MESSAGE FROM THE CHAIRMAN: THE END OF AN ERA

-SCOTT T. REEVES, M.D., MBA

The 39th Society of Cardiovascular Anesthesiologists Annual Meeting was held in Orlando, Florida from April 22-26. For me personally, it was the end of an era. I have had the pleasure of being in a leadership role within the Society since 2003, when I was appointed to the role of chairman for abstracts, workshops and PBLDs. Some 14 years later, I have now stepped down as Immediate Past President and reenter the role within the Society as “member.”

It has been a fascinating journey. I think I am most proud of the number of junior faculty I had the opportunity to develop from MUSC as well as nationally and internationally. We now have an ACGME approved fellowship process with training of over 160 subspecialty fellowship trained CT anesthesiologists each year. Our department was one of the first approved, and we currently have two fellows.

Patient safety has become a huge area of concentration within the society first through our FOCUS initiative and now through the Quality, Safety and Leadership Steering Committee under Jake’s leadership. We have developed a platform to have anesthesia residents get trained in perioperative ultrasound as apart of their core residency training. Our CA 1 and 2 residents will start the process in July. Our specialty is also exploring the ability to get subspecialty certification for the individual physician.

Our department has substantially expanded it role within the society as evident by the number of lectures and abstracts presented each year.

Lectures

- Databases and Quality: yesterday, Today and Tomorrow- Jake Abernathy, MD,
- Heparin resistance: Diagnosis and Management- Alan Finley, MD
- Ventricular Assist Devices- Eric Nelson, MD
- Resiliency in Terms and in Organizations: What it Takes to Have High Reliability in Medicine- Ken Catchpole, PhD
- Scope of Practice and Outcomes in Cardiac Surgery and Anesthesia: East Meets West- Scott Reeves, MD
- TAVR Problem-Based Learning Discussion- Jake Abernathy, MD
OPENING STATEMENT CONTINUED...

Abstracts/Problem Based Learning Discussions

- Single Center Experience of Anesthesia Management and Stroke Rates in Transcatheter Aortic Valve Replacements opal Raj, Sergey Gukasov, timothy Heinke
- High Fidelity Simulation Improves Resident performance During Rare High Acuity Events Timothy Heinke, George Guldan
- Identifying Threats to Patient Safety in Cardiac Surgery: Difference Between Teaching and Nonteaching Hospitals Tara Cohen, Albert Boquet, Jake Abernathy, Scott Reeves, Scott Shappell
- Using Flow Disruptions to Define the Error Space During Cardiovascular Surgery Albert Boquet, Tara Cohen, Scott Reeves, Scott Shappell
- Successful Resuscitation of a 14 Year Old After SVC Tear During ICD Laser Lead Extraction Jordan Friel, Andrew Scharf, Scott Reeves
- Management of a Patient With Aortic Stenosis and Left Ventricular Outflow Tract Obstruction: A Multidisciplinary Approach Andrew Scharf, Joseph Abro, Jake Abernathy

It is my desire that all of our department develop and achieve professional satisfaction by becoming actively involved in our specialty and subspecialty organizations.

TEACHER OF THE QUARTER AWARD

The residents have voted to award this quarter's Excellence in Teaching Award (aka The Whitener Award) to Dr. Jake Abernathy. We would especially like to thank him for his positivity, patience, and passion for working with residents. His ability to explain complicated concepts in a simple, understandable way is unparalleled. He teaches us how to prioritize, how to make a fast diagnosis in a critical situation, and what to focus on. He constantly challenges us to be better and leads by example by working hard without complaint. I asked to present this award because Jake has been a wonderful mentor to me personally over the years, and I know I speak for everyone when I say his departure will be felt as a great loss to the department and our daily lives. I know I frequently find myself asking, "What would Jake do?" in emergencies or when decisions need to be made. He's the anesthesiologist a lot of us (myself included) hope to be one day, with his combination of smarts, mellow attitude, and colorful socks.

Please join me today in congratulating Jake, and perhaps play a sad old man song in your OR in his honor.

Best,

Loren Francis, M.D.
CA-3 Chief Resident
RESEARCH CORNER

Journal of Anesthesia and Surgery

Amniotic Fluid Embolism during Dilation and Evacuation during 2nd Trimester Treated by ACLS Guidelines, ECMO and Dialysis: A Case Report
- Catherine Tobin
Sylvia H. Wilson¹, Phillip A. Rodriguez², Gweneth B. Lazenby³, Angela R. Dempsey⁴

Case Report

INTRATHecal BLEED FOLLOWING PERCUTaneous SPINAL CORD Stimulator TRIAL LEad PLACEMENT
Katherine S. Roden, MD, Julie A. Owen, MD, and Ryan H. Nobles, MD

Case Report

Partial Anomalous Pulmonary Venous Return: Scimitar Vein

Abstract
Scimitar syndrome is a rare association of congenital cardiopulmonary anomalies characterized by partial anomalous pulmonary venous return, in which an abnormal right pulmonary vein drains into the inferior vena cava. This case exemplifies the role of transesophageal echocardiography in perioperative management and surgical decision-making.

Keywords: Cardiopulmonary anesthesia, transesophageal echocardiogram, transthoracic echocardiography

Timothy Heinke, Scott R. Stewart, Toby Steinberg, William R. Hand, James H. Abernathy
Department of Anesthesia and Perioperative Medicine, Medical University of South Carolina, Charleston, SC, USA
RESEARCH CORNER CONTINUED...

Comparison of analgesia with lumbar epidurals and lumbar plexus nerve blocks in patients receiving multimodal analgesics following primary total hip arthroplasty: a retrospective analysis

Authors

N. Robert Harvey, Bethany J. Wolf, Eric D. Bolin, Sylvia H. Wilson

Original Paper
First Online: 11 April 2017
DOI: 10.1007/s00264-017-3465-7

Cite this article as:

DEPARTMENT HURRICANE PLAN

Click here to view the Departmental Hurricane Plan

Department of Anesthesia and Perioperative Medicine

Hurricane Plan
ANNUAL MYQUEST TRAINING DUE BY JUNE 30, 2017

It is time again to complete our MUSC Annual Mandatory Training courses which can be accessed through MyQuest. Training modules are tailored for specific roles in the organization and are due on or before June 30, 2017.

To access your required training modules, use the MyQuest icon found on your desktop and login using your netID and password. Your specific modules will be displayed in the Enrollments section of your home screen as seen below.

Remember, these are mandatory and must be completed by June 30.

ANNUAL IARS & SOCCA MEETINGS IN WASHINGTON, DC

MUSC's Department of Anesthesia was well represented at this year's combined annual meeting for IARS and SOCCA in Washington, DC. Dr. Carlee Clark presented a Problem Based Learning Discussion on LVAD management for non-cardiac surgery. Dr. Stephanie Robinson presented a poster on the use of IV, PO or no acetaminophen after Cesarean delivery. Dr. Sylvia Wilson presented two medically challenging cases (co-authored by Drs. Katie Bridges, Renuka George and Maria Yared), moderated three poster sessions and served as faculty at a regional anesthesia ultrasound workshop. Dr Larry Field also attended. Great job everyone.
DEPARTMENT TEXTBOOKS ONLINE

The MUSC library has made many of our departmental-issued textbooks available online via the Anesthesia Library Guide:

http://musc.libguides.com/anesthesia/books

Included:

1. Clinical Anesthesiology by Morgan/Mikhail
2. Basics of Anesthesia by Miller
3. Anesthesia and Co-existing Disease by Stoelting
4. Perioperative Medicine: Managing for Outcome by Newman
5. Clinical Anesthesia by Barash

The only resident text that is currently unavailable online is Critical Care Medicine by Marino (‘The ICU Book’). Beginning this year, new residents will be expected to use the electronic books as a resource and will receive a hard copy of ‘The ICU Book’ only.

If you have any questions, or if there are other texts you would like to see added to the Anesthesia Library Guide, please contact Lauren Byers at byersl@musc.edu.

If you have any issues accessing these texts online, please contact our designated librarian, Emily Brennan at brennane@musc.edu.

2017 40 UNDER 40 LEADERS IN MINORITY HEALTH

Washington, DC- The National Minority Quality Forum is proud to announce the selection of the 2017 40 Under 40 Leaders in Minority Health. After receiving hundreds of applications from healthcare professionals across the country, these 40 represent the next generation of thought leaders in reducing health disparities.

“Here at the NMQF, we are truly excited about this next class of honorees and recognizing them at our annual leadership summit,” stated NMQF President & CEO Dr. Gary Puckrein. “The 2017 winners are doing amazing things that both better and diversify the healthcare marketplace. They serve as positive role models for our next generation of leaders in minority health.”

“I am excited to meet this year’s 40 Under 40 Leaders in Minority Health at the CBC Spring Health Braintrust,” said Congressional Black Caucus Health Braintrust Chair Dr. Robin Kelly. “Our country needs new leaders to fulfill the dream of eliminating health disparities in a generation. Fresh ideas and new approaches are needed to decrease health inequalities for minority communities currently suffering from poor access to quality healthcare.”

40 Under 40 recipients will receive their award at the 2017 NMQF Leadership Summit on Health Disparities and CBC Spring Health Braintrust Gala Dinner on April 25. For more information on the 2017 NMQF Leadership Summit on Health Disparities and CBC Spring Health Braintrust please visit http://www.nmqf.org/2017-nmqf-leadership-summit-awards-dinner-health-braintrust/.
JEAN DAY ARBORETUM DEDICATION ON MAY 9TH, 2017
2017-2018 CLINICAL ANESTHESIA YEAR 1

Devin Antonovich, MD
Martha Anne King, MD
Kevin Draper, MD
Willy Gamma, MD

Andrew Gerughty, MD
John Green, DO
Mike Gukasov, DO
Sean Hynes, MD

Zachary Jeanes, MD
Tara Kelly, MD
Ryan Mims, MD
Max Phillips, DO

Clark Sealy, MD
Alex Wharton, MD
Chris Wolla, MD
The Department’s Administrative Staff was treated to lunch and flowers for Administrative Professionals Day, 2017. Fun conversation and good food were enjoyed at The Park Café.

WELCOME TO THE DEPARTMENT

Please welcome Kathy Sowards, MSNA, CRNA to the Department! She is a 2015 graduate of the MUSC AFN Program and worked at Baylor Scott & White Children’s Hospital in Temple, Texas prior to her practice transfer. A native of Irmo, SC, Kathy is now living in Charleston with her husband and four-year-old daughter, Florence. Welcome Kathy!

NEW BABY IN THE DEPARTMENT

Please congratulate Regan McKinney and family on the birth of Graham Davis McKinney! Graham was born on May 1, 2017, weighing in at 7lbs 8oz. and 20.5 inches long.
VALERIE LOUISE MATTHEWS BAILEY RETIRES FROM MUSC
BY AUDREY WILDER, RN

On June 9, 2017, Valerie Louise Matthews Bailey will retire from MUSC, after working for 42 years and 6 months. Valerie proclaims like the Apostle Paul, “The time of my departure has come. I have fought a good fight. I have finished the course here that God has set for me. Through it all, I have kept the faith while working at MUSC, through many good times and bad times.”

Valerie became a member of the MUSC family on November 11, 1974, in the Department of Nursing as a Ward Clerk (Unit Secretary) on the 5 Center nursing unit. In 1990, she transferred to the newly formed Ambulatory Surgery Department as an Administrative Assistant in the Patient Registration area.

As the Ambulatory Surgery Department grew to improve services to our patients, Valerie was assigned to the Anesthesia Pre-op Clinic as an Administrative Specialist, where she played an integral part in the smooth daily operations of the clinic.

She possesses a genuine love for her patients, co-workers, and colleagues within the various departments in the institution. As an ordained minister, Valerie often prayed with and for patients when requested. They sensed her kind and gentle spirit, saw her warm and reassuring smile, and felt her compassion in the fleeting minutes of their encounters with her.

Valerie has had the opportunity to work alongside many physicians and administrators to ensure the patient experience within the Ambulatory Surgery Department has positive outcomes.

Valerie proclaims, “I have been blessed while employed here with my family and gained many new MUSC/MUHA families while on this journey. Certainly, there have been a lot of changes during these 42 years and 6 months, for the good of the institution and the community as a whole.”

Valerie will truly be missed by her patients, colleagues, and friends here at MUSC.

We wish her the best of everything as she embarks upon this new chapter in her life.

JOSEPH ABRO, M.D., AWARDED HUMANISM AND EXCELLENCE IN TEACHING AWARD

Please congratulate CA-2 Joseph Abro for being selected by the Gold Humanism Honor Society (GHHS) Officers and graduating GHHS students for the Humanism and Excellence in Teaching Award! Residents are selected for the award based on their demonstrated commitment to teaching and compassionate treatment of patients and their families, students, and colleagues.

Dr. Abro was recognized during the Annual GHHS Appreciation Banquet on April 19, 2017 in the Harper Student Center Auditorium.

Congratulations
MATERNAL MORTALITY IN THE US
BY LATHA HEBBAR, M.D.

Maternal Mortality in the US - The Need for Mock Drills for Maternal Resuscitation

The quality of maternal health provided reflects the healthcare status of a nation; therefore, maternal mortality is closely tracked globally as defined by the Maternal Mortality Ratio.

**Maternal Mortality Ratio (MMR):** Number of maternal deaths during a given time period per 100,000 live births during the same birth period. It is the risk of death once a woman becomes pregnant.

Between 1990 and 2015, the global MMR declined by 44% – from 385 deaths to 216 deaths per 100,000 live births. Although the annual rate of reduction was only 2.3% (Millennium Development Goal 2015 target was a reduction in MMR of 5.5%), this is still considered a BIG WIN. The goal is to reduce the global MMR to less than 70 per 100,000 live births by 2030. Some of the countries with very low MMR are Italy and Scandinavian countries at 4 per 100,000 live births and Iceland at 3 per 100,000 live births. In contrast, Sub-Saharan Africa and Afghanistan have very high MMRs, although they have improved tremendously since 1990 (Afghanistan decreased from 1340 in 1990 to 396 in 2015).

However, among the developed countries, the United States has gone against the global grain of improved MMR. From a MMR of 11.5 in 1990, 16.7 in 2008, and 22 in 2015, the number of maternal deaths has increased. This is partly due to the escalation of C-section rates (abnormal placentation), maternal obesity with associated comorbidities, chronic medical conditions, heart disease, sepsis and AMA. **About half of maternal deaths in the US are preventable.** States with a high MMR in the US include District of Columbia, New Jersey, Georgia and Arkansas, especially among African American women. In South Carolina, the MMR for 2012 (DHEC) was 14 per 100,000 live births.

**Definitions of Maternal Death**
- **Direct death:** death caused by pregnancy occurring within 42 days of delivery
- **Indirect death:** death from a pre-existing condition aggravated by pregnancy
- **Coincidental death:** death unrelated to pregnancy
- **Late death:** death occurring between 42 days and 1 year

**Causes of Direct Death in the US**
- Embolism 21.4%
- Hypertensive Disease 19.4%
- Hemorrhage 13.4% (*Leading cause of maternal death globally and MOST preventable*)
- Infection 12.6%
- Cardiomyopathy 9.7%
- CVA 5.3%
- Anesthesia 1.8%
MATERNAL MORTALITY IN THE US CONTINUED...
BY LATHA HEBBAR, M.D.

Anesthesia-Related Maternal Deaths
A couple of ‘call to arms’ has decreased the incidence of anesthesia related maternal deaths:

A. The use of dilute solutions of local anesthetics for labor analgesia combined with the use of test–dose and injection in aliquots with repeated aspirations
B. The availability/application of the ASA difficult airway algorithm and advanced airway equipment, including video-laryngoscopy on L&D units

In the 2010 OB Closed Claims Analysis, the leading cause of anesthesia related maternal mortality was misadventures with labor epidurals/spinals leading to high block and cardiac arrest.

In a review of anesthesia related maternal deaths in Michigan, independent risk factors identified were maternal obesity, being African American, and the lack of vigilance and adequate supervision by anesthesiologists during emergence.

Indirect Causes
Cardiac, suicide, CNS hemorrhage, epilepsy, infections, respiratory in that order.

Steps to Decrease Maternal Mortality

NATIONAL:
1. In 2014, the National Partnership for Maternal Safety Recognition was created within the Council on Patients Safety in Women’s Health Care to reduce maternal mortality and morbidity in the United States. This collaborative initiative with representation from all major women’s health care professional organizations (including SOAP) has created priority safety bundles for the top three causes of severe maternal morbidity and maternal death: obstetric hemorrhage, severe hypertension in pregnancy, and peri-partum venous thromboembolism. The Consensus Bundle for Obstetric Hemorrhage was published in 2015 (Anesth Analg 2015;121:142-8). Safety bundle initiatives are organized into four action domains which every hospital that provides maternal care should have: Readiness, Recognition and Prevention, Response and Reporting, and Systems Learning.
2. Cardiac Arrest in Pregnancy: A Scientific Statement from the American Heart Association (Circulation. 2015;132:00-00. DOI: 10.1161/CIR.0000000000000300). A MUST READ!

STATE:
In 2016, DHEC created a Maternal Mortality and Morbidity Review Committee, “Improving Outcomes for Mothers in South Carolina.” It is a multidisciplinary team which meets on a quarterly basis to review maternal deaths in the state. However, it is currently voluntary reporting by hospitals, which is less than optimal. MUSC is one of the hospitals which reports maternal deaths to this Committee.
MATERNAL MORTALITY IN THE US CONTINUED...
BY LATHA HEBBAR, M.D.

MUSC:
1. Creation of an OB Hemorrhage Bundle – a well put-together document which addresses the 4 R’s of the bundle. I have shared this with all residents and faculty.
2. Creation of VTE and preeclampsia - in process.
3. Monthly Perinatal Safety Meeting to review cases with poor outcome.
4. Antepartum consult of high risk patients.
5. Direct supervision by attending anesthesiologist during induction and emergence from GA.
6. Maternal Cardiac Arrest policy [link]. The policy directs the activation of the Maternal Code team. However, we are in the process of combining OPA and the MUH adult code teams to create the Maternal Code Team. Until further notification, you will have to page both teams (OPA and Adult Code) in the event of a maternal code.
7. In-situ low-fidelity Mock Drill. The challenges with this operation are several – crowd control being one of them (> 45 people get paged!!). We have done 2 drills thus far (AM and PM shifts). **Key to optimal maternal and fetal outcome is to make incision in 4 mins following maternal arrest and extract fetus within 5 mins – to be done at bedside.** We will be performing these drills on a regular basis - please respond in a timely manner – it is an important exercise which could save maternal/fetal lives.

Some special considerations of a maternal code:
- ACLS guidelines for medications and defibrillation apply
- **Manual** Left Uterine displacement – rationale: to prevent maternal aorto-caval compression. A wedge is not recommended because it can become dislodged during CPR
- IV access/Central Line access should be above the level of the diaphragm - rationale: IVC compression by the gravid uterus can prevent optimal circulation of medications
- Early definitive advanced airway (smaller ETT 6/6.5 mm) - rationale: a.) the rate of desaturation with inadequate ventilation is more rapid in pregnant patients; b.) they can be difficult to ventilate with mask; c.) increased risk of aspiration in the parturient
- Removal of internal fetal monitors is advised - rationale: prevent fetus from getting shocked during defibrillation
- **BEDSIDE** Uterine incision < 4 minutes/delivery or extraction of fetus < 5 minutes – rationale: improves chances of a neurologically intact baby and improves survival rates of mom (less chance of aorto-caval compression)
MATERNAL MORTALITY IN THE US CONTINUED...
BY LATHA HEBBAR, M.D.

♦ Consider causes of cardiac arrest specific to pregnant patients:
  ◊ A Anesthetic complications (high neuraxial block, loss of airway, aspiration, respiratory depression, hypotension, local anesthetic systemic toxicity)
  ◊ B Bleeding (coagulopathy, uterine atony, placenta accreta, placental abruption, placenta previa, uterine rupture, trauma, surgical, transfusion reaction)
  ◊ C Cardiovascular causes (cardiomyopathy, myocardial infarction, aortic dissection, arrhythmias)
  ◊ D Drugs (anaphylaxis; illicit; drug error; magnesium, opioid, insulin, or oxytocin overdose)
  ◊ E Embolic (pulmonary embolus, amniotic fluid [AFE], air)
  ◊ F Fever (infection, sepsis)
  ◊ G General non-obstetric causes of cardiac arrest (H’s and T’s)
  ◊ H Hypertension (preeclampsia/eclampsia/HELLP, intracranial bleed)

Identified Needs for Improvement with the 2 Drills:

- Calling for correct teams OPA/Adult Code
- Delayed time to C-section
- Clear role assignments for maternal responders
- Clarification: Anesthesia senior resident/attending should be the CODE TEAM LEADER
- Crowd Control - room very crowded and noisy – unassigned team members should be outside room
- Identification upon arrival and role in resuscitation: “Dr. X on Anesthesia – Code Leader”
- Maternal considerations during cardiac arrest were not considered
- Collaboration/handoff:
  * Situational report to arriving team leaders (MICU, Anesthesia, OB, STAB)
  * Collaboration between team leaders – prioritizing different areas of concern and role in resuscitation
  * Handoff to STAB team in SBAR format

*A reminder to the CODE TEAM Leader – laminated copies of the cardiac arrest specific to pregnant patients and a check list for running the code are placed on the code cart in L&D below the ‘splash and go’ surgical kit.
COMMUNICATION OF EMERGENT BLOOD PRODUCTS
BY CHRIS HEINE, M.D.

A multidisciplinary team recently sought to solve the problem of inconsistent communication between providers and ART and MH blood banks during emergencies requiring blood products. An Improve Project was formed and identified that the existence of multiple policies/procedures, a lack of standardized responses to blood requests, and confusion with terminology had been leading to multiple incidences per month that were resulting in frustration on both ends of the phone, over processing and the potential for patient morbidity. The project team, with the help of Drs. Latha Hebbar and John Fox, developed a new workflow for the blood bank to follow when called with a request for “emergency blood.”

To avoid confusion, any request from a provider that could be described as emergency blood (major bleed, massive transfusion, etc.) will prompt the technician to ask for the provider’s location. If in the ER, OR, STICU, or PICU, the technician will activate the appropriate “STAT Pack” system for the particular patient (what we typically think of as the Massive Transfusion Protocol). If in any other area, the technician will follow the lower arm of the algorithm, and any special transfusion requirements, transfusion urgency, and age/weight will determine what is sent to that unit unless the provider says specifically what is needed. Dr. Hebbar would like it to be noted that this does not apply to the Labor and Delivery floor, and that they will still receive 6U PRBC, 6U FFP, and 1 pack of platelets for emergency obstetric hemorrhage.

This plan went into effect on April 19th and the blood bank will be collecting data on its use to continue to improve the process. If you have any questions or concerns, please let me know.
Welcome party at the Riverdogs!

Please join us for the Anesthesia Department’s New Resident and Fellow Welcome Celebration

Saturday, June 17 at 6:00 p.m.
360 Fishburne St., Charleston, SC 29403

Charleston Riverdogs
Baseball Game

Tickets, BBQ, and beer will be provided.
Families and kids are welcome to attend!

Please RSVP by June 1st to Tara Chauhan
chauhant@musc.edu or (843) 792-4316
GRAND ROUNDS FOR THE MONTH OF JUNE

“Motivation in the Workplace”  
June 6, 2017  
Jami DelliFraine, MHA, PhD, Assoc. Professor & Chair  
Dept. of Healthcare Leadership & Management  
College of Health Professions  
Medical University of South Carolina

“Healthcare Financing”  
June 13, 2017  
Mark Lyles, M.D., Associate Professor  
Department of Medicine  
Medical University of South Carolina

“Working with Different Personality Types”  
June 20, 2017  
Jami DelliFraine, MHA, PhD, Assoc. Professor & Chair  
Dept. of Healthcare Leadership & Management  
College of Health Professions  
Medical University of South Carolina

“Morbidity & Mortality Conference”  
June 27, 2017  
George Guldan, M.D., Assistant Professor  
Ryan Guncelman, M.D., Associate Professor  
Dept. of Anesthesia & Perioperative Medicine  
Medical University of South Carolina
Kelley Nevill, Anesthesia Tech—Going above and beyond! Received many compliments from providers on your role as an anesthesia tech.

Ben Miranda, Anesthesia Tech—Excellence in action. Ben has a wonderful work ethic and helps with difficult cases. He’s very sharp and on the ball, which makes the day so much better! Thanks, Ben!

Save the Date!

Department Celebration & New Resident Welcome
Saturday, June 17, 2017
Riley Park

Resident Graduation 2017
Friday, June 23, 2017
Founders Hall

Holiday Party 2017
Friday, December 1, 2017
Carolina Yacht Club

We Would Love to Hear From You!

If you have ideas or would like to contribute to Sleepy Times, the deadline for the July edition will be June 16, 2017.