Across practice settings, most nursing care is provided to older adults. Yet most nurses receive limited education to care for older adults, especially those with complex needs. A Knowledge Exchange Institute for Geriatric Nursing Education brought together 31 Canadian nursing faculty members and nursing doctoral students and provided them with tools and resources to enhance teaching and curriculum in baccalaureate nursing programs. Guided by the Knowledge-to-Action Process model, participants received usable summaries of the best research evidence about care for older adults and tools to increase the likelihood of successful integration of these resources in their teaching and curriculum. Feedback from participants indicates that their personal goals and the goals of the Knowledge Exchange were met. Through a public interactive wiki, participants and others will continue the process of knowledge exchange to improve nursing education and nursing care for older persons.
Introduction
There is an urgent need to enhance gerontological content in nursing education. This paper describes the process of knowledge transfer and exchange through the Knowledge Exchange Institute for Geriatric Nursing Education for current and future educators in baccalaureate nursing education programs in Canada.

Background
One in seven Canadian seniors receives home care. Seniors are three times as likely as younger Canadians to be admitted to hospital and are also more likely to be readmitted. Their length of stay is twice as long as younger Canadians’ (Statistics Canada 2006). In the United States, care of older adults comprises “25% of ambulatory care visits, 48% of hospital patient days, and 85% of nursing home residents” (Burbank et al. 2006: 91). In Canada, as in the United States and other Western countries, care of older adults is the “core business of health care” (Burbank et al. 2006: 91). Rosenfeld and colleagues (1999: 84) assert that “today, a nurse’s typical patient is an older adult” and “it behooves the nursing community to ensure that every nurse graduating from a baccalaureate nursing program has a defined level of competency in care of the elderly.”

Analyses of nursing curricula consistently indicate that in many cases, gerontological content in nursing education does not reflect the need to prepare nurses to meet the complex healthcare needs of older adults (Baumbusch and Andrusyszyn 2002; Fagerberg et al. 1997; Fagerberg and Gilje 2007; Ma 2007; Rosenfeld et al. 1999), with notable improvements in the United States in recent years (Berman et al. 2005). There is a debate on the best ways to educate nursing students in gerontology. Wallace and colleagues (2005) suggest that having both stand-alone nursing courses and integrated gerontology content in every course is very important and perhaps required in future nursing programs. However, many faculty are unprepared to teach gerontological content.

Considerable work to enhance gerontology curricula has been accomplished in the United States through the American Association of Colleges of Nursing and the John A. Hartford Foundation. Their work includes establishing “care of older adults” core competencies for baccalaureate nursing programs (AACN 2000) and development of enhanced curricula in 30 baccalaureate and graduate nursing programs (Thornlow et al. 2006). An evaluation of these efforts indicated early success, with increases in gerontological content in baccalaureate nursing programs between 1997 and 2003 (Berman et al. 2005). However, the authors noted a shortage of nursing faculty with expertise in gerontology. Two joint AACN/John A. Hartford Foundation projects addressed the need to build faculty expertise: a faculty guide for curriculum revision (Thornlow et al. 2006) and the Geriatric Nursing Education Consortium Project. The Education Consortium
focused on faculty development by creating evidence-based resources to enhance geriatric content in senior baccalaureate nursing courses and trained over 800 faculty members from 426 nursing programs across the United States at six three-day institutes (AACN 2000; Laurie Wilson, personal communication May 7, 2009).

The lack of gerontology content in Canadian baccalaureate programs is not sufficient either, as indicated by results of the 2006 Canadian Registered Nurse Examination, where fewer than half of answers related to patients over 80 years old were correct (CNA 2006). Similar gaps in gerontology knowledge and skills are found in clinical practice. Kaasalainen and colleagues (2006) asked practising registered nurses (RNs) if new RN graduates were prepared for gerontological nursing practice. Results indicate that 77% of practising RNs did not believe that new graduates are fully prepared to work with the elderly. Some of the areas identified that needed more preparation were dementia (identified most often), healthy normal aging, medication management, pain management, depression, fall prevention, communication, end-of-life care and skin and wound care.

The perception that Canadian nurses are not prepared for the healthcare needs of the population they serve is a major concern. A 2002 survey of Canadian nursing programs found that gerontology content is integrated in most Canadian baccalaureate nursing programs, with few programs offering courses with an explicit focus on care of older persons (Baumbusch and Andrusyszyn 2002). An earlier survey found that most nursing faculty do not have advanced gerontological education, meaning that integrated gerontology content is taught by non-experts (Earthy 1993). Regardless of whether gerontology content is taught by gerontology experts, the pace and breadth of research and knowledge development relevant to nursing care for older adults make it difficult to stay up to date with current knowledge and ensure that the best research evidence is integrated into curricula and teaching. The need to educate nursing educators in baccalaureate nursing programs in Canada is real.

The Knowledge Exchange Institute for Geriatric Nursing Education builds on work in the United States. It was designed to address this need and support enhanced gerontological content in Canadian baccalaureate nursing education.

**Theoretical Framework**

According to the Canadian Institutes of Health Research, “knowledge translation is a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically sound application of knowledge” (CIHR 2009: slide 3). It involves making users (i.e., nursing educators) “aware of knowledge and facilitating their use of it to improve health and health care systems … [and] moving knowledge into action” (slide 6).
Planning for the Knowledge Exchange Institute for Geriatric Nursing Education, hereafter referred to as “the Institute,” was based on the Knowledge-to-Action Process model (Graham et al. 2006). The model is presented in Figure 1. According to this model, there are two cycles in the Knowledge-to-Action Process, knowledge creation and action. “Knowledge” includes research-based knowledge as well as experience and expertise. The results of knowledge creation include research reports, knowledge syntheses (e.g., state-of-science reviews provided in the Institute) and knowledge products (e.g., guidelines and tools targeted at particular knowledge users such as gerontological nurses or nurse educators).
In the Knowledge-to-Action Process model, research is moved into action by knowledge users (in this case, nursing educators) through a process of (1) identifying the problem (e.g., “My students are not learning enough about a particular aspect of nursing care for older persons” or “Our curriculum does not offer sufficient opportunities to learn about care for older persons”); (2) identifying, reviewing and selecting relevant knowledge; (3) adapting knowledge to the local context (e.g., a baccalaureate program, a course or a clinical learning setting); (4) assessing barriers to using the knowledge (we also considered facilitators to using the knowledge) (e.g., variability in clinical practice learning settings; attitudes about geriatrics and gerontology); (5) planning and implementing strategies to transfer and promote adoption of the knowledge (e.g., using a research summary in a classroom or a new assessment tool in clinical learning); (6) monitoring knowledge use (e.g., feedback from clinical instructors about use of the tools); (7) evaluating the impact of knowledge use (e.g., do students use the new assessment tools?); and (7) sustaining ongoing use of this knowledge (Graham et al. 2006: 20).

**Knowledge Exchange Institute for Geriatric Nursing Education**

The goals of the Institute were to (1) transfer new research-based evidence and knowledge about care of older persons to Canadian nursing educators, (2) provide Canadian nursing educators with tools to incorporate evidence-based gerontology and geriatrics content in undergraduate curricula and (3) engage Canadian nursing educators as knowledge transfer champions for enhanced gerontology and geriatrics content in nursing curricula within their colleges or universities, at the provincial and national levels.

**Participants**

The Institute was advertised by email and on relevant websites. We sent a one-page flyer, registration form and covering letter to the deans and directors of all Canadian baccalaureate nursing programs listed on the Canadian Association of Schools of Nursing website. We also sent information to Canadian doctoral nursing programs. Additionally, this information was distributed via the National Initiative for Care of the Elderly (NICE) email distribution list. NICE is a network of researchers, practitioners and students dedicated to improving care of older adults through knowledge transfer, funded by the Canadian government.

The Institute was funded by NICE and the Canadian Institutes for Health Research. Twenty-eight nursing faculty members and 18 doctoral students applied to attend. Funding supported the full costs, including partial travel for 20 faculty member participants and full travel for 10 doctoral students.

The Institute ran for two full days. The 30 participants represented 22 universities and colleges in seven Canadian provinces. Seven of the doctoral students held
faculty positions. Many of the participants had considerable geriatric clinical experience (between two and 30 years, mean 16, $SD$ 7.7). Among faculty participants, the mean years of teaching experience was 7.8 ($SD$ 5.8). All but one faculty participant were currently teaching a course with gerontology content.

Evaluation
At the end of the Institute, 28 of the participants completed the evaluation questionnaire. The questionnaire included (1) identification of up to three pre-Institute goals and a rating of the extent to which the goals were achieved and (2) 14 items rating the value of the knowledge tools for personal use and for their colleagues’ use, the assigned preparation exercises, their learning at the Institute and their intentions to use the knowledge tools. There were open-ended questions about highlights of the institute, suggestions for improvement and comments to the funders. Relevant evaluation findings are presented along with descriptions of components of the institute. Additional findings are described in a separate section.

Knowledge tools and products
We started in the centre of the Knowledge-to-Action Process triangle by identifying knowledge syntheses, products and tools that would enhance gerontological content in undergraduate nursing education. They were given to participants in electronic and paper format (two CDs, a large binder and additional samples of tools). A significant resource was a set of state-of-science literature reviews on 10 key topics (with two additional subtopics) for nursing care of older persons produced by the Geriatric Nursing Education Consortium (GNEC) of the American Association of Colleges of Nursing. Each review was accompanied by up to 100 PowerPoint slides, with lecture notes and a case study. The rigorous process of synthesizing research for the state-of-science reviews was described by a representative of the American Association of Colleges of Nursing. Additional tools included electronic copies of relevant Nursing Best Practice Guidelines from the Registered Nurses Association of Ontario and Best Practice Guidelines from the Canadian Coalition for Seniors’ Mental Health; hard copies of tools from the National Initiative for Care of the Elderly on consent and capacity, caregiving, depression, end-of-life care and elder abuse; the Canadian Coalition for Seniors’ Mental Health Late Life Suicide Prevention Toolkit; and links, with printed examples, to 23 websites, portals and web-based knowledge products. All participants rated the knowledge products as useful for both themselves and their colleagues, 27 (96%) completely agreeing with the statement, “I received new resources that will be useful for my teaching” and 26 (93%) completely agreeing with the statement, “I received new resources that will be useful for my colleagues.”

Facilitating knowledge to action
Most of the work of the Institute was designed to help participants put the new
knowledge products into action – to incorporate them in their teaching or curriculum. The Knowledge-to-Action Process model was explained and referred to throughout the Institute.

The first step in the action cycle is identifying a problem and the knowledge relevant to the problem. To facilitate this, participants completed an assignment before they attended the Institute. They conducted a curriculum survey of their baccalaureate nursing program and mapped the content of a course they teach (GNEC n.d.) to identify where core competencies for geriatric nursing endorsed by the AACN (2000) were present. Of the 28 participants who completed the evaluation questionnaire, 25 reported completing the pre-workshop curriculum survey. Twenty-two (88%) reported finding this helpful in identifying the gaps in the current curriculum. All but one of the 24 participants who completed the course content map found it helped them identify opportunities to use the knowledge tools in their teaching.

Adapting knowledge to the local context
The expectation was that participants would adapt the knowledge products to their settings after they returned home. With the large number of knowledge products provided, they needed time to get to know all that was available. To begin this process, we had an example lecture, demonstrating how three of the knowledge products had been adapted at Brock University. This led to discussion about how to adapt the knowledge products. Small group discussion, including planning in pairs, was used to help participants start planning how to incorporate the knowledge products in their teaching. Following the Institute, 18 participants (64%) completely agreed with the statement, “I know how to incorporate the institute resources in my teaching,” while 10 (36%) somewhat agreed. All participants reported that they planned to learn more about the knowledge products in the coming year.

Assess barriers and facilitators to knowledge use
The next step in the action cycle is assessing barriers and facilitators to knowledge use. Knowledge use is influenced by stakeholders, environmental readiness and resources (RNAO 2002). To use the knowledge products successfully, participants need to engage key stakeholders, for example, faculty colleagues, clinical instructors, students and partners in clinical learning agencies. The Institute focused on two key stakeholder groups: faculty colleagues and clinical instructors. The pre-Institute curriculum mapping exercise required participants to engage in discussion with colleagues about the courses they taught. This was a way to identify barriers and facilitators to change among their colleagues. At least three participants worked in programs that were undergoing curriculum revision.
The second stakeholder group considered at the Institute was clinical instructors. Two universities’ experiences providing education to clinical instructors was used as a case example. The cases included description of the education about dementia and delirium, how the event was promoted and financial and other resources used. In small group discussion, participants discussed barriers to using the new knowledge tools in their settings, including in clinical learning courses. They were challenged to consider the question, “What are the barriers and facilitators to successfully supporting clinical instructors’ use of the new knowledge?” Participants identified barriers, including turnover of clinical instructors; clinical learning in practice settings that have not adopted the practices taught by the clinical instructor/course; and funding for time for clinical instructors to learn the new knowledge. Some of the barriers were also framed as possible facilitators (e.g., instructor turnover is an opportunity to hire instructors with geriatric nursing expertise). Other facilitators included accessible web-based learning for clinical instructors (e.g., Blackboard, WebCT), simulation labs and potential support for instructors acquiring graduate credit courses.

**Select, tailor and implement interventions**

The next step of the action process is selecting, tailoring and implementing interventions or strategies to use the knowledge. Discussion in pairs and small groups focused on how participants could use the new knowledge tools in their teaching and how they could influence stakeholders, particularly faculty colleagues and clinical instructors.

In small group sessions, participants began to plan strategies for engaging their colleagues, using these questions as starting points: “How are you going to engage your colleagues? With which of your colleagues could you offer to share your course mapping experience? How would you do that?” They also shared and discussed strategies to support clinical instructors’ adoption of knowledge tools from the Institute. They were asked to share their success stories.

On the final morning of the Institute, Gail Donner, professor and dean emeritus from the University of Toronto, led a presentation and discussion, “Making It Happen at Your University.” Her talk focused on strategies for success in participants’ efforts to improve curricula. Strategies included offering faculty tutorials on caring for the elderly, getting interest from communications departments at universities, increasing graduate studies in gerontology, working together with faculty with common interests, meeting people who have power at your university to share the information and, most importantly, capitalizing on students who share an interest in gerontology. Several participants commented on how helpful and inspiring this session was for them.
The Institute closed with participants’ publicly committing to their next steps. All participants reported planning to work on improving gerontology content in their baccalaureate programs. Twenty-one (75%) participants fully agreed with the statement, “I learned strategies to influence my colleagues,” while seven (25%) somewhat agreed.

Monitoring knowledge use, evaluating outcomes and sustaining knowledge use
The final three steps in the action process are monitoring knowledge use, evaluating outcomes and sustaining knowledge use. The Institute was designed to facilitate development of new relationships among participants. Participants can call on one another as they continue in the action process. We created an email discussion group so that participants can post questions, advice and new resources. When participants are contacted for follow-up evaluation of the Institute, they will be asked to refer back to the curriculum and course content maps they completed prior to the institute. This approach may provide a reminder to persist with these steps of the action process.

A wiki (Geriatric Nursing Education Wiki n.d.) was developed to support ongoing knowledge exchange among participants and expand knowledge exchange beyond participants. Knowledge tools provided at the Institute are described with links on the wiki, which is publicly accessible. Anyone can post new knowledge tools or their experiences of influencing curriculum changes within their universities on the wiki.

Feedback from participants
Feedback from participants was very positive. Participants identified between one and three pre-Institute goals. Networking, making new connections with like-minded educators and learning from peers was a goal for 23 (82%) participants. Many wanted to learn more about gerontological nursing (8, 28%) or obtain resources for their course or program curriculum (15, 53%). Likewise, many participants had goals related to preparing to make a change, e.g., learn new teaching and evaluation techniques (10, 36%), be able to change curriculum (8, 28%) and be able to influence policy and national standards (3, 11%). Some participants had goals related to their research (4, 14%). All but one participant reported that at least one of the goals was fully met. The participant whose one pre-Institute goal was not met noted, “What I got was way better.” Twenty-four (86%) participants reported that all their goals were fully met.

In response to the question about ways to improve the Institute, seven participants suggested a longer Institute with more time for discussion. Four participants wanted more examples of teaching strategies or more time to hear about other participants’ teaching. For the most part, participants reported that the best part
of the institute was the knowledge tools they received, followed by networking opportunities and feeling energized to make change. All participants made positive comments about what they gained from the Institute, describing it as “practical,” “informative,” “immediately useful” and “inspiring.” Many participants requested a follow-up meeting.

**Next Steps**
The final Institute goal was to engage participants as champions beyond their universities. Participants were invited to join work of the National Initiative for Care of the Elderly to promote national adoption of core competencies for geriatric nursing. History at the American Association of Colleges of Nursing of developing and endorsing separate geriatric competencies, then integrating these competencies with essential baccalaureate competencies (AACN 2008), was described. Participants were given copies of the NICE draft Interprofessional Core Competencies for Care of Older Adults (Guse and Farkas n.d.) and the Canadian Gerontological Nurses Association Standards of Practice (CGNA 1996).

**Discussion**
The imperative to prepare nursing graduates for the reality that the core business of healthcare is care of older persons is clear. Fortunately, many tools to assess and enhance the curriculum are available to nursing programs and educators (AACN 2000, 2008; Geriatric Nursing Education Consortium n.d.). Furthermore, there is a growing body of knowledge products (Geriatric Nursing Education Wiki n.d.) that make it easier for gerontological experts and non-experts alike to incorporate the best research evidence into their teaching.

The Knowledge-to-Action Process model (Graham et al. 2006) of knowledge translation was useful for planning, guiding and delivering the Institute. In addition to receiving many knowledge products they can use in their teaching and share with their colleagues, participants began a process of planned change. The process of completing the curriculum survey and course content map prior to the Institute helped participants identify specific problems that the knowledge products will address and potential targets for change in their courses and the curriculum at their institution. They left with specific action goals for their teaching and their programs.

The Institute emphasized assessing barriers and facilitators to change, including stakeholders, resources and environmental readiness. Variability in environmental readiness was apparent. Some participants’ programs were
engaged in curricular revision, and their colleagues were eagerly awaiting resources that would support enhanced gerontological content. Others left with strategies to improve environmental readiness, beginning with moving colleagues to a better understanding of care of older persons as a “core business” in today’s healthcare systems. Participants found that completing the curriculum survey was a useful way to engage their colleagues.

The Institute was designed for faculty who are not gerontology experts. While many of the participants had considerable experience in gerontological nursing, many of the knowledge products were either unavailable or unknown to them prior to the Institute. They were grateful to receive these tools and recommended wide dissemination. Creating the Geriatric Nursing Education Wiki should make it easier for participants to share resources with their colleagues and possibly for people who did not attend the Institute to access the resources.

The participants represented about a quarter of the 87 colleges and universities listed on the Canadian Association of Schools of Nursing website (2009). There were 14 more applicants than we were able to accommodate at the Institute, indicating an unmet demand. Given the years of gerontological experience of many participants, it is likely that they are highly motivated to use the knowledge tools. In order to attract faculty who do not have gerontology expertise to future Institutes, it may be necessary to work with deans to persuade them to support faculty participation. Formal evaluation of the longer-term outcomes of the first Institute could provide convincing evidence about the benefit of faculty participation in future knowledge exchange programs or Institutes.

The Knowledge Exchange Institute for Geriatric Nursing Education was an efficient, relatively low-cost way to disseminate research relevant to educating nurses for care of older persons. Early feedback from participants indicated that the experience of engaging in knowledge exchange was extremely valuable. The extent to which participants are able to improve their teaching and curricula and then sustain the improvements remains to be seen. Based on experience in the United States, programs to support enhanced curricula have produced improvements (Berman et al. 2005). The knowledge exchange focus on both curricular enhancement and tools for teaching may have a similar impact for Institute participants. However, change is a slow process. It will be important to evaluate how participants use the knowledge and tools from the Institute over the long term.
The absence of feedback from other stakeholders beyond the participants of the institute could be considered a limitation of this program. Future program evaluations of these types of initiatives may involve a more thorough understanding of the impact of the programs on faculty, students and patients. Faculty members would have an enhanced understanding of care of the elderly, and this information would be infused within the courses they teach. An evaluation of faculty adopting these learning modules into their curricula could be compared to those faculties who do not participate (Glista and Petersons 2003). One would expect that students in these programs would have improved attitudes, knowledge and skills with regard to care of the older adult. Process evaluations could be conducted to determine whether the information taught in the modules was transferred to their clinical learning environments (Gilford et al. 2005). With an increase in adoption of gerontology knowledge into curricula, one would expect that the Canadian Registered Nursing Examination marks related to care of the elderly would improve, as students would be better prepared. Eventually, more rigorous trials may involve following undergraduate nurses who have been educated in a more comprehensive gerontology curriculum to examine whether their care of older people differs. One would expect that patients in these communities and facilities would rate the quality of services received as more positive. However, multiple systemic factors that influence new graduates’ ability to transfer their knowledge of care of the elderly into practice settings (e.g., elder-friendly hospitals, mentorship from gerontological experts, supportive leadership) would have to be identified and accounted for within the evaluation (Kohlenberg et al.).

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References

Improving Gerontology Content in Baccalaureate Nursing Education through Knowledge Transfer to Nurse Educators


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