

Nurses' Role in Delivering Acute Care

The Robert Wood Johnson Foundation's Interdisciplinary Nursing Quality Research Initiative (INQRI) is producing rigorous research findings to influence how care is delivered and received in the hospital and other settings and to enhance quality, reduce errors and improve patient outcomes. INQRI's research teams led by nurses with co-investigators from disciplines such as economics, engineering, and communications aim to produce the science showing the link between nursing, better care and more efficient spending of the health care dollar.

Over the past three years, INQRI's multidisciplinary research teams have been identifying the most effective nurse-led interventions and solutions to many key health care policy problems. INQRI research is addressing national health care priorities including how to prevent infections in hospitals, curb falls among elderly patients, ensure effective discharges, improve pain management and make sure care is effectively coordinated.

Curbing infections in hospitals. The Obama Administration has urged hospitals to reduce hospital acquired infections and has promised financial support to achieve that goal. Two INQRI studies are examining nursing's role in preventing infections in one of the costliest and most infection-prone parts of the hospital, the intensive care unit (ICU). A team of researchers at Johns Hopkins University¹ has conducted the first randomized-control trial to reduce central line associated blood stream infections among ICU patients. There are some 80,000 catheter-induced bloodstream infections each year, causing up to 28,000 deaths. This study, conducted in ICUs in 12 states, has shown in preliminary analysis that substantial reductions in infections can be widely achieved and this project did so with nurses leading the infection control efforts. Their study builds on the well-known work of Dr. Peter Pronovost, creator of the line-insertion "checklist." Hospitals that followed the components of their ICU safety program, as well as adopted a safety improvement environment that fostered nurse involvement in quality improvement efforts, reduced, and in some cases completely eliminated, bloodstream infections for several months at a time. Their research is also showing that higher nurse turnover is related to higher infection rates.

Another INQRI-funded effort spearheaded by a team at the University of Pennsylvania² has shown how much nurse staffing and practice environment matter in preventing infections among tiny babies in neonatal intensive care units (NICUs). Care for these babies is typically among the most expensive care provided in a hospital, costing anywhere from \$50,000 to \$70,000 for each patient. This is the first national study to examine the link between nursing and very low birth weight infants in NICUs. The study examined care in more than 100 NICUs around the country to see how staffing and practice environment influence rates of death, brain hemorrhage, lung development and infection. The findings show that babies in units where nurses have less support and limited professional practice are at higher risk of developing infections. Higher levels of nurse staffing and the proportion of nurses with bachelor's degrees in nursing and NICU experience are associated with better infant outcomes. This leads to fewer cases of complications such as bleeding in the brain, which is not only expensive to treat but can lead to long-term developmental problems that drive up health costs.

Improving hospital discharge processes. Improving how patients are discharged from the hospital to reduce unnecessary readmissions is a critical issue now being debated at the national level. With one in five elderly readmitted to the hospital within 30 days at an annual cost to Medicare of \$17 billion, policymakers are seeking cost-effective solutions to better transition patients from hospital to home. Researchers at Marquette University³ in Wisconsin have been studying what hospital-based nurses do to influence outcomes that occur after discharge from a hospital. Specifically, they are looking at identifying the contributions that nursing staff make to the quality of discharge teaching on patient outcomes, readiness and readmission rates of patients who are discharged home. They have found that when units had more RN hours per patient day, less overtime hours and fewer vacancies, the discharge teaching was of higher quality, patients reported greater readiness for hospital discharge, and post-discharge utilization of readmission and emergency room visits was lower.

Effectively managing pain. If health care professionals are unable to effectively manage pain, patients experience a poor quality of life at a societal cost estimated at billions of health care dollars annually. Patients in the hospital often report significant pain, but little is known about their perceptions of how nurses help manage their pain. A team at the University of Utah⁴ has developed an instrument to elicit patients' opinions about how well they felt that their nurses managed their pain and to help patients select hospitals based on this element of the care experience. The survey tool will also be useful to hospital administrators and policymakers who want to improve nursing care. A performance measure related to pain management will contribute to national efforts to monitor and improve patient outcomes.

Coordinating patient care. When patients go to the hospital, they want their treatment to go as smoothly as possible, with everything happening at the expected time and they want up-to-date information about their care. Good care coordination in the hospital can affect how long a patient stays in the hospital, whether mistakes happen and whether the patient is prepared to go home and do well once out of the hospital and requires a lot of work by nurses behind the scenes. A team at Emory University⁵ has developed a tool to uncover and communicate the role staff nurses play in coordinating care for hospitalized patients. Through this research, the team has identified what care coordination activities nurses do and which are important for better care. Early tests of the tool have been promising, and show a link between nurse care coordination activities in the hospital and important patient outcomes. The team plans to refine the tool for the clinical setting to help nurses and discharge planners provide the highest quality care to patients. This research should lead to a better understanding of how to improve outcomes.

1. Thompson, David, "Linking Blood Stream Infection Rates to Intensive Care." Robert Wood Johnson Foundation ID#58292. 9/1/06-8/31/08.
2. Lake, Eileen, "Acuity-adjusted Staffing, Nurse Practice Environments and NICU Outcomes." Robert Wood Johnson Foundation ID#62601. 9/1/07-8/31/09.
3. Weiss, Marianne, "A Quality and Cost Analysis of Nurse Practice Predictors of Readiness for Hospital Discharge and Post-Discharge Outcomes." Robert Wood Johnson Foundation ID#62577. 9/1/07-8/31/09.
4. Beck, Susan, "Measuring Nursing Care Quality Related to Pain Management." Robert Wood Johnson Foundation ID#58299. 9/1/06-8/31/08.
5. Lamb, Gerri, "Nurse-Sensitive Measurement of Hospital Care Coordination." Robert Wood Johnson Foundation ID#58290. 9/1/06-8/31/08.