

Happenings

Eureka! A New World of Discovery in Nursing at the McGill University Health Centre

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“Aha! I’ve figured it out!”

Since 2002, the Eureka! Fellowship in Nursing Research at the McGill University Health Centre (MUHC) has provided four clinicians with the time to ponder their clinical puzzles and seek better ways of caring for patients and their families. These four fellows have been able to take the time to make discoveries through clinical nursing research that have led to changes in nursing practice, education, and policy. The fellowship provides a full salary with benefits for 1 year and mentorship by an experienced researcher at the MUHC in order to carry out a research project. The four nurses who have held the fellowship completed projects that reflect the diversity of nursing and nursing research. We will briefly describe the types of projects that have unfolded so far during the Eureka! Fellowship year.

This fellowship is a unique opportunity for nurses who are passionate about finding answers to their clinical questions. It is a gift of time that enables the nurse to pursue a researchable question with the time and support needed to complete the project — all the way to preparing a manuscript for publication.

The Eureka! Fellowship in Nursing Research at the MUHC was founded with the generous support of Richard and Satoko Ingram of the Newton Foundation and the foundations of the Montreal General, Royal Victoria, and Montreal Children’s hospitals. It has been made possible because of the importance that these foundations attach to nursing and to the essential growth of nursing research.

Applications are reviewed by an interdisciplinary committee that includes researchers, clinicians, administrators, and a community representative. The successful candidate presents a high-quality, innovative

protocol with a strong research design that is relevant to clinical practice, has the potential to change practice, and can be completed in 1 year.

Eureka! Moments Leading to Research Questions

In the case of all four fellows, a particular clinical situation had lit their fire and made them pursue a research application. Sometimes they reflected aloud on the situation and were “gently” encouraged by their Associate Director of Nursing. In each instance a comment crystallized the stimulus to pursue an answer through research.

Jane Chambers-Evans, a Clinical Nurse Specialist in intensive care, received a referral of a family having to make an end-of-life decision on behalf of their loved one. The referral was accompanied by the exasperated comment “This family just doesn’t *get it!*” For Patricia Rose, also a CNS in intensive care, the stimulus was ICU nurses complaining to her, “We are soooo tired of transferring patients upstairs and having nurses...say we don’t take good care of our patients just because the patient developed a pressure ulcer in ICU.” In the neonatal clinic, Jan Lariviere was puzzled by the dumbfounded expression on a mother’s face — as if to say, “Why on earth would I do that?” — when asked if she read to her 1-year-old child. While administering urodynamic tests, Lily Chin-Peuckert heard the children say, “That’s cold!” and began to wonder about the possibility of a different approach.

All four nurses were stimulated by those Eureka! moments to reflect on the comments they heard. They asked themselves, Why is this happening? What if we tried something different? Their reflections led to the following four research questions:

- What is the experience of those who have to make end-of-life decisions on behalf of others?
- What factors put critically ill patients at risk for developing a pressure ulcer?
- Does a nursing intervention encouraging parents to read to their infants in the neonatal intensive care unit result in parents reading more to their infants and having more positive parent-infant interactions after discharge from the NICU?
- What is the difference between two consecutive urodynamic tests performed on the same child? Does warming the filling solution during urodynamic testing have an effect on bladder capacity and bladder stability in children?

Working with a research mentor, the fellows developed their respective research approaches and protocols. As shown in Table 1, their methods reflect the nature of the state of knowledge, the type of question, and the diversity of approaches that mark research in nursing.

Table 1 *Research Question, Design, and Approaches*

Question	Design	N	Approaches
Experience of making end-of-life decisions	Qualitative interpretive phenomenology	8	In-depth interviews Interpretive analysis of themes and ideas: <ul style="list-style-type: none"> • crafting narratives • participant validation of narratives
Predictors of pressure ulcer in critically ill patients	Tool development	111	Item generation and reduction Literature, observation, focus groups Testing of 36-item scale through observation up to day 8: Braden scale, new scale, skin assessment
Parental reading in NICU	Non-randomized trial Historical control All participants blinded to the main outcome (reading)	116	Comparison of two groups 3 months post-NICU discharge: <ul style="list-style-type: none"> • group demographics • parenting activities, reading habits, and parental stress evaluated by standardized questionnaires • thematic analysis of response to one open-ended question about reading
Temperature of solution in urodynamic testing	Randomized controlled trial Crossover design	91	Two consecutive fillings with body temperature and room temperature saline (random order). Measure: <ul style="list-style-type: none"> • bladder capacity and stability • child preference

Results

The studies all yielded important findings that have had an impact on practice. The findings are as follows:

- People making end-of-life decisions for a loved one have common areas of concern, such as needing individualized information, struggling to set aside one's own convictions at decision-making time, and above all wanting to preserve the dignity and identity of the patient. The surrogate decision-makers underwent a four-phase process in making a decision.
- There are 15 items that best predict pressure ulcers in the critically ill. This 15-item scale is more sensitive than the Braden Scale (Bergstrom, Bergen, Kemp, Champagne, & Ruby, 1998; Rose, Cohen, & Amsel, 2006) in this population, and equally specific. In other words, the 15-item scale is better than the Braden Scale in predicting which patients will develop pressure ulcers. The two scales perform equally in predicting which patients will *not* develop a pressure ulcer.
- Parents who received the reading intervention reported a significantly higher rate and frequency of reading. A significant number of parents reported that reading made them feel closer to their baby and that it was an enjoyable activity. The parents indicated that reading to their infant both in the NICU and at home increased their sense of control, their sense of intimacy with their infant, and their sense of normality, as well as humanizing the situation.
- While there was a significant difference between room-temperature and body-temperature infusions on the urodynamic test results, the magnitude of the difference was not clinically significant. The children differentiated between the temperatures of the two solutions but did not have a preference.

So What?

Considering the substantial investment of time and money, what difference have these findings made in the day-to-day work of nurses and others at the MUHC?

End-of-Life Decision-Making

- The findings have opened the door to change in practice. For example, discussions at the bedside now include family perceptions about the meaning of illness.
- The findings have been used as a basis for building process-oriented end-of-life policies.

- The findings have been used as a basis for interdisciplinary teaching sessions in the McGill network and in the ethics education in nursing curriculum at the baccalaureate and master's levels.

Risk Assessment for Pressure Ulcers in Critically Ill Patients

- The Rose Scale is a reliable and valid scale for assessing the risk for pressure ulcer in critically ill patients. It requires further testing before it is ready for implementation.
- Nurses working in other ICUs within the MUHC have expressed keen interest in the scale; they want to know when it will be ready for use.
- Having witnessed nursing research in action, ICU nurses now integrate it into their daily practice; for example, nurses have spontaneously approached the researcher about potential subjects.

Parental Reading to Infants in NICU

- The reading program is now a standard intervention in the NICU and funding has been secured to continue the program.
- Families continue to relate stories about what it means to them to be able to “do something normal” in the NICU.
- A pilot project is underway in four pediatric clinics to promote parental reading to children up to 6 years of age.

Urodynamic Testing Study

- The study provided evidence to support the use of room-temperature solutions for bladder-filling tests in children. Therefore, no change in practice is necessary.
- A single filling test is needed in the vast majority of children.
- Patient suffering is reduced when only one filling test is performed.
- The results represent a savings in nursing time and money, in terms of repeating bladder-filling tests and warming saline.

Being Mentored

For all four clinicians, the fellowship represented a gift of time. It allowed them to translate their clinical observations into a research study and to work on the project full time. They describe it as a rare gift and a privilege to experience the research world and to grow in new directions. In addition to their own intelligence, skills, clinical and life experience, and determination, mentoring of inexperienced researchers was a critical component of the fellowship. All four fellows were mentored by experienced researchers within the McGill network: Jane Chambers-Evans by Dr. Frank Carnevale, Patricia Rose by Dr. Robin Cohen, and Lily Chin-Peuckert and Jan Lariviere by Dr. Janet Rennick.

The fellows describe the roles and influences of their mentors:

Offered encouragement, guidance, provided resources, and challenged my mind.

Supported my learning and research activities.

Was sure that I could do it, so I began to believe I could as well.

Until this project, matching a research question to a methodology and actually seeing how a theory guides your questioning and analysis remained intellectual conceptions learned in school.

Daily contact with seasoned researchers allowed me to build my knowledge of the process and politics of research.

Eureka Moments and Personal Highlights

The fellowship year brought many lessons, or what the fellows call “Eureka! moments,” beyond the development of knowledge and skills in clinical research. These included insights into the challenges of practice as the nurses stepped back and looked at their practice with fresh eyes. One fellow was moved by the willingness of families to participate in her study:

I developed an appreciation for nurses performing technical procedures and diagnostic tests. I stood in awe as these nurses explained, taught coping strategies, and coached frightened children and parents through a highly invasive test. The 96% acceptance rate to participate in the study was overwhelming. Families were willing to help in any way they could.

Another was moved by the response of parents and nurses to the intervention itself:

A parent described her first visit to the NICU and not knowing what to say or do, but the nurse offered her a book and “then the words came.” She talked with other parents who planned to read to their child in order to give the child every opportunity to do well, or who had seen that her reading to the baby in the hospital had calmed the baby and reading was now a favourite activity at home.

Some Eureka! moments were ones of insight into the academic aspects of the nurse’s role in a large academic health centre. For instance, the privilege of being removed from the challenges of daily practice for a year allowed them to discover how much could actually be accomplished given the time and space to focus.

The actual experience of data collection also provided important lessons:

I was impressed by the “power of the interview” in a qualitative study. All of my participant group members were grieving the loss of a loved one within the last 6 months. Many said they still reviewed the sequence of events every day. Somehow, telling their story with a purpose helped them in a different way. It reminded me of the privilege and the responsibility we have as researchers to ensure that our processes are ethical and compassionate.

Others were moments of pride. To their amazement, fellows have been approached to discuss their findings with nurses (“She had actually read it!”) and with researchers in the field in other countries. They have also been approached to have their study included in a systematic review or for “permission to use my scale to collect data in an RCT they will be conducting.” They have had abstracts accepted at large international meetings and manuscripts accepted for publication in prestigious journals (Chambers-Evans & Carnevale, 2005; Chin-Peuckert et al., 2003; Chin-Peuckert, Rennick, Jednak, Capolicchio, & Pippi Salle, 2004; Lariviere & Rennick, in press; Rose et al., 2006). Finally, three of the four fellows have already received both local awards and major international and interdisciplinary awards for their work.

- Patricia Rose won the National Pressure Ulcer Advisory Panel’s New Investigator Award for outstanding achievement in clinical or laboratory research. “Recognition at their international conference was an honour and a complete shock,” she says. “Since then, the homage paid to me by my MUHC colleagues has been extremely gratifying and humbling.” Rose also won the 2007 Lorine Besel Award for Nursing Leadership at the MUHC’s Royal Victoria Hospital site.
- Jan Lariviere was awarded the Award of Excellence for Nursing by the Montreal Children’s Hospital Foundation, based on nominations by peers, members of the interdisciplinary staff, and parents. The award provided partial funding for the pilot reading project in clinics and helped her to secure other grants.
- Lily Chin-Peuckert won the coveted Clinical Research Prize in Pediatric Urology at the American Academy of Pediatrics Meeting. After the award presentation, Dr. Stuart Bauer (to whom Chin-Peuckert refers as one of the “Fathers of Urodynamics”) shook her hand and said, “Well done.” She was also awarded the 2007 Montreal Children’s Hospital Award of Excellence for Professional Development as a “role model for evidence-based nursing practice.”

The year of research was not a year without challenges. The first challenge for each of the four nurses was to settle on a starting date for the fellowship, as it is not easy to replace skilled and experienced clinicians

in their clinical field. Other challenges related to data collection. For example, after a fairly lengthy period of data collection, Chin-Peuckert discovered a problem that resulted in the need to recruit more participants. "When faced with a problem of temperature calibration halfway through data collection, I was in total despair. I was forced to repeat the study. In hindsight, the setback helped to strengthen the final results." The fellows also found it difficult to move out of their usual clinical roles.

Conclusion

At the beginning of this innovative program, many were dubious about its potential. Some worried that nurses lacking sufficient preparation in research would not be doing research at all. Some worried that clinicians might not be interested in conducting research. The success of the Eureka! program is evident. The question concerning clinician interest is best answered in a comment by Rose: "I really didn't think I had what it took to do clinical research. I've learned how wrong I was, and now am able to say that I've caught the research bug."

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