Florida, since 1999 the Patient Safety Center of Inquiry (PSCI) has been doing impressive work to prevent adverse events associated with mobility and immobility. It is noteworthy that this Edge Runner program was started a year before the IOM report on errors was published (IOM, 1999), indicating a proactive approach to solve problems rather than a reaction to national calls for improvement in health care. Audrey Nelson, PhD, RN, FAAN leads the PSCI as it makes major contributions nationwide in four areas: patient falls, safe patient handling, hospital bed/wheelchair safety, and wandering, a problem common in people with dementia.

A specialist in rehabilitation nursing, Dr. Nelson was approached by a regional leader within the VA to develop the Patient Safety Center. She was able to see the relevance of her background to patient safety and accepted the challenge. Part of her success derives from her clear understanding of return on investment as well as the importance of capitalizing on facilities with high interest in creating the future and trying new approaches to practice. The success of the Center has led to partnerships with major organizations such as the Food and Drug Administration, the National Institute of Occupational Safety and Health, the Department of Defense, and the Centers for Disease Control to disseminate research and implement best practices.

The outcomes of this nurse led program are considerable. They are evidence of the contributions that have been made to quality health care in general and patient safety in particular. These outcomes include:

For more information about the *Raise the Voice* Campaign and Edge Runners, go to www.aannet.org.



- Interventions improving how patients are lifted and transferred have reduced the incidence of staff injuries by 31 percent, improved nurses' job satisfaction, are well accepted by administrators and patients, and resulted in a projected annualized cost savings of \$1.25 million.
- For every \$1 in core funding for the Patient Safety Center, the staff brought in an additional \$16.60 in funding thereby leveraging the \$500,000/year of core funding into \$7.2 million for fiscal year 2008.
- Development of 128 implementation tools for the VA to enhance patient and staff safety; these are not proprietary so health care facilities nationwide have free access to them; they can be adapted and customized to meet facility-specific needs.

Some of the barriers faced by the Patient Safety Center of Inquiry are common to all health care delivery systems that are trying to measure outcomes of care. That is, collecting data is time consuming and expensive. Along with the need to standardize measures, there is a pressing need to develop new measures that better capture important outcomes. Without funding and an infrastructure, the barriers to measure development will remain.

"We have one of the longest track records in looking at how to implement safety initiatives. We've learned a lot about how different changes in policies and practices have an impact, sometimes an unexpected impact—negative or positive—on patient outcomes."

Dr. Audrey Nelson

Achieving the IOM Goals for Improving Health Care Quality

As noted earlier, the IOM established six aims for the 21st century health care system (see Box 1). The summaries of the five Edge Runner initiatives show how nurses, as a professional group, are helping to achieve the aims envisioned by the IOM. In many cases, these initiatives preceded the work of the IOM, reflecting nurses' ability to proactively design health care to meet patient needs now and in the future. The Edge Runners clearly illustrate how nurses are part of the health care solution.

Avoiding patient injury—as well as staff harm—is at the core of *Dr. Audrey Nelson's* work, work that has been implemented throughout the VA as well as other agencies. She is on the vanguard of making care **safe**.

Using scientific knowledge to provide services to all who could benefit—and avoiding those services for people who are not likely to benefit—is central to the Transitional Care Model developed by *Dr. Mary Naylor*, in collaboration with patients, families, and physicians. She is on the vanguard of providing **effective** care.

Involving front line staff in redesigning hospital care is the essence of *Dr. Susan Hassmiller* and *Ms. Pat Rutherford's* effort to Transform Care at the Bedside. By reducing the lag time experienced by staff and patients for valuable change to become reality, *Dr. Hassmiller* is ensuring care is **timely**.

Providing a full range of integrated services to frail elders in their own homes, thereby avoiding the use of nursing homes, *Ms. Jennie Chen Hansen* contributed to changing Medicare and Medicaid laws. She is on the vanguard of creating care that is **efficient**.

Taking care to an underserved, largely uninsured community rather than making them cross a major thoroughfare for care that was already in place is *Dr. Kay Roberts'* creative approach to problem solving. She is on the vanguard of ensuring care is **equitable**.



All of these programs—PACE, TCM, the Harambee Nursing Center, TCAB, and the VA Patient Safety Center of Inquiry—are on the vanguard of ensuring health care is **patient- and family-centered**. The principles of patient- and family-centeredness are often lacking from many of today's approaches to health care, making each of the Edge Runner initiatives a potential prototype of ways to truly put the patient at the center of care.

These programs also represent cost-effective ways to improve **access** to care. As Avedis Donabedian, the father of health care quality, reflected years ago, "it is important to begin with access to care because, without initial access, no care can be given and, without continued access, care is prematurely discontinued (1989, p. 6). However, each of these programs is stifled in varying ways because of existing barriers that interfere with spreading and sustaining these innovations. Action is needed to minimize – better yet to remove – the barriers.

An Action Agenda

The work of the five Edge Runners illustrates that solutions exist for improving health care quality. The potential impact of these solutions will not be realized, however, unless barriers to innovative programs such as these are removed. In this regard, clinicians, state and federal policymakers, lawmakers, researchers, educators, consumer advocates, labor organizations, and other stakeholders must adopt the following recommendations to transform the health care system and mitigate barriers to sustainable improvements in health care quality.

Regulatory Oversight

- Ensure rapid diffusion of these nurse-led models through state and federal programs including, but not limited to, the Quality Improvement Organizations (QIOs).
- Expedite the processing of federal approval for program expansion.
- Create blended funding streams that eliminate the silos in Medicare and Medicaid and allow mechanisms to pay for essential care, including transitional care.
- Encourage state and local demonstration projects that can be exempt from regulatory requirements if outcomes are better than those of regulated facilities.

Aligning Incentives and Payment Reform

- Adjust current reimbursement systems to allow direct payment for models of care that work, albeit outside traditional care delivery systems.
- Provide payment that rewards sustaining health through preventive care and early intervention.
- Allow nurse practitioners to maximize their full benefit to society by lifting limitations to their practice, including reimbursement mechanisms.
- Reward high performing health care organizations, health care teams that contribute to high performance, and independent clinicians, regardless of discipline, for achieving high quality care.
- Expand responsibility of and payment for care coordination to advanced practice nurses, registered nurses, social workers and other qualified providers.

Education

- Better prepare the health care workforce to work in interdisciplinary groups that have the full set of skills to design and implement successful models of care for the future.
- Ensure that faculty are well-informed about the realities of contemporary health care delivery as well as innovative practice models to better prepare future generations of nurses.
- Beginning in baccalaureate programs, include content about measuring the effects of care and making data-based decisions.



Research

- Advocate for policy changes that will enable financial support from more agencies (e.g., the Agency for Healthcare Research and Quality, the Center for Disease Control, the Centers for Medicare & Medicaid Services, the National Institutes of Health) to fund research related to health care system improvements and health services research.
- Create the capacity in researchers to study key health care system issues and changes using solid, rigorous science.
- Establish partnerships between researchers and health care executives, particularly chief nursing officers, to identify and then explore the questions that will yield the greatest return for improvements in practice.

Performance Measurement for Transparency and Accountability

- Hardwire existing performance measures that reflect nursing's contribution to health care quality into nationally led initiatives that are institutionalized by government and non-government entities (e.g., the Centers for Medicare & Medicaid Services, the National Committee on Quality Assurance, The Joint Commission).
- Develop and improve performance measures that can be used for research, institutional decision-making, accountability, and public reporting.
- Engage health care consumers in measure development to ensure that measures capture aspects of care delivery that matter most to patients.

Health Care Leadership

- Seek commitments from institutional leaders to practice from an evidence base including establishing the infrastructure and support needed to ensure that practices and decisions derive from solid research.
- Align health care organizational philosophies, values, and actions so that all staff members—clinicians and administrative personnel alike—have a shared focus to ensure the consistent delivery of high quality care.

As noted in the IOM's report *Crossing the Quality Chasm*, "Quality problems are everywhere, affecting many patients. Between the health care we have and the care we could have lies not just a gap but a chasm" (Corrigan, Donaldson, & Kohn, 2001, p. 1). By rapidly undertaking the reforms proposed in this action agenda, the initial steps can be taken to fund and promulgate models of care such as those designed by the Edge Runners spotlighted here. The innovative features of these programs place them outside the traditional systems of health care. The innovative features of the Edge Runner initiatives are also what have contributed to their demonstrated success in advancing the quality of care for Americans. These innovative models illustrate how the unevenness and haphazardness of health care quality can be smoothed out, thereby fulfilling the decade old promise to remedy quality problems and narrow the chasm between the care that we have and the care we could have. The Edge Runners are creating care as it needs to be to help Americans across the quality chasm.



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The Health Care Home Debate: Opportunities for Nursing American Academy of Nursing

In a period of divide surrounding health care in the United States, one aspect of the system seems to inspire consensus: the need for its reform. It is *what* to reform that stirs debate, ranging from insurance coverage to quality of care to the very means of care itself. As this dialogue continues, the American Academy of Nursing (AAN) encourages all stakeholders to carefully consider the impact of nursing research and practice and the significant contribution that the profession can make to the lives of patients and the improvement of the system. One concept to drive such change that has gained much health policy and political attention is the medical home. As this concept continues to gather momentum, the American Academy of Nursing:

- recommends embracing a broader, more holistic health home approach, characterized by patient- and family-centeredness, health promotion and disease prevention, and optimization of the contributions of all providers, along with the basic tenets offered by the Institute of Medicine of the National Academies (IOM) and the National Quality Forum (NQF);
- cautions all clinicians and other stakeholders against employing narrow definitions and restrictive roles of any member of the caregiving team, the application of the medical home, or its derivative policy-setting activities;
- believes in the evidence-supported assertion that nurse education has traditionally involved a greater focus on care coordination, on the whole patient, and on his or her family; and
- advocates for research on the effectiveness, quality improvements, and cost implications of coordinated care models to best meet the needs of our growing population.

The IOM and the NQF offer a broader health home concept. Included in the IOM's 1996 publication, *Primary Care: America's Health in a New Era*¹ is a definition of *primary care*: "the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community." The IOM defines "clinician" as "an individual who uses a recognized scientific knowledge base and has the authority to direct the delivery of personal health care services to patients." It further asserts that "a clinician has direct contact with patients and may be a physician, nurse practitioner, or physician assistant." While acknowledging that for most patients this role is filled by a physician, the IOM states that this choice of language is used to emphasize "the importance of a relationship between a patient and an individual who uses judgment, science, and legal authority to diagnose and manage patient problems." The IOM remains consistent in its use of this

¹ Institute of Medicine of the National Academies, *Primary Care: America's Health in a New Era* (Washington, D.C.: National Academy Press, 1996) 29.



language and approach to coordinated care in its 2001 *Crossing the Quality Chasm*.² Similarly, the NQF, in its 2006 endorsement of a care coordination definition and framework, emphasizes the use of a team of caregivers, does not suggest who among those caregivers should be responsible for team leadership, and uses the term “primary care providers.” Consistent with the IOM, NQF puts *services* at the core of its definition: “Care coordination is a function that helps ensure that the patient’s needs and preferences for health services and information sharing across people, functions, and sites are met over time. Coordination maximizes the value of services delivered to patients by facilitating beneficial, efficient, safe, and high-quality patient experiences and improved healthcare outcomes.”³ The Academy recommends embracing this broad, holistic health home approach, characterized by patient- and family-centeredness, health promotion and disease prevention, and optimization of the contributions of all providers, along with the basic tenets asserted by the IOM and NQF.

While the mounting pressure for health reform has induced some individuals to seek a quick fix, the Academy recognizes that there are numerous models of care coordination and management and encourages measured and thoughtful analysis of all options. The Academy also views this increased interest in care coordination and patient-centered care models as a tangible, viable opportunity for changes to the delivery of care and the engagement of professional nursing.

For the purposes of this statement, the Academy has reviewed the evolution of the medical home concept. The medical home was introduced in 1967 by the American Academy of Pediatrics (AAP) with the intention of centralizing the medical information of children with special health needs. This single site of information evolved into a patient- and family-centered means of care.⁴ Throughout the past generation, the concept and its patient-centered focus have become applicable to all segments of the population, particularly those managing chronic conditions. The traditional medical home model is guided by these underlying principles: patient-centeredness; family orientation; coordination by a multidisciplinary care team community members; comprehensiveness to all of one’s health needs; and physician-led.

Along with the AAP, the American Academy of Family Physicians, the American College of Physicians, and the American Osteopathic Association, have been dominant voices in promoting the patient-centered medical home. In February 2007, the organizations collectively released their Joint Principles of the Patient-Centered Medical Home⁵, which include the following: a patient’s ongoing relationship with a personal physician; a personal physician who leads the team of caregivers; whole person orientation which addresses all of the patient’s health needs; integrated/coordinated care across the health system and the patient’s community; quality and safety; enhanced access to caregivers, including open scheduling, expanded hours, and new communications options; and a new payment structure which accounts for both physician and non-physician time as well as care and coordination occurring outside the face-to-face visit.

² Institute of Medicine of the National Academies, *Crossing the Quality Chasm: A New Health System for the 21st Century* (Washington, D.C.: National Academy Press, 2001).

³ National Quality Forum, “NQF-Endorsed Definition and Framework for Measuring Care Coordination,” 2006.

⁴ “The Patient Centered Medical Home,” Robert Graham Center: Nov. 2007: 4.

⁵ American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, American Osteopathic Association. Joint Principles of the Patient-Centered Medical Home. February 2007.



The National Center for Quality Assurance (NCQA) and Physician Practice Connections—Patient-Centered Medical Home (PPC-PCMH) have adopted these principles and have implemented an application process through which physician practices can receive official recognition as a medical home from the NCQA.

The growth of the medical or health home both in theory and practice is due, at least in part, to the need and desire for reform to the current health care system. Among these precipitators for change is the shift in the health issues of the American public from acute, episodic treatment to the management of chronic conditions in recent generations. Just as its variety of medical conditions has evolved, so has the health care system. The demand for primary care continues to grow with the aging population, yet more physicians are opting to practice in more lucrative specialized areas, which could result in more disjointed care.⁶ Due largely to the payment structure, discussed below, physicians—primary care and specialists alike—have been forced into shorter office visits with their patients, often aren't reimbursed for between-visit activities⁷ or reimbursed specifically for the coordination activities which occur in clinical settings.⁸ This shift has resulted in some contention surrounding the leadership of a caregiving team; as the discussion continues, the American Academy of Nursing cautions all clinicians and other stakeholders against employing narrow definitions and restrictive roles of any member of the caregiving team, the application of the medical home, or its derivative policy-setting activities.

In addition to being a divisive issue, the current insurance payment system is also perhaps the greatest impediment to the widespread implementation of the health or medical home.⁹ While some private insurers have begun to integrate case management programs, Medicare—the largest insurer in the country—does not. Recognizing the rising costs associated with the growing population of individuals with chronic conditions, Medicare initiated a demonstration project in 2005 to evaluate the effect of disease and case management on cost and patient outcomes.¹⁰ Though a four-year project, the evaluation of the first two years resulted in few statistically significant changes to patient and physician satisfaction and no effects on costs. The report, however, acknowledges that two years may not be enough time to change communication behaviors in the fee-for-service system and witness cost reductions. Phase I of the project will end in 2008 and while an evaluation will follow, preliminary findings suggest that due to budget neutrality provisions (under which contracting practices who fail to achieve savings must repay the care coordination fees they received from Medicare), there is some question as to the likelihood of implementation of Phase II. The project, however, has been extended through March 2010 for three participating practices based on early, positive outcomes and savings

⁶ Colwill J, Cultice J, Kruse R. Will Generalist Physician Supply Meet Demands of an Increasing and Aging Population? *Health Affairs* 27 (2008): w232-w241.

⁷ Gilchrist V, McCord G, Schrop S, King B, McCormick K, Oprandi A, Selius B, Chower M, Maheshwary M, Patel F, Shah A, Tsai B, Zaharna M. "Physician Activities During Time Out of the Examination Room." *Ann Fam Med*. 2005 November; 3(6): 494-499.

⁸ Medicare Payment Advisory Commission. 2006. Report to the Congress: Increasing the Value of Medicare. Washington, DC: MedPAC, 53.

⁹ Medicare Payment Advisory Commission. 2006. Report to the Congress: Increasing the Value of Medicare. Washington, DC: MedPAC, 35.

¹⁰ Brown R, Peikes D, Chen A, Ng J, Schore J, Soh C. "The Evaluation of the Medicare Coordinated Care Demonstration: Findings for the First Two Years." March 2007.



potential. In late 2006, Congress mandated a specific medical home demonstration project¹¹ which the Centers for Medicare & Medicaid Services intends to implement in September 2008. The controlling legislation does not include the same budget neutrality provision. It should also be noted that regardless of what Medicare's demonstration projects reveal, there is no scientific evidence to speak to the effectiveness of the medical or health home model.

Under the fee-for-service scheme, it is primarily face-to-face services that are reimbursed; most versions of patient-family-centered care involve a great deal of time and work on behalf of patients and their families which are not face-to-face but directly related to patient care, such as charting and communicating with other physicians and staff—i.e., coordination. The Minnesota Academy of Family Physicians¹² fully promotes the idea of uninterrupted availability of health staff to patients in any and all forms: face-to-face, via telephone and e-mail, at home, and so on. The reality, however, is that the current system pays clinicians for services which occur almost exclusively in clinical settings. In response, some developing medical homes include a care management fee assessed per member in addition to the standard fees for services, though these in and of themselves may not be enough at this point to allow practices to make the financial shift.¹³ This challenge is perhaps best stated in the above-cited Robert Graham Center report, *The Patient-Centered Medical Home*, which promotes coordinated care efforts led by a personal physician: “Unfortunately, the ability of primary care to create sustained clinician-patient partnerships and provide whole-person oriented care is already eroding according to Medicare beneficiaries. Without financing that specifically supports the integration care for people with chronic diseases into primary care...patients’ experiences in the fragmented healthcare system are likely to grow worse...” Simply put, it is financially impracticable under the current payment system to practice patient-family-centered care under the medical home model that most caregivers and entities seem to support, regardless of which clinician leads the caregiving team.

Several realities of the existing health care education and delivery system suggest that nurses may be logical team leaders in the medical or health home. First, nurse education has traditionally involved a greater focus on care coordination and on the patient as an individual with psychological, social and functional dimensions that shape a person's responses to illness and disease. Martin-J. Sepulveda, MD, FACP, in his commentary on the medical home, notes that the physician skill set needs to be expanded to include skills such as leadership, team building, and coaching, for the medical home model to succeed.¹⁴ The second is that, as previously stated, physicians' face-to-face time with patients has become increasingly restricted, consequently complicating their leadership in coordination activities. Finally, in the absence of substantial scientific data to support the medical home model, one may turn to several studies which indicate no significant difference between physician- and other clinician-led care,^{15 16}

¹¹ Tax Relief and Health Care Act of 2006, Section 204 of H.R. 6111

¹² “Minnesota Academy of Family Physicians Position Paper on the Concept of a Medical Home.” March 2006.

¹³ Backer, L. A. “The Medical Home: An Idea Whose Time Has Come...Again.” *Family Practice Management*, Sept. 2007: 39.

¹⁴ Sepulveda, M-J. “The Medical Home, Round Two: Building on a Solid Foundation.” *Commentary on The Commonwealth Fund/Modern Healthcare Health Care Opinion Leaders Survey on Views on Health Care Delivery System Reform*. April 2008.

¹⁵ Lenz E, Mundinger MO, Kane R, Hopkins S, Lin S. Primary Care Outcomes in Patients treated by Nurse Practitioners or Physicians: Two-Year Follow-Up. *Med Care Res Rev*. 2004; 61; 332.



studies indicating *better* outcomes for nurse-led care and reduced costs,^{17 18} and evaluations of the effectiveness of nurse-managed clinics.¹⁹ Many aspects of that comprehensive integration—the phone calls, the e-mails, open access and coordination—are already being fulfilled by nurses in many health care settings and innovations.

Because the debate surrounding the leadership of medical or health homes is not likely to be quelled in the immediate future, one must consider the distinction between how health homes *should* be in a new health care system and how they may be implemented *now*, under the current restraints. Studies such as that conducted by Ohman-Strickland, et al, referenced above, indicate that practices employing nurse-practitioners perform as well if not better than practices employing physicians only and those employing physicians assistants; thus, stakeholders should be open to multiple and diverse options for successful models of care. The American Academy of Nursing calls for further research for evidence on the concept and potentially resultant quality improvements and cost savings and supports a broad definition of the health home, which is consistent with the principles of AAN and the nursing profession as a whole. With regard to this and all health care delivery concepts, the American Academy of Nursing consistently advocates for the use of interdisciplinary models in both education and practice to ensure the best possible care for patients.

¹⁶ Horrocks S, Anderson E, Salisbury C. Systematic review of whether nurse practitioners working in primary care can provide equivalent care to doctors. *British Medical Journal*. 2002; 324: 819-823.

¹⁷ Ohman-Strickland P, Orzano A, Hudson S, Solberg L, DiCiccio-Bloom B, O'Malley D, Tallia A, Balasubramanian B, Crabtree B. Quality of Diabetes Care in Family Medicine Practices: Influence of Nurse-Practitioners and Physician's Assistants. *Ann Fam Med*. 2008; 6: 14-22.

¹⁸ Naylor MD, Broton DA, Campbell RL, Maislin G, McCauley KM, Schwartz JS. Transitional care of older adults hospitalized with heart failure: a randomized, controlled trial. *J Am Geriatr Soc*. 2004; 52: 675-84.

¹⁹ Hughes-Cromwick P, Barkauskas V, Breer L, Pohl J, Tanner C. Evaluation of a University Consortium of Nurse Managed Primary Care: The Clinics, the Students & the Consortium. *Abstr Acad Health Serv Res Health Policy Meet*. 19: 10.



Smart Technology, Enduring Solutions

Technology Solutions Can Make Nursing Care Safer and More Efficient

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KEYWORDS

Technology, smart technology, CPOE, clinical information systems, interoperability, point-of-care devices, safety, workflow, waste.

ABSTRACT

The shortage of registered nurses in hospitals threatens to cripple healthcare delivery in the next three to five years. The demand for nursing care has increased while the willingness of nurses to stay at the bedside in acute-care settings has decreased. The American Academy of Nursing Workforce Commission developed and tested a process called Technology Drill Down in more than 200 medical-surgical patient care units in a study supported by The Robert Wood Johnson Foundation. The process identified workflow inefficiencies that could be addressed through the deployment of technology. Findings from the study indicate the need for smart, portable, point-of-care solutions that are interoperable across devices and systems. Nurses believe that technology can reduce waste and workflow inefficiency and enable nurses to provide safe, reliable, quality patient care.

Over the past two decades healthcare organizations, professional associations and the Institute of Medicine have warned the American public that failure to improve the practice environment for nurses and other health professionals would threaten our ability to provide safe, quality and effective patient care.^{1,2,3} The basis for these profound observations was the increasing complexity of acute-care environments, the increasing demand for nursing care, the aging of the American workforce and the lack of data on what work areas require improvement. In 2002, the American Academy of Nursing launched an investigation supported by The Robert Wood Johnson Foundation to identify practice environment and workflow practices that result in workflow inefficiencies, nursing dissatisfaction and turnover and ultimately affect the nurse's ability to meet the demand for safe, quality patient care.

BACKGROUND

The presence of nurses at the bedside is critical to the early identification of changes in patient conditions and the implementation



of evidenced based interventions to prevent patient harm. Nurses are essential to preventing harm to patients as documented by multiple research projects. A medication study over a six-month period determined that nurses intercepted 86 percent of potential medication errors. However, estimates of the amount of nurses' time spent in direct patient care range from 23 percent to 30 percent. Multiple factors pull nurses away from their patients, including documentation of assessments, interventions and patient response to treatment; being ready and waiting for information, supplies, equipment, medications or assistance from other team members; hunting and gathering items to provide care; traveling to and from central stations and medication rooms; and communicating with physicians and other members of the patient care team. Chaotic and complex inefficient environments contribute to nursing dissatisfaction, nursing staff turnover and diminished capacity to provide quality care.^{1,2,3,4,5,6} Flawed workflows result in inefficient use of personnel, delays in care, and compromise of patient safety and privacy.⁷

Most efforts to address the demand for nursing care have been targeted at increasing the supply of nurses. A surge in applicants to nursing schools has occurred, but the production capacity of America's nursing schools has been limited due to the shrinking numbers of nursing school faculty. In 2007, 145,000 qualified nursing school applicants were turned away due to the lack of capacity.⁸ Though more nurses are being produced, even more nurses are retiring or leaving direct patient care positions.

The aging American workforce represents a serious threat to the nation's ability to provide safe care for its populace. The average age of registered nurses is 48 with a staggering one and a half million eligible for retirement over the next five years. That represents 47 percent of the current workforce. In acute-care hospitals almost half of the workforce is age 50. The number of nurses working in acute-care settings has actually declined despite the increase in the number of licensed registered nurses in the United States from 2002 to 2004.⁹ Staff nurses increasingly cite their disappointment with their work environments and the inability to provide as much patient care as they would prefer as contributing factors to their intent to leave their job and the profession.⁵ Nurses demand changes in their practice environment to stay at the bedside. Along with their co-workers and patients, they also expect technologically advanced care. Healthcare leaders must ensure manageable workloads and provide the resources required for safe and effective care.⁷

The American Academy of Nursing (Academy) Technology Drill Down (TD2) research identified work environment factors that could be improved with the deployment of technology. Nurses and other patient care team members espoused a more efficient work environment that not only reduces waste, but also improves working conditions and the care they provide.

METHODOLOGY

The Academy engaged twenty five acute-care hospitals across the country including facilities participating in the Transforming Care at the Bedside (TCAB) initiative. Hospitals varied in size with 28

percent under 250 beds, 36 percent from 251 to 500 beds, and 36 percent greater than 500 beds. The majority were urban with only 20 percent suburban and 8 percent rural. All were not-for-profit, with 39 percent academic, 39 percent community owned, 18 percent private and 4 percent government. Seventy-two percent were teaching facilities and 44 percent were recognized as Magnet hospitals.

More than 200 patient care units representing more than 1,000 individuals participated in the two-day program. Each hospital

Nurses believe it is essential to have smart, portable, point-of-care solutions for capturing and transmitting data, as well as routine communication.

identified representatives to participate in a mapping exercise targeted to identify current workflow practices, envision idealized workflow patterns and recommend technology solutions to close the gap between current and ideal workflow practices. Representatives included registered nurses, pharmacists, information technology specialists, assistive personnel, unit clerks, therapists (respiratory, physical, occupational), social workers, pharmacists, clinical engineers, dietitians, materials management, environmental services, administrators and managers and, at some facilities, patients.

On Day 1, the participants reviewed their typical day, identifying normal workflow practices. They also described their current and ideal work environment. On Day 2, the teams selected the top workflow areas of concern, and engaged in "deep dives" to envision work environments that are enhanced through technology. The TD2 process unmasked workflow inefficiencies and impaired work environments. Participants worked in groups to prioritize the workflow practice improvements and recommend technology solutions.

FINDINGS

Nurses and colleagues across the country identified 327 workflow issues with 766 unique process issues that are part of the nurse's care delivery in medical-surgical units. When analyzed, these represented eight major workflow categories of concern: admission, discharge and transfer (ADT); care coordination; care delivery; communication; documentation; medication; patient movement; and supplies and equipment.

Each of these workflows can benefit from using technology. Nurses consistently emphasized the need for improved safety, desire for standardization of processes, and system integration. For example, an efficient clinical information system (CIS) with an easy-to-use interface, integrated with all other systems and departments in the institution would expedite the ADT process. Patients could initially enter their own information concerning reason for admission and medical history during the ADT process. Their smart cards or personal health chips could be scanned to begin to populate the CIS. Summaries from previous admissions would be obtained and available for review. Information obtained during the ADT process could automatically trigger a bed assignment and notify providers of the patient's arrival, impacting both the patient movement and communication workflows.

Information captured would begin the documentation process

**Table 1: Categories of technology solutions.**

IS	785
Device	569
Hardware	167
Telecommunication	16
Tool	8
Software	4
Non-tech/Non-InfoTech	42

and impact this workflow. Since systems would be integrated, documentation could occur at each point where care is rendered, increasing efficiency and reducing costs, and increasing safety of care. Bedside entry systems could interface to medication systems, supply systems, and equipment systems to trigger ordering, charging and instructions as the patient is examined and orders are entered at the bedside. Robotic systems can be used to deliver needed supplies and equipment to the bedside and deliver collected specimens to the laboratory. Thus the workflows of medications and supplies and equipment are also impacted by the technology. Needed tests would automatically enter into a centralized

Table 2: Specific types of technology. (Descending frequency)

Bedside	130	Smart pump	15
CPOE	94	WOW	14
EMR (CIS)	92	Smart card	13
Tracking	76	Kiosk	6
Barcoding	69	Pyxis	5
Robot	38	Laptop/tablet	5
RFID	33	Decision support	3
PDA	32	Camera	3
Tube system	30	Data warehouse	2
MAR	25	GPS	2
Smart bed	19		

scheduling system to positively impact the workflow of care coordination and communication.

One of the biggest problems identified by nurses is the availability of needed hardware to successfully complete their work list. Nurses walk miles during their shift finding equipment and supplies. RFID technology and robots could impact their care delivery tremendously. Improving this workflow would allow nurses more time for communicating discharge instructions with

patients and giving them needed time to counsel patients about medications and interventions included in their care.

TECHNOLOGY SOLUTIONS

In the TD2 study, nurses and colleagues identified 599 unique statements in the total of 1,591 technology solutions statements they felt would assist with safe and efficient patient care. In coding the statements the reviewers indicated if the statement pointed to an overall category of technology, if it indicated a specific type of technology, up to two descriptors or technology requirements denoted, and up to two functions the technology would address. Some statements named specific types of technology solutions, e.g., RFID technology for tracking equipment, others described desired features or technology requirements, e.g., voice communication device. When examining the overall category of technology, 785 statements indicated a need for an information system and more than 500 statements designated the need for a technology device to facilitate workflow. (See Table 1.) An additional 167 statements pointed to the availability of hardware in the practice environments. Sixteen statements pointed to the need for telecommunication technology.

When examining the specific type of technology indicated in the statement, the most frequent was bedside technology, followed closely by an electronic medical record (including clinical information system), and CPOE. The remaining list of specific types of technology named by study participants is as follows in descending order of frequency: tracking, barcoding, robot, RFID, MAR, PDA, smart bed, smart pump, wireless on wheels, laptop/tablet, smart card, tube system, kiosk, decision support, GPS, camera and data warehouse. (See Table 2.)

Nurses brainstormed functionalities that make technology faster, more convenient, compact, and easier to use. The need for interoperability and integration topped the list of functionalities followed by strong preferences for hands free features (voice activation) and portability (hand-held) for devices requiring user interface. (See Table 3.)

Technology use has become more common in healthcare but has not been adopted in a way that reaches its fullest potential of use. Technology should be ubiquitous in nursing practice and if applied appropriately can transform clinical care. Clinical transformation is defined as clinical

and non-clinical process improvement that is supported by technology. Technology must be seen as supporting and not driving the processes of care and improvement to reach the desired outcomes.

The technologies nurses envisioned reflect a broad range of functions touching every aspect of workflow and care. Nurses believe technology can greatly reduce the burden associated with the workflows of documentation, medication administration,

**Table 3: Technology solution requirements.**

Integrated	211	Translation	34
Voice-activated	133	Wireless	30
Handheld	84	Portable/mobile	25
Smart	41	Notification	19
Automatic/auto pop	39	Hands free	19
Biometric	37	Interactive	16
Touch screen	37	Centralized	16

Table 4: Categories of functions impacted by technology solutions. (Frequency greater than 10)

Category	Frequency
Documentation	232
Medication	167
Communication	157
Orders	109
Equipment	86
Supplies	65
Multifunction	64
Information	52
Education	51
(Patient)	(28)
(Unspecified)	(15)
(Provider)	(8)
Locator	47
(Patient)	(33)
(Staff)	(9)
(Physician)	(5)
Patient ID	33
Availability	30
Scheduling	28
(Patient)	(15)
(Unspecified)	(11)
(Staff)	(2)
Sign on/access	27
Report	27
Care delivery	26
Family	18
Plan of care	17
Discharge planning	14
Data entry	11

communication, orders, and securing equipment and supplies. Many devices and technology applied at the point of care can also be multifunction. Technology solutions can and should improve a variety of functions of work that complement hands-on care. (See Table 4.)

Most often individuals think of information systems, clinical information systems in particular, when technology is discussed. It is true that healthcare is an information intensive industry. In 2004, President Bush called for widespread adoption of interoperable electronic health records within 10 years. Today, only about one fourth of hospitals have comprehensive information systems in place. Nurses report that existing systems are often splintered, unable to interface and require multiple log-on to access or enter data. They call repeatedly for integrated systems to ease their workload and help them reach clinical transformation. In addition they want access to these integrated systems from the point of care, most often at the bedside. Some clinical information systems still use clumsy, word based interfaces rather than graphical user interfaces that save time and are more easily learned. It is time to develop systems that reduce the workload rather than requiring providers, nurses in particular, to develop a work around to use the clinical information system to support their practice.

Information systems are a crucial technology but only one kind of technology that can bring about clinical transformation.¹⁰ Another type of technology is biomedical monitoring systems including noninvasive blood pressure devices or wireless telemetry monitors used in acute care and even home care settings. Biomedical systems can increase patient privacy and confidentiality by using physiological scans such as retinal images or fingerprinting to authorize care providers to have access to patient data. This technology eliminates the need for remembering passwords and should stop the practice of taping passwords to keyboards or monitors in case they are forgotten. Wireless communication and connectivity technologies allow the care team to communicate readily at the point of care, avoiding unnecessary travel to a facility or walking within a facility that delays implementation of critical interventions while receiving expert consultation from a distance.

An additional class of technologies are instrumental in improving patient safety. These technologies imbed computer chips that gather information and respond within a range of preset parameters. Known as smart technology, because it performs a task we think an intelligent person can do, it includes smart IV pumps, smart beds, and smart cards. Smart beds are able to monitor patients' vital signs and mobility without using electrodes. Smart beds can interface with information systems to transfer information collected and alert healthcare providers when a patient is getting out of bed unattended. Smart cards collect and store information about patients that is crucial to providing safe care to that individual patient. Such information would help many individuals following natural disasters, such as hurricanes or earthquakes,

communication, orders, and securing equipment and supplies. Many devices and technology applied at the point of care can also be multifunction. Technology solutions can and should improve a variety of functions of work that complement hands-on care. (See Table 4.)



provided they keep the cards with them. A controversial proposal is to implant a chip into individuals so this crucial information is not lost as a result of lifestyle or disaster.

Barcode technology is also included in the class of technologies improving patient safety and is used predominately with medication administration systems to match patients and prescribed drugs, thereby reducing medication errors. Barcode technology can also be used for equipment and supplies distribution and charging, automating portions of the process. Related to equipment and supply distribution, is the use of RFID technology. Nurses spend an inordinate amount of time tracking supplies and equipment. Radio frequency identification (RFID) technology uses radio waves to locate and track items needed for patient care, reducing time used to hunt and gather needed items to deliver care. Robotic systems are another technology that assists with distribution of equipment, supplies, and specimens. Robots have needed computerization to allow them to pick up or deliver items throughout the institution. They can be programmed to summon elevators and enter them, assuring priority status for their task. They move freely on their planned route, stopping when an obstacle, including a person, is in their path and redirecting themselves on a safe route to their assigned destination.

Decision-support systems are another category of technology that can impact nursing practice. Mimicking the decision process of experts these systems can help novice nurses reach a safer decision about patient care when those experts are not available to them, such as during the night or on weekends when fewer resources are available. And finally educational and reference technology represents networked patient education systems, patient bedside Internet access, and unit-based Internet access for nursing personnel. This type of technology allows patients and providers continuous access to information needed to make informed decisions about care.

IMPACT

Nurses believe it is essential to have smart, portable, point-of-care solutions for capturing and transmitting data, as well as routine communication. They also want technology to reduce demand on nursing time by eliminating waste in care resulting from inefficient workflows. The study demonstrated the greatest impact of technology is on written communication and data, followed by improvement in safe delivery of care, system integration, supply chain, and oral communications. Technology can also eliminate waste, alleviate some staffing and workload issues, assist in tracking staff, physicians, and patients, facilitate the medication cycle, and improve the efficiency of the physical environment. Additionally technology can reduce some of the stressors that result in an emotional reaction to inefficient workflows or poor work environments.

Nurses expressed their disappointment with many existing technologies that lead to “work-arounds” or ways to adapt technology that is not user-friendly, or does not provide necessary functionality. It is clear from the descriptions of work practices, that the medical-surgical inpatient RN workflow is highly com-

plex. The environment is chaotic, and there is a need for speed in all transactions and interfaces with any type of technology. Around 60 percent of the study sites utilized some type of electronic nurse charting as well as CPOE (computerized provider order entry). The combination of part paper, and part electronic systems, was repeatedly cited as complicating workflows. Further, the desire for rapid retrieval of data as well as more user-friendly systems and devices, underscored the desire for efficiency at the point of care.

SHAPING AND ADOPTING TECHNOLOGY

It is time to build the technology nurses want. The voice of the nurse benefits hospital executives and technology producers.

The average age of registered nurses is 48, with a staggering one and a half million eligible for retirement over the next five years—47 percent of the current workforce.

Nurses do not want to be passive consumers of technology, but they do want to be partners in the design and testing of new and innovative applications and devices that are patient friendly and affordable. Involving nurses as end-users in the early stages of system analysis and design specifications can lead to better adoption of new technology, as well as identifying how current technology can be adapted for greater user acceptance. Nurses have articulated their needs for information systems and devices that automate manual functions, speed the delivery of information, and add incremental measures of safety. Nurses' unique needs should drive technology development, with better functionality and integration across systems. Nurses want technology solutions that will not only improve delivery of care, but also reduce nursing demand, and reduce the physical burden of work, thus improving retention. It is important to remember nurses often have information and work process needs different from other healthcare providers, which call for unique solutions.¹¹ Improved technologies can eliminate waste in nursing workflow resulting from inefficient work patterns, interruptions, inaccessible information and documentation and missing supplies, equipment and medications.

Reducing the opportunity for error improves patient safety. Technology driving medication administration systems, improved communications, timely acquisition of equipment and supplies, and fool-proof patient identification are just some applications that improve safety.

There is great value in point-of-care devices and systems that accomplish data entry or retrieval, and documentation more quickly. Wireless systems that provide rapid efficient communication, free up the nurse to spend more time on patient interaction, as well as higher-level cognitive functions such as planning and analyzing care are needed. The value added benefits of technology and automation in nursing, enable care to be delivered in a timely, compassionate manner.¹² Technology solutions should expedite multiple actions associated with a task, for instance documenta-



tion of vital signs when measured by an automated device, issuing a charge and adjusting inventory when retrieving a supply item, and eliminating duplicate communication either written or voice. Technology solutions should also provide access to resources in the moment—physicians, pharmacists, and interpreters ranking at the top of the list.

THE IDEAL MEDICAL-SURGICAL UNIT ENVIRONMENT

It is the beginning of the shift and the nurse has information about the patients assigned for the next twelve hours. The information is in a hand-held device which also allows easy retrieval of orders, medication list, task list, plan of care, and test results. The device also allows two way communication with nurse call, paging system, internal and external phones, the clinical information system and the inter- and intra-net. Smart equipment is collecting and downloading physiologic measurements along with patient location and movement within the bed, room, and bathroom. The patient and family use the bedside hardware to communicate with internal departments (e.g., meal selection, entertainment, patient education), external family and internet, and summon assistance from the nurse. The bedside device also provides translation services on demand, recording and transcribing essential information. Barcode or RFID readers in the patient's room ensure accurate patient identification, staff identification and tracking, complete monitoring and recording of the medication cycle, as well as reordering and charging for supplies and equipment. The clinical information system (equipped with bio-identification for logon) provides quick access to data and decision support software that alerts the nurse to changes in the patient's condition that are potentially threatening. Voice commands activate internal communications as well as data entry into the CIS. Throughout the shift, replenishment of medications, nutritional aids, supplies and linens occurs automatically without additional action on the part of the nurse. The room is programmed to dim lights and play soothing music, or conform with other pre-identified preferences so the patient can enjoy periods of rest and sleep. When the patient logs into the bedside hardware to check-out, a hard copy (or e-mail) record of discharge instructions prints for pick up as do prescriptions, and follow-up contact information. The check-out also signals the transportation team for pick up and the patient arrives at the front door to meet their family who are arriving in patient pick-up. The nurse activates the bed coordinating check-out system to ensure the room is made ready for the next patient. All in a day's work, but also mostly hands free.

HEALTH POLICY IMPLICATIONS

Nurses support implementation of standards for interoperability. Their repeated requests for sharing data across systems were consistent with the work of the Healthcare Information Technology Standards Panel (HITSP), and the Office of the National Coordinator supporting the harmonization of standards needed in products that enable the movement of electronic health information from one entity to another.¹³ Nurses support federal initiatives

to remove barriers to promote interoperable health IT that will improve quality and efficiency of healthcare, as well as empower consumers to manage their health information.

WORKFORCE IMPLICATIONS

Returning more RN time to direct patient care positively influences patient outcomes, increases nurse satisfaction, and helps address the shortage of nurses. It is well established that the greater presence of RN time with patients, the lower incidence of undesirable complications of hospitalization such as falls, urinary tract infections, pressure ulcers, and mortality. Not only nurses who are aging, but all nurses want a manageable workload unencumbered by inefficient systems. Nurses are not technology-

A patient relationship management application allows hospitals a better understanding of patients' needs and wants through improved communication via follow-up systems.

averse. They embrace tools that help prevent errors, improve process, and provide information to allow them to practice confidently and competently. Technology will not replace nurses, but will augment and automate essential work processes.

Technology should be ubiquitous, helpful and unobtrusive. If appropriately designed, technology will positively impact each of the workflows identified as areas of concern by the nurses in the TD2 study. We need to develop technology that will reduce the demand placed on nurses in today's fast-paced and labor intensive environments. Nursing-technology partnerships are vital for our future.

The TD2 process can help identify inefficient and burdensome workflow processes that can be improved with technology. The Academy offers a free DVD describing the entire process on its website. The Facilitator's Guide can be viewed and downloaded from the website at AANNET.ORG.

Note: The authors wish to acknowledge the Robert Wood Johnson Foundation for their support, Prism e-solutions for use of their program management platform equation, the assistance of Marjean Griggs, Project Director, and the participants at hospitals across the country. **JHIM**

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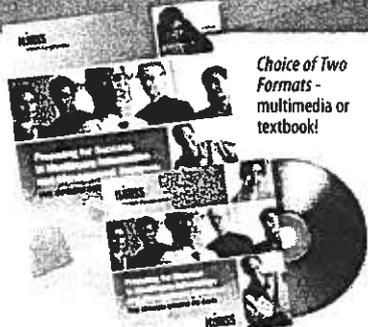
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ORIGINAL ARTICLE

A 36-Hospital Time and Motion Study: How Do Medical-Surgical Nurses Spend Their Time?

Ann Hendrich, RN, MSN, FAAN
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Abstract

Context: Nurses are the primary hospital caregivers. Increasing the efficiency and effectiveness of nursing care is essential to hospital function and the delivery of safe patient care.

Objective: We undertook a time and motion study to document how nurses spend their time. The goal was to identify drivers of inefficiency in nursing work processes and nursing unit design.

Design: Nurses from 36 medical-surgical units were invited to participate in research protocols designed to assess how nurses spend their time, nurse location and movement, and nurse physiologic response.

Main Outcome Measures: Nurses' time was divided into categories of activities (nursing practice, unit-related functions, nonclinical activities, and waste) and locations (patient room, nurse station, on-unit, off-unit). Total distance traveled and energy expenditure were assessed. Distance traveled was evaluated across types of unit design.

Results: A total of 767 nurses participated. More than three-quarters of all reported time was devoted to nursing practice. Three subcategories accounted for most of nursing practice time: documentation (35.3%; 147.5 minutes), medication administration (17.2%; 72 minutes), and care coordination (20.6%; 86 minutes). Patient care activities accounted for 19.3% (81 minutes) of nursing practice time, and only 7.2% (31 minutes) of nursing practice time was considered to be used for patient assessment and reading of vital signs.

Conclusion: The time and motion study identified three main targets for improving the efficiency of nursing care: documentation, medication administration, and care coordination. Changes in technology, work processes, and unit organization and design may allow for substantial improvements in the use of nurses' time and the safe delivery of care.

Introduction

The US hospital system is in a state of transition. Hospitals face daunting challenges, such as evolving technologies and reimbursement policies, demographic trends, competing fiscal demands, and a worsening workforce shortage. This point in time also affords a unique opportunity, as the US is in the midst of one of the largest hospital-building and -renovation booms in history.¹ A reconsideration of hospital design and work processes holds the potential to affect the efficiency and effectiveness of care delivery for the foreseeable future. Bold changes in the hospital work environment are imperative to ensure the sustainability and affordability of the hospital as part of the American health care delivery system.

Nurses are the linchpin of hospital care delivery. These frontline caregivers represent a critical and costly resource; maximizing the efficiency and effectiveness of nurses is essential to the integrity of hospital function and the promotion of safe patient care. A growing evidence base links more nursing time per patient-day with better patient outcomes.²⁻⁵ However, increased nurse workload and the growing nursing workforce shortage⁶ reduce the amount of nursing time available for patient care activities.

How medical-surgical nurses spend their time is a key driver of bold changes in the hospital work environment.⁷⁻⁹ Current re-

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ORIGINAL ARTICLE

A 36-Hospital Time and Motion Study: How Do Medical-Surgical Nurses Spend Their Time?

search suggests that two interrelated elements—nurse work process and the physical hospital environment—contribute to the efficiency and safety of patient care.¹⁰⁻¹² An understanding of how nurses spend their time will target opportunities for nursing care effectiveness through improvements in management, workforce, work processes, and organizational culture.¹³

We undertook a time and motion study to provide an evidence-based understanding of how medical-surgical nurses spend their time and of the influence of unit architectural layout on nurses' use of time and distance traveled. Documenting the drivers of inefficiency in nursing practice will allow for targeted changes to the work environment to positively influence patient safety and quality of care.

The primary objectives of the study were to identify how nurses spend their time during their shift and to pinpoint environmental variables in the acute-care nursing workplace that can be altered to positively affect the efficiency

of nursing care and, ultimately, patient safety.

Specifically, the study aimed to determine:

- the amount of time nurses spend on specific activities: nursing practice, unit-related functions, nonclinical activities, and waste
- the distance traveled by the average nurse during a typical shift, and whether this movement is efficient
- the physiologic impact of the work environment on nurses.

This study was also designed to provide baseline data regarding documentation activities prior to the installation of electronic health record (EHR) technology in specific units. These findings are not included in this article because of complications in the analysis of the data collected.

Methods

The time and motion study was conducted at 36 hospital medical-surgical units within 17 health care systems and 15 states. Together, these geographically diverse health

care systems operate a total of 274 hospitals with more than 63,000 beds. Each participating study health system and hospital's institutional review board approved the study protocol.

Study Units and Participants

From a list of all eligible medical-surgical units at each of the participating hospitals, one unit per hospital was randomly selected for inclusion in the study. An eligible medical-surgical unit was defined as a unit in which patients who require less care than that which is available in intensive care units, step-down units, or specialty care units, and receive 24-hour inpatient general medical services, postsurgery services, or both general medical and postsurgery services. These units may include mixed patient populations with diverse diagnoses and of diverse age groups who require care appropriate to a medical-surgical unit.

Nurses at each participating unit meeting the eligibility criteria were invited to join the study; participa-

	Study protocol			
	A	B	C	D
Purpose	Baseline data for EHR implementation	How nurses spend their time	Nurse location and movement	Nurse physiologic response
Data collected	All documentation activities during shift	Random sampling of work activities	Distance traveled and location in nursing unit	Physiologic parameters, steps taken
Study period	All on-shift hours for seven days	All on-shift hours for seven days	All on-shift hours for seven days	23 hours/day for seven days
Device	PDA	PDA	RFID ^a	Armband ^b
Method	For each documentation activity <ul style="list-style-type: none"> • Select category • Note activity duration 	When PDA vibrates, select <ul style="list-style-type: none"> • Location • Activity • Cognitive category 	Nurse location tracked continuously via RFID tags when on unit	Automatic recording of parameters throughout 23-hour period
Participation	Nurses randomized to protocol A or B		All nurses ^c	Voluntary
Participating nurses	385	382	750	288
Nurse shifts studied	1113	1083	1906	N/A

^a Radianse, Inc, Andover, MA.

^b SenseWear Pro Armband (BodyMedia, Inc, Pittsburgh, PA).

^c One study unit did not participate in protocol C.

EHR = electronic health record; PDA = personal digital assistant; RFID = radio frequency identification.



tion was voluntary. To be eligible, nurses were required to be licensed (RN, LPN, or LVN) and to provide direct nursing care for patients on the study unit. In-house pool nurses were eligible if they worked on the study unit for more than eight weeks. Ineligible nurses included: float and agency nurses; nurse preceptors and preceptees; and nursing supervisors, charge nurses, or other nurse specialists, unless they provided direct nursing care with the same acuity and patient load as other participants.

Study Protocols

The study consisted of four protocols: A, B, C, and D (Table 1). Nurses who consented to participate were randomized to either protocol A or protocol B. All nurses were asked to participate in protocol C, and any nurse who volunteered to do so took part in protocol D. For each protocol, study staff collected data for seven consecutive days, 24 hours a day, except for protocol D, for which data were collected for 23 hours a day.

Protocol A: Baseline Data for EHR Implementation

Nurses participating in protocol A were supplied with personal digital assistants (PDAs) to record all documentation-related activities during their shifts. With these PDAs, unit nurses documentation categories from the following options:

- Admission paperwork
- Assessment
- Transcribe orders
- Writing care plan
- Medications paperwork
- Teaching
- Discharge paperwork
- Other.

For each documentation activity, nurses selected "start" on their PDA, then the documentation category.

When they completed the activity, nurses pressed "stop." Protocol A sought to measure the amount of time spent on nursing work processes before the installation of EHRs. Pre- versus postinstallation results will be reported elsewhere.

Protocol B: How Nurses Spend Their Time

Nurses in research protocol B carried PDAs that vibrated at random times during their work shift to remind them to stop what they were doing and record the activity in which they were engaged. Each PDA was programmed to vibrate 25 times per 13-hour shift (in case of overtime), with a minimum interval of ten minutes between alarms. If the nurse did not respond immediately, the PDA continued to vibrate every 15 seconds until the nurse responded. When the PDA vibrated, the nurse was asked to select from categoric data sets describing where they were (patient room, nurse station, on unit, or off

unit) and what they were doing (Table 2). For this report, the term *patient room* refers to any patient room that the nurse visited, not a single patient room.

The nurses' activities were clustered into categories and subcategories of how much time nurses spend on activities considered to be nursing practice, nonclinical, unit-related, or waste. These categories and subcategories (Table 2) were selected to cluster sufficient increments of time to make strong comparisons and to identify important targets for change. The goals were to reveal drivers of inefficiency in how nurses spend their time and to identify opportunities to improve efficiency through changes to unit design and/or organization.

The subcategory of patient care activities does not represent a comprehensive accounting of all activities related to patient care. Other care-related subcategories, such as medication administration, care coordination, and documenta-

Table 2. Categories and subcategories of nursing time for protocol B

Nursing activity category	Nursing activity subcategory
Waste	Waiting
	Looking/retrieving
	Delivering
Unit-related functions*	Unit-related functions
Nursing practice	Patient care activities ^b
	Care coordination
	Medication administration
	Documentation
	Assessment/reading vital signs
Nonclinical	Personal time
	Patient/family care
	Administration/teaching

*Unit-related functions included preparing equipment, counting narcotics, transporting patients between departments, using fax or copy machine, and reviewing or updating a status board.

^bPatient care activities included providing care or treatment to the integumentary system; providing specific education about the patient's condition and nursing needs; loss of bowel or bladder control in which the nurse cleans the patient, linens, or floor; participating in or dealing with a rapid-response team, code, or near code; participating in general discussion with the patient; conducting intervention activities such as intravenous site changes and urinary catheter insertion; preparing the patient for hospital admission or discharge; helping the patient with activities of daily living; providing specific education about the patient's condition and nursing needs; assessing patient while off unit; conducting nursing or medical intervention while off unit.



tion were separated from patient care activities to help identify what activities consume nurses' time. These categories, therefore, are intended to be utilitarian rather than absolute.

Protocol C: Nurse Location and Movement

To monitor nurse location and movement, nurses in research protocol C wore radiofrequency identification (RFID) tags (Radianse, Inc, Andover, MA) that continually monitored where they were, how far they traveled, and the duration of activity in any one spot. Signals from each RFID tag were transmitted to an indoor positioning system installed on each unit for the study week. The RFID tags measured the distance traveled in relation to the physical layout of the nursing unit. As nurses spent only 20 to 30 seconds in any one spot, each nurse was fitted with four tags to

ensure that grouping signals would not be missed.

Protocol D: Nurse Physiologic Responses

To assess the physical impact of workload and stress on the nurses, volunteers from any study group had their physiologic response monitored by specialized armbands (SenseWear Pro Armband, BodyMedia, Inc, Pittsburgh, PA) to measure the physiologic metrics both on and off shift for 23 hours a day for a seven-day period (nurses removed armbands for one hour per day). The armbands simultaneously measured skin temperature, near body temperature, galvanic skin response, heat flux, and motion via a two-axis accelerometer. From these data, estimates were made for total energy expenditure (calories burned), distance traveled, speed, active energy expenditure, sleep, and categories of physical activity.

Site Implementation

Before study startup, the optimal placement of IPS receivers were mapped on computerized architectural drawings (CADs) of the study unit. Two days before the data-collection period, the temporary wireless access points were installed and tested to ensure proper functioning. At each study unit, the necessary hardware was installed, and staff and management members were oriented regarding the purpose of the study and the use of devices before data collection. The hospital study coordinator managed the data-collection process with the unit manager and nurse executive.

The study was conducted at each site during a period of seven consecutive days. Data for all units were collected between June 2005 and June 2006.

Unit-Assessment Data-Collection Tool

A standardized unit-assessment data-collection tool was completed by each study unit's nursing manager to collect more than 200 hospital unit demographic, technologic, and architectural variables. These variables were used to interpret unit and nurse variation, as well as cluster relationships that correlated or explained the difference in efficiency and nursing time spent with patients.

Data Management and Statistical Analysis

The statistical and technical methods used in this study will be reported in detail in a separate publication. In brief, each hospital unit transmitted raw data to computer scientists at Purdue University who then stored the data in an Oracle database. Data was transferred from the Oracle database to an R

To assess the physical impact of workload and stress on the nurses, volunteers ... had their physiologic response monitored by specialized armbands ...

Participant status and reason codes	Subtotal	Total
Total nurses in study units		1420
Ineligible for study		339
Does not meet nurse definition	109	
Inactive	23	
New nurse in orientation	19	
Not scheduled during study	169	
Other	19	
Total eligible for study		1081
Did not consent		255
Felt that study entailed "Big Brother watching"	3	
Disliked consent process	11	
Just said no	116	
Other	43	
Too busy to "mess with"	43	
"Too much equipment" used in study	11	
Would not participate in any study	28	
Consenting for study		826
Did not complete study		63
Did not start study	59	
Voluntarily dropped out during study	4	
Completed study		763



system for graphics database. A new framework was used for data display in which a "visualization database" exhibited all cleaned data as well as summary statistics. This deep visualization allowed for the development of valid statistical models and the performance of appropriate data analyses.

Cross-Validation Between Protocols

Data collected from the different protocols allowed for cross-validation of certain findings. Distance traveled on the unit, for example, was evaluated in both protocol C (through RFID tracking) and protocol D (through armband accelerometer). Nurse location could be validated between protocol B (PDA selection of location) and protocol C (RFID-determined location). Before the study was begun, location data for protocol C was validated by tracking "walks in the units." RFID-tracked location was compared with audio recordings from unit walk-through.

Results

Profile of Participating Hospitals and Nurses

Of the participating medical-surgical units, 33 were in urban facilities (3 rural) and 17 were part of teaching/academic institutions. The average length of stay for the study units ranged from 2.62 to 8.67 days (average, 4.37 days). Unit sizes ranged from 11 to 20 beds to 81 to 90 beds (median, 31–40 beds).

A total of 1420 nurses were identified at the 36 study units. Of this total, 339 were deemed ineligible by study criteria; 826 of the eligible nurses consented to participate, and 763 completed the study (Table 3). No participants were removed from the study because

of noncompliance. The majority of participants were RNs (783), and the remainder were LPN/LVN (43). Nurses' educational background was as follows: 57%, AD or nursing diploma; 41%, BSN; 2%, MSN.

The study population of 767 nurses were randomized, 385 to protocol A and 382 to protocol B (Table 1). All nurses were included in protocol C, with the exception of nurses at one study unit, leaving a total of 750 participants. For protocol D, 288 nurses volunteered. In all, data were collected for 2201 nursing shifts (2065 RNs; 136 LVNs/LPNs) and 21,882 total hours (20,573 RNs; 1309 LVNs/LPNs). Average shift length was 9.94 hours.

Nurses randomized to protocol B responded on average 17 times per shift. Figure 1 illustrates the average time spent by nurses in each location category (patient room, on the unit, off the unit, nurse station); an additional 45 minutes per average 10-hour shift (7.5% of a ten-hour shift) were not accounted for by participants (no response, no location chosen, undefined, or pushed wrong response). Percentages reported below and in Figures 1 through 5 do not include undocumented time.

Figure 2 illustrates how nurses spent their time by activity category. More than three-quarters of nurses' time was devoted to nursing practice (417 minutes, 77.7% reported time per shift). Activities considered to be waste consumed 36.3 minutes, or 6.6%, of reported time per 10-hour shift. Nurses' time was further analyzed according to activity by location, and by subcategory. Figure 3 illustrates the amount of time per activity category in each of the four locations. Nursing practice accounted for the majority of time

in all locations except off the unit. Waste and nonclinical activities accounted for larger proportions of time spent by nurses on the unit (excluding patient room and nurse station) or off the unit, compared to the patient room and nurse station. Time devoted to nonclinical activities was approximately equivalent for nurse station (20.6 minutes), on the unit (17.8 minutes), and off the unit (18.2 minutes); nonclinical activities accounted for only 11.3 minutes of time spent in the patient room.

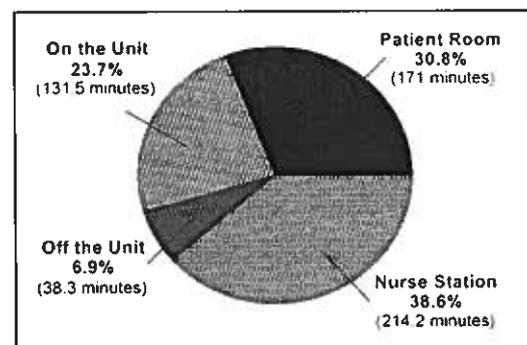


Figure 1. Reported nurse time by location.

In protocol B, location was selected by the nurse from four categories: patient room, nurse station, on the unit, and off the unit. Data were normalized to a 10-hour shift (600 minutes). Of this total, 45 minutes (7.5% of total) were not accounted for by participants (data not shown). Data in chart are percentages of all reported time (555 minutes).

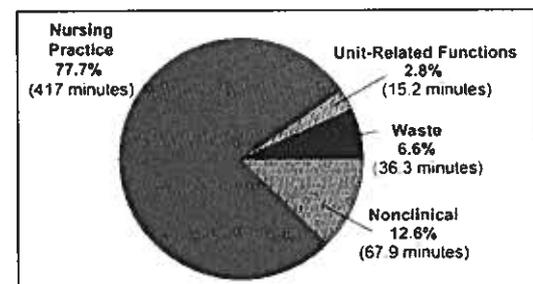


Figure 2. Reported nurse time spent by care category.

In protocol B, activity category was selected by the nurse from the following: nursing practice, nonclinical, unit-related functions, or waste. Data were normalized to 10-hour shift (600 minutes). Of this total, 63.5 minutes (10.6% of total) were not accounted for by participants (data not shown). Data in chart are percentages of all reported time (536.4 minutes). Nursing practice accounts for over three-quarters of all nursing time.

ORIGINAL ARTICLE

A 36-Hospital Time and Motion Study: How Do Medical-Surgical Nurses Spend Their Time?

Nursing Practice: Locations and Subcategories

Nursing practice time was concentrated in the patient room (155.7 minutes) and nurse station (180.6 minutes) (Figure 4A). Within nursing practice, the greatest proportion of time was devoted to documenta-

tion (147.5 minutes, 35.3%, Figure 4B). Care coordination—communication with team members or other departments—accounted for 86 minutes (20.6% of nursing practice). Patient care activities accounted for less than one-fifth of total nursing practice time (81 minutes, 19.3%);

time spent on assessment and obtaining vital signs was least among subcategories of nursing practice (30.9 minutes, 7.2%).

The subcategories care coordination and documentation were further analyzed by dividing each according to nurses' location (Figure 5A/B). Both were performed predominantly at the nurse station (documentation: 119 minutes, 80.6% documentation time; care coordination: 59.4 minutes, 69.2% care coordination time). Only a minority of care coordination (2.4 minutes, 2.8%) and documentation (4.13 minutes, 2.8%) took place in the patient room.

Unit Architecture

Three different unit architectural types were included in the study: "racetrack," "corridor," and "radial." Of 36 study units, 19 had a racetrack design; 12, corridor; and 5, radial. The effects of these three design types and design subtypes on nurses' activities were evaluated. No consistent, statistically significant relationship was found between the various architectural types and nursing time spent with patients.

Distance Traveled

Individual nurses across all study units traveled between 1 and 5 miles per 10-hour daytime shift. During daytime shifts, average distance traveled ranged between 2.4 and 3.4 miles per 10 hours (median, 3.0 miles).

Nurses traveled less distance during nighttime shifts when most activities and patient tasks change (patients are less mobile, pain often increases). On night shifts, average distance traveled ranged between 1.3 and 3.3 miles per 10 hours. The median distance was 2.2 miles, a reduction of 0.8 miles per 10 hours from daytime shifts.

Nurses spent considerably less

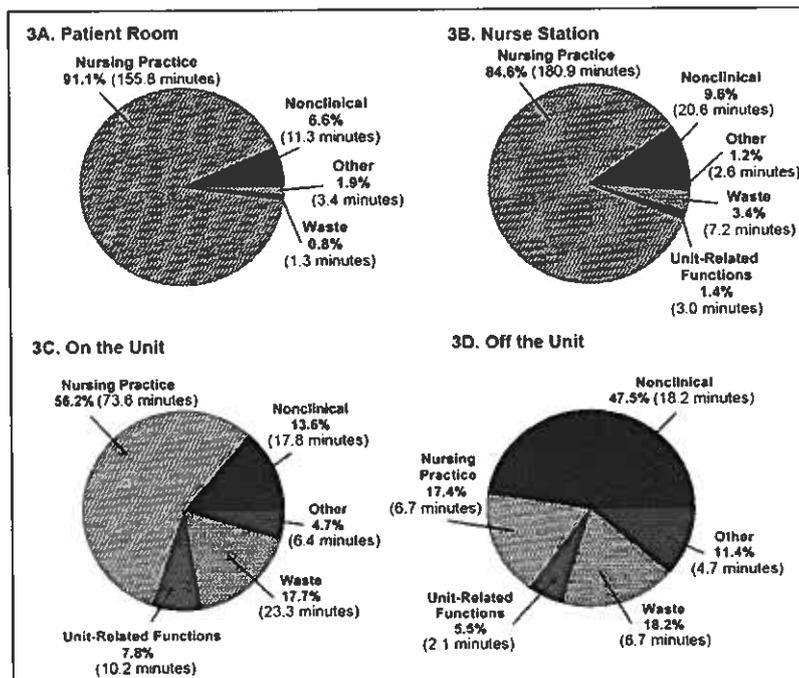


Figure 3. Reported nurse time in each activity category by location.

Activity category data from protocol B were examined by each of the four nurse locations: patient room (3A), nurse station (3B), on the unit (3C), and off the unit (3D). Unreported time is categorized as "other." Nursing practice accounted for most time in the patient room and at the nurse station and a majority of time on the unit. Time off the unit was fragmented into multiple categories.

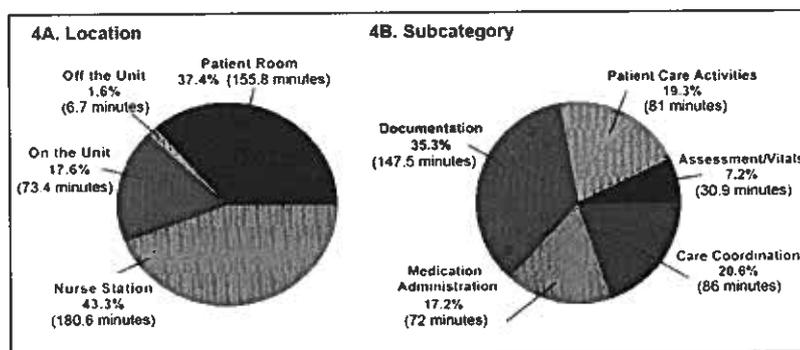


Figure 4. Nursing practice by location and by subcategory.

Analysis of nursing practice time by location revealed that the largest proportion of nursing practice was done at the nurse station (4A). Three subcategories of nursing practice (4B) consumed most nursing practice time not accounted for by patient care activities: documentation, medication administration, and care coordination.



A 36-Hospital Time and Motion Study: How Do Medical-Surgical Nurses Spend Their Time?

time moving when they were not at work. While they were off shift during the daytime, distance traveled varied from 1.2 miles to 3.5 miles. The median was 2.1 miles, or 0.9 miles fewer per 10 hours compared with daytime work shifts.

Variation Between Shifts

Distance traveled varied widely by shift. Distance per shift varied by a factor of four or more, even within the same unit (data not shown). Time spent on various activities (including documentation) also varied considerably between shifts. Of interest, the variability between individual nurses on the same unit was often greater than the variance across different hospital units.

Physiologic Impact

The normalized metabolic equivalents (nME), defined as energy expenditure during activity normalized to energy expenditure during sleeping time (ie, nME = 1 during sleep), were calculated for nurses in protocol D. The median nME for nurses on daytime shifts was 1.71. Nurses working on night shifts had a reduced nME, with a median of 1.52, an 11% reduction. While they were off shift, nME dropped to a median of 1.5, a 12% reduction from the daytime shift.

Discussion

This study is the first hospital environmental study to quantify how nurses spend their time, in real-time and in real work contexts. The findings demonstrate that nurses spent more than three-quarters of their time on nursing practice-related activities—but less than one-fifth of all nursing practice time on activities defined as patient care activities. Three other activities accounted for the majority of nursing practice time: documentation, care coordina-

tion, and medication administration. Only 7.2% (31 minutes) of nursing practice time was dedicated to patient assessment and recording of vital signs.

Of all reported time, 6.6% (36.3 minutes) was categorized as waste. Activities within this category—many of which were “hunting and gathering” behaviors—are clearly targets for improving efficiency. The much larger proportions of time devoted to care coordination, medication administration, and, in particular, documentation may also represent opportunities for process improvement. Documentation accounted for the largest proportion of nursing time; in fact, this category by itself accounts for 27.5% of all reported time, more than unit-related functions, nonclinical activities, and waste combined.

Among locations, the nurse sta-

tion featured prominently. Nurses spent the largest proportion of their time—38.6% (214.2 minutes)—at the nurse station, compared with less than one-third (171 minutes) in the patient room. It is also the primary location for activities related to documentation and care coordination. Whereas time spent in the patient room and at the nurse station was almost entirely devoted to nursing practice (Figure 3), nurses' time at other locations on the unit and off the unit was fragmented between nursing practice, nonclinical activities, unit-related functions, and waste.

A picture emerges of the professional nurse who is constantly moving from patient room to room, nurse station to supply closet and back to room, spending a minority of time on patient care activities and a greater amount of time on documen-

A picture emerges of the professional nurse who is constantly moving from patient room to room, nurse station to supply closet and back to room, spending a minority of time on patient care activities ...

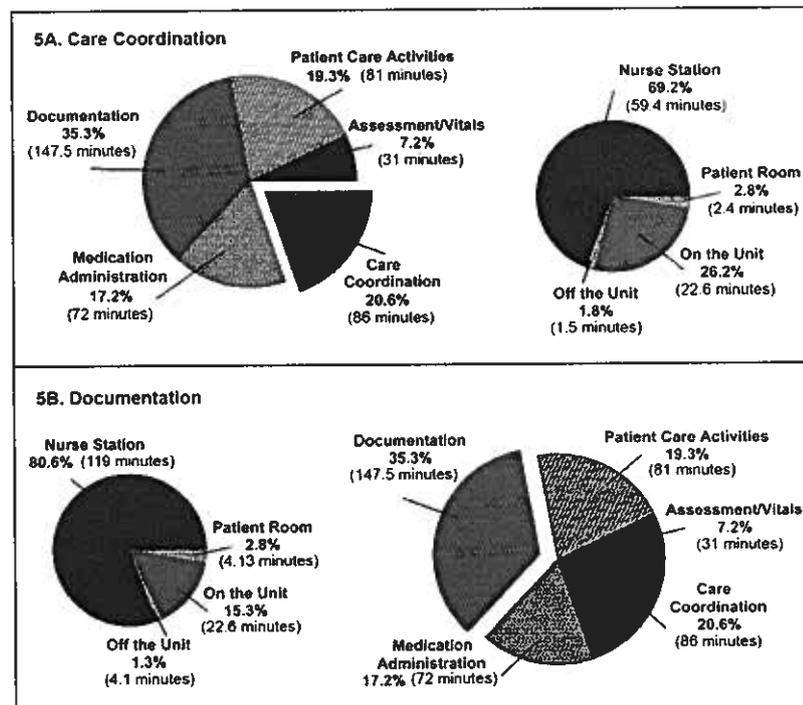


Figure 5. Care coordination and documentation subcategories by location.

Analysis of nursing practice subcategories by location found that care coordination was performed primarily at the nurse station (69.2%) and documentation was also performed primarily at the nurse station (80.6%).



tation, coordination of care, medication administration, and movement around the unit. The motion findings of the study support this picture. Nurses walked significant distances while at work and walked farther while on shift (median, 3.0 miles) than when not at work (median, 2.1 miles). In previous studies, walking has been identified as a major time consumer for nurses, and evidence suggests that time saved walking translates into more time spent on patient-care activities.¹

Previous research has shown that a primary reason for nurse attrition is the workloads traditionally inherent in this profession.¹⁴ Our findings regarding the physical activity required in nursing—long distances traveled and increased metabolic expenditure—corroborate the physical and workload demands nurses endure on a regular basis.

Documentation

Documentation is an essential part of nursing practice and accounts for a major portion of the nurses' time. The documentation process in many hospitals is also rife with inefficiencies. For example, nurses and other care providers often must transfer information between data collection systems, consuming nursing time and contributing to transcription errors. Documentation is often duplicated between departments and disciplines because of the lack of a single patient problem list for all providers. The result is fragmentation of care, duplication of data sets, and the inability to quantify the outcome of the care provided. Evolving regulatory and public policy requirements for documentation (such as "present on admission") may exacerbate these problems.¹⁵

The efficiency of documentation is a multifactorial problem, and solu-

tions remain varied and controversial. Health care systems will need robust processes driven by caregivers to improve efficiency and reduce time dedicated to documentation. There is hope that EHRs will improve efficiency, but whether they can has not yet been documented.

Medication Administration

Like documentation, medication administration is an essential component of nursing practice. Because nurses devote considerable time to this category of care, opportunities may exist to improve efficiency. Approximately two-thirds of all time spent on medication administration in this study was related to drug delivery to the patient (46.7 minutes). The other third (24.9 minutes) was spent preparing drugs for administration. Process improvements could reduce the time required for this step. Furthermore, medication administration has been identified by other researchers as a leading source of operational failures.¹⁰

Hospital medication processes may be affected by the fragmentation of the informatics infrastructure. In an ideal patient care nursing unit, medications would be administered as part of a seamless closed-loop system that provides accurate and timely information about the patient, including patient identification, order verification, allergies, laboratory values, potential reactions, and preferences. Operational failures within this process demand the nurse's attention and time and may be a source of additional distance traveled.

Proposed improvements to this process include advanced automated dispensing systems, the use of small medication cabinets within the patient room, and the use of case carts to provide most medications

predicted on that basis of patient condition. Creating closed-loop medication administration systems will require an interdisciplinary effort, including supply chain, informatics, work process, and vendor platform integration.

Care Coordination

Care coordination (communication regarding the patient) accounts for approximately one-fifth of nursing practice time. The benefits of timely and efficient communication between team members have been documented by other investigators.¹⁶⁻¹⁹ However, inefficiencies in communication may consume nurses' time and put patients at risk. Failure to rescue—death following the occurrence of an adverse event—is a nurse-sensitive outcome that has been correlated with nurse-patient ratios, communication, and patient surveillance, among other factors.² Indeed, many failure-to-rescue situations can be traced back to communication delays or omissions.

The efficient flow of patient information and status updates could reduce wasted time and the potential for errors. Proposed technology solutions include wireless networks, handheld and ear devices for the delivery of patient information, and intelligent systems that automatically track the physical location of a medical provider.

Most care coordination time is spent at the nurse station. Indeed, the nurse station itself may represent an opportunity for design and process improvement. The location of terminals and/or wireless devices for data entry, for example, could reduce the need for and time spent at the nurse station. Such changes could reduce walking time between patient rooms and the nurse station, and increase the amount of time available in the patient room.



Nursing Unit Design

One of our study objectives was to describe the variation in distance traveled, time spent by category, and workload between units with different physical layouts. No statistically significant correlation was found between type of unit design and time spent with patients. In fact, there was more variation in miles traveled and patient time between nurses on the same unit than between units. One likely explanation for these findings is that nurses' ability to organize their work and staffing assignments has greater impact on these measures than does physical space by itself. For example, a nurse with geographically contiguous patient assignments traveled less than a nurse with an assignment based on the level of acuity of illness in which patients were placed in noncontiguous rooms. This finding suggests that process and policy, as well as relatively minor physical changes within a unit (such as distribution points of supplies or medications), can have a major impact on nurse workload.

Nurses' adaptability may allow them to compensate for limitations imposed by the physical design of the unit. This adaptation may mask potential effects of unit layout on distance traveled and time spent per activity. Additional statistical analyses of time and motion data are currently underway to detect interactions between unit architecture and nurse time and movement.

It may be that for unit layout to make a difference in nursing time spent on patient care activities, other contextual factors must also change. Such factors include the interoperability of technology, staff work assignments, and work processes. Previous research provides compelling evidence that poorly

organized practice environments can negate the benefits of excellent staffing and positive patient outcomes.^{20,21} A holistic approach is needed whereby people, process, and technology come together harmoniously in a physical space to produce the maximum medical-surgical unit efficiency.

Study Limitations

The challenge study nurses faced in continuing their jobs without interference from the time and motion study (both with respect to patient needs and ensuring study validity) might have led to problems in the data collected. For example, some nurses in protocol A forgot to turn off their PDAs after completing their respective activity, leading to outlier times in the database. In protocol B, nurses occasionally selected no category or pressed incorrect buttons. These are limitations of the self-report methodology.

The study design required identification of all activities of a nursing shift and grouping these activities into cogent, useful, and appropriate categories. The rationale for these activities and groupings could be sensibly debated. The category of patient care activities, for example, does not include activities, such as medication administration, that have obvious and direct impact on patient safety and outcomes. The categories were selected with the intention of grouping activities that comprise sufficient nursing time to provide useful data while avoiding more vague terms such as *direct* and *indirect care*.

Conclusions

Nurses are the primary hospital caregivers, and the efficient use of their time and energy is critical to the future of American hospitals. Our study evaluated the time that

nurses spent and the distance that they traveled across 36 geographically diverse medical-surgical units. The results demonstrate that nurses devote large proportions of their time to documentation, medication administration, and care coordination and somewhat less time to patient care activities. Nurses also travel significantly larger distances and exert more energy during daytime shifts than when away from work.

These findings illustrate the complex and demanding hospital work environment and suggest opportunities to improve the efficiency of nursing work. Changes to the process and technology of documentation, communication, and medication handling, as well as the physical design of units, could benefit nursing efficiency and the safe delivery of care.

Truly transforming the hospital-patient care environment to improve the delivery of safe, high-quality, patient-centered care would be a paradigm shift. The task now is to test solutions to create a more effective work environment that seamlessly supports clinicians in the direct care of patients. ♦

Disclosure Statement

The author(s) have no conflicts of interest to disclose.

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A holistic approach is needed whereby people, process, and technology come together harmoniously in a physical space to produce the maximum medical-surgical unit efficiency.



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What You Can Do

Do not let what you cannot do interfere with what you can do.

— John Wood, b 1910, UCLA Basketball Coach



National Institute of Nursing Research (NINR)

In the 1980s, leaders of the nursing profession came together to create NINR, within the National Institute of Health, as a center for supporting and conducting nursing research. Academy Fellows helped lead the call for NINR's creation; over the years, the Academy has remained a strong advocate for the agency as a wide range of federal agencies came to participate in that research.

The status of AAN Fellows as leading researchers and nursing educators has been a key to NINR's success promoting and improving the health of individuals, families, communities, and populations. NINR's very existence has led to a substantially larger federal commitment to nursing research.

Examples of NINR research results include:

- Development of culturally tailored programs that help minority youths avoid risky health behavior reduce the incidence of HIV infection and adopt healthier lifestyles;
- A privately funded project to adopt the practice of specialty care from the hospital to home for the frail elderly suffering from heart disease — which improved patient health status and reduced costs and
- Establishing women-specific practice guidelines to prevent heart disease.

Both of NINR's permanent directors — Dr. Patricia A. Grady (who has served since 1995) and Dr. Ada Sue Hinshaw (who held the position from 1987 to 1994) are Academy Fellows.

For more information, visit the NINR Web site www.ninr.nih.gov.



Recent Achievements

Strategic direction for the Council is provided by a steering committee of representatives from four regional nursing research societies, Sigma Theta Tau International, the American Nurses Foundation and the National Institute of Nursing Research (ex-officio).

The Council has been instrumental in organizing and conducting a well-attended national biennial State of the Science Congress in Nursing Research. These conferences: serve as a national forum for communicating emerging innovations in nursing science related to nursing and health care practice; disseminate research findings that can influence clinical practice, education, research and health care policies; and influence long-term nursing and health care research agendas.

In alternate years, the Council conducts Special Research Topics Conferences.

For more information, visit the Council's Web site www.nursingscience.org.

IOM/ANF/AAN Scholar in Residence Program

Through a partnership among the Academy, the American Nurses Federation (ANF) and the Institute of Medicine (IOM), the Scholar in Residence Program provides a leadership opportunity in health policy at the national level based at The National Academies in Washington, DC. Introduced in 1992, this immersion experience helps nurse leaders play more prominent roles in national health policy development.

While in Washington, each Scholar in Residence conducts an extensive study of a topical public policy issue — either individually or as part of a larger IOM effort. Over the years, participants have contributed greatly to development of innovative proposals in areas such as transforming care at the bedside and covering the uninsured.

For more information on the IOM/ANF/AAN Scholar in Residence Program, visit www.aannet.org/opportunities/scholar_in_residence.asp.



AARP/AAN Joint Fellowship

In 2007, Karen M. Robinson, DNS, APRN, BC, FAAN became the inaugural Fellow of the AARP/American Academy of Nursing (AAN) Joint Fellowship program. This initiative provides a year-long leadership opportunity in health policy at the AARP Public Policy Institute. Supported by both the Academy and AARP, the program prepares nurse leaders for more prominent roles in health policy development at the national level.

ANCC Magnet Recognition Program

In October 2006, the Academy received the American Nurses Credentialing Center's (ANCC) highest award, the Magnet Prize, in recognition of its role in creating the Magnet Recognition Program®, which has become a "seal of approval" for quality nursing care.

Administered by ANCC, the Magnet program grew out of research conducted by a group of AAN Fellows: Drs. Margaret McClure, Muriel Poulin, Margaret Sovie and Mabel Wandelt.

The Magnet program recognizes health care organizations that provide the very best in nursing care and uphold the standard of professional nursing practice. The program also is a vehicle for disseminating successful practices and strategies among nursing systems.

Hospitals and other institutions achieving Magnet designation from ANCC — the credentialing arm of the American Nurses Association — have a valuable tool for attracting and retaining quality employees.

Magnet recognition is based, in part, on proof that nurses working within the facilities consider them good places to work, that the facilities have low turnover and vacancy rates and that they are in areas with significant regional competition for nursing services. Consequently, achieving Magnet status signifies that the role of nurses is valued and that the facility has reached a high level of excellence in nursing care.

Having a top-flight nursing staff, in turn, helps a facility attract and retain the best physicians — and it is one of several important signals to health care consumers that the facility is committed to the highest-quality overall care and patient safety.

continues



For more information about the Magnet Recognition Program®, visit ANCC's Web site www.nursecredentialing.org/magnet.

National Voluntary Consensus Standards for Nursing-Sensitive Care

Academy Fellows were leaders in the development and endorsement of the National Quality Forum's (NQF) 2004 national voluntary consensus standards for nursing-sensitive care. The consensus standards enable measurement of the extent to which nurses in acute care hospitals contribute to health care quality, patient safety and a professional and safe work environment.

The NQF's 15 national voluntary consensus standards for nursing-sensitive care (on patient outcomes, nursing interventions and system-level measures) are the first national, standardized and consensus-based performance measures for nursing care. Viewed together, the consensus standards enable consumers to assess the quality of nursing care in hospitals and help providers identify critical outcomes and processes of care for continuous improvement. Purchasers can use the consensus standards to reward hospitals for better performance.

For further information about these standards, visit the National Quality Forum Web site www.qualityforum.org/projects/completed/nursing/index.asp.

Council for the Advancement of Nursing Science

The Council was established in 2000 as an open membership entity of the Academy. The Council's mission is simple: *Better Health Through Nursing Science*. The Council works to:

- Be a strong voice of nurse scientists at the national and international levels;
- Support the development, conduct and utilization of nursing science; and
- Facilitate life-long learning opportunities for nurse scientists.



RAISE the Voice

“While others continue to debate how to solve today’s health care challenges, such as the uninsured and disparities in health delivery, nurse researchers and experts are finding solutions, piece-by-piece, from the ground up. In hospitals, universities, and health centers, nurses are devising new strategies to get patients and their families the care they need, regardless of insurance status. The promise of these techniques is enormous and needs to be shared with the American people.”

Donna E. Shalala

President of the University of Miami and formerly the U.S. Secretary of Health and Human Services



Health care in America today is inaccessible to many, expensive for most and fragmented for all. Enabling the system to deliver the best possible care at an acceptable cost requires not just reformation but transformation — to one that is safe, effective, efficient and personalized.

Nurses are using their unique insight to take action and create innovative solutions that provide affordable, coordinated, and effective care that Americans so urgently need. Through the *Raise the Voice* campaign, the American Academy of Nursing is mobilizing its 1,500 Fellows, partner organizations, and health leaders to ensure Americans are aware of how nurses are changing — and improving — the fundamental way care is delivered.

Raise the Voice showcases research-based solutions developed by nurse “Edge Runners” — the practical innovators who are leading the way in bringing new thinking and new methods to a wide range of health care challenges. Edge Runners have developed options that help people stay healthy and cope better with illness, while producing exemplary financial and clinical outcomes.

True health care reform has already been set in motion by nurses who are on the ground and in the field working tirelessly to help Americans stay healthy.

WHAT YOU NEED TO KNOW

- America’s health care system is in desperate need of repair.
- Nurses’ contributions to health care are critical and an indispensable part of solving our health care crisis.
- Nurse-led models of care produce positive clinical and financial outcomes.
- Nurses’ innovations address people’s needs and wants for a humane and effective health care system, reducing disparities while increasing efficiency and quality of patient care.
- It is in our country’s best interest to adopt viable models of care that result in lower costs and a healthier population.
- The *Raise the Voice* campaign aims to transform America’s health care system to one that delivers effective, convenient, personalized and relevant care to patients, families and communities.



EDGE RUNNER PROFILE

Mary Naylor, PhD, RN, FAAN

Marian S. Ware Professor in Gerontology; Director of the Center for Health Transitions, University of Pennsylvania School of Nursing, Philadelphia, PA

The Challenge

High rates of poor post-discharge outcomes that put elderly patients back in the hospital soon after their release following earlier treatment. Up to one-third of those hospitalizations are considered preventable.

The Goal

Improve post-discharge outcomes — lowering rates of re-hospitalization and thereby reducing health care costs.

An Innovative Solution

An innovative model of hospital-to-home care that helps improve post-discharge outcomes and reduces re-hospitalizations by focusing on transitional care led by master's-prepared advanced practice nurses (APNs) in conjunction with the patient's entire health care team, targeting high risk patients at risk for poor post-discharge outcomes.

The Details

Dr. Naylor developed a program that assures that APNs establish a relationship with patients and their families soon after hospital admission; design the discharge plan in collaboration with the patient, the patient's physician, and family members; and implement the plan in the patient's home following discharge, substituting for traditional skilled nursing follow-up. Findings from three clinical trials funded by the National Institute of Nursing Research consistently demonstrate that the APN Transitional Care Model improves quality of care and substantially decreases health care costs.

For example:

- Compared to standard care there are longer intervals before initial re-hospitalizations, fewer re-hospitalizations overall, shorter hospital stays and better patient satisfaction.
- Following a four-year trial with a group of elderly patients hospitalized with heart failure, the APN Care Model cut hospitalization costs by more than \$500,000, compared with a group receiving standard care — for an average savings of approximately \$5,000 per Medicare patient.



“For years nurses have been devising and developing practical innovations to address various health care challenges. Despite the advantages of many nursing care models, current financial and structural problems in the U.S. health care system stand in the way. Through the Raise the Voice campaign, the Academy will promote the ideas and initiatives that offer the kind of affordable, coordinated, effective care that Americans so urgently need.”

Louis Stokes

*Senior Counsel, Squire, Sanders & Dempsey, LLP
and former Member of Congress*

RAISE
the Voice



EDGE RUNNER PROFILE

Ruth Watson Lubic, EdD, RN, CNM, FAAN

Founder and Chair Emeriti, Family Health and Birth Center,
Washington, D.C.

The Challenge

Low-income mothers are more likely to experience preterm births, low birth weight babies and cesarean sections — all of which can lead to other medical complications and increase health care costs.

The Goal

Improve the health and quality of life of young families by reducing the number of pre-term births, low birth weight babies and c-sections — and, in turn, reduce the cost of care.

An Innovative Solution

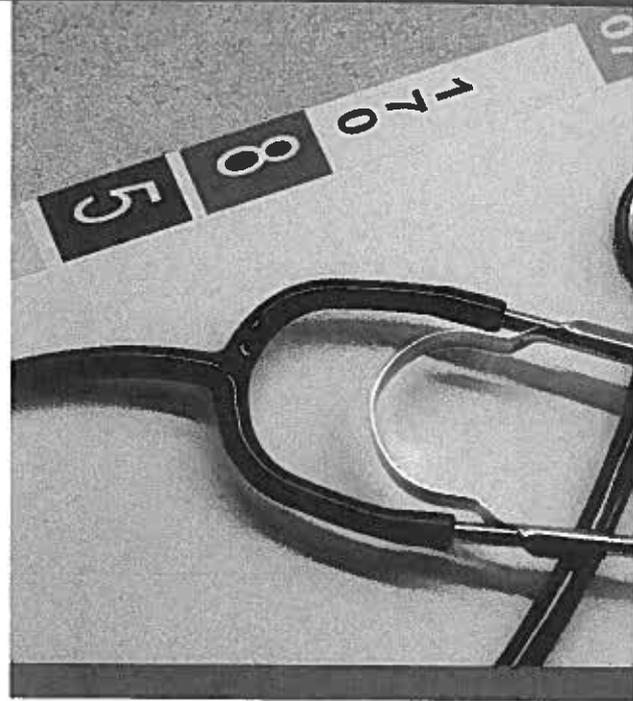
Provide a modern birth center in a low-income community, and supplement birth services with comprehensive women's and children's health care, social supports and early childhood development.

The Details

Family Health and Birth Center is the only independent birthing center in the District of Columbia, housed in a former supermarket in a low-income community. It provides midwifery and nursing services and healthcare for women and children — backed by hospital, obstetrical and gynecological consultants — in a nurse-driven setting. The center has seen success in both delivering healthy infants and lowering costs.

For example:

- Preliminary data for 2006 indicate the center delivered a record number of infants — more than 150 last year, as well as the highest percentage ever delivered outside the hospital in D.C. (25 percent of births took place at the facility, with the rest at Washington Hospital).
- After less than six years of operation, there was a substantial lowering of preterm birth (9 percent at the Center versus 14.2 percent for all of D.C.), low birth weight (7 percent at the Center, compared with 14.6 percent overall in D.C.) and cesarean section rates (15.3 percent at the Center versus 29 percent for all of D.C.).
- The Center's successes in 2005 alone reduced costs for the District of Columbia's health care system by more than \$1.15 million — more than the total of the Center's annual operating budget.



“We are seeing more and more evidence that programs led by nurses can improve patient care and outcomes while reducing costs. Meeting the overall needs of each patient as effectively as possible has long been the goal of nursing care, and we need nurses' leadership now more than ever. Raise the Voice recognizes these contributions and offers them as real solutions to the great challenges facing our nation's health care.”

Mark B. McClellan, MD

Director, Engelberg Center for Health Care Reform
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