Canadian Journal of Nursing Research, 2002, Vol. 33, No. 4, 115–121

Happenings

Nursing Matters: The Nursing and Health Outcomes Project of the Ontario Ministry of Health and Long-Term Care

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Outcomes are in. Mitchell (2001) notes that the MEDLINE database includes no research reports on patient outcomes for the period 1978 to 1989 but more than 700 for the period 1997 to 2000. Outcomes are in because accountability has become an important expectation of the health-care system. Outcomes provide evidence for accountability exercises. All components of the health-care system are subject to the gaze of accountability, as are all disciplines. Nursing has had little to offer in terms of hard evidence when asked to demonstrate that nurses make a difference to patient care. Over the last decade there has been increasing activity to fill this gap, with nursing identifying outcomes that demonstrate that nurses do make a difference to patients and their experience of illness and that can be systematically collected and housed on administrative databases. These databases can then serve as the source of information for studies that ask what it is about nursing that matters: numbers of registered nurses, proportion of registered nurses relative to other nursing personnel, number of full-time versus part-time nurses, and nurses' educational preparation or years of experience.

Canada is well positioned, because of the national information system maintained by the Canadian Institute for Health Information, to play a leading role in the development of databases that house nursing-

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sensitive patient outcomes. This system is not yet complete and the data that are available are fragmented, but the objective is to create information systems that, once linked, contain data on every patient episode in every health-care sector (acute care, home care, long-term care) in every province (Canadian Institute for Health Information, 1999). Nursing-sensitive patient outcomes can be integrated into these existing databases, and where necessary new databases can be created. It will then be possible to analyze patient experiences and to determine, on the basis of patient populations, what inputs are associated with better outcomes.

In this paper, we will briefly describe the status of patient outcomes and three major approaches to outcomes measurement, the background for the Nursing and Health Outcomes Project of the Ontario Ministry of Health and Long-Term Care, the decisions as to which outcomes to include and their measurement, and the process of reaching these decisions.

In 1996, the American Academy of Nursing held an invitational conference on health-care outcomes (the proceedings are reported in *Medical Care Supplement, 35*[11]). Health services researchers, insurance companies, and nurse researchers were invited to explore the status of patient outcomes and to respond to a new model linking nursing inputs and patient outcomes. The Quality Health Outcomes Model, developed by the American Academy of Nursing Expert Panel, integrated functional, social, psychological, and physical/physiologic factors along with patients' experiences, in contrast to the exclusively physiological outcomes that were the usual indicators of care (Mitchell, Ferketich, & Jennings, 1998). The Model proposed five outcomes: achievement of appropriate self-care, demonstration of health-promoting behaviours, health-related quality of life, patient perception of being well cared for, and symptom management (Mitchell et al.). The conference represents a milestone in nursing's conceptualization and commitment to outcomes research, and the proposed outcomes influenced the thinking of the group in Ontario charged with identifying nursing-sensitive outcomes for that province.

Patient outcomes that have been examined in nursing research generally fall into three categories: adverse occurrences, secondary medical diagnoses, and patient health status. Adverse occurrences, such as patient falls, medication errors, nosocomial infections, and pressure ulcers, can be linked to nursing practice but the relationships are not straightforward nor necessarily causative. For example, organizational factors may contribute more to medication errors than nursing factors

and wound infections are generally viewed as more reflective of operative technique than of post-operative care.

In 1994 the American Nurses Association initiated the Patient Safety and Nursing Quality project. This project had multiple dimensions, including the participation of 10 state nursing associations and the assemblage and analysis of data collected by the Health Care Financing Administration and Medicare for 200 hospitals in the 10 states (Rowell, 2001). The state nursing associations focused on different adverse occurrences. The New York State group found statistically significant relationships between nurse staffing and post-operative infections, urinary tract infections, pneumonias, pressure ulcers, and hospital lengths of stay; generally, shorter stays were associated with higher staffing levels and lower infection rates were associated with higher proportions of registered nurses within the nursing workforce (Rowell). An issue with the use of adverse occurrences as outcomes is the need for consistent application of definitions across units and hospitals and for consistent and uniform recording of occurrences in patient charts.

Although there is only a modest association between medical diagnoses and nursing inputs/processes, it has been the object of some research because these outcomes are easily accessible — being routinely abstracted from patient charts and housed on databases. A team from the Harvard School of Public Health (Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2001) used existing hospital discharge databases linked with financial reports or hospital staffing surveys from 799 hospitals across 11 states and a national sample of Medicare patients to examine the relationships between nursing staffing — levels of RN staffing or of overall nurse staffing — and a mix of adverse occurrences and medical diagnoses. In medical patients, they found strong and consistent relationships between both types of nurse staffing and urinary tract infections, pneumonia, length of stay, upper gastrointestinal bleeding, and shock. In major surgical patients, they found an association between staffing and failure to rescue — that is, death — among patients with shock, sepsis, pneumonia, deep vein thrombosis/pulmonary embolism, or gastrointestinal bleeding that could have been averted had the symptoms been recognized and treated promptly (Needleman et al.).

While the 1996 conference called for health status outcomes, existing research databases yield few examples of these. The reason for this is simple: indicators of health status are not routinely recorded in patient charts and abstracted onto databases. Although these types of

outcomes are found in increasing numbers of studies in which primary data are collected, the California division of the Kaiser Permanente Medical Care Program is the only health-care system to include patient health status in its databases (Ditmyer, Koepsell, Branum, Davis, & Lush, 1998). Nurses in the Kaiser Permanente HMO systematically assess functional status, patient engagement in health care, and psychosocial well-being on all patients in all sectors of their system: acute-care hospitals, home care, long-term care, and outpatient facilities; this information is abstracted and housed on the program's databases.

The Nursing and Health Outcomes Project

The Ontario Minister of Health and Long-Term Care commissioned the Nursing Task Force to examine the issues created by downsizing and realignment of the health-care system. One of the recommendations of the Task Force's report, released in January 1999, focuses on the need for a funding formula for nursing based on performance standards that promote high-quality patient outcomes and on health information systems that provide comprehensive and reliable data on nursing services (Ontario Ministry of Health and Long-Term Care 1999). Clearly, an information system inclusive of relevant nursing data was the first priority and the Nursing and Health Outcomes Project was established. The mandate of this Project was to recommend a set of nursing-sensitive patient outcomes and methods for measuring them, to identify databases on which to locate them, and to establish a process for "rolling out" the recommendations to all health-care sectors. The Project was to address acute care, home care, and long-term care. Public health, psychiatric care, obstetrics, and rehabilitation were not included in its mandate.

In September 1999 the first author was appointed Director and the second author full-time Manager of the Nursing and Health Outcomes Project. Two teams have guided the Project to date. An Expert Panel on Outcomes (EPO) comprising outcomes researchers and database experts has been responsible for identifying patient outcomes that are sensitive to nursing practice and for recommending assessment methods. The Outcomes Feasibility and Outreach Committee (OFOC) comprises representatives of provincial nursing organizations including the Registered Nurses Association of Ontario, the College of Nurses, the Registered Practical Nurses Association of Ontario, and the Ontario Nurses Association. The OFOC members are responsible for examining and providing feedback on the feasibility of the outcomes

recommended by the EPO and for keeping their constituent nursing communities informed about the progress of the Project.

The EPO began by creating a framework to explicate what it believed the Ontario health-care system was trying to achieve. It identified five patient-related objectives: improved health, prevention of avoidable decline, decreased risk to health, optimized comfort, and patient satisfaction with care. It identified outcomes for the health-care system related to each objective, then developed specific nursing outcomes and tested these against the literature and the Quality Health Outcomes Model. The initial selection of patient outcomes included: functional status; therapeutic self-care; management of four symptoms (dyspnea, fatigue, nausea, and pain) and two adverse occurrences (patient falls resulting in injury and decubitus ulcers); and patient satisfaction with nursing care.

A team of researchers led by Dr. Diane Irvine Doran conducted a critical appraisal of the research literature to ensure that each of these outcomes was significantly related to nursing inputs and processes, to identify which instruments had been used to measure the variables, to examine these instruments for reliability and validity, and to recommend the most suitable instruments for each health-care sector (Doran et al., 2001).

An invitational symposium was held in March 2001 to examine the state of science of outcomes relevant to nursing and to advise on the appropriateness of the outcomes selected by the EPO. The symposium was attended by a number of international experts who had made major contributions to the 1996 conference and also by Canadian experts. A monograph of the proceedings of the symposium is available on the Project's Web site (www.gov.on.ca/health/english/program/nursing/nursing_mn.html).

Both the critical appraisal exercise and the discussions at the symposium ensured the appropriateness and feasibility of the selected outcomes. The EPO was acutely aware of the limitations of its recommended set of outcomes. For example, although quality of life as an outcome surfaces regularly in discussions with stakeholders, particularly in the long-term-care sector, there is no agreement on how it should be conceptualized or measured, or on its influences in the various health-care sectors. There is agreement that quality of life is a subjective perception but no agreement on how to elicit the perceptions of the segment of the long-term-care population that is cognitively impaired. The EPO decided to recommend only those outcomes for which there are sound research linkages to nursing and which can be

routinely, reliably, and reasonably assessed by nurses in all sectors. It seemed wise to start with a limited number of outcomes in which the Expert Panel had confidence and to add others as they are shown to be relevant, rather than recommend many outcomes that could prove unworkable and unreliable.

The final set of EPO recommendations is now being tested in a series of pilot studies across the province. Nurses will assess patients' functional status using scales specific to each health sector, and patients will complete the Therapeutic Self-Care Instrument (Sidani & Irvine, 1999) and 11-point numeric symptom management scales. The amount of time to be allotted for completion of these scales is being evaluated in the pilot studies. Patient falls resulting in injury will be collected through ICD-10 CM, as will decubitus ulcers; ICD-10 CM will be phased in during 2003 in Ontario. Patient satisfaction with nursing care in the acute-care sector is collected through an annual Hospital Report jointly sponsored by the Ontario Hospital Association and the Ministry of Health and Long-Term Care. Sector-wide approaches to assessing patient satisfaction with their nursing care in home care and long-term care are currently being negotiated.

Outcomes are meaningless in the absence of a means of relating them to inputs. The OFOC has recommended a set of nursing inputs to be collected systematically. Some of these inputs, such as the number of registered nurses and registered practical nurses in a given hospital, are available on the Management Information System databases, but others need to be added, and a system for collecting these types of data and housing them on databases for home care and long-term care has yet to be established.

The Nursing and Health Outcomes Project represents a first step in an initiative that will go on for decades. In fact, once begun, the identification, addition, revision, and replacement of outcomes on administrative databases will never cease. Research will continue to inform the process. However small this beginning, it is critical to nursing's ability to use system-wide data to demonstrate that nurses matter to patients and to the achievement of important patient outcomes.

References

Canadian Institute for Health Information. (1999). *Health information roadmap: Responding to needs.* Available online: www.cihi.ca

Ditmyer, S., Koepsell, B., Bruanum, V., Davis, P., & Lush, M. (1998). Developing a nursing outcomes measurement tool. *Journal of Nursing Administration, 28*(6), 10–16.

Doran, D., Sidani, S., McGillis-Hall, L., Watt Watson, J., Mallette, C., Laschinger, H., & White, P. (2001). *The state of science: A methodological review of the literature on nursing-sensitive outcomes.* Unpublished report, University of Toronto.

Mitchell, P. (2001). The evolving world of outcomes. *Invitational symposium: Nursing and Health Outcomes Project, March 15 and 16.* Available online: www.gov.on.ca/health

Mitchell, P.H., Ferketich, S., & Jennings, B.M. (1998). Quality health outcomes model. *Image: Journal of Nursing Scholarship, 30,* 43–46.

Needleman, J., Buerhaus, P.I., Mattke, S., Stewart, M., & Zelevinsky, K. (2001). Nursing staffing and patient outcomes in hospitals. Available online: www.bhpr.hrsa.gov/dn/staffstudy.htm

Ontario Ministry of Health and Long-Term Care. (1999). *Good nursing, good health: An investment for the 21st century.* Toronto: Queen's Printer for Ontario. Available online: www.gov.on.ca/health

Rowell, P. (2001). American Nurses Association study on nursing-sensitive outcomes. *Invitational symposium: Nursing and Health Outcomes Project, March 15 and 16.* Available online: www.gov.on.ca/health

Sidani, S., & Irvine, D. (1999). *Evaluation of the Care Delivery Model and Staff Mix Redesign Initiative: The Collaborative Care Study.* Unpublished report, University of Toronto.