Moving Knowledge to Action: A Qualitative Study of the Registered Nurses’ Association of Ontario Advanced Clinical Practice Fellowship Program

**Wendy A. Gifford**, RN, PhD  
Assistant Professor, School of Nursing, Faculty of Health Sciences, University of Ottawa  
Associate Researcher, Saint Elizabeth  
Markham, ON

**Barbara L. Davies**, RN, PhD  
Professor, School of Nursing, Faculty of Health Sciences, University of Ottawa  
Co-director, Nursing Best Practice Research Unit, University of Ottawa  
Ottawa, ON

**Jenny Ploeg**, RN, PhD  
Associate Professor, School of Nursing, McMaster University  
Hamilton, ON

**Sue Eldred**, RN, MBA  
Doctoral Student, University of Ottawa  
Ottawa, ON

**Irmajean Bajnok**, RN, PhD  
Director, International Affairs and Best Practice Guidelines Programs  
Co-director, Nursing Best Practice Research Unit  
Toronto, ON
Abstract
With funding from the Ontario Ministry of Health and Long-Term Care, the Registered Nurses’ Association of Ontario (RNAO) established the Advanced Clinical Practice Fellowship (ACPF) program in 2000 to improve patient care and outcomes through advanced nursing knowledge and skills.

This paper describes the perceptions of ACPF fellows regarding their influence on quality of care and patient outcomes, specifically, the types of practice change activities initiated, successful implementation and influence on outcomes, barriers encountered and strategies used to address them and influence change.

Methods: Thirty telephone interviews were conducted with ACPF fellows after completing their fellowship. Interviews were analyzed using descriptive content analysis.

Results: Fifty-one practice change activities were identified. Ratings for successful implementation (1 = not successful, 10 = extremely successful) were 7.2/10; ratings for successful influence on outcomes were 7.4/10. Barriers identified were (a) resistant attitudes, (b) time and workload, (c) lack of administrative support and (d) lack of mentor’s involvement. Strategies proposed were (a) building a knowledge base, (b) negotiation and dialogue and (c) self-reliance and persistence.

Implications: The ACPF program is an innovative and highly utilized initiative. While this program supports strategic directions of government and nursing professional groups, further research will validate and expand on the specific ways in which the initiative influences professional development, healthcare delivery and patient outcomes.

Background
The delivery of effective and high-quality healthcare can be challenging, and known gaps exist between quality patient care and actual practice (Grol et al. 2005). It is estimated that 30–45% of patients do not receive proven effective care, and 20–25% receive care that is not needed or is potentially harmful (Grol et al. 2005; McGlynn 2003). For example, evidence-based clinical practice guidelines recommend that patients with diabetes have the sensation in their feet assessed when being treated for foot ulcers, because loss of sensation is one of the strongest predictors of complications. Yet, a recent chart review of patients receiving home care services in four regions of Ontario revealed that no patients had their feet assessed for sensation when receiving nursing care for diabetic foot ulcers (Gifford
et al. 2011). Although considerable research has been conducted to understand implementation of practice change in healthcare, results are frequently disappointing, and patients continue to receive suboptimal care (Grimshaw et al. 2004; Davies et al. 2008).

The science of knowledge translation assists healthcare providers in understanding and implementing evidence-based practice change strategies for the greatest chance of success. Knowledge translation encompasses the “ethically sound application of knowledge to improve the health of Canadians” (CIHR 2012). A number of conceptual frameworks have been developed to guide the process of addressing gaps between research and practice. The Knowledge to Action (KTA) framework is one such framework (CIHR 2012). The KTA framework is based on an analysis of 31 planned action theories and provides a systematic process to influence practice change in healthcare for improved patient care and outcomes (Graham et al. 2006, Graham et al. 2007). Briefly, the KTA process begins with recognition of a problem, followed by a synthesis of best practices and possible solutions relevant to that problem. Knowledge is then adapted to the local context, barriers to solutions are identified, and interventions are designed and implemented to address these barriers. Finally, knowledge use is monitored, outcomes are evaluated and strategies to sustain knowledge use are developed. Through knowledge creation and integration, the KTA framework illustrates components of the knowledge transfer process for practitioners and other stakeholders to create, implement and evaluate solutions for integrating practice change into healthcare settings.

As the largest professional group of healthcare providers, nurses have the potential to substantially improve healthcare delivery and maximize outcomes for patients and families through knowledge translation. To this end, and with funding from the Ontario Ministry of Health and Long-Term Care (MOHLTC), the Registered Nurses’ Association of Ontario (RNAO) established an innovative and highly utilized initiative, the Advanced Clinical Practice Fellowship (ACPF), aimed at improving patient care and outcomes in Ontario through advanced nursing knowledge translation and skills development (RNAO 2012).

To participate in the ACPF program, registered nurses respond to a request for proposals (RFP) to undertake 450 hours (over a 12- to 20-week period) of mentorship support and self-directed, clinically related learning in an area supported by their sponsoring organization. Applicants identify a practice gap or organizational need and describe how increased nursing knowledge and expertise will improve patient care and outcomes. Sponsoring organizations of successful applicants (hereafter referred to as “fellows”) receive a financial contribution of $13,000 from the RNAO (funded through the MOHLTC) and must contribute a minimum of $5,000 in kind to support the fellow (RNAO 2012). Mentorship is
an essential component of the fellowship and is provided by at least one primary mentor who specializes in the identified topic area. Primary mentors are master’s-prepared nurses with expertise in the fellow’s chosen topic area, and may be internal or external to their sponsoring organization. Other mentors may be involved, but they are not required to have a master’s degree and may be from other disciplines. Mentors volunteer their time, with the backing of their employer, to support the fellow and enhance their own professional development. As a critical component of the ACPF program, mentorship is involved throughout all aspects of the fellowship, from identifying practice gaps and organizational needs to writing the proposal and meeting the goals of the fellowship.

A literature review found many studies on mentoring; however, only a small number evaluated mentoring to advance nursing practice for positive patient outcomes, practitioner outcomes or both. Rather, mentoring programs have been used for teaching student and novice nurses, such as mentoring new graduate nurses to ease their transition into practice (Fogel 2011; Fox 2010), assisting role transitions for administrators, nurse practitioners or faculty members (MacPhee and Bouthillette 2008; de Campli et al. 2010; White et al. 2010; Hill and Sawatzky 2011) and providing career direction for junior colleagues (Allen et al. 2004) or leadership development for nurse executives (Weiss et al. 2008). These programs are typically developed and administered by organizations for their employees, often with the goal of recruiting or retaining nursing staff.

A small but emerging literature exists on mentoring as a strategy to influence knowledge translation and evidence-based practice change. These studies included mentorship as a mechanism to develop the research capacity of clinical nurses to improve quality of care and patient outcomes. For example, Gawlinski and Miller (2011) described an advanced nursing research program in United States that incorporated research mentoring from a hospital research institute to assist and supervise staff nurses in designing and conducting clinical research. Unit-based research teams that included mentors and staff were developed to facilitate interactive education and to answer clinically relevant research questions using the scientific process. Program evaluation suggested that the nurses’ professional development goals were better met through the program, and that outcomes were realized such as lower pain scores and improved patient assessments (Gawlinski and Miller 2011). Similarly, Ploeg and colleagues (2008) evaluated a research mentorship program designed to build research capacity among staff of community care agencies in Ontario, Canada. Through in-depth interviews, focus group interviews and written evaluations, participants reported positive effects of the program on the development of evaluative and research skills (Ploeg et al. 2008). Factors influencing participants’ engagement in research included positive mentoring relationships and participation in relevant research projects.
A number of programs were directed specifically at engaging nurses in implementing evidence-based practice (EBP) (Cullen et al. 2011; Selig and Lewanowicz 2008; Turkel et al. 2008). Selig and Lewanowicz (2008) described a program in which staff nurses worked closely with clinical leaders, who in turn worked with EBP mentors, to address a clinical practice issue in their workplace. While nurses suggested making substantial practice and policy changes through their projects, no formal evaluation was reported to validate these findings. In contrast, Cullen and colleagues (2011) used survey questionnaires at different points in time to evaluate the Advanced Practice Institute, an innovative program designed to develop advanced skills and build organizational capacity for EBP. Immediate and long-term positive patient, staff and financial outcomes were reported that included improved patient satisfaction and symptom management, improved care processes, and reduced nosocomial events such as falls and pressure ulcers (Cullen et al. 2011).

In summary, mentorship programs for advanced nursing knowledge and skills have targeted a variety of knowledge, skills and practices that include research inquiry (Cullen et al. 2011; Ploeg et al. 2008; Turkel et al. 2008), evidence-based practice (Gawlinski and Miller 2011; Selig and Lewanowicz 2008; Wells et al. 2007) and leadership development (Tourangeau et al. 2003; Weiss et al. 2008). However, little research has evaluated quality of care or patient outcomes as a result of mentorship programs and fellowships in nursing.

The RNAO’s ACPF fellowships focus on one of three broad topic areas: (a) clinical practice, (b) leadership or (c) guideline implementation. Clinical fellowships focus on increasing knowledge and skills of the fellow for application in a specific clinical area in an organization and have involved such topics as neonatal skin care in the Neonatal Intensive Care Unit and prevention and healing of chronic wounds in the community. Leadership fellowships focus on leadership development within education, management, research or policy, and have included such topics as leading change in nursing practice for medication reconciliation and applying action research methodology to facilitate organizational learning and change. Guideline implementation fellowships involve activities related to implementing and sustaining RNAO best practice guidelines and have included guidelines related to nursing care for clients with diabetic foot ulcers and caregiving strategies for older adults with delirium, dementia or depression.

Since inception in January 2000, over 365 registered nurses across the province of Ontario have completed an ACPF fellowship (RNAO 2012). Nurses from different healthcare settings have taken part in the program, including acute care, long-term care (LTC), complex continuing care, mental health, home care, public health and professional organizations.
Table 1. Number of participants by fellowship type and sector

<table>
<thead>
<tr>
<th>Fellowship Categories</th>
<th>Clinical</th>
<th>Leadership</th>
<th>Guideline Implementation</th>
<th>TOTAL (n %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Care</td>
<td>4</td>
<td>7</td>
<td>2</td>
<td>13 43%</td>
</tr>
<tr>
<td>Long-Term Care</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>9 30%</td>
</tr>
<tr>
<td>Community</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>8 27%</td>
</tr>
<tr>
<td>TOTAL (n %)</td>
<td>9 30%</td>
<td>12 40%</td>
<td>9 30%</td>
<td>30 100%</td>
</tr>
</tbody>
</table>

**Purpose**

The overall purpose of this study was to describe the perceptions of ACPF fellows regarding their influence on quality of care and patient outcomes after completing an ACPF fellowship. Specific objectives were to (a) describe practice change activities initiated by ACPF fellows as a result of the ACPF program, (b) understand ACPF fellows’ perceptions regarding successful implementation of these practice change activities and their influence on outcomes and (c) identify barriers encountered and strategies used to address barriers and implement practice change.

**Design and Methods**

The study involved a qualitative descriptive design (Sandelowski 2000). Qualitative descriptive designs aim to provide a comprehensive summary of events and are a method of choice when straight descriptions of phenomena are desired (Sandelowski 2000).

Ethical approval was obtained from the affiliated university research ethics board prior to recruitment. A stratified purposeful sample was used to provide representation from all fellowship types and sectors (Table 1). For reasons of feasibility, 36 fellows who had completed an ACPF fellowship between 2004 and 2006 and had completed the ACPF program’s nine-month follow-up evaluation were approached to participate in the study; 30 semi-structured telephone interviews were conducted (83% response rate) by a master’s-prepared research assistant with experience in qualitative interviewing. Reasons for non-participation were either an inability to contact the fellow (n=4) or refusal (n=2). Interviews lasted between 30 to 60 minutes.

**Interview Guide**

The interview guide (available on request from authors) was based on theory and research in knowledge translation (Davies et al. 2006; Gifford et al. 2006; Graham and Logan 2004). Content of the guide was reviewed by experts in the fields of knowledge translation and practice change, and representatives from the RNAO’s
ACPF program. The guide was piloted for clarity and ease of use with two fellows not participating in the study, and minor revisions were made. After identifying basic demographics including years of employment, education and area of work, participants were asked to describe two practice change activities they had implemented as a result of their fellowship. They were asked to rate the success of each activity on a 10-point Likert scale (1 = not at all successful; 10 = extremely successful) and explain their ratings related to (a) successful implementation of practice change and (b) influence on patient outcomes. Barriers when implementing practice change and strategies used to address barriers were then explored.

Data Analysis
The analysis was guided by the Knowledge to Action framework to systematically understand how ACPF fellows adapted knowledge within their local context and how they implemented strategies to address barriers to practice change. Interviews were audio-taped, transcribed verbatim and entered into the NVivo 7 qualitative software program. Using qualitative content analysis procedures (Miles and Huberman 1994), the analysis was guided by the research questions and involved constant comparisons, inductive and deductive coding, and consensus building among members of the research team to summarize the informational content of the data (Sandelowski 2000).

Data were first organized by interview question, and open coding was conducted using respondents’ actual words. An iterative process was then used to reduce the number of codes into broader thematic categories that involved (a) developing and analyzing data matrices, (b) searching for patterns and consistencies of codes within matrices, (c) theoretically organizing, deductively clustering and comparing emergent themes across respondents and (d) returning to transcripts to support or refute theme assignment. Throughout the analysis, preliminary codes and themes were discussed with the research team and revised based on group discussion and further analysis.

Quantitative demographic data and Likert scale ratings were entered and analyzed for means and frequencies in Microsoft Excel. Ratings for the two practice change activities were combined and analyzed together. Data were aggregated and reported by fellowship type and overall totals. The practice change activities described by participants were categorized according to the area of change towards which they were directed: (a) nursing team, (b) organization/policy and (c) fellow. To understand whether barriers and supports differed by fellowship type or sector, comparisons were made across clinical, leadership and guideline implementation fellowships, and acute care, LTC and community sectors. Methods to enhance rigour of the analysis involved (a) iterative review by the research team of themes and supporting data to refine and confirm findings,
(b) separate independent coding and comparisons by two independent raters, (c) examination of data from multiple fellowship types and healthcare sectors, (d) detailed audit trail of decisions regarding data analysis and (e) use of descriptions from the data to provide trustworthiness of the findings.

**Results**

**Characteristics of Respondents**

Demographic characteristics of study participants are summarized in Table 2. All participants were registered nurses, and 73% \( (n=22) \) worked full-time. The mean years employed in nursing was 23.2 (range, 6–40), and mean years working at their agency was 12.1 (range, 1.25–29). Participants from the leadership fellowship had worked the longest at their agency and had the highest percentage (42%) of graduate-prepared nurses.

<table>
<thead>
<tr>
<th>Table 2. Demographic characteristics of study participants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fellowship Categories</strong></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Clinical</td>
</tr>
<tr>
<td>( n=9 )</td>
</tr>
<tr>
<td>Years employed in nursing (mean)</td>
</tr>
<tr>
<td>Years employed in agency (mean)</td>
</tr>
<tr>
<td>Full-time employment status</td>
</tr>
<tr>
<td><strong>Education</strong></td>
</tr>
<tr>
<td>Diploma</td>
</tr>
<tr>
<td>Bachelor</td>
</tr>
<tr>
<td>Master's</td>
</tr>
<tr>
<td><strong>Area of work</strong></td>
</tr>
<tr>
<td>Acute Care</td>
</tr>
<tr>
<td>Complex Continuing Care/LTC</td>
</tr>
<tr>
<td>Community/Professional Association</td>
</tr>
</tbody>
</table>
Table 3. Practice change activities: Ratings for successful implementation

<table>
<thead>
<tr>
<th>Fellowship Categories</th>
<th>Clinical</th>
<th>Leadership</th>
<th>Guideline Implementation</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=9</td>
<td>n=12</td>
<td>n=9</td>
<td>n=30</td>
<td></td>
</tr>
<tr>
<td>Total no. practice change activities identified</td>
<td>15</td>
<td>21</td>
<td>15</td>
<td>51</td>
</tr>
<tr>
<td>Mean rating on successful implementation*</td>
<td>7.3</td>
<td>7.8</td>
<td>6.3</td>
<td>7.2</td>
</tr>
<tr>
<td>Score range*: 0–6</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>Score range*: 7–10</td>
<td>11</td>
<td>18</td>
<td>9</td>
<td>38</td>
</tr>
</tbody>
</table>

* Likert scale ratings between 1–10: 1 = not at all successful/improved, 10 = extremely successful/improved.

Practice Change Activities

All respondents stated they had implemented at least one practice change activity after completing their ACPF fellowship, and 76% reported implementing two. In total, 51 different practice change activities were identified and rated by respondents for success of implementation. The overall mean rating for successful implementation was 7.2 on a 10-point Likert scale, where 1 = not at all successful and 10 = extremely successful (Table 3). Participants from the acute care sector had the lowest mean rating (mean, 6.6), while participants from the community sector had the highest mean rating (mean, 8.1).

The practice change activities implemented by ACPF fellows were classified by the main target area or focus of the change related to (a) the nursing team, (b) the organization and (c) the fellows. Table 4 summarizes the themes that emerged from the analysis. The following quotations illustrate the identified themes, with the fellowship type and respondent identified in parentheses after each quotation.

Practice change activities targeting the nursing team

The majority of participants (60%; n=18) identified the nursing team’s knowledge and awareness as the practice change activity they targeted. This involved raising awareness of best practices and providing education and coaching (both formal and informal) to increase nurses’ knowledge and translate that knowledge into new processes of care for patients:

Raising the awareness is probably the other thing. The awareness of the importance of pain assessment in management … and the education process came into that. … I identified that as one of the things that really needed to be focused on early on. … there wasn’t a general understanding of the importance of pain assessment. (Guideline Implementation, Community)
Sharing knowledge and raising awareness with colleagues was a practice change activity identified by 86% of nurses in the community sector compared to 54% in acute care and 44% in LTC. Almost 78% of respondents who identified this activity were clinical fellows, compared to 33% of leadership fellows.

**Practice change activities targeting the organization**

ACPF fellows engaged in a number of activities that targeted organizational-level change such as new or revised policies and procedures (e.g., organizational policy related to therapeutic relations), product availability (e.g., oral care trays), programs for staff and families (e.g., diversity education program; in-house intra-aortic balloon pump training) and assessment tools (e.g., continence assessment; pain assessment). These activities were identified by 47% \( (n=14) \) of respondents. Most respondents who identified this type of change were from either the acute care or LTC sectors (46.2% and 44.4%, respectively), and 50% had completed a leadership fellowship:

> The other thing that we did for practice was we implemented an oral care tray. … And we brought it right to the bedside. And people were saying, “It’s so much easier to give care if you’ve got the equipment right at the bedside.” Because let’s face it, in the busy nursing world that we work in, you’re not going to be running around looking for equipment. … You might do it the first day, but you know nurses change all the time and it was just inconvenient. So what we suggested to the corporation was that we bring in the trays. (Leadership, LTC)

> Well, I think probably the most significant practice change would be the implementation of our diversity initiative – which is strongly linked to family-centred care – so really developing a framework, for which we work with families of diverse backgrounds, and then … developing and creating an education program to help staff work with families that have diversity issues. (Leadership, Acute)

A number of fellows described involving patients and families in programs to improve outcomes, such as this fellow who described working with a family advisory committee to implement family-centred care into the organization:

> One of the other focuses I’ve had is working with our family advisory committee. We have a committee of family members, and past patients, like patients who have been transferred into the adult system. And they … do consultation and they also do education. Like, they’ll tell their stories to new practitioners to help them understand family-centred care. So I’ve been working with that group to really structure and advance their education program. (Leadership, Acute)
Practice change activities targeting the fellow
Respondents spoke about targeting their own professional growth, learning and development as the focus of practice change. Specifically, these activities involved furthering their education through courses or pursuing a graduate degree, publishing papers or presenting at conferences, or being involved in research. Professional growth activities were reported by 16.7% \((n=5)\) of respondents and involved all fellowship types and sectors.

I did a presentation on the unit, talking about lifelong learning and about the fellowship in general and the benefits that I had, and how it helped me grow. (Clinical, Acute)

And so I had to actually do a self-study. I had to immerse myself in the literature to find out everything I could find out about any kind of best practices around [topic] … and then out of that I ended up writing the [topic] chapter. In that book! (Guideline Implementation, LTC)

<table>
<thead>
<tr>
<th>Inquiry</th>
<th>Theme</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice change activities implemented by ACPF fellows</td>
<td>Activities targeting the nursing team</td>
<td>Nursing team’s knowledge and awareness</td>
</tr>
<tr>
<td></td>
<td>Activities targeting the organization</td>
<td>Policies and procedures, products and programs for staff and families, assessment tools</td>
</tr>
<tr>
<td></td>
<td>Activities targeting the fellow</td>
<td>Professional growth, learning and development</td>
</tr>
<tr>
<td>Barriers ACPF fellows encountered when implementing practice change</td>
<td>Resistant attitudes towards change</td>
<td>Feelings of resentment, lack of interest and an inability to recognize the importance of the practice change by staff nurses, managers, MDs and allied health professionals</td>
</tr>
<tr>
<td></td>
<td>Time and workload issues</td>
<td>Burden on staff and fellows from extra work and lack of time</td>
</tr>
<tr>
<td></td>
<td>Lack of administrative support</td>
<td>Lack of financial and human resources to support the practice change</td>
</tr>
<tr>
<td></td>
<td>Lack of mentor’s involvement</td>
<td>Low levels of engagement and commitment by mentors</td>
</tr>
<tr>
<td>Strategies ACPF fellows used to address barriers and influence practice change</td>
<td>Built a knowledge base</td>
<td>Provided education, facilitated engagement and disseminated information</td>
</tr>
<tr>
<td></td>
<td>Ongoing negotiation and dialogue</td>
<td>Negotiated with managers for resources and education, and communicated with staff to raise awareness and facilitate dialogue</td>
</tr>
<tr>
<td></td>
<td>Self-reliance and persistence</td>
<td>Fellows’ determination and commitment to implement the change</td>
</tr>
</tbody>
</table>
Table 5. ACPF fellows’ ratings of improved patient outcomes

<table>
<thead>
<tr>
<th>Fellowship Categories</th>
<th>Clinical</th>
<th>Leadership</th>
<th>Guideline Implementation</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=9</td>
<td>n=12</td>
<td>n=9</td>
<td>n=30</td>
<td></td>
</tr>
<tr>
<td>Mean rating on improved patient outcomes*</td>
<td>7.6</td>
<td>8.2</td>
<td>6.2</td>
<td>7.4</td>
</tr>
</tbody>
</table>

* Likert scale ratings between 1–10: 1 = not at all successful/improved, 10 = extremely successful/improved.

The Influence of Practice Change Activities on Outcomes
Seventy per cent of fellows (n=21) rated the influence of their practice change activities on patient outcomes. Overall these ratings were moderate, with a mean rating of 7.4 on a 10-point Likert scale where 1 indicated “not at all successful” and 10 indicated “extremely successful.” Leadership fellows rated their influence on patient outcomes the highest (8.2/10), while guideline implementation fellows rated their influence the lowest (6.2/10) (Table 5).

Types of Outcomes
Fellows perceived that they had positively influenced nursing and patient outcomes (Table 6). Over half the respondents (57%; n=17) described the provision of better patient care as an outcome they influenced as a result of the ACPF fellowship program. This theme included facilitating the use of new equipment, technologies, assessment skills, tools, communication modes and documentation forms, and was identified fairly evenly across fellowship types and sectors. One fellow reported:

… just having staff that are more knowledgeable would be a benefit to the patients. You know, ’cause they’re having providers that know more and want to do more, so … they’re going to benefit that way. (Guideline Implementation, LTC)

It was frequently reported that the fellows were able to provide better nursing assessments and strategies for patient care:

Nurses are now better equipped to identify the risk factors. And by early detection of these risk factors, clients would be referred on to the appropriate resources out in the community. (Guideline Implementation, Community)
Table 6. Types of outcomes identified by ACPF fellows

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Participants (n=30)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Nursing team outcomes</td>
<td></td>
</tr>
<tr>
<td>The provision of better care for patients</td>
<td>17</td>
</tr>
<tr>
<td>Patient outcomes</td>
<td></td>
</tr>
<tr>
<td>Increase patient satisfaction and confidence in care</td>
<td>10</td>
</tr>
<tr>
<td>Clinical outcomes</td>
<td>6</td>
</tr>
</tbody>
</table>

What I’m seeing right now is impacting the nurses. They feel like they’re making headway … . And they’re putting together strategies for those individuals that are research-based strategies, and … even if one of those strategies works for one of those people … it’s a hundred per cent. (Leadership, Acute)

**Patient outcomes**

Two types of patient outcomes were described: increased patient satisfaction and confidence in care received, and clinical outcomes. Thirty-three per cent of respondents (n=10) from all fellowship types and sectors identified increased patient and family satisfaction and confidence in care as the outcome that was influenced as a result of the implemented practice change activities:

I think we’ve really established credibility with the families. Some of our families are our biggest advocates with other families that they’ve met and encourage them to come to the [facility]. (Leadership, Acute)

Once again, because of the positive patient feedback that we got [as a result of the practice change]. You know from the patients that were able and willing to attend. (Clinical, LTC)

Clinical outcomes were identified by six participants and were related to positively influencing patient outcomes associated with continence, wound healing, falls and fall injuries, comfort and quality of life:

We were successful in removing catheters, so I feel that we’ve reduced the risk of infection for those patients, we’ve increased their comfort. … some of them have actually become continent afterward and they see it as a positive. So the patient outcome was very good. (Leadership, Acute Care)
I’m getting more and more people in the community set up . . . . I’m identifying them and they are being started . . . and we are having faster wound closure and . . . we’re getting people healed up. (Clinical, Community)

**Barriers to Influencing Practice Change**

Four broad themes were identified as barriers to the ACPF fellows’ influence on practice change: (a) resistant attitudes towards change, (b) time and workload issues, (c) lack of administrative support and (d) lack of mentor’s involvement.

**Resistant attitudes towards change**

Resistant attitudes towards change were overwhelmingly the greatest barrier encountered by fellows when attempting to implement a practice change. These attitudes included resentment, lack of interest or lack of recognition of the importance of the practice change. Participants noted that resistant attitudes came most notably from staff nurses, but also from managers, physicians and allied health professionals such as occupational therapists and physiotherapists. All participants (n=21) completing leadership and guideline implementation fellowships identified this as a barrier compared to 44% (n=9) of fellows completing a clinical fellowship:

“They had some very, very strong personalities who felt that they . . . didn’t need to change, that they knew what they were doing and, then, that was it. (Clinical, Community)

“I would have hoped that the clinical manager would have been more involved and had a change herself . . . . Yet I don’t think she really believed in it. I think you need to be able to understand the content and the topic so that you can be supportive to your staff. (Guideline Implementation, Acute)

One fellow described how the resistant attitudes encountered by physicians changed over time:

“In the beginning, as I approached the different doctors, they almost were annoyed by my constant badgering, and wanting to know all. They almost made me feel for a while as if it really wasn’t any of my business. And finally, I think they started to enjoy it. And I think they started to recognize that if I was more knowledgeable, and if my team of nurses were more knowledgeable about the patient, their patient was going to get better served. (Leadership, Acute)

**Time and workload issues**

Approximately half of respondents identified lack of time and workload issues for
themselves and staff as barriers to implementing practice change. This theme was fairly evenly distributed across fellowship type and sector and involved the perception that the practice change activities involved extra work, in addition to the already heavy regular workload that fellows and staff carried:

One of the challenges that I experienced was that I’m only one individual person, and there was an expectation that I would be available 24 hours a day. So it turned into quite a lot of overtime for me, and a lot of additional hours for me. I just think that the biggest challenges were human resource issues, me being the one person. (Clinical, Acute)

Fellows spoke about being overwhelmed and feeling alone in carrying the extra workload to implement and sustain practice change activities:

Another barrier was that it was just me, and there’s only me. And we’re still working on the whole sustainability thing. I’m the only [clinical specialist] in the hospital, and therefore, I have to see patients, and then I have to educate nurses. So it’s very hard to do both. it’s a full-time job. And that is a barrier. (Leadership, Acute)

The impact of staffing shortages and nurses’ perceptions that the practice change was a burden of additional work when they were already working at their fullest capacity was identified as a barrier:

And so the immediate thing was, “Oh, not another pilot for us to do” and “We’re just too busy to do this sort of thing.” just your normal, “How do we fit this into our working day? What’s in it for me?” type thing. (Guideline Implementation, Community)

... time and workload issues. we’re in a state of, as you know, a crisis with nursing. And that is always going to be an issue. And so that was something we had to work around. But that was a barrier. Another was the nurses feeling like they’re giving, being given more work to do. So that was an issue, to go along with that time and workload thing. (Leadership, Acute)

**Lack of administrative support**

Lack of administrative support for financial and human resources to support the fellows in their practice change activities was identified by half the respondents as a barrier. Fellows perceived this barrier to include their managers’ and administrators’ lack of support to enable them to participate in learning and educational opportunities, disseminate their learnings to staff and colleagues or purchase new equipment to support the practice change. A fairly even distribution was noted
across both fellowship type and sector. Fellows spoke of being unable to attend or send staff to conferences, or to deliver educational workshops related to the practice change:

… my employer would not allow me to go. I had to take vacation time. She did say that she would allow me to take a day off, but I’d have to pay myself. So I really gleaned from that that there was absolutely no support. … They didn’t provide me with any other funding … when I was presenting at the knowledge café, they didn’t provide me with salary. I didn’t have access to any funds for office supplies. I had to do that all on my own. It was awful! (Clinical, LTC)

Over one-third of respondents (37%) identified that managers, physicians or staff’s lack of understanding of the fellow’s roles was a barrier during and after the fellowship for implementing practice change. Although this theme was evenly distributed across sectors, it was particularly strong within the guideline implementation fellowship, where 55% of guideline implementation fellows identified this theme as a barrier:

Probably the biggest barrier was that there was a, really a lot of misconceptions about the advanced practice role from managers, from other staff, from physicians. So that was a huge barrier, whereas people didn’t know the difference between the types of roles that were available in nursing. That was the biggest one and still continues to be a huge one. … it’s basically made it more complex, and we’ve had to do some education on the differences between advanced practice nurses and physician assistants. (Clinical, Acute)

**Lack of mentor’s involvement**

Twenty per cent of the ACPF fellows interviewed (n=6) perceived their mentors’ lack of involvement both during and after their fellowship as a barrier to implementing practice change. Reasons for mentors’ lack of involvement included an inability to meet because of poor physical proximity, and the complete lack of engagement or commitment by mentors, as described by these fellows:

When I met with my mentor the first time, she said to me … “You know, I have no time for this. I really don’t know what you expect from me.” So I said, I was kind of flattened. You know. And I said, “Well, if that’s the case, why did you say yes to this? It was requested, and you said yes.” And her reply was, “Well, when the boss asks you, you say ‘yes.’” But she said, “I’m telling you straight up, I don’t have any time for you.” So I said, “Well, that’s fine.” And I went to the person who was in charge of all of it, who had
requested her support. And she said, “Well, the fellowship should be self-directed learning anyway, so we won’t worry about that.” (Clinical, LTC)

I never received a phone call from any of the senior managers, even when they were supposed to be my mentors. (Guideline Implementation, LTC)

Strategies That ACPF Fellows Used to Address Barriers
Fellows identified multiple strategies to address barriers they experienced in implementing change. Three themes emerged as the most commonly used strategies: (a) building a knowledge base, (b) ongoing negotiation and dialogue and (c) ACPF fellows’ self-reliance and persistence.

Building a knowledge base
Over three-quarters of respondents described building a knowledge base among colleagues as one of the strategies they used to address barriers. Building a knowledge base involved providing education, facilitating engagement and disseminating information through emails, meetings, conferences and other activities. These knowledge dissemination strategies were targeted towards staff, specialty nurses, educators, managers, directors, administrators, doctors, other healthcare professionals and patients and families:

I’ve written letters to the Director of Nursing Practice as well as my boss who’s Administrative Director… and explained things. … we’re having meetings this week … . We have brochures, we have posters up. We’ve got lots of things to keep [topic] in the forefront of everyone’s mind. We’re educating patients and families about [topic]. … it’s definitely an interdisciplinary approach … so yeah, it’s everybody’s business. And so we’ve incorporated that into our plan, making sure that everybody’s educated. (Leadership, Acute)

Ongoing negotiation and dialogue
Ongoing negotiation and dialogue with managers and staff was identified by 63% of fellows as a strategy to address barriers and implement practice change. This involved negotiating with managers for resources and education to support the change, and communicating with staff to raise awareness about the importance of the change and to facilitate dialogue regarding staff concerns:

And you just try to focus more on the people that want to change, and then if you can’t, then you have to go “one on one” with the people that are resistant … [asking] “Why don’t you support this change?” or “What type of concerns do you have?” (Guideline Implementation, LTC)
ACPF fellows’ self-reliance and persistence
The ACPF fellow’s self-reliance and persistence was the final strategy that participants identified to address barriers and influence practice change. This theme involved fellows’ determination and commitment to implement the change, despite the barriers and resistance encountered along the way. Self-reliance and persistence was the strategy most often cited by leadership fellows (67%) and least often by clinical fellows (22%):

I just continued, I quietly continued. … my approach was very, certainly not aggressive and in their face. It tended to be more subtle. But I just kept coming back, and asking questions. … So it was just the determination to continue. I just wouldn't stop. I just, in spite of the fact that there was a certain degree of reticence to open up, they finally did. Whether they realized what was happening or not, they slowly did. (Leadership, Acute)

Study Limitations and Strengths
One limitation of this study is that although participants were asked specifically about practice change activities they engaged in after their fellowship was completed, many respondents reported on barriers and strategies they used during and after their fellowship. While this conflation may be due to lack of precision with the interview guide, it may also reflect the complexity of the practice change activities and barriers encountered with implementing. Thus, practice change activities that ACPF fellows focused on during their fellowship continued to be a focus after the fellowship ended, as fellows attempted to carry on and sustain the change.

Another limitation is that data were collected only from fellows’ perspectives, and it would be valuable to understand the perspectives of managers, organizational leaders and mentors (a scope beyond that of this study). Only 30 fellows for the 2004–2006 period were interviewed, representing 56% of all ACPF fellows at the time, thus potentially limiting generalizability of the results to the whole group. A larger sample might have provided additional insights and additional themes.

Furthermore, this was a descriptive study to analyze ACPF fellows’ experiences and perceptions only; objective measures of changes in processes of care or patient outcomes were not evaluated.

Finally, while the ideas in the themes recurred in many of the interviews, there was great variability in the practice change activities and barriers experienced by the ACPF fellows, as expressed by the number of nurses who identified each theme.

Study strengths include representation from all fellowship types (clinical, leadership and guideline implementation); variety of health sectors (acute, community, LTC); a
high participation rate by those approached (83%); and use of a research assistant independent of the study organizations to decrease social desirability response bias. Finally, this study describes a long-standing program to engage mid-career nurses in quality improvement initiatives, an area of research that is underrepresented in the literature.

Discussion
The ACPF is a mentoring program designed to advance nursing knowledge and expertise for better healthcare delivery and outcomes. It provides an opportunity for experienced nurses to be mentored in the development and design of a project based on identified organizational or practice needs related to clinical practice, leadership or guideline implementation. The program aims to develop nurses both individually and together as a professional body to improve the health of the people of Ontario through expert nursing knowledge and skills, and is unique in both its funding mechanisms through the Ontario Ministry of Health and Long-Term Care, and its governance structure through the RNAO, the professional nursing association. In times of ubiquitous budgetary constraints within the public sector, the continued financial support by the Government of Ontario underscores the importance that the government places on nursing’s contribution to patient care and outcomes.

This study captures the practice change activities initiated by ACPF fellows to improve quality of care and patient outcomes. Sharing knowledge with their colleagues was the activity that ACPF fellows most often used to influence practice change, a finding that emphasizes the importance of social interactions for nurses as a method of knowledge translation. The social sharing of knowledge further correlates with steps within diffusion of innovation, a process that emphasizes interactions among peers as an effective channel for communication in change adoption (Dobbins et al. 2002; Rogers 2003). Interestingly, however, only 44% and 54% of fellows in the LTC and acute care sectors (respectively) described engaging in knowledge sharing with colleagues to influence practice change, whereas 86% of fellows in the community sector described this activity. One possible explanation is that LTC and acute care facilities may not share the same culture of consultation and knowledge sharing as nurses working in the community sector. Community nurses work in greater physical isolation than their counterparts in the LTC and acute sectors. Thus, communication channels that support knowledge sharing may already be an established and integral component of the community nursing context, a finding that is consistent with that of Clawson (1996), who suggested that successful mentoring in community care requires the establishment of strong peer relationships and virtual connections. Ploeg and colleagues (2008) more recently described such barriers as resource constraints in the community care sector that greatly interfere with the application of new knowledge and skills acquired by nurses in mentoring relationships. Mechanisms
are needed to support and integrate knowledge sharing into practice change activities by ACPF fellows.

The second most commonly described practice change activities in which fellows engaged were directed at organizational structures and processes such as developing new policies and procedures, assessment tools and education programs for staff and patients. Many of these activities are similar to activities that leaders use when facilitating research utilization or implementing evidence-based practice in nursing (Gifford et al. 2006; Newhouse 2007; Davies et al. 2008). For example, an integrative literature review found policy revisions to be one of three leadership activities that managers used to influence evidence-based practice, along with the provision of support and conduct of clinical audits (Gifford et al. 2007). Research has further demonstrated that the implementation of documentation tools that reflect evidence-based guideline recommendations has helped nurses practise more consistently with guideline recommendations (Davies et al. 2006; St. Pierre et al. 2007). Interestingly, a number of fellows described working directly with patients and families to develop new programs and processes of care. The involvement of patients and families as important stakeholders in the development, implementation and evaluation of health services is increasingly being recognized as an important strategy for delivery of high-quality care (Bick and Graham 2010). A relatively new area of knowledge translation research (Graham et al. 2006), the contribution of patients and families to the design and evaluation of healthcare programs, is worthy of further investigation.

Fellows in this study reported fairly high levels of success in implementing practice change (mean, 7.2/10) and improving outcomes (mean, 7.4/10), particularly in relation to increasing the quality of care for patients. However, this finding must be viewed with caution, as responses were based on subjective perceptions and were not validated with clinical data. The literature is replete with studies indicating that implementation of practice change in healthcare is a slow, complex and unpredictable process involving multiple factors that include the change itself, potential adopters and the contextual environment (Dobbins et al. 2002; Cullen and Titler 2004; Rycroft-Malone et al. 2004; Greenhalgh et al. 2004; Graham et al. 2007). While multiple implementation strategies are frequently more effective than single intervention strategies (Grimshaw et al. 2004), it remains unclear which strategies are most effective for whom, how and in what circumstances. Furthermore, implementation science tells us that the rational linear notion that advising people about the need for practice change based on high-quality research will automatically translate into change is outdated (Nutley et al. 2007).

A substantial body of evidence shows that practice change requires significant planning and change management strategies that involve individual, team and
organizational processes (Dopson et al. 2002; Greenhalgh et al. 2004; Grol 2005). More research is needed to understand the change processes used by ACPF fellows, including social processes between and within professional groups, and the relationship between the nature of the context and overall organizational support.

Barriers to Implementing Practice Change
Many of the barriers encountered by ACPF fellows when implementing practice change were similar to those previously described in the research utilization literature such as resistant attitudes towards change, lack of time and heavy workload, and lack of administrative support (Funk et al. 1991; Ring et al. 2005; Clarke et al. 2005; Ploeg et al. 2007). While attitudes towards change are predominately a barrier of the individual practitioner, organizational and system-level barriers such as lack of time and heavy workload can influence attitudes towards change. For example, Ploeg and colleagues (2007) found that heavy workload, short staffing, high patient-to-staff ratios and high patient acuity were closely linked to negative staff attitudes towards guideline implementation in a qualitative analysis of 125 interviews with administrators, staff and project leaders. With heavy workloads, understaffing and ongoing organizational change prevalent in the current healthcare environment, time and workload issues continue to be a concern in nursing; these require larger system-level changes and warrant attention in future research. Taken together with the broader literature, findings from this study suggest factors that influence practice change are interlinked in complex ways, and further work is required to understand the complexity of these relationships.

Twenty per cent of fellows experienced a lack of support from their ACPF mentors during and after their fellowship. Based on these findings, it is important to ensure that mentors are committed to the fellowship and have the time to provide the amount and type of support required. Further, the goals and expectations of fellows and their mentors should match. Apparently, some of the same time constraints that nurses describe for practices such as research utilization (Funk et al. 1991; Dopson et al. 2002; Gifford et al. 2011) may have been a factor in mentors’ ability to enact their mentorship roles. However, it is important to emphasize that 80% of participants did not identify lack of mentorship support as a barrier, a finding that suggests mentor engagement was strong for the majority of participants. This engagement may, in part, be attributed to the RNAO’s RFP process, which requires mentors to be involved in every stage of the fellowship – from planning and identifying practice gaps and organizational needs, to writing the proposal and mentoring the fellow during the fellowship.

Fellows also described lack of support by their immediate or senior managers as a barrier to implementing practice change, a finding that echoes research on practice
change in healthcare (Hutchinson and Johnston 2006; Ploeg et al. 2007). Managers’ support, involvement and commitment are consistently described in the healthcare literature as critical when implementing practice change (Bradley et al. 2004; Greenhalgh et al. 2004; Davies et al. 2006; Gifford et al. 2006, 2007). How managers enact their supportive roles, however, is not well understood (Wilkinson et al. 2011). A recent pilot study suggests that nurse managers facilitate and support guideline-based practice change through their visibility, communication of goals, resource allocation and enabling of education (Gifford et al. 2012). Similarly, Kitson and colleagues (2001) reported that the support from nurse managers was critical for clinical leaders to assume a leadership role for implementing practice change. More research is needed to understand the kinds of support that ACPF fellows require from their immediate and senior managers, in addition to their mentors, to successfully implement practice change that benefits patient and process outcomes.

Strategies to Address Barriers
The top three strategies that fellows in this study used to address barriers were (a) building a knowledge base, (b) negotiation and dialogue and (c) persistence. These strategies resonate with the early stages of the process of diffusion of innovations described by Rogers (2003), wherein the primary purpose is to share knowledge and persuade potential adopters to accept the new innovation and change. While important, these strategies do not include sustainability factors to enable and promote the ongoing permeation of the practice change, such as setting up monitoring processes, engaging senior and clinical leaders in sustainability plans or providing equipment and resources to support the new practice (Maher et al. 2007).

Strategies identified by participants were predominantly directed towards individuals and did not address broader organizational barriers such as lack of time, heavy workload or lack of manager’s support. An analysis of 20 purposefully selected studies on quality improvement strategies in healthcare reported that there is often a mismatch between barriers identified in a barriers analysis prior to implementation, and the types of strategies used to implement the quality improvement changes (Bosch et al. 2007). Although the research literature is replete with barriers to practice change, there is a lack of focus on how to tailor strategies to barriers once identified, particularly organizational or system-level barriers (Shaw et al. 2005; Bosch et al. 2007). Furthermore, an emerging literature underscores the importance of using strategies that go beyond barriers management to sustain practice change, focusing more on existing supports, positive thinking, celebrating small wins and capacity building (Davies et al. 2010). Ongoing research is necessary to understand how to tailor implementation strategies to both barriers and existing supports, if successful practice change is to occur.

This research has reinforced the strength of the structures and processes of the
ACPF program for the benefit of the mentor, fellow, sponsoring organization and, ultimately, patients through the fellowship activities. In light of these results and as part of the RNAO’s quality improvement activities, the ACPF program has undergone some key changes that focus on the roles and responsibilities of fellows and mentors, participating organizations and the support provided by RNAO. Changes affecting the fellows and mentors include the development of enhanced evaluation criteria, which requires reporting on specific outcomes; identification of a lead primary mentor and mentor team when more than one mentor is identified; expectation that regular meetings be conducted among the fellow, mentor(s) and sponsoring organization’s contact; and engagement of the organization’s contact at the outset to support sustainability of the fellow’s work. These changes focus on highlighting the expertise of the mentor, facilitate the team’s contribution to the fellow’s learning plan, and examine how expectations are being met and barriers to implementation addressed. In addition, participating organizations are now required to provide written support from the fellow’s supervisor and next-level senior manager to commit the release time that the fellow needs. Finally, the RNAO has developed ACPF Fact Sheets, which are available on its website, to clarify and detail the key roles of mentor, fellow and sponsoring organization. Quality improvement changes continue to be explored in conjunction with the RNAO’s ongoing review of the program.

Conclusion
The Advanced Clinical Practice Fellowship is a highly utilized program for registered nurses to develop and promote nursing knowledge and expertise. This is the first study to look at what ACPF fellows do during and after completing the fellowship to improve healthcare delivery and patient outcomes. Fellows engaged in a variety of practice change activities that focused on the nursing team, the organization and themselves. They also perceived their influence on healthcare delivery and patient outcomes to be effective. The overwhelmingly positive attitude from fellows towards their abilities to influence patient care reflects a “yes, we can” attitude (Davies et al. 2010: 174) that highlights nurses’ contributions to the success of the healthcare system and the health of Canadians. The responses – both positive and negative – of others to ACPF fellows, and the variety of practice changes undertaken, reinforce the need for strategies and supports that focus on individuals, teams and organizations to bring best knowledge and practice to the point of care.

Further research is needed to validate and expand on the specific ways the ACPF fellowship program affects professional growth and development, quality of care and patient outcomes. Specifically, we suggest the following questions: What is the impact of the RNAO’s ACPF fellowship on quality of care and patient outcomes? What is the most effective mentorship model to support ACPF fellows
with knowledge translation? How can ACPF fellows sustain integration of advanced knowledge and skills into ongoing practice? Answering questions such as these will contribute to the growing evidence base about the role of nurses, who are mentored by identified leaders, in the provision of high-quality healthcare and improved patient outcomes, thus reinforcing the need for ongoing investments by governments in advanced nursing knowledge and expertise.

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Correspondence may be directed to: Wendy A. Gifford, RN, PhD, Assistant Professor, School of Nursing Faculty of Health Sciences, University of Ottawa and Associate Researcher, Saint Elizabeth, 451 Smyth Road, Nursing Best Practice Research Center, University of Ottawa, Ottawa, Ontario, K1H 8M5. Phone (613) 562-5800 ext 8975. wgifford@uottawa.ca.

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