

Redesigning the Workplace for 21st Century Healthcare

Patricia O'Connor, Judith Ritchie, Susan Drouin and Christine L. Covell

Poor designs and outmoded systems of work set the workforce up to fail (Institute of Medicine 2001). Nurses spend too much time “hunting and gathering” and in other non-value-added activities and, ultimately, patients suffer from the ineffective use of valuable resources. To successfully cross this “quality chasm,” nurses and other professionals need to be working to full scopes of practice, engage in inter-professional collaborative teamwork and be provided with the technological and information infrastructure needed (Hendrich et al. 2008; Institute of Medicine 2011; Page 2004). Fundamentally, our work processes and physical environments significantly impede the delivery of safe, effective and efficient care (Baker et al. 2008).

Many organizations are struggling to find answers while controlling costs. Common solutions include skill mix changes – such as adding licensed practical nurses, physiotherapy aides, pharmacy assistants and unregulated workers – potentially affecting patient safety (Aiken et al. 2003, 2008; Dunton et al. 2004; Jiang et al. 2006) and employee satisfaction (McGillis Hall and O'Brien-Pallas, 2000). More creative and responsive solutions are needed. Many have advocated for increased interdisciplinary collaboration in the planning and delivery of healthcare, yet there is little empirical literature about what it takes to successfully create and sustain interdisciplinary work redesigns (Oandasan et al. 2006; Clements et al. 2007). While

numerous complex factors influence the successful adoption of innovations by organizations, the role of leadership in improving system-level performance is pivotal (Baker et al. 2006; Nolan 2007; Stetler et al. 2007).

These values are illustrated by SCF's deliberate replacement of the word patient, with “customer-owner,” signalling the shift in balance of power to a system owned and managed by Alaska Native people.

This article explores the challenges healthcare organizations face with outmoded and inefficient service delivery models, describes some examples of successful work redesign in the United States and Canada and discusses how lessons learned can be applied to improve efficiency, quality of care and quality of work environments in Canada.

The Search for Successful Innovations

A fellowship as a US Commonwealth Fund Harkness associate permitted the lead author (P.O.) to examine innovations in interdisciplinary work designs and service delivery models to identify solutions to these challenges. The goal of the research was to describe successful innovations in interdisciplinary healthcare

work design, critical elements and strategic processes for innovation adoption and sustainability, and their impact on outcomes. In other words, how do organizations *make it happen*?

We used an explanatory case study design (Yin 2009) with individual and focus group interviews, document reviews and targeted observation. Three cases were selected from 19 organizations nominated by experts in healthcare. During four-day site visits, we interviewed stakeholders from all levels of each organization. Thematic content analysis was based on Pettigrew and Whipp's (1992) framework of strategic change. Two of the cases are presented below, demonstrating the *why, what* and *how* of successful innovation.

Case One: Primary Care Transformation at Southcentral Foundation

Southcentral Foundation (SCF), a non-profit healthcare organization, serves Native and American Indian people living in south central Alaska. With a history of fragmented, emergency room-based care, long waits, no continuity, little respect and no customer involvement, SCF moved from federally controlled health services to Native ownership and management. Over the past decade, it gradually developed a relationship-centred model of primary care marked by profound changes in philosophy, structure and delivery of services. It introduced the NUKA system of care that guides all care processes and employee actions. Based on the vision of developing a Native community that enjoys physical, mental, emotional and spiritual wellness, the key elements include shared responsibility and a commitment to quality, family wellness and operational effectiveness. These values are illustrated by SCF's deliberate replacement of the word patient, with "customer-owner," signalling the shift in balance of power to a system owned and managed by Alaska Native people.

Innovative Redesign Elements at SCF

SCF's model guided the development of several innovations, the most salient being the following:

- **Care that is population-based, longitudinal and focused on family wellness.** In moving from physician-based care to broad interdisciplinary teams (registered nurse [RN] case managers, family physicians, psychologist or social worker, medical assistant, dietitian, pharmacist and clerical staff), staff work at full scopes of practice, see customer-owners together and share assessments and decision-making. Advanced access programs ensure same-day appointments, and there is a systematic approach to reducing the morbidity and mortality associated with specific chronic illnesses.
- **Use of technology linking remote regions.** Automated telepharmacy dispenses medications and provides inventory control, and telehealth is available for remote villages.
- **Introduction of novel roles.** Residents in remote regions are

trained as local healthcare aides and are supported by RN case managers, while traditional healers and *family wellness warriors* address situations of domestic violence, abuse and neglect.

Strategic Change Processes at SCF

Strategic change processes at SCF included the following:

- **Alignment of the organization's mission and core values with all activities.** Core operating principles, developed through consensus seeking, guided all work (clinical, administrative, organizational development and quality improvement). Staff at all levels, as well as customer-owners, were clear about the priorities and expectations, reflecting the tight alignment around the vision.
- **Cohesive, stable senior leadership team with a shared vision.** The senior team has worked together for many years, resulting in increasing cohesiveness.
- **An approach centred on customer-owners.** Extensive, continuous customer-owner consultations use traditional and culturally sensitive methods. As explained by the chief executive officer (CEO): "We asked other Alaska Native people what they wanted, what they needed and what they valued. The system was built from the ground up based on that feedback. Still today, this is how we operate." Continuity of care providers is a priority, and requests to change practitioners are explored to identify problems in care satisfaction.
- **Building capacity for improvement.** Staff training incorporates a set of guiding principles and tools to use in every interaction with customers and fellow employees to create healthy relationships. All staff engage in ongoing cultural awareness training and rapid cycle improvement processes. Monthly meetings, with peer coaching, occur with interdisciplinary teams, a physician senior leader and a manager to review performance on several clinical indicators. Physician leadership training with the Institute for Healthcare Improvement (IHI) and Intermountain Health targeted learning needs in administration and quality.
- **A redesign of physical environments to support vision and practice changes.** Ambulatory care spaces are designed to be responsive to the needs and values of the community, with extensive displays of Native artwork, areas for potlatches, dancing and singing and quiet spaces for dialogue. To increase collaboration, SCF has each interdisciplinary clinic team share one large office, rather than having profession-based space in "silos."
- **Leveraged information technology to support service delivery.** Extensive clinical performance monitoring of preventive and chronic illness management is facilitated by an extensive "data mall" with monthly panel reports, and open reporting of results on the intranet.
- **Physicians becoming salaried.** This change has created

a level playing field vis-à-vis compensation and removed procedures-based incentives.

Outcomes at SCF

There was clear evidence of spread and sustainability at SCF. The outstanding outcomes included improvements in *quality of care* (100% same-day access, a 50% decrease in emergency room/urgent care and specialty care visits due to more comprehensive primary care services, a 30% decrease in admissions and in-patient days, greatly improved customer satisfaction and performance at the 90th percentile levels on multiple preventive care practices), *quality of work environment* (relatively high staff satisfaction, inter-professional collaboration and continuous efforts to act on staff feedback for workplace improvements) and *costs* (fewer admissions and specialty care reduced costs, and significant enhancement of revenue streams allowing for a doubling of the primary care capacity). Other jurisdictions, including the Saskatchewan Ministry of Health and First Nations, are working on transferring these lessons learned to their communities.

Case Two: In-patient Care Redesign at ThedaCare

ThedaCare, the largest healthcare provider in rural north-eastern Wisconsin, is composed of four hospitals, 21 primary care centres and a range of other services. Its intensive efforts in organizational transformation through in-patient interdisciplinary care redesign were aimed at producing value-added care and reducing errors and variability. ThedaCare's Collaborative Care model of in-patient care delivery is based on changes in team roles and responsibilities, innovative work processes, and principles of error proofing and visual management. Its vision has nursing at its centre and focuses on maximizing the scopes of nursing and pharmacy practice, including redesigning the physical environment to support inter-professional collaboration, reduce waste, ensure safety and promote healing.

Innovative Redesign Elements at ThedaCare

Redesign elements primarily focused on people, processes and the environment:

- **People.** Innovations include admission trios and joint care planning. At the bedside, a nurse, physician and pharmacist complete the admission assessments, including medication reconciliation and risk screens, and develop a single plan of care that is linked to practice guidelines for specific diagnoses. An anticipated discharge date is discussed with the patient and communicated on the white board near the patient's bed. In daily bedside care conferences, clinical learning and exchanges occur in interaction with the patient, focusing on the latest progress and recommendations for the next 24 hours. Joint decisions about medication and other clinical changes yield

no misunderstandings or delays in action. RNs work as case managers, with licensed practical nurses (LPNs) and nursing assistants performing most of the task-oriented care activities, including medication administration and bedside testing. Assignments are clear, with minimal overlap between RN and LPN functions. RNs focus on patient and family education, chronic illness management, psychosocial interventions and ensuring that there is no wasted time between diagnosis, testing, treatments and preparation for discharge.

- **Processes.** Planned diagnostic and treatment interventions as well as patient results are closely monitored by the RN in six-hour intervals ("tollgates") to reduce delays in decision-making. Progress is noted on a visual control board. Integrated, electronic charting using evidence-informed clinical practice guidelines and standardized orders for all diagnoses supports clinicians in following the same pathways.
- **Environment.** Supply and medication cabinets (patient servers) have been built into every patient room, significantly eliminating the time spent looking for supplies and medications. Visual cueing is used extensively throughout the unit, improving efficiency and reducing the time for information transmission (e.g., new orders, notifications of medication delivery).

Strategic Change Processes at ThedaCare

Strategic change processes at ThedaCare included the following:

- **Senior leadership team commitment to improving performance.** The former CEO provided a clear message that filtered through the ranks: "We're not going back, so let's figure out how to improve together." The senior team also visited top performers in other industries to learn how to reduce defects (safety errors) and improve quality and value. They further strengthened their resolve by inviting some of those executives onto their board.
- **The application of the principles and tools of the Toyota Production System to healthcare.** To develop capacity for completely redesigning in-patient care, staff were liberated for multiple value-stream-mapping events and trained to work at full scopes of nursing and pharmacy practice. The ThedaCare Improvement System introduced systematic quality improvement and error-proof training to staff at all levels. ThedaCare deliberately rotated trained facilitators into operational roles within 18 months of having developed expertise as quality advisors. There are weekly reports on improvement projects in a forum with the CEO, executive team and more than 200 staff.
- **A vision with nursing at its centre.** ThedaCare hospitals' president, previously an administrator of large primary care practices, reflected on what she saw as the central core of in-patient care: "And what came to me was, it is 24-hour

nursing care ... the patient is in the hospital because ... the nurses [are there].” To strengthen nursing, ThedaCare joined IHI’s Transforming Care at the Bedside (TCAB) program, which engages nurses to lead process improvement efforts aimed at improving patient outcomes and the work environment (Hassmiller and Bolton 2009). Evolving into the new Collaborative Care model, ThedaCare took redesign to a whole new level. Prior to implementation, protected staff release and training time were significant to prepare practitioners for new roles.

- **Considerable investments in information systems and measurement.** Realizing the critical need for reliable, useful data, ThedaCare has created a dependable data warehouse and electronic health records. These investments have built capacity for creating quality data that drive needed and effective improvements. It was striking to hear front-line medical and nursing staff on the alpha unit easily describe their quality performance processes and results vis-à-vis several relevant safety indicators.

Outcomes at ThedaCare

Two years after the launch of the Collaborative Care alpha unit, the results were striking. Physicians, pharmacists and nursing staff described the dramatic impact of these role changes. As one RN commented, “I feel I have grown more in the past two years than I did my first 17 years of nursing.” Other outcomes included improvements in the *quality of care* (a 20% decrease in lengths of stay; a 9.5% increase in admissions; better quality bundle compliance for pneumonia, congestive heart failure and falls; defect-free medication reconciliation; and very high patient satisfaction), the *quality of work environment* (high staff satisfaction and low RN turnover) and *costs* (a 21% decrease in cost per case and a return on investments that auto-financed a new wing expansion).

Lessons Learned and Success Factors

Despite varying in size, complexity and the factors motivating the changes, there was considerable similarity in the key contextual and strategic change processes used in the successful adoption and sustainability of innovations at SCF and ThedaCare:

- **Courageous, stable and cohesive leadership.** Buy-in and consistent leadership from all levels within the organizations, executive stewardship, the use of physician and other clinical leader champions and broad stakeholder engagement were key. Successful change also required stable and courageous leadership.
- **Alignment and clarity of vision, goals and activities.** A critical feature was the clear alignment of the organizations’ core values, vision, policy decisions and activities to advance the change agenda. Deep engagement of the boards of direc-

tors, whose members had expertise in organizational change and quality performance, in all steps of the transformation (particularly when there were problems) was critical and highly supportive.

- **Support, reinforcement and recognition of individual and organizational capacities.** Extensive staff training in the Lean methodology and other systematic improvement processes was coupled with the use of standardized evidence-informed care protocols to increase reliability and decrease variation. Significant investments in technological infrastructure greatly

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facilitated performance management. Staff received timely, relevant feedback about changes in performance, and recognition of successes and extensive communication of progress were hallmarks of their change efforts. In other words, these organizations paid huge attention to their social capital.

- **Support for involvement and staying with the program.** In both cases, there was a clear understanding that the transformations the organizations sought would involve significant amounts of time, resources and energy, as well as strategies to manage the naysayers and the overzealous. Both organizations committed to putting the patient/family at the centre of their redesign, continuously seeking input on how to improve the experience of care (value) and breaking down the traditional professional role silos. They took policy and converted it into an operational effectiveness that truly improves the lives of the community they serve, as well as those of the staff.

From Inspiration to Action

Taking inspiration from both case studies, it was time to apply the lessons learned to our own organization. In mid-2010, the McGill University Health Centre (MUHC) partnered with IHI to launch the TCAB program on five units in three of our hospitals. TCAB was by then implemented in over 200 US hospitals but was relatively new to Canada. Based on our philosophy that a redesign of care processes must respond to the real needs of patients and families, our aim was to understand care “through eyes of patients” and to engage patients and staff in co-developing and testing new work processes. Multiple “patient representatives” volunteered to join each unit’s core TCAB team. Support from generous donors, a Canadian Health Services Research Foundation patient engagement grant and one from Canadian Institutes of Health Research to evaluate impacts on staff provided the critical resources to begin. The “how” of TCAB focuses on teaching front-line staff how to do rapid cycle improvement processes using Plan-Do-Study-Act, so that

they can become the owners and leaders of the improvements needed to achieve better outcomes. Each unit chose the areas for improvement and learned how to conduct simple tests of change, with pre- and post-measurements.

Results from the first year have been positive and largely sustained. Patient representatives have become very active collaborators. We have seen an 8% increase in the amount of RN time spent in direct care. The responsiveness of caregivers, as

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measured by the Hospital Consumer Assessment of Healthcare Provider and Systems Survey, has improved by 30%, reflecting better patient experiences, and patient narratives have provided rich feedback about what is good (or not good) in care delivery. Other results have included the following:

- A quiet zone for medication administration was introduced, which resulted in a 50% reduction in interruptions and a 60% reduction in transcription errors.
- Equipment re-location significantly reduced time spent hunting and gathering.
- Patient and staff redesigned a chemotherapy treatment room, reducing the time to start chemotherapy by 57%.
- A joint inter-professional admission process introduced in mental health reduced admission time from 4.3 hours to 1 hour, eliminating duplication and improving team communication and cross-discipline learning.
- Staff and patient representatives have been gaining skills in Plan-Do-Study-Act cycles, leading change, negotiations and communication.

Barriers faced have included ensuring protected release time for staff, securing support resources (project manager, facilitators, leadership training for managers) and managing expectations.

Other Work Redesign Innovations in Canada Releasing Time to Care in Saskatchewan and Ontario

In a bold policy move in 2009, the Saskatchewan Ministry of Health made significant investments to support the province-wide implementation of the Releasing Time to Care (RTC) program. With very similar goals to TCAB, this highly structured program for redesigning nursing care processes is being implemented on 14 units. Results have included increased time in direct care; improved patient and staff satisfaction; a reduction in falls, infections and pressure ulcers; and improved relationships with service departments. As part of a case study in February

2011 with Dr. Alain Biron, a Canadian Patient Safety Institute patient safety fellow, we witnessed considerable ministerial and executive buy-in, extensive leadership support and the degree to which front-line staff have assumed ownership in creating and spreading innovations. Since the summer of 2011, MUHC has partnered with the Saskatoon Health Region to share lessons learned in our respective quality improvement journeys. For details of the Saskatchewan experience, log on to the Health Quality Council's website at www.hqc.sk.ca. A number of hospitals in Ontario also embarked on RTC starting in late 2009.

Primary Care Redesigns

There are now many examples of successful integrations of nurse practitioners, dietitians and pharmacists into primary care practices. Policy changes within provinces have broadened scopes of practice and provided financial incentives for such practices to evolve – key factors to their success and sustainability. In jurisdictions where the funding envelopes have not been adequate or sustained, the introduction of nurse practitioners has been challenging.

Research to Action: Applied Workplace Solutions for Nurses

Under the visionary leadership of Linda Silas, in 2008 the Canadian Federation of Nurses Unions partnered with the Canadian Nurses Association, the Canadian Healthcare Association and the Dietitians of Canada to support nurse-led innovations aimed at applying research evidence in practice to create healthier workplaces. Funded by Health Canada, the creative and sustainable solutions included a redesign of the nursing workforce and staffing models (e.g., the 80-20 model, in which staff are scheduled to have 20% of time for quality improvement or development activities), mentorship programs, e-learning in rural areas and broader access to professional development opportunities.

Implications for Policy and Practice

Inter-professional care teams focused on patient needs and system efficiency offer improved system performance. Redesigning care processes and physical work environments requires broad vision, quality and coherence of organizational policy, as well as consistent executive leadership support over time. Wide dissemination of real-time clinical performance information and infrastructure support to build capacity in quality improvement processes are critical to changing provider behaviour. Current policies and systems issues in Canada that act as barriers to team-based or inter-professional healthcare delivery are educational programs that train professionals in discipline-specific silos, systems that consider physicians independent entrepreneurs rather than members of hospital staff and incentives that encourage “procedural” care versus addressing health outcomes. As highlighted in

the *Future of Nursing* report (Institute of Medicine 2011), we will not realize the vision of a transformed healthcare system until nurses, as the largest healthcare workforce, are working at full scope of practice and acting as full partners in leading change.

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Acknowledgements

Many thanks to the US Commonwealth Foundation and mentors Maureen Bisognano (IHI) and Ross Baker, and to the MUHC staff, Justin Ringer and Drs. M. Lavoie-Tremblay, C. Sounan and A. Biron, for their support of this work. Special thanks to our funders, Canadian Institutes of Health Research, Canadian Health Services Research Foundation, the Newton, Roasters and Montreal General Hospital Foundations. Final thanks go to our patients, who have courageously stepped forward to co-create improvements.

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About the Authors

Patricia O'Connor, RN, MSc(A), CHE, FCCHL, is director of nursing and chief nursing officer at the McGill University Health Centre and assistant professor in the School of Nursing at McGill University, Montreal, Quebec. She can be reached by email at: patty.oconnor@muhc.mcgill.ca.

Judith Ritchie, RN, PhD, is associate director for nursing research at the McGill University Health Centre and a professor in the School of Nursing at McGill University in Montreal, Quebec.

Susan Drouin, RN, MSc(A), MA, is associate director of nursing at the McGill University Health Centre and also an associate professor at McGill University in Montreal, Quebec.

Christine L. Covell, PhD, RN, is a postdoctoral fellow in the University of Ottawa's Faculty of Health Sciences.

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