Bloomberg Nursing
Changing Healthcare through Research
Research Report 2014
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A Message from the Dean

2014 marked another successful year for the Lawrence S Bloomberg Faculty of Nursing and strengthening our position as an internationally recognized leader in research in the discipline of nursing. This Report highlights the achievements of our faculty, in terms of funding success, and publications. It showcases the transdisciplinary nature of the research and scholarship undertaken in the Faculty, with Divisions and Faculties across the University, and with our world-leading clinical affiliates. Importantly, our research is making a difference; improving clinical practice, delivering benefits to society, and much of that beyond Canada.

Our success would not have been possible without the commitment and support of our clinical partners and donor and alumni communities. Together our efforts can transform lives, and change society for the better. I invite you to read the case studies and learn about the researchers, their projects and the contributions they are making to improving health and healthcare around the world.

LINDA JOHNSTON, RN (AUST), PhD, FEANS, FAAN
DEAN AND PROFESSOR
A Message from the Associate Dean, Research & External Affairs

Our 2014 annual Research Report for the Lawrence S. Bloomberg Faculty of Nursing at the University of Toronto, Canada, profiles the scholarship of our faculty researchers conducted over the past year. The ongoing impact of Bloomberg Nursing research is highlighted, with an emphasis on how it is improving health and health care globally, its influence on policy and in practice settings. The Bloomberg Faculty of Nursing at the University of Toronto is widely recognized as a research-intensive environment that promotes education and scholarship in nursing. Our faculty are world-class scholars whose expertise has shaped the discipline of nursing. Our faculty’s research activity demonstrates the integration of teaching and research in our core graduate fields of study. Our undergraduate, master’s and doctoral students are provided with opportunities to experience research through active engagement with Bloomberg faculty research programs.

This year we also include profiles of our funding success over the past year and highlight our many and diverse publications that contribute to the knowledge not only of the discipline of nursing, but to health practice and policy development.

LINDA MCGILLIS HALL, RN, PhD, FAAN, FCAHS
ASSOCIATE DEAN RESEARCH
What’s at Stake?
Heart attacks (also known as myocardial infarctions) are devastating events for all involved. Too often, though, our image of a heart attack victim is of a man clutching his chest. We too rarely think of women as experiencing heart attacks, yet this is not uncommon, and in fact, heart disease is the leading cause of death in women. We would expect that all victims of heart attacks would receive the same level of care, yet studies consistently report disparities in the treatment men and women receive. Understanding and addressing these disparities will improve health care outcomes for women and society at large.

Summary of Research
Dr. Arlene Bierman’s research focuses on improving health care for older adults with chronic illness, particularly older women. Her research has focused on inequities in health and health care for socioeconomically disadvantaged populations. As lead of a multi-year project funded by the Ontario Ministry of Health and Long-term Care, Dr. Bierman authored a substantial report on women’s health.* The research findings from the POWER study led to an international collaboration investigating

sex disparities in the use of therapies to treat heart attacks in both Canada and Sweden. Working with colleagues from Sweden, Dr. Bierman analyzed the clinical factors related to sex differences in the use of a specific type of therapy (acute reperfusion) in the treatment of heart attack patients.¹

The research team looked at Canadian data from the Canadian Global Registry of Acute Coronary Events (GRACE) and the Register of Information and Knowledge about Swedish Heart Intensive Care Admissions (RIKS-HIA). Over 30,000 patients were enrolled in both registries combined. Both registries include important clinical information to help us better understand differences in treatment between women and men. Women in both countries were older than men and had more risk factors for heart disease – including diabetes, high blood pressure, congestive heart failure and previous cerebrovascular accident (stroke). Factors that contributed to differences in treatment differed between younger and older women. In women over age 60, age and comorbidity contribute to but don’t fully explain differences in care. In Canada, women under age 60 more often had a longer prehospital delay than men, suggesting lack of recognition of symptoms. In Sweden, where results from angiography were available, sex differences in the causes of heart attack explained some of the differences observed. Nevertheless, in both countries, acute reperfusion therapy was used less often when indicated in women than in men, even after controlling for important differences, suggesting persistent sex disparities in care.

**Implications**
Disparities in health care treatment for men and women have important consequences for society – and particularly for women – in terms of mortality and morbidity. That disparities continue to exist even though most practice guidelines for treating heart attacks recommend that both men and women be treated similarly is cause for concern. The study highlights the need for routine sex- and age-stratified analyses to guide and assess the effectiveness of quality improvement interventions. Furthermore, studies such as Dr. Bierman’s and her colleagues, provide new insights that can inform interventions to eliminate disparities in treatment and improve the quality and outcomes of care for women.
**Cindy-Lee Dennis**: Peer Support for Women with Postpartum Depression

**What’s at Stake?**
Postpartum depression is a debilitating condition that many women encounter after the birth of a child. Postpartum depression has an immediate impact on the relationship between a mother and her new baby – it can lead to mothers withdrawing from their babies, even feeling hostile towards them. Mothers who have postpartum depression may also be less likely to start or continue breastfeeding their babies. Mothers who have already experienced postpartum depression are also more likely to develop depression in the future. Developing research suggests that postpartum depression has an effect on newborns as they develop into childhood through effects on poor cognitive functioning, behavioural issues and poor emotional adjustment.

**Summary of Research**
Dr. Cindy-Lee Dennis has developed a rich program of research in the area of child and maternal health (particularly post-partum depression and its effects on all members of a family), which has led to tools that are used by health care practitioners around the world.

Research contributes much to our knowledge base; however, getting research findings applied in practice can be challenging, and studies of implementation or adherence are important as they give clinicians insight into how to implement change and confidence that implementing change is possible and has positive outcomes. Dr. Dennis recently published a study that looked...
at the development and implementation of a telephone-based peer support program for postpartum depression; the study examined treatment adherence. The goals of the research were to find out if this type of program could be used to prevent postpartum depression in new mothers. The program is simple and elegant. It draws on women who have previously experienced postpartum depression – peer volunteers – and asks them to use their experience to help new mothers who have been identified as being at risk for postpartum depression. Peer volunteers were recruited through a variety of methods including newspaper ads and flyers. They were trained to provide emotional support, information and encouragement to women at risk of postpartum depression.

Women at risk of postpartum depression were identified via a phone call from a public health nurse – a phone call that all new mothers in Ontario receive. During this phone call, the public health nurse screened women using the Edinburgh Postnatal Depression Scale; women who scored higher than 9 were invited to participate in a peer support program.

Peer volunteers were matched with at-risk women and asked to make contact at least four times. After initiating contact, the goal was to maintain the intervention, and Dr. Dennis and her team monitored the implementation of the intervention by peer volunteers for 12 weeks. The results were impressive: two hundred and twenty-one women who received the intervention returned an evaluation of their participation in the program, with 80.5% being satisfied with their experience, 83% reporting they would recommend this peer support to a friend, and 72.2% reporting that they felt the program provided the help they needed. Peer volunteers were equally enthusiastic, with over 90% reporting they would be a peer volunteer again.

**Implications**

Postpartum depression has such a negative effect on women who experience it and their children that interventions to help women navigate their experiences are much appreciated. Given the stigma associated with mental illness, approaches that allow women to benefit from an intervention delivered by their peers are desirable approaches to delivering health care. As well, given the overburdened health care system, approaches that don’t rely on the health care system are just as attractive. Dr. Dennis and her colleagues have developed and evaluated an effective approach to preventing postpartum depression in women at risk. This research has tremendous value for improving health outcomes for women and their families.
What’s at Stake?

The traditional biomedical model of health has focused on pathology and physiology as causing illness, ignoring social factors of health. However, researchers in the mid-twentieth century began to investigate other reasons for ill health. These factors, known as the social determinants of health, have now been found to play an important role in our health and wellbeing, over and above strictly biological causes of disease. Social determinants of health include economic inequality, employment status, stress, housing, and social exclusion, to name a few. Research on the social determinants of health has broadened to include work on how well people are integrated into society. New research shows that people who are excluded from society do less well than those who are well integrated into society. People who are excluded from society are (self-evidently) from its fringes – immigrants who have not integrated into their new homes, refugee claimants and other vulnerable populations. Programs that address social exclusion have the potential to improve health outcomes for these vulnerable groups.

Summary of Research

Dr. Denise Gastaldo explores health as a social phenomenon. She is particularly interested in how health is produced through social, political and economic process, with a special emphasis on migration and gender as social determinants of health. Recent research by Dr. Gastaldo has investigated the health and wellbeing of undocumented workers, a group that is particularly
vulnerable to stress-related poor health as a consequence of precarious working conditions, poor housing, and low wages.

In developing her research program, Dr. Gastaldo and colleagues created a new research method: “body map storytelling”. 

Body-map storytelling is a data generating research method and a tool that helps to share knowledge with the public. It is used to tell a story that visually reflects social, political and economic processes, as well as individuals’ embodied experiences and meanings attributed to their life circumstances that shape who they have become. Body-map storytelling has the potential to connect times and spaces in people’s lives that are otherwise seen as separate and distal in more traditional, linear accounts. The final outcome of the body-map storytelling process is a mapped story composed of 3 elements: a testimonio (a brief story narrated in the first person), a life-size body map, and a key to describe each visual element found on the map. The research report mentioned above shows all three elements.

This method is based on a few epistemological assumptions informed by an asset-based approach: first, we propose that research participation is an intellectual activity and participants have expertise to share; second, we need to support the reflexive process of participants offering additional tools to help them to express complex ideas to achieve a deeper account of their experiences; third, we believe we should reveal participants’ strengths and skills, rather than simply focus on their needs, the common approach in health care research. In other words, we see participants in a positive light, as people who have a contribution to offer to the social and health sciences.

Implications

Since this method has been published and presented in conferences and university lectures, other researchers have begun using it with positive results. For instance, Gastaldo and her colleagues have been invited to teach this method at other University of Toronto faculties, as well as two Brazilian universities. The method has been used by researchers to elicit information about body, space and violence relationships that could be used by city planners to enhance planning practices. New methods allow researchers such as Denise Gastaldo to uncover nuances around social factors of health; results give policymakers targets to address as they aim to improve society’s health.

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What’s at Stake?
Getting a good night’s sleep is invaluable to staying healthy. And when people are ill, a good night’s sleep can be an important restorative, contributing to the healing process. Cancer patients often struggle with sleep disturbances, adding to the stress of dealing with a serious illness. Sleep disturbance and insomnia in cancer patients can be attributed to many factors, such as the age and gender of the patient, the types of cancer treatments being received, side effects of cancer treatments, menopausal symptoms (in women), being hospitalized, the stress and distress of having cancer, and the pain and fatigue associated with cancer. Unfortunately, patients are often not asked about their sleep habits and sleep quality. Helping cancer patients and their treating clinicians understand that insomnia and sleep disturbance are real issues and providing options for identifying and managing those disturbances are key to improving health outcomes for patients.

Summary of Research
Much of Dr. Doris Howell’s research focuses on understanding how cancer symptoms affect patients and how health care providers can address those symptoms to improve patients’ wellbeing. Dr. Howell’s program of research also focuses on testing interventions to engage patients in self-management of cancer symptoms to reduce symptom distress and improve quality of life.
Dr. Howell has recently published an important guideline for clinicians and health care professionals on the prevention, screening, assessment and treatment of sleep disturbances and insomnia in cancer patients. This Canadian practice guideline, a major undertaking, was developed in collaboration with researchers from across Canada. The panel reviewed existing practice guidelines as well as randomized clinical trials that have been conducted on treatment for insomnia in cancer patients. Based on their assessment of the evidence, Dr. Howell and her colleagues concluded that sleep quality assessment, especially for insomnia, was an important part of the management of patients with cancer and developed an algorithm of how to approach that assessment. They also developed a list of several simple questions that clinicians could use to quickly determine whether patients’ sleep problems needed further investigation or even referral to sleep specialists. The developers of the guideline intend to review and update it as new evidence is published.

**Implications**

Sleep disturbance and insomnia are frustrating experiences for healthy people; for people dealing with a cancer diagnosis, they are an added burden to an already stressful and distressing situation. A first step towards improving health outcomes for cancer patients with respect to their sleep needs can be as simple as asking the question about whether there are issues with sleep disturbances. Simple follow-up questions can help clinicians decide whether self-help measures and improved hygiene are a good start or whether more specialized follow-up is needed. Dr. Howell’s research on identifying sleep disturbance as a real problem and developing assessment and management options for practitioners and patients will help improve the health outcomes of cancer patients.
Lianne Jeffs: Perceptions about Hospital Readmissions

What’s at Stake?
Patients who deal with multiple health conditions face many challenges as they navigate the health care system. One particular challenge is that they are often readmitted to hospital, which is often seen as a bad outcome by patients and as an additional cost to the health care system. Because they are seen as preventable, they are also seen as an indication that the health care system failed for a particular patient. However, is that the full story? Understanding why patients are readmitted could reduce unnecessary readmissions and improve health care for all.

Summary of Research
Dr. Jeffs is interested in improving the care of complex medical patients, and in particular, how they are moved from one care facility (e.g., hospital) to another (e.g., home or a long-term facility). Her goal is to improve the quality of care patients and their caregivers experience as well as health outcomes (such as emergency room visits, hospital readmissions, and errors). Dr. Jeffs and colleagues recently published a study that looked at what patients, family members and health care professionals thought about hospital readmissions.5

Dr. Jeffs and colleagues interviewed 49 individuals (patients, family members, nurses, case manager, physicians, and discharge planners) from a large general internal medicine unit at a
Interviews were designed to tease out what participants saw as the underlying reasons for patients being readmitted to hospital. Content analysis of the transcribed interviews allowed the researchers to identify themes and key issues important to patients and non-patients alike. Surprisingly, given the disparate nature of the participants, the content analysis identified two major—and oppositional—themes: some readmissions could be prevented but others were inevitable.

Key factors leading to readmission related to the hospital stay itself and what happened when patients were discharged, especially improper diagnosis (and hence, inadequate treatment) and being discharged too early. Lack of communication among health care professionals and between health care professionals and patients and their families likely drove early discharge and improper diagnosis. An important element of early discharge was what happened—or didn’t happen—when patients returned home. For instance, if patients didn’t follow discharge plans (e.g., following diet, medication and lifestyle plans) or if there was no follow-up care (home care, ensuring appointments were kept), patients were likely to be readmitted to the hospital. Inadequate housing, living alone without any social support, and living with a family member who also had complex medical needs also contributed to hospital readmissions.

Patients, caregivers, and health care professionals also identified readmissions that were inevitable. These were cases where a patient’s condition was worsening because of the natural progression of their disease or health condition. Often patients saw readmission as important in preventing their health from worsening further. Patients often struggled with comorbidities and worried about how they would manage at home.

Implications
While many want to reduce health care readmissions, Dr. Jeffs’ research shows that readmissions are necessary, crucial even, for many patients who face declining health and challenges in the home setting. However, her research provides insight into how to prevent readmissions as well. Simply looking into a patient’s home care needs and ensuring they are addressed before discharge can make a difference. Ensuring a smooth transition out of hospital requires communication not only between patients, their caregivers and health care professionals, but among and between health care professionals themselves. Dr. Jeffs’ research will make a difference to hospitals and health professionals as they try to deliver the best care possible to their patients, and it will make a bigger difference to the lives of patients and their families as they struggle with complex health conditions.

My research enhances understanding of factors leading to readmissions, particularly ones that are preventable and that may be modifiable to prevent readmissions and enhance quality of care.

Future research will look at nurse-led care transition interventions with elder complex patient populations.
Linda McGillis Hall: Canadian Nurses, Changing Standards

What’s at Stake?

The Canadian nursing community is about to embark on a great change in how nurses are licensed to practice. Currently, nurses write the Canadian Registered Nurse Exam (CRNE), but in 2015 this will change, and Canadian nurse graduates and those wishing to practice in Canada will have to write the National Council Licensure Examination (NCLEX) to gain entry to practice. This exam is administered by the National Council of State Boards of Nursing in the United States. The implications and effects of this change in entry to practice are unknown. Will Canadian nurses be more willing to relocate to the US to advance their careers? Will Canada face a shortage of nurses? Many of these questions will be answered in the coming years, but Linda McGillis Hall’s research on Canadian nurse migration provides insight into how Canadian and American nurses move across the border and how a change in licensing examination might affect staffing here in Canada.

Summary of Research

Linda McGillis Hall’s research focuses on nursing health services and systems. She has investigated issues such as nurse staffing, nurse education and the internationalization of the nursing workforce – Canadian trained nurses moving to the United States to work, and internationally educated nurses moving to Canada to work. She recently investigated patterns
of nurse migration in advance of a move by the Canadian Nurses Association to the National Council Licensure Examination as entry to practice for Canada’s nurses.

In a retrospective analysis of nurses in Canada and the US, Dr. McGillis Hall used data from the 2008 US National Sample Survey of Registered Nurses and the Canadian Institute for Health Information to paint a picture of Canadian-educated nurses working in the United States and US-educated nurses working in Canada.6

There were some important differences between the two groups. Canadian-educated nurses in the US were significantly more likely to be diploma prepared while US-educated nurses in the US were significantly more likely to hold associate, baccalaureate and graduate master’s degrees. US-educated nurses were more likely to hold a graduate degree compared to Canadian-educated RNs working in the United States. US-educated nurses were significantly more likely to be working full-time than Canadian-educated nurses living and working in the United States.

A higher percentage of Canadian RNs working in the United States were in full-time positions compared to their Canadian colleagues who had remained in Canada. A much higher percentage of Canadian-educated RNs working in the United States had a graduate degree compared to RNs working in Canada.

Implications
Clearly, as Canada moves from the present CRNE licensing exam to the NCLEX exam in 2015, many new nurses and the educational institutions that train them will learn a great deal. Whether the use of the NCLEX in Canada leads to greater nurse migration to the United States or vice-versa remains to be seen. However, Dr. McGillis Hall’s work on understanding the composition of the nursing workforce of both countries, the workforce participation of Canadian-educated nurses in the US and US-educated nurses in Canada, as well as the participation of internationally educated nurses, provides a solid grounding for analysts, policymakers and educators as they follow the results of this major change in Canadian nursing practice.
**Kathy McGilton**: Better Outcomes for the Older Person with a Hip Fracture

**What’s at Stake?**
The population of Canada is aging, and with increased age often comes greater infirmity and greater use of healthcare resources, especially in terms of hospitalizations. As governments struggle to contain costs, interventions that can reduce the number and duration of hospitalizations as well as improve patients’ quality of life are particularly attractive – to patients, their families and health care providers. The older person with cognitive impairment can face a difficult path for rehabilitation after a hip fracture. There are few specialized beds available for their rehabilitation, and often they are refused entry into general inpatient rehabilitation programs because it is believed rehabilitation is not possible. Improving rehabilitation outcomes for older person with hip fractures – even those with cognitive impairment – can make an important difference to that older person, their families, and even the health care system.

**Summary of Research**
Dr. Kathy McGilton researches the care of individuals with cognitive impairment and the staff who provide that care. She is particularly interested in identifying interventions and models of care delivery that improve patient and staff outcomes, and she has developed new ways to care for elderly patients with dementia living in the community before undergoing hip fracture.
surgery. Dr. McGilton recently led a study evaluating two approaches to rehabilitating older persons with a hip fracture, including those with cognitive impairment.7

Dr. McGilton and her team compared the Patient-Centered Rehabilitation Model including persons with Cognitive Impairment (PCRM-CI) to usual care to find out whether its use led to greater patient mobility and greater likelihood of patients returning home after undergoing surgery for a hip fracture. The PCRM-CI approach includes five components: rehabilitation management; dementia management as required; delirium prevention; education and support for health care professionals on patient-centered care for older persons with multiple co-morbidities (including cognitive impairment); and support and education for family caregivers.

Knowledge translation and staff support were important components of the study. To that end, an advanced practice nurse with expertise in gerontology, and fully trained on the use of the PCRM-CI, worked with staff for a year to train them on the use of the intervention. Another important element of that support that enriched the study was having health care professionals from the pilot study site discuss their experiences of successfully working with patients with cognitive impairment on their rehabilitation.

The study was conducted at two sites with 76 patients enrolled in the usual care arm and 73 patients enrolled in the intervention arm. Statistical analysis found one difference between the intervention and the usual care arm: patients in the intervention group, including those with cognitive impairment, were more likely to return home after discharge than those in the usual care group. Patients in both groups improved their mobility, but the longer patients remained in hospital, the worse they did, particularly cognitively impaired patients.

Implications
Our health care system is changing – there is increasing pressure for patients to return home earlier after hospitalization, in part, to improve quality of life, but also to reduce health care costs. Our population is changing too – people are living longer, but the number of people with cognitive impairment is growing. Historically, it has been difficult to rehabilitate patients with dementia after hip fracture. Dr. McGilton’s work shows that rehabilitation is possible and that patients with dementia can return to their homes after surgery for hip fracture. Dr. McGilton’s work improves outcomes for patients, their families, and the health care system.
**What’s at Stake?**

Women who carry a BRCA1 or a BRCA2 mutation have a very high risk of developing breast cancer in their lifetime. Women’s knowledge of this information gives rise to the question of what to do about it? How can they move forward feeling that the future is uncertain? What can they do to minimize the risk of developing breast cancer? Dr. Kelly Metcalfe’s research on mastectomy and survival in women with BRCA1 or BRCA2 mutations provides a deeper understanding of the choices available to women who want to reduce their risk of future breast cancer.

**Summary of Research**

Kelly Metcalfe’s research focuses on the prevention and treatment of hereditary breast cancer – that is, breast cancer in women who carry the BRCA1 or BRCA2 mutation. Her work has resulted in the development of a decision aid to help women understand their choices in preventive health care, and she has also extensively researched prophylactic mastectomy and oophorectomy (i.e., removal of the breasts and ovaries). A recently published study by Kelly Metcalfe and colleagues investigated the value of contralateral mastectomy (removal of the
unaffected breast as well as the breast with cancer) for women with BRCA1 and BRCA2 mutations who have already survived breast cancer.\(^8\)

Dr. Metcalfe and her team conducted a retrospective analysis comparing the survival of those women who had only the affected breast removed to those who had both breasts removed.\(^2\) The goal of the study was to find out if there was a difference in survival between the two groups; the findings could have important implications for women with BRCA1 or BRCA2 breast cancer.

A total of 390 women with a family history of stage I or II breast cancer who were carriers of BRCA1 and BRCA2 mutations entered the study. These women had all been treated with a mastectomy. A total of 181 women had the unaffected or opposite breast removed in addition to the affected breast. Patients were followed up for up to 20 years from being diagnosed with breast cancer.

Over that 20 year follow-up period, 79 women died of breast cancer: of these 18 had had both breasts removed and 61 had only had the affected breast removed. The survival rate for women who had both breasts removed was significantly higher than those who had only the affected breast removed. Further analysis strengthened these findings, leading the authors to conclude that women who have both the affected and unaffected breast removed are less likely to die from breast cancer than those who only have one breast removed.

**Implications**

Dr. Metcalfe and her team caution that the results are preliminary and the number of deaths in the group was relatively small. Nevertheless, there is a nearly 50% reduction in the risk of mortality for women who have both breasts removed compared to those who only have one breast removed. It is important to note that this study looked only at stage I and stage II breast cancers. Even though the findings need to be replicated, they clearly show that there is a definite advantage to women with BRCA1 and BRCA2 mutations of having both breasts removed. Dr. Metcalfe’s research on the value of contralateral mastectomy builds on her previous work and gives women more and better information so that they can make better decisions about their future.

These research findings are already being translated into clinical practice and lives will be saved because of it.
Carles Muntaner: The Value of Social Epidemiology

What’s at Stake?
Social epidemiologists reveal important information about the interactions of socio-structural factors on health – that is, how factors such as socioeconomic status, education and access to affordable housing affect health outcomes. Recently a debate has arisen among social epidemiologists about whether the discipline itself will continue to play an important role in health research. Some suggest that its future rests on delving into ever larger datasets to find ever more correlations between health outcomes and social factors, and trying to uncover the effects of social factors on biological processes. Dr. Carles Muntaner thinks social epidemiologists can offer a lot more to the health community and society to help motivate deeper changes in societies and truly make differences in people’s health.

Summary of Research
Dr. Carles Muntaner’s research interests centre on social inequities in health and health disparities, as well as race/ethnicity, gender and mental health. He also examines how work organization and employment conditions can affect people’s health. He is a leader in the field of social epidemiology, and in a recently published paper written in response to questions about the future of social epidemiology, he clearly defined the value of social epidemiology in Increased attention on (social) causal models will generate more innovative social interventions.
addressing significant questions about the health of populations and offering pathways to change.9

Researchers outside North America have made great strides in addressing questions about the effects on health of social class, income inequality, the recession of 2008, precarious employment, politics and the social welfare state. Often, social epidemiological research raises deeper questions that often go unanswered – or even unasked. For example, when it is found that educational level is inversely related to some health outcomes, the superficial conclusion is that improving everyone’s educational level will lead to better health outcomes. This ignores the reality of many people’s lives in terms of accessibility to education and employment environment.

Dr. Muntaner argues that other areas of research, such as cardiology, psychiatry and oncology, often include social variables in their studies and do so quite well. According to Dr. Muntaner, social epidemiologists are in a unique position. They can take advantage of collaborations with other types of social scientists - and populations of interest themselves – to ask large-scale questions that really focus on how societies and organizations are structured to improve or worsen health. Social epidemiologists have the opportunity to generate causal explanations and understand what kinds of population interventions make a real difference.

Indeed, Dr. Muntaner feels social epidemiologist should be asking causal questions, because there is a real lack of knowledge about what interventions can really improve population health or reduce health inequities. Some important questions include: What kinds of social policies have the biggest impact on reducing health inequalities? What types of labour market organization promote worker health? Ultimately, a multidisciplinary or transdisciplinary approach will be more valuable – in collaborating to produce more complex models that better explain how structural factors affect health and which interventions will improve outcomes.

**Implications**

Changing health outcomes can mean doing more than prescribing medication or performing surgery. Often, social conditions have profound and serious impacts on people’s health. Simply finding out that race and income level are associated with particular health outcomes fails to tell us why that is so. Dr. Muntaner makes the case that social epidemiologists need to be asking more questions and exploring more models to better explain and understand why and which social factors and health outcomes are associated so that societies can make deeper changes and ultimately improve everyone’s health.
Elizabeth Peter: Nurses’ Ethical Understanding of Aggressive Care

What’s at Stake?
Nurses occupy a unique position in health care system, spending much time not only with patients but their family members too. Consequently, nurses often see the consequences of very aggressive care, and its effects on patients and families. Aggressive care has been found to have important effects on nurses’ own experience of moral distress. Moral distress arises when people know what the right thing to do is, but the environment they work in makes it almost impossible to do the right thing. Exploring nurses’ understanding of ‘the right thing to do’, and how they understand their ability to do so, in the context of what they perceive to be aggressive care can provide insight not only into how patient and family care can be improved, but also into how nurses’ moral distress can be eased.

Summary of Research
Dr. Elizabeth Peter’s research centres on ethical issues in nursing, with a particular interest in exploring the spatial and temporal dimensions of nurses’ work and its impact on their ethical lives. Her work in feminist healthcare ethics has implications for how all health professionals interact and communicate with each other as they provide health care to patients.

Dr. Peter recently published a study that carefully explored how nurses perceive aggressive care and what they consider to be the right thing to do in challenging care situations they have faced. Dr. Peter and her colleagues interviewed 15 graduate nursing students about their...
experiences of moral distress as they cared for patients whose care, they believed, was overly aggressive. The nurses came from a wide range of practice settings (e.g., medical-surgical, palliative, intensive care, emergency care, community) and experience (ranging from one year of experience to over 20).

Dr. Peter and her team used a critical narrative approach to analyze the interviews they conducted with nurses. Analysis of the content of those interviews allowed Dr. Peter and her team to identify four ways nurses understand the ethical dimensions of aggressive care. Narratives that fit in the first category, “Wait and see: medical uncertainty”, point to how medical knowledge cannot always be definitive about what treatment or withdrawal of treatment means for patients and how only the passage of time often leads to any clarity about patient outcomes.

A second grouping of narratives reflects “deflected responsibilities to respond to dying, death, or futility”, which highlights health professionals’ difficulty in speaking openly and honestly to patients and their families about death and dying. Many nurses, themselves, felt uncomfortable leading this type of conversation, turning to a more experienced nurse to lead or initiate such conversations.

A third narrative grouping, “Divergent understandings, responsibilities, and temporalities” described the different perspectives experienced by nurses, physicians and even family members over the appropriate course of treatment. Issues that are debated include: Should treatment be continued or not? Should the focus of treatment be cure or palliation? Should the needs of the family outweigh the needs of the patient?

Finally, the category “Privileged medical understandings and responsibilities” follows a well described path of the primacy of physicians’ medical knowledge over nursing and other allied health professionals’ knowledge. Such privileging can lead to physicians’ decisions to continue aggressive treatment, distressing patients, their families and nurses.

**Implications**

Across all four narrative groupings, nurses locate their moral distress in their professional ethos, commenting on their inability to right what they saw as wrong. Many nurses recognize the complex negotiations and relationships that underlie treatment decisions, but Dr. Peter’s research clearly demonstrates how ill-equipped many health care professionals are to have conversations, not only with patients, but with each other, about difficult topics such as death, dying and aggressive care. Dr. Peter’s research points to the need to recognize nurses’ experience and knowledge in the care of patients, the value of a wider understanding of the social roles of all the players and the place of time, knowledge and responsibility in treatment decisions around aggressive care.
**Martine Puts**: Cancer Treatment and Geriatric Assessments

**What’s at Stake?**
As the Canadian population ages, the number of older adults (those over age 65) diagnosed with cancer will increase significantly. Older cancer patients often experience other conditions as well – such as diabetes and heart, kidney and lung problems – which may make cancer treatment more complicated. Patients and their physicians may even be reluctant to go ahead with treatment or may choose to reduce treatment duration and intensity; this may in turn reduce the effectiveness of the cancer treatment. However, if oncologists have tools that help them understand what health issues their cancer patients are facing, they will be better able to tailor treatments to ensure the best outcomes.

**Summary of Research**
Dr. Martine Puts leads research on older adults with a focus on frailty and oncology as well as general health and functioning. Her work is geared to improving the quality of life of older adults as well as the treatment options they are offered by health care professionals.

Much of Dr. Puts’ research has focused on the importance of the geriatric assessment in helping clinicians and patients make decisions about cancer treatment. Her research has contributed to the position papers of several international cancer research organizations, such as the International Society of Geriatric Oncology and the European Organization for Research and
Treatment of Cancer, leading to a recommendation that geriatric cancer patients undergo a full geriatric assessment before cancer treatment begins.

One of the challenges facing researchers is how to get research results out and used by health care providers at all levels and their patients. Knowledge translation and dissemination play an important role and can take many forms. Publication of guidelines and recommendations are one approach to helping clinicians implement new research findings. Other approaches are also useful, such as developing how-to guides. Dr. Puts and her colleagues recently published a paper that presents the evidence in favour of conducting a geriatric assessment, and gives oncologists reasons to conduct an assessment, including identifying which patients will benefit most from, what exactly is involved in a geriatric assessment, and how to do it.¹¹

**Implications**
Cancer treatments are often very difficult for patients. Older adults face some very particular challenges. They are more likely to have other morbidities related to heart, kidney and lung function. They may struggle with non-medical issues such as transport availability and social and family support at home, and physicians may not communicate in the most effective manner. Dr. Puts’ research not only determines how such factors affect how patients are treated for cancer, her research also helps clinicians understand the value of implementing new research findings in order to improve health outcomes for their patients.
**Louise Rose**: Transitioning Patients Requiring Mechanical Ventilation across the Care Continuum

**What’s at Stake?**
Mechanical ventilation is life-saving for many patients suffering acute illness or acute events; they eventually recover and are able to be weaned from the ventilator. For other patients, though, mechanical ventilation is a long-term event, requiring transition from hospital to other care facilities or even home. Patients, families and health care professionals may struggle with decision-making on how to proceed with care, and these decisions may depend on resource availability: should patients remain in hospital, be moved to a different type of facility, be moved home, or should ventilation be withdrawn?

**Summary of Research**
Dr. Louise Rose’s research focus is the care and management of patients who need mechanical ventilation and who are cared for in the emergency department, the intensive care unit, step-down facilities, long-term facilities, and even at home. Dr. Rose and colleagues have recently published a paper identifying transitions across the care continuum experienced by patients on mechanical ventilation and the characteristics that should define these transitions.\(^{12}\)

Through their collaboration with national and international experts in management of mechanical ventilation across the care continuum, Dr. Rose and her colleagues developed
expert, consensus-based criteria to define each care transition that differentiate various cohorts of mechanically ventilated patients. At an initial workshop of key stakeholders, seven transition stages were identified: T1: acute ventilation to prolonged mechanical ventilation (PMV); PMV to Long-term Mechanical Ventilation (LTMV); T3: PMV or LTMV to acute ventilation; T4: institutional to community care; T5: no ventilation requiring LTMV; T6: Pediatric to adult LTMV; and T7: active treatment to end-of-life care.

Dr. Rose and her team built up the characteristics of each transition stage through several Delphi rounds of questionnaire administered over the web. A total of 73 experts were invited to participate and 45 completed all rounds to generate criteria that defined each transition stage and also criteria that should not be used to define each transition stage. The research team analyzed the data generated by each round of discussion and summarized content into statements that reflect each category. The result is a series of statements that defines a transition stage.

**Implications**

Care for mechanically ventilated patients is complex. And as time on the ventilator lengthens, it can become more difficult for health care professionals, patients and family members to make decisions around what is best for the patient. Within the current Canadian healthcare system barriers and facilitators exist for these transitions. In addition, there are important milestones for particular cohorts, such as when pediatric patients move to the adult health care system, that can be especially difficult to navigate. The identification of transition stages as well as how those stages are defined offers health professionals a valuable tool to improve care and outcomes for patients who are receiving mechanical ventilation.
Bonnie Stevens: Helping Children Manage their Pain

What’s at Stake?
Spending time in hospital is not the most enjoyable experience for children. Undergoing painful procedures without adequate pain management makes the experience even more unpleasant – and can have short and long-term adverse effects. Even though there has been a great deal of research in recent years about pain management in children, and recommendations and guidelines on how to manage pain have been published, children of all ages still undergo painful procedures without adequate pain management. Improving pain management practices will improve outcomes for hospitalized children.

Summary of Research
Dr. Bonnie Stevens’ long-term research focus is the assessment and management of pain in children. She also leads research on how to get new research findings into the practice community through effective knowledge translation interventions evaluated within the Canadian Institutes of Health Research Team in Children’s Pain.

Dr. Stevens’ and colleagues recently published a study evaluating a strategy aimed at changing health care professionals’ pain management behaviours. The strategy is known as EPIQ – Evidence-based Practice for Improving Quality. In the first, preparation phase, EPIQ is designed...
to bring together health professionals who identify a pain practice (or non-practice) that needs changing and who work together to facilitate change at the unit level within a hospital. In the second, implementation and change phase, the health professionals carry out the change in practice and evaluate its effectiveness.

In Dr. Stevens’ study, 32 hospital units within 8 Canadian pediatric hospitals were evaluated to see whether units that used the EPIQ strategy to change practice did better than units that used standard care in relation to improving pain processes (pain assessment and management) and clinical outcomes (pain intensity). Units that participated in the EPIQ intervention used a wide variety of knowledge translation strategies to implement change – educational materials (e.g., newsletters, posters), educational outreach (e.g., rounding, huddles), reminders (e.g., screen savers, stickers), chart audit and feedback – over four three-month cycles of using continuous quality improvement Plan, Do, Study, and Act cycles.

The results were positive: EPIQ units outperformed standard care units in using pain assessment measures, analgesic interventions linked to painful procedures that appeared to have a clinically relevant effect as there was a statistically significant reduction in the odds of patients on EPIQ units having severe pain compared to patients on standard care units.

Implications
Hospital is not where most children want to spend their time – and having to undergo painful procedures with inadequate pain management is certainly not something anyone looks forward to. Dr. Stevens’ research shows that an evidence-based, coordinated, organized, and tailored approach to ensuring that pain management guidelines are followed results in improved pain assessment and management strategies in children’s hospitals. This change in practice, effectively using evidence and quality improvement strategies within the EPIQ intervention, has led to better outcomes for hospitalized children.

We have developed effective multifaceted strategies in collaboration with researchers and clinicians that will address this knowledge translation challenge.
Jennifer Stinson: Pain Assessment in Children

What’s at Stake?
Children and youth who are chronically ill face many challenges. Pain is a significant one, as it is known to negatively impact quality of life. Effective pain management can make a tremendous difference to children and youth, allowing them to have a more ‘normal’ life. Clinicians and patients need to be able to assess pain accurately – knowing how severe pain is and knowing what approaches reduce that pain lead to better pain management and health outcomes. But pain assessment can be difficult, especially in children and youth.

Summary of Research
Dr. Jennifer Stinson leads research into children and youth with chronic pain and their families. She is particularly interested in pain and symptom management and the use of internet and smartphone technologies to improve pain assessment and management in children with chronic illnesses.

Traditionally, patients have been asked to think back about their experience of pain over the previous week, fortnight or month, using a paper diary or report. But recall is not wholly reliable– people forget or underestimate or over-estimate their pain experience. New technologies and smartphone apps offer the opportunity to capture more immediate assessments by patients. Investigators, including Dr. Stinson, are now evaluating different methods to see if they make an improvement over old-fashioned pen and paper. As part of that
ongoing research, Dr. Stinson and colleagues recently published a paper comparing a weekly recall report to a momentary assessment via a Personal Digital Assistant that linked to a web-based multidimensional pain diary called e-Ouch©.¹⁴ e-Ouch allows a person to record their pain experience at specific and multiple times during the day.

Dr. Stinson and her team compared e-Ouch to paper recall methods in a sample of teenagers with juvenile idiopathic arthritis. The teens were asked to evaluate pain three times a day for 14 days, and the device had alarms triggered to remind patients to complete the assessments at set times. Patients were also given a phone call once a week for each of the two weeks of the study to remind them to complete a paper pain assessment report (the Recalled Pain Inventory).

What did Dr. Stinson and her team find out? The results were interesting. Mean reports of average momentary pain (as reported on e-Ouch) were significantly lower than those of weekly recalled pain. And average recalled pain intensity was significantly greater than the average of all momentary pain reports. However, what was particularly interesting in this study was that pain from pain episodes were reported as greater using e-Ouch than on weekly pain reports. Overall, e-Ouch compared favourably in consistency and validity with the more conventional and well-established recall pain method.

**Implications**
Managing pain effectively is crucial to giving patients – especially children and youth – good quality of life. Recall methods have certain disadvantages, notably reliability of memory and a tendency to remember ‘peak pain’ (the highest level of pain) more than non-peak pain. Electronic methods that allow for immediate pain reporting can get around the tendency to favour ‘peak’ pain reporting, but also offer flexibility in setting up more frequent assessments that allow clinicians and patients to see how pain may fluctuate over time and respond to treatment. Ultimately, better pain assessment leads to better pain management, which in turn leads to improved quality of life and health outcomes for patients and their families.

Based on this work we are now creating several other smartphone-based pain apps that will allow us to not only track in real-time the pain experience of children but also enable us to provide them with “just-in-time” advise on how to manage their pain. These apps will help us change the way we assess and treat pain in children.
**Ann Tourangeau: Nurse Faculty Incentives for Staying or Leaving Employment**

**What’s at Stake?**
Nurses are the foundation of our health care system. They provide essential health services at all levels of care – from the home to the hospital. Yet Canada and many other countries face a shortfall of nurses, driving many health care agencies to look for ways to encourage people to join the profession and to encourage nurses to stay with the profession. A highly skilled, educated and knowledgeable nursing workforce depends upon a cadre of well-prepared educators in college and university nursing programs. Yet universities and colleges are also facing shortages of faculty who can educate and train not only new nurses but who can develop and nurture the nursing faculties of the future. Without an adequate nursing faculty workforce, our colleges and universities will be unable to prepare the nurses our health care system needs and educate graduate prepared nurses – today and in the future.

**Summary of Research**
Dr. Ann Tourangeau’s research aims to build knowledge to strengthen health systems and care delivery to improve patient outcomes. A component of this research involves investigating why nurses choose to stay (or not) in nursing employment. Dr. Tourangeau and colleagues recently published a study of nurses who work in faculties of nursing and what influences them to remain (or not) in their workplace.¹⁵

Dr. Tourangeau and her research team surveyed 650 nurse faculty members in Ontario colleges and/or universities to find out what factors encourage them to remain in nursing education and
what factors encourage them to leave. Dr. Tourangeau and her team identified four generational cohorts: the Silent Generation/Veterans (born in or before 1945), Baby Boomers (born between 1946 and 1964), Generation X (born between 1965 and 1979), and Generation Y (born in 1980 or later).

The four groups shared common ground, with over 70% of respondents identifying the same six reasons they were likely to remain employed in nursing education: having a supportive director/dean, having a reasonable workload, having supportive colleagues, having adequate resources, having manageable class sizes and being able to experience life/work balance. However, Generation Y respondents were much more likely to see opportunities for leadership roles and advancement as important to work satisfaction.

More than 65% of respondents, no matter what their generational cohort, shared the same top five reasons for wanting to leave work. These included having an unmanageable workload, having an unsupportive organization, having a poor work environment, having an unsupportive director/dean, and experiencing bullying, belittling and other types of workplace incivility. Yet there were differences among generational groups as well. For example, for the oldest, Silent Generation, health issues were a more important reason to leave employment.

**Implications**

Facing a shortage of nurses as well as a shortage of faculty to educate nurses, colleges and universities need strategies to retain the nurse faculty they do have and to recruit new faculty. Dr. Tourangeau’s research shows that different generational cohorts have different expectations and aspirations about their careers, with Generation Y faculty (likely to become an important component of nurse education in the future) interested in being able to advance in their profession and take on leadership roles. Yet other groups, such as Generation X, see value in flexible work hours, work/life balance and higher salary. Nursing faculties can use Dr. Tourangeau’s research to develop strategies to keep and build their faculty membership. A healthy and satisfied nursing faculty is crucial to the development and education of nurses for clinical practice, administration, research and academic roles. Ultimately this will lead to an improved health care landscape and better health outcomes for all.
Judy Watt-Watson: Pain after Heart Surgery – Recognizing the Problem

What’s at Stake?
Cardiac surgeries, including coronary artery bypass grafting (CABG), are common procedures in modern health care, making a tremendous difference to patients’ lives by improving survival and quality of life. However, many patients – up to 60% – experience pain after surgery. Persistent pain after the usual time for healing can have a significant impact on a person’s daily functioning and quality of life. Understanding which patients are at risk for persistent post-operative pain and identifying ways to address that pain can have a tremendous impact on health and quality of life outcomes for patients.

Summary of Research
Dr. Judy Watt-Watson is a pioneer in the study of pain in Canada. She has conducted wide-ranging research on pain prevalence, risk factors for pain (especially for cardiac surgery patients) and interventions involving health professionals and patients.

Recently, Dr. Watt-Watson was co-principal investigator on a large-scale study that investigated pain after cardiac surgery. This research was the largest study to examine post-operative pain prospectively (i.e., following a cohort of patients over time) at several sites (4 Canadian...
university-affiliated heart surgery centres) over a long period of 24 months. Over a thousand patients were enrolled in the study.

The study focused on the pain patients experience long after surgery, investigating both how common and severe the pain is, as well as whether some patients are more at risk than others for experiencing pain. Dr. Watt-Watson and her team used several questionnaires to measure patients’ anxiety and depression levels, their experience and perception of pain, and their quality of life. Patients were asked to rate their pain early after surgery (24, 48 and 72 hours, and 7 days) and much later (3, 6, 12 and 24 months).

Most patients reported that their pain decreased over time, but even at 24 months almost 10% of study participants reported persistent post-operative pain (4% reported moderate to severe post-operative pain).

Dr. Watt-Watson and her team found several factors that predicted which patients were most likely to experience any postoperative pain. These included younger age, persistent nonanginal pain before surgery, anxiety before surgery, moderate to severe pain on the third post-operative day, or pain interfering with daily life one week after surgery. Factors that predicted which patients would experience moderate to severe persistent postoperative pain included sex (women were more likely than men to report pain), moderate to severe acute pain on the third postoperative day, pain’s interference with life one week after surgery, and more time spent in intensive care. Interestingly, the longer patients stayed in hospital after being discharged from the intensive care unit, the less likely they were to report persistent pain.

Implications

Persistent post-operative pain has a significant effect on patients’ health-related quality of life once they are discharged from the hospital. The findings from Dr. Watt-Watson’s study underline that acute pain after surgery can predict later persistent pain and that it is possible to identify who is most at risk of future pain. These results suggest that there are ways for health care professionals to be aware of the importance of appropriate postsurgical pain management and the potential of patients to develop persistent post-operative pain. Stepping in earlier to address that pain will lead to better health outcomes for patients.
**What’s at Stake?**
Palliative care is front of mind as society struggles with how to care for patients and families with serious illness. Discussions about care among patients, family and health care providers can be difficult to initiate. Wishes and communication about care can be unclear. While much of the discussion today centres around adult care, particularly adult end-of-life care, the choices, decisions and communication, can be similarly challenging in the pediatric setting. Ideal practice today is for all children diagnosed with cancer, not just those receiving end-of-life care, to be treated according to palliative care principles. Providing patients, families, and health care professionals with knowledge and tools to negotiate these complex situations will benefit all.

**Summary of Research**
Dr. Kim Widger’s research focuses on palliative and end-of-life care for children. She is interested in identifying and measuring all elements (processes, outcomes, structures) in the care of patients that demonstrate whether that care is high quality, no matter what the setting. As part of that research interest, Dr. Widger has developed a tool that measures the quality of care provided to dying children and their families from the perspective of bereaved parents.

Unfortunately, as in the adult world, there is little training for pediatrics professionals in palliative care, and parents notice the lack of quality care for their children suffering cancer. To address this gap in knowledge and practice, Dr. Widger and her research team have recently
initiated a large-scale education and training program to ensure that palliative care principles inform the care of all children with cancer.\textsuperscript{17} This program, \textit{Education in Palliative and End-of-Life Care for Pediatrics} (EPEC\textsuperscript{®}-Pediatrics), uses a train-the-trainer model and will be rolled out through teams based at the 16 pediatric oncology programs in Canada. The program will include webinars and frequent meetings with participating teams to enable shared learning. The team will also evaluate how effective the education program is.

\textbf{Implications}

EPEC-Pediatrics will be initiated in the pediatric cancer setting, but it is expected to be a great success, as it will provide much-needed knowledge translation and training to health care professionals. Once outcomes are evaluated, Dr. Widger and her team believe that they will be able to roll EPEC-Pediatrics out to health professionals who care for children with other life-threatening conditions. Educating health professionals about the best palliative care practices for children with serious illnesses will not only improve outcomes for patients, but will help families as they negotiate their way through the health care system. The hope is that a difficult journey will be made slightly easier.
References


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  - Kim Widger

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- CIHR New Investigator Award
  - Jennifer Stinson:
  - 2013-2018

- MOHLTC Career Scientist Award

- CIHR New Investigator Award
  - Martine Puts
  - 2014-2019
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