

HOLLAND BONE AND JOINT PROGRAM NEWS

Fall/Winter 2018



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Sharing expertise to improve care

Teams at the Holland Bone and Joint Program continue to lead by example working with health leaders to focus on musculoskeletal health care delivery across the province. The development of centralized referral intake and early assessment (rapid access clinics) has been shown to improve access to care.

These clinics will better support patients with hip and knee arthritis and lower back pain by providing a central point of contact for referrals, and for patients, an early assessment with a specially trained expert clinician. If patients require a surgical consultation, the team makes these arrangements. Patients receive education and recommendations for treatment and are linked to community programs that may help their condition.

The Holland Centre started their team-based model of care for patients with hip and knee arthritis in 2005. Systems for tracking referrals and evaluating outcomes are part of the program. Since that time, the specially trained team has seen over 25,000 patients for the initial assessment and provided advice and care plans to patients that do not need to see a surgeon. Another 40,000 patients have been seen for follow up after joint replacement surgery. The team approach adds value to patients and streamlines care so that surgeons see patients who need their subspecialty skillset. As a result of the program's success, the team approach to care is being scaled up across the province.

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Our newsletter offers updates on clinical services, research, education and staff activities. We'd like to hear from you! Please send story ideas or articles for review to: natalie.chung-sayers@sunnybrook.ca

“We pioneered the centralized referral intake and team-approach to care for patients with arthritis in Canada. The clinics are a result of strong collaboration between the advanced practice providers and orthopaedic surgeons. Patients see a highly credentialed clinician (physiotherapists/occupational therapist with advanced degrees) for a detailed comprehensive assessment that takes about 45 minutes and includes special tests to look at function. Patients that do not need surgery are given the tools to carry on with confidence and those that do, are provided with early education about the surgical program and how to prepare in order to get the best outcome possible,” says **Susan Robarts**, advanced practice physiotherapist and Team Leader.

She and orthopaedic surgeon, **Dr. Jeffrey Gollish**, are now sharing their collaborative expertise as clinical leads for the provincial initiative.

“It’s about meeting the needs of patients and doing so in a responsible way when it comes to health care resources,” says Susan.

To ensure consistency in the delivery of specialized care in these clinics, they are also advising on ways to standardize practice and each part of the patient’s journey, from referral to assessment to treatment, and setting competency standards for the role of the advanced practice provider to ensure high quality of care, and transferability of the role between health care institutions.

The team-based approach to care has spread within the Holland Bone and Joint Program to include shoulder and spine specialty clinics with good results, and the teams are well positioned to be part of any future potential expansion.



Feldberg Chair Supports Spinal Research and Quality of Life for Patients

Dr. Joel Finkelstein (pictured above) has been appointed to the Feldberg Chair in Spinal Research.

“The Feldberg Chair in Spinal Research will assist us tremendously in our goal to provide unmatched care. It will help drive a research platform that will significantly improve long-term quality of life for patients affected by spinal cord injuries and spine trauma, metastatic disease

to the spine, and degenerative spinal conditions,” says Dr. Finkelstein, who is an orthopaedic surgeon in the Holland Bone and Joint Program, an affiliate scientist at Sunnybrook Research Institute, and head of Sunnybrook’s Spine Team.

In collaboration with clinician-scientist colleagues in the Holland Bone and Joint Program and other Sunnybrook

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researchers across oncology and neurosurgery, his research focuses on image-guided and minimally invasive spine surgery and delivery of therapeutics. He is also studying ways to better understand patients' response shifts, after spine treatments, in perceptions of their health-related quality of life.

Dr. Finkelstein, who is also an associate professor in the Department of Surgery at University of Toronto, continues to lead minimally invasive spine surgery at Sunnybrook for better patient outcomes. He optimized both spine care pathways and the use of image guidance in pre-operative planning and intra-operatively, and has initiated less invasive techniques into surgical practice, such as the use of tubular retractors and cortical trajectory screws for stabilization.

The Chair will help support research including:

Ultrasound imaging with 3D Cone Beam CT-based spinal navigation for better soft tissue visualization during surgery:

During surgeries for trauma, degenerative disease, malformations, and metastatic disease, ultrasound imaging is currently used but is limited to single views and

not linked to the patient's spine anatomy. Dr. Finkelstein and colleagues are combining ultrasound imaging in real time, with 3D CT navigation technology for more accuracy in localization and visualization of soft tissues (discs, the spinal cord, tumours) to help with resections.

Innovations in RFA (radiofrequency ablation) to treat large bone tumours:

Radiofrequency ablation is the surgical removal of tissue using heat generated locally from medium frequency alternating current. The Feldberg Chair will also provide support for cutting edge research by **Dr. Albert Yee** and **Dr. Cari Whyne** who have developed new applications in RFA that target heat and maintain consistent temperatures to allow for the ablation of large tumours in the vertebrae while preserving nearby tissues.

Quality of life research for continuous improvements in spine treatments:

Research to better understand how and why, patients' responses shift in their view of quality of life and positive outcomes will help evaluate the success of spine research translated to clinical care.



State-of-the-art facility continues to support patients

Thanks to the generosity of donors and others, enhancements to Holland Centre Operating Rooms are now complete. Construction teams made improvements to four existing Operating Rooms and added a new Operating Room for future potential use. Renovation enhancements include a new, large, Air Handling Unit for high quality airflow, filtration, system upgrades including to medical gas monitoring, fortified infrastructure, significant waterproofing for longevity of the facility, and new generators for 24/7 backup power.



MyHip&Knee application now also a web-based tool

myHip&Knee helps patients get ready for hip or knee replacement surgery and keeps them on track during recovery. This helpful tool can now also be accessed online in your web browser. Please visit www.sunnybrook.ca and search the term, 'myhip&knee'.



Online

Use myHip&Knee in your web browser



Research To Improve Quality of Life for Patients

Members of our Holland Bone and Joint Research Program at Sunnybrook Research Institute continue to conduct research.

Highlights from this year's Research Day:

Dr. Joel Finkelstein, orthopaedic surgeon and affiliate scientist, recently appointed to the Feldberg Chair in Spinal Research, spoke about his work to better understand response shifts in patients' perceptions of quality of life after spine treatments. His research will help evaluate the success of spine research translated to clinical care. (For more about his research, please see pages 2 and 3).

Dr. Jacques Lee, emergency medicine physician and scientist, talked about his research to improve emergent care of older persons. He is conducting research on ultrasound-guided nerve block analgesia for newly admitted elderly hip fracture patients. This form of pain management has shown significant reductions in pain levels, and together with other strategies may minimize risks of complications such as delirium, particularly if initiated early in patient care.

Dr. Paul Marks, orthopaedic surgeon and associate scientist, appointed the inaugural recipient of the Susanne & William Holland Chair in Sports Medicine, is conducting research on risk factors for osteoarthritis risk and the progression of the disease especially after sports injury. Longer term, the goal is to incorporate known risk factors with varied patient populations to potentially develop a risk equation for osteoarthritis. He further updated the group on advances in minimally invasive surgical sports medicine related to articular cartilage regeneration and functional joint preservation.

Dr. Diane Nam, orthopaedic surgeon and associate scientist, presented her research on short-term, low-dose lithium carbonate for fracture healing. Even in good health, for about ten percent of Canadians who experience fractures, their bones do not heal. Individuals taking lithium carbonate, however, have been observed to have a decreased fracture risk. Our pre-clinical studies have linked lithium carbonate to improved bone healing with optimized dosing. Dr. Nam is now conducting the first randomized controlled trial with the hope to bring this promising, safe and low-cost treatment to clinic.

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Dr. Bheeshma Ravi, orthopaedic surgeon and scientist, discussed his research to improve quality of life for patients after total joint replacement and other orthopaedic surgical procedures. His goal is to identify predictive factors of less optimal outcomes linked to function, pain, complications, and to study ways to reduce these risks. Currently he is studying factors such as length of surgery and delirium risk, and the effects of opioids related to patients with severe arthritis before and after total joint replacement.

Dr. Sebastian Tomescu, orthopaedic surgeon, talked about research that he and colleagues at the University of Waterloo are conducting. In consultation with Holland Centre physiotherapists, the researchers are further

developing their smart brace, a software-responsive, wearable technology to support patients in their recovery after knee surgery.

Dr. Jessica Widdifield, a recently appointed scientist, talked about her research in evaluating musculoskeletal care to improve patient outcomes, and the power of leveraging de-identified health data. In a study published earlier this year, she reported a higher mortality rate for patients with rheumatoid arthritis, compared to a matched set of the general population. These patients have proportionately higher co-existing medical conditions, and the study emphasizes the need for early access to rheumatologists for more preventive care and management.



Helping patients manage pain after joint replacement surgery

Thanks to feedback and input from patients, the Holland Centre team set about expanding pain management information and resources to better support patients after joint replacement surgery.

Recently recognized as an Accreditation Canada leading practice, these educational materials are featured in different formats to meet the needs of patients with varying learning styles.

“We took a team-based approach, engaging our interdisciplinary team and patients and families to develop a ‘Top 10 Questions about Pain Medication’ brochure, which was adapted online. We also produced a video, ‘Managing Pain After Joint Replacement’”, and incorporated the pain management information into myHip&Knee; our interactive, self-monitoring mobile application and web-based tool,” says **Amy Wainwright**, physiotherapist,

Holland Centre, and project lead. Resources are available at www.sunnybrook.ca/hipkneepain.

Twenty-five patients evaluated the materials, and 90 percent were satisfied or very satisfied with the information.



Improving Musculoskeletal Care and Expanding Research

Members of our Program help lead improvements in musculoskeletal care. Here is a partial list:

Arthritis Alliance of Canada

Patricia Dickson, APOT

Bone and Joint Canada

Dr. Albert Yee, co-chair

Canadian Orthopaedic Association

Dr. Veronica Wadey, chair,
Committee on Professional
Development

Canadian Orthopaedic Foundation

Dr. Hans Kreder, vice chair

Canadian Orthopaedic Nurses Association

Girlie Hart, APN
Eri Maeda, NP

GLA:D Canada

Mark Anunciacion, PT

Health Quality Ontario – Development of Quality Standards

Suzanne Denis, APP - Osteoarthritis
Patricia Dickson, APOT - Hip
Fracture

Helen Razmjou, APP - Shoulder

Health Quality Ontario – Adopting Research to Improve Care (ARTIC)

Dr. Jeffrey Gollish, provincial lead,
rapid access clinics
Susan Robarts, APP, provincial
clinical lead, rapid access clinics

International Society of Orthopaedic Centers

Dr. Richard Jenkinson, member,
Board of Directors
Dr. Albert Yee, chair, Membership
Committee

Toronto Central LHIN

Dr. John Murnaghan, surgeon
champion, Hip and Knee Arthritis
rapid access clinics
Dr. Albert Yee, surgeon champion,
Low Back Pain rapid access clinics

Award Highlights:

Lindsay Crawford, occupational therapist: Recipient of the 2018-19 Practice-Based Research and Innovation TAHSNP Health Professionals Holland Bone and Joint Innovation Fellowship for her project: *Improving the Experience of Patients Undergoing Shoulder Surgery Across the Continuum of Care and Across Two Campuses.*

Eileen Barbeau, volunteer: recipient of the Sunnybrook Volunteer Resources Service Award.

Dr. Shirley (Chow) Lake, Dr. Natasha Gakhal: Gold Practice Reflection Award from the Canadian Rheumatology Association.

Dr. Shirley (Chow) Lake, Dr. Natasha Gakhal, Dr. Amanda Steiman, **Dr. Jessica Widdifield**: Awarded funding of \$19,875 Pfizer Chair Research Competition for *Rheumatology Serology Testing in Ontario.*

Dr. Josef Schatzker, orthopaedic surgeon, was recently named a member of the Order of Saint Stanislas in Poland. This award is similar to the Order of Canada, which he was named to, in 2007.

Kathak Vachhani, research engineer, Dr. Pierre Lapaine, Dr. Saeid Samiezadeh, **Dr. Cari Whyne**, senior scientist, **Dr. Jeffrey Fialkov**, plastic surgeon and associate scientist: Canadian Connective Tissue Conference poster award: *Biomechanical Assessment of Surgical Manoeuvres of Alar Cartilage Performed in Rhinoplasty.*

Research Highlights:

Holland Bone and Joint Program researchers continue to be productive in knowledge translation:

Dr. Cari Whyne, senior scientist with **Dr. Albert Yee**, orthopaedic surgeon

and associate scientist, were awarded a four-year \$966,960 Canadian Institutes of Health Research Project Scheme Operating Grant for *Treatment Induced Changes in Bone Quality: Impact on the Skeletal Stability of the Metastatic Spinee.*

Dr. Hans Kreder, orthopaedic surgeon and scientist, was one of the recipients of a four-year \$2,275,876 Canadian Institutes of Health Grant Competition for *Cognitive Behavioural Therapy to Improve Patient Outcomes Following Internal Fixation of Extremity Fractures: a Randomized Controlled Trial.*

Dr. Meaghan O'Reilly, scientist received a one-year, \$190,000 Ontario Ministry of Research, Innovation and Science Early Researcher Award for her project, *Therapy Effects of Ultrasound (non-invasive surgical alternative) in the Spinal Cord.*

Choosing Wisely



Dr. Jeffrey Gollish helped lead these initiatives.

For better outcomes for patients undergoing hip and knee replacement surgery at the Holland Centre, these initiatives have been implemented as part of Choosing Wisely, a global campaign in health care to reduce the number of unnecessary tests and procedures while ensuring decisions meet patients' needs.

Teams collaborated across areas including surgery, surgical services, anaesthesiology, haematology, nursing, general medicine, infection prevention and control, microbiology and antibiotic stewardship, related to initiatives including:

Minimize blood transfusions and associated potential complications:

A patient's haemoglobin level before surgery is the strongest indicator of the potential need for blood transfusion. Patients are given oral

iron supplements for two months prior to surgery. Patients are routinely checked for anemia and if at high-risk they are referred to the hospital's Blood Conservation Program for blood optimization support.

Team includes: Yulia Lin, MD, John Murnaghan, MD, Jeffrey Gollish, MD, Sue Belo, MD, Jeannie Callum, MD, Marciano Reis, MD, Diane Bentley, RN, Jan Flynn, RN.

Minimize risk of VTE (venous thromboembolism):

VTE is when a blood clot forms, most often in the deep veins of body, and cuts off blood flow. To reduce VTE risk, the team introduced a new oral anticoagulant that eliminated the need for daily blood work, laboratory monitoring, and eliminated the need for routine Doppler ultrasound screening.

Team includes: Jeffrey Gollish, MD, Deborah Murnaghan, RN, Andrea Donovan, MD, John Murnaghan, MD, Vikas Bansal, MD, Helen Razmjou, PhD.

Minimize surgical infections for patients undergoing total joint replacement:

Perioperative practices were further improved to enhance prevention of infections. These improvements have resulted in sustained low infection rates, compared to national and international benchmarks.

Team includes: Dariusz Pajak, IP&C, Chantal Letang, RN, Jeffrey Gollish, MD, John Murnaghan, MD, Agnes Nowak, RN, Helen Vandoremalen, PCM, Jerome Leis, MD.

Minimize unnecessary antibiotics for patients undergoing joint replacement:

Screening urine cultures before surgery are now done only if a patient has symptoms of urinary tract infection, and with appropriate antibiotic treatment if the culture is positive. This significant change in practice to discontinue routine screening is guided by evidence from recent, large studies with patients having joint replacement. Reduction in the use of antibiotics limits side effects and the development of antibiotic resistance.

Team includes: Michael J. Lamb, MD, Laura Baillie, Microbiology, Jan Flynn, RN, Vikas Bansal, MD, Sandra Walker, Pharmacy, Susan Clark, RN, Jeffrey Gollish, MD, Jerome Leis, MD.

How to research health topics online

No matter the health topic you're researching, the more you get from credible articles and published studies, the more informed you'll be when talking to your health care team, says **Patricia Dickson**, advanced practice occupational therapist, and **Ekaterina Petkova**, librarian, Sunnybrook.

[R] **eliable?**

Website credible? Visit government or large non-profit health agency websites. Look for well-researched, best practice treatment information.

[E] **xpert?**

Author named? Credentials? Relevant to the health topic you're researching? Are they linked to an academic institution?

[S] **ource?**

Where is the information from? Our health care system is different from the United States. Try looking at Canadian sites first.

[E] **verywhere?**

The same article on many sites doesn't make it reliable. It may be paid-for or sponsored, and may not be objective.

[A] **ccurate?**

Are there typos in the article? Does it reference a list of credible and published articles?

[R] **eviewed?**

Article or study been reviewed by a relevant specialist or group of specialists? Published in a peer-reviewed journal?

[C] **urrent?**

Timely information? When was the study done? How is the website updated? Do articles have dates?

[H] **ow?**

When looking at studies, how many patients participated in the study. How was the study done?



For health blogs, visit health.sunnybrook.ca

The Holland Bone and Joint Program is one of North America's finest in musculoskeletal care, education and research. The Program provides integrated services in orthopaedic surgery, orthopaedic trauma, rheumatology and rehabilitation. Located at Sunnybrook's sites of the Holland Orthopaedic and Arthritic Centre and Bayview, the Program is a key referral centre for complex trauma orthopaedic surgery, spine surgery, hip and knee joint replacement, soft tissue injury reconstruction, and shoulder and upper extremity surgery. The Holland Bone and Joint Program also encompasses the Working Condition program and Sunnybrook Centre for Independent Living (SCIL).