Critical Connections
The Complete News Source for Critical Care Professionals

Critical Care Congress
Advance Program

February 17-20, 2019 | San Diego Convention Center | San Diego, California, USA

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Patient-centered care in the intensive care unit (ICU) requires a commitment by the ICU team to the “Right Care, Right Now,” delivering the right care at exactly the right moment to achieve optimal patient outcomes. But in addition to this important goal, our team, the surgical intensive care unit (SICU) at the University of Michigan in Ann Arbor, Michigan, USA, began a journey in 2005, seeking to establish the ideal patient- and family-centered care (PFCC) experience. To accomplish this, we assembled a multidisciplinary team to establish an environment that fosters the concept of being continually responsive to the needs, priorities and choices of patients and their families.

The SICU is a 20-bed unit caring for a wide variety of critically ill adult surgical patients (general, specialty and transplant surgery). It also serves as a regional acute respiratory distress syndrome referral center for extracorporeal membrane oxygenation (ECMO). In 2005, the unit transitioned to having all patients cared for by a multidisciplinary ICU team, led by a board-certified surgical or anesthesiology intensivist. Evidence-based critical care was promoted, using standardized protocols and policies and implemented strategies to prevent complications in an effort to achieve optimal patient outcomes.

Utilizing evidence-based practice guidelines from the Society of Critical Care Medicine, the American Association of Critical-Care Nurses and the Institute for Patient- and Family-Centered Care, our concurrent goal was to adopt the concept that patient- and family-centered care is a critical component of optimizing patient outcomes in the SICU.

“Transforming Care: Developing a Patient- and Family-Centered ICU” p9

Clinical Spotlight
Transforming Care: Developing a Patient- and Family-Centered ICU

The Value and Future of Patient-Centered Outcomes Research

“The Value and Future of Patient-Centered Outcomes Research” p4

In This Issue…
Patient- and Family-Centered Care
Learn how to enhance communication with families in the ICU.

See how one ICU team worked toward excellence in family-centered care.

Delve into the intricacies and nuances of patient blood management.

Thank you for your membership in the Society of Critical Care Medicine. Learn more about the benefits of membership at www.sccm.org or call +1 847 827-6888.
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48th Critical Care Congress Advance Program

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From the Editor...

This special issue of Critical Connections highlights the many exciting activities planned for the Society of Critical Care Medicine’s (SCCM) 48th Critical Care Congress, to be held February 17-20, in San Diego, California, USA. We hope you can join us.

The Society’s annual Congress is the largest multiprofessional critical care event of the year, bringing together more than 6,000 critical care professionals from around the world. This four-day event will offer opportunities to learn about cutting-edge research or review the fundamentals of critical care with experts in the field in a variety of venues, from traditional lectures, to debates in the Critical Crosstalk Theater, to Roundtable Discussions, to the Tech Lab.

The Pre-Congress Educational Sessions keep getting better and better. This year, there will be three new topics: liver failure, palliative and end-of-life care, and research methodology. Congress highlights will include exciting plenary sessions: Rana L. Awdish, MD, will talk about “A View from the Edge: Creating a Culture of Caring.” Robert H. Bartlett, MD, will receive the Lifetime Achievement Award from the Society and will talk about “Extracorporeal Life Support in Critical Care.” Ronald V. Maier, MD, will talk about “Response to Injury and Stress: A Genomic Storm.” And don’t miss the second annual Critical Care Quiz Show for some fun entertainment and maybe even some education!

Keeping with tradition, all components of this stellar program were designed to highlight the most up-to-date, evidence-based developments in critical care medicine. One of the best aspects of Congress is the opportunity to share creative ideas and inspired perspectives with old colleagues or new friends who are all members of the multidisciplinary, multiprofessional critical care team. Regardless of your profession or role in the critical care team, you will find opportunities to enhance your practice at this year’s Congress.
A learning healthcare environment occurs when clinical care, clinical research/quality improvement, and interdisciplinary team-shared education are so intertwined and integrated that they are basically inseparable. Each element informs and benefits the other, with the end result being implementation of best practices—evidence-based when possible and conscientiously consensus-derived when evidence is unavailable.

Infrastructure for developing and fostering a learning healthcare environment in the ICU is schematically represented as the house of continuous process improvement. This structure is founded on the principle of patients and families first. Oversight is provided by an informed and engaged staff of interdisciplinary critical care professionals. Essential pillars of continuous process improvement include quality, cost, delivery, and safety. Attention to the quality/cost ratio ensures high-value ICU care.

Developing and fostering a learning healthcare environment in the ICU is based on the following six principles:

1. **Practicing evidence-based medicine whenever possible**

   The Society of Critical Care Medicine (SCCM) has recently fostered evidence-based medicine in three areas related to the practice of critical care: Choosing Wisely, ICU Liberation, and the Surviving Sepsis Campaign (SSC).

   **Choosing Wisely**
   - The original 2014 Choosing Wisely activities for critical care included:
     1. Don’t order diagnostic tests at regular intervals (such as every day), but rather in response to specific clinical questions.
     2. Don’t transfuse red blood cells in hemodynamically stable, non-bleeding ICU patients with a hemoglobin concentration greater than 7 g/dL.
     3. Don’t prescribe parenteral nutrition for adequately nourished critically ill patients during the first seven days of an ICU stay.
     4. Don’t deeply sedate mechanically ventilated patients without a specific indication and without daily attempts to lighten sedation.
     5. Don’t continue life support for patients at high risk for death or severely impaired functional recovery without offering patients and their families the alternative of care focused entirely on comfort.

   **Surviving Sepsis Campaign**
   - The SSC is a collaborative effort between SCCM and the European Society of Intensive Care Medicine (ESICM) that began in 2002. This international quality improvement program has focused on the publication of evidence-based guidelines and iterative process improvement for rapid identification and treatment of sepsis. The previous SSC 3- and 6-hour bundles have recently been merged into an ideal state hour-1 bundle that emphasizes the earliest recognition and treatment of sepsis. It includes the following elements:
     1. Measure the lactate level and remeasure if initial lactate is > 2 mmol/L.
     2. Obtain blood cultures before initiating antibiotics.
     3. Administer broad-spectrum antibiotics.
     4. Begin rapid administration of 30 mL/kg of crystalloid for hypotension or lactate > 4 mmol/L.
     5. Apply vasopressors if the patient is hypotensive during or after fluid resuscitation to maintain mean arterial pressure > 65 mm Hg.

2. **Designing clinical standard work modules to reduce practice variation, conducting iterative plan-do-study-act cycles of clinical standard work, and displaying outcomes of continuous process improvement activities**

   Advantages of protocols for delivering ICU care have been summarized as follows: avoiding errors of omission, improving unit efficiency, decreasing cost, and maintaining a standard of care. A standardized approach to care facilitates identifying and eliminating waste, maintaining gains from rapid process improvement, communicating between providers, establishing a baseline for continuous improvement, and minimizing noise and controlling for nuisance variables when attempting to identify best practice. It has been emphasized that standardization represents the foundation for iterative process improvement and, without standardization, measurements of improvement are impossible.

   Clinical standard work should be evidence-based whenever possible and consensus-derived among relevant stakeholders when evidence is not available. ICU Liberation provides an infrastructure for clinical standard work for usual care in the ICU. Other SCCM areas of clinical standard work include the Sepsis 3.0 definitions for adult sepsis and a similar ongoing initiative for pediatric sepsis. In both instances, the new definitions derive from actual patient data as well as a rigorous consensus process. Developing and updating a variety of guidelines related to ICU practice remains a key initiative of SCCM’s American College of Critical Care Medicine; these guidelines provide the most up-to-date information to inform development of local clinical standard work that reflects best practice. Ideally any clinical standard work should undergo regular plan-do-study-act cycles to iteratively improve the process toward an ideal state. Providing feedback in the form of run charts of clinically meaningful outcome data and celebrating successes encourages ongoing interest and involvement of relevant stakeholders.

3. **Participating in interdisciplinary teaching and education**

   SCCM is the largest organization of critical care professionals. Clearly a paramount SCCM mission is development and dissemination of interdisciplinary education materials. SCCM’s Critical Care Congress highlights this activity. Multiple other teaching venues that are relevant to the ICU team include adult and pediatric review and ultrasound courses, Congress pre-courses, focused topic summits, webinars, podcasts, and a wealth of information housed on SCCM’s website. SCCM’s Fundamentals courses have flourished over the past several years and are taught around the world. They now include several specialty modules. SCCM committee involvement frequently affords members opportunities to participate in specialized education that may include development of white papers. SCCM currently supports two specialty journals, Critical Care Medicine and...
A learning healthcare organization embraces applied clinical improvement research

5. Supporting clinical, translational, and quality improvement research
A learning healthcare organization embraces applied clinical research and rigorous quality improvement as key aspects of identifying best practice. Research should be a standard of care for most ICUs. Multidisciplinary support of local research and quality improvement enriches the ICU environment for everyone and ultimately improves patient care. Maintaining equipoise on important critical care issues by ICU providers fosters conduct of high-quality research in the ICU and ultimately underlies an evidence basis for practice. SCCM's PCOR-ICU collaborative identified practices to best engage ICU families in the care plan, while SCCM's THRIVE initiative is examining how patient support groups and post-ICU clinics can moderate the burden of long-term morbidity among ICU survivors and their families.

Discovery, the Critical Care Research Network, is SCCM's research enterprise, which is committed to enhancing all types of clinical research related to critical illness. Discovery manages pilot grants, provides detailed critique of research proposals, matches research mentors with junior investigators, meets face-to-face and virtually several times a year, and integrates SCCM research resources with researchers. Supporting validation studies for the new Sepsis 3.0 definitions and SSC guidelines are other important areas of SCCM member involvement in research. Currently SCCM is also submitting multiple research resources with researchers. Supporting validation studies for the new Sepsis 3.0 definitions and SSC guidelines are other important areas of SCCM member involvement in research. Currently SCCM is also submitting multiple research proposals related to the Biomedical Advanced Research and Development Authority’s (BARDA) request for disruptive, innovative investigations to enhance national preparedness for natural and man-made disasters.

6. Promoting wellness and resilience for all ICU providers as well as patients and families
A learning healthcare environment requires a healthy ICU and family as well as the multidisciplinary team. Burnout syndrome (BOS), characterized by emotional exhaustion, depersonalization, cynicism, and reduced personal accomplishment, threatens this workforce. Since miscommunication is frequently a root cause of medical errors, SCCM ICU Liberation and Patient-Centered Outcomes Research Institute – ICU (PCOR-ICU) programs both stress clear communication among ICU providers, patients, and families. Because hospital-acquired infections represent a common critical illness medical error, SCCM has supported efforts to reduce central line-associated bloodstream infections, catheter-associated urinary tract infections, and ventilator-associated infections. Medication errors represent the most common type of error and account for nearly 80% of serious medical errors in the ICU. SCCM's Clinical Pharmacy and Pharmacology Section is committed to improving the prescription, transcription, preparation, dispensation, and administration of ICU medications.

Conclusion
It has been astutely noted that systems awareness and systems design, like promotion of a learning healthcare environment in the ICU, are important for healthcare professionals, but these are not enough. Ultimately the secret of best-quality, lowest-cost, equitably delivered, and safe ICU care becomes love. Not just love for best practice and outcomes, but love for the patient and family as well as the multidisciplinary team.

Jerry J. Zimmerman, MD, PhD, FCCM, is on the faculty in Pediatric Critical Care Medicine at Seattle Children's Hospital and at the University of Washington School of Medicine in Seattle, Washington, USA.
Safety and accuracy was proven in an FDA correlation study of 16,778 capillary results from critically ill patients compared to laboratory venous results. StatStrip can now be used with venous, arterial or capillary samples from critically ill patients.

Use of any other glucose meter in critical care is considered off label by the FDA and would require following high complexity testing procedures, including patient consent.

CLIA-waived status for a meter is also lost if it is used off label on critically ill patients.

A hospital cannot avoid these federal regulations by substituting their own meter validation testing or by redefining critically ill patients.
Critical Care Quiz Show
The 48th Critical Care Congress will feature an updated and more robust Critical Care Quiz Show! Specialty section teams will be invited to match wits against each other. Attendees will gather to watch and root for their teams during the friendly competition, as contestants show off their critical care knowledge in this fast-paced game show.

Critical Crosstalk Theater
Participate in stimulating discussions on critical care. This theater features educational sessions and debates focused on critical care topics in the fields of internal medicine, anesthesiology, surgery, and more. Discussions are led by SCCM faculty members and specialty section members.

Roundtable Discussions
Discuss critical care topics and network with peers on a variety of professional, career, and leadership subjects. These discussions are led by experienced moderators and are designed to provide participants with multiple quick learning opportunities within each time block.

Tech Lab
Learn, collaborate, and network with fellow attendees about the latest and best technologies available in your personal and professional life. Technology demonstrations, experiential learning, social media analysis, and talks about a variety of hot technology topics will be featured.

Wellness Lab
The Wellness Lab will give clinicians an opportunity to focus on their own well-being, which is essential for safe and high-quality patient care, as well as reducing stress and burnout. A wellness expert will be on site to lead a variety of sessions on topics including health and wellness habits, relaxation techniques, keys to healthy living, wellness technologies, and meditation techniques. Roundtable discussions will feature members discussing stress and burnout reduction success stories. Experiential approaches to stress reduction will be introduced and demonstrated.

Congress Highlights
Don’t miss these popular Congress events while in San Diego.

Plenary Sessions
Attend thought-provoking presentations that promote innovative developments in critical care. Plenary sessions are held at unopposed times, with presentations given by distinguished, world-renowned leaders in the critical care field. Confirmed speakers include:

Rana L. Awdish, MD, FACCPEike Grenvik Honorary Lecture
A View from the Edge: Creating a Culture of Caring
Critical Care Physician
Director of the Pulmonary Hypertension Program, Henry Ford Hospital
Medical Director, Care Experience, Henry Ford Health System
Detroit, Michigan, USA

Robert H. Bartlett, MD
Lifetime Achievement Award
Extracorporeal Life Support in Critical Care
Professor Emeritus of Surgery
University of Michigan
Ann Arbor, Michigan, USA

Ronald V. Maier, MD, FACS, FRCS Ed (Hon)
Max Harry Weil Memorial Lecture
Response to Injury and Stress: A Genomic Storm
Jane and Donald D. Trunkey Professor and Vice Chair of Surgery
University of Washington
Seattle, Washington, USA
Surgeon-in-Chief
Harborview Medical Center
Seattle, Washington, USA

Paul E. Pepe, MD, MPH, FACEP, FAEMS, MACEP, MCCM
Peter Safar Memorial Lecture
A 2020 Vision of CPR: Evolution, Revolution, and Novel Solutions
Professor of Medicine, Surgery, Pediatrics, Emergency Medicine, Public Health and Riggs Family Chair in Emergency Medicine,
University of Texas Southwestern Medical Center
Dallas, Texas, USA

Kathryn Rowan, PhD
William Shoemaker Honorary Lecture
Improving Critical Care and Outcomes Using National Clinical Audit
Director of Scientific & Strategic Development and Clinical Trials Unit
Director - ICNARC
Honorary Professor, London School of Hygiene & Tropical Medicine,
University of London
London, United Kingdom
Pre- and Post-Congress Educational Sessions

Each course is packed with essential clinical information to keep you well informed on various critical care topics. Course prices vary. Visit sccm.org/Congress to register.

**Friday, February 15, and Saturday, February 16, 2019**

**Critical Care Ultrasound: Adult**
Gain the realistic training needed to perform and interpret ultrasound imaging during this two-day comprehensive course. Participants benefit from skill stations that allow the immediate integration of learned skills using live models. Hands-on learning with a high faculty-to-attendee ratio includes topics such as Cardiac Output, Left/Right Ventricular Function, Focused Assessed Transthoracic Echocardiography Examination, Vascular Ultrasound, and Ask the Expert. This course will be held at the Hilton San Diego Bayfront hotel.

**Critical Care Ultrasound: Pediatric and Neonatal**
Learn how to perform and interpret pediatric and neonatal ultrasound imaging during this comprehensive two-day course. Expert faculty will review the latest pediatric and neonatal strategies in ultrasound image interpretation and diagnostic challenges. Extensive faculty coverage ensures a significant hands-on experience for each participant. Topics covered at the skill stations include Vascular and Guided Procedures, Volume Status, Ventricular Function, and Ask the Expert. This course will be held at the Hilton San Diego Bayfront hotel.

**Current Concepts in Adult Critical Care**
Enhance and update your critical care knowledge by attending this two-day multidisciplinary course, which will highlight a variety of topics applicable to the intensive care unit setting. The interactive format will include presentations on select topics, including Drug Withdrawal Syndromes, Cytokine Release Syndrome, Inhaled Antibiotics for Respiratory Infection, and the pro/con discussion, Do Mandates Improve Sepsis Care and Outcomes? Panel discussion provides attendees the opportunity to ask questions. Attendees will receive an accompanying book written by the faculty.

**Current Concepts in Pediatric Critical Care**
Attain expert knowledge and bring home new information and approaches for your pediatric critical care practice. This two-day interactive course with panel discussions will focus on clinical challenges pertinent to the critical care practitioner and will provide insight into new and controversial topics. The 16 presentations will include Tiered Transfusion Strategies, Metabolic Emergencies, Pharmacologic and Mechanical Support in Pediatric Heart Failure, and Toxidromes of Emerging Street Drugs. Attendees will receive an accompanying book written by the faculty.

**Disaster Medicine and Toxicologic Emergencies for the Veterinary Critical Care Specialist**
*Held in partnership with the American College of Veterinary Emergency and Critical Care*
This two-day program is designed for veterinary emergency and critical care practitioners, residents, and interns. The first day will feature an in-depth look at common toxicities affecting cats and dogs. The program will emphasize mechanism of action, diagnosis, and treatment of toxins leading to emergency presentation and requiring intensive care and support. Many veterinary intensive care units and emergency departments around the United States have been faced with patient management in the face of a natural disaster. The second day of the program will cover common environmental emergencies that occur with fires and hurricanes, as well as facility preparedness, disaster response teams, and unanticipated events based on the experiences of the presenters.

**Advanced VV ECMO Workshop**
*Held in partnership with the Extracorporeal Life Support Organization*
Led by expert faculty, this two-day workshop covers all elements of managing severe hypoxemic and hypercapnic respiratory failure on VV ECMO. Topics covered include ventilator management on VV ECMO, troubleshooting the ECMO circuit, anticoagulation management, awake ambulatory ECMO, ECMO as a bridge to transplant, and the growing role of EECO2R. Novel and challenging simulation sessions will complement lectures to provide an immersive educational experience.

**Fundamental Critical Care Support: Obstetrics**
This two-day, newly developed Fundamentals licensed course is designed for intensivists and other critical care clinicians who focus on maternal/fetal critical care and those in obstetrics seeking additional education in critical care. Course content covers physiologic changes during pregnancy, specific obstetric medical conditions and their appropriate treatment, maternal cardiovascular resuscitation and airway management of critically ill pregnant patients, and appropriate steps in fetal assessment, delivery, and neonatal management. Skill stations will complement the lectures and allow course participants to practice clinical scenarios.
Pre- and Post-Congress Educational Sessions

Saturday, February 16, 2019

UPDATED Airway Management for the Critically Ill Patient
This full-day course will include didactic discussion and hands-on learning for emergent intubation, airway management pharmacology, rescue techniques for maintaining ventilation, and traditional and novel techniques and tools for difficult airway management in the adult and pediatric population. Attendees will also learn from expert faculty at skill stations encompassing laryngoscopy, fiberoptic intubation, surgical approaches to airway establishment, and rescue strategies in adult and pediatric airway management.

UPDATED Liver Failure in the ICU
The liver failure population lends unique challenges to management for the intensive care specialist. As liver transplantation has expanded both in the United States and abroad, more hospitals are becoming referral centers for patients with liver disease. Featuring a combination of lectures and case studies, this half-day precourse is designed to highlight some of the common considerations in management of liver failure in the ICU.

Bedside Pharmacologic Management
The first- and second-line therapies failed; you are already "off the map" in terms of guidelines, protocols, algorithms, and order sets. Now what? What exactly are the rules and what skills do you need to (safely) break them? Come and explore solutions for common clinical challenges— and misadventures, whoops!—in medication management with leading experts. Topics for this eight-hour course will include toxicology, neurocritical care, pain, agitation, sepsis, and shock. There will be an emphasis on skills and practice that challenge the new and seasoned clinician alike.

Critical Care Quality Summit
The Critical Care Quality Summit is a unique conference focused on peer-to-peer learning led by expert faculty exploring hot topics in critical care patient safety and quality. The intensive care unit (ICU) team is encouraged to attend, as well as individuals who can plan to return to their ICU equipped with innovative implementation strategies. This event will cultivate an environment of learning and sharing with like-minded critical care professionals with the goal of improving bedside care.

ICU Simulation Bootcamp: A Multidisciplinary Approach to Bedside Emergencies and Teamwork
This high-fidelity simulation course is designed for ICU providers in training (senior residents and fellows) and all new-to-practice ICU providers (physicians, nurses, nurse practitioners, physician assistants, pharmacists, and respiratory therapists). Attendees will participate in high-fidelity simulated ICU emergencies to improve teamwork, leadership, and situational awareness in acute ICU care. Attendees will practice managing high-risk but infrequent ICU-type conditions in a realistic environment and then debrief the learning experience in collaborative and interactive sessions. This full-day course is not intended for experienced intensivists or for medical or nursing students. This course will take place at the Naval Medical Center in San Diego. Round-trip transportation will be provided.

Because this course is held in a U.S. government facility and there is a need for attendee security clearance, registration will be closed January 14, 2019. Attendee identification MUST be provided by January 14. No registrations can be taken after this date or on site. Further details and the mandatory identification form can be found at sccm.org/Congress when registering.

UPDATED Neurologic Monitoring in the Adult and Pediatric ICUs
This full-day course will examine the usefulness and implementation of a variety of advanced neurologic monitoring modalities in the ICU. Indications, choice of appropriate patients, advantages, and pitfalls will be discussed. Topics will include continuous EEG, including post-processing modalities such as quantitative and amplitude-integrated EEG, brain tissue oxygenation, transcranial Doppler, microdialysis, and neurosonology, including ophthalmic ultrasound, intracranial pressure monitoring, biomarkers, and neuroimaging. A pediatric and adult case-based format will be incorporated, including medical and surgical clinical scenarios in cardiac arrest, stroke, traumatic brain injury, subarachnoid hemorrhage, and status epilepticus.

NEW! Palliative and End-of-Life Care in the ICU: State of the Art and Skills for the Intensivist Team
Providing palliative and end-of-life care in the ICU is one of a clinician’s greatest challenges. This half-day course provides both didactic and experiential learning with multidisciplinary experts in the field. Attendees will learn the latest evidence in the fields of primary and specialty palliative care, as well as techniques to optimize complex discussions with clinicians, patients, and families. Participants will practice these skills in small group sessions focused on difficult conversations and formal family meetings.

NEW! SCCM Critical Care Research Methodology and Career Trajectory Foundation Course
Why select a research career in critical care? It is an integral part of hospital care, consuming a substantial proportion of the beds and the budget. With increasing critical care needs and better research infrastructure, critical care research is expected to boom. This full-day course will explore the nature and scope of choosing an academic research career in critical care and will include topics such as identifying funding opportunities, writing grant proposals, finding mentors, and research collaboration. This course is applicable to surgeons, physicians, anesthesiologists, pharmacists, and nurses. It will be predominantly directed toward trainees, residents, fellows, and medical students but is also applicable to early career professionals.

Thursday, February 21, 2019

Emergency Neurological Life Support (ENLS): What to Do in the First Critical Hour of a Neurological Emergency
Presented by the Neurocritical Care Society
Emergency Neurological Life Support (ENLS) is designed to help healthcare professionals improve patient care and outcomes during the most crucial time—the critical first hours of the patient’s neurological emergency. ENLS covers a collaborative, multidisciplinary approach that outlines a consistent set of protocols, practical checklists, decision points, and suggested communications to use during patient management. Completion of this course and online assessment provides 15 hours of Level 1 CME, ANCC, ACPE and CAPCE credit, and two-year ENLS certification.

This course will be held from 8:00 a.m. to 4:30 p.m. Registration is being handled by the Neurocritical Care Society (NCS). To register, email enls@neurocriticalcare.org.
FRIDAY, FEBRUARY 15, 2019

8:00 A.M. – 4:30 P.M.

+ PRE-Congress Educational Session

Current Concepts in Pediatric Critical Care – Day 1

Moderators: Elizabeth H. Mack, Elizabeth S. Goswami

8:00 a.m. – 8:15 a.m.

Welcome and Opening Remarks

Elizabeth H. Mack

8:15 a.m. – 8:30 a.m.

Latest in Management of Pediatric Strokes

Jennifer C. Erklauer

8:55 a.m. – 9:15 a.m.

Targeted Temperature Management Post-Arrest

Utpal S. Bhalaria

9:35 a.m. – 9:50 a.m.

Break

9:55 a.m. – 10:00 a.m.

Preparing Your Children’s Hospital for Disaster

Steven E. Krug

10:30 a.m. – 11:10 a.m.

Tiered Transfusion Strategies

Marianne Nellis

11:10 a.m. – 11:30 a.m.

Panel Discussion

Jennifer C. Erklauer, Utpal S. Bhalaria, Steven E. Krug, Marianne Nellis

11:30 a.m. – 12:30 p.m.

Lunch

12:30 p.m. – 1:10 p.m.

Drug Dosing Considerations in AKI and RRT

Elizabeth S. Goswami

1:10 p.m. – 1:30 p.m.

Hot Issues in Pediatric Liver Transplantation

Salish N. Nadig

1:50 p.m. – 2:05 p.m.

Break

2:05 p.m. – 2:45 p.m.

New Nutrition Guidelines

Elizabeth Emrath

2:45 p.m. – 3:25 p.m.

Metabolic Emergencies Not to Be Missed

Salish N. Nadig

3:25 p.m. – 3:45 p.m.

Panel Discussion

Elizabeth S. Goswami, Elizabeth Emrath, Jamie L. Fraser, Salish N. Nadig

3:45 p.m. – 4:00 p.m.

Closing Remarks

Elizabeth H. Mack

8:00 A.M. – 5:00 P.M.

+ PRE-Congress Educational Session

Critical Care Ultrasound: Adult – Day 1

Moderators: Sara Nikravan, Paul K. Mohabir

7:30 a.m. – 7:45 a.m.

Welcome and Introductions

Sara Nikravan, Paul K. Mohabir

7:45 a.m. – 8:15 a.m.

Pretest Review

Sara Nikravan

8:15 a.m. – 9:00 a.m.

Basic Physics and Knobology

Christopher Schott

9:00 a.m. – 9:45 a.m.

Fundamental Echocardiography Views

Nibras Bughrara

9:45 a.m. – 10:00 a.m.

Break

10:00 a.m. – 12:00 p.m.

Skill Stations:

1. Apical Views

2. Parasternal Views

3. Subcostal Views

Sarah E. Bain, Monika Aplyn, Nibras Bughrara, Michael C. Woo, Vidy K. Rao, Vi Am Dinh, Peter E. Croft, Jose L. Diaz-Gomez, John Klick, Marcos Lopez, Daniel W. Johnson, Jan Kasal, Sara Nikravan, Michael J. Lanspa, Ng Niu, Paul K. Mohabir, Antonio Hernandez, Jason M. Parente, Enyo Ablordepey, Lisa Rapoport, Christopher Schott, Daniel A. Sweeney, Carla Venegas-Borsellino, Mark P. Hamlin, Stephanie Cha

12:00 p.m. – 1:00 p.m.

Lunch and Clinical Cases

Michael C. Woo, Monika Aplyn

1:00 p.m. – 1:30 p.m.

Basic Evaluation of Left Ventricular Function and Cardiac Output

Jamie Fraser

1:30 p.m. – 2:00 p.m.

Basic Evaluation of Right Ventricular Function

Paul K. Mohabir

2:00 p.m. – 2:25 p.m.

Intravascular Volume Assessment

Daniel A. Sweeney

2:30 p.m. – 2:45 p.m.

Break

2:45 p.m. – 4:45 p.m.

Skill Stations:

1. Cardiac Output

2. Volume Assessment

3. Left/Right Ventricular Function

Sarah E. Bain, Monika Aplyn, Nibras Bughrara, Michael C. Woo, Vidy K. Rao, Vi Am Dinh, Peter E. Croft, Jose L. Diaz-Gomez, John Klick, Marcos Lopez, Daniel W. Johnson, Jan Kasal, Sara Nikravan, Michael J. Lanspa, Ng Niu, Paul K. Mohabir, Antonio Hernandez, Jason M. Parente, Enyo Ablordepey, Lisa Rapoport, Christopher Schott, Daniel A. Sweeney, Carla Venegas-Borsellino, Mark P. Hamlin, Stephanie Cha

4:45 p.m. – 5:00 p.m.

Clinical Cases and Interactive Questions

Enyo Ablordepey, Carla Venegas-Borsellino
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 A.M. – 5:00 P.M.</td>
<td>Pre-congress Educational Session</td>
</tr>
</tbody>
</table>
| Disaster Medicine and Toxicologic Emergencies for the Veterinary Critical Care Specialist: Approach to the Critically Ill Toxicology Patient – Day 1 (see page 15 for Day 2) | Moderator: Elizabeth Davidow  
8:00 a.m. – 8:15 a.m.: Welcome and Course Introduction  
Marie R. Baldisseri, Lauren A. Plante, Scott A. Harvey  
8:15 a.m. – 8:45 a.m.: Review of Antidotes in Veterinary Toxicology  
Justine A. Lee  
9:30 a.m. – 10:15 a.m.: Emergency Management and Treatment of Cardiotoxins  
Justine A. Lee  
10:15 a.m. – 10:30 a.m.: Break  
10:30 a.m. – 12:00 p.m.: Journal Review: What’s New in Toxicology  
Justine A. Lee  
12:00 p.m. – 1:00 p.m.: Lunch  
1:00 p.m. – 2:30 p.m.: Hemodialysis and Extracorporeal Treatment in Veterinary Toxicology  
Sheri J. Ross  
2:30 p.m. – 3:15 p.m.: Liver Let Die: Hepatotoxins  
Tina Wismer  
3:15 p.m. – 3:30 p.m.: Urine, or You’re Out: Renal Toxins  
Tina Wismer  
3:30 p.m. – 4:15 p.m.: Tweakers, Tokers, and Other Nervous System Toxicants  
Tina Wismer  
4:15 p.m. – 5:00 p.m.: Break  |
| 8:00 A.M. – 5:00 P.M. | Pre-congress Educational Session                                      |
| Fundamental Critical Care Support: Obstetrics – Day 1 (see page 15 for Day 2) | Moderators: Lauren A. Plante, Scott A. Harvey  
8:00 a.m. – 8:15 a.m.: Welcome and Course Introduction  
Marie R. Baldisseri, Lauren A. Plante, Scott A. Harvey  
8:15 a.m. – 8:45 a.m.: Review of Antidotes in Veterinary Toxicology  
Justine A. Lee  
9:30 a.m. – 10:15 a.m.: Emergency Management and Treatment of Cardiotoxins  
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Tina Wismer  
4:15 p.m. – 5:00 p.m.: Break  |
| 8:00 A.M. – 5:00 P.M. | Pre-congress Educational Session                                      |
| Critical Care Ultrasound: Pediatric and Neonatal – Day 1 (see page 12 for Day 2) | Moderator: David Kantor  
8:30 a.m. – 8:45 a.m.: Welcome and Overview  
David Kantor  
8:45 a.m. – 9:30 a.m.: Knobology, Physics, and Artifacts  
Jason Z. Stoller  
9:30 a.m. – 10:00 a.m.: Focused Assessment With Sonography in Trauma (FAST)/Abdominal Examination  
Mark D. Weber  
10:45 a.m. – 11:30 a.m.: Basic Cardiac Views  
Jesse Wenger  
11:30 a.m. – 12:30 p.m.: Lunch and Clinical Cases  
Jeff Burzynski  
12:30 p.m. – 2:30 p.m.: Skill Stations:  
1. FAST/Abdominal Examination  
2. Vascular and Guided Procedures  
3. Knobology  
Sonali Basu, Karen Boretsky, Jeff Burzynski, Maria V. Fraga, Christie Glau, Ellie Hirshberg, David Kantor, Jae H. Kim, Jason Z. Stoller, Mark D. Weber, Jesse Wenger, Bereketeab Haileselassie, Adam Domeja  
2:30 p.m. – 2:45 p.m.: Break  
2:45 p.m. – 3:15 p.m.: Left Ventricular Function  
Ellie Hirshberg  
3:15 p.m. – 3:45 p.m.: Thoracic Examination  
Christie Glau  
3:45 p.m. – 4:15 p.m.: Ultrasound in Neonates: Procedural  
Maria V. Fraga  
4:15 p.m. – 4:45 p.m.: Administration/Program Development  
David Kantor  
4:45 p.m. – 5:00 p.m.: Break  
5:00 p.m. – 7:00 p.m.: Skill Stations:  
1. Apical Views  
2. Parasternal Views  
3. Subcostal Views  
Sonali Basu, Karen Boretsky, Jeff Burzynski, Maria V. Fraga, Christie Glau, Ellie Hirshberg, David Kantor, Jae H. Kim, Jason Z. Stoller, Mark D. Weber, Jesse Wenger, Bereketeab Haileselassie, Adam Domeja  
8:30 A.M. – 7:00 P.M. | Pre-congress Educational Session                                      |
| Critical Care Ultrasound: Pediatric and Neonatal – Day 1 (see page 12 for Day 2) | Moderator: David Kantor  
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2:45 p.m. – 3:15 p.m.: Left Ventricular Function  
Ellie Hirshberg  
3:15 p.m. – 3:45 p.m.: Thoracic Examination  
Christie Glau  
3:45 p.m. – 4:15 p.m.: Ultrasound in Neonates: Procedural  
Maria V. Fraga  
4:15 p.m. – 4:45 p.m.: Administration/Program Development  
David Kantor  
4:45 p.m. – 5:00 p.m.: Break  
5:00 p.m. – 7:00 p.m.: Skill Stations:  
1. Apical Views  
2. Parasternal Views  
3. Subcostal Views  
Sonali Basu, Karen Boretsky, Jeff Burzynski, Maria V. Fraga, Christie Glau, Ellie Hirshberg, David Kantor, Jae H. Kim, Jason Z. Stoller, Mark D. Weber, Jesse Wenger, Bereketeab Haileselassie, Adam Domeja
SATURDAY, FEBRUARY 16, 2019

7:00 A.M. – 5:00 P.M.  
**PRE-CONGRESS EDUCATIONAL SESSION**  
*Critical Care Ultrasound: Pediatric and Neonatal – Day 2* (see page 11 for Day 1)

Moderator: David Kantor

6:30 a.m. – 7:00 a.m.

> Questions and Overview

David Kantor

7:00 a.m. – 7:30 a.m.

> Ultrasound in Neonates: Diagnostic

Ruth M. Kleinpell

Jesse Wenger, Bereketeab Haileselassie

9:15 a.m. – 9:30 a.m.

> Right Ventricular Evaluation and Volume Overload

Ellie Hirshberg

10:15 a.m. – 10:45 a.m.

> Volume Responsiveness

David Kantor

10:45 a.m. – 11:15 a.m.

> Approach to Shock and Tamponade

Jeff Burzynski

11:15 a.m. – 12:15 p.m.

> Lunch and Clinical Cases/Expert Panel discussion

Karen Boretsky

12:15 p.m. – 1:15 p.m.

> Break

1:15 p.m. – 2:30 p.m.

> Skill Stations:  
  1. Putting it Together: Shock
  2. Volume Assessment
  3. Ask the Expert

Sonali Basu, Karen Boretsky, Maria V. Fraga, Christine Glau, Ellie Hirshberg, David Kantor, Jae H. Kim, Jason Z. Stoller, Mark D. Weber, Jesse Wenger, Bereketeab Haileselassie, Adam Himebauch

2:30 p.m. – 3:30 p.m.

> Break

3:30 p.m. – 4:00 p.m.

> Ultrasound in Neonates: Diagnostic

Joe H. Kim

3:00 p.m. – 3:30 p.m.

> Putting it Together: Interactive Cases

Adam Himebauch

4:00 p.m. – 5:00 p.m.

> Point-of-Care Ultrasound: What’s Next?

Bereketeab Haileselassie

Karen Boretsky

4:30 p.m. – 5:00 p.m.

> Posttest Discussion and Closing Remarks

David Kantor

7:30 A.M. – 5:00 P.M.  
**PRE-CONGRESS EDUCATIONAL SESSION**  
*Critical Care Quality Summit*

Moderators: Jason M. Kane, Teresa A. Rincon, Pamela L. Smithburger

7:30 a.m. – 8:00 a.m.

> Welcome and Overview

Teresa A. Rincon, Pamela L. Smithburger

8:00 a.m. – 8:15 a.m.

> ABCDEF Bundle: Show Me the Data

Brenda T. Pun

9:00 a.m. – 10:00 a.m.

> ABCDEF Bundle: Show Me the Data

Brenda T. Pun

10:00 a.m. – 10:15 a.m.

> Break and Poster Viewing

10:15 a.m. – 11:00 a.m.

> Patient- and Family-Centered Care Implementation Strategies

Judy E. Davidson, Brenda T. Pun

11:00 a.m. – 12:00 p.m.

> SCCM Definitions of Potentially Inappropriate and Futile Interventions

Nneka O. Sederstrom

12:00 p.m. – 1:00 p.m.

> ABCDEF Bundle: Show Me the Data

Brenda T. Pun

1:00 p.m. – 1:30 p.m.

> What’s Next at SCCM: Quality Collaboratives

Kathy Vermoch

1:30 p.m. – 2:15 p.m.

> 2018 PADIS Guidelines

John W. Devlin

2:15 p.m. – 3:15 p.m.

> Networking Discussions:

Topic 1: PADIS Guidelines

John W. Devlin

Topic 2: ABCDEF Bundle

Brenda T. Pun

Topic 3: Clinician Burnout

Ruth M. Kleinpell

Topic 4: Ethical Considerations

Nneka O. Sederstrom

Topic 5: End of Life

Mitchell M. Levy

Topic 6: Pediatric Considerations for Quality and Safety

Jason M. Kane

3:15 p.m. – 4:30 p.m.

> Break

4:30 p.m. – 5:15 p.m.

> Ethical Considerations for End-of-Life Planning in an Age of Predictive Modeling

Mitchell M. Levy, Teresa A. Rincon

4:15 p.m. – 5:00 p.m.

> Engaging an Entire Health System: How to Implement Quality and Safety Initiatives and Best Practices Across Diverse Hospitals Within One System

Teresa A. Rincon, David Murray

7:30 A.M. – 5:00 P.M.
This schedule is subject to change. Visit sccm.org/Congress for the most up-to-date schedule.

Schedule of Events

<table>
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<tr>
<th>7:30 A.M. – 5:00 P.M.</th>
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<th>8:00 A.M. – 12:00 P.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRE-CONGRESS EDUCATIONAL SESSION</strong></td>
<td><strong>Critical Care Ultrasound: Adult – Day 2</strong> (see page 10 for Day 1)</td>
<td><strong>Liver Failure in the ICU</strong></td>
</tr>
<tr>
<td>SCCM Critical Care Research Methodology and Career Trajectory Foundation Course</td>
<td>Moderators: Sara Nikravan, Paul K. Mohabir</td>
<td>Moderators: Constantine J. Karvellas, Ram M. Subramanian, Jody C. Olson</td>
</tr>
<tr>
<td>Moderators: Sheila A. Alexander, Sonal R. Pannu</td>
<td>7:30 a.m. – 7:45 a.m.</td>
<td>8:00 a.m. – 8:20 a.m.</td>
</tr>
<tr>
<td>&gt; Welcome and Introduction Sheila A. Alexander, Sonal R. Pannu</td>
<td>&gt; Questions and Overview Sara Nikravan</td>
<td>&gt; Definitions, Epidemiology, and Prognostication Jody C. Olson</td>
</tr>
<tr>
<td>7:40 a.m. – 8:00 a.m.</td>
<td>7:45 a.m. – 8:15 a.m.</td>
<td>8:20 a.m. – 8:40 a.m.</td>
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<tr>
<td>8:00 a.m. – 8:20 a.m.</td>
<td>8:15 a.m. – 8:45 a.m.</td>
<td>8:40 a.m. – 9:00 a.m.</td>
</tr>
<tr>
<td>&gt; Securing Success for Research: Turning Clinical Questions Into Funded Research J. Perren Cobb</td>
<td>&gt; Tamponade: Diagnosis and Physiology John Klick</td>
<td>&gt; Renal Failure in Patients With Cirrhosis Constantine J. Karvellas</td>
</tr>
<tr>
<td>8:20 a.m. – 8:40 a.m.</td>
<td>8:45 a.m. – 9:15 a.m.</td>
<td>9:00 a.m. – 9:20 a.m.</td>
</tr>
<tr>
<td>&gt; Securing Success for Research: Fundamental Aspects of Grants and Funding Opportunities Marilyn Hravnak</td>
<td>&gt; Focused Assessment with Sonography in Trauma (FAST) Examination Vi Am Dinh</td>
<td>&gt; Infectious Disease Complications of Cirrhosis Rahul S. Nanchal</td>
</tr>
<tr>
<td>8:40 a.m. – 9:00 a.m.</td>
<td>9:15 a.m. – 9:45 a.m.</td>
<td>9:40 a.m. – 10:00 a.m.</td>
</tr>
<tr>
<td>&gt; Panel Discussion</td>
<td>&gt; Echocardiographic Approach to Shock Lisa Rapoport</td>
<td>&gt; Hepatic Encephalopathy Jody C. Olson</td>
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<tr>
<td>Mary Beth Happ, Theodore J. Iwashyna, Michelle Ng Gong</td>
<td>9:45 a.m. – 10:00 a.m.</td>
<td>10:00 a.m. – 10:20 a.m.</td>
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<tr>
<td>9:00 a.m. – 9:20 a.m.</td>
<td>&gt; Break</td>
<td>&gt; Coagulation Abnormalities in Liver Disease Constantine J. Karvellas</td>
</tr>
<tr>
<td>&gt; Mentorship and Research Collaboration: Finding Mentorship and Enhancing Success Through Mentoring Relationships Sonal R. Pannu</td>
<td>10:00 a.m. – 12:00 p.m.</td>
<td>10:20 a.m. – 10:35 a.m.</td>
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<tr>
<td>9:20 a.m. – 9:40 a.m.</td>
<td>&gt; Skill Stations:</td>
<td>&gt; Break</td>
</tr>
<tr>
<td>&gt; Mentorship and Research Collaboration: How to Develop a National and International Reputation, Role of Research Collaboration Teams, and More Michelle Ng Gong</td>
<td>10:35 a.m. – 11:00 a.m.</td>
<td>10:35 a.m. – 11:00 a.m.</td>
</tr>
<tr>
<td>9:40 a.m. – 10:00 a.m.</td>
<td>&gt; 1. FAST Examination</td>
<td>&gt; Case Studies Constantine J. Karvellas, Rahul S. Nanchal</td>
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<tr>
<td>&gt; Panel Discussion Sheila A. Alexander, Ishaq Lat, Jonathan E. Sevransky</td>
<td>&gt; 2. Tamponade Evaluation</td>
<td>11:00 a.m. – 11:20 a.m.</td>
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<tr>
<td>10:00 a.m. – 10:15 a.m.</td>
<td>&gt; 3. Focused Assessed Transthoracic Echocardiography (FATE) Examination Sarah E. Bain</td>
<td>&gt; Post-Liver Transplant Management: Nursing Considerations Whitney L. McMillen</td>
</tr>
<tr>
<td>&gt; Break</td>
<td>Michael C. Woo, Vidya K. Rao, Vi Am Dinh, Peter E. Croft, Jose L. Diaz-Gomez, John Klick, Marcos Lopez, Daniel W. Johnson, Jan Kasal, Sara Nikravan, Michael J. Lanspa, Ng Niu, Paul K. Mohabir, Antonio Hernandez, Jason M. Parente, Eno Ablordepeey, Lisa Rapoport, Christopher Schott, Daniel A. Sweeney, Carla Venegas-Borsellino, Mark P. Hamlin, Stephanie Cha</td>
<td>11:20 a.m. – 11:40 a.m.</td>
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<tr>
<td>10:15 a.m. – 12:15 p.m.</td>
<td>12:00 p.m. – 1:00 p.m.</td>
<td>&gt; Hemodynamic and Pulmonary Complications of Liver Failure Ram M. Subramanian</td>
</tr>
<tr>
<td>&gt; Hands-On Session 1: Here Is a Hypothesis: Let’s Develop a Study From Hypothesis to Publication Rahul Kashyap, Ishaq Lat, J. Perren Cobb</td>
<td>&gt; Lunch and Clinical Cases Marcos Lopez, Stephanie Cha</td>
<td>11:40 a.m. – 12:00 p.m.</td>
</tr>
<tr>
<td>10:15 a.m. – 12:15 p.m.</td>
<td>1:00 p.m. – 1:30 p.m.</td>
<td>&gt; Perioperative Management of the Liver Transplant Patient Rahul S. Nanchal</td>
</tr>
<tr>
<td>&gt; Hands-On Session 2: How to Develop a Specific Aims Page Mary Beth Happ, Jonathan E. Sevransky</td>
<td>&gt; Vascular Ultrasound Sarah E. Bain</td>
<td></td>
</tr>
<tr>
<td>12:15 p.m. – 1:15 p.m.</td>
<td>1:30 p.m. – 2:15 p.m.</td>
<td>12:40 p.m. – 1:00 p.m.</td>
</tr>
<tr>
<td>&gt; Lunch</td>
<td>&gt; Evaluation of Pneumothorax, Pleural Effusions, and Thoracentesis Peter E. Croft</td>
<td>&gt; Focused Assessment with Sonography in Trauma (FAST) Examination Vi Am Dinh, Peter E. Croft, Jose L. Diaz-Gomez, John Klick, Marcos Lopez, Michael C. Woo, Vidya K. Rao, Vi Am Dinh, Peter E. Croft, Jose L. Diaz-Gomez, John Klick, Marcos Lopez, Daniel W. Johnson, Jan Kasal, Sara Nikravan, Michael J. Lanspa, Ng Niu, Paul K. Mohabir, Antonio Hernandez, Jason M. Parente, Eno Ablordepeey, Lisa Rapoport, Christopher Schott, Daniel A. Sweeney, Carla Venegas-Borsellino, Mark P. Hamlin, Stephanie Cha</td>
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<tr>
<td>1:15 p.m. – 1:15 p.m.</td>
<td>2:15 p.m. – 2:30 p.m.</td>
<td>1:35 p.m. – 1:50 p.m.</td>
</tr>
<tr>
<td>&gt; Hands-On Session 3: Bring the Nonscientific Sections of Your Grant Proposal Sonal R. Pannu, Sheila A. Alexander, Theodore J. Iwashyna</td>
<td>&gt; Break</td>
<td>&gt; Coagulation Abnormalities in Liver Disease Constantine J. Karvellas</td>
</tr>
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<td>1:15 p.m. – 1:15 p.m.</td>
<td>2:30 p.m. – 4:30 p.m.</td>
<td>10:20 a.m. – 10:35 a.m.</td>
</tr>
<tr>
<td>&gt; Hands-On Session 4: NIH Mock Review Session Michelle Ng Gong, J. Perren Cobb, Marilyn Hravnak</td>
<td>&gt; Skill Stations:</td>
<td>&gt; Break</td>
</tr>
<tr>
<td>3:15 p.m. – 3:30 p.m.</td>
<td>1. Lung: Pleural Effusions and Thoracentesis</td>
<td>2:30 p.m. – 4:30 p.m.</td>
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<tr>
<td>&gt; Break</td>
<td>&gt; 2. Vascular Ultrasound</td>
<td>&gt; Skill Stations:</td>
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<tr>
<td>3:30 p.m. – 3:50 p.m.</td>
<td>&gt; 3. Ask the Expert Sarah E. Bain, Monika Aplyn, Nibras Bughrara, Michael C. Woo, Vidya K. Rao, Vi Am Dinh, Peter E. Croft, Jose L. Diaz-Gomez, John Klick, Marcos Lopez, Daniel W. Johnson, Jan Kasal, Sara Nikravan, Michael J. Lanspa, Ng Niu, Paul K. Mohabir, Antonio Hernandez, Jason M. Parente, Eno Ablordepeey, Lisa Rapoport, Christopher Schott, Daniel A. Sweeney, Carla Venegas-Borsellino, Mark P. Hamlin, Stephanie Cha</td>
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<td>4:30 p.m. – 5:00 p.m.</td>
<td>5:00 p.m. – 5:30 p.m.</td>
</tr>
<tr>
<td>&gt; Manuscripts and Publications: The Key to Keeping Them Going Mary Beth Happ</td>
<td>&gt; Questions, Answers, and Moving Forward Sara Nikravan</td>
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<tr>
<td>4:10 p.m. – 4:30 p.m.</td>
<td>&gt; Summary Sheila A. Alexander, Sonal R. Pannu</td>
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</tr>
</tbody>
</table>
Schedule of Events

8:00 A.M. – 4:00 P.M.

> PRE-CONGRESS EDUCATIONAL SESSION

Current Concepts in Pediatric Critical Care – Day 2 (see page 10 for Day 1)
Moderators: Elizabeth H. Mack, Elizabeth S. Goswami
8:00 a.m. – 8:15 a.m.
Welcome Back
Elizabeth S. Goswami
8:15 a.m. – 8:50 a.m.
Pharmacologic and Mechanical Support in Pediatric Heart Failure
Scott I. Aydin
8:55 a.m. – 9:35 a.m.
Newer Oncology Treatment Example: Chimeric Antigen Receptor T Cell Therapy
James S. Killinger
9:35 a.m. – 10:00 a.m.
Break
9:50 a.m. – 10:30 a.m.
Latest in Pulmonary Hypertension Management
Jeffrey R. Fineman
10:30 a.m. – 11:10 a.m.
Management of Bleeding on Extracorporeal Therapies
Tim Humlicek
11:10 a.m. – 11:50 a.m.
Panel Discussion
Scott I. Aydin, James S. Killinger, Jeffrey R. Fineman, Tim Humlicek
11:50 a.m. – 12:30 p.m.
Lunch
12:30 p.m. – 1:10 p.m.
Toxidromes of Emerging Street Drugs
Edward E. Conway Jr
1:10 p.m. – 1:50 p.m.
Closing Remarks
Elizabeth H. Mack

10:15 a.m. – 10:50 a.m.
> Controversies in Surgical Airway Technique
Daniel D. Yeh
10:50 a.m. – 11:15 a.m.
> The Airway Management Team
TBD
11:15 a.m. – 12:00 p.m.
> Challenges in Pediatric Airway Management
Nicholas Dalesio
12:00 p.m. – 1:00 p.m.
> Lunch
1:00 p.m. – 1:45 p.m.
> Skill Station 1: Laryngoscopes
Edward A. Bittner, Arthur Tokarczyk
1:45 p.m. – 2:30 p.m.
> Skill Station 2: Fiberoptic Intubation
William E. Hurford, David M. Ferraro
2:30 p.m. – 3:15 p.m.
> Skill Station 3: Surgical Airway
Daniel D. Yeh
3:15 p.m. – 3:30 p.m.
> Break
3:30 p.m. – 4:15 p.m.
> Skill Station 4: Rescue Noninvasive Ventilation
Ulrich Schmidt, TBD
4:15 p.m. – 5:00 p.m.
> Skill Station 5: Pediatric Airway
Nicholas Dalesio, Arun Saini

8:00 A.M. – 5:00 P.M.

> PRE-CONGRESS EDUCATIONAL SESSION

Bedside Pharmacologic Management
Moderators: Jeremiah J. Duby, Tyree H. Kiser
8:00 a.m. – 8:40 a.m.
Global Care Versus the World of (Poisons): Practical Toxicology
Janice L. Zimmerman
8:40 a.m. – 9:20 a.m.
Focusing Fire or Watchful Waiting: Substance Withdrawal in the ICU
Jeremiah J. Duby
9:20 a.m. – 10:00 a.m.
> Bleeding on Direct Oral Anticoagulants: Reversal to the Rescue!
Cassie A. Barton
10:00 a.m. – 10:30 a.m.
> Panel Questions and Answers: Toxicology
Janice L. Zimmerman, Jeremiah J. Duby, Cassie A. Barton
10:30 a.m. – 10:30 a.m.
> Break
10:30 a.m. – 11:10 a.m.
> Anything and Everything but Panic: Refractory and Super-Refractory Seizures
Holly E. Hinson
11:10 a.m. – 11:50 a.m.
> Head-On to Heads-Up: Active Traumatic Brain Injury Management
TBD
11:50 a.m. – 12:00 p.m.
> Panel Questions and Answers: Neurocritical Care
Holly E. Hinson, TBD
12:00 p.m. – 1:00 p.m.
> Lunch
1:00 p.m. – 1:30 p.m.
> Sedation: Updates on Clinical Practice Guidelines
Gilles L. Fraser
1:30 p.m. – 1:50 p.m.
> Show, Don’t Tell: Reduce Delirium and Its Associated Outcomes
John W. Devlin
2:10 p.m. – 2:50 p.m.
> Multimodal Analgesia: Opioid- and Pain-Free?
John W. Devlin
2:50 p.m. – 3:00 p.m.
> Panel Questions and Answers: Pain, Agitation, and Delirium
Gilles L. Fraser, John W. Devlin
3:00 p.m. – 3:15 p.m.
> Break
3:15 p.m. – 3:45 p.m.
> Antibiotics: Shiny and New?
Monica Donnelley
3:45 p.m. – 4:15 p.m.
> Vasopressors: MAP the Course?
Seth R. Baur
4:15 p.m. – 4:45 p.m.
> Big and Fast: Antibiotic Dosing in Obesity and Augmented Renal Clearance
Tyree H. Kiser
4:45 p.m. – 5:00 p.m.
> Panel Questions and Answers: Pain, Agitation, and Delirium
Monica Donnelley, Seth R. Baur, Tyree H. Kiser

8:00 A.M. – 5:00 P.M.

> PRE-CONGRESS EDUCATIONAL SESSION

Current Concepts in Adult Critical Care – Day 2 (see page 10 for Day 1)
Moderators: Ho Geol Ryu, Michael J. Connor
8:00 a.m. – 8:05 a.m.
Welcome Back
Ho Geol Ryu, Michael J. Connor
8:05 a.m. – 8:50 a.m.
> Microbiomes and Pathobiomes in Critically Ill Patients
Craig M. Cooper smith
8:50 a.m. – 9:35 a.m.
> Venovenous ECMO in the ICU
Gregory J. Schears
9:35 a.m. – 10:00 a.m.
> Conversing With the Experts: Panel Discussion
Craig M. Cooper smith, Gregory J. Schears
10:00 a.m. – 10:15 a.m.
> Break
10:15 a.m. – 11:00 a.m.
> The Lyter Side of Acid-Base: A Critical Appraisal of Crystalloid Resuscitation and Its Effect on pH
David C. Kaufman
11:00 a.m. – 11:45 a.m.
> When to Start Renal Replacement Therapy in Critically Ill Patients: Early Versus Late
Michael J. Connor
11:45 a.m. – 12:00 p.m.
> Conversing With the Experts: Panel Discussion
Gregory J. Schears, David C. Kaufman, Michael J. Connor
12:00 p.m. – 1:00 p.m.
> Lunch
1:00 p.m. – 1:45 p.m.
> Advanced Practice Providers in the ICU
Ruth M. Kleinle pin
1:45 p.m. – 2:30 p.m.
> Inhaled Antibiotics for Respiratory Infection
Christine M. Groth
2:30 p.m. – 2:50 p.m.
> Conversing With the Experts: Panel Discussion
Ruth M. Kleinle pin, Christine M. Groth
2:50 p.m. – 3:05 p.m.
> Break
3:05 p.m. – 3:50 p.m.
> Alternative Options for Sedation in the ICU
Christopher D. Adams
3:50 p.m. – 4:35 p.m.
> The ABCDEF Bundle
J. Matthew Aldrich
4:35 p.m. – 4:55 p.m.
> Conversing With the Experts: Panel Discussion
Christopher D. Adams, J. Matthew Aldrich
4:55 p.m. – 5:00 p.m.
> Closing Remarks
Ho Geol Ryu, Michael J. Connor

Additional charge to attend = Ticketed session. Continental breakfast included with all pre- and post-Congress sessions.
# Schedule of Events

## Saturday, February 16

### 8:00 A.M. – 5:00 P.M.

<table>
<thead>
<tr>
<th>Session Title</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>PRE-Congress Educational Session</em></td>
<td>8:00 A.M. – 5:00 P.M.</td>
</tr>
<tr>
<td>Disas...</td>
<td></td>
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### 1:00 P.M. – 5:00 P.M.

<table>
<thead>
<tr>
<th>Session Title</th>
<th>Time</th>
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<tbody>
<tr>
<td><em>PRE-Congress Educational Session</em></td>
<td>1:00 P.M. – 5:00 P.M.</td>
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<tr>
<td>Palliative...</td>
<td>1:00 P.M. – 5:00 P.M.</td>
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## Schedule of Events

<table>
<thead>
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<th>Event</th>
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<tbody>
<tr>
<td>8:00 A.M.</td>
<td><a href="#">PRE-Congress Educational Session: Disas...</a></td>
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<tr>
<td>10:45 a.m. – 11:30 a.m.</td>
<td>Thromboembolic Disease and Pregnancy</td>
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<tr>
<td>9:45 a.m. – 10:00 a.m.</td>
<td>Sepsis</td>
</tr>
<tr>
<td>9:00 a.m. – 9:45 a.m.</td>
<td>Nonobstetric Surgical Diseases in the Pregnant Patient</td>
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<tr>
<td>8:15 a.m. – 9:00 a.m.</td>
<td>Obstetric Hemorrhage</td>
</tr>
<tr>
<td>9:00 a.m. – 9:45 a.m.</td>
<td>Nonobstetric Surgical Diseases in the Pregnant Patient Mary J. Reed</td>
</tr>
<tr>
<td>10:00 a.m. – 10:45 a.m.</td>
<td>Septic A. Jason Vaught</td>
</tr>
<tr>
<td>11:30 a.m. – 12:15 p.m.</td>
<td>Fetal Evaluation and Fetal Concerns in the Seriously III Pregnant Patient Lauren A. Plante</td>
</tr>
<tr>
<td>1:00 p.m. – 1:45 p.m.</td>
<td>Management of Delivery and the Newborn Frederico G. Rocha</td>
</tr>
<tr>
<td>2:15 p.m. – 2:30 p.m.</td>
<td>Transport of the Critically III Pregnant Patient Randy S. Wax</td>
</tr>
<tr>
<td>3:00 p.m. – 3:45 p.m.</td>
<td>Skill Station: Delivery and Neonatal Resuscitation Frederico G. Rocha, Randy S. Wax</td>
</tr>
<tr>
<td>4:00 p.m. – 4:45 p.m.</td>
<td>Skill Station: Postpartum Hemorrhage Mary J. Reed, A. Jason Vaught</td>
</tr>
<tr>
<td>5:00 p.m. – 5:45 p.m.</td>
<td>Wrap-Up and Posttest Lauren A. Plante, Scott A. Harvey, Marie R. Baldissi, Frank M. O’Connell, Mary J. Reed, Frederico G. Rocha, A. Jason Vaught, Randy S. Wax</td>
</tr>
<tr>
<td>8:00 A.M. – 5:00 P.M.</td>
<td><a href="#">PRE-Congress Educational Session: Neurolog...</a></td>
</tr>
<tr>
<td>8:00 A.M. – 8:10 A.M.</td>
<td>Welcome and Opening Remarks Erik Su, Cherylee W.J. Chang</td>
</tr>
<tr>
<td>12:10 A.M. – 12:45 A.M.</td>
<td>Lunch</td>
</tr>
<tr>
<td>1:20 A.M. – 2:00 A.M.</td>
<td>Brain Oxygenation Measurement Wendy C. Ziel</td>
</tr>
<tr>
<td>2:30 A.M. – 3:00 A.M.</td>
<td>Transcranial Doppler Charles H. Tegeler IV</td>
</tr>
<tr>
<td>4:45 A.M. – 5:30 A.M.</td>
<td>Wrap-Up and Posttest</td>
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</table>

### Remarks

This schedule is subject to change. Visit sccm.org/Congress for the most up-to-date schedule.

© Additional charge to attend © Ticketed session. Continental breakfast included with all pre- and post-Congress sessions.
### SUNDAY, FEBRUARY 17, 2019

#### 8:00 A.M. – 9:30 A.M.

<table>
<thead>
<tr>
<th>OPENING SESSION</th>
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</thead>
<tbody>
<tr>
<td><strong>Welcome</strong></td>
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</table>

#### 2019 Presidential Address

**Heatherlee Bailey, MD, FCCM**  
Durham VA Medical Center  
Department of Emergency Medicine  
Durham, North Carolina, USA

#### 9:30 A.M. – 3:45 P.M.

<table>
<thead>
<tr>
<th>PLENIARY SESSION</th>
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<tbody>
<tr>
<td><strong>Plenary Session 1</strong></td>
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<tr>
<td>TBD</td>
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<tr>
<th>Exhibit Hall Open</th>
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<tr>
<td>9:30 A.M. – 10:30 A.M.</td>
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<table>
<thead>
<tr>
<th>Break</th>
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<tbody>
<tr>
<td>10:30 A.M. – 11:30 A.M.</td>
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#### 10:30 A.M. – 11:30 A.M.

<table>
<thead>
<tr>
<th>Opioids: Crisis in Healthcare and Society</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderator: Corey J. Witenko</td>
</tr>
</tbody>
</table>
| > Nursing Issues Across the Spectrum  
  Lauren R. Sorce |
| > Drug-Seeking Behavior in the ICU  
  Wynne E. Morrison |
| > Complications of Drug Abuse  
  Heather L. Evans |

<table>
<thead>
<tr>
<th>Pro/Con Debate: Are AKI Biomarkers Ready for Clinical Use?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderator: Jay L. Koyner</td>
</tr>
</tbody>
</table>
| > Limitations of the Current Consensus AKI Definition  
  John A. Kellum |
| > Pro: Let the Testing Begin!  
  Jay L. Koyner |
| > Con: We’re Not There Yet . . .  
  Michael G.S. Shashaty |

<table>
<thead>
<tr>
<th>New Strategies in Managing Complex Wounds in the Critically Ill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderator: William S. Miles</td>
</tr>
</tbody>
</table>
| > Anatomy, Pathophysiologic Basis, and Bacteriology of Complex Wounds in the ICU  
  Addison K. May |
| > Wound Emergencies: Not Just Flesh-Eating Bacteria  
  Jose J. Diaz Jr |
| > Antibiotic Stewardship and Difficult ICU Wounds: Time, Type, and Topicals  
  Anthony T. Gerlach |
| > The Challenging Oncologic Wound: Bone Marrow Suppression, Malignancy, and Graft-Versus-Host Disease  
  Joseph L. Nates |
| > Novel Strategies for the Challenging Wound: Beyond Negative Pressure  
  William S. Miles |

<table>
<thead>
<tr>
<th>Toxicology Pearls for Everyone</th>
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<tbody>
<tr>
<td>Moderator: Edward A. Bittner, Laura Baumgardner</td>
</tr>
</tbody>
</table>
| > Basic Poison Management for the Intensive Care Provider  
  Jerrold B. Leikin |
| > Trends in National Poison Data  
  Janice L. Zimmerman |
| > Best Toxicology Articles of 2018  
  Bryan Hayes |
| > Controversies in Toxicology Management  
  Aaron Skolnik |
| > Antidotes  
  Bryan Hayes |

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/= Ticketed session. Continental breakfast included with all pre- and post-Congress sessions.
### ACCM Adult Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption (PADIS)

**Moderator:** John W. Devlin

- Methods and Application of Key Pain, Sedation, and Immobility Recommendations
  - John W. Devlin
- Application of Key Delirium and Sleep Recommendations
  - Gerald L. Weinhouse
- ICU Survivor Perspectives
  - Cheryl J. Misak
- Lessons Learned, Implementation Suggestions, and Future Steps
  - Yoanna Skrobik

### How to Become a Fellow

**Moderator:** TBD

### Pro/Con Debate: Who Should Be in Charge of Multidisciplinary Critical Care Training?

**Moderator:** Gilman B. Allen

- Pro: Keep It Simple: Follow the ACGME Supervision Restrictions
  - Antoinette Spevetz
- Con: Allow Us to Cross-Pollinate
  - Paul D. Boerem

### Sweet and Sour: Pearls and Perils of Glycemic Management

**Moderator:** Diana Wells Mulherin

- Transitions in Glycemic Control: How Not to Drop Anchor From Your Emergency Canoe
  - James F. Gilmore IV
- Acute Dysglycemia: You Are Probably Doing It Wrong
  - Brian C. Beldowicz
- Nutrition: What Do Barfish, Coffee Bombs, and Beef Jerky Have in Common?
  - Greet H. Van den Berghe

### Fibbing With the Atria: New-Onset Atrial Fibrillation

**Moderator:** Drayton A. Hammond

- Anticoagulation Management
  - TBD
- Rate, Rhythm, and Roll
  - Aranya Bagchi
- Fibrillation in Special Populations
  - Clara M. Shaver

### Trainee to Faculty: Get There and Get Comfortable

**Moderators:** Utpal S. Bhalala, Roshni Sreedharan

- Bettering the Perception of Competence as Viewed by Self and Colleagues: How Can We Help?
  - Marc J. Popovich
- Work and Life: Striking the Balance and Keeping Burnout at Bay
  - Judy E. Davidson
- Engaging the Team for Effective Interdisciplinary Rounds: Tips and Tricks
  - Vinay M. Nadkarni
- Resilience in the ICU: Training Our Trainees
  - Ashish K. Khanna

### Late-Breaking News in Critical Care Medicine

**TBD**

### Star Research Presentations
MONDAY, FEBRUARY 18, 2019

6:15 A.M. - 7:45 A.M.
- EDUCATIONAL SYMPOSIA
Catecholamine Resistant Distributive Shock: Current Management
8:00 A.M. - 8:45 A.M.
- PLENARY SESSION
- PETER SAFAR MEMORIAL LECTURE
A 2020 Vision of CPR: Evolution, Revolution, and Novel Solution
Paul E. Pepe, MD, MPH, FACEP, FAEMS, MACEP, MCCM
Professor of Medicine, Surgery, Pediatrics, Emergency Medicine, Public Health and Riggs Family Chair in Emergency Medicine, University of Texas Southwestern Medical Center at Dallas;
Medical Director for Emergency Medical Services / Public Safety Dallas County
Dallas, Texas, USA

8:30 A.M. - 3:30 P.M.
Exhibit Hall Open

8:45 A.M. - 9:45 A.M.
Break

9:45 A.M. - 11:45 A.M.
Hot Controversies in Sepsis: Surfing the Wave of Change
Moderators: R. Phillip Dellinger, Judith Jacobi
- Caring for the Patient: Protocized or Individualized
  Mitchell M. Levy
- Is Early Goal-Directed Therapy Dead in the Water?
  TBD
- Early Fluids or Early Vasopressor Agents
  TBD
- Which Fluid-Balanced Crystalloid, Unbalanced Crystalloid, or Just Albumin?
  Greg S. Martin
- Steroids for Everyone, No One, or Just a Select Few
  Djillali Annane

9:45 A.M. - 10:45 A.M.
Late Breakers: SCCM Journals
Moderators: Timothy G. Buchman, Patrick M. Kochanek

9:45 A.M. - 10:45 A.M.
Mitigation of Burnout in the ICU: Separating Myth From Reality
Moderator: Heather Meissen, Gilman B. Allen
- Disruptive Clinician Behavior
  James D. Fortenberry
- Interpersonal Harmony: Why Can’t We All Just Get Along?
  Vishal Bakshi
- More Than a Minion: Renewing Purpose in Our Daily Work
  Ruth M. Kleingell

9:45 A.M. - 11:45 A.M.
Organ Repair and Recovery: How Long, if Ever
Moderator: Stephen M. Pastores
- Renal Recovery After Acute Kidney Injury
  John A. Kellum
- Skeletal Muscle Recovery
  Ramona O. Hopkins
- Neurocognitive Recovery
  Pratik P. Pandharipande
- Immune Recovery
  Mark W. Hall
- Endocrine Recovery
  Greet H. Van den Berghe

9:45 A.M. - 10:45 A.M.
Pediatric Surgical Critical Care: Same Patients, Different Perspectives
Moderator: Samir K. Gadepalli
- ECMO Cannulation Strategies
  Michael W. Dingeldein
- Fluid Management in the Complex Postoperative Pediatric Patient
  Alexander Feliz
- Massive Transfusion and Coagulopathy in Pediatric Trauma
  Adam M. Vogel
- Understanding Damage Control in Pediatric Patients
  Laura Boomer

9:45 A.M. - 10:45 A.M.
Pro/Con Debate: Procedures in the ICU: APP Versus GME
Moderator: TBD
- APPs Performing Procedures
  Courtney Struble
- GMES Performing Procedures
  Edward A. Bittner

11:00 A.M. - 12:00 P.M.
Critical Care Societies Collaborative Joint Session: Moral Distress, In-Hospital Violence, and Conflict Management Techniques
Moderator: Lewis J. Kaplan
- Moral Distress
  Vicki S. Good
- In-Hospital Violence and Professionalism Failure
  Juan C. Celedon
- Conflict Management Techniques
  Joshua B. Kasyer

11:00 A.M. - 12:00 P.M.
Late Breakers: Other Medical Journals
Moderator: TBD

11:00 A.M. - 12:00 P.M.
Mending Little Hearts
Moderator: Ndidiamaka L. Musa
- Genetic Basis for Congenital Cardiac Disease
  Mustafa Khokha
- What Becomes of the Person With Cyanotic Congenital Heart Disease?
  Adrienne Kovacs
- Mechanical Cardiac Assist Devices
  Paul A. Checchia

11:00 A.M. - 12:00 P.M.
Pro/Con Debate: Is ECMO First-Line Therapy in ARDS?
Moderator: Rahul S. Nanchal
- Con: ECMO Is Not First-Line Therapy in ARDS
  Roy G. Brower
- Pro: ECMO Is First-Line Therapy in ARDS
  Alain Combes

11:00 A.M. - 12:00 P.M.
Year in Review: Internal Medicine
Moderator: TBD

11:00 A.M. - 12:00 P.M.
Year in Review: Nursing
Moderator: Mary E. Lough
- Adult Critical Care Nursing: Year in Review
  Marilyn Schallom
- Pediatric Critical Care Nursing: Year in Review
  Jacqueline Elegant

This schedule is subject to change. Visit sccm.org/Congress for the most up-to-date schedule.
12:00 P.M. – 1:15 P.M.
Fellowship Program Directors Luncheon: Mentorship Programs in Critical Care: A Road Less Traveled
Moderator: Ashish K. Khanna
> Welcome
> Ashish K. Khanna
> Mentorship During Fellowship: A Real-World Experience
Piyush Mathur
> Survey Feedback: Nationwide Need for Critical Care Mentorship Survey?
Jason E. Moore
> Multiprofessional Mentorship During Critical Care Training: Formal, Informal, or Both?
Gilles L. Fraser
> Novel Mentorship Ideas: An International Perspective
Jan Bakker
> Summary and Group Discussion
Ashish K. Khanna, Piyush Mathur, Jason E. Moore, Gilles L. Fraser, Jan Bakker

1:30 P.M. – 2:15 P.M.
PLENARY SESSION
LIFETIME ACHIEVEMENT AWARD
Extracorporeal Life Support in Critical Care
Robert H. Bartlett, MD
Professor Emeritus of Surgery
University of Michigan
Ann Arbor, Michigan, USA

3:15 P.M. – 4:15 P.M.
Big Data and Quality Measures
Moderators: Robert D. Stevens
> Designing the Electronic Medical Record to Maximize Quality and Safety in the ICU
Vitaly Herasevich
> Machine Learning to Classify ICU Big Data: Impact on Quality and Safety
Leo Anthony G. Cell
> Prediction of Clinical Decompensation Using Physiologic Time Series and Electronic Medical Record Data
James C. Fackler

3:15 P.M. – 4:15 P.M.
Pediatric Sedation: Less Is More
Moderator: Ira M. Cheifetz
> Move, Don’t Sedate
Sapna Kudchadkar
> Pediatric Delirium: Fact or Fiction
Chani S. Traube
> Nursing Procedural Sedation Competencies in the Pediatric ICU
Lauren R. Sorce

3:15 P.M. – 4:15 P.M.
Pro/Con Debate: Steroids in the ICU: To Give or Not to Give
Moderator: Lauren Roller
> Pro: Give Steroids
Djillali Annane
> Con: No Steroids
Bram Rochwerg

3:15 P.M. – 4:15 P.M.
The Critical Care Opioid Crisis
Moderators: Jose L. Pascual, Jeanmarie Perrone
> ICU Resource Utilization in the Opioid Overdose Crisis
Jennifer P. Stevens
> ABCDEF: Treat Pain First, Right? Are We Creating Narcotics Addicts in the ICU
Paul Yaffe
> Shortages and Alternatives to Opioids
Jessica Crow

3:15 P.M. – 4:15 P.M.
Year in Review: Emergency Medicine and Prehospital Care
Moderator: Brian T. Wessman
> Prehospital Care, Initial Stabilization, and Transfer of the Critically Ill Patient
Jacob B. Keeperman
> Time Zero: ICU Care on Arrival to the Emergency Department
Trenton C. Wray
> Bringing Emergency Medicine Care Upstairs
Katherine Pollard

3:15 P.M. – 4:15 P.M.
The Critical Care Opioid Crisis
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Jennifer P. Stevens
> ABCDEF: Treat Pain First, Right? Are We Creating Narcotics Addicts in the ICU
Paul Yaffe
> Shortages and Alternatives to Opioids
Jessica Crow

3:15 P.M. – 4:15 P.M.
Year in Review: Neuroscience
Moderator: TBD

3:15 P.M. – 5:15 P.M.
SCCM/ESICM JOINT SESSION
Sepsis Research: Gaps, Priorities, and Goals; What Does the Future Hold?
Moderators: Jozef Kesecioglu, Jerry J. Zimmerman
> Panel Discussion
Daniel P. De Backer, Craig M. Coopersmith, Mitchell M. Levy
3:15 P.M. – 5:15 P.M.
Immunomodulators in Critical Illness: Updates From Clinical Trials
Moderator: Heather A. Personett
> Immunotherapy of Sepsis Using Anti-PDL1 Antibody
  Sachin Yende
> Human Myeloid-Derived Suppressor Cells in Sepsis
  Philip A. Elron
> GM-CSF for Immunomodulation Following Trauma
  Mark W. Hall
> Treatment Strategies for HLH/MAS in the ICU
  Jennifer A. McArthur
> Nontraditional ICU Drugs to Affect Inflammation
  Marc G. Jeschke

3:15 P.M. – 5:15 P.M.
Optimizing Antibiotic Use in Your ICU
Moderator: Rahul S. Nanchal
> The New Paradigm: Antibiotic Stewardship in the ICU
  Simon W. Lam
> How to De-Escalate Antibiotic Therapy
  Michael Klompas
> Biomarker-Guided Antibiotic Therapy
  Anand Kumar
> When Not to Give Antibiotics
  Rahul S. Nanchal
> Therapeutic Antibiotic Monitoring and How to Effectively Decipher It
  Scott Micek

4:30 P.M. – 5:30 P.M.
Barriers to Implementation of Evidence-Based Practices in Patients With ARDS
Moderator: Colin K. Grissom
> Low Tidal Volume Ventilation and High PEEP in ARDS: Perception Versus Implementation
  Robert C. Hyzy
> What Is the Evidence for Alternative Modes of Mechanical Ventilation in ARDS?
  Richard D. Branson
> Identifying Barriers to Implementation and Developing Interventions
  Michelle Ng Gong

4:30 P.M. – 5:30 P.M.
Controversies in Pediatric ARDS
Moderator: Ira M. Cheifetz
> Optimal Tidal Volume for Pediatric ARDS
  Neal J. Thomas
> High-Frequency Ventilation for Pediatric ARDS
  Martin C.J. Kneyber
> Prone Positioning for Pediatric ARDS
  Martha A.Q. Curley

4:30 P.M. – 5:30 P.M.
If You Build It, They Will Come: Optimizing ICU Bed Utilization
Moderator: Jeremy M. Kahn
> Is My ICU the Right Size?
  Hannah Wunsch
> Do I Have the Right Patients in My ICU?
  Barbara A. Birriel
> Why Can’t I Use My Beds More Efficiently?
  Michael D. Howell

4:30 P.M. – 5:30 P.M.
Pro/Con Debate: To REBOA or Not to REBOA
Moderators: Kristine A.K. Lombardozzi, Todd Rasmussen
> Pro: REBOA
  Mayur Narayan
> Con: REBOA
  Matthew E. Lissauer

4:30 P.M. - 5:30 P.M.
Safety and Quality Lessons You Need to Learn
Moderator: Jason M. Kane
> Family-Centered Care Is High-Quality Medical Care
  Maureen A. Madden
> Throwing Competition to the Wind: Collaboration to Save Lives
  Kimberly Jackson
> Healing Environments
  Kathleen L. Seerup

4:30 P.M. – 5:30 P.M.
Year in Review: Anesthesiology
Moderator: Ashish K. Khanna
> Top Ten Critical Care Articles of 2018
  Ranjit Deshpande
> Refractory Shock in the ICU: The Old, the New, and the Future
  Ashish K. Khanna
> Mechanical Circulatory Support Devices in 2019: What to Expect and Key Management Pearls
  Steven Miller
TUESDAY, FEBRUARY 19, 2019

8:00 A.M. – 8:45 A.M.
• PLENARY SESSION
  • MAX HARRY WEIL MEMORIAL LECTURE
  Response to Injury and Stress: A Genomic Storm
  Ronald V. Maier, MD, FACS, FRCS
  Ed (Hon)
  Jane and Donald D. Trunkey Professor and Vice Chair of Surgery
  University of Washington
  Seattle, Washington, USA
  Surgeon-in-Chief
  Harborview Medical Center
  Seattle, Washington, USA

8:30 A.M. – 1:30 P.M.
Exhibit Hall Open

8:45 A.M. – 9:45 A.M.
Break

9:45 A.M. – 10:45 A.M.
Abstract Awards
  Moderators: Bill E. Dager, Steven Greenberg, Lynn J. Hydo

9:45 A.M. – 10:45 A.M.
Amniotic Tsunami: Critical Care of the High-Risk Obstetric Patient
  Moderator: Richard M. Pino
  > Management of the Obstetric Patient With Congenital Cardiac Abnormalities
    Andrea Gimius
  > The Pregnant Patient With Hypertension, Coronary Disease, and Pulmonary Artery Hypertension
    Dirk J. Varelmann
  > Organization of ICU Resources for the Complex Pregnant Patient
    Marie R. Baldisseri

9:45 A.M. – 10:45 A.M.
ASMUND S. LAERDAL MEMORIAL AWARD LECTURE
  Asmund S. Laerdal Memorial Award
  Lecture
  Moderator: Pauline K. Park

9:45 A.M. – 10:45 A.M.
Gut Health in Critical Illness
  Moderator: Nazima Pathan
  > The Gut Microbiome-Host Relationship in Critical Illness
    Nazima Pathan
  > Nutritional Modulation to Support Intestinal Homeostasis in Critical Illness
    Paul Wischmeyer
  > The Gut as a Motor of Multigorgan Dysfunction in Critical Illness
    Craig M. Coopersmith

9:45 A.M. – 10:45 A.M.
Metabolomics in Critical Illness: The Missing Link in Precision Medicine?
  Moderators: Stacy A. Volls, Michael A. Dubick
  > The -Omics
    Gary Siuzdak, Douglas D. Fraser
  > Metabolomic Studies in the Critically Ill: The Good, the Bad, and the Ugly
    Philip E. Empey
  > Successful Design and Analysis of Metabolomic Studies
    Amr Shahin

9:45 A.M. – 10:45 A.M.
Pro/Con Debate: Mandating Sepsis Treatment
  Moderator: TBD
  > Pro: CMS Sepsis Mandate Should Be Adopted Nationally
    TBD
  > Con: The CMS Sepsis Mandate Should Not Be Adopted Nationally
    Michael Klompas

9:45 A.M. – 10:45 A.M.
Safety in the ICU Environment
  Moderator: Ira M. Cheifetz
  > ICU Safety: The Impact of Pediatric Violence Victims
    Heidi R. Flori
  > De-Escalation Strategies for Staff In the Trenches
    Karin Reuter-Rice
  > Legal and Regulatory Perspectives: How to Keep Our ICUs Safe
    John Legge

9:45 A.M. – 11:45 A.M.
Health Informatics
  Moderator: Andrew L. Rosenberg
  > Understanding IT and How It Supports the Critical Care Community
    TBD
  > Cybersecurity Update
    TBD
  > Advances in IT and Informatics Relevant to the Critical Care Practitioner
    TBD
  > EHR and Critical Care: State of the Art and Best Practices for Critical Care Uses
    TBD

9:45 A.M. – 11:45 A.M.
Life After Landmark RCTs
  Moderator: Sheila A. Alexander
  > Sepsis
    Emanuel P. Rivers
  > Resuscitation: Life After the Leuven Trials
    Greg H. Van den Bergh
  > Respiratory Failure
    TBD
  > Post-ICU Recovery
    Mark E. Mikkelsen
  > Prevention of Multigorgan Dysfunction
    John C. Marshall

9:45 A.M. – 11:45 A.M.
Make It Stop: Hemorrhagic Control
  Moderator: Marie E. Steiner
  > Measuring Coagulation
    Robert Gosselin
  > Surgical Hemostasis
    Jeremy W. Cannon
  > Blood Components
    Philip C. Spinella
  > Pharmacotherapy
    Scott A. Chapman

11:00 A.M. – 12:00 P.M.
Beyond the CLABSI and CAUTI Bundles: How to Get to Zero When Change Is Hard
  Moderator: Melissa A. Miller
  > Conversing With the Experts: Panel Discussion
    Patricia J. Posa, Kathleen M. Vollman, William S. Miles

11:00 A.M. – 12:00 P.M.
Controversies in the Management of the Pediatric ECMO Patient
  Moderator: Ana Lía Graciano, Ndidiamaka L. Musa
  > Ventilator Management: Rest or Exercise the Lung
    Heidi J. Dalton
  > Anticoagulation Strategies and Challenges in Neonatal and Pediatric ECMO
    Melania Bembea
  > How to Deal With Acute Complications
    James D. Fortenberry

Schedule of Events
Schedule of Events

11:00 A.M. – 12:00 P.M.

Era of Bionic Patients: Total Artificial Heart and Assist Devices in ICU (Trainee-Friendly Session)
Moderator: Michael M. Koerner
- Intra-Aortic Balloon Pumping
  - John C. Messenger
- Percutaneous Axial Flow Pump
  - Sammy Zakaria
- Cardiac Assist Devices 101: What You Need to Know About LVADs and RVADs
  - Onur Demirci

11:00 A.M. – 12:00 P.M.

Patient on Fire: Immune Activation Syndromes in the ICU
Moderator: Michael G.S. Shashaty
- HLH/MAS: An Inflammatory Runaway Train
  - Surender Rajasekaran
- Chimeric Antigen Receptor T Cell-Associated Cytokine Storm
  - Julie C. Fitzgerald
- Pulmonary-Renal Syndromes
  - Kianoush Banaei-Kashani

11:00 A.M. – 12:00 P.M.

Precision Immunomodulation for the Treatment of Severe Sepsis
Moderators: Elliott D. Crouser, Craig M. Coopersmith
- Clinical Manifestations of Sepsis: From Acute Inflammation to Prolonged Immunosuppression
  - Hallie Prescott
- Better Care Through Better Science: The Role of Novel Immune Biomarkers
  - Lyle L. Moldawer
- Infusing Precise Immunomodulation in Sepsis Into Trials
  - Sachin Yende

11:00 A.M. – 12:00 P.M.

Pro/Con Debate: Do Vitamin C and Thiamine Make a Difference?
Moderator: John C. Alverdy
- Pro: Vitamin C: What Can’t It Do?
  - Michael Hooper
- Con: Vitamin C Cannot Do Everything
  - Andre C. Kalil
- Pro: Thiamine: Evidence-Based Therapy or Fear of Missing Out?
  - Michael W. Donnino
- Con: Thiamine: Evidence-Based Therapy or Fear of Missing Out?
  - TBD

12:00 P.M. – 1:15 P.M.

Advanced Practice Providers Networking Luncheon
Moderators: Rhonda L. D’Agostino, Christopher Anderson
- Welcome and Introductions
  - Table Discussion/Networking
- Table Highlights

1:30 P.M. – 2:15 P.M.

Flipping the Switch on Bleeding: What’s New in Anticoagulant Reversal
Moderator: Truman J. Milling
- Prevention of Perioperative Bleeding: Who Decides on the Approach?
  - Joseph S. Meltzer
- Washed Over: Approach to the Care of the Bleeding Trauma Patient
  - Karen A. McQuillan
- Stopping the Clock: A Neurosciences Perspective
  - Michael J. Erdman
- Translating Guidelines Into Clinical Practice
  - TBD
- Bedside Application of Reversal Agents
  - Shaun Rowe

3:15 P.M. – 4:15 P.M.

Pro/Con Debate: Think Outside the ET Tube: Using Noninvasive Ventilation and High-Flow Nasal Cannulas
Moderator: Michael G.S. Shashaty
- Noninvasive Ventilation: The Evidence
  - TBD
- High-Flow Nasal Cannula
  - Laurent Brochard
- Case Studies: Applying the Evidence
  - Michael G.S. Shashaty

3:15 P.M. – 5:15 P.M.

Does My ICU Patient Need a Surgical Consult?
Moderator: Paul Wischmeyer
- Gut Ischemia: How, What, and Why
  - Lewis J. Kaplan
- Clostridium difficile: Sparring With Spores
  - Paula Ferrada
- Cholecystitis in the ICU: The Patient Has Gallstones; Is This the Cause of the Sepsis?
  - Kaye L. Banton
- Pancreatitis
  - Steven B. Johnson
- Abdominal Compartment Syndrome
  - Jose J. Diaz Jr.
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>3:15 P.M. – 4:15 P.M.</td>
<td><strong>How to Poison Your Patient in the ICU</strong>&lt;br&gt;Moderators: Fred Rincon, Peter N. Johnson&lt;br&gt;How We Cause Withdrawal&lt;br&gt;Scott Bolesta&lt;br&gt;How We Miss Withdrawal&lt;br&gt;Jeremiah J. Duby&lt;br&gt;How We Fix Withdrawal&lt;br&gt;Shari Simone</td>
</tr>
<tr>
<td>3:15 P.M. – 4:15 P.M.</td>
<td><strong>International Critical Care Trials Groups: What New Evidence Will Be Coming Down the Road?</strong>&lt;br&gt;Moderator: Ognjen Gajic&lt;br&gt;BRIICNet&lt;br&gt;Flavia R. Machado&lt;br&gt;Saudi Critical Care Trials Group&lt;br&gt;Yaseen Arabi&lt;br&gt;Discovery Research Network&lt;br&gt;TBD&lt;br&gt;ANZICS Critical Care Trials Group&lt;br&gt;Sandra L. Peake</td>
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<tr>
<td>3:15 P.M. – 4:15 P.M.</td>
<td><strong>Year in Review: Pediatrics</strong>&lt;br&gt;Moderator: TBD</td>
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<tr>
<td>3:15 P.M. – 4:15 P.M.</td>
<td><strong>Year In Review: Pharmacy</strong>&lt;br&gt;Moderator: TBD&lt;br&gt;Get the Bugs Out: Emerging Strategies to Manage Multidrug-Resistant Organisms in the ICU&lt;br&gt;Steven M. Lemieux&lt;br&gt;Nutrition in Special ICU Populations: What’s Your Gut Feeling?&lt;br&gt;Amanda J. Giancarelli&lt;br&gt;Don’t Bypass the Knowledge: Updates in Cardiovascular Surgery Pharmacotherapy&lt;br&gt;Matthew A. Wanat</td>
</tr>
<tr>
<td>3:15 P.M. – 5:15 P.M.</td>
<td><strong>The Pathophysiology of Chronic Critical Illness: From Bench to Bedside</strong>&lt;br&gt;Moderator: Cherylee W.J. Chang&lt;br&gt;The Muscle&lt;br&gt;Zudin Puthucheary&lt;br&gt;The Gut&lt;br&gt;Robert G. Martindale&lt;br&gt;The Kidney&lt;br&gt;Azra Bihorac&lt;br&gt;The Brain&lt;br&gt;Thomas P. Bleck&lt;br&gt;The Lung&lt;br&gt;M. Elizabeth Wilcox&lt;br&gt;The Bone Marrow&lt;br&gt;Philip A. Efron</td>
</tr>
<tr>
<td>3:15 P.M. – 5:15 P.M.</td>
<td><strong>Anticoagulation in the Pediatric ICU: When Do We Need It?</strong>&lt;br&gt;Moderators: Marie E. Steiner, Elizabeth S. Goswami&lt;br&gt;We’re Looking for Clots and Finding Them: Can We Actually Prevent Them?&lt;br&gt;Christine A. Schindler&lt;br&gt;Monitoring Your Anticoagulation the One True Way!&lt;br&gt;Marianne Nellis&lt;br&gt;I’ve Got a Clot, so Now What Do I Do?&lt;br&gt;Peter N. Johnson</td>
</tr>
<tr>
<td>3:15 P.M. – 5:15 P.M.</td>
<td><strong>ACCM Distinguished Investigator Award and SCCM-Weil Research and Discovery Grant Recipients</strong>&lt;br&gt;Moderator: TBD&lt;br&gt;ACCM Distinguished Investigator Presentation: Pain in ICU Patients: First Do No Harm&lt;br&gt;Kathleen A. Puntillo&lt;br&gt;SCCM-Weil Research Grant Recipients&lt;br&gt;Discovery Grant Recipients</td>
</tr>
<tr>
<td>4:30 P.M. – 5:30 P.M.</td>
<td><strong>Baby on My Brain: Neurologic Complications of the Peripartum</strong>&lt;br&gt;Moderator: Mary Kay Bader&lt;br&gt;Life-Threatening Peripartum Brain Disorders&lt;br&gt;Paul M. Vespa&lt;br&gt;Supporting the Pregnant Comatose Patient&lt;br&gt;Corrina Oxford&lt;br&gt;Save the Baby Versus Save the Mother&lt;br&gt;Christopher M. Burkle</td>
</tr>
<tr>
<td>4:30 P.M. – 5:30 P.M.</td>
<td><strong>Case Records of the Joint Trauma System: Critical Care Focus</strong>&lt;br&gt;Moderator: Kevin K. Chung, Jennifer M. Gurney&lt;br&gt;Case Records of the Joint Trauma System: Critical Care Focus&lt;br&gt;Jennifer M. Gurney</td>
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</tbody>
</table>

This schedule is subject to change. Visit sccm.org/Congress for the most up-to-date schedule.
Schedule of Events

WEDNESDAY, FEBRUARY 20, 2019

8:15 A.M. – 9:00 A.M.
• PLENARY SESSION
• AKE GRENVIK HONORARY LECTURE
A View From the Edge: Creating a Culture of Caring
Rana L. Awdish, MD, FACCP
Critical Care Physician
Director of the Pulmonary Hypertension Program, Henry Ford Hospital
Medical Director, Care Experience, Henry Ford Health System
Detroit, Michigan, USA

9:30 A.M. - 10:30 A.M.
Handoffs in Critical Care: How Can the Science Guide Us Toward Safer Care?
Moderator: Juliane Jablonski
> Handoffs and Patient Safety: ED or OR to ICU, and ICU to OR
  Meghan B. Lane-Fall
> Filling the Cracks in the Pavement: Handoffs in the ICU at Shift Change
  Christopher Landrigan
> ICU Patient Transfers: Lapses and Errors
  Wendell Hess

9:30 A.M. - 10:30 A.M.
Novel Trials Designs in Critical Care
Moderator: Colin K. Grissom
> Response-Adaptive Clinical Trial Design for Critical Care
  TBD
> Pragmatic Clinical Trial Design for Critical Care
  Todd W. Rice
> Are the Results of Clinical Trials Generalizable? Comparison of Different Clinical Trial Designs
  Steve A. Webb

9:30 A.M. - 10:30 A.M.
Outcomes and Opportunities in the Pediatric ICU
Moderator: Jason M. Kane
> Opioid Crises in Children
  Jason M. Kane
> Technology Dependence: A Consequence of Survival
  Maureen A. Madden
> Functional and Neurodevelopmental Outcomes in Survivors
  Martha A.Q. Curley

9:30 A.M. - 10:30 A.M.
Pro/Con Debate: Advances in Management of Chest Wall Trauma
Moderator: Adam M. Shiroff
> Nonoperative Management of Chest Wall Injuries
  Ulrich Schmidt
> Operative Management of Chest Wall Injuries
  Adam M. Shiroff

9:30 A.M. - 10:30 A.M.
Pro/Con Debate: Too Much of a Good Thing: Early Antibiotic Therapy in Sepsis
Moderator: Liz G. Ramos
> Absolutely: They Save Lives and Improve Outcomes
  Christopher W. Seymour
> Absolutely Not: The Hidden Consequences of Indiscriminate Antibiotic Therapy
  TBD
> Early Antibiotics or Not: We Are Just Not Sure
  Mitchell M. Levy

9:30 A.M. - 10:30 A.M.
Respiratory Failure in the Morbidly Obese Patient: From Intubation to Extubation
Moderator: Lorenzo Berra
> Emergency Airway Management in the Morbidly Obese Patient
  Louis Brusco Jr
> Mechanical Ventilation in the Morbidly Obese Patient
  Richard D. Branson
> Extubation in the Morbidly Obese Patient
  TBD

9:30 A.M. - 10:30 A.M.
Successful ICU Ultrasound Program Development: A Meaningful Journey Needs a Reliable Vessel
Moderators: Jose L. Diaz-Gomez, Thomas Conlon
> Earning Your Wings: Certification in Critical Care Ultrasound
  Antonio Hernandez
> Earning Your Keep: Credentialing in Critical Care Ultrasound
  Aliaksei Pustavoitau

9:30 A.M. - 11:30 A.M.
Right Ventricular Failure: New Concepts, New Therapies
Moderator: Kevin W. Hatton
> Pathophysiology of Acute Right Heart Failure
  Steven M. Hollenberg
> Evaluation of Right Ventricular Function
  Laura Mercer-Rosa
> Pharmacologic Therapy for Right Ventricular Failure
  Cliff Greyson
> Mechanical Circulatory Support for the Failing Right Ventricle
  Jacob C. Jentzer

This schedule is subject to change. Visit sccm.org/Congress for the most up-to-date schedule.
= Additional charge to attend  = Ticketed session. Continental breakfast included with all pre- and post-Congress sessions.
9:30 A.M. - 10:30 A.M.
Who Wants to Be Boss?
Moderator: Pamela A. Lipsett
> On Becoming a Leader in Your Hospital System
  Jeffrey S. Vender
> On Becoming a Leader in Your National Society Organization
  Judith Jacobi
> On Becoming a Leader in Your Clinical Practice
  Stephanie L. Pieroni

10:45 A.M. - 11:45 A.M.
ACCM Pediatric Guidelines
Moderator: TBD

10:45 A.M. - 11:45 A.M.
Assessing and Addressing Antimicrobial Allergies in the ICU
Moderators: Kathryn R. Matthias, Oscar E. Guzman
> The Path of Least Resistance: Collateral Damage
  Alejandro C. Arroliga
> Mysteries of History: Decoding Patient Drug Allergies
  TBD
> Demystifying Drug Desensitization: Who, When, and How
  Barbara A. Birriel

10:45 A.M. - 11:45 A.M.
Diagnostic Errors in the ICU: The Hidden Epidemic
Moderator: Rahul S. Nanchal
> How Do We Define and Recognize Diagnostic Errors?
  Paul Berg
> The Epidemiology and Consequences of Diagnostic Errors in the ICU
  Christina L. Cifra
> Reporting and Preventing Diagnostic Errors in the ICU
  Mary Jo C. Grant

10:45 A.M. - 11:45 A.M.
Pro/Con Debate: Mechanical Ventilation in the Hot Seat
Moderator: TBD
> Pro/Con Debate: Driving Pressure: Is It the Holy Grail?
  TBD
> Pro/Con Debate: Recruitment Maneuvers: Absolutely and All the Time?
  Maurizio Caredda

10:45 A.M. - 11:45 A.M.
Measures and Metrics and Mayhem
Moderators: Sean R. Townsend, Jennifer A. LaRosa
> Are Metrics Measuring Our Delivered Care?
  Donna L. Armagiac
> What CMS Finds Important
  Emanuel P. Rivers
> Unintended Consequences of Measure Enforcement
  John W. Devlin

10:45 A.M. - 11:45 A.M.
Open It Now!
Moderator: Bracken Burns
> Identification of Acute Surgical Abdomen in the ICU and Surgical Options
  Scott C. Brakenridge
> Management of the Open Surgical Abdomen in the ICU
  Douglas Schuerer
> Nursing Management of the Open Abdomen in the ICU
  John J. Gallagher

10:45 A.M. - 11:45 A.M.
Will These Controversies in Sepsis Ever End? Which Vasopressor Do I Use?
Moderator: Patricia L. Parker
> Just High-Dose Norepinephrine
  Steven M. Hollenberg
> Adding Vasopressin Early
  TBD
> Time to Add Angiotensin
  Joseph E. Parrillo
Hotel Accommodations

Take advantage of discounted Congress hotel rates by making your reservation through the SCCM Housing Bureau. Reserve your room online at sccm.org/Congress.

The deadline for booking at the discounted SCCM rates is Friday, January 18, 2019.

Room reservations for all Congress hotels will be handled on a first-come, first-served basis. All reservations are subject to availability. For housing questions, including reservation changes or cancellations, please email SCCM@orchid.events or call +1 800 572-9712 (U.S. and Canada) or +1 801 505-4135 (all other countries), Monday through Friday, between 8:00 a.m. and 5:00 p.m. Central Time.

<table>
<thead>
<tr>
<th>Hotels</th>
<th>Distance from Convention Center (miles)</th>
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<tbody>
<tr>
<td>Hilton San Diego Bayfront</td>
<td>0.2 mi.</td>
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<tr>
<td>Embassy Suites by Hilton San Diego Bay Downtown</td>
<td>0.8 mi.</td>
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<tr>
<td>Manchester Grand Hyatt San Diego</td>
<td>0.3 mi.</td>
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<tr>
<td>Hard Rock Hotel San Diego</td>
<td>0.4 mi.</td>
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<td>Hilton San Diego Gaslamp Quarter</td>
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<td>Hotel Indigo San Diego Gaslamp Quarter</td>
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<td>Kimpton Solamar Hotel</td>
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<td>Omni San Diego Hotel</td>
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<td>San Diego Marriott Gaslamp Quarter</td>
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<td>Westin Gaslamp San Diego Gaslamp Quarter</td>
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</table>

**Hilton San Diego Bayfront**
1 Park Boulevard
San Diego, CA 92101
Rate: $259 single/double
**Rate does not include applicable taxes**

San Diego’s distinctive coastal culture is obvious the moment you arrive at the Hilton San Diego Bayfront. This 30-story hotel, with sun- and sea-inspired design, offers a cool vibe and great amenities. The location, adjacent to the San Diego Convention Center and across the street from the San Diego Padres’ Petco Park, couldn’t be more convenient. While you’re here, enjoy stunning views, relaxing leisure facilities, and trendy dining venues.

Visit sccm.org/Congress for additional housing details.
**Sightseeing Activities**

SCCM is offering sightseeing tours for attendees who want to discover all the amazing culture, natural beauty, and wide range of activities available in San Diego. Come discover what makes San Diego unforgettable! Visit sccm.org/Congress for more information.

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**Air Travel**

SCCM has arranged for discounted airfare with United Airlines and Delta Airlines for travel to San Diego, California, USA, for the 48th Critical Care Congress. Please visit sccm.org/Congress for details.

Attendees and guests are eligible for up to 10% off published fares. Please reference the offer codes below when booking.

**United Airlines**

- Website: www.united.com
- Promotional code: ZFMF511151
- By phone: +1 800 426-1122
- By email: groupmeetings@united.com
- Agreement code: 511151
- Z code: ZFMF

**Delta Airlines**

- Website: www.delta.com/meetings
- Meeting Ticket Designator/Meeting Code: NMSLB
- By phone: +1 800 328-1111

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**Car Rental**

SCCM has negotiated special car rental rates for Congress with Hertz. Discounted rates are available from all San Diego locations for rental dates between February 10 and February 26, 2019. To receive the discounted rates, please refer to the information below.

**Hertz**

- Website: www.hertz.com
- Phone: +1 800 654-2240 (U.S. and Canada)
  +1 405 749-4434 (all other countries)
- CV #: 050D0009

**Taxi Service**

Taxi service is available from the San Diego International Airport (SAN) to all Congress hotels through the taxi dispatchers outside the baggage claim area. One-way fares during non-rush-hour periods start at $25. Fare is by meter only. Most major credit cards are accepted. For more information, visit www.san.org/parking-transportation/Taxis.
Concise Critical Appraisal: The Effect of Ramelteon Administration on the Duration of ICU Stay

Concise Critical Appraisal is a regular feature aimed at highlighting the best and most relevant literature from a variety of academic journals and encouraging discussion around recent studies and research.

Delirium affects a large percentage of intensive care unit (ICU) patients. This acute fluctuating disturbance in consciousness, cognition, and perception is often accompanied by a deranged circadian rhythm. The development of delirium has been associated with increases in hospital length of stay, costs, complications, and mortality. Healthcare providers use a variety of prevention and treatment strategies, including nonpharmacologic approaches such as environmental optimization, and pharmacologic approaches, including antipsychotics, alpha-2 agonists, and sedatives. Recent studies suggest that melatonin can prevent delirium; however, little data exists on melatonin use in critically ill patients.

Nishikimi et al (Crit Care Med. 2018;46:1099-1105) studied the effects of ramelteon, a selective melatonin receptor agonist with 3 to 6 times greater affinity for melatonin receptors. This single-center, randomized, triple-blind, placebo-controlled trial was performed in both medical and surgical ICUs in an academic hospital. The primary outcome was ICU length of stay. Secondary outcomes included mortality and the occurrence and duration of delirium in the ICU. Patients older than 20 years were randomized to receive either ramelteon, 8 mg/day at 8:00 p.m., or placebo. Randomization was stratified according to age (older or younger than 60 years). Acute Physiologic Assessment and Chronic Health Evaluation (APACHE) score (above or below 30), and intubation status. Patients were excluded if they were already receiving ramelteon, had a known sensitivity to ramelteon, or refused consent. The trial drug was continued until ICU discharge.

A total of 88 patients were randomized and included in the intention-to-treat analysis. The primary end point of ICU length of stay was 4.56 days in the ramelteon group and 5.86 days in the placebo group (p = 0.086). A multivariate analysis adjusting for patient characteristics showed statistically significant reduction in ICU length of stay. Secondary end points of delirium occurrence (24.4% vs. 46.5%, p = 0.044) and duration of delirium (0.78 days vs. 1.4 days, p = 0.048) were statistically significant in favor of ramelteon. The was no difference in mortality (6.7% vs 7.5%, p = 0.99), and no adverse events were attributed to ramelteon.

Although the results were promising, this study has limitations. The initial calculation to detect a one-day reduction in ICU stay for the ramelteon group with at least 80% statistical power was calculated as 182 patients. This study is underpowered, randomizing only 88 patients. The patient characteristics between groups were grossly similar; however, the ramelteon group had a slightly higher proportion of men and subjects with dementia, sepsis, and history of heavy alcohol use, perhaps masking some of the benefits of ramelteon. The usual limitations of a small randomized controlled trial from a single academic center certainly limit generalizability.

Despite these limitations, Nishikimi et al showed that melatonin agonists may play a role in decreasing ICU length of stay in critically ill patients and may also decrease the incidence and duration of delirium in this population. Given the relative low cost of ramelteon compared to the cost of an additional day in the ICU, it may be advantageous to institute prophylactic use, especially considering the adverse effect profile (no adverse events were noted in this study).

More studies are needed that address these limitations, and indeed some have already been conducted, with a multicenter feasibility trial in Canada by Burry et al (BMJ Open. 2017;7:e015420), and the multicenter Pro-MEDIC randomized controlled trial (Martinez F, et al. Trials. 2017;18:4). Δ

Co-authors of this installment of Concise Critical Appraisal:

Daniel Kraus, MD, is a clinical assistant professor of emergency medicine at the University of Florida College of Medicine – Jacksonville.

Brian J. Wright, MD, MPH, is a clinical assistant professor and the program director for the Advanced Resuscitation Training Program in the Department of Emergency Medicine at Stony Brook Medicine. Dr. Wright is an editor of Concise Critical Appraisal.

Coding and Billing for Critical Care: An Interactive Guide to Critical Care Coding

A must-have text for professional coders, hospital administrators, physicians, nurse practitioners, and physician assistants, Coding and Billing for Critical Care: A Practice Tool, Seventh Edition, explains the complexities of critical care coding and billing and offers a better understanding of coding and billing procedures in a critical care setting.

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The Society of Critical Care Medicine has 15 Specialty Sections to accommodate members of various professions and disciplines. Members may join up to three sections for unique opportunities to network with colleagues and become more involved in projects and initiatives while advancing the mission of the Society. For more information on joining a Specialty Section, visit sccm.org/membership.

Anesthesiology Section

The Anesthesiology Section looks forward to seeing you in San Diego, California, USA, at the 48th Annual SCCM Critical Care Congress, February 17-20, 2019. We will have many excellent educational offerings as well as opportunities to network with section members.

On Friday and Saturday, February 15-16, 2019, there will be several preconference educational sessions that will be of interest to anesthesiology intensivists, including Critical Care Ultrasound: Adult and Airway Management in the Critically Ill Patient.

Please join us at the Anesthesiology Section Steering Committee and business meetings, where we will make our plans for 2019. Year in Review: Anesthesiology will also be a superb educational offering. We look forward to seeing all of you there.

We are also planning an Anesthesiology Section reception. More details are forthcoming.

If you are interested in becoming more involved with section activities, please make sure that you are a member of the section so you can receive our email communications. Please feel free to email any of the section officers, who will be happy to talk you. We look forward to seeing you in San Diego!!

Clinical Pharmacy and Pharmacology Section

The Clinical Pharmacy and Pharmacology (CPP) Journal Club continues to be held on the third Friday of every month at 2:00 p.m. Eastern Time, with an option to receive continuing education credit. The first three research webinars were a great success so we will continue to host research webinars in the upcoming year. Stay tuned for topics and dates!

The October CPP Newsletter featured a nutrition theme, reflected in the pharmacotherapy article and spotlight sections. The newsletter also included useful research and patient safety pearls as well as the Visiting Clinical Professor Program summary.

The Mentor-Mentee Program provides CPP pharmacist members with guidance in a variety of areas. If you are interested in becoming a mentor or mentee, please contact Meghan Caylor, BCPS, PharmD (meghan.caylor@uphs.upenn.edu). In conjunction with the SCCM Membership Committee, the CPP Section is currently developing a toolkit for the Mentor-Mentee Program as a resource for other SCCM sections to use in creating such a program. It will be available later this year—stay tuned!

The Visiting Clinical Professor Program facilitates interactions between pharmacists looking to advance critical care services and a professor with expertise in the chosen area. Applications are accepted on a rolling basis. For more information, please contact Laura Zane, PharmD, BCCCP (lzane12@gmail.com).

The Research and Scholarship Committee has many ways to get involved! Visit the Research Forum (http://cppresearchforum.icyboards.net/) to discuss potential research ideas, collaborate, and find a database of funding opportunities.

Manuscript and grant peer pre-review services are available. Subscribe to the Critical Care Pharmacotherapy Literature Updates at CCPCCPLU@gmail.com. Contact Megan A. Rech, BCCCP, MS, PharmD (mrech@lumc.edu), for additional information.

Emergency Medicine Section

Get involved with the Society of Critical Care Medicine (SCCM). Use “My Groups” in SCCM Connect to ask questions, pose discussion topics, and get section updates!

We are looking forward to the 48th Annual SCCM Critical Care Congress, which will be held in San Diego, California, USA, February 17-20, 2019. Mark your calendars now!

Watch your email for Congress-specific updates, including the celebration reception for SCCM President Heatherlee Bailey, MD, FCCM.

Be sure to pencil in the section business meeting to be held during Congress. Details have yet to be determined. It will be a great lunchtime meeting and an opportunity to interact with our new section members, hear important updates, and enjoy wonderful food.

The ED-ICU Task Force (defining delivery of critical care medicine in an emergency department: moving beyond patient boarding) is making progress with regular meetings and coordination with our sister section in the American College of Emergency Physicians.

The Critical Care Quiz Show will be held again this year at Congress. We need members to represent our section’s team. Email Section Chair Brian T. Wessman, MD, FCCM, at brianwessman@wustl.edu if you are interested.

Be on the lookout for deadlines, including committee membership applications (May 1, 2019) and the American College of Critical Care Medicine Fellowship application (March 15, 2019).

Please reach out to Chair Brian Wessman or Chair-Elect Lillian Liang Emlet, MD, MS, FCCM, if you have any questions about the Emergency Medicine Section or committee involvement.
Nursing Section

CONGRATULATIONS to our new Masters of Critical Care Medicine!
Caroll L. Thompson, PhD, DNP, CCRN, ACNP, FNP, FAANP, FAAN, FCCM, and Judy E. Davidson, DNP, RN, FAAN, FCCM, will both be inducted as Masters of Critical Care Medicine (MCCM) at Congress in 2019. This is the highest designation of the American College of Critical Care Medicine (ACCM). It honors fellows who have dedicated their lives to critical care and achieved national and international professional prominence. Please join us in celebration at the ACCM Convocation in San Diego in 2019.

Section elections are fast approaching. One member at-large position is up for election. The elections will be held electronically, so please check your email for your ballot. Members at-large are voting members of the Nursing Section Steering Committee, which guides the business of the section. They will serve as liaisons to two of the section subcommittees. If you have any questions regarding this position, please reach out to Section Chair Brian K. Jefferson, ACNP, DNP, FCCM, via brian.jefferson@atriumhealth.org.

Don’t forget to vote for SCCM leadership!

Society elections will also be coming soon. Please check your inbox and make sure you cast your ballot.

Pediatrics Section

Thank you to all of the Pediatrics Section members who submitted abstracts for the upcoming Congress in San Diego, California, USA, February 17-20, 2019. Registration is now open. Be on the lookout for announcements regarding Pediatrics Section activities at Congress. As Congress approaches, the Steering Committee will continue to develop ways to engage more of the section membership. There are many committees and ways to get involved. Interested members should contact Section Chair David A. Turner, MD, FCCM, at david.turner@ehc.edu.

Physician Assistant Section

The Physician Assistant (PA) Section hopes that everyone is enjoying their summer! As we head into fall and trade our bathing suits for Halloween costumes, the steering committee would like to take a moment to wish our members a Happy PA Week in October! This week recognizes the physician assistant profession for its contributions to our nation’s healthcare.

The new SCCM Connect communication portal is live! Moving forward, this will be our primary method of disseminating information to section members. If you have not already done so, please log in to SCCM.org and click on MySCCM. The SCCM Connect tab is on the right side of the screen. Please familiarize yourself with the portal, add a picture, and write a post or share information. This is an open forum for discussions related to advanced practice providers (APPs).

We continue to work diligently on the APP Workforce Survey, which is a collaborative effort with our nurse practitioner colleagues to evaluate the current work environment among critical care APPs throughout the country. We will notify members through SCCM Connect when the survey is ready for release. Please keep your eyes peeled and encourage your colleagues and coworkers to complete the survey when it becomes available.

We would like to mention PA Section members Ryan M. O’Gowan, PA-C, FCCM; James E. Lunn Jr, PA-C, FCCM; Ash Seth, PA-C, FCCM; and Peter S. Sandor, PA-C, FCCM for their collaboration with the Northeast Chapter in the successfully developed, coordinated, and delivered 4th Annual Point-of-Care Ultrasound Symposium at St. Francis Hospital in Hartford, Connecticut, USA, on September 15, 2018. If you or another PA Section member received any awards or achievements, please email Peter Sandor at petericupai@yahoo.com to be recognized.

Interested in becoming a Fellow of the American College of Critical Care Medicine (FCCM)? The FCCM designation recognizes members who have made significant contributions in the field of critical care medicine. Please familiarize yourself with the requirements on www.sccm.org. To date, 14 PAs have received this distinguished recognition and would like to guide, support, and encourage others to apply. Having a mentor is strongly encouraged. Please contact Ash Seth at getback67@gmail.com for assistance.

Last year at Congress was the inaugural Critical Care Quiz Show, which will be held again this year. This is a Jeopardy-style event that lets contestants demonstrate their critical care knowledge while others cheer them on. The PA Section is looking for three to five members with diverse critical care backgrounds to volunteer to participate. Knowledge of critical care is encouraged but not required. This is designed to be a fun event. Please contact Peter Sandor at petericupai@yahoo.com if you are interested.

Research Section

The SCCM Research Section has established a mentoring subcommittee that aims to work with other SCCM section leadership and staff partners to create an online mentor-mentee matching program.

A systematic review published in the Journal of the American Medical Association explored the impact of mentorship on academic members’ career choices and academic advancement. The article reported on the importance of a mentor for personal and academic advancement. In my life, mentors have played a pivotal role in my career, especially the research accomplishments. My mentors not only got that “research bug” into me but also held my hand, helping me learn to walk on the research path until I became an independent investigator. While my mentors at my training institution were instrumental in my success with my research projects and academic career, some SCCM members also guided me in my overall academic career and supported me with my immigration application and my contributions to SCCM.

Working with SCCM committees has helped me learn the importance of mentors outside my own institution. SCCM is a huge organization, full of seasoned faculty who have rich experience and expertise in specific areas. Our critical care trainees would benefit significantly if connected to them. The key is to learn about the academic needs of individual trainees through an online portal and then connect them to mentors who are willing to share their valuable time in guiding the trainees with their specific questions related to their academic careers.

We look forward to your support of our mentoring efforts. Please contact Upal S. Bhalala, MD, FAAP, FCCM, at Upal.bhalala@bcm.edu for any questions about mentoring.

Southwest Chapter

The Southwest Chapter of SCCM serves Alabama, Arkansas, Louisiana, Georgia, Kentucky, Mississippi, and Tennessee and continues to promote the highest quality of care for critically ill patients. Membership benefits include quarterly education meetings with renowned speakers in various critical care professions, continuing education credits and contact hours, and networking and mentorship with fellow healthcare professionals. In November 2017, Jayshil Patel, MD, presented “Parenteral Nutrition in the ICU” at the quarterly meeting. The chapter continues to expand membership benefits and opportunities, serving critical care practitioners in the southeast region. If you reside in the chapter region and are interested in hearing more about our events and how to get involved, follow us on Facebook or on Twitter @SCCMSE, or visit our website at sccmse.org.

Texas Chapter

First and foremost, we are honored that the Texas Chapter has been named as the recipient of the 2018 Chapters Alliance Excellence Award. This award is presented in recognition of the innovative approach in promoting growth and development to the chapter. We want to recognize Matthew A. Wanat, BCACP-BCPS, PharmD, immediate past president, as this award reflects his year as president. We also want to acknowledge the entire Executive Committee, Board of Directors, and committee chairs for their time and dedication to ensure the success of the chapter. We are excited about receiving this award in San Diego at Congress and hope that all of our members attending Congress are able to attend the awards ceremony.

The Texas Chapter is now over 600 members strong and growing as we expand programming from our established regions of Houston, Dallas, San Antonio, and El Paso to the Corpus Christi and Austin areas. We have had local programs as well as simulcast meetings, and our next large simulcast is planned for November 2018. To improve communication to our members, we will be piloting a new email system, with a membership survey to evaluate satisfaction with the system. We are also excited to formalize the first research grant sponsored by the chapter. The Research Committee has worked hard to set up the application process, planned to go live in 2019.

For more information about the Texas Chapter, as well as benefits, and how to become a member, please visit our website at scctexaschapter.org.

Listen to the Latest iCritical Care Podcasts

iCritical Care offers a wide selection of in-depth interviews on adult and pediatric topics. Gain unique perspectives as hosts chat with authors of the latest Critical Care Medicine and Pediatric Critical Care Medicine articles, well-known speakers and prominent SCCM members.

Visit sccm.org/iCriticalCare to listen and subscribe for free.
KCENTRA® (Prothrombin Complex Concentrate [Human])
For Intravenous Use, Lyophilized Powder for Reconstitution
Initial U.S. Approval: 2013

BRIEF SUMMARY OF PRESCRIBING INFORMATION
These highlights do not include all the information needed to use Kcentra safely and effectively. See full prescribing information for Kcentra.

WARNING: ARTERIAL AND VENOUS THROMBOEMBOLIC COMPLICATIONS
Patients being treated with Vitamin K antagonists (VKA) therapy have underlying disease states that predispose them to thromboembolic events. Potential benefits of reversing VKA should be weighed against the potential risks of thromboembolic events, especially in patients with the history of a thromboembolic event. Resumption of anticoagulation should be carefully considered as soon as the risk of thromboembolic events outweighs the risk of acute bleeding.

• Both fatal and non-fatal arterial and venous thromboembolic complications have been reported with Kcentra in clinical trials and post marketing surveillance. Monitor patients receiving Kcentra for signs and symptoms of thromboembolic events.

• Kcentra was not studied in subjects who had a thromboembolic event, myocardial infarction, disseminated intravascular coagulation, cerebral vascular accident, transient ischemic attack, unstable angina pectoris, or severe peripheral vascular disease within the prior 3 months. Kcentra may not be suitable in patients with thromboembolic events in the prior 3 months.

INDICATIONS AND USAGE
Kcentra, Prothrombin Complex Concentrate (Human), is a blood coagulation factor replacement product indicated for the urgent reversal of acquired coagulation factor deficiency induced by Vitamin K antagonist (VKA, e.g., warfarin) therapy in adult patients with:

• acute major bleeding or
• need for an urgent surgery/invasive procedure.

DOSAGE AND ADMINISTRATION
For intravenous use after reconstitution only.

• Kcentra dosing should be individualized based on the patient’s baseline International Normalized Ratio (INR) value, and body weight.

• Administer Vitamin K concurrently to patients receiving Kcentra to maintain factor levels once the effects of Kcentra have diminished.

• The safety and effectiveness of repeat dosing have not been established and it is not recommended.

• Administer reconstituted Kcentra at a rate of 0.12 mL/kg/min (≈3 units/kg/min) up to a maximum rate of 8.4 mL/min (≈210 units/min).

Pre-treatment INR 2–< 4 4–6 > 6
Dose* of Kcentra (units† of Factor IX) / kg body weight 25 35 50
Maximum dose‡ (units† of Factor IX) Not to exceed 2500 Not to exceed 3500 Not to exceed 5000

Dosing is based on body weight. Dose based on actual potency is stated on the vial, which will vary from 20-31 Factor IX units/ml, after reconstitution. The actual potency for 500 unit vial ranges from 400-620 units/vial. The actual potency for 1000 unit vial ranges from 800-1340 units/vial.

1 Units refer to International Units.
2 Dose is based on body weight up to but not exceeding 100 kg. For patients weighing more than 100 kg, maximum dose should not be exceeded.

CONTRAINDICATIONS
Kcentra is contraindicated in patients with:

• Known anaphylactic or severe systemic reactions to Kcentra or any components in Kcentra including heparin, Factors II, VII, IX, X, Proteins C and S, Antithrombin III and human albumin.

• Disseminated intravascular coagulation.

• Known heparin-induced thrombocytopenia. Kcentra contains heparin.

WARNINGS AND PRECAUTIONS

• Hypersensitivity reactions may occur. If necessary, discontinue administration and institute appropriate treatment.

• Arterial and venous thromboembolic complications have been reported in patients receiving Kcentra. Monitor patients receiving Kcentra for signs and symptoms of thromboembolic events. Kcentra was not studied in subjects who had a thrombotic or thromboembolic (TE) event within the prior 3 months. Kcentra may not be suitable in patients with thromboembolic events in the prior 3 months.

• Kcentra is made from human blood and may carry a risk of transmitting infectious agents, e.g., viruses, the variant Creutzfeldt-Jakob disease (vCJD) agent, and theoretically, the Creutzfeldt-Jakob disease (CJD) agent.

ADVERSE REACTIONS
The most common adverse reactions (ARs) (frequency ≥ 2.8%) observed in subjects receiving Kcentra were headache, nausea/vomiting, hypotension, and anemia. (6)

The most serious ARs were thromboembolic events including stroke, pulmonary embolism, and deep vein thrombosis.

To report SUSPECTED ADVERSE REACTIONS, contact CSL Behring at 1-866-915-6958 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

See 17 for PATIENT COUNSELING INFORMATION

REVISED: AUGUST 2017
Urgent warfarin reversal with fast and sustained* action

- Single-dose Kcentra (4F-PCC) is the only FDA-approved alternative to plasma for urgent warfarin reversal
- Kcentra demonstrated superiority to plasma in 3 of 4 efficacy endpoints in 2 head-to-head trials\(^1\)\(^2\)
- Reaching early INR reduction to \(\leq 1.3\) at 30 minutes after end of infusion\(^1\)\(^2\)

Kcentra Demonstrated Significant INR Reduction vs Plasma Sustained for Up to 12 Hours

- The relationship between INR values and clinical hemostasis in patients has not been established.
- Safety comparable to plasma.

\*30 minutes from the start of infusion. †Statistically significant difference compared to plasma by 2-sided Wilcoxon test.

**Median INR after start of infusion in RCT (Secondary Endpoint)**

![Graph showing INR reduction over time](image)

**Important Safety Information**

Kcentra is a blood coagulation factor replacement product indicated for the urgent reversal of acquired coagulation factor deficiency induced by Vitamin K antagonist (VKA—eg, warfarin) therapy in adult patients with acute major bleeding or the need for urgent surgery or other invasive procedure. Kcentra is for intravenous use only.

**WARNING: ARTERIAL AND VENOUS THROMBOEMBOLIC COMPLICATIONS**

Patients being treated with Vitamin K antagonist therapy have underlying disease states that predispose them to thromboembolic events. Potential benefits of reversing VKA should be weighed against the risk of thromboembolic events, especially in patients with history of such events. Resolution of anticoagulation therapy should be carefully considered once the risk of thromboembolic events outweighs the risk of acute bleeding. Both fatal and nonfatal arterial and venous thromboembolic complications have been reported in clinical trials and postmarketing surveillance. Monitor patients receiving Kcentra, and inform them of signs and symptoms of thromboembolic events. Kcentra was not studied in subjects who had a transient ischemic attack, unstable angina pectoris, or intravascular coagulation, cerebral vascular accident, thromboembolic event, myocardial infarction, disseminated intravascular coagulation. Because Kcentra contains heparin, it is contraindicated in patients with heparin-induced thrombocytopenia (HIT).

Hypersensitivity reactions to Kcentra may occur. If patient experiences severe allergic or anaphylactic type reactions, discontinue administration and institute appropriate treatment.

To inform patients of signs and symptoms of thromboembolic events, especially in patients with history of such events. Kcentra might not be suitable for patients with thromboembolic events in the prior 3 months.

Kcentra is contraindicated in patients with known anaphylactic or severe systemic reactions to Kcentra or any of its components (including heparin, Factors II, VII, IX, X, Proteins C and S, Antithrombin III and human albumin). Kcentra is also contraindicated in patients with disseminated intravascular coagulation. Because Kcentra contains heparin, it is contraindicated in patients with heparin-induced thrombocytopenia (HIT).

**Please see brief summary of full prescribing information on adjacent page.**

**References:**
