I am pleased to present this issue of the Department of Surgery (DOS) newsletter. As you will see, the DOS continues its focus on excellence in clinical work, scholarly research and dedication to education and training. We continue to expand our faculty and engage our community partners as we actively drive innovative approaches to care delivery through integration with medical subspecialties such as cancer, gastrointestinal diseases, vascular diseases, and trauma and critical care, to name just a few. The expertise of all of our surgeons, combined with leading-edge technologies, translates into shorter hospital stays and better outcomes for our patients. This steadfast commitment to exceptional patient care combined with the pursuit of scientific discovery will be the cornerstones of the DOS as we move forward.
The educational programs in the Department of Surgery continued to strengthen and grow this year. We received endorsement from the ACGME for the expansion of approved residency positions to 25 (five per year), and welcomed our first class of five this summer. We wish to welcome our new residents and fellows!

We also wish our graduated chief residents all the best as they all proceed on to fellowship training.

**Enrico Danzer** – Pediatric Surgical Oncology, Memorial Sloan-Kettering Cancer Center, New York, NY

**Allison Key** – Trauma/Critical Care, Washington Hospital Center, Washington, DC

**Matthew LaPorta** – Trauma/Critical Care, Inova Fairfax Medical Campus, Falls Church, VA

**George Younan** – Hepatobiliary Surgery, University of Wisconsin, Madison, WI

The opening of the new Advanced Surgical Technology and Education Center (ASTEC) one year ago has allowed us to mature our weekly formal skills curriculum for the residents. New this year is the addition of a weekly basic skills simulation curriculum for our rotating VCU medical students. For the first time this summer, the DOS partnered with the Departments of Obstetrics/Gynecology and Podiatry in a combined, formal, two day surgical boot camp for our incoming residents. It covered topics ranging from basic surgical skills, introduction to the operating room, and standard on-call scenarios. Based on the strong positive feedback from learners and educators alike, this promises to grow and expand in the future.

The production of scholarly activity by our residents continues to grow as well. Over a third of our residents contributed original research to the second annual Graduate Medical Education Quality Symposium in May. We congratulate our chief resident, Ashley McCusker, MD for placing second in the presentation competition with her work on ICU feedings. This work was also presented at the resident paper competition of the American College of Surgeons Committee on Trauma, and will be presented this September at the annual meeting of the American Association for the Surgery of Trauma (AAST). Also, we congratulate Libby Copeland-Halperin, MD for her presentation of her work on wound cultures this past October at the American College of Wound Healing conference, and the acceptance of her work on the yield and necessity of blood cultures to be presented this October at the Clinical Congress of the American College of Surgeons. Finally, we are deeply appreciative of the tireless educational efforts of all our surgical faculty, residents, midlevel providers, and staff. Their dedication and commitment to teaching are what drives the continued excellence this program enjoys, and will continue to enjoy, as together we mold the surgeons of the future for this community and beyond.
As we all realize the importance of quality and safety, not just for the well-being of our patients, but also for the effects that unexpected results have on the hospital and our own practices, it becomes evident that we need to pay more attention to the data being generated. Recently, ProPublica published complication comparisons for 17,000 surgeons. Centers for Medicare and Medicaid Services (CMS) rates hospitals, as well as US News and World Report, and now surgeon outcomes are becoming public information. For those of you who have not reviewed the results online, the data can be misinterpreted by any patient or organization who downloads it. We want the Department of Surgery to have access to and interpret accurate data, both for the DOS, and ultimately for the individual surgeons.

One method for sharing this is the use of a “dashboard” which will be available for all to review. The data will be updated at least quarterly to reflect the values that CMS, Inova, and the DOS deem important. We will utilize these results to design procedures and methodologies which can lead to improvement where necessary. Most of these data come from our administrative database and depends on your proper documentation for accuracy.

As you should know, we are one of over 600 hospitals participating in the ACS National Surgical Quality Improvement Project (NSQIP). You can use this for Maintenance of Certifications (MOC) and when applying with CMS for Value Based Purchasing as a quality measure. The data from 2014 for all participating hospitals became available in June, and we have done well overall. We still have two areas of significant concern and deserving improvement.

Our overall Surgical Site Infection (SSI) rate was 4.65% with an expected rate of 3.73%. This places us in the 8th decile or below. The second area of continued disappointment is our Venous Thromboembolism (VTE) rate. Despite all our education and attempts to improve, our VTE rate for general surgery in 2014 was 1.24% with an expected rate of 0.82%, which places us in the lowest (10th) decile. The good news is our mortality rate is right in the middle (5th decile), and our rate of sepsis (not SSI) is very low.

We also belong to the Virginia NSQIP collaborative, which includes University of Virginia (UVA), Virginia Tech Carillion, and Winchester Valley Health. We have the lowest risk-adjusted mortality and incidence of sepsis in the state, while even state-wide we rank low in VTE and SSI. We are continuing to make progress in these areas and need to continue to pay more attention to the two areas of concern.

The new introduction of the Caprini risk score into pre and post-operative order sets may help surgeons decide on the appropriate VTE prophylaxis and may help bring our rates down. Finally, although no operating unit has achieved its goals for the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), our scores on the 11th floor have continued to improve in multiple areas, especially communication with nurses (81.3%= 80th percentile) and communication with doctors (also 81% but only 48th percentile). If you have a problem, think we should be doing something better, or think we are doing something really well, please let us know.

AND REMEMBER TO WASH YOUR HANDS!!!

The graph below represents the hard work performed by the Peer Review committees for General, Colorectal and Vascular Surgery. This committee is composed of senior surgeons who meet monthly to carefully review all complications. The committee maintains objectivity, using evidence as well as clinical data to come to consensus. Of the more than 150 cases reviewed by the committee, only two were deemed “deviation from standard of care”, while the majority were deemed to be appropriate.
The treatment options for cancer patients at Inova have recently been expanded by the establishment of a Hyperthermic Intraperitoneal Chemotherapy (HIPEC) program led by Dr. Lana Bijelic, MD Medical Director of Surgical Oncology. This was a true multidisciplinary team effort that started with bringing together and training members from operating room and oncology nursing, anesthesia, pharmacy, perfusion services and the ICU. The availability of ASTEC proved to be an invaluable asset to train the team and simulate the procedure. The team felt ready and performed the first cytoreductive surgery with HIPEC procedure for a young patient with advanced appendiceal cancer on in June of 2015 without complications. The program has continued to treat more patients since June and is expecting continued growth in the future.

The division of research has maintained a high level of activity since the beginning of 2015 including opening of new industry-sponsored and investigator-initiated studies, support of resident education and academic development and some structural and personnel changes. We have welcomed Mallory Frasier, MS, CCRC and Jeff Wright, MPH as Clinical Research Associates and Erica Emery, MS as a Project and Research Coordinator. Dr. Bijelic took over as the Director of the Research Division in April 2015. The division currently oversees 5 actively enrolling studies, 30 retrospective studies and 12 studies in the process of data analysis. The division is currently working on strengthening the review process for proposed studies prior to IRB submission and enhancing the level of support for new investigators by developing multiple protocol templates.

Erica Emery joined the research office in July as the new Project and Research Coordinator. She received her BS in Biology and her MS in Biostatistics from McGill University in Montreal, Quebec, Canada. She worked as an academic research assistant before moving to the US last year.

Mallory Frazier joined the Department of Surgery research office as a research coordinator in March 2015. She received her B.S. in Psychology from the University of Mary Washington, and her M.S. in Neuroscience from Texas A&M University. Mallory has worked in clinical research for the past 6 years focusing on research related to stress, pain, new medications, and traumatic brain injury. She is looking forward to working on funded studies with the department.

Jeff Wright is the new clinical research coordinator in the Department of Surgery research office. He originally joined the department in August of 2013 as the Project and Research Coordinator. He received his B.S. in Biology from the University of Virginia, and his M.P.H. in Epidemiology from Virginia Commonwealth University. He is looking forward to working on all funded research projects within the department.
Research Highlights

General Surgery Resident Research Day
Inova Fairfax Medical Campus
Wednesday June 3rd, 2015

Post-Graduate Year 5
Enrico Danzer – Abnormal neuromuscular development of the eviscerated intestine in gastroschisis: Experimental and clinical evidence
Allison Key – Reducing length of stay in colectomy patients utilizing an opioid sparing pain management protocol
Matthew LaPorta – Early mobilization in the colorectal surgery population as a strategy to reduce deep vein thrombosis and pulmonary embolism

Post-Graduate Year 4
Alexander Kaminsky – The periosteo-cutaneous flap for distal fingertip injuries
Sina Khoshbin – Evaluating the relationship between the lunar cycle and emergency surgical volume
Ashley McCusker – Prospective evaluation of nutritional adequacy of volume-based enteral feeding in a single center trauma/surgical ICU
Carolina Solis – Nicaragua surgical and anesthesia infrastructure: Survey of Ministry of Health hospitals

Post-Graduate Year 3
Charles Ghee – Liposomal bupivacaine for multiple rib fractures
Rachel Mathis – Intraoperative assessment of resident technical skills
Katherine Renner – Looking at laparoscopic approach to small bowel obstruction
Esther Yim – The consequences of colorectal anastomotic leaks

Post-Graduate Year 2
Natalie Banks – Implementation of a standardized protocol for the treatment of refractory and recurrent *Clostridium difficile* infection
Libby Copeland-Halperin – Re-evaluating the role of blood cultures in the evaluation of postoperative fever
Courtney Grant – Massive gastrointestinal bleeding: A clinical pathway for the Inova Fairfax Medical Campus
Edward Wills – Prophylactic alpha-blockade for postoperative urinary retention after inguinal hernia repair

Post-Graduate Year 1
Tyler Bernaiche – Multimodality pain management in outpatient inguinal hernia and laparoscopic cholecystectomy patients
Alex Cheah – Surgical bronchoscopic training: Expanding the surgical resident curriculum
Cecelia Esteban – Addition of gabapentin to the pain medication regimen in patients with rib fractures
Shkala Karzai – Primary tumor location and pattern of lymphatic spread within the neck
The information below concerns all surgeons at IFMC. The changes described are aimed at addressing many concerns you have expressed over the last few years. In the summer 2014, a new perioperative leadership structure was created. Based on best practices nationwide, we are in the process of making significant changes which will result in improved surgical care for your patients.

The key to accomplishing these changes involved the development of a new operational and governance structure for the perioperative area. Our goals include:

1. Develop a new governance structure for the perioperative area (Surgical Services Operational Council - SSOC)
2. Redesign block rules to address improved access to the ORs and increased block utilization and allocation
3. Redesign Pre-Surgical Services to include early management of patients at the time of scheduling, improved navigation among medical providers of complex patients, and risk reduction strategies to improve surgical outcomes.
4. Improve operational efficiency
5. Improve surgeon and patient satisfaction

New Perioperative Governance Structure

Based on best practice recommendations and experience at like-sized hospitals, the Surgical Services Operational Council (SSOC) assembled in January is a collaborative, data-driven operations committee that will provide the framework for leading sustained cultural changes. The committee will determine operational decisions for all perioperative services delivered at IFMC.

Structure of the Committee: The SSOC is comprised of 12 surgeons, 2 anesthesiologists, 1 OR nursing director and administrative personnel including the COO/CEO/CNE. The co-chairs for the committee are the Medical Director of Perioperative Services (Dr. Mesrobian) and the Chairman Department of Surgery (Dr. Moynihan). Physician representatives were chosen based on their familiarity with working in the ORs, close understanding of operational issues, and to represent specific service lines. The SSOC creates operational rules, reports to the COO/CEO, and informs the Surgical Leadership Council of actions. Supporting structure of the committee is through the analytic department of OR support services. The block committee reports directly to the SSOC. Other subcommittees will be developed in the future to facilitate decision block utilization reports.

In July, IFMC began sending monthly block utilization reports to all surgeons working at MOR, ASC and WBSC. The addition of IHVI and SCW surgeons will follow shortly. Data in these reports comes directly from EPIC and accuracy has been verified by the analytic department at IFMC. The reports include block utilization, case volume, out of block (OOB) minutes, add-on volume and metrics such as turn over time (TOT) and On-Time Starts (OTS) –specific for each surgeon or group block of surgeons. If you have not received your report via email, please contact Dr. Mesrobian.

New Block Rules effective August 1, 2015

Specialty specific block release dates:
- Unused block will be reclaimed automatically if no patient is scheduled.
- Credit for block release has been changed to 28 days (4 weeks) before surgery.
- No credit will be given for any release inside 28 days.
- New blocks will only be 8 hour blocks at ASC/MOR, and can be 4 or 8 hours at WBSC.
- Available for all specialties other than those with an existing urgent room

Block utilization:
- Must be >70% for 4 out of 5 months.
- Additional daily 8-hour urgent room with a 3 day release

Reclaiming block:
- Done after notification and discussion with the surgeon
- Alert notices will be sent when utilization drops to <70% for more than 3 months contiguous
- Block will be reclaimed if utilization drops to < 50% for more than 3 months
- Block is reclaimed in units of 8 hours – not splitting in 4 hour blocks

New surgeons – must have track record of 3 months of scheduled cases before block can be awarded

We are making progress, but we need your help to sustain our improvements. Any questions on this report should be directed to either Dr. Mesrobian (703-776-8994, Robert.Mesrobian@inova.org) or Dr. Moynihan (703-776-3563, John.Moynihan@inova.org)
It is hard to believe that it has been over a year since the opening of the new location for the Advanced Surgical Technology and Education Center on June 12, 2014. One year later ASTEC is running at 92 percent capacity, has a full time manager, senior simulation technician, biostatistician/epidemiologist and a senior administrative coordinator. If you have not met Frank Piscitani, Larry Walker, Amber Trickey or Brianna Miller I encourage you to stop by the center. They are directly responsible for the tremendous level of service ASTEC provides.

Education:
ASTEC is the home to multiple recurring simulation and educational events. The General Surgery, OB-GYN and Podiatric Surgery residencies all have weekly or bimonthly time in the center for their year-long skills training curricula. The second group of perioperative nurse fellows are already well into their training in the realistic simulated operating room environment; the ASTEC facilities have greatly expanded the capacity and flexibility for training our novice OR nurses. A combined boot camp event which pooled the resources of the Surgery, OB-GYN and Podiatry faculty was held during new resident orientation to ensure that all interns for the surgical and procedural specialties started out their residency with a common knowledge base.

Peter Wu, MD has spearheaded the frequent multidisciplinary OR simulation events to train and refresh staff knowledge on intraoperative emergencies. One of ASTEC’s high-fidelity ORs was the setting for a dry run by Surgical Oncologist Lana Bijelic, MD and the team that performed the first IFMC HIPEC case.

Globus Medical hosted a 6 station cadaver lab to train spinal surgeons from across the country in a new fusion technique. We will host a skull base surgery cadaver course this fall directed by Nilesh Vyas, MD.

Research, Innovation and Technology:
The American College of Surgeons has recently designated ASTEC as a fully Accredited Education Institute (AEI). Since the ACS launched the AEI program in 2005, they have set standards for surgical education and training offered at Accredited Education Institutes. Their goal is to promote patient safety through the use of simulation, develop new education and technologies, identify best practices, and promote research and collaboration among our institutes. The AEI consortium also evaluates the impact of education through long-term follow-up of learners and analyzes how to best incorporate aspects of surgical research into surgical education. The accreditation process is extremely thorough, and most centers do not receive full accreditation on their first attempt. ASTEC is one of only 75 simulation centers in the United States to be accredited by the ACS.

Earlier this year, ASTEC received the Health & Life Sciences Innovator of the Year award, presented by the Fairfax County Chamber of Commerce. Presented to a Greater Washington area organization exhibiting excellence in healthcare and life science work, this award recognizes innovative products or processes that have a significant impact in the community.

Our collaboration with the College of Education and Human Development, Division of Learning Technologies at George Mason University led to a successful joint simulation organized by Brenda Bannan, PhD. This group included partners from Fairfax Fire & Rescue, the Inova Fairfax Hospital Emergency and Trauma departments, ASTEC, and multiple technology innovators. This first of its kind longitudinal simulation was submitted to the National Institute of Science and Technology Global City Teams Challenge project "Ecosystem for Smart Medical Team Training" and presented at the National in Washington, DC this past June. This project has recently received additional funding to continue the research.

Our recent technology acquisitions include the Human Patient Simulator adult and child mannequins. These amazing patient simulators can be programmed to display realistic physical exam findings and physiologic responses to most clinical scenarios. They will even automatically respond to drug and anesthesia gas administration. If you would like more information on ASTEC’s capabilities, or to schedule time in the center please contact ASTEC at (703) 776-2040.
ASTEC’s Talented Student Intern

We are fortunate to have an outstanding student from Thomas Jefferson High School for Science and Technology, Joshua Holtzman. Josh received an Inova Health System Summer Student Research Grant Award in May 2015. The summer research project evaluates the feasibility of using 3D printing to create surgical education models for use in simulation skills training.

Did You Know?

- Flu shots will be available starting September 1st. A clinic will be held in the DOS on September 30th. The deadline for mandatory flu shots is 10/31/2015.
- The Employment Engagement (Pulse) Survey will be live from 9/9/2015—9/24/2015. Please complete your survey and help the DOS achieve a 100% participation rate.
- TB Screenings and mask fit testing are due for all employees during their birth month.
- HealthStream education modules have assigned due dates. Please check your individual HealthStream account and be sure your training is up-to-date.
From the inception of the American College of Surgeons in 1913, surgeons have been committed to answering the question “How can we provide the best surgical care for our patients?” This is the essence of clinical effectiveness—providing value both in terms of quality of care and resource utilization. Patients and payers are demanding that we demonstrate our outcomes. Last month’s release of the ProPublica surgeon specific complication rates and cost data is a prime example of this overwhelming demand for data. Payer reimbursement and patient referrals are increasingly being tied to outcomes.

For 2015-2016, IFH Department of Surgery clinical effectiveness efforts have been focused on tracking our outcomes for specific clinical conditions. In collaboration with quality, the DOS has created a scorecard tool to track and trend our critical quality outcomes and processes to reduce patient safety indicator (PSI) events, hospital-acquired conditions (HACs) and other outcomes.

Multidisciplinary teams have been focused in 5 areas including decreasing surgical site infections (SSI), venous thromboembolism (VTE), C. diff. infections, length of stay and 30-day readmissions. Some examples of this work include: colorectal efforts to reduce ileostomy 30-day readmissions culminated in decreasing readmissions in Q1 2015 to less than 10%; resident-led efforts to increase early ambulation in the post-anesthesia care unit have been very successful. This summer and fall, efforts are focused on decreasing surgical site infections.

**SCORECARD METRICS:**

- Volume (Inpatient)
- PSI 90- All of Surgery (NOT including Cardiac)
- PSI #3 Pressure Ulcer
- PSI #6 Iatrogenic Pneumothorax
- PSI #7 Central Line-Associated Blood Stream Infections
- PSI #8 Postoperative Hip Fracture
- PSI #9 Perioperative Hemorrhage
- PSI #10 Postoperative Physiologic and Metabolic Derangement
- PSI #11 Postoperative Respiratory Failure
- PSI #12 Postoperative Venous Thromboembolism (Deep Vein Thrombosis / Pulmonary Embolism)
- Hospital-Acquired Conditions
- Catheter-Associated Urinary Tract Infections
- Gastric Surgical Site Infections
- Colon Surgical Site Infections
- Mortality
- 30-Day Hospital Readmission
- HCAHPS Communication with Doctors
- HCAHPS Pain Management
- C. Diff for South Tower 11
Publications


Dort JM, Trickey AW, Kallies KJ, Joshi ART, Sidwell RA, Jarman BT. Applicant characteristics associated with selection for ranking at independent surgery residency programs. *Journal of Surgical Education* 2015, in press.


Presentations

Cohen R. Recent Advances in Breast Cancer Care. *GS Grand Rounds, Inova Fairfax Medical Campus.* March 4, 2015, Falls Church, VA.


Dort JM, Graling PR. Spaced Education for Safety Excellence. *AORN EXPO and Congress.* March 2015, Denver, CO.

Dort JM, Trickey AW, Kallies KJ, Joshi ART, Sidwell RA, Jarman BT. Applicant characteristics associated with selection for ranking at independent surgery residency programs. Poster presented at the Association of Program Directors in Surgery meeting, April 23, 2015; Seattle, WA.

Edmiston K. Breast Cancer Care in Low Resource Environment. *GS Grand Rounds, Inova Fairfax Medical Campus.* Jan 21, 2015, Falls Church, VA.

Franco E. Small Bowel Obstruction: The Sun Has Risen, Now What? *GS Grand Rounds, Inova Fairfax Medical Campus.* May 13, 2015, Falls Church, VA.


Graling PR. Introduction to Simulation in the Perioperative Environments. *AORN of Northern Virginia, Chapter meeting.* Feb 2015, Falls Church, VA

Graling PR. Levels of Evidence, Quality Rating Scales, Evidence Summary table. *Inova Evidence-Based Practice Fellowship Program.* April 2015, Falls Church, VA


Graling PR. Optimizing the use of 2%CHG cloth baths to reduce SSI. *AORN Executive Leadership Series at EXPO.* March 2015, Denver, CO

Graling PR. Using Simulation to develop safe surgical teams. *Virginia Association of Nurse Anesthetists, District 2 Spring Meeting.* March 2015, Ashburn, VA.

Gresens A. Bariatric Surgery in 2015: Beyond “My 600-lb Life”. *GS Grand Rounds, Inova Fairfax Medical Campus.* April 8, 2015, Falls Church, VA.


Grifffen M. Vascular Trauma. *GS Grand Rounds, Inova Fairfax Medical Campus.* June 17, 2015, Falls Church, VA.

Kaminsky AJ, Li S, Lodhi F, Bradford AN, Wright JM, Dort J. General Surgery Quality Improvement Project for...
Communication between Nursing Staff and Residents. *2nd Annual Inova GME Quality Symposium*. May 21, 2015, Falls Church, VA.


McCusker A. Prospective Evaluation of Nutritional Adequacy of Volume Based Enteral Feeding in a Single Center Trauma/Surgical ICU. *2nd Annual Inova GME Quality Symposium*. May 21, 2015, Falls Church, VA.


Mirali R. Leadership. *GS Grand Rounds, Inova Fairfax Medical Campus*. Feb 18, 2015, Falls Church, VA.

Mirali R, Kaminsky AJ. Advances in Facial Reconstruction. *GS Grand Rounds, Inova Fairfax Medical Campus*. April 1, 2015, Falls Church, VA.

Mukherjee D. A Cost-Effective Comparison of CEA under Local vs General Anesthesia. *Neurological Societies of the Virginias*. Jan 2015, Greenbriar, WV.


Mukherjee D. Lessons Learned from 30 Years of Trying to Perfect Carotid Endarterectomy. *GS Grand Rounds, Inova Fairfax Medical Campus*. Jan 14, 2015, Falls Church, VA.


Reines HD. Engaging Residents in the Quality In-Training Initiative. *American College of Surgeons National Surgical Quality Improvement Program Conference*. July 26, 2015, Chicago, IL.

Sobel R. Updates in Treatment of Head & Neck Cancer. *GS Grand Rounds, Inova Fairfax Medical Campus*. Feb 11, 2015, Falls Church, VA.


Trickey AW, Wright J, Donovan J, Reines HD, Dort J, Prentice HA, Graling P, Moynihan JJ. Causes of surgical re-admissions are more clinically accurate in ACS NSQIP than administrative claims data. *Virginia Chapter of the American College of Surgeons*. May 3, 2015, Richmond, VA.


If you have presentations or publications to be added to this list, please contact Erica Emery at Erica.Emery@inova.org