Activating Knowledge for Patient Safety Practices: A Canadian Academic-Policy Partnership

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ABSTRACT

Background: Over the past decade, the need for healthcare delivery systems to identify and address patient safety issues has been propelled to the forefront. A Canadian survey, for example, demonstrated patient safety to be a major concern of frontline nurses (Nicklin & McVeety 2002). Three crucial patient safety elements, current knowledge, resources, and context of care have been identified by the World Health Organization (WHO 2009). To develop strategies to respond to the scope and mandate of the WHO report within the Canadian context, a pan-Canadian academic-policy partnership has been established.

Approach: This newly formed Pan-Canadian Partnership, the Queen’s Joanna Briggs Collaboration for Patient Safety (referred throughout as “QJBC” or “the Partnership”), includes the Queen’s University School of Nursing, Accreditation Canada, the Canadian Patient Safety Institute (CPSI), the Canadian Institutes of Health Research, and is supported by an active and committed advisory council representing over 10 national organizations representing all sectors of the health continuum, including patients/families advocacy groups, professional associations, and other bodies. This unique partnership is designed to provide timely, focused support from academia to the front line of patient safety.

QJBC has adopted an “integrated knowledge translation” approach to identify and respond to patient safety priorities and to ensure active engagement with stakeholders in producing and using available knowledge. Synthesis of evidence and guideline adaptation methodologies are employed to access quantitative and qualitative evidence relevant to pertinent patient safety questions and subsequently, to respond to issues of feasibility, meaningfulness, appropriateness/acceptability, and effectiveness.

Summary: This paper describes the conceptual grounding of the Partnership, its proposed methods, and its plan for action. It is hoped that our journey may provide some guidance to others as they develop patient safety models within their own arenas.

KEYWORDS knowledge to action, knowledge translation, evidence-informed practice, knowledge synthesis, systematic reviews, patient safety
BACKGROUND

Over the past decade, several important reports have propelled patient safety to the forefront for healthcare delivery in North America. These include the landmark US report, *To Err is Human: Building a Safer Health System* (Kohn et al. 2000), the Canadian report, *Building A Safer System: A National Integrated Strategy for Improving Patient Safety in Canadian Health Care* (National Steering Committee on Patient Safety 2002) and *The Canadian Adverse Events Study: The Incidence of Adverse Events among Hospital Patients in Canada* (Baker et al. 2004). Baker et al. (2004) cite the overall incidence rate of adverse events (AE) to be 7.5% suggesting that, "of the almost 2.5 million annual hospital admissions in Canada similar to the type studied, about 185,000 are associated with an AE and close to 70,000 of these are potentially preventable" (p. 1678).

The Agency for Healthcare Research and Quality (AHRQ) consensus report was one of the first efforts to amalgamate patient safety research by defining a list of "best practices" ranked according to strengths of evidence (Shojania et al. 2001). However, at that time available studies for “best practice” were in large part limited to areas of high acute care medical risk. While addressing medical adverse events in hospital acute care is important given the diversity of the Canadian landscape, the scope must be broadened to increase emphasis on prevention of common, often devastating events in all areas of healthcare delivery, including long-term care, home care, and rural and remote settings. To date very little research focuses on patient safety in settings outside of hospitals, a disturbing aspect given the current trend to transfer care previously delivered in hospitals to ambulatory, home, and residential care. In a Canada-wide survey, Nicklin and McVeety (2002) demonstrated that patient safety is a major concern of frontline nurses. Because nursing teams provide direct care across the continuum of care settings they possess tacit knowledge of all aspects of the care context and are in a unique position to assess safety and risk. One of QJBC’s mandates therefore is to synthesize all available evidence for use by providers and patients in rural and remote care.

Advancing Evidence-Informed Practices for Patient Safety

In 2004, WHO launched the World Alliance for Patient Safety to facilitate the development of patient safety policy and practice. They define patient safety as “...the reduction of risk of unnecessary harm associated with healthcare to an acceptable minimum. An acceptable minimum refers to the collective notions of given current knowledge, resources available and the context in which care was delivered weighed against the risk of non-treatment or other treatment” (WHO 2009, p. 15). The World Alliance’s vision identified three important patient safety elements (current knowledge, resources, and context) required to ensure patient safety issues are addressed, giving rise to two significant questions: (1) How much do we know about the state of current knowledge for implementing safe patient care? and (2) What type of research evidence comprises current knowledge in patient safety?

Although patient safety is a concern in virtually every health sector, it is still a relatively new focus on the research frontier. Leape et al. (2002) argue that reasonable judgments have to be made on current knowledge, that is, until safety multi-interventions are more fully evaluated with appropriate experimental research, focus for synthesis must rely on the best available evidence, for example, large cohort studies or program evaluations.

Resource availability issues are also important elements to consider when implementing patient safety initiatives. For example, the availability and use of beds lower to the floor may be required for falls prevention, and lack of may underpin a sequela of events that contribute to an adverse event.

Understanding of contextual issues assists in implementing high-level evidence about effectiveness of particular strategies, whereas understanding patient experience through a synthesis of qualitative studies may provide a foundation to design more appropriate and acceptable interventions for patients/families. Leape et al. (2002) noted that patient safety interventions cannot be separated from the context of the organization in which care is delivered. The context-specific focus with patient safety evidence highlights the importance of taking a broader view of what constitutes evidence. For example, there are numerous guidelines and tools developed to address the multisector challenge of pressure ulcer prevention, but these have largely been developed for use in acute care by registered nurses. The question becomes how to use this evidence in the context of community and long-term care settings by unregulated workers and family members doing assessments.

THE CANADIAN INITIATIVE

Building Support from the Academy to the Field

In 2004, the Queen’s Joanna Briggs Collaboration (QJBC) was first established as the first North American collaborating center of the Joanna Briggs Institute. QJBC was conceived as a regional academic-practice partnership with Queen’s University School of Nursing and the South Eastern Ontario Health Sciences Centre, supported through a grant from the Ontario Ministry of Health and Long-Term Care. Its mandate was to develop an academic-practice...
model driven by local practice policies to improve healthcare delivery in our region through the synthesis and implementation of best available evidence (Harrison et al. 2004–2008). With the support and input from our practice partners, QJBC evolved into an active and productive knowledge translation model and provided a foundation on which to further develop this center beyond our regional scope into a pan-Canadian academic-policy effort.

In November 2009, QJBC expanded to establish a pan-Canadian patient safety academic-policy partnership, with the support and encouragement of the Canadian Institutes of Health Research (CIHR) Knowledge Syntheses and Exchange. CIHR granted the university and QJBC 5-year funding (Harrison et al. 2009–2014) to formalize a national patient safety academic-policy partnership with its policy partners, Accreditation Canada, and the CPSI and CIHR.

Accreditation Canada (www.accreditation.ca) is a not-for-profit, independent organization that provides Canadian health organizations with an external peer review process to assess the quality of their services in accordance with nationally established standards of excellence, such as risk management, infection prevention and control, and medication management. Accreditation Canada provides services in more than 30 healthcare sectors, including acute care, home care, rehabilitation, community and public health, hospice palliative care, labs and blood banks, and diagnostic imaging. Their clients include Regional Health Authorities, hospitals, and community-based programs and services, from both private and public sectors. Patient safety is an integral component of the evidence-based accreditation programs.

CPSI (www.patientsafetyinstitute.ca) was created in December 2003 to provide national leadership to build and advance a safer healthcare system in Canada. CPSI facilitates patient safety initiatives through collaboration between provincial governments and stakeholders, including patients. CPSI focuses on four key areas: (1) education, (2) research, (3) interventions and programs, and (4) tools and resources.

QJBC provides cohesive leadership as an academic-policy partnership to improve both access to and uptake of evidence on patient safety. Specifically this includes the synthesis of evidence based priority topics identified by practice and policy partners, and the adaptation of already synthesized evidence from one context to another (e.g., adapting a guideline developed for acute care for use in community care). QJBC’s goals will be achieved through three patient safety focused strategies designed to (1) build infrastructure, (2) facilitate evidence production (syntheses and adaptation), and (3) establish networks. Initial milestones to firmly establish our partnership included the development of an advisory council to establish and oversee QJBC initiatives. With our policy partners and the support of our governance body (advisory council), we strive to build a sustainable, vibrant community of practice focused on evidence generation and evidence use for patient safety that includes a focus across the continuum of care.

GUIDING FRAMEWORKS

The Knowledge to Action (KTA) framework (Graham et al. 2006) underpins QJBC and is instrumental to its success by outlining a planned action framework for knowledge generation and the steps in the active phase of knowledge uptake.

QJBC has the dual focus of knowledge generation and knowledge to action (highlighted in Figure 1). QJBC will generate knowledge and tailor it for use in practice through syntheses and systematic reviews of best available patient safety evidence drawn from primary studies. Knowledge products, such as adapted guidelines, will be developed. KTA activities include working collaboratively with our partners to establish priorities for evidence synthesis and developing a network of stakeholders and a community of practice, to promote evidence use in patient safety.

The vision for QJBC integrates a planned-action approach to knowledge use with the WHO conceptual framework. The WHO (2009), Conceptual Framework for the International Classification for Patient Safety, identifies 10 high level classes, namely: Incident Type, Patient Outcomes, Patient Characteristics, Incident Characteristics, Actions Taken to Reduce Risk. As noted by the developers, it aims to provide a comprehensive understanding of the domain of patient safety to represent continuous learning and improvement. The emphasis is on identification of risk, prevention, detection, reduction of risk, incident recovery, and system resilience which occur throughout and at any point within the conceptual framework.

Integrating the hierarchical subdivisions and flow of the WHO framework with the KTA approach provides QJBC with a comprehensive model for activating patient safety evidence. Over several substantive working sessions, the QJBC research group drafted a patient safety version of the action framework that places the patient safety initiative into the KTA approach (Graham et al. 2006) and will assist us in organizing our “products,” for example, systematic reviews and adapted guidelines, in a manner familiar to the patient safety field. Figure 2 highlights this integrated framework that we refer to as the QJBC Model.
Academic-Policy Partnership for Patient Safety

Figure 1. QJBC focus within the knowledge to action framework.

for Activating Patient Safety evidence (QJBC-MAPS). In the new model, knowledge creation is generated through knowledge inquiry, synthesis, and tools and products that are specific to contributing factors/hazards within the patient safety context. Analysis of these contributing factors/hazards includes patient characteristics, incident type, and incident characteristics. Detection and mitigating factors determine patient outcome and organizational outcomes, and lead to potential ameliorating actions. Together, detection and mitigating factors represent incident recovery (i.e., secondary prevention). According to WHO (2009), “Ameliorating actions are those actions taken or circumstances altered to make better or compensate any harm after an incident. Ameliorating actions apply to the patient (clinical management of an injury, apologizing) and to the organization (staff debriefing, culture change, claims management)” (p.13). As the knowledge related to reducing patient safety risk is identified, it is adapted to local context. For example, the actual application may be very different in an acute care setting compared to home care. As the knowledge is used by stakeholders, barriers to knowledge use are identified and it may be refined to better suit the situation in which it is needed.

The Integrated Knowledge Translation Approach

In collaboration with CPSI and Accreditation Canada, QJBC is developing the infrastructure and strategic plan to create and/or synthesize evidence and then to disseminate it to interested communities. A fundamental element of the QJBC approach has been the amalgamation of field knowledge with external evidence using the science of synthesis (meta-analysis, metasynthesis) based on the Joanna Briggs Institute’s model of evidence-based health care known as FAME (feasibility, appropriateness/acceptability, meaningfulness, and effectiveness; Averis & Pearson 2003; Pearson 2004). Integrated knowledge translation engages researchers and research users throughout the research process, from research question to methodological choices, and involves them in the actual conduct of the reviews or guideline adaptation projects (Graham & Tetroe 2007). Through its regional academic-practice partnership, QJBC has developed the methodological expertise and experience in identifying research questions and findings, as well as using and adapting evidence to particular contexts.

QJBC guideline adaptation procedures are drawn from the international ADAPTE approach (Harrison, Legare, Graham & Fervers, 2010) and, combined with the
CAN-IMPLEMENT© methodology (Harrison & van den Hoek, 2010) provides essential process issues and facilitation elements. The CAN-IMPLEMENT is a resource to help providers and settings in the adaptation and use of quality evidence-based guideline recommendations developed for one context (e.g., hospital use by RNs) to be applied to different context (e.g., home care by practical nurses or support workers). This encompassing approach to evidence is critical to the actual uptake of new practice knowledge since it builds on effectiveness research to include evidence relevant to the context.

Partnership stakeholders are instrumental in identifying pressing questions arising from their settings, thereby contributing to both knowledge generation and knowledge use phases. The Partnership, including stakeholders, design the methodological approach, conduct the reviews, and support the adaptation of external evidence to frontline Canadian settings. As the academic partner, QJBC serves as scientific lead and facilitator, providing expertise for the production, and use evidence for patient safety.

As members of the Partnership, Accreditation Canada and CPSI bring important yet distinct communities of practice together through their respective stakeholder organizations. When they identify a gap or need in the field that can be addressed through evidence synthesis or development of knowledge products (such as focused systematic review or an adapted guideline) the academic work by QJBC is initiated. Because potentially there may be more questions raised than QJBC is able to address, Accreditation Canada and CPSI partners and their networks will identify and set priority topic areas. For example, QJBC’s current work, in partnership with Canadian researchers, targets patient safety and adverse events in the home care setting. The university partner selects the

![Figure 2. QJBC model for activating patient safety evidence (QJBC-MAPS).](image-url)
appropriate scientific method and provides training and support. Together, the Partnership is establishing a policy-academic infrastructure that will be responsive to the community of practice in patient safety.

During its first year, QJBC focused on establishing the national consortium for the project. Initial site visits with Accreditation Canada and CPSI occurred and an advisory council with national representation has taken place (see Figure 3). Participants include Accreditation Canada, Canadian Patient Safety Institute, CIHR (nonvoting member), Patients for Patient Safety Canada, Queen’s University School of Nursing, Royal College of Physicians and Surgeons of Canada, Canadian Healthcare Association, Health Council of Canada, Canadian Home Care Association, Healthcare Insurance Reciprocal of Canada, Canadian Nurses Association, Canadian Medical Association, Canadian Pediatric Association, and the Community and Hospital Infection Control Association Canada. The Advisory Council continues to refine our mission statement and is helping to establish priorities for the initiative; in particular, it has emphasized the importance of including the patient perspective. The conceptual framework has been developed by the project investigators over several monthly meetings; these meetings will continue on a bi-monthly basis as the initiative rolls out. To establish initial priorities, QJBC undertook an environmental scan, a summary of key patient safety organizations, and an initial scan of literature that determined the number of systematic reviews and studies in each priority area and incidence of adverse events for each priority area. As well, an inventory of germinal patient safety literature and adverse event statistics have been collated, feedback obtained from partners on priority areas, and patient safety systematic reviews and a guideline inventory initiated.

As QJBC progresses through its second year, there is increased focus on the development of the Safety Resource Engine and conducting several priority syntheses. A Web-based patient safety resource engine is being established that will be integrated into already available Web-based tools. The resource will facilitate the exchange of existing knowledge, tools, and resources in the area of patient safety. The engine will serve a “clearinghouse” function and include a registry of available syntheses, practice guidelines, and clinical pathways with safety-related...
recommendations. It will also function as a Web-based
toolkit for finding, critically appraising, and synthesizing
evidence, as well as tools for adapting already developed
guidelines. In addition to the empirical evidentiary base,
the resource engine is being designed to catalog frame-
works, theories, and approaches used internationally (e.g.,
quality assessment for guidelines, adapting guidelines for
different contexts). The key for QJBC is to enhance access
to patient safety related information while being mindful
of quality tools already available on the Web. To avoid du-
plication, a directory of links to other networks of interest
will also be tabulated. For example, the new Patient Safety
Crosswalk (http://www.patientsafetycrosswalk.ca/) deve-
loped by CPSI provides the latest updates across Canada on
patient safety interests, news, events, projects, and research
will be included.

By year 3, in addition to evidence syntheses and guide-
line adaptation, QJBC will collaborate with our partners
and other funding agencies to develop implementation
studies.

Evaluation of the Academic-Policy Collaboration
The overriding goal for QJBC is to improve the quality
and reliability of practice, and ultimately health outcomes
by enabling a proactive use of best available evidence on
patient risk and safety in clinical and community settings.
QJBC is a knowledge translation initiative and as such is
evaluated differently than traditional research grants. In
this case, CIHR does not expect us to simply measure by
deliverables or milestones, but rather looks for positive
impact (anticipated and unanticipated) on the healthcare
community. CIHR allows knowledge translation initiatives
the flexibility to emerge and deviate if necessary from the
original proposal as the community’s needs evolve. The
progression over time of the initiative is monitored by
CIHR through annual reports submitted by the principal
investigator. An influencing framework for our evaluation
is the Lavis and colleagues’ multidomain framework for
assessing country level efforts to link research to action
including general climate for research use, production of
relevant and appropriately synthesized research for users,
and the facilitating of “push and pull” efforts (Lavis et al.
2006). The QJBC Advisory Council has developed a draft
evaluation plan that is being further refined with input from
CIHR (see Figure 4).

Years 4 and 5 will see knowledge in patient safety being
put to action in terms of capacity building, education, train-
ing, and the implementation of the knowledge translation
plan. Partners will be assessed for needs regarding train-
ing in evidence synthesis and use. For example, further
capacity building will occur through initiatives with the
Canadian Health Libraries Association, Joanna Briggs In-
stitute Comprehensive Systematic Review Training Work-
shops, the Joanna Briggs Institute Colloquium, and
CAN-IMPLEMENT® Training. Outreach will also involve
continued work with the National Patient Safety Round Ta-
ble events and the Canadian Healthcare Safety Symposia.
Education will be supported through poster presentations,
patient safety visiting scholars, and participation in nurs-

Implications to Policy, Research and Practice,
and Education
The goal of knowledge translation in health care is to im-
prove the quality of care and patient outcomes. The twofold
venture with the QJBC partnership will: (1) provide ac-
cess to the best available evidence for patient safety in
identified priority areas, thereby facilitating an increased
awareness and knowledge about safety issues and current
research in the area; and (2) engage users in discussions
concerning the applicability or appropriateness of the in-
formation to their circumstances across the continuum of
care. QJBC will conduct systematic reviews relevant to
partner issues on priority patient safety topics identified
by stakeholders. The QJBC Advisory Council represents
a wide number of health sectors and networks in Canada
that will be instrumental in determining priority patient
safety issues. In addition, to the academic-policy part-
nership, QJBC is maintaining our regional academic-practice
partnership and we are meeting with nursing professional
practice representatives locally to determine their patient
safety practice issues and research questions. QJBC will
also provide support and training for guideline adaptation
to various contexts.

QJBC is well anchored within both academic and prac-
tice domains. To be effective, it has brought together an
academic team with clinical expertise in various health
sectors, experience with different patient populations and
health services domains, well-versed in epidemiology re-
search and qualitative enquiry (Table 1). This table illus-
trates the breadth of expertise in such an initiative and was
useful to identify strengths and potential gaps within our
scholarship team. From our policy partners’ perspective, it
identified the range and type of experience they can draw
upon. The grid may be helpful to other centers replicating
the process.

When synthesis results indicate that changes in policy
may be required, QJBC in collaboration with its part-
ners will draft and tailor briefs to present this information
at appropriate focused meetings, conferences, and polit-
cal and decision-making forums. This is an area where
the Partnership will actively guide knowledge exchange
activity.
**Stakeholder Dissemination**

All systematic reviews will be made available in their entirety in report format, including the scope of enquiry, findings and subsequent recommendations, and will be available through the QJBC Web site and on other discipline-appropriate Web sites such as the Cochrane Library, Joanna Briggs Institute, Accreditation Canada, and CPSI and/or other Web sites as appropriate. A brief summaries of systematic review recommendations, modeled on the JBI Best Practice Information sheets, will also be available for practitioners’ immediate. A needs assessment will be conducted through our partners to determine how best to address remote and rural needs where information technology may not be readily available. Other dissemination modalities include peer-reviewed manuscripts, national and international conferences and forums to access a wide audience of practitioners, knowledge brokers, and decision-makers.

To increase the application of research findings and uptake of research into practice, teams of practitioners from different healthcare organizations, for example, long-term and community care, will be to a series of interactive educational seminars that will be advertised on all Partnership Web sites. The objectives of these seminars will be to discuss the findings and implications for practice. Feedback from these sessions will in turn, inform strategies used in implementation projects. Notably, our patient representatives will be invaluable to advise QJBC on strategies to raise safety awareness through education that will reach patient populations.

A fundamental philosophical tenet driving QJBC relates to the importance of knowledge translation with the next generation of practitioners. Patient safety presentations will be tailored to undergraduate healthcare students (nursing, medicine, and rehabilitation science) beginning at our own university and working through educational channels to champion this element. For example, during Patient Safety week in November 2010 and 2011, we constructed patient safety focused student lab sessions to highlight prevention of adverse events. A patient safety “room of horrors” with several scenarios was set up for students to test their knowledge and
observation skills and recognize an error or adverse event in the offing. The event was well-received by health sciences students and clinical faculty (Nursing, Rehabilitation Science, Medicine, Pharmacy), and this event will be held annually. QJBC is in a unique position to target our next generation of patient care providers by developing patient education initiatives within the existing infrastructure of the academic environment. Both graduate and undergraduate students and clinicians are mentored through the systematic review process, using the JBI methodology, thus raising awareness of patient safety issues while enhancing student/clinician skill and knowledge in the integration and use of evidence for practice.

**SUMMARY**

By supporting improved use of all available patient safety evidence to address questions of effectiveness, feasibility and appropriateness of care, QJBC will engage in an intersectoral approach focused on the full continuum of care for patient safety. The initiative is founded on an academic-policy partnership with a university (Queen’s), Accreditation Canada, the Canadian Patient Safety Institute, and the CIHR to advance best practices in patient safety, improve the quality and reliability of practice and ultimately, health outcomes, through the use of best available evidence. The QJBC alliance is focused on incrementally building a vibrant community of practice dedicated to evidence generation and use for patient safety. It is an experiment to work with national partners through an integrated scholarship approach to be more responsive at the policy level. Furthermore, it will benefit health services planners and decision-makers, researchers, policy-makers, funders, healthcare providers, educators, and patient populations.

We hope to report back to *Worldviews* audiences on our successes (and breakdowns) with such a partnership after a few years’ experience. We would also welcome feedback on this approach and dialogue with other such collaborations internationally.

**References**


