

Innovation and Evolution: Inventing the Future of Toronto Orthopaedics



Fall 2011

A. Background

Orthopaedics at the University of Toronto has a long history of excellence in clinical care, teaching, and research. However, several factors which have weakened our division over past decades, hampering our ability to achieve the levels of excellence we had in the past. Our faculty met four years ago in a strategic planning session to define our goals for orthopaedics. We set an ambitious agenda, whose purpose was to place our division as the preeminent orthopaedic program in Canada, North America, and the world.

The division completed the goals that were defined in this process four years ago:

I. Education:

(1) Developed an innovative resident education program. The Competency Based Curriculum under the leadership of Bill Kraemer, Peter Ferguson, and Markku Nousiainen has revolutionized the way we think about orthopaedic education, and is garnering worldwide attention.

(2) Enhanced our ability to recruit the best trainees into our residency program, and indeed now are able to recruit our top ranked trainees into our program.

(3) Brought clinical fellows from across the hospitals together under Albert Yee's leadership of an enhanced fellowship committee.

(4) Developed an integrated research year to allow all residents to participate in research under the direction of Cari Whyne and Sevan Hopyan, co-chairs of our research committee.

II. Research:

While there are a number of areas in which we excel in the research domain, we identified translational research (bringing fundamental science findings to clinical care) as an area in which we have unique advantages in Toronto. Thus, we focused on developing initiatives to enhance our research environment to become a world leader in translational research.

(1) The Toronto Musculoskeletal Centre (as university wide extradepartmental unit) was initiated this year. While the center crosses all institutions and departments across the broad University of Toronto and its affiliated hospitals community, the centre has two nodes at Sunnybrook Hospital and Mount Sinai Hospital. The centre will focus on developing initiatives to help translating research

from the bench to the bedside to the backyard. It will develop a new graduate education program, provide seed funding for interdisciplinary research, and help with the recruitment of new MSK researchers to Toronto. Its ultimate goal is to develop new and improved methods of treating patients with orthopaedic and other musculoskeletal conditions

(2) We recruited several additional non-clinician scientists into the division, and recruited a number of new researchers with cross appointments in orthopaedics. These researchers all are working to develop broad based translational research programs.

III. Clinical:

We developed programs based on clinical areas that cross hospitals (and sometime disciplines) such as the sports program under the leadership of Darrell Ogilvie-Harris, the spine program under the leadership of Albert Yee and Michael Fehlings, and the Foot and ankle program, under the leadership of Tim Daniels. Additional clinical resources were made available to the division through the sports program and Women's College Hospital.

IV. Administrative:

We streamlined the administrative aspects of the division, due primarily to the strong work of Dan Stojimorivic.

B. Going forward

Since the division accomplished the goals it set out to achieve four years ago, council endorsed that we proceeded with a strategic planning process to identify goals for the next five years.

In the spring and summer of 2011, MacPhie & Company facilitated a strategic planning process with orthopaedic surgeons from Toronto East General Hospital, Toronto Western Hospital (UHN), the Hospital for Sick Children, Mount Sinai Hospital, Sunnybrook Hospital and Saint Michael's Hospital to inform the Division of Orthopaedic Surgery's strategic planning process. There were extensive consultations with the faculty members and other stakeholders including non-clinical members of the division.

The process culminated in a division wide retreat, whose objectives were:

- To establish areas of focus for the Division of Orthopaedics in the next 5 years;

- To determine the necessary work streams for each area of focus; and,
- To provide high-level guidance surrounding the implementation of the areas of focus and work streams.

Areas of Focus

Areas of focus provide a framework for the strategic plan. They create focus and offer direction regarding the activities that the University of Toronto's Division of Orthopaedics will undertake over the next five years – and beyond.

The wording of the areas of focus implies that choices are being made to engage in some activities, and not engage in others.

The areas of focus that were created by members of the Division of Orthopaedics during the strategic planning retreat were:

- 1. Establish the best orthopaedic training program in the world.**
- 2. Develop opportunities for increased coordination of orthopaedic clinical care delivery among the University of Toronto affiliated hospitals.**
- 3. Bridge research related activities between hospitals and disciplines to develop an environment that will foster true innovations in patient care based on the highest quality research.**
- 4. Leverage relationships with alumni.**

C. Work Streams

Work streams contribute to the achievement of an area of focus. There are significant cross-linkages between all of the areas of focus and work streams, and hence they should not be viewed in silos. The accountability structure that will be established to manage the implementation of the plan will seek to ensure that these cross-linkages are leveraged, and become a strength that weaves the strategic plan and the entire organization more closely together.

1. Establish the best orthopaedic training program in the world.

The division embarked on a pilot residency-training curriculum, the competency based curriculum. This is a novel approach to training in which residents move through modules that are based on achieving an educational goal, rather than a location based rotation, and move to the next module once competency has been achieved. This pilot program has taught quite a bit about how to best train orthopaedists. The ministry of health and long-term care provided four years of funding for the pilot for four years. As part of the funding process, the division is to develop a sustainable training program taking these principles into account in the fourth year of funding, which will occur in two years time. There are two work streams that support the first area of focus:

1A. Develop a world-class, single stream resident training program by incorporating the best elements of the CBC program into the regular teaching stream.

1B. Train the world's best teachers.

1A. Develop a world-class, single stream resident training program by incorporating the best elements of the CBC program into the regular teaching stream.

Orthopaedists expressed their strong belief that by conducting a thorough review of the CBC program, and subsequently incorporating the best elements of the CBC program into the regular teaching stream, the University of Toronto could become a centre of excellence for orthopaedic resident training. Some of the positive elements of the CBC program that were identified by orthopaedic surgeons during the strategic planning retreat included:

- Clearly stating objectives for each resident at the beginning of a teaching module;
- Making residents accountable for a clearly defined body of knowledge; and,
- Frequently evaluating residents throughout each module.

The current framework for residency education can be used to develop a novel program wide curriculum based on these principles. There was broad support for this activity.

1B. Train the world's best teachers.

Orthopaedists concluded that the best way to develop a world-class resident training program was to identify and continuously develop the best teachers. There was consensus among retreat participants that faculty that are the best teachers should be teaching orthopaedic residents and fellows.

Additional comments and guidance related to this area of focus included remembering the training and teaching of fellows and medical students – not just residents, and the existing opportunity to roll out successful components of the CBC model across the other specialties. Further, the theme of teaching (and providing teaching and training for a broader number of health care providers) was touched upon as something that could be fostered through the new Musculoskeletal Centre.

Developing education programs to teach the teachers was another area that was touched on. We could use facilities like the skill's lab to help teach the faculty how to take trainees through cases, and deal with difficult situations.

2. Develop opportunities for increased coordination of orthopaedic clinical care delivery among the University of Toronto affiliated hospitals.

The division members recognize that we could provide care in a more effective and efficient manner by better coordinating clinical activity. Such coordination could be as small as ensuring that there is not duplication in recruiting new faculty, to moving clinical programs from one hospital to another to build a critical mass at a single institution for a certain specialty. It was also recognized that dividing up subspecialty care among multiple hospitals is a block to developing closer collaborations in research and education. Indeed, it was recognized that developing coordinated care systems based on subspecialty would be key to developing improved patient outcomes, better educational programs (e.g. cross university fellowships) and more impactful coordinated research. The division has made a significant stride in this area in sports over the past four years. There are attempts to develop similar programs in spine and foot and ankle. Two important issues were identified, the first is that sports has worked because new clinical resources were available, and this is not the case in other areas; Secondly, there is a fear that if orthopaedics at an institution becomes more efficient, that institution will lose orthopaedic resources to another specialty, rather than reaping benefits for orthopaedic patients. Despite these issues, it was clear that it is in the best interest of our mission and patient care to become better coordinated.

In addition to helping with patient care, the participants recognized that such an exercise would strengthen the division's research and education mandate. Even if

care remains at multiple locations, coordinating the clinicians will be useful in improving education and collaborative research.

Over the next five years, steps towards this aim were suggested. Two work streams that support the second area of focus:

2A. – Select orthopaedic surgeons to champion the case for increased care coordination and develop a “pilot project”.

2B. – Develop a case for increased care coordination to present to the hospitals and/or MOHLTC.

2A. – Select orthopaedic surgeons to champion the case for increased care coordination and develop a “pilot project”.

Retreat participants agreed that developing a case for increased care coordination could be a massive undertaking. Key to this task will be to select the team of individuals that will work together to work towards increased care coordination. Rather than tackle all areas, coordinated care in one or several pilot areas initially has a greater chance of success. The participants identified several such areas.

2B. – Develop a case for increased care coordination to present to the hospitals and/or MOHLTC.

While changing the policies and procedures of the MOHLTC is not necessarily an easy task, it is something that can be accomplished with an extremely thoughtful proposal and the proper political support. The case for increased care coordination should include, but is not limited to:

- The area(s) where care can be coordinated;
 - The impact that care coordination will have on patient care;
 - The financial, human and other resource investment needed for care coordination;
 - The time frame necessary for care coordination to be achieved in each area(s);
 - The financial benefits that will be realized after a care coordination solution is implemented;
- and,

- Identification of possible risks that could result from increased care coordination.

Overall, while faculty acknowledged the difficulty of achieving this area of focus, there was also a general sense that it was a worthwhile goal for the entire health care system – despite the challenges related to implementation.

3. Bridge research related activities between hospitals and disciplines to develop an environment that will foster true innovations in patient care based on the highest quality research.

The divisional members recognized that the future is to develop new innovative treatments based on cutting edge research. We have an incredible research foundation within the larger University of Toronto, but divisional members are not as well utilizing this as possible. There are also specific areas in which we have a competitive advantage in the University of Toronto, which we are not capitalizing on. There is real potential for our division to become the world's leader in the research domain in orthopaedics. Furthermore, we can build an environment to encourage the development of new innovations in orthopaedic care, based on research. The newly developed Toronto musculoskeletal centre will act as a focus to develop these new clinical innovations. There are two work streams that support the third area of focus:

3A. – Develop incentives to encourage innovation and collaboration.

3B. – Coordinate research training through the Musculo-skeletal Centre.

3A. – Develop incentives to encourage innovation and collaboration.

Orthopedic surgeons were thoughtful and articulate when expressing the need for incentives to encourage inter-professional collaboration. One potential incentive for increased collaboration, which was suggested by a member of the strategic planning retreat, was to give “academic credit” for participation. Another concept is to provide shared financial resources for such work. Other initiatives included making it easier to undertake university wide work by having things such as a single RAB, having research associates employed by the university to help with the work, or by developing a shared physical home for undertaking innovative research. Other incentives should be examined to encourage further collaboration, and this is something that could be considered in the context of the new edu. Simply identifying all of the research resources of the University would help develop better coordinated work, so people would know who else is working in an area of interest. There may be an opportunity to develop a demonstration project, something that

the entire division could participate in, or one that translates a translating a basic finding from Toronto to patient care. Lastly, there is an opportunity to fund raise for resources to help in this goal, and of course, such founts would be a major incentive.

3B. – Coordinate research training through the Musculo-skeletal Centre

Orthopaedic surgeons voiced that there is currently a significant amount of duplication in musculo-skeletal research and indeed education in general. There was agreement that if the Musculo-skeletal Centre could develop an educational program to coordinate this it could significantly improve the quality of training, help trainees learn other research disciplines, and foster new inter-disciplinary collaborations. One concept was the development of a coordinated graduate program. Developing such an educational program would also help to cement multidisciplinary ties in the long term.

4. Leverage relationships with alumni.

There are two work streams that support the fourth area of focus:

4A. – Engage alumni to help raise funds for the Division of Orthopaedics.

4B. – Use our alumni network to help place graduated residents into fellowships.

4A. – Engage alumni to help raise funds for the Division of Orthopaedics.

Many alumni of the Division of Orthopaedics hold senior roles in the North American health care system. The Division of Orthopaedics should reach-out to alumni to secure additional funding.

4B. – Use our alumni network to help place graduated residents into fellowships.

The Division of Orthopedics at the University of Toronto has an expansive and well--connected alumni network.

With the Division of Orthopaedics currently training substantially more residents than they can hire on a full---time basis, it is increasingly important to reach---out to alumni to help place graduated residents into fellowships.

D. Implementation Plan

The execution of this strategic plan is a clear accountability structure that delineates who is responsible for each work stream.

Dr. Ben Alman will be ultimately accountable for the execution of the strategic plan, and for reporting progress to the Chair of the Division of Surgery. Members of the Division of Orthopaedics will have their annual performance assessed based, in part, on achieving progress based on work streams and tasks assigned to them. Success will also be gauged against potential barriers such as technology, funding, and government policy.

Dr. Ben Alman will appoint a member of the Division of Orthopaedic to be responsible for each Area of focus.

Each Area of Focus Owner will be tasked with assembling a team. The Owner would then delegate responsibility for each Work Stream to one of the members on the team. The Work Stream Owner, in consultation with other members of the team and the Area of Focus Owner, would be responsible for creating and executing action plans. Area of Focus Teams would meet on a frequent basis to discuss their progress and gather input on initiatives.

We operate in a very fluid environment, which is influenced by changing demographics, health system reforms and budgetary pressures. That's why it will be important to review priorities on a semi-annual basis and make any adjustments necessary. Dr. Ben Alman will meet with each Area of Focus Team on a semi-annual basis to evaluate progress and provide strategic counsel.