SURGERY
STRATEGIC CLINICAL NETWORK

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Our Mission:
Bringing patients, clinicians, administrators and policy-makers together to advance surgical care in Alberta.

In This Issue
- Surgery SCN Seed Grant Competition
- Non-Hospital Surgical Facilities—Implementation of Provincial Framework Underway
- Advanced Technical Skills Simulation Laboratory (ATSSL) — State of the Art Learning Environment for Surgical Teams
- Centre for the Advancement of Minimally Invasive Surgery (CAMIS)
- Data Highlighting Change
- Perioperative Services and Invasive Procedures Accreditation
- Formalin Surveillance Initiative
- Adult Coding Access Targets for Surgery (aCATS) Update
- Enhanced Recovery After Surgery (ERAS) Update

Surgery SCN Seed Grant Competition

From the 39 applications received, we are pleased to announce the results of the 2015 Surgery SCN Seed Grant Competition. This competition is designed to foster and strengthen the development of larger funding proposals that aim to improve quality of care for surgical patients through health services research and innovation.

Based on the combined scoring from the External Scientific Review Panel and the Surgery SCN Core Committee Review, the successful proposals include:

- Dr. Rachel Khadaroo, Elder-friendly Approaches to the Surgical Environment – Bedside reconditioning for Functional Improvements (EASE-BE FIT)
- Dr. Oliver Bathe, Development of an assay for a blood test for colorectal cancer and adenoma
- Dr. Prism Schneider, Does Reaming for Intramedullary Nail Fixation Affect Trauma-induced Coagulopathy Based on Thrombelastography
- Dr. Richard Baverstock, Characterizing differences in the long term health and healthcare utilization of men post-prostate cancer
- Dr. Eric Bédard, Translational application of microRNA profiling for early detection of lung cancer

As outlined in the program description, each of the proposals selected for funding will receive $10,000.

The External Scientific Review Panel and the Surgery SCN Core Committee would like to thank all of the applicants for their proposals. We were impressed with the breadth and scope of the research submissions.
Non-Hospital Surgical Facilities — Implementation of Provincial Framework Underway

A Non-Hospital Surgical Facilities (NHSFs) Provincial Working Group was formed in May 2014 to address recommendations from the audit reports from the Office of the Auditor General of Alberta (OAG) and AHS Internal Audit Services. Lead by the Surgery SCN, the Working Group was comprised of key stakeholders from Alberta Health (AH), the College of Physicians & Surgeons of Alberta (CPSA) and AHS with the mandate to:

1. Develop a provincial strategy for NHSFs which creates a governance framework under which AHS and NHSF business may successfully meet its objectives.
2. Clearly define roles and responsibilities of all stakeholders involved, including AHS, CPSA and the Alberta Dental Association & College (ADA&C).
3. Develop and define NHSF performance measures, including quality and outcome measures.
4. Formalize a structure and process for monitoring performance of NHSFs against defined performance measures and outcomes reported by NHSFs.
5. Clarify NHSF incident reporting criteria and establish an AHS NHSF incident reporting and management mechanism. This process will run in parallel with AH and CPSA incident reporting requirements and activities, but is streamlined, with knowledge sharing and coordination mechanisms between the organizations.

A provincial NHSF framework was developed and approved by the AHS Clinical Operations Executive Committee in April 2015. Implementation of the framework is now underway. For more information, please contact jill.robert@albertahealthservices.ca.

Advanced Technical Skills Simulation Laboratory (ATSSL) — State of the Art Learning Environment for Surgical Teams

The Advanced Technical Skills Simulation Laboratory (ATSSL), which opened in April 2014, provides inter-professional simulated educational opportunities in a realistic and safe environment. Simulation provides the opportunity to practice procedural, surgical, and clinical skills without the risk of harming a patient, while supporting knowledge transfer of best practices and research initiatives. ATSSL is a joint partnership between the University of Calgary Cumming School of Medicine and Alberta Health Service’s eSIM Provincial Simulation Program. The ATSSL Surgical Simulation Lab and associated classrooms are located on the Basement Level of the Health Research Innovation Centre at the University of Calgary.

The Surgical Simulation Lab has 20 simulated Operating Room stations equipped surgical beds and tables, overhead operating room lighting, dual LED monitors, ceiling supply units, and surgical scrub sinks. Four of the stations contain in-line cameras allowing for the display of real-time imaging throughout the lab and classrooms. Integrated cameras offer the opportunity to video-record educational sessions. This area can accommodate one large group or be configured to smaller spaces for simultaneous education sessions. The Simulation Lab is also equipped with a fully functional reprocessing area to clean and sterilize instruments.

The two classrooms located within the ATSSL have the capacity to seat up to 30 participants and provide wireless internet access, LCD projectors and in-ceiling speakers, videoconference capabilities, and remote viewing into the Surgical Simulation Lab.

For more information on how to access and book the ATSSL, please contact George Mulvey gmulvey@ucalgary.ca.
Centre for the Advancement of Minimally Invasive Surgery (CAMIS)

The Centre for the Advancement of Minimally Invasive Surgery (CAMIS) which is based at the Royal Alexandra Hospital in Edmonton, is one of a few Canadian centers that supports instruction, research and leadership in minimally invasive surgery. Minimally invasive surgery (MIS) is less invasive than traditional surgery and results in less blood loss, fewer wound complications, faster recovery, and shorter hospital stays.

Established in 2005, the services that CAMIS provides are comprised of three main parts:

- **Teaching:** CAMIS has developed an MIS resident training curriculum and provides a centralized training site for professional development in MIS techniques for surgeons, residents, nurses, and allied health providers.
- **Clinical:** CAMIS ensures patients in Edmonton and area have access to safe, leading-edge MIS surgery.
- **Research:** CAMIS leads research in MIS training and clinical experience.

“Our greatest achievement has been the ability to not only provide these services to the healthcare environment for over 10 years, but to also expand the range of services provided,” said Dr. Daniel Birch, who leads the program.

Dr. Daniel Birch, currently a Professor in the Department of Surgery, University of Alberta, was recruited by Alberta Health Services in July 2004 to lead the development of a centre of excellence in minimally invasive surgery. “They recruited me to be a driver for minimally invasive surgical techniques and to try and develop education programs for surgeons, residents and nurses,” he said.

One of the more significant achievements of CAMIS is the establishment of an Academic Fellowship Program for Advanced Minimally Invasive/Bariatric Surgery under the auspices of the University of Alberta Faculty of Medicine and Dentistry, and Alberta Health Services, Edmonton Zone. This program provides advanced training for qualified surgeons who wish to expand and further their skills in minimally invasive and bariatric surgery in a combined clinical, research, and educational experience. “This is the only MIS – Bariatric fellowship program in Canada that is accredited by the Minimally Invasive Surgery Fellowship Council and the American Society for Metabolic and Bariatric Surgery. So it’s a very high profile program and requires a tremendous amount of support in terms of programming and human resources. Through it we train one surgeon every year and we have done so since 2005.”

“We also have another high profile accreditation,” said Dr. Birch, “we are now a test centre for a special program called Fundamentals of Laparoscopic Surgery (FLS).” FLS, in addition to FES/FUSE (Fundamentals of Endoscopic Surgery/Fundamental Use of Surgical Energy), is the internationally-recognized, competency-based trifecta educational and testing program applicable to OR, endoscopy or other procedural environments.

Keith Andony, CAMIS Manager, stated that “the simulation based hands-on training that CAMIS provides has created a cohort of some of Canada’s best trained young surgeons and nurses, and many of these individuals take their MIS skills throughout the province and Canada.”

Andony further attests that “In the recent national hospital ratings by the CBC, the Royal Alexandra Hospital was also recognized for its role in the expansion and development of minimally invasive surgery. CAMIS sees this national recognition as a shared honour with all supporters in the Universities of Alberta and Calgary, Alberta Health Services, and industry partners.”
Chinook Regional Hospital (CRH) is taking part in an international program to improve surgical outcomes by analyzing patient data to change practices.

The National Surgical Quality Improvement Program (NSQIP) was developed by the American College of Surgeons. NSQIP has proved a success in the U.S., reducing post-op complications in U.S. hospitals and reducing costs of millions of dollars.

NSQIP stats show participating in the program prevents 250 to 500 complications per hospital per year. The savings are significant as the average cost per complication is more than $11,000 US.

But before similar results can be achieved in Alberta hospitals, the data needs to be compiled, says Donna Nordin, surgical clinical reviewer for the program at CRH.

“We won’t know what our goals are until we are able to look at the data over time; then we will review what it is we want to change,” Nordin says. “Goals may include such variables as, ‘Do we want to see a 25 per cent decrease in infection rates overall, or in a specific specialty or procedure? Pulmonary embolisms — do we have any? Hopefully, we will be able to see reports from the web-based application by this summer.”

The program follows surgical patients before and during surgery for 30 days post-op, tracking each person’s variables (from a possible list of 239), such as age, height and weight, chronic conditions, gender and history. Everything is documented in a NSQIP application which can be accessed 24 hours a day. If complications occur — infection or blood clots, for example — the app correlates the complication with the patient’s variables, compiling the information to reveal where trends may lie.

CRH surgery, nursing and anesthesiology departments are contributing to the data collection. “Patient care is a collaborative process, and unless you have examination of all aspects of a patient’s care flow through the system, you’ll end up missing important points of how to improve their care and certain quality initiatives,” says surgeon Dr. Luke Szobota. “If we look at just some of the specific surgery things, but ignore, say, the anesthetic component, we may miss areas where we can potentially improve.”

Anesthesiologist Dr. Melissa Setiawan agrees. “It’s a good opportunity to bring surgery, anesthesiology and nursing together,” she says. “We’re all patient advocates, but I think it solidifies that common goal. And rather than separate everybody, we all work together as a team.”

The program has been funded for a 30-month trial by the Surgery Strategic Clinical Network at five pilot sites in Alberta. In addition to CRH, they include the Rockyview General Hospital, Red Deer Regional Hospital, University of Alberta Hospital, and Grande Prairie Regional Hospital.

“We complete a random sampling of 40 cases during a cycle of eight days,” Nordin says of the project at CRH. “I choose from orthopedics, general surgery, gynecology, plastics, ear-nose-and-throat, and urology. I’m also communicating with an infection control practitioner, to see if her data collection correlates with mine.”

Once data is gathered, trends can be compiled. The reports allow staff to compare their outcomes to other participating sites, as well. “More importantly, we may find out from these reports that we’re doing a really good job,” Nordin says.

For more information regarding NSQIP in Alberta, contact stacy.kozak@albertahealthservices.ca.
Perioperative Services and Invasive Procedures Accreditation

Accreditation of AHS Perioperative Services and Invasive Procedures became an annual Accreditation survey requirement in 2015. Each year, the Perioperative Accreditation survey will focus on a different surgical population within AHS and will include the entire continuum of surgical care from preoperative to intra-operative to post-operative care and recovery in the community.

Alberta Health Services (AHS) Provincial Perioperative Services and Invasive Procedures (Perioperative) Service Excellence Team (SET) is responsible for developing strategies to support implementation of the Accreditation Canada Perioperative standards across surgical services in Alberta. The SET compares AHS surgical services and practices against nationally recognized standards of excellence from Accreditation Canada. The SET develops and provides resources, tools and/or guidelines based on best practice, to support zone implementation of strategies to meet Accreditation Canada standards. The SET promotes staff understanding and recognition that accreditation is a key component of day-to-day work and ongoing quality improvement.

May 2015 Accreditation Results

In May 2015 the focus for AHS surgical services accreditation was the continuum of Hip and Knee Arthroplasty care across Alberta. The Accreditation Canada Surveyors were very impressed by the results achieved; and the Hip and Knee Arthroplasty Clinical Pathway was suggested as a national leading practice that is innovative and creative; client/family-centered, valid and reliable, sustainable, and adaptable by other organizations. The survey indicated there are some areas for improvement, including: infusion pump training, falls prevention, pressure ulcer prevention, and considerations around the implementation of the safe surgery checklist. A huge congratulations goes out to all of you, who represent surgical services in Alberta, the Hip and Knee Arthroplasty program across Alberta for all you do every day to make this work so valuable and successful for all Albertans. A special thank you to all front-line clinicians, the Alberta Bone and Joint Health Institute, the Bone and Joint SCN, Central Intake Clinics, and many more who make this work successful every day!

May 2016 Accreditation: General Surgery (Urban & Regional) - Work Underway

The focus for 2016 is Urban and Regional General Surgery in Calgary, Edmonton, Red Deer, Medicine Hat, Lethbridge, Grande Prairie, and Fort McMurray. In 2017, the focus will be on Rural General Surgery. The 2016 Accreditation Canada survey will occur over 5 days in May 2016.

The Team

The Surgery SCN is starting to prepare for the 2016 Accreditation Canada survey by forming a provincial Service Excellence Team (SET) composed of representatives from each zone and the AHS facilities that provide care to general surgery patients; as well as relevant external stakeholders and patient/family advisors. This team will review the results of the self-assessment surveys, identify any gaps in compliance with Accreditation Canada Perioperative Services and Invasive Procedure Standards, and develop and facilitate site implementation of action plans to address any gaps.

For further information, please contact michelle.salesse@albertahealthservices.ca.

Formalin Surveillance Initiative

Workplace Health and Safety, in collaboration with the Surgery SCN and the Surgical Operations Support (SOS) group, is conducting exposure assessment for workers that pour formalin in the OR Surgical Suite area.

The initiative was prompted due to concerns about potential overexposure raised by staff and hospital administration. The occupational surveillance quantifies exposures and compares them to legislated allowable limits.

This type of sampling is a proactive measure that can contribute to a positive safety culture, but also provides an opportunity to make improvements and ensure consistent work practices across all Zones.

A number of locations, where pouring in the OR occurs, have volunteered to participate in this study. A final report will be completed by late July, 2015.
**Adult Coding Access Targets for Surgery (aCATS) Update**

Adult Code Access Targets for Surgery (aCATS) is a provincial project aimed at helping surgeons deliver surgical care in a safe and timely manner. aCATS is a standardized system to help prioritize the booking of surgeries, depending on a patient’s the diagnosis and level of urgency. For physicians, it means they can deliver the right treatment at the right time, from the time a decision for surgery is made to the surgical date.

**Surgeon Advisory Group**

aCATS is developing a Surgeon Advisory Group that will provide leadership and guidance for aCATS optimization. Comprising 8-12 surgeons, this group will help guide the strategic direction of aCATS. Through their advice and leadership, we will improve the quality of the data and establish a sustainable future for aCATS.

This group will meet monthly with the mandate to:

- Represent surgeons across Alberta regarding aCATS;
- Provide input on decisions regarding surgical waitlist tools, aCATS spread and aCATS optimization strategies;
- Validate aCATS codes across services; and
- Provide recommendations of the direction of surgical access beyond aCATS.

Questions and comments regarding this group can be sent to bryan.atwood@albertahealthservices.ca.

**Surgeon Waitlist Report**

Surgeons, Medical Office Assistants (MOAs), and booking offices have provided their input on the current surgeon level reports: improvements are needed.

We have designed a new surgeon waitlist report that improves upon the limitations expressed by the feedback groups. This report will show the surgical waitlist from Decision to Treat, not Ready to Treat. The goal is to create a useful scheduling tool for the surgeons to aid in the decision making process regarding their surgery schedules.

We will run a pilot at the end of September at selected sites in the Edmonton Zone. We will determine if this report meets our overarching goal and make changes as necessary. We are hoping to roll this out in November.

**aCATS Sustain and Spread**

aCATS is officially in the South Zone! On April 1, 2015, aCATS implementation started at the Chinook Regional Hospital in Lethbridge for plastics and urology. aCATS has expanded to include two more services, and more services are expected to implement aCATS by Fall 2015:

**Spread Timeline:**

- April—Plastics and Urology
- June—Obstetrics/Gynecology and ENT
- July—Orthopedics and Ophthalmology
- September — General Surgery

**Code Update**

The aCATS 2014/15 annual code update is now complete. AHS Surgical Division Chiefs, with support by the aCATS team, made nearly 2000 individual changes in 13 services. The team worked with surgeons, MOAs, booking office staff and technical teams to recode over 3000 patients on current waitlists to reflect the new codes.

This update focused on three main areas:

- Standardizing diagnosis descriptions across services;
- Removing duplicate codes; and
- Creating missing codes.

The team has distributed the updated code book. A digital version is available by contacting bryan.atwood@albertahealthservices.ca.
**Enhanced Recovery After Surgery (ERAS) Update**

Partnering with patients is at the heart of ERAS Alberta. The overall goal is to help patients stay strong, improve recovery times, reduce complications, and create a better patient experience. ERAS patients get back to their home, work and play sooner through an evidence-based pathway that includes changes to anesthesia and surgical care practices. Key changes include: patient education, enhanced perioperative nutrition, goal-directed fluid therapy, multi-modal medication management, and an ERAS mobility protocol. Most importantly, the patient and their family are actively involved before and after surgery to enhance the recovery process.

ERAS Alberta has three components:

1. The **ERAS clinical pathway** – an evidence-based pathway comprised of 22 clinical practices that are recommended before, during or after surgery to mitigate the surgical stress response.

2. The **ERAS Interactive Audit System** – a software solution that captures data and provides reporting to healthcare providers on compliance with the pathway, patient outcomes and length of stay.

3. An **implementation model** that supports site-based ERAS teams with provincial coordination and leadership.

ERAS resources are available to the public on AHS’ [external website](http://www.ahealthservices.ca), which includes an archived [webinar](http://www.ahealthservices.ca) from the project coordinators explaining the various components and how the project is rolling out within AHS.

**Analytics**

A hybrid of the ERAS Interactive Audit System (EIAS) and the Discharge Abstract Database (DAD) provided by Analytics (DIMR) is used by the provincial team. The EIAS system serves as the primary analytics platform for the care teams at their bi-weekly quality improvement meetings. Patient data is entered by ERAS coordinators directly into the EIAS database. A dashboard of performance metrics as well as detailed views of trends, compliance, and outcomes is updated every 24 hours so staff can see today’s performance tomorrow. This information allows the ERAS interdisciplinary core teams to see where they are doing well and where improvement is required with regards to patient outcomes, compliance with the pathway, length of stay and other quality measures.

A recent improvement example comes from the Foothills Medical Centre, which had a 14% post-operative urinary tract infection (UTI) rate. The local site coordinator analyzed data from the EIAS and did an additional observational audit to identify the primary cause for this complication (catheter insertion and removal technique). Within three months of providing education and training on proper catheter insertions and timely removals, the site’s UTI rate declined to 2%.
ERAS Update Continued

Results

Alberta is only the second jurisdiction in the world to implement ERAS at the health system level. Other than AHS and the United Kingdom’s National Health Service, implementations have only taken place at individual hospitals or with individual surgeons.

To date, the ERAS clinical pathway has been applied to over 1,800 colorectal surgery patients across the six Alberta implementation sites with the following results:

- Average hospital length of stay has decreased by 18% (see below), which translates to a $2,000 cost reduction per ERAS patient. Practically, this improvement has freed up almost 3,000 total bed days, thus creating the capacity for additional surgeries without having to add a single new bed.
- Major surgical, lung or heart complications have declined by 20%.
- Average readmission rates have dropped from 12% to 11%.
- Patient experience has increased.
- Overall, compliance to the 22 clinical practices has improved from 50% to 70%, making Alberta one of the highest performers worldwide.

Note: A 100% compliance rate is not practical as individual patient characteristics, co-morbidities, etc. can preclude certain interventions. In consultation with clinicians, the Alberta target has been set at 80%.

What’s Next?

As of May 1, 2015, the Surgery SCN has taken over management of ERAS within AHS and is planning to expand implementation beyond the current six sites. As more sites are requesting to use the ERAS clinical pathway, ERAS Alberta will:

- create a provincial program to allow new sites to implement and sustain ERAS;
- create templates and toolkits for new sites with online information, tips and tricks;
- establish a streamlined ERAS Alberta audit capability using a hybrid of DAD and EIAS data;
- continue leading learning collaboratives to share data successes and challenges, site ERAS scorecards and action plans built around the six dimensions of quality; and
- expand ERAS to additional surgical procedures (starting Fall 2015).

For more information about ERAS, contact jeannette.lawrence@albertahealthservices.ca.