In the Spotlight:

A Word from our Chair
By: Ed Conway Jr, MD, MS, FCCM, FAAP

I hope that everyone is enjoying a healthy and happy 2016. As the Chair of the Section on Critical Care it gives me great pleasure to report on some of our highlights of this past year, none of which would be possible without successful teamwork between membership and the executive committee. There were several informative PCCM presentations at the AAP National Conference & Exhibition meeting in Washington DC in October (slides are available on the AAP SOCC website). The first was a joint program on septic shock sponsored by the AAP Section on Emergency Medicine and SOCC. The session updated attendees on recognition and diagnostics in the setting of septic shock and the use of protocols and metrics to care for these patients. The second joint session was with the SOCC, Telehealth Care and the Section on Transport Medicine. This session updated attendees on the use of Telehealth in the care of critically ill children. Goals included improving awareness and understanding the breadth of use of Telehealth Technology, understanding the challenges and barriers to setting up a Telehealth Program and understanding the challenges of assuring quality.

The meeting included oral scientific presentations (available for review on the AAP SOCC website) followed by professor walk rounds to discuss the large number of posters which were presented. The number and quality of submissions continues to increase. The 2015 SOCC award winners included Tom Rice MD, FAAP as the Distinguished Career Award winner (see photo below). All award winners are listed below. Congratulations to all of the physicians for their contributions to our Section. I would like to continue to encourage all SOCC practitioners to submit their work for consideration for our next SOCC Scientific Abstract and Educational Program being held in San Francisco October 23-24th, 2016. There will be more details in upcoming issues of our SOCC electronic news flash but I am pleased to announce that we will again be able to provide the awards noted above.

The AAP SOCC Executive Committee will be meeting at the Society of Critical Care Medicine (SCCM) Annual Congress in February 2016 in Orlando. Each organization has members that sit on each other’s committees to allow for a sharing of ideas and concerns. We are currently in discussion for a possible joint venture between the Colloquium and AAP SOCC for Chicago in September 2017 as both groups will be meeting around the same time, so stay tuned for more details. Dr. Bob Tamburro attended the meeting representing the Eunice Kennedy Shriver National Institute of Child Health and Human Development, Pediatric Trauma and Critical Illness Branch of the National Institutes of Health (NIH) which led to dialogue of potential interactions between the organizations. A meeting was held at the NIH on December 10th to discuss “Advancing Pediatric Trauma and Critical Illness Research: Building the Field and advancing the Science”. Several members of the AAP SOCC executive committee attended and we hope for a summary in an upcoming issue of our newsflash.
Dr. Fernando Stein, FAAP, who is a member of the AAP SOCC, was elected President-Elect of the AAP and will take office on Jan 1, 2017. He has cited two issues he wishes to address; toxic stress for children and gun violence. He is also concerned with MOC and wishes to bring it to a level that is part of the workflow of the pediatrician's life, so that the activity of lifelong learning is incorporated as part of everyday work.

As the current Chair of the SOCC Executive Committee I would like to get as many eligible PCCM physicians as possible to join our section. We are the third largest section in the AAP yet our membership numbers are quite low (only about 780 of 2100 eligible folks are members). We have an increasing number of subcommittees to join which include: Member Engagement and Mentorship, Quality. These groups work collaboratively with larger AAP groups such as AAP Council on Quality Improvement and Patient Safety, PICU Measures and other Quality Initiatives, and AAP Subspecialty Membership Recruitment Initiative to site a few. I encourage SOCC members, both young and old; to get involved with our section as each of you has something unique that you can contribute to the SOCC. As a section member you have access to the voice of nearly 64,000 AAP members, 700 plus SOCC members, 450 AAP staff members and a dedicated AAP Washington Office advocating for the care of children and providing a variety of high-quality pediatric professional resources. PICU PREP provides Part 2 credits for MOC under the American Board of Pediatrics (ABP).

I wish everyone a healthy and happy new year and I look forward to hearing from you.
Ed Conway Jr, MD, FCCM, FAAP
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Congratulations to SOCC Awardees!
2015 AAP National Conference & Exhibition

Distinguished Career Award
Tom B. Rice, MD, FAAP

Best Abstract Award
Sandeep Tripathi, MD
“Proper: Development of an Early Pediatric Intensive Care Readmission Risk Assessment Tool”

Best Physician-In-Training Award
Blair Colwell, MD, FAAP
“Early Mobilization in the Pediatric Intensive Care Unit”

Physician-In-Training Travel Award
Katherine T. Flynn O’Brien, MD, MPH
“Improving Risk Adjusted Mortality Modeling in Pediatric Trauma with a Novel Dataset

Small Project Awards
Tara Petersen, MD, FAAP
“Utilizing the Pediatric Milestones: Assessment of Trainee Education in the Pediatric Intensive Care Unit”

Erin Powell, MD, FAAP
“Design and Implementation of a Curriculum to Teach Communication Skills to Pediatric Critical Care Fellows”
What’s Happening Now?

AAP 2015 State Legislation Report

See the amazing progress that’s been made by AAP chapters and members in states across the country. The AAP 2015 State Legislation Report details 25 significant child health and pediatric practice state policies. Also featured is the AAP 2016 State Advocacy Blueprint, which examines key state policy trends with the goal of helping chapters build on their state advocacy successes.

AAP Mentorship Program Off to a Great Start

Since March of 2015, there have been over 300 mentors and 400 mentees on the site with over 100 mentoring connections made.

Mentorship is one of the most important tools for professional development and has been linked to greater productivity, career advancement, and professional satisfaction. The AAP recognizes that mentorship is critical in helping to nurture and grow our future leaders and that a mentorship program is a key opportunity to engage new and existing members. The AAP Mentorship Program seeks to establish mentoring relationships between trainees/early career physicians and practicing AAP member physicians. Click here for more information and to join the program. Please note: Mentors are asked to commit approximately one full academic year. However, the program also offers opportunities for short-term “flash” mentoring.

Coding for Critical Care

Get the critical information you need to code correctly for critical care!
Chapter 16 of the Academy's *Coding for Pediatrics* is dedicated to coding for critical and intensive care -- including hourly critical care, critical care of the neonate and children younger than 6 years, and intensive care of the neonate and recovering or low birth weight infants. Related services commonly reported before and after intensive or critical care services, such as care during emergency transport, consultations, attendance at delivery, neonatal resuscitation, and medical team conferences, are also included.

**What Opportunities Exist?**

**Nominate someone for the 2016 SOCC Distinguished Career Award**

The AAP Section on Critical Care (SOCC) Distinguished Career Award is intended to recognize an SOCC member and senior leader in the field of Pediatric Critical Care Medicine who has contributed to the subspecialty for 15 years or longer for significant career accomplishments. This award is presented during the SOCC program at the AAP National Conference & Exhibition. The nominee/award recipient must be a current SOCC member. Past award recipients are not eligible. Self-nominations may be submitted.

Nominations will be reviewed and prioritized by the SOCC Nominating Committee, to be chaired by the Immediate-past SOCC Executive Committee chair and a Nominating Committee comprised of 2 Section members not on the SOCC Executive Committee. A final vote will be obtained from the SOCC Executive Committee and past award recipients, based on review of the CVs for the top 3 candidates identified by the Nominating Committee. These votes will be collected and tallied by AAP staff and communicated back to the Section at large following official approval by Academy leadership. Letters of recommendation are not required.

Submit nominations by March 8, 2016 to Sue Tellez, SOCC Manager, at stellez@aap.org

**Call for Abstracts for the 2016 AAP National Conference & Exhibition**

The AAP is now accepting submissions for abstracts to be presented at the 2016 National Conference & Exhibition. Section and council programs held at the National Conference cover clinical matters or research related to subspecialty or special interest areas. Submissions by AAP members and nonmembers are welcome, with participation open to health professionals in any field. Details can be found [here](#).

Guidelines for submissions to the Section on Critical Care (SOCC) program can be found [here](#).

This year, 20 Sections and Councils, including SOCC, are participating in the opportunity to support members in obtaining MOC Part 4 credit for quality improvement (QI) work they are involved in that they present at Section/Council programs at the National Conference. More information about this opportunity is available [here](#).

The abstract submission deadline is April 8, 2016.
Join the Section on Early Career Physicians

The Section on Early Career Physicians no longer has an age restriction and it's easy to join for only $10 per year. Join and network with others around mentorship, leadership, work/life balance and career growth. The Section will help you connect with resources that will help you achieve a successful and fulfilling transition from training to your chosen career path and beyond. Click here to join.

Research Corner

NICHD Update
By: Robert Tamburro, MD, MSc, FAAP

The Pediatric Trauma and Critical Illness Branch (PTCIB) at the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) have recently published its Strategic Plan. It can be reached and reviewed via the website.

The PTCIB was established in 2012 under the leadership of the former Institute Director, Alan Guttmacher, who among his many other accomplishments, founded Vermont’s only pediatric intensive care unit. The Branch, which incorporates the former Pediatric Critical Care and Rehabilitation Research Program at the National Center for Medical Rehabilitation Research at NICHD, was developed to address the compelling needs of traumatized, injured, and critically ill children and their families. Dr. Valerie Maholmes serves as the Branch Chief.

There are currently a number of funding opportunities available to investigators interested in the fields of pediatric trauma, injury and critical illness. They include, but are not limited to the following:

- NICHD Consortium for Research on Pediatric Trauma and Injury Prevention (R24) (PAR-14-324)
  Eunice Kennedy Shriver National Institute of Child Health and Human Development
  Application Dates: Opened December 25, 2014 / Expires January 8, 2017

- CAPSTONE Centers for Multidisciplinary Research in Child Abuse and Neglect (P50) (RFA-16-002)
  Eunice Kennedy Shriver National Institute of Child Health and Human Development

- Patient Safety in the Context of Perinatal, Neonatal, and Pediatric Care (R21) (PAR-14-311)
  Eunice Kennedy Shriver National Institute of Child Health and Human Development
  Application Dates: Opened September 16, 2014 / Expires September 8, 2017

- Patient Safety in the Context of Perinatal, Neonatal, and Pediatric Care (R01) (PAR-14-312)
  Eunice Kennedy Shriver National Institute of Child Health and Human Development
  Application Dates: Opened September 5, 2014 / Expires September 8, 2017

- Patient Safety in the Context of Perinatal, Neonatal, and Pediatric Care (R03) (PAR-14-313)
  Eunice Kennedy Shriver National Institute of Child Health and Human Development
  Application Dates: Opened September 16, 2014 / Expires September 8, 2017

- Studies in Neonatal and Pediatric Resuscitation (R21) (PAR-14-349)
**PREP ICU Q&A**

To subscribe to the **PREP® ICU Self-Assessment** programs, visit [http://prepicu.aap.org](http://prepicu.aap.org).

**Question**

A 14-year-old boy fell off his motor-cross cycle and is brought to the emergency department. He had transient loss of consciousness and is amnestic to the event. His initial evaluation demonstrates many abrasions and fractures of his left humerus and left tibia and fibula. Computed tomography of the
abdomen demonstrates a small splenic laceration with no free fluid in the peritoneum. He is taken to the pediatric intensive care unit for close observation.

Of the following, what is the MOST common finding of early compartment syndrome?

A. pain  
B. pallor  
C. paralysis  
D. paresthesia  
E. pulselessness

**Answer**

Correct answer: A

Compartment syndrome is a complication of tissue injury that leads to increased pressures within confined spaces of the body. These increased pressures lead to compromised perfusion to the tissues within that compartment. As pressure builds within a compartment, venous outflow is reduced, thereby increasing pressure further until ischemia occurs. This leads to more tissue injury and a vicious cycle can ensue, leading to permanent damage to the tissues within the compartment. The most common locations at which compartment syndrome occurs are the leg and the forearm, although many other areas can be affected, including the thigh, arm, foot, and abdomen. Fractures are the most common cause of compartment syndrome, but crush injuries, intravenous catheter infiltrates, and other injuries can also lead to compartment syndrome. Edema from capillary leak during sepsis can also cause compartment syndrome. Surprisingly, the significant swelling resulting from envenomation by crotalid snakes rarely causes compartment syndrome.

Unfortunately, the signs and symptoms of compartment syndrome are often nonspecific and may occur late in the process at a time when delayed therapy is unable to prevent permanent injury. Therefore, a high index of suspicion and liberal use of direct measurement of compartment pressures are necessary when this is a potential diagnosis.

Pain out of proportion to what is expected for the injury is the most common early symptom. Pain with passive stretching of the involved muscle group is a classic finding. Because most patients have fractures, it can be hard to decide whether pain is out of proportion, but an increase in pain medication requirement over time can be a clue.

Paresthesias are the second most common symptom of compartment syndrome after pain.

Pallor occurs in the area when high compartment pressures limit arterial flow into the area. Therefore, pallor is a relatively late sign.

Similarly, paralysis is a late finding caused by the ischemic injury to nerves and/or muscles within the compartment.

As compartment pressures rise, initially lymphatics drain faster. However, this mechanism can easily be overwhelmed, and pressures rise high enough to compromise capillary then venous flow. Only when pressures become very high and tissue injury from poor microvascular perfusion has already taken place will arterial flow and subsequent pulselessness occur. Therefore, pulselessness is a late finding of
compartment syndrome. Thus, the development of disproportionate pain, paresthesias, pallor, paralysis, or pulselessness should lead the practitioner to expedite measuring compartment pressures and intervene for elevations promptly.

To reduce the risk of compartment syndrome, circumferential dressings should not be too tight, and casts may have to be loosened if concern for compartment syndrome develops. The involved extremity should be kept at heart level because elevating it will reduce arterial pressure and compromise perfusion pressure.

**Suggested Readings**


*Pediatric Trauma Pathophysiology, Diagnosis, and Treatment.* New York, NY: Taylor & Francis; 2006:334-335


Stracciolini A. Acute compartment syndrome. UpToDate. . Accessed June 1, 2010 at: http://www.uptodate.com/patients/content/topic.do?topicKey=5uFia1GcnQHG&selectedTitle=1~90&source=search_result

**American Board of Pediatrics Content Specifications**

- Recognize compartment syndrome
- Plan the management of a patient with compartment syndrome