Improving Society Through Research: The Lawrence S. Bloomberg Faculty of Nursing
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Welcome to the 2013 annual Research Report for the Lawrence S. Bloomberg Faculty of Nursing at the University of Toronto, Canada. This year, the report takes on a new style by profiling the latest work by each of our faculty researchers – identifying what’s at stake (why this research is important), summarizing what the study entailed, and discussing the implications of each piece of work. This report highlights the growing impact of Bloomberg Nursing research, and how it is improving health and health care globally.

Our faculty’s research activity demonstrates the integration of teaching and research in our core graduate fields of study. Within these core study fields, our individual Bloomberg faculty members are clustered in three research areas: effective care and health outcomes (indicated by the green word cloud), nursing health systems (identified by pink), and critical approaches to health and health care (blue). Our undergraduate, master’s and doctoral students are provided with opportunities to experience research through active engagement with Bloomberg faculty research programs.

LINDA MCGILLIS HALL, RN, PhD, FAAN, FCAHS
ASSOCIATE DEAN RESEARCH

Front Cover:

Top row (from left to right): Jan Angus, Arlene Bierman, Cindy-Lee Dennis, Diane Doran, Denise Gastaldo

2nd row: Ellen Hodnett, Doris Howell, Doris Leung, Linda McGillis Hall

3rd row: Kathy McGilton, Kelly Metcalfe, Carles Muntaner, Monica Parry, Elizabeth Peter

4th row: Louise Rose, Lianne Jeffs, Martine Puts, Bonnie Stevens

Bottom row: Robyn Stremler, Ann Tourangeau, Judy Watt-Watson, Kim Widger, Jennifer Stinson
Jan Angus: Women’s Unequal Access to Health Services in Ontario

What’s at Stake?

Everyone should have equitable access to health care, especially in a publicly funded system such as Canada’s. Unfortunately, this doesn’t always happen. There are many reasons for this, but the results of inequitable access to health care can be less healthy individuals and a less healthy society. Not all women experience these issues; however, for those who do, explanations for why those inequities exist are often over-simplified. A nuanced understanding of what and how health inequities affect women will offer strategies for improving health care for everyone.

“...We should conceptualize gender-based research, not as a study of individual characteristics, but as an inquiry into the inequitable ways that the social world positions men and women in various contexts.”

Dr. Jan Angus

Summary of Research

Dr. Jan Angus researches gender and health disparities in access to health care. Angus, RN, PhD, and her colleagues recently published a qualitative meta-study looking at the challenges to women’s health care access in Ontario, Canada. The study was linked with the Project for an Ontario Women’s Health Evidence-Based Report (POWER) Study, led by Dr. Arlene Bierman, also of Bloomberg Nursing. The study
used evidence-based health indicators to extract population data about inequities in Ontario’s health care system.

Angus and her research team reviewed qualitative studies (for example, ethnographies, focus groups and interviews) published between 2002 and 2008. They looked for studies on access to health care (primary, acute, chronic and home care services) among groups of women (immigrant, homeless, aged, etc.) across rural and urban regions of Ontario. Critical appraisal of the available research resulted in the selection of 35 papers that were used to form the basis of the metasynthesis.

The team identified four overarching themes related to women’s access to health care. The first, contextual conditions, identified women’s real-life living situations (including housing, family demands, work, dependency on others, immigration, violence and victimization) as factors that contributed to poor health – these factors generated the need for health care. Constraints impeded access to health care – echoing the components of contextual conditions, but directly limiting women’s ability to use health services once they thought or knew they needed health care. Constraints might include low income, an inability to arrange child care or get time off work for appointments, and an inability to speak English. Barriers related directly to provincial health policy and included eligibility for health care coverage, being able to speak freely to a health care provider, and lack of appropriate services. And finally, deterrents were forces that dissuaded them from pursuing health care – the inconvenience of scheduling appointments, having to wait in a doctor’s office for hours, and insensitive service delivery; for example, to marginalized women with disabilities or in a same-sex partnership. Deterrents also took the form of perceived surveillance by health providers; for example, some women with mental health issues tried to hide symptoms of increased illness because they feared their children would be taken from them.

Implications

Metasynthesis is a technique that unveils unseen and varying complexities in a given environment. Angus’s work has revealed important nuances in how health care disparities function in women’s real, day-to-day lives. These findings offer insight into how the health care system can be changed to improve access to health care for women. Some issues identified require society-wide and institutional policy change – these might include addressing employment needs, pay, availability of services, and lack of communication between primary care providers and specialists. But the fixes don’t all have to be expensive; simply having better appointment scheduling and time management, as well as health care practitioners having more welcoming attitudes could make a big difference in the lives of women seeking health care.

“We were able to parcel out what the different forces were in each situation that affected access to health care, and we learned that there often were many.”

Dr. Jan Angus
Arlene Bierman: Women’s Health Equity: The POWER Study

What’s at stake?

We know that the health of a society and its individuals is affected by many factors. But do we know what factors affect which individuals, which groups of individuals and which communities? How would we even begin to find out? And what would we do once we did find out?

The costs associated with health care are high. Not only that, today we live in a world where we face chronic illnesses that affect not only our own quality of life but also the ability of our society to cope with them – burdens on caregivers and patients, and financial costs in delivering health care. In Canada, we spent $193.1 billion in 2010 on health care, and were expected to spend more than $200 billion in 2012.1 We can intuitively grasp that

“We know that the health of a society and its individuals is affected by many factors. But do we know what factors affect which individuals, which groups of individuals and which communities? How would we even begin to find out? And what would we do once we did find out?”

Dr. Arlene Bierman

1 Canadian Institute for Health Information, National Health Expenditure Trends, 1975 to 2012 (Ottawa, ON. CIHI, 2012).
understanding these problems can lead to our developing solutions to address the burden – financial and personal – of illness and health care.

Summary of Research

Dr. Arlene Bierman led an intensive project from 2006 to 2012 in Ontario, Canada, to investigate, collect information on and understand women’s health and health care, not only of women individually, but of specific subgroups of Ontario’s population. Bierman, MD, MS, FRCPC, and her team were interested in whether there are inequities in health and health care in Ontario, whether those inequities exist between men and women, and between different groups of women, such as women of different socioeconomic classes, ethnicities and geographic residences. The team then looked at a comprehensive set of evidence-based health indicators across a variety of disease and population categories: depression, cardiovascular disease, access to health care services, musculoskeletal conditions, diabetes, reproductive and gynaecological health, HIV infection, social determinants of health and populations at risk, and older women’s health.

The researchers made important findings. Income had significant effects on health care outcomes, affecting individuals, their communities and the health system. Lower-income Ontarians had worse health and functional status, had more chronic disease risk factors, received less preventive care and had worse health outcomes than those with higher incomes. The social determinants of health influenced women and men’s health differently. Many of the observed health inequities resulted from chronic diseases and their risk factors. Inequities in health status were much greater than inequities in access to and quality of care. Inequities in screening and chronic disease management were greater than inequities in care for acute conditions. Race/ethnicity, immigration and language were also related to inequities in access to health care.

Implications

Bierman’s work shows that although we aim high, there is much room for change, to improve care for all while reducing inequities in health and health care associated with gender, socioeconomic status, ethnicity and where one lives. Where systematic quality improvement strategies were in place, using performance measurement, there were fewer inequities. Gender differences highlighted the need for gender-sensitive solutions and also identified opportunities to improve men’s health. The POWER Study’s health equity road map, drawing on the study’s findings, provides a 10-point plan for moving forward to achieve health equity in the province, and its core set of equity indicators provide evidence-based measures to monitor progress.

Health equity is key to health system sustainability. Targeting the social determinants of health – which lie outside the health system – through poverty reduction, better education, and encouraging healthy workplaces and communities can help reduce the burden on our health care system, contain costs and lead to a healthier population. Better coordination of care for chronic disease, better access to primary care, and better monitoring and evaluation of the health system and relevant performance indicators will all contribute to a better functioning health care system and better health care for all.
Cindy-Lee Dennis: Maternal, Paternal and Infant Health and Postpartum Depression

What’s at Stake?

Depression is a widespread condition that has become a major public health priority. Although it affects individuals throughout the lifespan, research suggests there is an increased risk for both women and men during the pregnancy and postpartum period. Depression can interfere with parenting quality and increase the risk of children developing cognitive, behavioural and social problems – and evidence is accumulating that these negative effects begin in the early infant environment.

“Approximately 13% of mothers will experience postpartum depression within the first 12 weeks postpartum.”

Dr. Cindy-Lee Dennis

International experts have identified parental depression as a major childhood adversity and that effective interventions to address this condition are one of the most-important public health preventive strategies we can implement to reduce the long-term negative developmental outcomes among children.

Summary of Research
Dr. Cindy-Lee Dennis is a leading researcher in evaluating interventions for the identification, prevention and treatment of postpartum depression among mothers and fathers. She holds a Canada Research Chair in Perinatal Community Health as well as the Shirley Brown Chair in Women’s Mental Health Research at Women’s College Research Institute. Dennis, PhD, conducted a Cochrane systematic review examining psychosocial and psychological interventions for the prevention of postpartum depression which showed they do make a difference to women. Building on this systematic review, she conducted a multi-site randomized controlled trial across Ontario to evaluate the effect of telephone-based peer support in preventing postpartum depression. She also evaluated the effect of telephone-based interpersonal psychotherapy provided by a nurse for the treatment of postpartum depression in women in Canada. The results of this innovative trial are the first to: (1) examine the utility of providing interpersonal psychotherapy via telephone for the treatment of postpartum depression; (2) develop our understanding of the advantages and disadvantages of using trained nurses in the delivery of interpersonal psychotherapy; and (3) provide an economic evaluation of an interpersonal psychotherapy intervention.

Implications

Dennis has clearly shown that psychosocial and psychological interventions can help health professionals prevent the development of postpartum depression among new mothers. Interventions are more likely to be beneficial if they are individually based, initiated post-natally and target “at-risk” mothers. Dennis and her team have also demonstrated that telephone-based support from a mother in the community who herself has experienced postpartum depression can cut the risk of postpartum depression by 50% among new mothers with beginning depressive symptomatology early in the postpartum period.

As for treatment, Dennis found that interpersonal psychotherapy – provided over the telephone and by appropriately trained nurses – is an effective treatment for postpartum depression. Future research will investigate the value of collaborative care in postpartum depression, particularly to mothers in rural and remote areas. This research will also advance evidence in the field, improve our understanding of postpartum depression identification in early childhood, and provide information about the cost-effectiveness of collaborative care. Dennis’s ongoing research will also examine why immigrant women are at higher risk of developing postpartum depression, and the impact of parental depression on the first two years of a child’s life. Results from these research projects will contribute to developing interventions to improve parenting quality and child development outcomes.
What’s at Stake?

Today’s approach to health care is to emphasize releasing patients earlier from hospital, and keeping the elderly and patients with chronic illness at home longer. In large part this is to control hospital costs, but it is also thought that being at home is a better environment for recovery and quality of life. As more people are cared for at home, there is a greater need to determine how best to provide care to ensure client safety and wellbeing. A better understanding of home care safety issues will enable the development and implementation of effective policy and practice recommendations, ensuring better outcomes for those who are cared for at home.

Summary of Research

Dr. Diane Doran has a strong interest in patient safety. With her pan-Canadian team, Doran, RN, PhD, set out to investigate the prevalence, incidence, magnitude and types of adverse events (AEs) in home care, and the types of risks associated with them.

A variety of techniques were used in this study: literature review, database analysis, chart review, interviews with subjects and incident analyses. Database analysis demonstrated that the annual incidence rate of clients with AEs was 13%; the most common AEs were falls causing injury, injuries (for non-fall reasons), medication

“Home care is an integral component of the ongoing restructuring of health care in Canada. As the aging population continues to grow, there is a greater need to ensure the delivery of home care in Canada is safe. The release of the Safety at Home: A Pan-Canadian Home Care Study is the first of its kind to examine adverse events in the home and includes recommendations on how to make care safer.”

Dr. Diane Doran
events and infections. Chart review demonstrated the overall incidence of AEs to be 4.2%, of which 56% was rated as preventable. The team also found that clients were at higher risk of AEs if they had more comorbid conditions, were more dependent on caregivers, had complex conditions, received multiple medications, received more home care days, had a higher nursing service intensity in the previous seven days, or had been discharged from hospital within 30 days. The summary results show that 4.2% of home care patients had experienced an AE (results of chart review); the annual incident rate of AEs was 10.1-13%, depending on methodology.

Client and caregiver interviews identified six major issues: people’s homes are not set up to deliver hospital care or accommodate medical equipment; homes can become cluttered, untidy and unclean. There is often little consistency in services offered – caregivers change often, people are not always aware of all of the programs, resources and services available, and there may be long waiting periods. Family and friends often experience burnout or are forced to reduce their own hours of work or even quit work to care for their loved one. Both clients and caregivers prefer the client being at home and often hide their needs or refuse care for fear they will be forced to leave their home. Finally, family and friends who care for clients are often older, and caregiving can have a serious impact on their health, leading to stress, depression and anxiety as their burden increases.

Implications

Doran’s work demonstrates that many safety issues are related to system design, slow administrative processes, shortages of staff and equipment, and poor communication, all of which lead to a lack of continuity and coordination of care.

The solution, the group concluded, is to assign a Case Manager to each client, who will lead an interdisciplinary cross-sector team, have a clear role definition and the authority to act to address care issues. The findings also point to systemic weaknesses – a lack of consistent planning and delivery of care; the absence of an integrated interdisciplinary health care team; poor standardization of care processes; and challenges in dealing with the ability or inability of clients and their families to be independent decision-makers and objectively evaluate their situation.

Doran’s findings tell us that as the population ages and more demands are put on the health care system – and especially home care and caregivers – we need to improve how care is delivered. Ultimately, seamless home care will benefit individuals and the society they live in.

“Future research needs to investigate the development and pilot testing of a national set of reportable adverse events with common definitions, forms and processes; and investigate strategies for the early identification of deteriorating clients and those at increased risk of an adverse event occurring.”

Dr. Diane Doran

“The research team in collaboration with the Canadian Patient Safety Institute and national partners such as Canadian Home Care Association and Accreditation Canada will be developing tools and resources for various audiences, including clients, caregivers, home care organizations and policy-makers to support safer home care.”

Dr. Diane Doran
What’s at Stake?

Our health is affected by myriad factors, many of which are societal rather than biological. They include economic inequality, employment status, stress, housing and social exclusion, to name a few. It is well known that people with low social status have higher mortality and morbidity rates than people with higher social status. It is also known that people who are well integrated into society do better than those who are excluded from society. Understanding the challenges that socially excluded groups face can lead to new ways of thinking and talking about their experiences as well as supporting the creation of policies and programs aimed at health improvements.

“Social position is the best indicator of health, and immigrants have an acute loss of social position.”

Dr. Denise Gastaldo

Summary of Research

Dr. Gastaldo’s research examines health as a social phenomenon and the impact of social inequity on people’s health. Gastaldo, PhD, investigates how health is produced through social, political and economic processes. Two of her main interests are migration and gender as social determinants of health, which led her to conduct research on one of the most vulnerable social groups in Canadian
society: undocumented workers. Gastaldo and her team have recently published the results of their in-depth research project on this population.

In her most recent study, Gastaldo and colleagues conducted multiple interviews with 20 men and women, ranging in age from 23 to 50. In addition to interviews with each participant, Gastaldo used a novel technique to elicit information about undocumented workers’ experiences: body map storytelling. Body maps are life-sized human drawings that people can draw or write on to represent aspects of their lives, their bodies and their world. Body maps tell a very personal story, but are also valuable research tools in that they have the potential to connect times and spaces in people’s lives, something that traditional, linear accounts cannot. This novel technique provides valuable insight into the social and economic aspects of people’s lives – in this case, the intersections of migration, work and health.

The interviews and body maps from this study revealed the challenges that undocumented workers face, many of which affect their health – from the difficulty of finding affordable housing, the threat of deportation, precarious and unsafe employment, to limited social support networks. Interestingly, as undocumented workers begin to improve their earnings (often through taking on multiple jobs), they send more money home, which improves the lives of the relatives left behind, but leaves the workers even more vulnerable to exploitative conditions.

The health consequences of being undocumented are significant. Gastaldo’s study found that 60% of those interviewed reported their health was worse after coming to Canada than it was before. Undocumented workers’ experiences of social exclusion suggest they face greater job insecurity, which inevitably leads to more stress, tension, exhaustion and, for many, depression. Poor sleeping patterns and changes in weight (gaining too much weight or losing too much as a result of stress and/or poor diet) are common health effects, too. Holding many jobs means many workers don’t have time to develop relationships or build a social network.

“Most health is produced collectively. The more equitable the society, the healthier the people.”

Dr. Denise Gastaldo

Implications

Globalization has increased workers’ mobility, yet most countries have national/provincial health systems. The disparities between these economic and social agendas can lead to a lack of access to health care for millions of undocumented workers, including those in Canada. Thus, there is a need to address the societal structures that shape undocumented workers’ experiences – such as access to health care, workplace environments and housing – if we are to promote health for all in Canada.
**Ellen Hodnett:** Continuous Labour Support by Nurses

**What’s at Stake?**

Dr. Ellen Hodnett’s research focus is on care for childbearing women and improving birth outcomes. Ten years ago, there was significant concern that the rate of caesarean sections in the United States and Canada was too high. High caesarean delivery rates have significant health, economic and social costs. Hodnett, RN, PhD, had led a Cochrane Review that found that continuous caregiver support during labour had many advantages, including lowering the likelihood of caesarean delivery. These findings were widely disseminated in practice guidelines, but North American hospitals were less likely than European ones to implement the recommendations because of barriers related to how hospitals were staffed and the associated costs, whether family members or other providers of support were allowed in the delivery area, and the training of expertise of nurses asked to provide labour support. To resolve these issues, Hodnett developed and ran one of the largest nursing research trials on labour support.

“The birth experience is an unnecessarily high-tech experience in North America.”

Dr. Ellen Hodnett
Summary of Research

Hodnett’s landmark study on the effectiveness of nurses as providers of birth labour support in North American hospitals helped establish the importance of nurse-led research. As the first named chair in nursing research in Canada (1996-2011, the Heather M. Reisman Chair in Perinatal Nursing Research), Hodnett has led many studies about the care for childbearing women, particularly care during labour.

Hodnett’s study on the effectiveness of nurses as providers of birth labour support in North American hospitals was a complex randomized clinical trial. Thirteen hospitals participated, and a total of 6,915 women were randomized to either usual care or continuous labour support by a specially trained nurse. The results showed no difference between the two groups in terms of caesarean rate, other events during labour or the hospital stay, or in mother’s depression. However, when asked, women said they would prefer continuous labour support in the future.

This study was included in the recent Cochrane Review conducted by Hodnett and her colleagues, which investigated the effects of continuous, one-to-one support for women during labour compared with usual care and whether the effects of that support are influenced by routine practices and policies, whether the provider of support is a hospital employee or a member of the woman’s social network, and when the support begins. In the review, the team analyzed data from 22 trials that included 15,288 women. Women who received continuous support were more likely to have a spontaneous vaginal birth (RR 1.08), and less likely to have pain relief during labour (relative risk [RR] 0.90). As well, their labours were shorter (on average just over half an hour less), and they were less likely to have a baby with a low five-minute Apgar score (RR 0.69). There were no adverse outcomes.

Implications

Hodnett and her team concluded that the value of continuous labour support may depend on the setting. The hospitals in her original study had low average caesarean rates to start with; emphasized shared decision-making and multidisciplinary teams; and viewed labour and birth as healthy life events – characteristics of environments that have low caesarean rates. In the U.S. and Canada, Hodnett concluded, caesarean delivery rates cannot be reduced only by implementing continuous labour support. Other changes are needed in the routine care of women during labour and birth.

The findings from this Cochrane Review are striking: continuous support during labour is beneficial to both mother and baby – reducing interventions and the likelihood of a baby being born with a low Apgar score, and demonstrating there is no risk to the presence of continuous labour support. The review concluded that all women should have support throughout labour and birth. These conclusions establish a benchmark and a reason for a practice change in hospitals and centres that care for women as they give birth. Hodnett’s work has led to an understanding of the complexity of care delivery during labour, leading to improved outcomes for mothers and babies.
What's at Stake?

Cancer patients experience many symptoms. Some result from treatment, some are due to the disease itself. Poor symptom management can lead to poor outcomes for patients. If symptoms are related to the treatment itself, patients may be less willing to adhere to treatment, which may mean less uptake of treatment medication, less drug in the system to attack cancer, reduced chances of treatment success and a greater likelihood of mortality. If symptoms are related to the disease, that too might affect adherence to treatment with all the ensuing consequences. Improving symptom management, then, has tremendous potential to improve outcomes for patients.

“\[I\] want to be sure that individuals with cancer receive the highest quality of care to reduce the burden of living with this disease.\]"

Dr. Doris Howell

Summary of Research

Dr. Doris Howell conducts research in cancer care, with the goal of optimizing the quality of care and empowering patients in their treatment. One of her recently published studies looks at how symptoms cluster together and how this clustering can be used to better treat patients.
Symptom clusters are – very simply – two or more symptoms that appear together. Much research already shows that symptoms may cluster together because they share underlying biological mechanisms. Often, different clusters do not overlap or interrelate at all. But even though symptom clusters can be independent, they may still affect each other, collectively having a greater effect on patient outcomes. Outcomes associated with symptom clusters include worse overall physical function, and a lower quality of life and psychological morbidity. However, symptom clusters can be difficult for clinicians to identify and manage; consequently, it can be difficult to know what to treat.

Howell, RN, PhD, and her research team wanted to better identify symptom clusters so they could be used to improve treatment decisions and outcomes for cancer patients. She led a large factor analysis study with the goal of identifying specific symptom clusters in cancer patients. The study looked at data for more than 10,000 Ontario cancer patients undergoing treatment for several different kinds of cancer between 2007 and 2009. From this large sample, Howell and her team applied an initial exploratory analysis on the database. With further refinement, the team identified specific symptom clusters. The predominant cluster included tiredness and drowsiness symptoms as well as pain, nausea and dyspnea and was labelled “fatigue-sickness cluster.” It was seen in all types of cancers except gastrointestinal cancer. A second cluster was identified as “emotional distress cluster” (including anxiety and depression); it too was seen in all cancer sub-populations. A third cluster was identified as “poor sense of wellbeing,” comprised of appetite and wellbeing, and was seen for all cancer and cancer sub-populations except for haematological cancers.

Implications

What do these findings mean for patients and researchers? For researchers it means there are well-identified targets to investigate. Researchers can now isolate how these symptoms function together to undermine patient health as well as, at a more basic science level, determine how the individual components work together and learn why these symptoms are seen together more often than not. For clinicians, the identification of symptom clusters offers an opportunity to manage patient symptoms more comprehensively; they can be more aware that symptoms may cluster together and know what to watch for. And for patients, it means the opportunity to have symptoms treated more effectively, resulting in an improved quality of life and better outcome. Howell’s research advances the care of patients with cancer and offers an opportunity to improve their lives.
What’s at Stake?

The health care system aims to discharge patients earlier and keep patients at home longer. As a result, hospitalized patients are more complex cases, and they struggle with comorbidities and complex conditions. Smooth, seamless transition of care, then, is essential to good outcomes. How is a seamless transition of care achieved? What benchmarks can be used to measure successful transitions and identify where problems might cause further complications or worsening outcomes for patients? There are no standardized measures yet; research in this area would benefit patients, health professionals and institutions.

Summary of Research

Dr. Lianne Jeffs studies patient safety in health systems. Jeffs, RN, PhD, is particularly interested in how patients move through and across health care sectors and what can be done to make those transitions seamless and reduce patient complications related to transitions. In a recent study, Jeffs led a team of experts to establish quality measures for moving complex-care patients across different health sectors.

“Patients are often moving between and across many levels of care: from home to hospital, rehabilitation centre or complex continuing care setting, within the hospital among departments, from intensive care to medical wards, or from care at home to hospital and back again.”

Dr. Lianne Jeffs
Jeffs used a modified Delphi consensus technique to arrive at measures of quality care transitions. This technique is based on structured communication among a panel of experts. The experts review material through several rounds; their assessment of the content allows for the material to be narrowed down to arrive at answers to a problem – in this case, the ideal markers of quality measures.

The research process began with a wide-ranging literature review to identify potentially relevant measures. Material from published and grey literature identified more than 1,600 abstracts published between 2000 and 2011. After several stages of further review, it was narrowed down to 37 documents and a total of 119 measures. The research team then identified potential panel experts who could provide expert assessment of the 119 potential measures.

Panel members were individuals interested in care transitions, patient safety, quality improvement and the patient care experience. A final panel with 11 participants was put in place to review the documents. The first round of reviews involved the panel being sent a questionnaire ahead of a face-to-face meeting, asking for input on which measures were worth considering. Measures were ranked on a scale of 1 to 9, and those that achieved a 75% consensus agreement were kept. These were reviewed over several rounds, with the final five identified as: readmission rates within 30 days, primary care visit within seven days post-discharge for high-risk patients, medication reconciliation completed at admission and prior to discharge, readmission rates within 72 hours, and time from discharge to homecare nursing visit for high-risk patients.

**Implications**

Patient transfer between and across departments and institutions can be a delicate task, particularly for those whose health care needs are complex and who have multiple comorbidities. Understanding what can go wrong and what can go right and how to measure it gives health care researchers and professionals a way of preventing poor outcomes. Jeffs’s research gives health care workers an opportunity to improve care transitions and outcomes. Research such as Jeffs’s has tremendous value for health care systems – outcomes improve, patient care improves, and costs to the system can be reduced. This research is at the nexus of caring for the individual and improving the system’s delivery of that care.

“Panel members rated the measures according to importance; scientific soundness of the measure – clinical logic; scientific soundness of the measure – measure properties; and feasibility of the measure.”

*Dr. Lianne Jeffs*
Doris Leung: Cancer Nurses’ Experience of Their Patients’ Mortality

What’s at Stake?

Nurses face many challenges in the work they do – challenges that include more than just providing medical care. With patients, family members and friends, physicians and allied health-care providers, nurses direct care. But this dialogue and negotiation can be stressful for nurses. How do nurses cope with the impending death of a patient? How do they talk to a patient and family about the patient’s situation? How do they integrate the demands for further curative treatment with the knowledge that the patient will likely not survive?

“My research highlights nurses’ perceived responsibility to help patients and their families make sense of treatment, curative and/or palliative.”

Dr. Doris Leung

Summary of Research

Dr. Doris Leung investigates psychosocial support, including palliative end-of-life treatment, in studies that look at the experiences of hope and meaning in nursing practice involving patients who experience a prolonged, imminent threat to their mortality. Leung, RN, PhD, explores how the context of nurses’ work contributes to the quality of patient and family care in highly technological hospital settings.
While outcomes are improving for cancer patients, including those receiving bone marrow transplantation, there is still a risk that they may die as a result of complications from treatment and the underlying cancer. Nurses working with patients face issues of how and when or even whether to communicate with patients and families about end-of-life issues. A recent study by Leung and colleagues looked at how cancer nurses on a bone marrow transplantation unit in Canada experience the threat of their patients’ mortality.

Leung and her team recruited 19 nurses from two in-patient bone marrow transplant units and interviewed them individually and observed them in their work settings over a period of four months. Several themes emerged from those interviews.

Leung and her team learned that nurses often struggle to reconcile their efforts in encouraging patients to “fight cancer” while facing the likelihood that patients would not survive treatment. Despite this, nurses were concerned that their words or actions could “burst the bubble” of hope held by many patients and family members. Nurses were often unsure about how to communicate with patients, particularly when patients seemed distressed. Complicating matters was how physicians communicated with patients about the risks of mortality as well as the role of “do not resuscitate” orders, which generally were not changed to reflect patients’ changing health situation. One way nurses could manage their conflicting feelings was to offer meaningful care to the patient and through taking time to talk with relatives and patients. Finally, nurses varied in their coping mechanisms, with some preferring to maintain a conscious separation between themselves and their patients, and balancing their work and life situations.

Implications

Qualitative studies offer a way of drawing out information that would otherwise remain hidden and unspoken. A study, such as Leung’s, elicits nuanced information about participants’ views and understanding of their situation; in this case, of how nurses work in a setting that fluctuated between curative and palliative treatment. The findings of this study demonstrate that nurses would benefit from additional training in how to communicate with patients who are dying and their family members.

The study also shows that there is room for improving how all health professionals communicate with patients and each other with respect to patients who are at risk of dying, particularly those who are moving from requiring acute care to palliative end-of-life care.
What’s at stake?

Nurses are a crucial component of the Canadian health care system. They are key providers in the delivery of health care in our health care system. Canada is expected to have a significant shortage of nurses in the future, and this will affect the timeliness and effectiveness of health care delivery. But Canada is not the only country facing a nursing shortage – the United States is expected to see shortages as well. Indeed, Canadian-educated nurses are heavily recruited by U.S. hospitals. What options are available to the Canadian health care system to address not only the future nursing shortage but also Canadian nurse migration out of Canada?

Summary of Research

Dr. Linda McGillis Hall is an internationally renowned researcher in nursing health services and systems. Her work is used by policy leaders in Canada to improve nursing health human resources and patient safety outcomes. McGillis Hall, RN, PhD, is particularly interested in how the nursing work environment and health human resources affect nurse migration. Her research provides insight into why nurses migrate to the U.S. and what might keep them in Canada.
In a recently published study, McGillis Hall surveyed and conducted focus groups with Canadian-educated nurses working in the United States about what led them to move to the U.S. McGillis Hall studied Canadian-educated nurses working in Texas, North Carolina, California and New York – states where Canadian nurses commonly migrate. Over 4,000 of a potential 20,000 Canadian-educated nurses working in the U.S. responded, with the highest response rates coming from California and Texas. McGillis Hall also held focus groups with 134 of those survey participants to enrich the survey results.

The findings of the study are informative. All survey respondents were registered nurses. Almost half had migrated to California to work and more than a quarter had migrated to Texas. But patterns of migration had changed over time – in the early 1990s, almost half of Canadian nurses moving to the U.S. went to Texas, but by the late 1990s, that had dropped to less than a third. The shift continued in the early 2000s, as almost two-thirds of respondents who migrated to the U.S. chose California as their destination, just under a third migrating to each of North Carolina and New York, and less than 10% moving to Texas.

The five key reasons nurses gave for moving to the U.S. were: to work full-time in nursing (almost half), for family or personal reasons (42%), to travel (one-third), educational opportunities, and improved salary and benefits. And U.S. health care organizations were happy to help Canadian nurses move south. More than half of the nurses surveyed were offered relocation assistance, and half reported that salary and benefits packages were incentive to move.

Implications

McC Gillis Hall’s findings offer valuable insight into how policy-makers might address the issue of Canadian nurse migration to the U.S. and the anticipated nursing shortage in Canada. Knowing that the most common reason nurses give for moving to the U.S. is that they want full-time employment and that there are often financial incentives for nurses to move to the U.S. (e.g., better salary, benefits and relocation assistance) suggests some concrete actions that can be taken to encourage nurses to stay in Canada. But what is particularly concerning is that almost half of those surveyed wanted to stay and work in Canada and only moved south when they could not find work here. Policy leaders and managers can use these findings to organize their employment structure, offering more full-time than part-time employment, and also to assess whether better financial incentives are required to attract and keep Canadian nurses in Canada.
What's at Stake?

The Canadian population is aging, and Canadians are living longer and with more comorbidities and chronic conditions. It is likely that despite our best attempts to keep people living at home, older people will need care that is beyond the scope and capabilities of family and friends. At the same time, they will not be ill enough for hospital admission. Long-term care (LTC) will become an increasingly valuable component of our health care system. Residents of LTC facilities will want more than just basic clinical care — they will want care that ensures a good quality of life and enriches their lives. How this is achieved is a crucial aspect of LTC philosophy.

Summary of Research

Dr. Kathy McGilton’s research focuses on how older people are cared for, and the role of nurses and other health professionals in providing that care. McGilton, RN, PhD, has recently published work describing empowering registered nurses (RNs) to be more involved in the decision-making and care coordination that is key to improving outcomes for LTC residents.

LTC homes are regulated by government agencies. The data that is collected

“My research focuses on challenging myths about the care of older people and developing and evaluating models of care that focus on providing the best care by the right staff.”

Dr. Kathy McGilton
about patient outcomes often focuses on use of restraints, urinary incontinence, pressure ulcers, risk of falls and nutrition status. These are all important considerations and not to be ignored, but such measures fail to incorporate patient quality of life.

Care in an LTC home is provided by a variety of health care professionals – nurse aides, personal support workers (PSWs) and RNs. Over time, clinical care for patients has increasingly come to be delivered by staff other than RNs. McGilton argues that while this may be seen as undermining the role of RNs in LTC, in fact, it creates an opportunity for RNs to redefine and enrich their role. The education, training and experience of RNs bestow critical expertise in the care of patients, including clinical knowledge, skill and judgment; ethical decision-making ability; and problem-solving capability. This group of skills becomes important in the context of providing care to elderly residents living in LTC because the patients often have complex needs and multiple chronic conditions.

Person-centred care is often presented as the ideal, but too often it is difficult to put into practice. McGilton argues that a better approach would be to involve residents, families and all staff, including PSWs, in care planning to ensure that person-centred outcomes are achieved. The development of empathic relations between health care providers and residents is essential to optimize care, clinical management and quality of life. The complex and specialized skill set of RNs is invaluable in achieving these goals. RNs could lead the provision of enriched patient-centred care by building trusting relationships among residents and colleagues, providing staff support, leading the management of care of individual residents and contributing to enhancing staff learning as effective facilitators. The expertise of RNs equips them to lead in the move toward patient-centred care.

**Implications**

McGilton suggests that establishing the RN at the centre of patient care has the potential to exponentially improve the quality and delivery of care in LTC homes. RNs will lead by mentoring staff and using their full complement of skills in addressing patient needs; for example, recognizing loneliness, anxiety and pain, and devising solutions to address them. RNs will oversee the care of the whole patient – including physical, psychological and emotional needs. Such care will enrich the lives of patients in LTC. RNs will benefit by being fully engaged with the care they provide, evaluating the needs of their patients and using their full complement of skills.

“Our research will help inform policy by identifying new ways of using human resources to provide quality care.”

*Dr. Kathy McGilton*
What’s at Stake?

Breast cancer is the most common cancer in women. In Canada, one in 11 (9%) women will be diagnosed with breast cancer in their lifetime. The discovery of two genes, BRCA1 and BRCA2, nearly 20 years ago and the subsequent development of a test to detect mutations in these genes have given some measure of predictability and control to women. For women found to have a BRCA1 or BRCA2 genetic mutation, the lifetime risk of breast cancer is approximately 80%. Fortunately, there are options for women to significantly reduce or even eliminate this risk. Genetic testing for BRCA1 and BRCA2 has been available since 1995. However, who to test and how to test (by individual referral or wider population screening) remains an evolving question.

Research Summary

Dr. Kelly Metcalfe researches the prevention and treatment of breast cancer in those at increased risk of developing the disease. In particular, she focuses on women with BRCA1 and BRCA2 mutations, which put them at increased risk of breast and ovarian cancer. As well, she investigates the role of genetic and
psychosocial counselling. Metcalfe, RN, PhD, has developed a decision aid to help women make decisions about what options they have to prevent breast cancer (e.g., watchful waiting, prophylactic mastectomy and prophylactic oophorectomy).

Metcalfe recently published a study that examined whether it would be more effective – and would identify more mutation carriers – to screen at the population level in certain groups.

To test the hypothesis, Metcalfe and her team compared referral- and population-based genetic testing. The referral-based group comprised more than 200 women who were referred for evaluation for genetic testing of BRCA1 and BRCA2 at Women’s College Hospital in Toronto, Canada, between May 1, 2008, and May 1, 2012. These women met the Ontario Ministry of Health’s guidelines for testing, their family history of cancer was assessed, and they received standard pre- and post-test counselling. The population-based group comprised more than 6,000 Ashkenazi Jewish women who were recruited through an advertisement placed in a Canadian national paper in May 2008. They did not need a family history of cancer to be tested. This group was given an information brochure before they were tested, and women in whom a mutation was detected were offered full counselling. In addition, if a woman was found to have a mutation, all of her first-degree female relatives over age 18 were offered testing.

Among women who went for testing through standard referral-based clinical testing, 22 were identified as having a mutation. As a result of testing, another 50 female relatives were tested, of whom 16 also had a mutation detected. Therefore, during the study period, 72 women with a BRCA mutation were identified using the standard referral-based genetic testing. Among women who were part of the population-screened group, 68 were found to have a BRCA mutation, and another 71 relatives were also tested. Of these women who were found to have a BRCA1 or BRCA2 mutation, just 26 would have qualified for genetic testing. This suggests that we are currently missing many individuals with a BRCA mutation who are never identified because they don’t meet the provincial criteria for genetic testing. Through the use of population genetic testing, we were able to identify more women with BRCA mutation than with standard genetic testing protocols.

**Implications**

Metcalfe and her group concluded that all Jewish women should be offered genetic testing for BRCA1 and BRCA2 mutations – whether or not there is a family history of cancer. This finding has important implications not just for individual women, but for the health care system as a whole. Offering testing to this population will pick up some women who might not otherwise have known they were at risk of developing cancer. It will offer them the opportunity to evaluate and assess their risks and choices. On a societal level, population-based screening in certain groups can reduce the amount and therefore the costs of counselling. Better options mean better choices and better outcomes for women.

“By identifying women with a BRCA1 or BRCA2 mutation we are in a position to prevent breast and ovarian cancer in these women.”

Dr. Kelly Metcalfe
What’s at Stake?

everyone wants to be as healthy as possible, but sometimes we face conditions beyond our control that lead to poor health outcomes. These are known as “social determinants of health” or “the causes of the causes,” and they can have a significant impact on health outcomes at all levels of society. Social determinants of health include income, housing, food insecurity and social exclusion. These four factors have a significant impact on health: people with higher incomes are healthier, and people with lower incomes are less healthy. Not having access to affordable housing worsens health outcomes for those earning low incomes. And low income also affects people’s ability to eat well and healthfully, again leading to worsening outcomes. Some groups in society are particularly affected; in Canada, First Nations and minority racial and ethnic groups experience worse health outcomes than non-minority ethnic groups. Addressing the social determinants of health will lead to improved health not only for individuals but Canada as a whole.

“Politics is medicine on a grand scale.”

Dr. Carles Muntaner

“My research shows the political origins and solutions of health inequalities between groups that would appear superficially as the consequence of individual choices.”

Dr. Carles Muntaner
Summary of Research

Dr. Carles Muntaner is interested in social inequities in health, health disparities, social epidemiology, health policy, the politics of health, social class, racism and ethnic discrimination. His interest and expertise in these areas led to a recent involvement in a major report on how public policy and programs could address the social determinants of health to improve health outcomes for all.

In advocating policy action, it helps to have evidence to support new ideas. Muntaner, MHS, PhD, and his team embarked on an ambitious project to find out how social determinants of health affect health outcomes and to use the findings to create policies that address inequities, with a particular focus on involving the nursing profession.

Muntaner and his group conducted a scoping review of the available evidence on the effects of social determinants of health on health outcomes. This meant identifying studies that looked at the effects of income, food insecurity, housing and social exclusion on health outcomes, such as mortality and morbidity. The findings were clear. Health inequities persist, although they have decreased over the past 40 years, likely mitigated by Canada’s health care system. Income has the largest effect on health outcomes; it affects people’s ability to find secure housing and buy food for their family. Social exclusion has tremendous negative impact, particularly on Aboriginal/First Nations groups in Canada. Minority racial/ethnic groups also experience health and social disadvantages compared to non-minority racial/ethnic groups.

Implications

How can these complex issues be addressed?

Muntaner and his team developed a series of recommendations based on the evidence at hand. He points out that many nursing organizations, particularly community and public health groups, have called for nurses to be more engaged in advocating for marginalized groups. There are many areas in which nurses can play a role, such as advocating for living wages and strengthening the social safety net; advocating for progressive taxation, the right to food security and affordable housing; and advocating for employment equity to ensure marginalized groups have access to employment.
What’s at Stake?

Coronary artery bypass graft (CABG) surgery has become almost routine in the management of coronary artery disease. Patients undergoing the procedure are now older and often have one or more comorbid conditions, such as hypertension, respiratory disease, recent heart attack, kidney dysfunction and peripheral vascular disease. The presence of these comorbid conditions complicates how we assess how patients are doing after surgery and may mask an improvement or worsening of health, and our current tools may not pick up slight changes. Tools that more accurately assess patient function could help in determining the value of CABG for patients with comorbid conditions.

Summary of Research

Dr. Monica Parry’s research focuses on how to improve outcomes in individuals with chronic disease, particularly cardiovascular disease and heart failure. Parry, RN, PhD, and a team of researchers recently evaluated two different tools that measure how well individuals are functioning after undergoing CABG surgery.
As our population ages, it is important to have tools that are responsive to change, otherwise we may conclude our interventions are ineffective when in fact it may be that we have not used the best tool to measure our outcomes.”

Dr. Monica Parry

A total of 84 men and 17 women, who were on average 63 years of age, participated in the study, completing the HAP and physical component scale of the SF-36v2 before surgery and nine weeks after they left the hospital. Most of these patients had between three and six comorbid illnesses; the most common non-cardiac diseases were arthritis, chronic obstructive pulmonary disease, peripheral vascular disease, diabetes, upper gastrointestinal disease, depression and visual impairment, and a third of the study participants were obese. Preoperatively, many were very limited in their ability to be active – they were unable to walk far or climb stairs.

Parry and her team found that individuals with comorbidities scored more poorly than normal healthy adults on both HAP and SF-36v2 (physical component scale). HAP, though, measures a wider range of activities – work-related and not, and gender-specific – and was found to be more sensitive to the effects of comorbidities compared to the physical component scale of SF-36v2. This suggests that HAP would be a more useful tool to assess function in patients with comorbidities after they have undergone CABG surgery.

Implications

Parry’s research provides evidence that HAP may be a more sensitive measure of function in individuals with comorbid conditions following CABG surgery. Many studies have found that comorbid conditions impair recovery, health-related quality of life, morbidity and mortality. Function is a modifiable risk factor for cardiovascular disease and many other chronic diseases. To evaluate interventions to improve function in these populations, it is necessary to have reliable, valid and sensitive tools. Further research to evaluate HAP in populations with a high comorbid burden is essential.
What’s at Stake?

Nurses face many challenges in their work. One that might be less evident is that of a disconnect between what they learn about their roles and responsibilities and what they face on a hospital unit – particularly as they care for patients who require end-of-life care. Researchers understand this disconnect as “moral distress.” Nurses encounter moral distress when they know what the right thing to do is, but circumstances in their workplace make it impossible to do it. The concept of moral distress opens up a larger discussion about how we identify and resolve sensitive issues in the health workplace or indeed any workplace.

Summary of Research

Dr. Elizabeth Peter’s research interests encompass nursing, philosophy and bioethics. Peter, RN, PhD, is particularly interested in ethical matters in community nursing, including home care. Her research explores the intersections of the working lives of nurses and their moral knowledge. Peter’s latest publication explores the mixed messages nurses receive through

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“This article was part of a larger symposium I edited for the Journal of Bioethical Inquiry and included a retrospective written by Andrew Jameton, who coined the term ‘moral distress’ over 30 years ago. The retrospective is very important because he knows the early history of the work on moral distress and had not published in nursing in many years.”

Dr. Elizabeth Peter
their education and practice. Peter argues that moral distress emerges as a result of limitations or constraints on nurses’ moral identities, and their relationships and responsibilities in their professional life. She connects the concept of moral distress to the realities nurses face in daily practice, particularly in end-of-life care.

Institutional constraints, such as reduced staffing and heavier workloads, can lead to nurses struggling with their identity and creating moral distress as they struggle with carrying out activities that may conflict with their understanding of a patient’s needs. Moral distress may also emerge in the relationships nurses have with their colleagues – notably in the nurse-physician relationship and the perceived hierarchy of different professional positions within a health institution. Responsibilities can also be a site for moral distress when nurses are asked to deliver or witness care they deem unacceptable. How do nurses deal with these conflicts, and how do they manage the moral distress they experience?

Implications

Peter notes that moral distress has significant implications for nurses and society at large. For nurses, burnout can be a significant concern; for society, the effect of moral distress on quality of care is a concern. Peter and colleagues offer three suggestions that can help institutions and professionals mitigate moral distress and facilitate the emergence of wholly respectful institutions. The first is for health professionals to talk to each other about ethically difficult matters, and to identify and communicate values and responsibilities. The second is for nurses to identify themselves as skilled professionals who have responsibilities that require knowledge rather than simply being “angels of healing.” The third is to move toward the relief of human suffering – and this particularly applies in the context of end-of-life care. Having the capacity to ask whether the care being provided serves the good of the patient can alleviate the moral distress faced by nurses – although not without requiring a change in attitudes and beliefs on the part of society as well.

“Conceptual work that is supported by empirical findings on the term ‘moral distress’ is greatly needed given the confusion regarding the meaning of the term and its often superficial usage.”

Dr. Elizabeth Peter

“I hope that the work we have done in the symposium in the Journal of Bioethical Inquiry will better help frame both empirical and philosophical work on moral distress. Moral distress is likely the most commonly studied phenomenon in nursing ethics which likely, in part, is a reflection of its prevalence in practice.”

Dr. Elizabeth Peter
What’s at Stake?

The Canadian population is growing, and the population of Canadians over 65 years of age is the fastest growing sector. Most cancers occur in older adults, and more deaths due to cancer occur in older adults. To complicate matters, many older adults are also managing many other conditions. This means that they may not have the physiological resources to deal with the issues associated with cancer treatment, such as side effects and treatment toxicity, and may choose to cut back on the amount of cancer treatment they receive. These decisions could affect how they do in the long-term. Clearly, knowing what other conditions older cancer patients have and managing them appropriately is an important component of patient care.

“My research looks at how we can best support older adults to undergo treatment so they obtain the best clinical outcomes and how we can support older adults who are facing a cancer treatment decision.”

Dr. Martine Puts

Summary of Research

Dr. Martine Puts is interested in the health and functioning of older adults, and focuses on understanding how frail older adults with cancer function and how to help them do better. The geriatric assessment is a tool that does not seem to be widely used but is recommended by many international groups.
specializing in both the elderly and cancer. It is a tool that can help physicians treat their elderly patients more effectively. However, not much is known about what the best type of geriatric assessment might be and how exactly an assessment would improve outcomes. Over the past couple of years, Puts, RN, PhD, and her team have worked to answer these questions.

“There is a lack of effective supportive care interventions to improve outcomes for older adults with cancer and other chronic health conditions who are undergoing cancer treatments, and this needs to be addressed.”

Dr. Martine Puts

Puts recently published a systematic review of studies that evaluated the use of the geriatric assessment for older patients with cancer. A systematic review is a technique that allows researchers to pool data from many different studies that might have slightly different methods to come to a conclusion about an overall effect. It is useful in providing a big-picture view of the effectiveness of different interventions, such as drug treatments or even clinical assessments of patients.

Puts’s systematic review built on previous work evaluating studies that used the geriatric assessment. She elicited data from 35 studies that used the geriatric assessment and found that, in general, newer studies were of better quality than older ones. None evaluated how effective a geriatric assessment was in changing treatment plans or whether outcomes for older adults with cancer were improved. Nevertheless, Puts found that there is evidence that geriatric assessments may shape treatment decisions for older patients.

Implications

Puts’s study has important implications for cancer specialists working with older adults. She has helped identify that assessing the totality of the cancer patient – that is, all health conditions – is a valuable approach to managing the treatment of cancer patients. She has identified that more research is needed on which assessment is most useful and would be most effective overall in the management of older patients with cancer, and has also pointed out that many studies evaluating the geriatric assessment in the clinical assessment don’t include as much information as they should. Developing and using a well-validated geriatric assessment in the management of older patients with cancer has the potential to improve outcomes by ensuring that patients receive the most effective treatments.

“In the future, I hope to conduct a randomized controlled trial to study if conducting a geriatric assessment followed by an integrated care plan by a geriatric oncology team improves quality of life and functional status for older adults undergoing cancer treatment.”

Dr. Martine Puts
What's at stake?

Patients in the intensive care unit (ICU) are often placed on a ventilator to help them breathe. However, this mechanical ventilation has serious adverse events associated with it, including ventilator-associated pneumonia, injury to the airway and injury to the lungs. Patients may also experience negative psychological effects, such as post-traumatic stress disorder, anxiety and depression, and cognitive deficits. The longer that patients are on mechanical ventilation, the higher the rate of mortality. Additionally, patients requiring ventilation account for a large portion of the time and costs of ICU care. Helping patients move to breathing on their own (weaning) is a critical part of their management. Shortening the weaning period can have important consequences – improved health outcomes and reduced costs in the ICU.

“’We are continually looking for strategies to reduce the duration of ventilation and ICU stay due to risks to the patients; automated systems may offer such a strategy.”

Dr. Louise Rose

Summary of Research

Dr. Louise Rose’s research focuses on how to best wean patients from mechanical ventilation. Rose, RN, PhD, has recently published the results of a Cochrane Collaboration review of the benefits of automated versus non-
automated weaning in terms of reducing how long patients are on mechanical ventilation. With automated weaning, mechanical ventilators are programmed to adapt to a patient’s own ability to breathe and reduce the amount of time spent on the ventilator. With non-automated weaning, a patient’s dependence on mechanical ventilation is adjusted based on clinical judgment or treatment protocols.

Rose and her team reviewed all randomized controlled trials comparing automated weaning to non-automated weaning of medical, surgical, adult and paediatric ICU patients. Different types of automated weaning are offered by different manufacturers, but essentially all systems make changes based on changes in the patient’s physiological responses. Non-automated weaning depends on a clinician being available to notice that the patient’s status has changed before changes to ventilation can be made.

The findings were statistically significant. The duration of weaning was shorter for automated weaning systems than non-automated ones. The implications are that a shorter weaning period leads to a shorter ICU stay and less time on ventilation. These findings, though, are preliminary – Rose emphasizes that more research is needed, given that only 15 randomized controlled trials could be evaluated for this major review.

**Implications**

Patients who receive mechanical breathing assistance can spend a long time on a ventilator, have to deal with physiological and psychological complications, and undergo what can be a lengthy process of weaning. Determining how best to reduce dependence on mechanical ventilation so patients are ultimately able to breathe on their own can lead to an earlier discharge from the ICU. Being in the ICU is extremely stressful for patients and their families. Time in the ICU is also very expensive, and as health care organizations face tightening budgets, reducing patient stay can be helpful. As well, hospitals and other health care organizations are facing cuts in staff, and automated weaning could lower staffing needs. Rose’s work and insights have tremendous value for patients and the health care system – the results of her research can improve outcomes and create efficiencies in the system.
Many studies have been conducted on the use of sucrose, but they have used a range of doses, durations or application, and ways of assessing infants’ experience of pain.”

Dr. Bonnie Stevens

What’s at Stake?

Newborns in the neonatal intensive care unit undergo many painful procedures. There are strategies to manage the pain associated with surgery, illness and major procedures, but babies undergoing minor procedures, such as heel lances and needle pricks, are often not given pain relief. However, over the last 15 years, sucrose has come to be seen as a suitable intervention for these minor procedures and pain, and researchers have investigated its usefulness and effectiveness. Despite the research, though, sucrose is not as widely used for pain relief as it could be. Further, little is known about the best dose, side effects and long-term use. Better data will allow for better treatment decisions and better outcomes.

Summary of Research

Dr. Bonnie Stevens is interested in the assessment and management of pain in infants. She has made important contributions to the study of infant pain, particularly in the use of sucrose as a pain reliever, and also in how best to assess pain in children and infants. Stevens, RN, PhD, adds to the literature on pain management in infants and newborns with the publication of an updated Cochrane Review on the use of sucrose for...
pain relief in newborns.

Stevens and her colleagues set out to evaluate all randomized controlled trials to determine how effective sucrose for pain relief is in: heel lance, retinopathy of prematurity (ROP), venipuncture, bladder catheterisation, circumcision, nasogastric (NG) tube insertion and multiple procedures.

The review was comprehensive, evaluating 57 studies that enrolled 4,730 infants. The findings are that sucrose is an effective pain reliever for heel lance, is somewhat effective for venipuncture, and does not appear to be effective (based on current studies) for ROP. There are conflicting results for the effectiveness of sucrose for NG tube insertion, bladder catheterisation and circumcision. It may be that these procedures require multiple doses of sucrose or sucrose combined with another type of intervention.

Implications

Stevens’s work has significant implications for real-world practice and future research. The evidence shows that sucrose is a safe and effective pain reliever for heel lances. More research is needed to conclusively determine its effectiveness in other procedures. Clinical practice guidelines, though, have incorporated the recommendation that small doses of 24% sucrose (0.01 to 0.02 g) be used in infants with a very low birth weight, and larger doses (0.24 to 0.50 g) in term infants. Despite such a strong statement, sucrose is rarely used in neonatal intensive care units. Stevens’s Cochrane Review adds weight to the clinical guidelines; uptake of these recommendations will go a long way to making hospital procedures less painful for newborns.
Jennifer Stinson: A Smartphone App to Assess Pain in Teens with Cancer

What’s at Stake

Children and teens often experience pain related to cancer and its treatment. Pain worsens their quality of life because they become anxious and distressed about their illness and its treatment. Poorly managed pain is just as problematic, if not more so, by adding to the burden of anxiety and distress experienced by patients. It is impossible to address pain without understanding how it affects patients. When do they experience pain? How intense is that experience? Where (what part of the body) do they experience pain?

To understand how pain affects patients, researchers need to develop a picture of the everyday experience of cancer patients. Better information can lead to better interventions in addressing cancer and its related pain.

Summary of Research

Dr. Jennifer Stinson leads an interdisciplinary team that manages chronic pain at the Hospital for Sick Children in Toronto, Canada. She’s interested in developing tools that allow teens and children to understand and manage pain themselves. Given that kids are expert users of technology, especially smartphones and their apps, Stinson, RN, PhD, and her team developed an iPhone app – the Pain Squad.

“This new tool will help clinicians and researchers better understand cancer pain in children and teens and how best to treat it.”

Dr. Jennifer Stinson
Our next step is to build a decision-making tool that will help teens manage their pain in real time; that is, when they are experiencing it in whatever setting they are in, home, school, hospital. This will give teens more control over managing cancer pain.

Dr. Jennifer Stinson

It’s important to develop ways to better help young people better manage pain related to their illness using technologies that they use in their everyday lives.

Dr. Jennifer Stinson

The team designed and developed the pain diary app (in collaboration with paediatric oncologists and paediatric pain experts) by modifying an existing arthritis diary. Stinson and her group then conducted interviews with potential users at three stages of the app’s development (average age 13; n = 15, phase 1a; n = 18, phase 1b; and n = 14, phase 2). Interviews were designed to help guide the development of the app by learning what users liked and disliked, and what worked and didn’t work for the app.

More than 50% of teens interviewed rated the questions as “important” or “very important.” Compliance was high, with an average of 81%, and was consistent across time of day and day of week. The vast majority (86%, 12/14) of teens enjoyed the game aspect of the app, found it easy to use and reported that it did not interfere with their daily activities.

Implications

Stinson reports that this study is the first to report on the development and preliminary testing of a game-based mobile health application to assess pain. The validity and reliability of the app are still being tested, but Stinson and her team hope to develop it further to give teens a way of making clinical decisions about their pain management. This approach to assessing cancer-related pain should prove valuable, given that teens are quick adopters of technology, and could have a significant impact on how teens and their health care professionals manage pain.

Stinson’s research also shows that technology from one area of health care can be adapted to address needs in another, and that apps such as this have the potential to be widely used by many patients, helping them manage chronic illness and improve patient outcomes.
Robyn Stremler: Helping New Mothers and Their Babies Sleep

What’s at Stake?

New mothers face many challenges. Conventional thinking says a new baby should be a joy and delight, but new moms are dealing with a new role, that of “mother,” which brings with it cognitive and psychological challenges. An inexperienced mom may worry about what’s best for her baby, and there can be much anxiety around whether the baby is getting enough sleep. But a new baby is not the only one who needs good sleep – new moms need rest too, and first-time moms experience greater sleep disturbance than more experienced moms. Sleep deficit or regularly disturbed sleep can affect new moms – their mood, cognitive functioning and general wellbeing. Getting a good night’s sleep is an important goal for everyone in the family. But how can researchers help new moms achieve this goal?

Summary of Research

“Sleep is critically important for health but can be difficult for families to achieve. My program of research aims to understand barriers to sleep and develop interventions to help families get the sleep they need so they can be their very best.”

Dr. Robyn Stremler
Dr. Stremler’s research investigates sleep issues across the age spectrum and addresses why people aren’t getting enough sleep and how this problem can be resolved. But how to help new moms sleep? Strategies might address sleep hygiene (behaviours and sleep environment issues), or offer relaxation techniques or cognitive behavioural approaches. Stremler, RN, PhD, and her team decided to find out if an educational intervention they had developed would help new moms and their babies have less disturbed sleep. The intervention had several components: a 45-minute in-hospital education session with a nurse, three support phone calls once the moms were released from hospital, and an information booklet on how to improve sleep for babies and moms (which included information on how sleeping ties into crying and feeding issues). A total of 246 women participated in the study: 123 received the sleep intervention, and 123 received usual care which included three phone calls over four weeks post-hospital release but no extra information about sleep.

The team was interested in whether sleep improved for mother and baby. They assessed this by measuring the continuous motion of the mom and baby with an actigraph, which is worn around the wrist. Information from the actigraph is downloaded to a computer which analyzes the data and determines when the mother and baby were asleep and awake. Two time periods were measured: the Monday to Friday closest to when the new baby reached six weeks of age, and the Monday to Friday closest to when the new baby reached 12 weeks of age. (Weekends were not recorded because people tend to change their sleep habits then.) Women also kept a sleep diary, which helped interpret the actigraphy data. Also assessed were other factors, such as fatigue, subjective sleep disturbance, depressive symptoms and breastfeeding.

Implications

What did Stremler find out from this study? There was no difference in the moms’ and babies’ sleep disturbance between women who received the intervention and those who did not. Although this finding was unexpected, it is important as we now know that it is not worth training postpartum nurses to offer the sleep intervention to all postpartum women. These findings also lead to new, other questions to explore. Stremler’s research found that many women also sought information about sleep from other sources, not just the intervention or usual care. They also enjoyed the contact with the study staff, receiving information about sleep in-person, receiving written information about sleep and keeping a sleep diary. Several interesting implications arise from the study. It may be that women don’t need additional support in managing sleep, but it may also be that a different intervention might have a positive effect on sleep. It is also possible that it is too soon to try to influence sleep patterns in the first week postpartum. Perhaps more in-person and telephone support would have made a difference. Clearly, further research is needed to tease out how best to improve sleep for all.
**Ann Tourangeau: Promoting Home Care Nurse Retention**

With the advancing shortage of nurses – as baby boomers retire and new nurses leave the profession – locally and globally, we need to develop effective strategies to encourage nurses to remain employed to ensure patients achieve the best possible outcomes.

Dr. Ann Tourangeau

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**What’s at Stake?**

More and more, health care is being delivered at home – the elderly and infirm are living at home longer, and patients are being released from hospital sooner. At home, patients need care. While friends and family often provide care and support, many people need more specialized care delivered by home care workers, including registered nurses (RNs) or registered practical nurses (RPNs). Nurses are crucial participants in the health care system. Unfortunately, there can be a high turnover in home care workers. Understanding what works and doesn’t work in keeping home care nurses practising will help more nurses stay in home care jobs, and improve outcomes for nurses and their clients.

**Summary of Research**

Dr. Ann Tourangeau’s research explores health care outcomes such as nurse retention. In a recent study, Tourangeau, RN, PhD, and her team held a series of focus groups, speaking with RNs and RPNs about factors influencing their intention to remain employed. The goal of these focus groups was to elicit information from nurses about why they stayed working in home care and why they thought of leaving. They recruited 27

“With the advancing shortage of nurses – as baby boomers retire and new nurses leave the profession – locally and globally, we need to develop effective strategies to encourage nurses to remain employed to ensure patients achieve the best possible outcomes.”

Dr. Ann Tourangeau
RNAs and 23 RPNs through home-care nursing service agencies who worked in a home care setting and conducted a total of six focus groups lasting 60 to 90 minutes each. The focus groups generated interesting findings. Nurses appreciated being able to use all of their skills and valued autonomy in home care nursing. They valued being able to provide continuity of care to their clients; that is, being able to care for a client for as long as was needed. Relationships with colleagues, clients and client family members all played a role in nurses’ satisfaction with their work. Access to training and education were seen as beneficial. Work flexibility and workloads, safety at work, working part-time or full-time, pay rates, benefits, unpaid work hours and out-of-pocket expenses were other factors that played a role in whether nurses remained working in the home care field.

Implications

The growing need for health care delivered at home results in the increased need for nurses to provide that care. The early results obtained from Tourangeau’s study are being investigated further in the next study phase. Nevertheless, they give some insight into how home care nurses evaluate their working situation and decide whether to keep working or not. Learning that we can identify factors that lead nurses to quit – such as workload and scheduling, continuity of care and client expectations – means that policies can be developed to address these issues; for example, allowing flexible scheduling, improving training and support, and offering more full-time work. Ultimately, the goal is to improve nurse retention in the home care setting, so that patients, families and the health care system benefit from the expertise and care of home care providers.
What’s at Stake?

Patients often experience pain, and leaving this pain untreated can have costly long-term consequences for patients and society. Long after the initial surgery or trauma, it can lead to worsening health outcomes and a negative effect on quality of life. Much has been written and talked about in relation to pain management, yet one in five Canadians has an ongoing persistent pain problem. Addressing patient pain is an important component of the health care system and should be an important consideration in a health professional’s practice. One of the most valuable interventions for managing pain is educating health professionals – early in their training – about pain management. But does this happen?

“Pain is probably one of the most common if not the most common symptom that people bring to a health professional. But our curricular on pain is minimal. The joke among pain researchers is that you are better off going to a vet!”

Dr. Judy Watt-Watson

Summary of Research
Dr. Judy Watt-Watson has been in the vanguard of Canadian – and international – research on pain. Her research has established benchmarks for evaluating pain prevalence and the gaps in pain education for health professionals. Watt-Watson, RN, PhD, and colleagues recently evaluated pain management education among Canadian health science and veterinary schools.

One way of ensuring that health professionals develop expertise in (or at least become comfortable with) managing pain is to require professionals to demonstrate competency in the area before they are licensed to practise. To find out the status of pain-related pre-licensure requirements, or entry-to-practice competencies, Watt-Watson and colleagues conducted an in-depth survey of pain competencies required for health science students at Canadian universities. These competencies were then compared with those required for veterinary medicine graduates. Watt-Watson and her team also examined how these competencies relate to key ethical competencies.

The team determined whether a health science student required pain knowledge as a requirement of competency by examining relevant provincial and territorial documentation for dentistry, medicine, nursing, pharmacy, occupational therapy, physiotherapy, psychology (grouped together as “health sciences”) and veterinary medicine.

The results were interesting. At the national level, only nursing and dentistry documents included references to competencies in pain; no other disciplines discussed pain competency in specific terms. Similar results were seen provincially. The veterinary medicine requirements as outlined in the Ontario Veterinary College Professional Competencies of Canadian Veterinarians were much more detailed, identifying 10 pain-related competencies. This work has now been replicated internationally with similar results.

"We need to get pain into curricula. We need to graduate people at the first level who have important knowledge of pain management and pain assessment."

Dr. Judy Watt-Watson

“When I conducted my doctoral research on pain after surgery, I was told not to because people don’t experience pain after surgery, but I found this was not true. I’ve identified that people, particularly cardiac patients, have pain after surgery.”

Ethics is a key competency requirement for all health professionals. However, ethical behaviour is not easily quantified with stand-alone elements; rather, it is integral to the whole of professional practice. Watt-Watson argues that failure to specifically identify competencies in pain management means that health professionals are unable to act in a wholly ethical manner.

Implications

Watt-Watson’s research identifies the gaps in health professionals’ education about pain management and emphasizes the value of educating health professionals about pain before they enter practice. Too often pain is mentioned only briefly in academic curricula or professional literature without an associated well-defined program of study or learning outcome measures. Uncovering the lack of pain management as a competency across health professionals offers an opportunity for improvement in health science education, with the ultimate goal of improving outcomes for patients.
What’s at Stake?

It used to be that we thought children and especially infants didn’t feel pain when they underwent hospital procedures. It took to the 1960s to learn that children experience pain and until the late 1980s to learn that infants experience pain. More recently, we have come to understand that there are significant long-term negative outcomes of untreated pain. Children and infants in hospital may experience pain for many reasons – heel lances, finger pokes, surgery, dressing changes. Even though there is a wealth of research about how to minimize pain during these procedures, children continue to report pain as the worst part of their hospitalization.

“Given the current state of knowledge about how to reduce pain during and after procedures, it is unacceptable that children continue to experience needless pain.”

Dr. Kim Widger

Summary of Research

Dr. Kim Widger recently led a unique project to increase awareness and share knowledge about the process of improving pain practices for hospitalized children. The project was based on results from a recent study conducted by Dr. Bonnie Stevens and the Canadian Institutes of Health Research (CIHR) Team in Children’s Pain, and was to adapt and implement a knowledge translation intervention called Evidence-based Practice for Improving Quality (EPIQ). The intervention was studied in eight university-affiliated
children’s hospitals in Canada; a total of 16 hospital units received the EPIQ intervention and 16 continued with standard care.

The use of EPIQ led to significant improvements in pain assessment and management, and reduced pain intensity in hospitalized children. Widger, RN, PhD, worked with Stevens and Dr. Melanie Barwick from the original study team to develop a strategy to share a more descriptive narrative of the intricacies and experiences of implementing EPIQ in the participating units in an effort to reach health professionals who may be interested in implementing a similar process to improve practices in their own setting.

The result was *Stories from the Floor: A Knowledge Translation Casebook on Improving Pediatric Pain Practices*. Primarily in Canada, the casebook method has been used to informally share the experience of implementing research into practice. Other casebooks include compilations from a number of different studies, while *Stories from the Floor* includes the experiences of the eight research coordinators who facilitated the implementation of EPIQ and measured outcomes at each site over an 18-month period. Due to the tailored nature of the intervention and differences in context, there was great variation in these experiences. Widger worked closely with each coordinator to tell her story of facilitating change using EPIQ. Each story is presented in a casebook chapter with a number of figures to illustrate strategies used during the change process. The casebook ends with a synthesis of “key learnings” across the stories on the most-important steps to changing practice: build relationships, involve the right people to steer change, actively engage all staff, focus on seamless integration and take baby steps.

**Implications**

Pain management is an important component of optimal care for hospitalized children and infants. The casebook method offers a novel and grounded means share first-hand knowledge and experience from the perspectives of those engaged in the process of improving pain practices. The casebook has been well received by researchers and practitioners. Widger’s efforts to share the success of the study have the potential to improve the health care outcomes of children and infants by assisting others to make changes in their own practice setting.

“We hope *Stories from the Floor*, written by those actively involved in implementing EPIQ, will inspire others to find creative ways to move forward with improving pain management or other clinical practices in their own care setting.”

*Dr. Kim Widger*
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