Hip & Knee Osteoarthritis Surgical Quality Program

2021 Updates:

Thank you! The Bone and Joint Health Strategic Clinical Network (BJH SCN) would like to thank **Raul Kuchinad**, **Lorraine Oleski, Candace Kenyon,** and **Art Teppler** for their work on the Hip and Knee Osteoarthritis (OA) Surgical Quality Program over the years and wish them the best as they move to new endeavors. Raul Kuchinad has been the surgeon co-lead for six years, providing leadership for several key quality improvement initiatives (see pgs 6-7). Lorraine Oleski and Candace Kenyon served as administrative co-leads and provided leadership as the program moves toward sustainability. Art Teppler served as a physiotherapy lead.

The BJH SCN would like to welcome new co-leads to the working group: Dr. Guy Lavoie as the new surgeon lead and Danika Tribo as the new administrative lead.

Hip and Knee Working Group Leads

Dr. Guy Lavoie completed his medical training and orthopedic residency in Edmonton. He completed fellowships in adult reconstruction and orthopedic oncology at Mount Sinai in Toronto and Memorial Sloan Kettering in New York. He has been practicing in Edmonton since 1990.

Danika Tribo joins as a Clinical Nurse Educator at the Rockyview General Hospital in Calgary for 6 years. Danika is a Registered Nurse with 12 years of orthopedic experience and holds orthopedic (CNA) certification. She completed a Master of Nursing in Education (MN-ANP) from the University of Western Ontario in 2019 where she completed two clinical placements with Ania Kania-Richmond, Assistant Scientific Director of the BJH SCN. Danika is an active participant in the Surgery Strategic Clinical Network as a core committee member (3 years) and the BJH SCN as a working group member (6 years).

Celebrating 17 Years of Leadership

Many thanks go out to previous leaders for their support and commitments to the quality program over the 17-year long period of innovating hip and knee arthroplasty care in Alberta: **Jane Squire-Howden**, **Jason Werle**, **Kelly Martial**, and **Denise Hall**.

Marking 17 Years of Quality Improvement

Recognized for providing high quality patient-centered care and for being champions of health change in Alberta since 2004.

Surgical Quality Program

This provincial program aims to standardize, implement, and improve evidence-based clinical practices to deliver the best possible quality care for hip and knee arthroplasty patients in Alberta. As a result of extensive stakeholder collaboration and process integration, continuous quality improvement is an integral part of hip and knee replacement practice in Alberta, with some of the richest data on quality available in the country.

BJH SCN Vision

Keeping Albertans Moving

Provincial Partners

First established in 2004, today the quality program includes thirteen hospitals and eleven central intake clinics. Driving continuous quality improvement are the provincial Working Group (WG) and Clinical Committee (CC). Since 2012, the program has been a signature focus of the BJH SCN. Central to the work are the impassioned clinicians including surgeons, front line allied health and nursing staff providing hip and knee arthroplasty care in Alberta, health administrators and the analytic and project management specialists from the Alberta Bone and Joint Health Institute (ABJHI).

Leaders in Quality Care

The program has identified opportunities for quality improvement and to measure the impact of changes in process like no other service area in the province by leveraging rich quality data. Consequently, the program is able to establish targets that maximize value for money and to avoid short-term cost reduction targets that may adversely impact quality of care long-term.

Inspiring solutions. Together.

Principles of Hip & Knee Surgical Care in Alberta

Surgical care path (provincial standard)

- Provincially standardized care path from referral intake to post-op follow-up
- Updated annually using multi-disciplinary collaboration, best evidence, and clinical consensus

Case management for patient-centred care

- Comprehensive assessment either with a musculoskeletal (MSK) expert physician and/or a surgeon
- Surgical optimization and relationship building with the patient including touchpoints after hospital discharge
- Customized care plan - addressing patient questions, expectations, and outcomes throughout the entire journey

Geographical central intake via clinics

- Best practices that support safe and equal access to care including standardized referral requirements, option to refer to next available surgeon, consistent triaging approaches and wait list management
- Communication with primary care as per college requirements

Multi-disciplinary care

- Evidence in MSK research consistently concludes that multi-disciplinary care is crucial for MSK conditions

Specialist advice care plan

- Customized care plan for surgical patients as part of case management
- Customized care plan for non-surgical patients and their referring provider (standardization through implementing Conservative OA quality program)

Patient and family/buddy participation

- Empowering patients for surgery preparation and recovery post-operatively
- Provincially standardized education (teaching books, handouts, and classroom instruction) provided to patients and their family/buddy

Follow-up appointments at time points

- Support patient experience and outcomes (up to 1 year post-operatively)
- Including wound assessment/staple removal, coordination of complementary referrals to community physiotherapy, and assessment of recovery

Measurement framework (Provincial Standard)

- Accountability to patient and care outcomes and inspiring creativity to drive further quality improvement
- Key performance indicators, patient-reported outcomes measures (PROMs) and patient-reported experience measures (PREMs) identify quality of the surgical care path

A Time to Reflect - Evolution of the Quality Program

2004

The Alberta Orthopaedic Society, ABJHI and the former Alberta Health Regions develop an innovative hip and knee arthroplasty care path to reduce wait times and improve the quality and efficiency of services for hip and knee replacements in the province. The care path focuses on the care continuum—through referral, patient assessment, patient optimization, surgery, in-hospital care, sub-acute care, recovery at home, and post-operative monitoring.

2005

2006

The care path is piloted in the Capital (Edmonton), Calgary, and David Thompson (Central) Health Regions. In the pilot, patients experience significant improvement in outcomes, dramatically reduced waiting time for consultation with specialists and for surgery, and shortened hospital stay compared with the patients in the conventional approach. Patients are more satisfied with their hip or knee replacement and more accountable for their outcomes.

2007

A provincial Wait Times Management Steering Committee is established to solicit and review innovative proposals to deal with wait lists and other health challenges. ABJHI works with the remaining six health regions to secure funding to implement the new care continuum. The patient process, care path, templates, and measurement framework are revised in preparation for provincial implementation of the validated care path.

2008

Alberta Health Services is formed and the Health Regions are dissolved. Limited spread of the hip and knee care path results as groups across the province reorganize under the new provincial health authority.

2009

The care path, revised with latest evidence, is released provincially. The update marks the first annual review cycle of the care path and measurement framework. To support ongoing collection and reporting of information for quality improvement purposes, ABJHI signs Affiliation Agreements with orthopedic surgeons and Alberta Health Services. A balanced scorecard pilot is undertaken at Rockyview General Hospital. Alberta Health and Wellness establishes a target wait time for elective hip and knee replacement of 14 weeks, making it among the most progressive in Canada.

2010

The Bone & Joint Clinical Network (BJCN) is formed. The BJCN works with ABJHI to build the Learning Collaborative, a frontline-focused, momentum-building approach to mobilize provincial spread of the standardized model of care. Balanced scorecards and the first Continuous Improvement (CI) reports are launched at twelve sites across the province. The scorecards, based off Kaplan-Norton Balanced Scorecard methodology, allow teams to set their own targets in critical areas of the care path. Teams meet monthly to review progress and share scorecards. In support of the AHS 5-Year Health Action Plan, the BJCN develops a *5-Year Plan Meeting Alberta's Wait Times Target for Hip and Knee Replacements*.

2011

2012

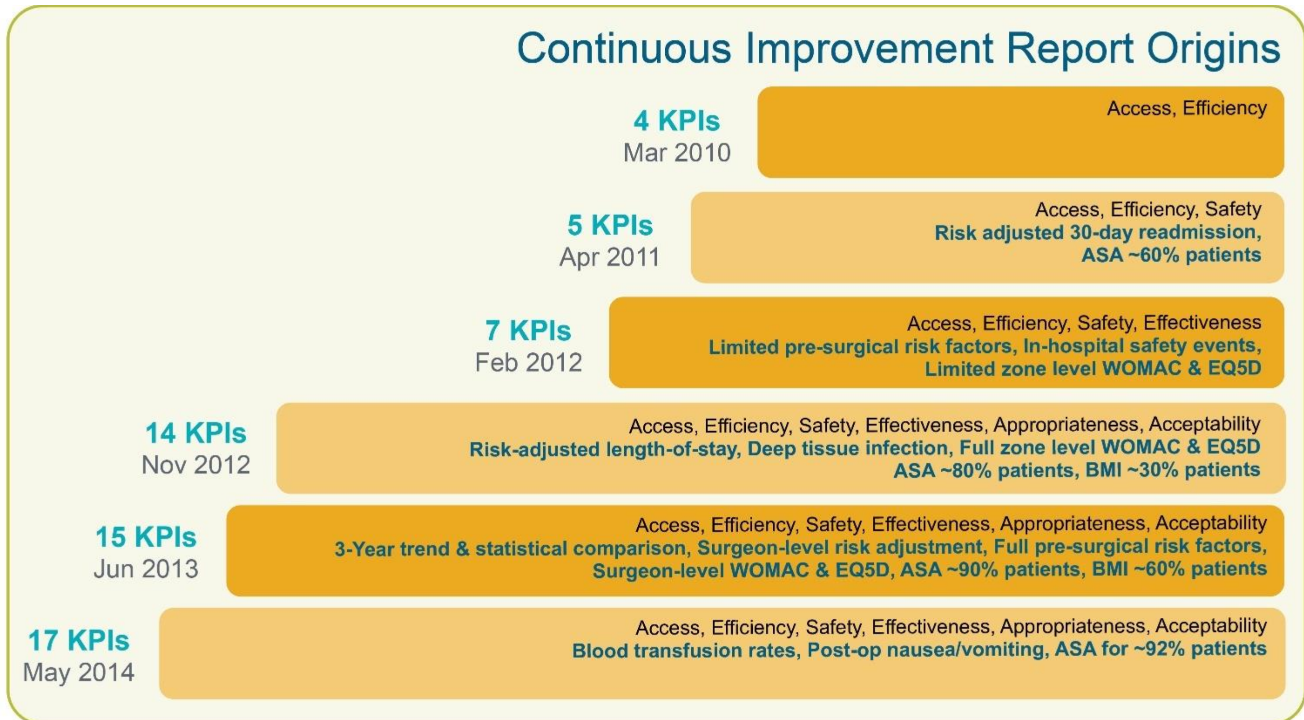
Strategic Clinical Networks are formed in 2012 and the BJCN amalgamates into the BJH SCN. Year one and two of the 5-Year Plan are implemented. The Learning Collaborative progresses to a permanent program in 2011-2012 on the strength of its results in both resource efficiency and patient outcomes. New key performance indicators are added to the CI reports.

2013

Three years into the balanced scorecard and CI reporting, total savings are projected at approximately 32,300 bed-days on March 31, 2013. These include 22,400 bed-days in acute care and 9,900 bed-days in sub-acute care facilities. The savings have a value to Alberta's public health care system of more than $22 million. In Year three of the 5-Year Plan, financial pressures force AHS to retreat from the plan and to adopt a zero-volume growth policy, resulting in wait times beginning to increase. Standardized rules for recording wait times are encouraged, including ready-to-treat (RTT) date (in addition to the customary decision-to-treat date). The first report on provincial wait times using RTT date is presented.

2014

Zero growth continues for Year four of the 5-Year Plan. Implementation of electronic collection of patient-reported outcome measures begins using the Western Ontario McMaster Universities Arthritis Index (WOMAC) and Euroqol EQ-5D tools. The elimination of inappropriate and avoidable use of blood products is prioritized into the list of quality improvement initiatives. Blood transfusion rates begin to drop dramatically.



2015

AHS approves a Joint Accountability proposal, which introduces value-based funding principles (Activity-based Funding, ABF). AHS announces an Operational Based Practice methodology for Activity Based Budgets (ABB) to be implemented in the 2017/18 fiscal year. Engagement with Diabetes, Obesity, and Nutrition and Surgery SCNs on potential collaboration opportunities occurs related to severely obese hip and knee arthroplasty patients. A Partnership for Research and Innovation in the Health System (PRIHS) grant is awarded for *Optimizing Central Intake to Improve Arthritis Care*, a three-year project to identify, implement and evaluate innovative ways to improve access to arthritis care in Alberta.

2016

Trialing of Joint Accountability begins. Bonnyville Healthcare Centre, the thirteenth and final site, joins the quality program. The provincial quality program receives *Leading Practice Award* from Accreditation Canada. Guidelines for accreditation require demonstration in the following areas: innovative and creative, client/family centred, evaluated, demonstrates intended results, sustainable, and adaptable to other organizations.

The reduction of length of stay benchmarks is prioritized. Current state assessments are conducted at all thirteen sites to inform direction of the program, the design of provincial order sets, and revisions to the care path. AHS concludes the Joint Accountability exercise produced promising results, however, the BJH SCN is asked to explore ways to align ABF and Operational Based Practice methodology. An Arthroplasty Risk Assessment Tool (ARAT) is developed with the intent to aid patients and clinicians when discussing surgery including the risks, optimization, and the patient's overall suitability for surgery (including Body Mass Index threshold for arthroplasty surgery). As part of its multi-pronged strategy to improve quality of osteoarthritis care in the province, the BJH SCN commission a separate quality group to develop a provincial strategy for community care management of OA.

2017

2018

Provincial order sets are developed with input from the surgical quality program, an anaesthesia panel, pharmacy, and the Bone and Joint Connect Care Area Council. The care path is overhauled based on findings from the 2017 current state assessments. Costing reporting is transitioned to quality improvement reports. Although positively received by stakeholders engaged in ARAT, surgeon consensus determines it does not have utility to effectively support decision making. Sustainability planning is initiated to redesign elements of the surgical program to be more self-sustaining in the long term (shifting some regular quality improvement functions from the BJH SCN and ABJHI to operations).

The first issue of provincial order sets is released and added to the annual review cycle. Sites develop local action plans, which feed into a provincial action plan for sustainability planning. Based on member feedback, the quality improvement reporting package is enhanced by ABJHI alongside balanced scorecards to include new Trigger Summary reports, new unique lifetime identifier (ULI) reports, new KPI reports, and redesigned CI and patient satisfaction reports.

2019

2020

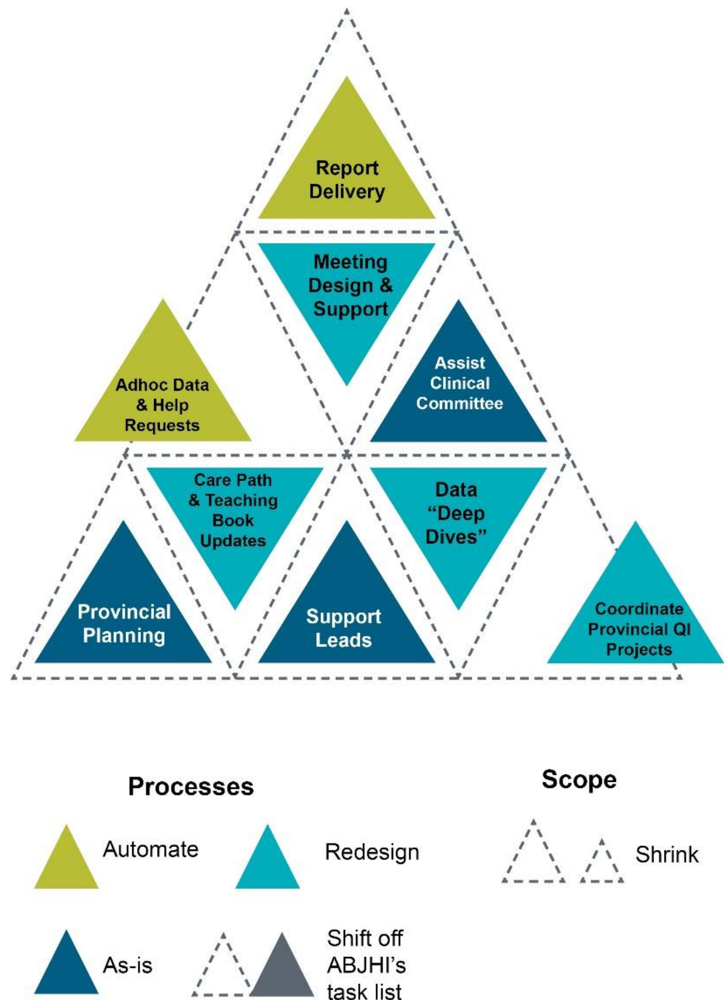
The Alberta COVID-19 pandemic response begins in March. Hip and knee clinics pivot to provide virtual consults and teaching classes. An OA Toolkit (designed through the Conservative OA quality program) is provided for distribution to patients. Following postponement of elective surgeries during consecutive COVID-19 waves, modelling projections for reopening are completed. Development starts on a new web-based education and communication tool critical for sustainability of the surgical program.

What's Next – Status Quo to Sustainability

What is Sustainability Planning?

A project to re-design the model of the quality program into a more sustainable format, whereby:

- the program does not lose the high quality of care being delivered or the enthusiasm of the participating sites for dedication to continuous quality improvement.



What does it involve?

- More coordination and open and regular communication between the sites without the BJH SCN and ABJHI at the centre.
- More automated, on-demand access to quality data including electronic notifications to prompt attention to quality indicators that require further investigation.

BONE AND JOINT HEALTH STRATEGIC CLINICAL NETWORK

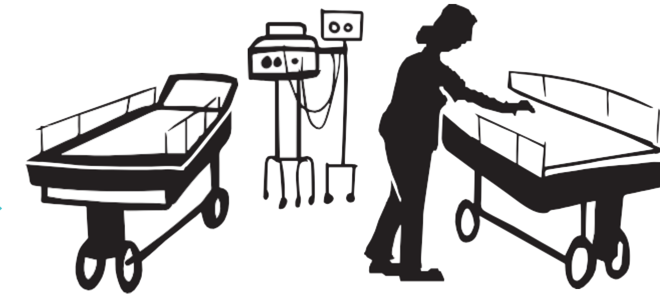
HIP AND KNEE OSTEOARTHRITIS SURGICAL PROGRAM
year-over-year improvements

Fiscal Years 2009/10 - 2020/2021

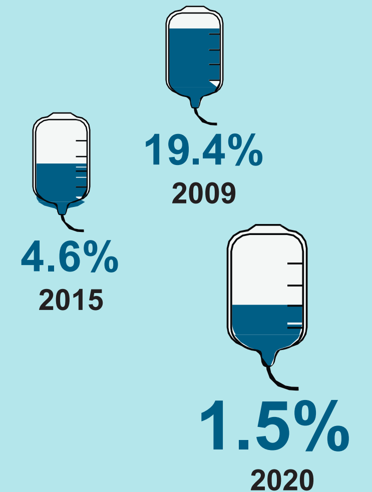
84% Mobilization
10 Steps Day of Surgery in 2020

avg. 4.7 days in hospital 2009
avg. 3.8 days in hospital 2015
2.4 days in hospital 2020

return home sooner



over **221,000** extra days of hospital bed space since 2009



cost savings of $11.7 million
fewer transfusions

Wait times: more work ahead of us

average time from decision to surgery

wait times are in weeks and reflect system constraints

Weeks	Year
21.7	2009
22.3	2010
20.9	2011
19.8	2012
21.5	2013
22.7	2014
24.2	2015
23.9	2016
26.6	2017
29.0	2018
29.4	2019
38.3	2020

39% more surgeries performed
60% increase in bed capacity
2009 – 2019

increased hospital capacity

34,400 extra days 2018
14,700 extra days 2014
3,600 extra days 2010
38,100 extra days 2020
23,500 extra days 2016
6,800 extra days 2012

$219 MILLION value

lower readmission rate

3.3% 2009
2.2% 2020

85% 2014
89% 2020

improved patient education and satisfaction

Contributing factors to success include detailed education for patients and their families; helping them get ready to leave the hospital sooner and reducing post-operative complications.

- 84% take at least 10 steps the same day as surgery in 2020/21
- prearranged help at home after surgery

Note: All years refer to fiscal year timeframes. For example, 2009 refers to fiscal year 2009/10.

Transfusion $ is minimum (assumes only one unit given), average cost $908.41.

Cumulative hospital capacity $: average cost per length of stay day, $986.63.

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Strategic Clinical Networks (SCNs) are creating improvements within focused areas of health care.

To get the most out of our health care system, AHS has developed networks of people who are passionate and knowledgeable about specific areas of health, challenging them to find new and innovative ways of delivering care that will provide better quality, better outcomes and better value for every Albertan.

The Hip and Knee Arthroplasty program is a key initiative of the AHS Bone and Joint Health Strategic Clinical Network.

It is a huge success in firstly improving care for patients and also ensuring we get the best value for our health care dollars.

About 10,000 elective hip and knee replacements are performed annually in Alberta.

Bone & Joint Health Strategic Clinical Network™