Surgery Research Day

Recognizing accomplishments in Research and Innovation in the Department of Surgery, University of Manitoba

VISITING PROFESSOR

Dr Alan Dardik
Professor of Surgery
Yale University
Chief of Vascular Surgery
VA Connecticut

Surgery Grand Rounds
Theatre C
Bannatyne Campus

KEYNOTE SPEAKER

Dr Gerald Fried
Edward W. Archibald Professor & Chairman
Department of Surgery
McGill University

Research Day
Ambassador A
Canad Inns-Destination HSC

Research Day Program

Wednesday, January 13, 2016
Surgery Research Day 2016
Department of Surgery

RESEARCH DAY SPONSORS

The Surgery Research Day 2016 Planning Committee gratefully recognizes the contributions of the sponsors for the Annual Surgery Research Day:

Department of Surgery GFT Surgeons
The Wayne Beecroft Western Surgical Lectureship Fund

ACKNOWLEDGEMENTS

The Surgery Research Day 2016 Planning Committee greatly appreciates the support from the Pan Am Clinic Foundation and Department of Surgery Research Advisory Committee members in the planning of our Annual Surgery Research Day 2016.
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(The electronic version of the Research Day 2016 Program is customized with hyperlinks)
Dr. Alan Dardik is a surgeon-scientist who uses the power of molecular biology to achieve a modern understanding of vascular disease, using the basic science laboratory to perform cutting edge research to ultimately benefit patients with vascular disease.

Dr. Dardik trained at Yale, the University of Pennsylvania, and the Johns Hopkins Hospital before his appointment to the Yale faculty in 2001. Dr. Dardik is the Chief of the Vascular Surgery section at the VA Connecticut, focusing his clinical practice on teaching of medical students, residents and fellows. Dr. Dardik won the C. Elton Cahow Award for Outstanding Faculty Teaching from Yale’s Department of Surgery and the Faculty Teaching Award from St. Mary’s Hospital. He is the author of the textbook “Outpatient Surgery. Clinical decision making and board review.”

The Dardik laboratory studies the healing and function of blood vessels and synthetic blood vessel substitutes and fistulae that are used in patients having vascular surgery. The laboratory is trying to understand the fundamental molecular mechanisms by which vein graft adaptation and arteriovenous fistula (AVF) maturation result in positive remodeling and successful adaptation to the arterial environment, yet often proceed, in the long-term, to neointimal hyperplasia and failure.

Dr. Dardik is currently the President of the International Society for Vascular Surgery and the Recorder for the Association of VA Surgeons. He has run several national and international meetings, including the Society for Vascular Surgery Vascular Research Initiatives Conference and served on numerous peer review committees including review for NIH, the VA and Vascular Cures.
Dr. Gerald Fried is currently the Edward W. Archibald Professor and Chairman of the Department of Surgery at McGill, and Surgeon-in-Chief of the McGill University Health Centre Network in Montreal, Canada.

He completed his general surgery residency at McGill, and did clinical fellowships in gastrointestinal surgery and gastroenterology at The Ohio State University, then a research fellowship in gastrointestinal physiology at University of Texas Medical Branch, Galveston. He returned to McGill where he has developed a clinical practice in gastrointestinal surgery, minimally invasive surgery, and surgical endoscopy.

In 1990, he established MIS as a clinical and academic program at McGill. He and his colleagues have built this into one of the foremost such programs in North America. They have made significant contributions to surgical education, simulation, the process of introducing innovation into clinical practice, and the development and teaching of enhanced recovery practices to leverage the benefits of less invasive surgical techniques.

Dr. Fried has served as President of the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES), the Canadian Association of General Surgeons, the Central Surgical Association, and James IV Association of Surgeons (Canadian Section). He is a Regent of the American College of Surgeons and has served on the Boards of Directors of the SSAT and International Society for Digestive Surgery. He sits on 6 major editorial boards. He has given over 250 invited lectures internationally and published widely on minimally invasive GI surgery and surgical education.
JUDGES

Dr Gerald Fried
Professor
Department of Surgery, McGill University

Dr Alan Dardik
Professor
Department of Surgery, Yale University

Dr Annie Ducas
General Surgery Resident
Department of Surgery, University of Manitoba

SURGERY RESEARCH DAY 2016 PLANNING COMMITTEE

Dr Krista Hardy, Co-Chair
Dr April Boyd, Co-Chair
Dr Richard Keijzer, Thorlakson Chair in Surgical Research
Dr Robin Visser, Resident Representative
Mary Brychka, Administrator

RESEARCH DAY 2016 OBJECTIVES

At the end of the Department of Surgery Annual Research Day, participants will be able to:

▪ Discuss the findings from surgical research conducted in the Department of Surgery at the University of Manitoba with colleagues and translate knowledge into clinical practice, patient care and academic teaching.

▪ Understand that the contemporary explanations for vein graft and arteriovenous fistulae (AVF) failure; the PREVENT trials and the consequences of their failure; and lean the current paradigm of arterial and venous embryonic development.

▪ Describe non-surgical skills required to be a surgical innovator; give an example of an innovation that has transformed surgical care; and assess the principles by which a putative innovation can be assessed for value.
CONFLICT OF INTEREST DISCLOSURE

Before each presentation, speakers will disclose on their first slide any significant relationships that may be a perceived or apparent conflict of interest to the subject of the proposed CME/CPD activity.

Each member of the Research Day 2016 Planning Committee were asked to disclose any significant relationships with the manufacturer of any commercial product that may have a direct or indirect conflict of interest in the program content. All members reported no conflicts.

CONTINUING PROFESSIONAL DEVELOPMENT

The Annual Surgery Research Day 2016 has been designated an Accredited Group Learning Activity (Section 1) as defined by the Maintenance of Certification Program of The Royal College of Physicians and Surgeons of Canada and approved by the CPD Medicine Program, University of Manitoba for a maximum of 6.5 credits.

Participants should only claim credit for the actual number of hours attended.

The University of Manitoba CPD Medicine Program is fully accredited by the Committee on Accreditation of Continuing Medical Education (CACME).

WIRELESS ACCESS

To help save our environment the Surgery Research Day 2016 Planning Committee is publishing only a limited number of Programs as an electronic copy is being trialed.

Hyperlinks have been created throughout the program to access the abstracts and schedule.

The Annual Surgery Research Day 2016 has access to the wireless Internet in Ambassador A at Canad Inns-HSC:

User Name: guest
Password: canad
**Program — Morning**

**8:00 DEPARTMENT OF SURGERY GRAND ROUNDS**
**VISITING PROFESSOR**
Theatre C – Bannatyne Campus—University of Manitoba

Introduction Dr April Boyd (Co-Chair)
Dr Alan Dardik, Yale University
*Can surgeons turn veins into arteries?*

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**9:15 OPENING REMARKS - Dr Krista Hardy (Co-Chair)**
Ambassador Room A (second floor)
Canad Inns – Destination Health Sciences Centre

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<tr>
<td>9:30</td>
<td>The protective effect of abdominal scars on DIEP flaps and motor nerve preservation</td>
<td>Blair Peters* Plastic Surgery</td>
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<tr>
<td>9:42</td>
<td>Conflicts of interest in neurosurgical research: Comparing voluntary disclosure with mandatory industry disclosure through the Open Payments Database</td>
<td>Emma Schon* Neurosurgery</td>
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<tr>
<td>9:54</td>
<td>The impact of a dedicated acute care surgical service on the delivery of care for patients with general surgical emergencies</td>
<td>Jennifer Metcalfe* General Surgery</td>
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<tr>
<td>10:06</td>
<td>Penetrating atherosclerotic ulcers and intramural hematoma: Clinical management and outcomes from a dedicated thoracic aortic diseases clinic</td>
<td>Carly Lodewyks* Cardiac Surgery</td>
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<tr>
<td>10:18</td>
<td>Crucial conversations training for senior health care learners: A thematic extraction of our most difficult conversations</td>
<td>Rebecca Whitley* General Surgery</td>
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<tr>
<td>10:30</td>
<td>Abdominal aortic aneurysm growth is associated with increasing thrombus deposition in regions of flow recirculation</td>
<td>Sebastian Launcelott* Vascular Surgery</td>
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<tr>
<td>10:57</td>
<td>Prognostic factors in determining the outcome of head and neck cutaneous melanoma</td>
<td>Kristyn Buchko* Head &amp; Neck Oncology</td>
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<td>11:09</td>
<td>The potential significance of xenoantigens in the structural valve deterioration of bioprosthetic heart valves</td>
<td>Rizwan Manji Cardiac Surgery</td>
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<td>11:21</td>
<td>Outcomes following laparoscopic partial nephrectomy in the obese</td>
<td>Evan Wiens* Urology</td>
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<td>11:33</td>
<td>Is tissue still the issue? Lobectomy for suspicious lung nodules without confirmation of malignancy</td>
<td>Suha Kaaki* General Surgery</td>
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<td>11:45</td>
<td>Concussions in senior Manitoba rugby: Incidence, knowledge and attitudes</td>
<td>Kyle Martin* Orthopedic Surgery</td>
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<tr>
<td>11:57</td>
<td>MiRacles for babies with abnormal lungs: The story of miR-10a and lung development</td>
<td>Robin Visser* General Surgery</td>
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* Speaker eligible for a presentation award
### PROGRAM — AFTERNOON

**1:00 KEYNOTE SPEAKER**

**Introduction**—Dr Krista Hardy (Co-Chair)

Dr Gerald Fried, McGill University

*Fostering surgical innovation: Aligning residency opportunities with departmental priorities*

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<tr>
<td>2:00</td>
<td>Predictors of functional survival and hospital re-admission in octogenarians after surgical aortic valve replacement</td>
<td>Karin Love Cardiac Surgery</td>
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<tr>
<td>2:05</td>
<td>Identifying the most appropriate age threshold for TNM staging of well-differentiated thyroid cancer</td>
<td>Heather Sigvaldason Head &amp; Neck Oncology</td>
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<td>2:10</td>
<td>Safety of immediate breast reconstruction following neoadjuvant chemotherapy in inflammatory breast cancer</td>
<td>Essa M. Aleassa* General Surgery</td>
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<td>2:15</td>
<td>Classification of facial pain: A 13-year population-based study</td>
<td>Steven Nolin* Neurosurgery</td>
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<td>2:20</td>
<td>Effect of functional laterality on simulated shoulder arthroscopy</td>
<td>Joe Amirault* Orthopedic Surgery</td>
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<td>2:25</td>
<td>A population-based examination of the effect of major trauma on the development of physical disorders as compared to a matched control cohort</td>
<td>Stephanie Lim* General Surgery</td>
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<td>2:30</td>
<td>Differential regulation of mechanistic target of rapamycin pathways in hormone dependent and independent prostate cancer</td>
<td>Premal Patel* Urology</td>
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<td>2:35</td>
<td>The role of endoscopic retrograde cholangiopancreatography (ERCP) in the diagnostic work-up of biliary atresia</td>
<td>Jeniva Donaleshen* General Surgery</td>
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<td>2:40</td>
<td>Incidence of total knee replacement in patients with previous cruciate ligament reconstruction</td>
<td>James McCammon* Orthopedic Surgery</td>
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<td>2:45</td>
<td>The impact of spinal manipulation on lower extremity motor control in lumbar spinal stenosis patients: A single-blind randomized clinical trial</td>
<td>Mina Aziz* Orthopedic Surgery</td>
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<td>2:50</td>
<td>Communicating when the stakes are high: An inter-professional learning opportunity for senior health care learners</td>
<td>Megan Delisle* General Surgery</td>
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<tr>
<td>2:55</td>
<td>Management of complicated ureteric strictures post-renal transplant utilizing pyelovesicostomy with Boari flap</td>
<td>Chun Huang* Urology</td>
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### 3:00 COFFEE BREAK

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<td>MicroRNA miR-200b is essential for normal lung development in CDH</td>
<td>Naghmeh Khoshgoo* Pediatric Surgery</td>
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<td>3:27</td>
<td>Development of consensus-derived quality indicators for bariatric surgery</td>
<td>Shannon Stogryn* General Surgery</td>
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<td>3:39</td>
<td>Healthcare resource utilization of necrotizing fasciitis as compared to burns: A single center comparative analysis</td>
<td>Eileen Burnett* Plastic Surgery</td>
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<td>3:51</td>
<td>Neurosurgical outcomes in patients with multiple sclerosis related trigeminal neuralgia</td>
<td>Sandeep Krishnan* Neurosurgery</td>
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<td>4:03</td>
<td>Cancer heterogeneity among the elderly: Changes in incidence and stage presentation</td>
<td>Deepak Pruthi* Urology</td>
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<tr>
<td>4:15</td>
<td>The impact of frailty on functional survival in patients 1-year post cardiac surgery</td>
<td>James Lytwyn* Cardiac Surgery</td>
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### 4:30 RESEARCH DAY RECEPTION & PRESENTATION AWARDS

Presented by: Dr Richard Keijzer, Thorlakson Chair in Surgical Research

*Come and celebrate with the winners of today’s top presentations*
9:30—10:42  PLENARY SESSION
Moderator: Dr Gordon Buduhan
Section of Thoracic Surgery

Time Abstract
9:30 The protective effect of abdominal scars on DIEP flaps and motor nerve preservation
Blair Peters\textsuperscript{1}, Edward Buchel\textsuperscript{2}, Tom Hayakawa\textsuperscript{1}, Kimberly Dalke\textsuperscript{2}
\textsuperscript{1}Plastic Surgery Residency Program, College of Medicine, University of Manitoba
\textsuperscript{2}Section of Plastic Surgery, Department of Surgery, University of Manitoba

9:42 Conflicts of interest in neurosurgical research: Comparing voluntary disclosure with mandatory industry disclosure through the Open Payments Database
Emma Schon\textsuperscript{1}, Patrick J. McDonald\textsuperscript{2}, Abhaya V. Kulkarni\textsuperscript{3}
\textsuperscript{1}College of Medicine, Faculty of Health Sciences, University of Manitoba
\textsuperscript{2}Section of Neurosurgery, Department of Surgery, University of Manitoba
\textsuperscript{3}Division of Neurosurgery, Department of Surgery, University of Toronto

9:54 The impact of a dedicated acute care surgical service on the delivery of care for patients with general surgical emergencies
Jennifer Metcalfe\textsuperscript{1}, Krista Hardy\textsuperscript{2}
\textsuperscript{1}General Surgery Residency Program, College of Medicine, University of Manitoba
\textsuperscript{2}Section of General Surgery, Department of Surgery, University of Manitoba

10:06 Penetrating atherosclerotic ulcers and intramural hematoma: Clinical management and outcomes from a dedicated thoracic aortic diseases clinic
Carly Lodewyks\textsuperscript{1}, Edward Pascoe\textsuperscript{3}, Iain Kirkpatrick\textsuperscript{3}, Rohit Singal\textsuperscript{2}, Rakesh Arora\textsuperscript{2}, Brett Hiebert\textsuperscript{4}
\textsuperscript{1}Cardiac Surgery Residency Program, College of Medicine, University of Manitoba
\textsuperscript{2}Section of Cardiac Surgery, Department of Surgery, University of Manitoba
\textsuperscript{3}Department of Radiology, University of Manitoba
\textsuperscript{4}Cardiac Sciences Program, Winnipeg Regional Health Authority, Winnipeg, Manitoba

10:18 Crucial conversations training for senior health care learners: A thematic extraction of our most difficult conversations
Rebecca Whitley\textsuperscript{1}, Megan Delisle\textsuperscript{1}, Debrah Wirtzfeld\textsuperscript{2}
\textsuperscript{1}General Surgery Residency Program, College of Medicine, University of Manitoba
\textsuperscript{2}Section of General Surgery, Department of Surgery, University of Manitoba

10:30 Abdominal aortic aneurysm growth is associated with increasing thrombus deposition in regions of flow recirculation
Sebastian L. Launcelott\textsuperscript{1}, Richard J. Lozowy\textsuperscript{2}, David C.S. Kuhn\textsuperscript{2}, April J. Boyd\textsuperscript{3}
\textsuperscript{1}Vascular Surgery Residency Program, College of Medicine, University of Manitoba
\textsuperscript{2}Department of Mechanical Engineering, University of Manitoba
\textsuperscript{3}Section of Vascular Surgery, Department of Surgery, University of Manitoba

Annual Surgery Research Day 2016
The protective effect of abdominal scars on DIEP flaps and motor nerve preservation

Blair Peters\textsuperscript{1}, Edward Buchel\textsuperscript{2}, Tom Hayakawa\textsuperscript{2}, Kimberly Dalke\textsuperscript{2}

\textsuperscript{1} Plastic Surgery Residency Program, College of Medicine, University of Manitoba
\textsuperscript{2} Section of Plastic Surgery, Department of Surgery, University of Manitoba

Introduction
One of the contraindications to use of abdominal free flaps for breast reconstruction is abdominal scarring. The purpose of this study was to evaluate the effect of scarring on the number of perforators taken and rate of intercostal nerve sacrifice during DIEP flap harvest.

Methods
This study was a subset analysis of “A Randomized Clinical Trial Comparing the Breast and Abdominal Related Morbidity of DIEP and SIEA Flaps”. A standardized set of intra-operative anatomical and surgical variables were recorded on 88 DIEP flaps. Data included abdominal scar type and location; the size, number, and location of perforators harvested; and the number of intercostal nerves sacrificed.

Results
54 of 88 patients had abdominal scars, ranging from 1-5 in number. There was no statistical difference in demographics between groups. The need to harvest more than one perforator was significantly higher in abdomens without scars (44.1%) compared to abdomens with scars (11.5 %), \( p < 0.05 \). Patients with flaps harvested on a single perforator were more likely to have multiple scars than patients with flaps harvested on >1 perforator, \( p = 0.01 \). Prevalence of nerve damage was significantly lower in scarred abdomens (20.4%) compared to abdomens without scars (44.1%), \( p < 0.05 \). Patients without any intercostal nerve damage had a greater number of scars than those with nerve damage.

Conclusions
Pre-existing abdominal scars appear to confer a protective effect towards lower numbers of perforators harvested and lower rates of intercostal nerve damage. Previous scars may invoke a delay phenomenon and cause the abdomen to undergo ischemic preconditioning, increasing the ability of a single perforator to support the flap. These findings challenge the assumption that abdominal scars are a contraindication to use of the DIEP flap and provide evidence for feasibility of abdominal free flap harvest in scarred abdomens.
Conflicts of interest in neurosurgical research: Comparing voluntary disclosure with mandatory industry disclosure through the Open Payments Database

Emma Schon1, Patrick J. McDonald2, Abhaya V. Kulkarni3
1 College of Medicine, Faculty of Health Sciences, University of Manitoba
2 Section of Neurosurgery, Department of Surgery, University of Manitoba
3 Division of Neurosurgery, Department of Surgery, University of Toronto

Introduction
Industry involvement in medical research and the conflicts of interest (COIs) they create are ubiquitous. Most medical journals require voluntary disclosure of such COIs when publishing research. Until recently, there was no method of determining the accuracy of voluntary disclosure. Recent legislation in the U.S. (the Sunshine Act) mandates industry disclosure of all payments to physicians >$10.00, thus the accuracy of voluntary disclosure can be determined. We sought to determine the accuracy of voluntary disclosure in neurosurgical research after the implementation of the Sunshine Act.

Methods
We compared the incidence of voluntary disclosure in 3 neurosurgical journals (JNS, JNS-Spine, JNS-Pediatrics) before (2011) and after (2013) the implementation of the Sunshine Act. In addition, we compared voluntary disclosure in these journals, as well as in the journal Neurosurgery, with mandated industry disclosure on the Open Payments Database (OPD) – the publicly accessible database mandated by the Sunshine Act. The scope of industry involvement in neurosurgical research was also determined using OPD.

Results
Voluntary disclosure increased from 10.7% to 35.4% in JNS-Spine after implementation of the Sunshine Act in 2013 (p<0.001). Similar increases were not seen in the other two journals. 38.3% of U.S. neurosurgical researchers failed to voluntarily disclose a COI that was disclosed by industry on OPD. A total of $32,598,522.97 of industry funding was provided to 656 U.S. M.D. authors from all four journals studied from August – December 2013, an average of $49,692.87 per author.

Conclusions
There was a statistically significant increase in voluntary disclosure in JNS-Spine after the implementation of the Sunshine Act. Industry payments to physicians publishing neurosurgery research are common and rates of non-disclosure of financial COIs are disturbingly high. The limitations of both voluntary and mandated disclosure and potential solutions will be discussed.
The impact of a dedicated acute care surgical service on the delivery of care for patients with general surgical emergencies

Jennifer Metcalfe\textsuperscript{1}, Krista Hardy\textsuperscript{2}

\textsuperscript{1}General Surgery Residency Program, College of Medicine, University of Manitoba
\textsuperscript{2}Section of General Surgery, Department of Surgery, University of Manitoba

Introduction
Acute Care Surgery (ACS) is a new model of emergency general surgery care that was developed to provide prompt, comprehensive, and evidence-based care to acutely ill non-trauma surgical patients. Our objective was to determine the impact of implementing ACS on efficiency of care and patient outcomes.

Methods
This was a retrospective chart review of patients admitted with acute appendicitis (AA) and biliary tract disease (BTD). Efficiency of care measures and patient outcomes were compared over two one-year time periods: pre-ACS (2007) and established St. Boniface ACS (2011).

Results
A total of $n=1,229$ patients were included in this study; $n=507$ were in the pre-ACS cohort, and $n=722$ were in the ACS cohort. The cohorts were similar on most baseline demographic information. As a result of regionalization of care, the ACS cohort had a significantly higher number of patients who were transferred versus directly admitted through the emergency department. Surgical response times and acquisition of imaging were significantly faster with ACS. Time to OR and total hospital length of stay were similar between cohorts. Similar rates of daytime operating were present between groups, but significantly more appendectomies occurred at night with ACS. There were significantly fewer intra-operative complications for patients with BTD in 2011. However, the ACS cohort had significantly more perforated appendices and readmissions post-appendectomy for intra-abdominal abscesses.

Conclusions
Despite the increased volume of patients seen with the implementation of ACS, surgical assessments and diagnostic imaging were significantly more prompt. Inpatient EOC measures were unchanged with ACS, and outcomes for AA were worse. Recommendations for future improvements to ACS in Winnipeg include the establishment of transfer protocols, the creation of clinical care pathways for common emergency general surgery diagnoses, establishing benchmarks for efficiency of care, and monitoring patient outcomes in a prospective fashion.
Penetrating atherosclerotic ulcers and intramural hematoma: Clinical management and outcomes from a dedicated thoracic aortic diseases clinic

Carly Lodewyks¹, Edward Pascoe², Iain Kirkpatric³, Rohit Singal², Rakesh Arora², Brett Hiebert⁴
¹ Cardiac Surgery Residency Program, College of Medicine, University of Manitoba
² Section of Cardiac Surgery, Department of Surgery, University of Manitoba
³ Department of Radiology, University of Manitoba
⁴ Cardiac Sciences Program, Winnipeg Regional Health Authority, Winnipeg, Manitoba

Introduction
There is a paucity of information related to the natural history, management and outcomes of patients with penetrating atherosclerotic ulcers (PAU) and intramural hematoma (IMH) of the aorta. A dedicated Thoracic Aortic Diseases clinic was established in Winnipeg in September 2011. We sought to review characteristics of patients presenting with PAU or IMH to this clinic.

Methods
Data was retrospectively abstracted from the Manitoba Thoracic Aortic Diseases Clinic database for all patients with an observed clinic visit and/or surgical intervention between September 2011 and March 2015.

Results
Of 871 patients reviewed, 26 (3.0%) had been diagnosed with a PAU and 8 (0.9%) with an IMH. Seventeen PAU patients have undergone at least one surgical procedure and 9 are being managed conservatively with routine clinic follow up. 65% of PAU patients who received intervention were treated endovascularly while 35% underwent open surgery. Post-operative complications following open repair included a 33% incidence of either stroke or acute kidney injury (AKI). The in hospital mortality for PAU patients was 5.9%. Following endovascular intervention there was an 18% incidence of type 2 endoleak and a 9% incidence of AKI. Of the 8 patients with an IMH, only one has undergone surgical intervention, 7 are being managed conservatively and there have been no deaths.

Conclusions
The treatment of PAU and IMH is an important clinical problem and there has not yet been a consensus on the optimal timing and type of treatment. The Manitoba Aortic Diseases clinic has allowed for routine monitoring and clinic follow-up in order to help discern the most appropriate time for surgical intervention. Future direction for this project will examine pre and post procedure CT scan measurements to determine their impact on surgical decision-making, and the identification of PAU/IMH patients who are at greatest risk for poor surgical outcomes.
Crucial conversations training for senior health care learners: A thematic extraction of our most difficult conversations

Rebecca Whitley¹, Megan Delisle¹, Debrah Wirtzfeld²
¹ General Surgery Residency Program, College of Medicine, University of Manitoba
² Section of General Surgery, Department of Surgery, University of Manitoba

Introduction
Effective communication between colleagues in health care is critical and becomes more difficult during crucial decision-making, impacting inter-professional relationships and patient safety. Our objective was to provide senior health care learners with Crucial Conversations® Training to evaluate difficult areas of communication, ability to utilize crucial conversations skills, and the extent of conflict resolution.

Methods
Two cohorts of 20 students from 5 colleges of amalgamated health sciences at the University of Manitoba completed a 4-week inter-professional Crucial Conversations course. Students were asked to complete two surveys, at 3 and 4 months post course, detailing situations in which they used skills learned in the course. Common themes were identified including: who conflict arose with, classification of conflict, and what skills were used to bring about resolution.

Results
31 out of 38 responses from the 2 groups were collected. Surveys most commonly identified conflict in communication with either a boss or a peer in the same profession. Common conflict themes included misinterpretation of communication, lack of feedback, unclear expectations, hostile work environment, lack of professionalism, and disagreement of opinion. Each student was able to identify the conversation as crucial, employ the skills they had learned and felt that it was resolved satisfactorily.

Conclusions
Effective communication in the healthcare setting is critical for patient safety. Senior health care learners can use Crucial Conversations skills to identify when a conversation becomes crucial, use the skills that were taught, and identify which ones bring resolution to conflict. Identified themes will be used to develop future communication and leadership programming for students in the health care sector.
Abdominal aortic aneurysm growth is associated with increasing thrombus deposition in regions of flow recirculation

Sebastian L. Launcelott¹, Richard J. Lozowy², David C.S. Kuhn², April J. Boyd³
¹ Vascular Surgery Residency Program, College of Medicine, University of Manitoba
² Department of Mechanical Engineering, University of Manitoba
³ Section of Vascular Surgery, Department of Surgery, University of Manitoba

Introduction
Abdominal aortic aneurysm (AAA) rupture has an associated mortality of 90%. AAA are repaired when they meet size criteria, become symptomatic, or rupture. Using aortic diameter as the primary criterion in the decision to intervene, fails to take into consideration that AAA rupture at sizes below operative thresholds or reach extreme size without rupture. We have previously shown that AAA rupture at sites of low wall shear stress (WSS) where flow recirculation and intraluminal thrombus (ILT) tends to be more abundant. The present study examined the fate of ILT deposition in AAA growth. We hypothesized that AAA expansion would be associated with increasing ILT deposition in sites of flow recirculation.

Methods
A total of 6 patients with serial images of AAA growth over 3 time points were studied. Aortic measurements and sites of ILT deposition were recorded. Three-dimensional AAA geometry was generated from CTA images. Predicted aortic blood flow velocity, localized pressure variation, and WSS profiles were correlated with AAA growth and ILT deposition. This study was carried out with biomedical ethics approval (B2013:130).

Results
AAA growth was associated with increasing ILT deposition in all cases. The site of maximal ILT deposition strongly correlated with regions of flow recirculation and low WSS, but did not correlate with the region of maximal aortic expansion. Interestingly, in some cases the recirculation zone changed location with AAA growth and this was associated similar change in location of ILT deposition.

Conclusions
This study has shown that ILT increases with increasing AAA size and that deposition of ILT occurs at sites with low WSS and flow recirculation. An understanding of the interplay between alterations in WSS in pulsatile flow and its effect on vascular endothelium will lead to a better understanding of AAA development and growth; and may ultimately lead to better prediction of AAA rupture potential.
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<th>Time</th>
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<tr>
<td>10:57</td>
<td><strong>Prognostic factors in determining the outcome of head and neck cutaneous melanoma</strong>&lt;br&gt;Kristyn Buchko¹, K. Alok Pathak²</td>
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<td>¹College of Medicine, Faculty of Health Sciences, University of Manitoba&lt;br&gt;²Section of Surgical Oncology, Department of Surgery, University of Manitoba</td>
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<td>11:09</td>
<td><strong>The potential significance of xenoantigens in the structural valve deterioration of bioprosthetic heart valves</strong>&lt;br&gt;Rizwan A. Manji¹, Whayoung Lee², Hidetaka Hara², David K.C. Cooper²</td>
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<td>¹Section of Cardiac Surgery, Department of Surgery, University of Manitoba&lt;br&gt;²Thomas E. Starzi Transplantation Institute, University of Pittsburgh, Pittsburgh, USA</td>
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<td>11:21</td>
<td><strong>Outcomes following laparoscopic partial nephrectomy in the obese</strong>&lt;br&gt;Evan Wiens¹, Deepak Pruthi², Ruchi Chhibba¹, Thomas McGregor³</td>
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<td>11:33</td>
<td><strong>Is tissue still the issue? Lobectomy for suspicious lung nodules without confirmation of malignancy</strong>&lt;br&gt;Suha Kaaki¹, G. Buduhan², L. Tan², S. Srinathan²</td>
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<td>11:45</td>
<td><strong>Concussions in senior Manitoba rugby: Incidence, knowledge and attitudes</strong>&lt;br&gt;R. Kyle Martin¹,², Travis Hrubeniuk¹,³, Jeff Leiter¹,⁴</td>
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<td>11:57</td>
<td><strong>MiRacles for babies with abnormal lungs: The story of miR-10a and lung development</strong>&lt;br&gt;R. Visser¹, C. Fraser², D. Mulhall², F. Zhu², C. Day², B. Iwasiow², T. Mahood²,³, R. Keijzer²,³,⁴</td>
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|       | ¹General Surgery Residency Program, College of Medicine, University of Manitoba<br>²Department of Pediatric Surgery & Child Health, and Children’s Hospital Research Institute of Manitoba (CHRIM), University of Manitoba<br>³Department of Physiology & Pathophysiology, University of Manitoba
Prognostic factors in determining the outcome of head and neck cutaneous melanoma

Kristyn Buchko\textsuperscript{1}, K. Alok Pathak\textsuperscript{2}
\textsuperscript{1} College of Medicine, Faculty of Health Sciences, University of Manitoba
\textsuperscript{2} Section of Surgical Oncology, Department of Surgery, University of Manitoba

Introduction
Head and neck melanoma presents a unique problem in terms of complex anatomy and atypical nodal basin drainage, which makes sentinel lymph node biopsy challenging and obtaining wide surgical margins difficult. 25-35\% of invasive melanoma are seen in the head and neck region. The purpose of this study was to evaluate surgical margins and other prognostic factors determining the oncological outcome of patients with invasive head and neck melanoma.

Methods
Electronic and paper records of a historical cohort of 345 patients with invasive head and neck cutaneous melanoma seen in the province of Manitoba during 1970-2002 and treated with radical intent. Information on tumor stage, margin status, treatment modality, and pathological details was collected. Disease free survival (DFS) and disease specific survival (DSS) were calculated by Kaplan Meir method and analyzed by Cox Proportional hazard model for independent variables using SPSS 22.0.

Results
Mean age of the patients at diagnosis was 65.6 + 17.6 years and 63.5\% of the patients were female. 59.6\% of the patients had Stage I, 28.7\% stage II, 9.0\% stage III and 2.8\% stage IV invasive melanoma. All patients underwent surgical resection and 55 out of 70 T2 invasive melanoma patients underwent sentinel node biopsy and 11(20\%) had positive sentinel nodes. DSS at 5 years was 75\% at 5 years and 66.7 at 10 years. Age of the patient at diagnosis \(p=0.047\) and stage of disease \(p<0.001\) had significant independent impact on DSS. Margin of resection did not have any significant influence on either DSS \(p=0.347\) or DFS \(p=0.348\). There was no difference in the oncological outcome of invasive head and neck melanoma excised with 1 cm or two cm margin.

Conclusions
TNM stage and age of diagnosis were independent prognostic factors determining the oncological outcome of invasive melanoma of head and neck region.
The potential significance of xenoantigens in the structural valve deterioration of bioprosthetic heart valves

Rizwan A. Manji, Whayoung Lee, Hidetaka Hara, David K.C. Cooper
1 Section of Cardiac Surgery, Department of Surgery, University of Manitoba
2 Thomas E. Starzi Transplantation Institute, University of Pittsburgh, Pittsburgh, USA

Introduction
Glutaraldehyde-fixed bioprosthetic heart valves (GBHVs) from wild-type (WT) pigs undergo structural valve deterioration (SVD) which may be related to an immune response to xenoantigens. Genetically engineered pigs not expressing important xenoantigens such as Gal and NeuGc may decrease SVD. Objective: To determine expression of Gal and NeuGc on (a) fresh porcine valve/pericardial tissue, (b) 3 different commercially-available GBHVs, and (c) glutaraldehyde-fixed (GF) valves from WT, GTKO (Gal transferase knock out), and GTKO/NeuGcKO pigs; as well as to determine human antibody binding to these various valves.

Methods
Aortic valves (AV), pulmonary valves (PV), and pericardium from WT, GTKO, and GTKO/NeuGcKO pigs (n=3 each) were tested (i) fresh and (ii) after glutaraldehyde fixation. Three different commercially available BHVs were also studied. The tissues were stained for Gal and NeuGc expression as well as being incubated with pooled human serum and then stained for human antibody (IgM and IgG) binding.

Results
Gal and NeuGc expression was high on all WT tissue and BHVs with no difference in expression level on different tissues (AV, PV, pericardium). Gal was not detected on GTKO valves, and neither Gal nor NeuGc was detected on GTKO/NeuGcKO valves. GF did not alter the expression level of Gal or NeuGc. Human IgM and IgG binding was present on BHV and WT pig valves/ pericardium after incubation with human serum. However, compared to BHVs and valves from WT pigs, valves from GTKO pigs and, particularly, GTKO/NeuGcKO pigs, showed less IgM and IgG binding with or without glutaraldehyde-fixation. See figure 1.

Conclusions
Gal and NeuGc is expressed on porcine valves/pericardium and commercially used GBHV. This expression is not reduced after glutaraldehyde-fixation. There is strong human IgM and IgG antibody binding to the valves. The implantation of valves from GTKO or, particularly, GTKO/NeuGcKO pigs may reduce this antibody response and thus decrease SVD.
Outcomes following laparoscopic partial nephrectomy in the obese

Evan Wiens¹, Deepak Pruthi², Ruchi Chhibba¹, Thomas McGregor³
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² Urology Residency Program, College of Medicine, University of Manitoba
³ Section of Urology, Department of Surgery, University of Manitoba

Introduction
Partial nephrectomy is the gold standard for treatment of small renal masses. However, there exists limited data in the literature on the effectiveness and complications associated with laparoscopic partial nephrectomy (LPN) in the obese population. This study compares outcomes for obese (BMI ≥ 30) and non-obese (BMI < 30) patients undergoing LPN and defines preoperative risk factors for complications and renal insufficiency.

Methods
We conducted a retrospective review of 187 consecutive patients who underwent LPN at two academic centers. We examined the association between BMI and postoperative complications, estimated blood loss (EBL), hospital length of stay, warm ischemic time (WIT), and post-operative renal function (estimated glomerular filtration rate [eGFR]). We performed similar analyses using the RENAL nephrometry score (RNS) and the patient’s comorbidity status.

Results
There was no statistically significant increase in complications among obese patients relative to non-obese patients. The obese had higher mean EBL (261 cc vs 162 cc; p = 0.0111). Patients experienced more complications if they had a Charlson comorbidity score ≥ 3 (p = 0.0065), an ASA score ≥ 3 (p = 0.0042), or a history of diabetes mellitus (p = 0.0196). There was no association between RNS and complications; however, patients with a score ≥ 8 experienced higher WIT (p = 0.0022) and a greater decline in eGFR post-operatively (p = 0.0488).

Conclusions
Obese patients undergoing LPN are not at significantly increased risk of complication relative to non-obese patients. However, comorbidities other than obesity are important in predicting complications. In addition, a high RENAL nephrometry score was associated with greater declines in eGFR following LPN; this may be related to an increased WIT. LPN is safe in the obese; however, complex tumors may compromise renal function.
Introduction
While histologic confirmation of malignancy has traditionally been indicated for a suspicious lung nodule prior to resection, invasive diagnostic procedures are expensive, time consuming, potentially morbid and not always diagnostic. The purpose of this study was to determine whether or not foregoing routine preoperative and intraoperative tissue biopsy for suspected malignant lung nodule increased the incidence of lobectomy for benign lesions.

Methods
Retrospective cohort of 256 adult patients who underwent thoracoscopic or open lobectomy for a confirmed or suspected pulmonary malignancy, with or without tissue diagnosis. Clinical, radiographic and pathologic data were compared. A priori sample size calculation was done. Using a one-sided significance level of 5%, and statistical power 80% to detect a 5% difference in incidence of benign pathology post lobectomy in the “biopsy” and “no biopsy” groups.

Results
Among 256 patients who underwent lobectomy for confirmed / suspected lung malignancy, 127 had attempted tissue biopsy (group A) and 129 had no biopsy procedure (group B). There was no significant difference in the incidence of benign resections between the groups (Group A=4 patients (3.2%) benign pathology vs. group B= 9 patients (7.0%); p=0.16). Compared to group A, group B had significantly lower operative time (127.1 vs. 112.3 minutes; p=0.004) and intraoperative complications (23 vs. 37 patients; p=0.03). There was trend toward longer hospital stay and surgical waiting time in group A vs. B (6.6 vs. 5.2 days, p=0.24; 92.4 vs. 66.2 days; p=0.14).

Conclusions
Foregoing invasive biopsies and proceeding directly to lobectomy in selected patients with suspicious lung nodules is safe, did not increase the incidence of resected benign pathology, and may decrease surgical wait time. Patients should be carefully evaluated and counseled after review of all clinical and imaging characteristics.

Suha Kaaki¹, G. Buduhan², L. Tan², S. Srinathan²
¹General Surgery Residency Program, College of Medicine, University of Manitoba
²Section of Thoracic Surgery, Department of Surgery University of Manitoba
Concussions in senior Manitoba rugby: Incidence, knowledge and attitudes

R. Kyle Martin1,2, Travis Hrubeniuk1,3, Jeff Leiter1,4
1 Pan Am Clinic Foundation, Winnipeg, Canada
2 Orthopedic Surgery Residency Program, College of Medicine, University of Manitoba
3 Faculty of Kinesiology & Recreation Management, University of Manitoba
4 Section of Orthopedic Surgery, Department of Surgery, University of Manitoba

Introduction
Rugby is a popular collision sport, and players are at risk of sustaining concussions. It is important to understand how Canadian rugby players approach concussion management.

Methods
Manitoba senior rugby players received an anonymous survey requesting demographic information, recent concussion history, and knowledge and attitudes towards concussion management. Chi-square tests for independence were used to compare the proportions of responses from male and female players. Differences in demographics were calculated using t-tests or Mann-Whitney U tests. Significance was set at p < 0.05.

Results
Overall response rate was 61% (170 males, 112 females). In the previous season, proportionally more female players experienced signs and symptoms of concussion compared to the male players (49% vs. 30%, respectively; p < 0.05). Within this symptomatic subgroup, 44% of the female players were diagnosed with a concussion, and 31% missed school and/or work. Conversely, 57% of the symptomatic males were diagnosed with concussion, and 22% missed school and/or work. These differences did not reach significance. Thirty percent of the male and 28% of the female players would continue participation while experiencing symptoms, despite 91% of the male and 98% of the female players recognizing that it is dangerous to do so (p < 0.05). Additionally, more female players knew there was an increased risk of sustaining a concussion with a prior history of the injury (95% vs. 85% p < 0.05), yet females also felt they were letting others down if they stopped playing (48% vs. 32%; p < 0.05). Only five total respondents indicated they would feel let down if a teammate stopped playing due to a concussion.

Conclusions
Concussions are frequently sustained in Canadian rugby, and despite recent attempts to increase awareness of the severity of concussions, many players are still willing to continue participation with symptoms. Due to this, standardized concussion protocols are warranted.
R. Visser¹, C. Fraser², D. Mulhall², F. Zhu², C. Day², B. Iwasiow², T. Mahood²,3, R. Keijzer²,4
¹ General Surgery Residency Program, College of Medicine, University of Manitoba
² Department of Pediatric Surgery & Child Health, and Children’s Hospital Research Institute of Manitoba (CHRIM), University of Manitoba
³ Department of Physiology & Pathophysiology, University of Manitoba

Introduction
Worldwide, 150 babies are born every day with congenital diaphragmatic hernia (CDH). One third of these infants will die from respiratory failure due to pulmonary hypoplasia. MicroRNAs are essential epigenetic factors for lung development. We identified microRNA miR-10a as a key regulator in CDH. We aimed to define the role of miR-10a in both normal and abnormal lung development.

Methods
Using the nitrofen rat model to induce CDH, we employed real-time quantitative polymerase chain reaction (RT-qPCR) and fluorescent in situ hybridization to study miR-10a expression during development. Control- and nitrofen-treated fetal rat lungs were extracted for explant cultures and treated with miR-10a inhibitors and mimics to observe its effects on airway branching.

Results
We found that miR-10a expression is localized in the mesenchyme of fetal lungs. Nitrofen treatment reduces miR-10a’s expression, particularly early in gestation. Using nitrofen-treated fetal rat lungs as explant cultures, we could reverse the hypoplastic phenotype by treating lungs early in development with a miR-10a mimic.

Conclusions
In CDH, reduced expression of miR-10a early in development contributes to pulmonary hypoplasia. Treating developing lungs with miR-10a mimics can reverse the hypoplastic phenotype. We believe this microRNA can help to develop a prenatal treatment to improve the outcomes of CDH babies.
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<td>2:00</td>
<td>Predictors of functional survival and hospital re-admission in octogenarians after surgical aortic valve replacement</td>
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<td>Kendra Kuo(^1), Rakesh Arora(^2), Alan Menkis(^3), Brett Hiebert(^3), Karin Love(^3), Pallav Shah(^4)</td>
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<td>(^3) WRHA Cardiac Sciences Program, Winnipeg, Canada</td>
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<td>2:05</td>
<td>Identifying the most appropriate age threshold for TNM staging of well-differentiated thyroid cancer</td>
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<td>Safety of immediate breast reconstruction following neoadjuvant chemotherapy in inflammatory breast cancer</td>
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<td>E.M. Aleassa(^1), S. Niraula(^3), M.W. Pitz(^2), E.L. MacInstosh(^2), T.J. Hayakawa(^4), E.W. Buchel(^4), B. Friesen(^3), O. Bucher(^2), P. Hebbard(^2)</td>
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<td>(^5) Epidemiology &amp; Cancer Registry, CancerCare Manitoba, Winnipeg, Canada</td>
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<td>Classification of facial pain: A 13-year population-based study</td>
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<td>Anthony M. Kaufmann(^1), Steven Nolin(^2), Lyra de Fatima Barchet(^3)</td>
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<td>(^2) College of Medicine, Faculty of Health Sciences, University of Manitoba</td>
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<td>2:20</td>
<td>Effect of functional laterality on simulated shoulder arthroscopy</td>
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<td>Joe Amirault(^1), Jeff Leiter(^2)</td>
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<td>(^2) Pan Am Clinic Foundation, Winnipeg, Canada</td>
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<td>A population-based examination of the effect of major trauma on the development of physical disorders as compared to a matched control cohort</td>
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<td>Stephanie Lim(^1), Justin Gawaziuk(^2), Sarvesh Logsetty(^3)</td>
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<td>(^2) Manitoba Firefighters Burn Unit, Department of Surgery, University of Manitoba</td>
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| 2:30   | **Differential regulation of mechanistic target of rapamycin pathways in hormone dependent and independent prostate cancer**  
Premal Patel, Andrea Dypiangco, Darrel Drachenberg, Arbind Dubey, Anuraag Shrivastav  
1 Urology Residency Program, College of Medicine, University of Manitoba  
2 Department of Biology, Faculty of Science, University of Manitoba  
3 Section of Urology, Department of Surgery, University of Manitoba  
4 Radiation Oncology, CancerCare Manitoba, Winnipeg, Canada |
| 2:35   | **The role of endoscopic retrograde cholangiopancreatography (ERCP) in the diagnostic work-up of biliary atresia**  
Melanie Morris, Jeniva Donaleshen, Wael El-Matary, Jennifer Griffin, Dana Moffat  
1 Section of Pediatric Surgery, Department of Surgery, University of Manitoba  
2 General Surgery Residency Program, College of Medicine, University of Manitoba  
3 Department of Pediatric Gastroenterology, University of Manitoba  
4 Department of Gastroenterology, University of Manitoba |
| 2:40   | **Incidence of total knee replacement in patients with previous cruciate ligament reconstruction**  
James McCammon, Jeff Leiter, Peter MacDonald  
1 Orthopedic Surgery Residency Program, College of Medicine, University of Manitoba  
2 Jeff Leiter, Pan Am Clinic Foundation  
3 Section of Orthopedic Surgery, Department of Surgery, University of Manitoba |
| 2:45   | **The impact of spinal manipulation on lower extremity motor control in lumbar spinal stenosis patients: A single-blind randomized clinical trial**  
Mina Aziz, Michael Johnson, Steven Passmore, Michael Goytan, Cheryl Glazebrook  
1 Orthopedic Surgery Residency Program, College of Medicine, University of Manitoba  
2 Section of Orthopedic Surgery, Department of Surgery, University of Manitoba  
3 Faculty of Kinesiology & Recreation Management, University of Manitoba |
| 2:50   | **Communicating when the stakes are high: An inter-professional learning opportunity for senior health care learners**  
Megan Delisle, Rebecca Whitley, Ruby Grymonpre, Frank Krupka, Debrah Wirtzfeld  
1 General Surgery Residency Program, College of Medicine, University of Manitoba  
2 College of Pharmacy, Faculty of Health Sciences, University of Manitoba  
3 The George & Fay Yee Center for Health Care Innovation, University of Manitoba and Winnipeg Regional Health Authority, Winnipeg, Canada  
4 Leadership Department, Dean’s Council, College of Medicine, Faculty of Health Sciences, University of Manitoba |
| 2:55   | **Management of complicated ureteric strictures post-renal transplant utilizing pyelovesicostomy with Boari flap**  
Huang Chun, Tadeusz Kroczał, Tom McGregor, Joshua Koulack  
1 Urology Residency Program, College of Medicine, University of Manitoba  
2 Section of Urology, Department of Surgery, University of Manitoba  
3 Section of Vascular Surgery, Department of Surgery, University of Manitoba |
Predictors of functional survival and hospital re-admission in octogenarians after surgical aortic valve replacement

Kendra Kuo¹, Rakesh Arora², Alan Menkis², Brett Hiebert³, Karin Love³, Pallav Shah²
¹ BSc Med Program, College of Medicine, Faculty of Health Sciences, University of Manitoba
² Section of Cardiac Surgery, Department of Surgery, University of Manitoba
³ WRHA Cardiac Sciences Program, Winnipeg, Canada

Introduction
We aimed to analyze outcomes and predictors of survival, survival + freedom from admission to personal care home ("functional survival") and hospital readmission in octogenarians who underwent surgical aortic valve replacement (SAVR) with or without concomitant coronary artery bypass grafting (CABG).

Methods
A retrospective review of 1872 patients aged ≥50 who underwent SAVR ± CABG between 1995 and 2014 in Manitoba was performed. 378 patients aged ≥ 80 years of age underwent SAVR with (n=208) or without CABG (n=170). Kaplan-Meier estimates of outcomes and Cox multivariate regression analysis of factors influencing outcome was performed. Survival was compared to the age and sex matched population life expectancy from Statistics Canada.

Results
30-day outcomes of ICU stay (47.2 hours, P<0.001), length of hospital stay (13 days, P<0.001) and in-hospital mortality (8.5%, P<0.001) in patients aged ≥ 80 years were worse than the entire cohort. Survival at 30-days, 1, 5 and 15 years was 93.6%, 83.8%, 60.8% and 6.4%, functional survival was 93.6%, 82.4%, 56.5% and 6.4% and freedom from hospital readmission was 84.9%, 61.5%, 28.4% and 7.3%. Survival following SAVR approximated the age and sex matched life expectancy of the general Manitoba population. Female gender, preoperative atrial fibrillation, peripheral vascular disease, diabetes, postoperative acute kidney injury and blood transfusion were associated with adverse outcomes.

Conclusions
SAVR in properly selected octogenarians can be carried out with acceptable functional survival and hospital readmission rates, but are associated with significant perioperative mortality and morbidity. These results can provide a reference standard for patient selection for SAVR and promote judicious usage of healthcare resources.
Identifying the most appropriate age threshold for TNM staging of well-differentiated thyroid cancer

Heather Sigvaldason¹, Jane Hendrickson-Rebizant¹, Richard W. Nason², K. Alok Pathak²
¹ CancerCare Manitoba, Winnipeg, Canada
² Section of Surgical Oncology, Department of Surgery, University of Manitoba

Introduction
Well-differentiated thyroid cancer (WDTC) is increasing in incidence and currently accounts for over 90% of thyroid malignancies. Age, an important determinant of prognosis, has been consistently utilized in most risk stratification systems. However, lack of consensus has been demonstrated regarding the most appropriate age threshold to employ. An age threshold of 45 years is currently used by the AJCC-TNM system. Those less than 45 years of age are staged I or II regardless of tumor size (T) or nodal status (N). The objective of this study was to analyze the independent impact on disease specific survival (DSS) of applying different age cut-offs for TNM staging of WDTC, in order to identify the most appropriate threshold.

Methods
Data was collected from a population-based thyroid cancer cohort of 2115 consecutive patients with WDTC, diagnosed between 1970-2010. Oncologic outcomes including disease-specific survival (DSS) and disease-free survival (DFS) were calculated using the Kaplan Meier method. A measure of statistical model fit, the Akaike information criterion (AIC), was used to identify the most appropriate age threshold.

Results
The mean age of patients was 47.3 years, 76.6% were female and 83.3% had papillary carcinoma. The median follow-up of the cohort was 11.5 years. Disease free survival (DFS) was 87.2% and 85.7% at 10 years and 20 years respectively. Disease specific survival (DSS) was 95.6% and 92.8% at 10 years and 20 years respectively. Age of 55 years demonstrated the lowest AIC (808.4), which indicates the preferred model.

Conclusions
The age of 55 years was identified to be the most appropriate threshold for TNM staging.
Safety of immediate breast reconstruction following neoadjuvant chemotherapy in inflammatory breast cancer

E.M. Aleassa, S. Niraula, M.W. Pitz, E.L. MacInstosh, T.J. Hayakawa, E.W. Buchel, B. Friesen, O. Bucher, P. Hebbard

1 General Surgery Residency Program, College of Medicine, University of Manitoba
2 Section of General Surgery, Department of Surgery, University of Manitoba
3 Medical Oncology & Hematology, Department of Internal Medicine, University of Manitoba
4 Section of Plastic Surgery, Department of Surgery, University of Manitoba
5 Epidemiology & Cancer Registry, CancerCare Manitoba, Winnipeg, Canada

Introduction
Indications for breast reconstruction surgery after breast cancer surgery are expanding. We hypothesize that immediate breast reconstruction is safe to perform in inflammatory breast cancer (IBC) patients following neoadjuvant chemotherapy.

Methods
A retrospective chart review was performed for all locally advanced breast cancer (LABC) and inflammatory breast cancer (IBC) patients receiving neoadjuvant chemotherapy followed by surgery in the province of Manitoba between January 2004 and December 2011. Data gathered included demographics, breast cancer (site and type), surgery, reconstruction, recurrence and all-cause mortality. Descriptive data analysis and univariable logistic regression model were used to analyze the date.

Results
A total of 286 patients were treated with curative intent during the time period. After excluding patients who had progressive disease on chemotherapy, 199 (69.6%) were included in the study, of which 71 (36%) had IBC. Thirty-two (45%) patients with IBC developed recurrences and 39 (55%) died at last follow-up. Local recurrence occurred in only 1 patient. Fifteen (21%) of the IBC patients had breast reconstruction, including 10 (14%) that were performed at the time of definitive surgery. There was no association between use of immediate breast reconstruction and risk of breast cancer recurrence (OR 0.72, 95%CI 0.18-2.8, p =0.63) or death (OR 0.78, 95%CI 0.06-1.1, p= 0.068). Similarly, when looking at the larger group of LABC patients, there was no association between the use of immediate breast reconstruction and the risk of breast cancer recurrence (OR 0.78, 95%CI 0.35-1.8, p=0.56). There was an association between immediate breast reconstruction and the risk of death in all LABC patients (OR 0.37, 95%CI 0.15-0.88), reflecting good patient selection for the procedure.

Conclusions
Immediate breast reconstruction in IBC patients who have undergone neoadjuvant chemotherapy appears to be safe in appropriately selected patients. This treatment option is routinely offered to appropriate patients in our centre.
Classification of facial pain: A 13-year population-based study

Anthony M. Kaufmann\textsuperscript{1}, Steven Nolin\textsuperscript{2}, Lyra de Fatima Barchet\textsuperscript{2}
\textsuperscript{1}Section of Neurosurgery, Department of Surgery, University of Manitoba
\textsuperscript{2}College of Medicine, Faculty of Health Sciences, University of Manitoba

Introduction
Facial pain conditions have been categorized to distinguish patients who may benefit from specific treatments including surgery. The International Headache Society (IHS), for example, distinguishes patients with trigeminal neuralgia and idiopathic facial pain and a variety of pain conditions secondary to other etiologies (eg. trauma, postherpetic, etc.). We set out to examine patients with facial pain conditions that do not fall under established diagnostic criteria.

Methods
The Winnipeg Centre for Cranial Nerve Disorders maintains a database of facial pain patients presenting for neurosurgical assessment. A retrospective chart review of these patients whose diagnosis did not fall within one of the established IHS categories was performed. The clinical presentation and examination findings for these patients were extracted and compared to a similar review of patients with established IHS criteria for conditions including atypical trigeminal neuralgia (ATN) and idiopathic facial pain (iFP).

Results
There were 534 patients presenting with facial pain between 2001 and 2013. The most common diagnosis was typical trigeminal neuralgia in 266. ATN and iFP were identified in 37 and 40 patients respectively, other diagnoses were noted in accordance with the IHS system. There were 25 patients however, whose diagnostic criteria were incongruent to the diagnostic system. Their complaints were characterized by symptoms confined to one or multiple divisions of the trigeminal nerve root ipsilaterally including persistent numbness (52%), ache or dull ache (40%), tingling (28%), and burning (20%) in addition to sensory disturbances (48%) upon examination.

Conclusions
In exclusion to the majority of patients diagnosable with existing classification systems, we suggest the term idiopathic trigeminal neuropathy be applied to the identified group of patients without a current diagnostic criteria. The importance of this clinical subgroup with overlapping trigeminal neuralgia and idiopathic facial pain, respectively amenable and contraindicated to surgery, is that therapies may be identified in accordance with future aetiological investigations.
Effect of functional laterality on simulated shoulder arthroscopy

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Introduction
Traditionally, surgical education follows a master-apprentice model, similar to that of the tradecrafts. The modern educational environment has experienced a net effect of decreasing both the quantity and quality of the teaching opportunities for trainees for many reasons - trainees now face an increasingly steep technical learning curve with less time to do so compared to their predecessors. Simulators for surgical training are a new educational tool that could address this. Previous research has demonstrated significant performance difference across hand dominance in simulated laparoscopic surgical tasks. No evidence exists to date regarding applicability of this conclusion to simulated shoulder arthroscopic surgery.

Methods
Using the Touch of Life Technologies ArthroSim\textsuperscript{TM} - a virtual reality based arthroscopic simulator - 51 participants have been recruited to date and performed two simulated diagnostic shoulder arthroscopy training modules: one left shoulder while holding the arthroscope in their right hand for the majority of tasks, and one right shoulder while holding the arthroscope in their left hand. Demographics were collected on each participant, outcome measures of completion score, and time to completion were measured by the simulator for each component task of a diagnostic shoulder arthroscopy. Subjective difficulty was measured using visual analogue scales.

Results
Non-parametric statistical analysis (Wilcoxon Signed Rank Test) was conducted to discern if there was a performance difference amongst the cohort when performing the arthroscopy on the left versus right side.

When analyzing subgroups by right or left hand dominance, significant differences exist across a number of the performance variables measured by the simulator.

Conclusions
This study demonstrates that there is a significant performance difference when participants are performing an arthroscopy on a right vs left shoulder.
A population-based examination of the effect of major trauma on the development of physical disorders as compared to a matched control cohort

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Introduction
Traumatic injury causes metabolic stress but how this stress affects future physical disorders (PDs) is unknown. Previous research by our team showed increased mortality following major trauma and this is not directly related to the trauma. There is limited research evaluating the long-term prevalence of PDs after trauma. Our objective is to examine the prevalence of PDs in adults post-injury compared to matched non-trauma controls. We hypothesize the rate of change in the prevalence of each PD comparing pre- and post-injury will be significantly higher in the major trauma cohort compared to controls.

Methods
Following ethics approval, this population-based epidemiological study included patients with an Injury Severity Score ≥ 12 during 2004-2010. Patients were identified from the Trauma Registry for the Health Sciences Centre in Winnipeg and matched 1:5 to control non-trauma individuals from the Manitoba general population on age, sex, and geographic residence. PD diagnoses were determined from physician billings and hospital claims from the Manitoba Center for Health Policy Data Repository using ICD codes: total respiratory morbidity, hypertension, arthritis, diabetes, fractures, coronary artery disease, cancer. The prevalence and relative rate of change of each PD was compared for two years pre- to two years post-injury for trauma and control cohorts. Rates were adjusted for socioeconomic factors and pre-injury diagnoses.

Results
Arthritis adjusted relative rate (ARR) ratios were 1.36 (P<0.001) two years post-injury and 1.15 (P<0.001) two years pre-injury in the trauma cohort compared to control. A sensitivity analysis demonstrated higher ARRs of arthritis in the trauma cohort closer in proximity to the trauma.

Conclusions
This study demonstrates major trauma results in higher relative rates of arthritis compared to matched controls. This contributes to a greater understanding of how trauma impacts subsequent physical health and is important knowledge for post-traumatic health evaluation and screening to reduce further morbidity.
Introduction
Mechanistic target of rapamycin (mTOR), which is the downstream target of PI3K/Akt pathway, is a complex central hub for various signaling pathways regulating protein synthesis, cellular differentiation, proliferation and transformation. The mTOR protein is activated upon phosphorylation of its serine 2448 (pS2448) residue that is a rapamycin sensitive site. In prostate cancer (PCa), alterations in the signaling members of the PI3K/Akt/mTOR pathway have been reported in 42% of primary and 100 % of metastatic PCa. The mTOR signaling is often dysregulated in human cancer including prostate cancer and has been pursued as a therapeutic target. The activation of PI3K/Akt/mTOR pathway has been demonstrated in castration resistance prostate cancer (CRPC), however given the complexity and regulation of growth factor mediated PI3K/Akt by mTOR and p70S6K in a feedback loop manner, a more detailed understanding of the interaction of androgen signaling and the mTOR pathway is needed. N-myristoyltransferase (NMT) catalyzes myristoylation of proteins that regulate mitogenic pathways.

Methods / Results
To determine differential alteration in PI3K/Akt/mTOR pathway in hormone dependent and independent PCa, we treated LNCaP (hormone dependent), PC3 and Du145 (both hormone independent) PCa cells with metformin and/or rapamycin. Both metformin and rapamycin inhibit mTOR through different effectors.

Results/ Conclusions
We observed differential effect of metformin and rapamycin on hormone independent and dependent PCa cells. We also report for the first time that NMT is a downstream target of mTOR in PCa. Together our data suggest PI3K/Akt/mTOR pathway is differentially regulated in hormone dependent and independent PCa cells and regulation of NMT by mTOR may provide further insight into the pathogenesis and progression of PCa.
The role of endoscopic retrograde cholangiopancreatography (ERCP) in the diagnostic work-up of biliary atresia

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Introduction
Biliary atresia accounts for approximately 30 percent of neonatal cholestasis. Due to the rapid progression of this disease, both prompt diagnosis and early intervention are required. Traditionally, a laparotomy and subsequent cholangiogram have been required to substantiate a diagnosis. ERCP, when available, is a less invasive alternative in the evaluation and management of neonatal cholestasis. The use of neonatal ERCP, however, is currently restricted to a few specialized centres worldwide. This study presents the findings from a Canadian paediatric centre utilizing ECRP in the workup of neonatal cholestasis.

Methods
A retrospective chart review of our institution’s early experience with the use of diagnostic ERCP in the diagnostic work-up of neonatal cholestasis, non-secreting HIDA scan and non-conclusive liver biopsy was conducted.

Results
Between June 2014 and May 2015, four patients (mean weight of 4.48kg (range 4.1-4.86 kg), had ERCP performed at a mean age of 58.5 + 17.14 days. Of these patients, biliary atresia was ruled out via ERCP in two patients while the other two had intra-operative cholangiograms following ERCP; one of which had biliary atresia and underwent a Kasai procedure. The mean duration of ERCP procedure was 15.5 minutes. No complications were encountered as a result of the procedure.

Conclusions
Our preliminary data regarding the use of ERCP in the diagnostic algorithm of neonatal cholestasis indicate it is a safe alternative to more invasive open or laparoscopic cholangiograms. ERCPs can be performed judiciously and expediently in the workup of neonatal cholestasis, allowing for timely diagnosis of biliary atresia.
Introduction

Injury to the cruciate ligament results in considerable morbidity to the patient including premature joint degeneration. Measuring degeneration in the knee has consistently been done in the past using radiographic parameters. This leads to variability in measurement due the number of systems used as well as the questionable correlation with patient symptoms. Arthroplasty of the knee is one of the treatment possibilities for symptomatic, advanced knee degeneration. Therefore it is reasonable to use total knee replacement (TKR) as a surrogate measure to determine the extent of clinically relevant knee degeneration.

Methods

This was a retrospective review of de-identified data stored in the Manitoba Center for Health Policy Database. The codes for cruciate reconstruction as well as TKR were gathered from the past 30 years. Patient factors gathered included: age, gender and neighborhood income quintile. An age, gender and geographically matched control group (CNT) was compared for analysis with an average of 5 controls for each cruciate ligament reconstruction. Statistical analysis included T-test, chi-test, and proportional hazards regression analysis.

Results

A total of 7,195 cruciate ligament reconstructions were found with 35,419 matches. There were a total 180 TKR, 120 had previous cruciate ligament reconstruction. Cumulative incidence of TKR at 15,20, and 25 years was low (2.0, 4.5, 6.8%). Patients with previous cruciate ligament reconstruction were approximately seven times more likely to undergo TKR than the matched cohorts. In the regression model, age was the only significant predictor of total knee replacement after controlling for other variables.

Conclusions

Using TKR as a surrogate measure for clinically relevant knee degeneration resulted in a low cumulative incidence up to 25 years after cruciate reconstruction. Despite this result, we also found a seven-fold increased risk of total knee replacement after cruciate reconstruction. Age at time of cruciate reconstruction was the only significant predictor of future total knee replacement.
The impact of spinal manipulation on lower extremity motor control in lumbar spinal stenosis patients: A single-blind randomized clinical trial

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Introduction
Spinal manipulation (SM) can offer lumbar spinal stenosis (LSS) patients a degree of pain relief and improve function. Our objective was to quantify the impact of a single SM intervention on patients with LSS using a Fitts’ Law lower extremity movement task. Our findings will inform surgeons of potential objective treatment outcomes when considering non-operative care. Hypothesis: Patients who received spinal manipulation will demonstrate improved motor performance compared a non-intervention (NI) group. Study design: Cross sectional single blind randomized clinical trial.

Methods
Participants with LSS (N=14; Swiss Spinal Stenosis score of M=63.2, SD=15.9) performed baseline testing and underwent a covariate-adaptive randomization. The treatment and the control groups each performed a foot-pointing task to 4 targets with different indexes of difficulty (ID). Participants completed 10 trials per ID, per foot, resulting in 80 total trials both pre and post-intervention. Pain, lumbar range of motion (LROM), and motor performance were assessed at baseline and following lumbar SM or NI. Experimenters were blinded to patient group allocation.

Results
Significant main effects for movement time (MT), peak velocity, time to peak velocity and peak acceleration were observed across task difficulty as predicted by Fitt’s Law. Planned comparisons of the MT main effect revealed significant differences between the three most difficult IDs post-SM. For all other comparisons, gross movements required to attain appropriate target amplitude superseded any precision movements associated with coordinated movement to targets of different sizes. No significant differences in pain, or LROM were found within or between groups.

Conclusions
Participants undergoing SM demonstrated immediate improvement in MT. No immediate differences in pain, LROM, or kinematic performance were noted following SM. In the future, research on the impact of SM on LSS patients should quantify the impact of a course of care (multiple SM treatments over multiple days) which more closely reflects non-operative clinical practice.
Communicating when the stakes are high: An inter-professional learning opportunity for senior health care learners

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Introduction
Preventable adverse events are equivalent to the eighth leading cause of mortality in medicine. They can arise from the inability of healthcare workers to speak up in today’s healthcare environment because of perceived hierarchies and professional silos. Safety checklists do little to prevent these mistakes if healthcare workers do not have the skills to speak up. We sought to improve senior healthcare learners ability to communicate in an inter-professional team, where stakes are high, emotions are strong and opinions vary, through participation in an inter-professional learning opportunity (IPLO)- Crucial Conversations® (CC).

Methods
Two classes, each consisting of 20 senior pre-licensure healthcare students from pharmacy, medicine, medical rehabilitation, dentistry and nursing, were offered. Each cohort attended four sessions of four hours for four consecutive weeks. The University of the West of England Inter-professional Questionnaire was administered before and after the course to assess changes in attitudes towards inter-professional learning, relationships, interactions and teamwork. The attributes of CC as an IPLO were evaluated using the Points for Inter-professional Education Score (PIPES).

Results
The pre-questionnaire was completed by 38 (100%) students and the post-questionnaire was completed by 35 (92%) students. Baseline attitude scores were positive for three of the four subscales, all which improved post-intervention. Attitudes towards inter-professional interactions remained negative post-intervention. CC was considered to very strongly attain the principles of inter-professional education on the PIPES.

Conclusions
Students’ negative perceptions about inter-professional interactions are deep rooted and difficult to change. They may be a consequence of the hierarchal structure, professional silos and stereotypes in today’s healthcare environment and may promote poor inter-professional communication. The positive shifts in attitudes towards inter-professional learning, relationship and teamwork skills are evidence that IPLO promotes inter-professional collaboration. Students need to given early opportunities to network across professions to encourage knowledge sharing that will translate into improved patient care.
Management of complicated ureteric strictures post-renal transplant utilizing pyelovesicostomy with Boari flap

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Introduction
Ureteric strictures are the most common urologic complication following renal transplantation. Although minimally invasive procedures such as placement of a ureteric stent or percutaneous nephrostomy tube, and endoscopic interventions are typically preferred, they often have a short duration of efficacy requiring multiple treatments. Open surgical repair allows for definitive management with minimal risk to the transplant. We review our experience with complicated ureteral strictures refractory to endoscopic management.

Methods
We identified 10 renal transplant recipients who developed ureteric strictures that failed multiple endoscopic treatments. All ten of these strictures were managed by pyelovesicostomy utilizing a Boari flap.

Results
The median time to ureteric stricture diagnosis was 2.5 months with a median of 4 endoscopic procedures prior to surgery. Median time from stricture diagnosis to surgical repair was 53 months. Overall success was 100 % with graft function being salvaged in all cases and no stricture recurrence after a mean follow up of 18 months.

Conclusions
We present a case series of complex ureteric strictures post renal transplant managed by pyelovesicostomy with Boari flap after failed endoscopic management. We demonstrate the safety and effectiveness of this approach of to treat complex ureteric strictures.
**PLENARY SESSION**

Moderator: Dr Jonathan Marsh  
Section of Orthopedic Surgery  

<table>
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<th>Time</th>
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| 3:15  | *MicroRNA miR-200b is essential for normal lung development in CDH*  
Naghmeh Khoshgoo\(^1,3\), Robin Visser\(^1,2\), Ramin Kholdebarin\(^1,2\), Arzu Öztürk\(^4,5,6\), Sujata Basu\(^1,3\), Mike Jackson, Barbara Iwasiow\(^1,3\), Molly Pind\(^1,5\), Agnes Fresnosa\(^4,5\), Fuqin Zhu\(^1,2\), Vinaya Siragam\(^1,3\), Geoff Hicks\(^4,5\), Andrew Halayko\(^1,2\), Richard Keijzer\(^1,2,3\)  
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\(^4\) Manitoba Institute of Cell Biology, University of Manitoba, Winnipeg, Canada  
\(^5\) Department of Biochemistry & Medical Genetics, University of Manitoba, Winnipeg, Canada  
\(^6\) Life & Health Sciences Research Institute, School of Health Sciences, University of Minho, Braga, Portugal  

| 3:27  | *Development of consensus-derived quality indicators for bariatric surgery*  
Shannon Stogryn\(^1\), Krista Hardy\(^2\), Jason Park\(^2\), Ashley Vergis\(^2\)  
\(^1\) General Surgery Residency Program, College of Medicine, University of Manitoba  
\(^2\) Section of General Surgery, Department of Surgery, University of Manitoba  

| 3:39  | *Healthcare resource utilization of necrotizing fasciitis as compared to burns: A single center comparative analysis*  
Eileen J. Burnett\(^1\), J. P. Gawaziuk\(^2,3\), K. Shek\(^4\), S. Logsetty\(^2,5\)  
\(^1\) Med II Summer Research Program, College of Medicine, University of Manitoba  
\(^2\) Manitoba Firefighters Burn Unit, Winnipeg, Canada  
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\(^4\) BSc Med Program, College of Medicine, University of Manitoba  
\(^5\) Sections of General Surgery & Plastic Surgery, Department of Surgery, University of Manitoba  

| 3:51  | *Neurosurgical outcomes in patients with multiple sclerosis related trigeminal neuralgia*  
Sandeep Krishnan\(^1\), Anthony M. Kaufmann\(^2\)  
\(^1\) College of Medicine, Faculty of Health Sciences, University of Manitoba  
\(^2\) Section of Neurosurgery, Department of Surgery, University of Manitoba  

| 4:03  | *Cancer heterogeneity among the elderly: Changes in incidence and stage presentation*  
Deepak Pruthi\(^1\), Zoann Nugent\(^2\), Tannis Erickson\(^2\), Alain Demers\(^2\), David Dawe\(^3\), Harminder Singh\(^4\), Piotr Czykowski\(^3\)  
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\(^3\) Department of Medical Oncology & Hematology, CancerCare Manitoba, Winnipeg, Canada  
\(^4\) Department of Internal Medicine, University of Manitoba  

| 4:15  | *The impact of frailty on functional survival in patients 1-year post cardiac surgery*  
James Lytwyn\(^1,2\), Patrick Jung\(^1,2\), Bryce Alexander\(^1\), Brett Hiebert\(^1\), Chris Dubiel\(^1\), Dustin Kimber\(^1\), Naomi Hamm\(^1\), Scott Kehler\(^1,3\), Mekayla Clarke\(^1\), Carly Fraser\(^1\), Brittany Pedreira\(^1\), Navdeep Tangri\(^1\), Rakesh Arora\(^1,4\)  
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Annual Surgery Research Day 2016
**MicroRNA miR-200b is essential for normal lung development in CDH**

Naghmeh Khoshgoo\(^1,2,3\), Robin Visser\(^1,2\), Ramin Kholdebarin\(^1,2\), Arzu Öztürk\(^4,5,6\), Sujata Basu\(^1,3\), Mike Jackson, Barbara Iwasiow\(^1,2\), Molly Pind\(^4,5\), Agnes Fresnosa\(^4,5\), Fuqin Zhu\(^1,2\), Vinaya Siragam\(^1,2\), Geoff Hicks\(^4,5\), Andrew Halayko\(^1,2\), Richard Keijzer\(^1,2,3\)

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6. Life & Health Sciences Research Institute, School of Health Sciences, University of Minho, Braga, Portugal

**Introduction**

MicroRNAs are important epigenetic factors in development and disease. Recently, we showed that the expression of microRNA miR-200b is disrupted in abnormal lung development in human babies born with CDH. The aim of this study was to generate knockout mice for miR-200b and delineate the role of miR-200b in lung development.

**Methods**

We evaluated the expression of miR-200b in whole embryos using the lac-Z reporter inserted in the knockout mice. Lung function analyses were performed on miR-200b +/-, +/- and -/- 8-week old mice. We used H&E staining, Immuno-staining and micro-CT scan to evaluate the phenotype of the lungs.

**Results**

LacZ expression in embryos with miR-200b showed a unique expression in lung, palate and inner ear. Lung function studies demonstrated that miR-200b +/- mice have significantly higher lung tissue resistance and elasticity compared to miR-200b+/+ or +/- littermates. MiR-200b +/- mice show lung stiffness due to the thickened alveolar wall, more fibroblast-like cells and lower number of distal airways.

**Conclusions**

These data indicate that miR-200b is required for normal lung development. Thickened alveolar walls and reduced distal airways in MiR-200b knockout mice are recapitulating lung hypoplasia as observed in CDH. Therefore, prenatal therapy with miR-200b has the potential to rescue abnormal lung development in babies with CDH.
Development of consensus-derived quality indicators for bariatric surgery

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Introduction
Our objective was to systematically develop a list of quality indicators for a laparoscopic Roux-en-Y gastric bypass (RYGB) operative report in order to generate validated parameters by which these reports can be evaluated and improved.

Methods
A Delphi protocol was used to determine quality indicators for a RYGB report. Bariatric surgeons from across Canada were recruited to participate along with local key stakeholders via a secure web-based platform. Participants initially submitted potential quality indicators for a RYGB. These items were grouped by theme and then rated on a 9-point Likert scale in subsequent rounds. For consensus, a score of 70% (mean 6.3) or greater indicated inclusion of an item and 30% (mean 2.7) or less denoted exclusion. Elements ranging from 30-70% consensus were re-circulated by runoff in subsequent rounds to generate the final list of quality indicators.

Results
Four community and four academic bariatric surgeons were invited to participate. We had representation from all provinces performing RYGB in Canada. The 4 local multidisciplinary invitees included: 1 minimally invasive/acute care surgeon, 1 tertiary abdominal radiologist, 1 gastroenterologist specializing in advanced endoscopic techniques, and 1 general surgeon with expertise in synoptic reporting. The initial survey achieved an 83.3% (10/12) response and identified 91 quality indicators for consideration. The subsequent survey had a 100% (12/12) response. Sixty-nine items reached inclusion consensus (Table 1).

Conclusions
This study has established consensus-derived quality indicators for RYGB operative reports. This information will allow further evaluation of existing documentation and development of a synoptic report that may ameliorate identified deficiencies.
Healthcare resource utilization of necrotizing fasciitis as compared to burns: A single center comparative analysis

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Introduction

Necrotizing Fasciitis (NF) are non-burn wounds that due to similar needs are increasingly managed in regional burn units. Although treated similarly to burns, the healthcare resource utilization (HRU) appears to be increased. The goal of this study is to provide a better understanding of the HRU for NF as compared to burns.

Methods

A retrospective chart review of patients ≥ 18 yr admitted to a regional burn unit with either NF or burns requiring surgery. We examined age, sex, % TBSA, geographic region, anatomical location, cause/circumstance of burn injury, as well as NF injury type and bacteriology.

Results

There were 210 NF patients and 209 burn patients. The NF cohort had a smaller TBSA (3.3\% vs. 10\%), but a longer median LOS (20 days vs. 14 days) and consequently a longer median LOS/%TBSA (6.0 vs. 1.5 days). This persisted after adjusting for age. A significantly higher proportion of the NF cohort (44.8\%) spent ≥ 12 h in intensive care unit than the burn cohort. The NF cohort also had significantly more procedures (median 2 vs. 1), required blood more often (46.2 vs. 16.7\%), and were more likely to die in hospital (13.3 vs. 4.3\%), have an amputation (12.4\% vs. 4.8\%) or a free tissue transfer (7.6\% vs. 2.9\%).

Conclusions

This study shows that NF requires significantly more HRU compared to burns even though they have a smaller TBSA affected.

Applicability of Research to Practice

It is important to take this increased resource utilization into consideration to allocate increased staffing and planning the associated budget when caring for these patients.
Neurosurgical outcomes in patients with multiple sclerosis related trigeminal neuralgia

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² Section of Neurosurgery, Department of Surgery, University of Manitoba

Introduction
Trigeminal neuralgia (TN) is a severe facial pain condition and may be caused by multiple sclerosis (MS). The aim of this study was to assess surgical outcomes for Manitoba patients with medically refractory MS-related TN.

Methods
All Manitoba patients undergoing surgery for medically refractory MS-related TN between 2000 and 2014 were identified in the database of the Winnipeg Centre for Cranial Nerve Disorders. Clinical and surgical details were extracted from a review of clinic and hospital records. The interval between repeat surgeries was determined and defined as the time to fail (TTF) for each surgery. The outcomes of first and repeated surgeries were assessed by Kaplan-Meier curves of TTF. Outcomes of the different surgical techniques were also compared.

Results
Twenty-one patients underwent 100 surgeries on 26 sides (range 1-12 each). First procedures included rhizotomy by GammaKnife (GKRS, 13), glycerol injection (PGR, 10) and balloon compression (BCR, 3); there were no statistically significant differences in TTF between the three modalities as the average TTF for first treatment was 16 months. Repeated surgeries were required for 23 sides (88%) and included GKRS (24), PGR (19), BCR (25), microvascular decompression (MVD, 2) and open surgical rhizotomy (OSR, 4). There were no significant differences in TTF for the repeat procedures (average TTF for repeat GKRS, PGR, BCR, and MVD was 15 months) except for OSR after which no patients had recurrence of medically refractory MS-related TN (p-value < 0.05).

Conclusions
The surgical treatment of medically refractory MS-related TN is challenging. There is a high failure rate for minimally invasive rhizotomy surgeries while open surgical rhizotomy is most effective in providing long-term pain relief, even among patients with multi-recurrent pain.
Cancer heterogeneity among the elderly: Changes in incidence and stage presentation

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Introduction
The increasing older population is changing the demographic structure of Western society. The burden of cancer in the advanced age has been poorly investigated. We examined the changing incidence of cancer and the transformation in overall disease distribution among the elderly defined as the ‘young-old’ (age 65-74), ‘older-old’ (age 75-84), and ‘oldest-old’ (age 85+).

Methods
Data was extracted from the population-based Manitoba Cancer Registry for 1985–2013 for Manitobans aged 65+ at diagnosis. Registry data was combined with Manitoba Health registry data to produce age-specific incidence rates. Staging data began from 2004 onward and second cancers assessment began from 1956 onward.

Results
This study included 97,972 cancers diagnosed in 83,412 people aged 65 and older since 1985. The overall rate of cancer among males peaks at 3916 cases per 100,000 declines in the oldest old (annual percent change [APC] -9.7, age 94). Among females the rates increase to the oldest old (2360/100,000 cases) and diminish thereafter (APC -2.79, age 85). The rates of male colorectal cancer attenuate (APC 1.0, age 76 from APC 6.94) with advancing age and diminish among older women (APC -1.29, age 84). Similarly, male (APC -0.3, age 75) and female (APC -3.3, age 77) lung cancer rates diminish with advancing age. The incidence of female breast cancer (APC 0.3) and prostate cancer (APC 0.6) continue to rise with age. The younger old with colorectal cancer were more likely to be diagnosed with Stage III cancer compared with the oldest old (30 vs 22%, p<0.001).

Conclusions
Rates of cancer incidence do not rise indefinitely; rather, they attenuate and decrease. Consequently, there is a change in cancer distribution and stage presentation among the elderly. This should be accounted for in healthcare cost projections, for clinicians on the front-line, and for researchers in clinical trial development.
The impact of frailty on functional survival in patients 1-year post cardiac surgery

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Introduction
As the global population ages, a greater amount of older adults are presenting for cardiac surgery worldwide. These patients are often not only interested in survival, but also in attaining or maintaining a high health related quality of life (HRQoL) following surgery. Upwards of half of these patients are frail, and thus at increased vulnerability to stressors. The two most commonly utilized pre-operative risk predictor scores, the Euroscore II and the STS PROMM, are effective at predicting post-surgical morbidity and mortality but have not been shown robust in predicting post-operative HRQoL. We aim to determine if adding frailty measures to the Euroscore II improves prediction of 1-year functional survival.

Methods
In a prospective observational study in cardiac surgery patients, frailty was defined using the Modified Fried Criteria (MFC), the Short Physical Performance Battery (SPPB) and the Clinical Frailty Scale (CFS). The primary outcome was functional survival, defined as being alive at 1-year post surgery with an EQ-VAS score greater than 60, demonstrating good HRQoL.

Results
The proportion of our study's 188 participants deemed frail according to the MFC, SPPB, and CFS were 49.5%, 52.0%, and 31.9%, respectively. After adjusting for the EuroSCORE II, patients deemed frail under the MFC, SPPB, and CFS had an increased odds ratio for having poor functional survival of 3.44, 3.47, and 2.08, respectively. When compared to the Euroscore II alone, the MFC, SPPB, and CFS showed an absolute improvement in the discrimination slope of 6.7%, 6.5%, and 2.4% with a category free classification improvement of 59.6%, 59.2%, and 35.1%, respectively.

Conclusions
HRQoL at 1-year was significantly higher in preoperative non-frail patients when compared to the frail patients. The addition of frailty measurement tools to the EuroSCORE II significantly improves prediction of poor functional survival at 1-year post surgery, regardless of frailty definition.
EVALUATION & CERTIFICATE OF ATTENDANCE

As an accredited event, an evaluation of today’s Surgery Research Day 2016 must be completed at the end of the event. Your input is invaluable to help us know this event met your expectations and to enrich future Department of Surgery Annual Research Days for surgeons, fellows, residents, medical students, researchers and staff.

At the end of the on-line survey, a certificate of attendance will be available for you to save and print for your records. Instructions have been provided in the survey and on the Department of Surgery Research Day webpage. An email reminder will be sent to all participants following the event.

The survey will close February 17 2016.

*On behalf of the Surgery Research Day 2016 Planning Committee we appreciate your support and thank you for your time and collaboration.*

To complete the evaluation, please use this link or QR code:


The Annual Surgery Research Day 2016 evaluation link and QR code will also be available through our website until the survey closes:

[DEPARTMENT OF SURGERY RESEARCH DAY](#)
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