MESSAGE FROM THE CHAIRMAN:
- SCOTT T. REEVES, MD, MBA

On March 10, 2011, Jake Abernathy and I met with Ray Greenberg (MUSC president), Scott Schapel (Clemson, Professor of Industrial Engineering), David Alison (Clemson, Chairman of Healthcare Architecture) and local industry leaders to discuss how we could leverage a project from the Society of Cardiovascular Anesthesiologists called FOCUS that we participated in since October 2008. FOCUS involved taking a serious multidiscipline look at safety within a cardiovascular operating room. We were one of five centers in the United States to participate.

From that early work, a collaborative team was formed between Clemson and MUSC that would develop a patient safety taxonomy to evaluate flow disruptions within an operating room called RIPCHORD (Realizing Improved Patient Care through Human-Centered Operating Room Design), (Anesthesiology 2013;119:1066-77). This team over the past 12 months has been very busy recruiting two South Carolina Smart State endowed chairs. The first is Anjali Joseph, Ph.D., EDAC Endowed Chair in Architecture Health Design and Research, Associate Professor of Architecture at Clemson. The second recruitment, finalized in August, is Ken Catchpole, Ph.D. Endowed Chair in Clinical Practice and Human Factors. He will be a member of our department beginning in January.

With these two outstanding recruits, we aggressively went after a P30 award from the Agency of Healthcare Research and Quality (AHRQ). I am happy to report that we received notice that Clemson with MUSC as a co-institution has been awarded a 4 year grant of $4,000,000 called Realizing Improved Patient Care through Human-Centered Design in the OR (RIPCHD. OR).

The goal of the proposed RIPCHD. OR patient safety learning lab is to develop an optimal general surgical operating room designed using a multidisciplinary human-centered approach incorporating evidence-based design, human factors, and systems engineering principles. The incidence of adverse events such as surgical site infections and surgical errors are a huge problem in the OR due to the high vulnerability of the patient and the complex interactions required between providers of different disciplines and a range of equipment, technology and the physical space where care is provided. Two to five percent of patients who undergo surgery will develop a surgical site infection leading to significant mortality and morbidity. Distractions and interruptions are major causes of medical errors during surgery and often lead to serious patient harm.

The proposed learning lab will aim to conduct three highly interrelated and integrated patient safety focused projects related to key aspects of OR suite design over the course of four years:

Project 1: Unmasking of anesthesia related alarms and communication
Project 2: Traffic flow and door openings in the OR
Project 3: Operating room suite design
OPENING STATEMENT CONTINUED . . .

MUSC will contribute substantial expertise to the project including co-investigator work from Drs. Jake Abernathy, Cassandra Salgado, Danielle Scheurer, Mark Scheurer, John Schaeffer, Scott Reeves and Dee San, BSN, MBA.

It is my expectation that this will be the first of many funded projects from the RIPCHORD group with MUSC taking the lead on future efforts as well.

SAFE SURGERY 2015 HOSPITAL DESIGNATION CONGRATULATORY LETTER

September 1, 2015

Dear Mike and Dee,

Congratulations for designating Medical University of South Carolina a Safe Surgery 2015 Hospital and on your successful implementation of the Surgical Safety Checklist! The Safe Surgery 2015: South Carolina team is very proud to join you in celebrating the crucial work you have done, and we thank you for your dedication to improving team communication and patient care in South Carolina. Because of your efforts, the state has become a leader in surgical safety improvement.

Your application was reviewed by a 5-person, multi-disciplinary committee with representatives from the South Carolina Hospital Association, the Harvard School of Public Health, and the Safe Surgery 2015 Leadership Team. In it, you confirmed that each patient who visits your operating rooms benefits from the surgical safety checklist before the induction of anesthesia, before skin incision and before the patient leaves the operating room. This is a tremendous accomplishment, and as a Safe Surgery 2015 Hospital, we encourage you to continue observing in the operating room and working through the next steps outlined in your application to sustain your work.

The first group of Safe Surgery 2015 Hospitals will be recognized at the 2015 Trustees, Administrators, and Physicians (TAP) conference September 17th-19th in Hilton Head. This is an exciting statewide annual meeting during which your CEO and Board members will be publically applauded for the dedication and work of your operating room teams.

We look forward to continuing to work with you as you sustain your work with the checklist and share the lessons learned beyond the operating room. Please keep us updated on your continued successes and good ideas, and as always, please let us know if there is anything we can do to support you and your staff! If you have any questions or comments about the application process please contact Lorri Gibbons at lgibbons@scha.org.

Congratulations,

Bill Berry, MD, MPH
Program Director
Safe Surgery 2015: South Carolina

Thornton Kirby
President and CEO
South Carolina Hospital Association
2015 PRE-MEDICAL SOCIETY'S OUTSTANDING SERVICE AWARD IN MEDICINE, CONGRATS DR. EBONY HILTON

This award is sponsored by the Alumni Association, the School of Sciences and Mathematics, and the Alpha Epsilon Delta Pre-Medical Society. The award recognizes a College of Charleston graduate whose practice of medicine, including dental, veterinary, and related medical sciences represents remarkable achievement, and who demonstrates an enduring commitment to the College and his or her community.

Ebony Hilton, Class of 2004

Ebony Jade Hilton was born the middle child of three girls in the rural town of Little Africa, S.C. Following a family tragedy, at the tender age of 8, she told her mom she wanted to be a doctor. From that day forward, her mother called her Dr. Hilton. She attributes her entire career and the success that followed to that small gesture. She graduated from Spartanburg High School in 2000 and enrolled at the College of Charleston. In 2004, she graduated magnum cum laude from CofC with a B.S. in biochemistry, a B.S. in molecular biology and a B.A. in inorganic chemistry. She then began her medical studies at the Medical University of South Carolina and, following graduation in 2008, she continued at this institution for completion of her anesthesiology residency and critical care fellowship. On July 1, 2013, she became the first African American female anesthesiologist to be hired at MUSC since its opening in 1824. Throughout her studies, her primary focus has been health disparities and bridging the gap between physicians and patients.

MUSC OBTAINS MAGNET NURSING STATUS

Dear MUSC Medical Staff,

Today at 3:30pm, the American Nurses Credentialing Center contacted us and informed a group of MUSC leaders that we have achieved the pinnacle of nursing excellence and officially earned the Magnet credential!

This is quite an achievement based on the numbers alone - of the almost 6,000 hospitals in the US, only 420 are Magnet designated organizations. MUSC is currently the 3rd hospital in South Carolina with this credential and the only academic medical center in the state with this level of nursing excellence. As I have repeatedly stated in the July 17th issue and in the July 24th issue of Clinical Connections, I know MUSC has the best nurses!

When I first came to MUSC 12 years ago, I quickly realized that we have phenomenal Nurses! We can only take care of the complex patients we see at MUSC in a high quality manner with great nurses on our care team. The entire medical staff feels the same way, as does the public.

The Nursing Excellence / Magnet Recognition Program is a rigorous program that requires we produce clear evidence of a compassionate, innovative, and data-driven approach by our nurses. Magnet designation is the ultimate credential for high quality nursing and the leading example of successful nursing practices and strategies worldwide.

Congratulations to our nursing team for this wonderful achievement! This is further evidence of the MUSC Excellence that abounds on our campus! Thank you for the great care you provide every day!

Patrick J. Cawley, M.D.
Executive Director/CEO, Medical Center
Vice President of Clinical Operations, University
Congratulations to Sylvia and members of our department who contributed to this nice textbook published by Cambridge Medicine.

Departmental Contributors by Chapter

Chapter 3; Adjuncts to peripheral nerve blocks, Gregory Schnepper and Sylvia H. Wilson

Chapter 11; Underlying neuropathy, Julie R. McSwain and Wesley J. Doty

Chapter 12; Geriatrics, Joel Barton
As this has become our custom, GJ and I took the CA 1 residents to the NC/SC annual meeting, which was held in Asheville, North Carolina this year. The theme of the event was Quality in Anesthesia. I had the opportunity to serve on the program committee and several of our faculty spoke.

Sylvia Wilson, MD:

*Regional Anesthesia and Arthroplasty: Options, Mobilizations and Outcomes*

Jake Abernathy, MD:

*Patient Safety in the Operating Room: What Can, Will and Might Make Patients Safer and You Happier*

It was a nice opportunity to spend time with our CA1 outside MUSC in an education rich environment.
I am very happy to announce that Anesthesia Tech, Kevin Williams, has accepted the Equipment Specialist position at ART! Kevin has many years of experience in anesthesia at MUSC and Emory. He has a very thorough knowledge of our equipment and will do a fantastic job!

Congratulations Kevin!

Katie Smith
Infection control is a HUGE theme this year, so how we clean things, OR attire and handling of equipment are extremely important!

**Malignant Hyperthermia Bag** – It was suggested that we get a cart to be JC compliant. The bags are in a controlled environment (anesthesia workrooms), the compartments are closed with zip ties, and the pharmaceutical contents maintained by OR Pharmacy. Having bags makes it easier for quick transport to the many areas that we provide anesthesia, i.e. NORA sites, L&D and the ORs. For all of these reasons we will not be pursuing a cart at this time.

**Infection Control** – Katie Smith, AT Supervisor, has been participating in weekly rounds with Infection Control at UH in preparation for the JC visit. Below are some of the issues we have addressed.

1. **Tape** – Tape residue on the poles and anesthesia machines has been designated an increased risk for infection. We have asked everyone to stop hanging tape from the anesthesia machines and to stop using tape on the surgical drapes. We are trying to purchase and stock plastic towel clips for single use for the surgical drapes.

2. **Bronchoscope storage** – All bronchoscopes must be stored in cabinets, so cabinets have been added to all of the airway carts and in the workroom. They can hang on the wall in the OR as it is a controlled, sterile environment.

3. **Bronchoscope transport** – When transporting a bronchoscope between the workroom and the OR, they must be in a plastic bin. Plastic bins have been ordered and will be in the workrooms at all OR locations. I will send a photo at some point.

4. **Machine cleaning** – The Anesthesia Techs will be doing a deep cleaning of all the anesthesia machines. In addition, we have confirmed we are using the correct cleaning products for cleaning in between the cases.

5. **Glidescope Blade cleaning** – Temperature measurement before and after placing the blades in the metricide. Goal temp is 20 degrees Celsius +/- 2 degrees. If the temperature is out of range, then the metricide should be changed.

6. **TEE storage and cleaning** – Temperature measurement before and after placing the TEE probes in metricide. Goal temp is 20 degrees Celsius +/- 2 degrees. If the temperature is out of range, then the metricide should be changed.

7. **No more PAM at ART or RT for bronchoscope lubrication.** We have ordered a new silicone spray to replace the PAM on the bronchoscopy carts and in the thoracic rooms.

8. **Handwashing with sanitizer before and after patient care and going in and out of ORs.**

**Medication labeling and handling**

1. **Labeling** – Name of medication, drug concentration, date, initials and time if the drug expires before 24 hours.

2. **Medication storage**
   a. In between cases all medications must be placed in the pyxis drawer.
   b. Drips – should be spiked and tubing primed right before a case, but not the night before or hours in advance.
   c. Medications for RAPS – medications cannot be left on the US machine or on top of the block cart/pyxis. Sedation for blocks must be labelled with date and initials.
   d. Setup for traumas – One IV setup will be spiked, labelled and ready at all times. Arterial lines
3. **Fluids**
   a. Considered a medication, so they need to be labelled with a date and initials. You can use a piece of tape for the labeling.
   b. Fluids should only be spiked and primed immediately prior to a case, except for the trauma room. See below for L&D, Peds Heart and Adult Heart specifics.
   c. Primed blood sets should not be primed and hanging in the back of the room all day or overnight.

**OR attire**

1. **No one should be wearing scrubs in from home or leaving the hospital in them.**
2. **No scrub hats or shoe covers outside of the perioperative area (ORs, PreOp, PACU or transport to ICUs).** Masks are supposed to be removed immediately after leaving the OR. You should get a new mask when going from room to room.
3. **Scrubs need to be covered by a white coat when leaving periop area (cafeteria, grand rounds, floors during rounds).**
4. No personal jackets (LLbean) in the OR, but the ones from the scrub machines are fine.
5. Personal scrub hats need to be washed regularly or covered with a disposable scrub hat.
6. No personal bags/backpacks/purses/totes should be taken into the OR.

**Equipment**

1. **Endotracheal tubes** – Endotracheal tubes should not be opened and styletted until arrival in the OR with the patient. Please do not open and stylet multiple ETTs. If you need to prepare multiples, immediately throw away the ones that were not used.
2. **Code bags** – Equipment and medications should not be opened in advance. Medications should be drawn up immediately prior to use and ETT opened and styletted immediately prior to use. The code bag should be checked daily by the person covering it for expired medications or equipment.

**Regional Services**

1. No sharps or drugs (local or sedation) on the US or on top of the carts.
   a. On the back of the US you can have 4x4; gloves; tegaderms; gel; chloroprep; probe covers. No sharps. If you see one, get rid of it.
   b. All drawn up drugs need to be labeled/dated/initialied and locked in the cart or in your pocket.
2. **Masks:** Change your mask between blocks. We will get some extra to keep on the carts. Finish a block, take it off and throw it away.
3. **Rounds and outside of the OR**
   a. A white lab coat is required to cover your scrubs outside of holding and the OR.
   b. Hats are not permitted outside of holding or the OR.
   c. Masks are not permitted outside of holding unless doing a block (remove your mask after each procedure).
JOINT COMMISSION EDUCATION ITEMS FOR ANESTHESIA CONTINUED. . .  BY: DR. CARLEE CLARK

Labor and Delivery

1. No medication on top of the anesthesia cart. All OPA related meds are in designated spots in the top draw of the anesthesia cart including bicitra. A laminated note has been placed on top of the cart with this message – has been very effective.

2. No spiking any fluids/medication in anticipation of a case including A-line bags, unless the patient is ready to be rolled back to the OR.

3. Anesthesia techs covering L&D will assist in workroom organization when they do their AM and PM visit for stocking.

Adult Cardiac Cases

The Joint Commission is intently focused on the sterility of prepared medications. Unfortunately, we cannot have any fluids run through, drips run through or syringes made the night before a case. Additionally, all medications not on a pole, are required to be locked away in a drawer.

Heart Pole:
- The techs will continue to put together the triple transducer
- The techs will hang one plasmalyte, two drip tubings, and one tubing with manifold attached on the pole (as previously done)
- When the pole is placed in the room, the techs will put the neo and epi bags in the pyxis drawer

Heart bucket will go away and be replaced by The Heart Bag (pictured below).

- This bag will be picked up by the resident each morning from pharmacy
- There will be a supply of these bags in the acudose for after hours
- The bag will be stored in the pyxis drawer with the other medications
- The bag will contain:
  Calcium chloride syr x1
  Lidocaine syr 2% x1
  Nitroglycerin 250ml bottle x1
  Potassium chloride 10% bag 100ml
  Milrinone 20mg 100ml bag x1
  Vasopressin vial x1

Converting to the bag will reduce the work required on the pharmacy to maintain supplies of drugs we no longer use (mannitol, albumin) and allow us to be JC compliant. The drugs / medication removed from the heart bucket are plentifully stocked in the acudose or in the OR pharmacy.
MALIGNANT HYPERThERMIA FILTERS
BY: DR. CARLEE CLARK

We have now received the new Malignant Hyperthermia filters for the anesthesia machine that were
discussed at our recent grand rounds on MH. Attached are images of what they look like in the package.
Each OR site has a supply of 8 and we will reorder as needed.

Instructions for machine preparation are to disconnect the vaporizers and flush with Oxygen flows of 10 liters/min
for at least 90 seconds. After that, place filters on inspiratory and expiratory limbs with a new circuit and vent bag and
you are ready to proceed.

Here is a link to the MHaus website where it discusses the filters: http://www.mhaus.org/healthcare-professionals/
mhaus-recommendations/anesthesia-workstation-preparation

This is a significant improvement in the preparation for the care of these complex patients. Please become
familiarized with this new technology.

![Image of Malignant Hyperthermia Filters]

VAPOR-CLEAN
Removes Unwanted Anesthetic Gas from the Breathing Circuit

Instructions for Use:
Single Patient Use. Not Intended for Reprocessing

Intended use: To remove unwanted anesthetic gas from the breathing circuit.

Intended patient population: Surgical patients being ventilated by an anesthesia gas machine.

Instructions for Use:
1. Turn off the anesthesia vaporizer
2. Increase fresh gas flow to >10 L/min for at least 90 seconds to flush the vapor from the anesthesia
delivery system
3. Place one of the Vapor-Clean canisters on the inspired port of the anesthesia machine and the other canister
on the expired port of the anesthesia machine.
4. Replace the breathing bag and connect a new breathing circuit between the patient and the Vapor-
Clean canisters. Maintain fresh gas flow at >3 L/min.

Warnings

⚠️ Warning: This device contains charcoal and charcoal dust. If damaged, the charcoal dust may leak from the device. The physical nature of this dust may cause eye irritation.

⚠️ Warning: Sterilization of this device with Ethylene Oxide will exhaust the anesthetic absorber and render the device useless.

⚠️ Warning: Do not soak, rinse, sterilize or reuse this device as reprocessing may render the device non-functional.

⚠️ Warning: This product contains activated charcoal. Activated charcoal in contact with strong oxidizers such as ozone, liquid oxygen, chlorine gas, peroxymonosulfate, etc. may result in fire.

⚠️ Warning: Do not use this device when attempting to anesthetize patients using vapor.

⚠️ Warning: In a patient that is known, or suspected, of having malignant hyperthermia, the safest course of action is to use a ventilator which has never been exposed to anesthetic vapors.

[^1] Bench testing has demonstrated that this product removes at least 99% of anesthetic vapors (Isoflurane, sevoflurane and desflurane). This means that 99% of anesthetic vapor emitted by an anesthesia gas machine may be inhaled by the patient.

[^2] This device is capable of removing residual anesthetic from the breathing circuit for at least 12 hours of continuous use. Replace the Vapor-Clean canisters with a new set after 12 hours of use on a single patient. Do not exceed 60 minutes of use on a patient who is exhalating volatile anesthetics.

[^3] This device does not capture or scavenge nitrous oxide.

[^4] This device has not been tested using any anesthetics agents other than Isoflurane, sevoflurane and desflurane.

Cautions

Federal (USA) law restricts this device to sale by, or on order of, a physician.

This device and its packaging contain no natural latex.

Device Specifications

- Connections: Anesthesia machine side: 22 mm female
Breathing circuit side: 22 mm male
- Resistance to Flow: <9.0 cm H2O at 1 liter per second
<1.5 cm H2O at 0.5 liter per second
- Minimum Anesthetic Removal: 99% removed
- Internal volume: 92 ml
- Storage Conditions: Store at temperatures between 15°C and 40°C
- Shelf life relative humidity between 15% and 95% non-condensing

Manufactured by: Dynaesthesia
3461 West 2100 South #300
Salt Lake City, Utah 84119
www.dynaesthesia.com
801-484-3820

U.S. Patent No.: 6,485,187, 6,800,561. Other patents pending.
Find the patient in Patient Lists, highlight the patient, and select Hospital Chart.

Open Procedure notes section of the navigator.

Choose Intubation in the Select Procedure section of the NoteWriter
Document the intubation note.

1. Select REDCap:

   ![Intubation Note](image1.png)

2. Enter CSN Number, which can be found here:

   ![CSN Number](image2.png)

3. Enter who was present at time of adverse event and what the event was.

   ![Documenting QA/QI Events](image3.png)
YOU WILL BE MISSED PAUL DANCY!

After nine years with the Anesthesia Department, Paul Dancy (Anesthesia Tech/Equipment Specialist) has accepted a position with the Biomed Department at ART. Paul is a wonderful tech and will truly be missed by all.

WELCOME NEW ANESTHESIA TECH AT THE UNIVERSITY HOSPITAL, JULIE HEMINGER

Julie Heminger is a graduate of Charleston Southern University. She grew up in Greenville, SC, but has called Charleston her home for the last seven years. Julie previously worked in medical research and is very excited to join the OR team as an anesthesia tech. She looks forward to meeting everyone!
Here is something that we should all be doing the SAME: Line reconciliation. All lines that are placed in the patient in the OR should be entered using the “lines” button shown here in Epic. After entering the lines section, remove any incorrect lines that may have been entered by activating a macro. For example, in the past, activating the peds cardiac macro automatically entered a single lumen pediatric CVL—which we never placed. It must be removed and replaced with the correct pediatric CVL. This macro error may now be corrected, but others may exist, hence the need to reconcile the lines so the patients arrive in the PICU, NICU, PCICU or PACU with the correct lines entered. If we don’t reconcile the lines it pushes our work downstream onto the ICU or PACU nurses.

For all of the patients going to a pediatric ICU or pediatric floor, you must select the pediatric IV, pediatric central line, etc. If you choose the central lines higher in the menu these cannot be used by pediatric staff to chart infusions, line care, fluid boluses, etc.

*In summary, it is important to be precise when entering the lines on pediatric patients and be aware that the PEDIATRIC lines should be entered and not the “generic adult” lines shown invitingly at the top of the selection list.
GRAND ROUNDS FOR THE MONTH OF OCTOBER

“Regional Anesthesia for Arthroplasty: Options, Mobilization, and Outcomes”
October 6, 2015
Sylvia Wilson, MD
Associate Professor
Medical University of South Carolina

“Morbidity & Mortality Conference”
October 13, 2015
Jared McKinnon, MD,
CA2 Anesthesia Resident
Medical University of South Carolina

“Multimodal Treatment of Acute Pain”
October 20, 2015
Jason Taylor, MD
Assistant Professor
Medical University of South Carolina

“Outcome Studies on Regional Anesthesia”
October 27, 2015
Scott Byram, MD
Associate Professor
Loyola University Medical Center
I HUNG THE MOON
Don’t forget to nominate your co-workers for going ‘Beyond the Call of Duty’. I Hung The Moon slips are available at the 3rd floor front desk, and may be turned in to Kim Crisp. Thanks so much!

Molly Sekar, Anesthesia Tech:  Being a great team player! Helping fellow techs with all kinds of tasks and volunteering to cover short hour shifts on a regular basis.

Department Holiday Party:  December 4, 2015, Carolina Yacht Club

I HUNG THE MOON
Don’t forget to nominate your co-workers for going ‘Beyond the Call of Duty’. I Hung The Moon slips are available at the 3rd floor front desk, and may be turned in to Kim Crisp. Thanks so much!!

Molly Sekar, Anesthesia Tech:  Being a great team player! Helping fellow techs with all kinds of tasks and volunteering to cover short hour shifts on a regular basis.

Department Holiday Party:  December 4, 2015, Carolina Yacht Club

I HUNG THE MOON
Don’t forget to nominate your co-workers for going ‘Beyond the Call of Duty’. I Hung The Moon slips are available at the 3rd floor front desk, and may be turned in to Kim Crisp. Thanks so much!!

Molly Sekar, Anesthesia Tech:  Being a great team player! Helping fellow techs with all kinds of tasks and volunteering to cover short hour shifts on a regular basis.

Department Holiday Party:  December 4, 2015, Carolina Yacht Club

I HUNG THE MOON
Don’t forget to nominate your co-workers for going ‘Beyond the Call of Duty’. I Hung The Moon slips are available at the 3rd floor front desk, and may be turned in to Kim Crisp. Thanks so much!!

Molly Sekar, Anesthesia Tech:  Being a great team player! Helping fellow techs with all kinds of tasks and volunteering to cover short hour shifts on a regular basis.

Department Holiday Party:  December 4, 2015, Carolina Yacht Club

I HUNG THE MOON
Don’t forget to nominate your co-workers for going ‘Beyond the Call of Duty’. I Hung The Moon slips are available at the 3rd floor front desk, and may be turned in to Kim Crisp. Thanks so much!!

Molly Sekar, Anesthesia Tech:  Being a great team player! Helping fellow techs with all kinds of tasks and volunteering to cover short hour shifts on a regular basis.

Department Holiday Party:  December 4, 2015, Carolina Yacht Club