

Building a Decision Support Tool for Delivery of Health Services to Hip and Knee Osteoarthritis Patients

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Alberta Bone and Joint Clinical Network

Who Are We?

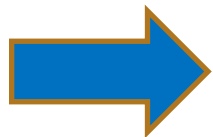
CIHR/CAS and AHFMR OA Team Grant Pilot

- Co-Investigators from U Toronto and U Calgary:
 - Deborah Marshall (PI), Cy Frank, Tom Noseworthy, Dianne Mosher, Mike Carter, Sonia Vanderby, Tom Rohleder, Paul Rogers, Colleen Maxwell
- Partners:
 - **AB Bone Joint Clinical Network** - Tracy Wasylak, Don Dick, Jason Werle, Jane Squire Howden, Jo-Ann Nelson, Sharon LeClercq, Paul Davis
 - **Alberta Health Services** - Tracy Wasylak (Bone Joint Clinical Network), Cathie Scott (Knowledge Management), Judy Seidel (Research)
 - **Alberta Bone Joint Health Institute** – Cy Frank, Ed Enns, Chris Smith, Peter Faris
 - **Bone and Joint Canada** – Rhona McGlasson, Hazel Wood
- Contributors: health system administrators, clinic managers, physicians, surgeons, other clinicians

Objective

Create a decision-support tool for strategic service planning of care for OA patients - across care continuum and sustainable

- Enable clinicians, policy makers, service planners and administrators to evaluate care quality and system performance
- Balance the tradeoffs between accessibility, effectiveness and efficiency
- Inform choices about health system interventions



Goal is a sustainable plan for OA care

Why System Dynamics Model for Decision Support Tool?

Health Care is a System and it is Dynamic

- Allows for balance between **demand and supply** of H&K OA health service delivery
- Considers **resource constraints** (current demand and backlog)
- Conceptually presents the “**big picture**”
 - Population-level care delivery
 - Capacity, flow rates, utilization, wait times
 - Captures changes projected over time
- Can explore numerous scenarios to **inform decisions**

Phase I Development Process

- Literature review → initial process diagram
- Expert feedback & input via 4 workshops
 - refine process diagram
 - Identify resources throughout process
 - Identify other factors affecting patient flow

Hip & Knee Working Group

- 2 workshops
- Focus: surgical management process

Arthritis Working Group

- 2 workshops
- Focus: medical management process

Example of Questions We Would Like to Address

- What resources are needed to:
 - Meet the target wait times for hip and knee surgery?
 - Meet current and future demand for OA services?
- What effect do acute and sub-acute utilization policies have on system performance?
- How are resources (human, financial, infrastructure) best deployed to achieve expected outcomes?
- What are the wait time and cost implications of changes in service demand and supply for OA?

Example Scenarios

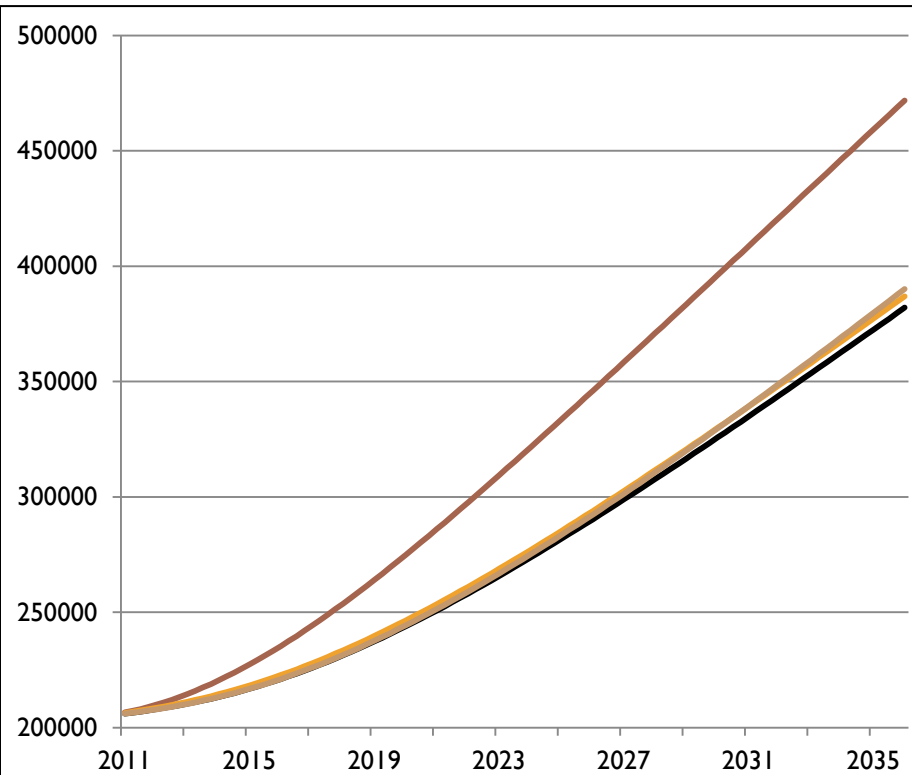
‘What if...’

- The high population projections are used?
- OA incidence rate increased 25%?
- The screening surgeon referred 25% fewer patients to orthopaedic surgeon for initial consult?

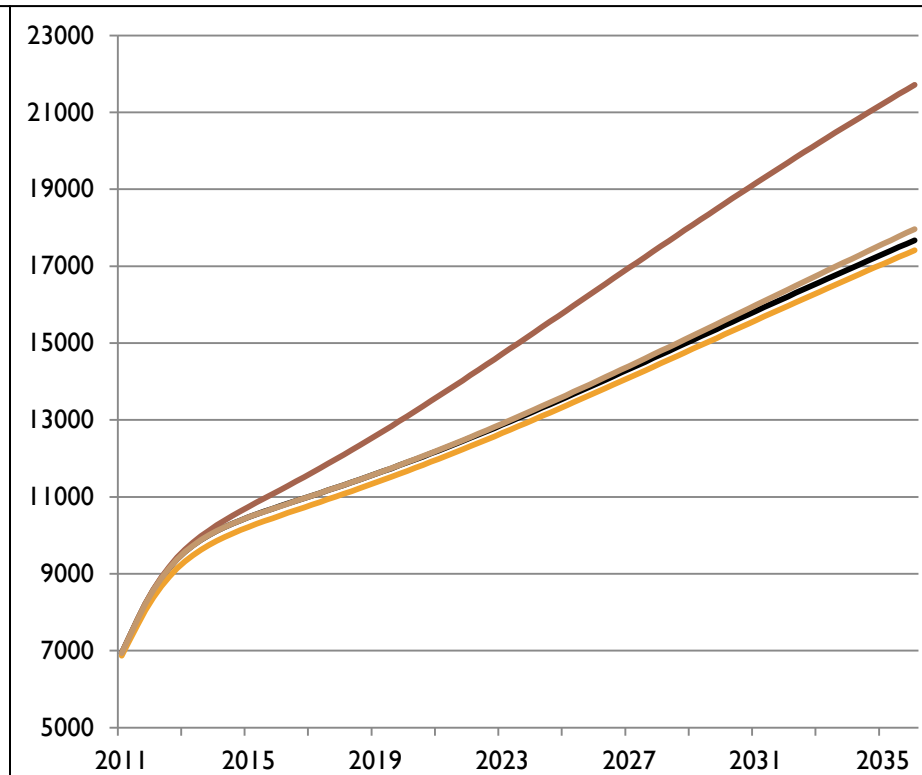
‘What would the effect be on the # of patients...’

- Seeking primary care?
- In their 1st year post-surgery?

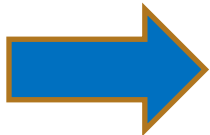
Number of patients visiting primary care



Number of patients in 1st yr post-surgery



- Current Estimates
- OA incidence rate +25%
- MSK referral rate -25%
- High population projections



Key point: These relationships are not linear!

How Will the Tool Help BJC Network?

Provide insights into bottlenecks in the system across the continuum as well as potential areas for informing change

Provide information that will guide decision makers about approaches to achieve performance targets
(both Medical & Surgical)

Capture the current status & inform future needs for hip & knee OA health services

Result: Improve hip & knee OA care in context of sustainable health system

Thank you!

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