Promoting Rigorous Interdisciplinary Research and Building an Evidence Base to Inform Health Care Learning, Practice, and Policy

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The Institute of Medicine (IOM) established the Roundtable on Value & Science-Driven Health Care to accelerate the advancement and application of science to achieve the best possible health and health care outcomes and value for Americans. The work of the roundtable is predicated on the notion that our health care system must continuously learn from rigorous evidence in order to innovate and improve. To that end, it acknowledges and promotes the importance of identifying best practices in health and health care, developing and testing innovations, and— most importantly— promoting collaborative efforts.

This vision for improving health and health care is shared by the Robert Wood Johnson Foundation, which funds an innovative and unique initiative to improve patient care by examining the role nurses play in improving care quality: the Interdisciplinary Nursing Quality Research Initiative (INQRI). Mark Pauly of the University of Pennsylvania and I have had the great privilege of serving as co-directors of this program since its inception in 2005.

More than 3.1 million strong, nurses represent the largest segment of the health care professional workforce in the United States and are the professionals who provide the most direct patient care. But, until the launch of the INQRI program, there was

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little rigorous research linking nursing's contributions to patient outcomes. INQRI has served to advance the science of health care by investigating those linkages and providing evidence to inform policies and practices that improve patient care and outcomes, thereby improving our health care system overall.

Since INQRI's launch, the program has encouraged researchers to develop new strategies to improve health care value and demonstrate nursing's role in accomplishing that aim. To date, INQRI has supported 48 multidisciplinary teams of scholars whose studies have dramatically increased the evidence linking nursing to quality of care. These teams not only examine the nursing practices and processes that affect the patients' experience with care and outcome, but also design and implement nurse-led interventions to improve patient outcomes. Equally important, findings from INQRI teams have helped to distinguish effective ideas from solutions that are often popular, yet ineffective.

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A series of articles recently published in a special supplement of *Medical Care* revealed that, collectively, these studies have helped to improve the rigor of research methodology, built a solid base of evidence demonstrating linkages between nursing care and patient outcomes, and helped advance interdisciplinary research and practice. To a large extent, INQRI's contributions to our knowledge are a function of the singular requirement that every INQRI research team include investigators from more than one discipline. As IOM's Roundtable on Value & Science-Driven Health Care has drawn on the insights of a multidisciplinary community, so have INQRI teams. By requiring that researchers collaborate across disciplines, the program raises the bar for the level of rigor, ensuring that diverse perspectives contribute to the design of each study and are also brought to bear in the analysis of the findings.

The roundtable has sought to accelerate progress through six stakeholder Innovation Collaboratives: 1) Best Practices; 2) Clinical-Effectiveness Research; 3) Evidence Communication; 4) Digital Learning; 5) Systems Approaches for Health; and 6) Value Incentives. To make significant change, we must look at all aspects of the health care system. To that end, INQRI attempts to understand the nurses' role in delivering high-quality care across a variety of patient populations and settings.

INQRI has funded several studies that examined nursing practices and tested interventions that can improve patient care and safety, including

- changes in nursing processes and the practice environment to facilitate nurses' ability to intercept costly and dangerous medication errors;
- nurse-led innovations to reduce the incidence of facility-acquired

pressure ulcers among residents in long-term care settings; and
- strategies to improve intensive care unit patients' ability to communicate with nurses and other health team members regarding their care needs and preferences.

INQRI grantees have also applied rigorous research methods to examine a broad range of approaches to improving the value of health care—increasing quality while reducing health care costs associated with issues such as patient falls, hospital-acquired infections, and rehospitalizations. Studies aimed at reducing events that drive up health care costs have included

- an analysis of the factors that influence the quality of preparation of patients and family caregivers for the transition from hospitals to home and the impact of enhanced preparation on patients' perceived readiness and rates of re-hospitalization;
- relationships between the level of professional nursing practice, adoption of evidence-based care strategies, and the number and kind of injuries from falls;
- effects on patients' health of diabetes prevention information delivered by visiting nurses to residents in subsidized housing units; and
- linkages between nurse staffing levels in neonatal intensive care units and outcomes for very-low-birth-weight infants in those units.

In addition to contributing to continuous learning in our nation's health care system, improving the rigor of research, and identifying the linkages between nursing and the quality of patient care, INQRI has helped to define what we mean by "quality" in the

context of health care and to identify new metrics and measures that should be used in future health care research. As any research endeavor should, INQRI has proven to be greater than the sum of its parts.

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Note: Authored commentaries in this IOM Series draw on the experience and expertise of field leaders to highlight health and health care innovations they feel have the potential, if engaged at scale, to foster transformative progress toward the continuously learning health system envisioned by the IOM. Statements are personal, and are not those of the IOM or the National Academies.

In this commentary, Mary Naylor, the Marian S. Ware Professor in Gerontology and the director of the NewCourtland Center for Transitions and Health at the University of Pennsylvania School of Nursing, member of the IOM Roundtable on Value & Science-Driven Health Care, and chair of the Roundtable's Best Practices Innovation Collaborative, discusses the merits of the Interdisciplinary Nursing Quality Research Initiative (INQRI), a Robert Wood Johnson Foundation initiative to improve patient care by examining the role nurses play in increasing care quality. As the IOM Roundtable on Value & Science-Driven Health Care strives to foster a continuously learning health system that innovates and improves, INQRI shares in this vision by:

- Providing rigorous research linking nursing's contributions to patient outcomes;
- Encouraging researchers to not only examine the nursing practices and processes that affect the patient's experience with care, but also design and implement nurse-led interventions that can improve patient outcomes;
- Analyzing a broad range of issues related to improving the value of health care by supporting studies aimed at reducing events that drive up health care costs.

Information on the IOM's Learning Health System work may be found at www.iom.edu/learninghealthsystem.