
48TH ANNUAL CRITICAL CARE CONGRESS MINI-SUMMARIES

Several sessions presented at Congress are highlighted in this supplement, including pearls we felt might be applicable to our wide CVCSCCM member base. All sessions are available through Congress On Demand. Many of the sessions are also available at no charge on the Society of Critical Care Medicine's YouTube page at: <https://www.youtube.com/channel/UCD4yTwlCd09rCbB7KSPmGUA>.

Thank you to all those who contributed, which included non-CVCSCCM members. Those who wrote up sessions were Julia Beatty, Desiree Kosmisky, Lisa Kurczewski, Khushboo Patel, Jana Sigmon, Susan Smith, and Brittany Verkerk.

Opening Session

Presidential Address

Heatherlee Bailey, MD, FCCM

The Changing Continuum of Healthcare

Brett P. Giroir, MD

Outgoing SCCM President, Dr. Jerry Zimmerman, welcomed everyone to the Congress and presented the Adult and Pediatric ICU Heroes Awards. He also introduced the Lifetime achievement award winner, Dr. Robert Bartlett, who has made significant contributions to Extracorporeal Life Support throughout his career. Dr. Zimmerman then introduced the new, incoming SCCM President, Dr. Heatherlee Bailey (who is also an active member of the Carolinas/Virginias Chapter). Dr. Bailey's extensive training in emergency response was evident in her speech as she discussed the importance of prehospital care and emergency responder training. Dr. Bailey then pointed out some of the highlights of Congress this year, which included: new innovations through the Technology Lab, a focus on burnout avoidance through the Wellness Lab, and the themes of Congress which were "Continuum of Care" and "The Ripple of Change". Lastly, the Critical Care Explorations (CCE) Open-Access Journal was introduced. The Opening Session wrapped up with an informative presentation on addressing the opioid crisis by Admiral Brett Giroir.

Improving Critical Care and Outcomes Using National Clinical Audit

Kathryn Rowan, PhD

Dr. Rowan described her work with the Intensive Care National Audit and Research Center (ICNARC) within the National Institute for Health Research, which is an integrated health care system of approximately 250 hospitals within the United Kingdom. The aim of ICNARC was to foster improvement in clinical practice, outcomes, and the experience of critical care for patients and practitioners. Currently, 100% of all adult general critical care units participate and receive feedback on potential quality indicators, such as, number of admissions, high risk sepsis admissions, and risk-adjusted acute hospital mortality. Data captured is also reported publicly through quarterly and annual quality reports allowing clinical comparisons, innovative epidemiology, and completion of efficient trials through a high-quality clinical database.

Plenary Session: Late Breaking-Studies that Will Change your Practice

Chanu Rhee, MD, MPH; Glenn Hernandez, MD, PhD; Yahya Shehabi, MBA, MD, PhD, FCICM

Dr. Chanu Rhee discussed Sepsis Surveillance Using Adult Sepsis Events Simplified eSOFA Criteria versus Sepsis-3 SOFA Criteria suggesting that eSOFA is simpler to use but has good overlap with Sepsis-3 cases. This may facilitate wide-scale surveillance using eSOFA criteria. Dr. Glenn Hernandez discussed the ANDROMEDA-SHOCK trial, which concluded protocol-based peripheral perfusion versus lactate-based resuscitation was associated with lower treatment intensity (fluids and vasopressors) and no difference in 28-day mortality. Dr. Yahya Shehabi presented the SPICE III trial, which found early dexmedetomidine versus usual care resulted in no difference in 90-day mortality with less delirium and more ventilator-free days, but that this benefit may be isolated to older patients.

Plenary Session: A 2020 Vision of CPR: Evolution, Revolution, and Novel Solution

Paul E. Pepe, MD, MPH, FACEP, MACP, MCCM, FAEMS

Technologies on the horizon related to CPR include Pulsepoint, transesophageal echo for positioning of CPR, REBOA, and ECMO/ECLS. Success with public access to AEDS and the “sweet spot” of 100 to 120 compressions per minute were discussed. Impedence threshold device (ITD) has no advantage when used alone but results in favorable neurological outcomes when coupled with high-quality CPR. Gravity-assisted CPR has demonstrated that supine chest compressions increase both arterial and venous pressures in the brain, resulting in “brain hammering” (compression of an already ischemic brain). Gravity-assisted CPR (30-degree head-up CPR) results in decreased ICP/increased CPP and the synergistic bundle of head up/chest up CPR + active compression decompression (ACD) + ITD results in sustained increased in CPP, improved survival, and likely improvement in neurologic outcomes.

Hot Controversies in Sepsis: Surfing the Wave of Change

Mitchell M. Levy, MD, FCCM; Greg S. Martin, MD, MS, FCCM; Michael R. Pinsky, MD, Dr hc; Emanuel Rivers, MD, MPH; Bram Rochweg, MD, MSc

Dr. Bram Rochweg started off the talk by reviewing the controversial and unclear evidence behind steroid use in sepsis. He made mention to be on the lookout for the ADRENAL group’s 1-year follow-up. Next Dr. Greg Martin reviewed crystalloid fluid choices in resuscitation, explaining why balanced salt solutions are preferred. Piggybacking off of that topic, Dr. Michael Pinsky explained the importance of making sure your patient is fluid responsive before initiating aggressive fluid resuscitation. He feels that most patients only need 5-10 mL/kg to be adequately resuscitated. Dr. Emanuel Rivers reviewed why Early Goal Directed Therapy should be a verb eliciting specific and timely interventions in septic patients even if the details of those interventions change as new study results are made available. Lastly, Dr. Mitchell Levy reviewed the importance of protocolizing certain aspects of care while still keeping patient specific factors and responses to resuscitation in mind.

THRIVE: Bringing Meaning and Life Back to Survivors of Critical Illness*Theodore J. Iwashyna, MD, PhD, FCCM; Julie Rogan, CCRN, CNS, MSN; Carla M. Sevin, MD*

After ICU discharge, patients have increased risk of death, inability to return to social roles, recurrent health problems, and a burden on caregivers. Our current model is mortality-preventing critical care, but what would recovery-focused critical care look like? As a team, we should be helping patients rebuild emotions and relationships as much as rebuilding muscle and strength. Post intensive care syndrome (PICS) is present in over half of ICU survivors, resulting in cognitive and physical impairments and mental health issues such as anxiety, PTSD, and depression. Family members may also be affected and may experience sleep disturbances and mental health problems as well. The ICU diary is a patient-centered diary containing daily events recorded by clinicians and family members. It mitigates PICS and improves communication and engagement with patients and their loved ones and promotes clinician well-being. To ensure good recovery and prepare survivors and loved ones for hospital discharge, we should summarize the hospitalization (provide written information), execute discharge planning (medications, rehabilitation, vaccines, home health, PT/OT/assistive devices, follow-up appointments), talk to families about trajectory, and give patients resources to contact.

Plenary Session: Extracorporeal Life Support in Critical Care*Robert H. Bartlett, MD*

Dr. Bartlett provided a fascinating history of the evolution of critical care medicine and organ support modalities since his career began in 1963, including his role in developing extracorporeal life support (ECLS) from the bench to the bedside. While ECMO had its initial success in neonates, rapid growth in the number of pediatric and adult cases have been observed over the last 5 to 10 years as ECMO has become more portable and practical. Although the role of ECLS in cardiac life support is much more intuitive, patient selection and timing for respiratory support is less clear. He discussed how our management of ECMO patients has evolved from sedating and paralyzing all patients to allowing them to breathe spontaneously, interact, ambulate, and even start to rehabilitate. The future of ECMO includes wearable/implantable artificial lungs, portable right atrium/pulmonary artery support, initiating therapy in patients at lower mortality risk, no requirement for systemic anticoagulation, and automated systems.

ESICM/SCCM Joint Session: Sepsis Research: Gaps, Priorities, and Goals; What does the future hold?*Craig M. Coopersmith, MD, FACS, FCCM; Mitchell M. Levy, MD, MCCM; Daniel P. DeBacker, MD, PhD*

The top 6 identified gaps and priorities for future sepsis research include identifying the appropriate endpoint for resuscitation, identifying a homogenous population for research, investigating the role of precision based personalized medicine, determining appropriate empiric antibiotics utilization, determining the role of double antibiotic coverage in gram-negative sepsis, and defining which information identifies organ dysfunction. The critical care research community will likely continue to produce negative studies when studying therapies in the broad sepsis population. Emphasis should be placed on identifying patient, host, and organism specific factors to predict response (both positive and negative) to a given therapy. Another strong consideration should be made for shifting clinical trial endpoints from short-term to long-term physical, mental, and cognitive outcomes.

Plenary Session: Response to Injury and Stress: A Genomic Storm*Ronald V. Maier, MD, FACS, FRCS Ed (Hon)*

The current Multiple Organ Dysfunction Syndrome (MODS) theory that physicians have followed for decades suggests that the first stimulus/insult produces a massive immunomodulatory response. At day 5-7, a counter-response occurs that leads to worsening organ dysfunction and increased mortality. However, genome mapping has proposed this theory be viewed in a different perspective. In a study with blunt, trauma patients, 17,000 out of 21,000 genes analyzed had a measurable change in genomic expression. These changes seen in the adaptive/innate immunity can be measured up to 2 months from the initial injury. Therefore, continued research in this area will allow physicians to target treatment and even measure impact of interventions.

Plenary Session: Did I Start the Opioid Epidemic?*Renee C.B. Manworren, PhD, RN-BC, APRN*

Dr. Manworren noted that while opioid prescribing rates are declining, returning to pre-opioid epidemic rates is unlikely to be the best answer for our patients. As a pediatric pain and palliative care specialist, she has identified numerous gaps in knowledge and attitudes regarding pain and substance use disorders. She has worked to make Chicago the first ChildKind City in the United States, based on a global initiative to provide care sensitive to pediatric pain and provide best pain management. She discussed how drug-based pain management strategies are likely more effective but to optimize non-opioid management, provide local/regional management when possible, and to educate patients about their opioid epidemic and their role. She also emphasized the importance of timely drug disposal to limit pediatric misuse and abuse of opioid agents.

Plenary Session: A View from the Edge: Creating a Culture of Caring*Rana L. Awdish, MD, FCCP*

Rana Awdish, MD, FCCP and author of "In Shock" discussed her experience as a critically ill patient emphasizing the fear, the loss of agency, and the feeling of disconnection between her goals and those of the medical team as she overheard statements such as "She's trying to die on us." She discussed how we need to really see our patients, not the laboratory data, not the technology, but their emotions and who they are as a person in order to treat them. She talked about the value of our presence as providers, even if we are unable to heal, and how we should choose to open reciprocal channels of empathy and communication with our patients. She also discussed how in critical medicine we have a unique opportunity to have ikigai, or a "reason for being", that combines what you are good at, what you love, what you can be paid for, and what the world needs.