



Section on Critical Care NEWSLETTER

December 2011

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™



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This is a newsletter of the Section on Critical Care of the American Academy of Pediatrics. The opinions expressed herein do not necessarily reflect the opinions of the American Academy of Pediatrics.

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Chair's Report Donald Vernon, MD, FAAP

Dear PCCM Colleagues:

The SOCC has had another excellent year, with the membership of the SOCC executive committee remaining unchanged. Last fall's SOCC program at the AAP National Conference and Exhibition in San Francisco was another success, with many high-quality research presentations and an excellent educational program. The half-day session on resuscitation controversies was particularly interesting, as it was presented jointly with the Sections on Cardiology, Emergency Medicine, and Hospital Medicine. Another noteworthy event in which the SOCC played a part was the publication in September's Critical Care Medicine of the "Guidelines for the determination of brain death in infants and children: An update of the 1987 Task Force recommendations," with Dr. Thomas Nakagawa as the first author. The creation of these guidelines took a fair amount of time, and was not without controversy or contention, but it is good to finally see them in print.



The SOCC program at the upcoming NCE in Boston was superb, with Dr. John Straumanis doing his customarily masterful job in researching interesting topics, recruiting speakers and moderators, and generally pulling the whole thing together. As usual, it began with a half-day of research presentations, followed by afternoon presentations on "Technological Advances in Pediatric Critical Care." The following morning, there were several presentations on "Critical Care Dilemmas", called "Are you Smarter than an Intensivist" put together by Drs. Ed Conway and Tom Kayrouz who put in considerable effort to adapt the cases for use with an Audience Response System. The effort was very well received.

A major issue and concern for the SOCC continues to be the level of participation and engagement by pediatric intensivists, including current members of the AAP and the SOCC. As of 2011, the SOCC had 573 active members, representing 30% of all 1881 board-certified pediatric intensivists, and 59% of board-certified pediatric intensivists who are current members of the AAP. Membership in the SOCC has been declining in recent years, with a loss of nearly 200 members, a bit more than 25%, compared with 2009. We have been undertaking actions to reverse this trend, undertaking a national recruitment campaign in January 2010, offering Fellows whose membership has lapsed discounted AAP dues and SOCC membership. We have continued efforts to recruit new SOCC members, with mailing of a new promotional flyer and significantly reduction in initial dues for intensivists who are non-members or lapsed members of the AAP.

As I have for the past two years, I ask you as SOCC members to consider the benefits of involvement in the SOCC and its activities. Especially in the current economic climate, we all realize that travel and conference attendance are expensive, and that we are in competition with many other meetings. However, I believe that the SOCC offers excellent value. The SOCC educational programs at the NCE have been consistently excellent, and the SOCC section program is a terrific place for junior as well as senior investigators to present their research. If you haven't participated in our program at the NCE, I ask that you consider attending the next time around. Consider presenting one of your projects here, and suggest it as a place your junior faculty, fellows,

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residents, and even nurses, to present their research as well. And, the AAP has always provided a voice for pediatricians and pediatric subspecialists, one that is heard by government, especially important now with the uncertainties of healthcare reform and government budget crises.

Look at the SOCC webpage (<http://www.aap.org/Sections/critcare/>) for an overview of the SOCC, members of the SOCC executive committee, and an overview of the various activities and resources of the section. Please consider engaging with the SOCC and the AAP.

Hope you all have had a great year. It was great seeing many of you in Boston!

DV



**PREP ICU Now Available
for Subscription**

**Review for exams and
maintain your knowledge of
pediatric critical care with
the new AAP self-study
program.**

Welcome to the Section on Critical Care!

**New members
July 2010 - November 2011**



Mark Abe
Samer Abu-Sultaneh
Michelle Adu-Darko
Rabia Akbar
Kristina Kypuros
Almeda
Ingrid Anderson
Marjorie Arca
David Bigos
Gabriel Bredin
Brian Bridges
MyMy Buu
Anne Camerlengo
Heather Carpentier
Timothy Carroll
Christina Cifra
Regina Clemens
Lisa DelSignore
Maude Dull
Cesar Mella Estevez
Joseph Falco
Leslie Garner
Jennifer Geracht
Efren Gutierrez
Vinet Gupta
Senan Hadid
Steven Horwitz
Angela Hsu
Kimberly Ingram
Kathy Kalkbrenner
Lutifat Kashimawo
Capt. Jennifer Kicker
Todd Kilbaugh

Brahmananda Koduri
Shaghig Kouyoumjian
Firdous Laique
Yosef Levenbrown
Ashley Loomis
Jeffrey Lutmer
Amanda Madden
Chris Maloney
Maj. Renee Matos
Michelle McGarry
Michael McManus
Steven McSwain
Janet Meller
Andrew Meyer
Emily Miller
Seema Nair
David Nathalang
Ryan Nofziger
Luke Noronha
Tagbo Oguonu
Waseem Ostwani
Melissa Parker
Sanjiv Pasala
Juan Meneses Paz
Jason Peck
Elizabeth Persad
Francesca Perez
Marques James Phillips
Joseph Philip
Corey Philpot
Eduardo Pino
Shekhar Raj
Hariprem Rajasekhar

Courtney Ranallo
Eileen Rhee
Sara Ross
Mina Salib
Babak Salimi
Ronald Sanders
William Sasser
James Schneider
Andreas Schwingshackl
Shilpa Shah
Jana Sperka
Richard Sterett
Felice Su
Michael Sweeney
Erin Talati
Christopher Todd
Adalberto Torres
Chani Traube
Kalia Ulate
Anwar Vardag
Elizabeth Villano
Amelie Von Saint Andre-
von Arnim
Rajeev Wadia
Laura Watkins
Andy Wen
Michael Wolf
Melvin Wright
Matthew Wylie
Andrew Yates
Jennifer York

PREP ICU Editorial Board 2011



From Left to Right: Monica Relvas, Denise Goodman, Derek Wheeler, Tad Fiser, Ed Conway, Mary Lieh-Lai, Tim Timmons, Ann Thompson, Jim Hanson, Brad Fuhrman, and Bob Tamburro.

NCE 2011 Award Winners

Section on Critical Care Awards presented during SOCC program - Boston

Distinguished Career Award Recipient



Timothy S. Yeh, MD, FAAP

Timothy Yeh, MD 2011 Distinguished Career Award Winner

Serendipity – AAP Section on Critical Care Distinguished Career Award 2011 Acceptance Speech

Thank you, Michele for your kind words. I would like to thank the Academy and the Section on Critical Care for this very special honor. I would also like to thank my wife, Laura James, for her love, support and understanding, without which I would not have been able pursue my professional goals. I am delighted that she and my in-laws are with me here today.

I am very humbled to be included in the company of the previous recipients of this award. This is really the Hall of Fame team. These are the individuals that immediately come to mind when one thinks of the significant advances in our field of critical care medicine and I have been fortunate to have known all of them. I have been even more fortunate to have worked closely with many of them and to become their friend and colleague and I have the American Academy of Pediatrics to thank for providing me with the opportunity to do so.

1995 David Todres	2003 Ann E. Thompson
1996 John Downes	2004 Bradley P. Fuhrman
1997 Peter Holbrook	2005 J. Michael Dean
1998 George Gregory	2006 David G. Nichols
1999 George Lister	2007 Ashok P. Sarnaik
2000 Russell Raphaely	2008 Patrick M. Kochanek
2001 Murray Pollack	2009 Jerry Zimmerman
2002 Daniel L. Levin	2010 M. Michele Moss

The word “career” has several origins, including the French *carrière*, for racecourse and Late Latin *carrāria* or carriage road. The conventional definition of “Career” is a profession or occupation chosen as one’s life work. However, it is the alternative definition, a path or progress through life or history, which is more closely aligned to the origins of the word. It is this definition that is particularly meaningful for me today. Receiving this award has allowed me to spend some time thinking about the path that I have followed over the years. Please bear with me while I free associate.

A person does not usually receive this type of recognition until they are, shall we say relatively “mature”. Now, I am not saying that I am old, but many things have happened since I first entered medicine. First there was the discovery of fire and then came the invention of the wheel, the use of ether as an anesthetic as demonstrated by Morton, the discovery of penicillin by Alexander Fleming and more recently space exploration, which has helped to accelerate the development of many new technologies. Of course there have also been many major cultural milestones such as M*A*S*H, Cheers, Seinfeld and Survivor, but that is a topic for another day. In medicine, the use of advanced imaging techniques such as CT scans, ultrasound, MRIs, PET scanners has become routine. Other technologies that we take for granted include calculators and smartphones. In fact retro technology has come full circle; there are now iPhone slide rule and abacus apps. And here we have the first iPhone. We have pulse oximetry and more sophisticated point of care testing. Yet through all of these developments, some considered advances, some not, the one constant for me in my practice has been the people that I have worked with.

It has been my good fortune to have worked with many amazing people over the years. They have been brilliant, tireless and engaging, but most importantly they share a passion for the care of critically ill children. The essence of pediatric critical care lies in its diversity. If you choose to make this your career, your options are unlimited. Whether your focus is in basic science research, quality improvement, teaching or medical ethics, each day that you spend in the intensive care unit provides the opportunity for you to do a little bit of everything. As you take care of your patients you become a teacher, administrator, ethicist, behaviorist and even a researcher, because every individual patient represents a teaching point or a research opportunity, a chance to observe and incorporate data and formulate a hypothesis. Each day,

Toys and Hot Topics in Boston at the NCE!

John P Straumanis, MD **Program Chair**

The Section had very successful scientific and educational sessions at the AAP's 2011 NCE held in Boston (October 16th and 17th). There was standing room only in the session for general pediatricians sponsored by the Section entitled: Are You Smarter Than an Intensivist? Ed Conway and Tom Kayrouz kept everyone's attention glued to the game board with their audience response case presentations.

Science was front and center during the podium and poster abstract sessions. The attendees were able to hear about up to date research in basic science, quality, patient safety, and clinical medicine. All of the presented abstracts will be published in an upcoming edition of Pediatric Critical Care Medicine. The venue continues to be an excellent place for students, residents, fellows, nurses, and faculty to present their data. There were also awards presented for the best abstracts. The winners were:

Best Overall Abstract

Christopher Mastropietro MD, Children's Hospital of Michigan/Wayne State University

Copeptin as a Surrogate Marker of Plasma Arginine Vasopressin in Children after Cardiopulmonary Bypass.

Best In-Training Abstract

Hitesh Sandhu, MBBS, Children's Hospital of Michigan/Wayne State University

Detection of TNF-alpha and IL-6 in Exhaled Breath Condensate of Rats with Pneumonia Due to Staphylococcus Enterotoxin B

Best Nursing Abstract

Patricia Lincoln, RN, MS, CCRN
Childrens Hospital Boston/Harvard University

Instituting a Multidisciplinary Review Process for Patients Supported on Continuous Renal Replacement Therapy

There were two educational sessions presented by the Section geared toward intensivists. The first was an update and discussion of intensive care technologies: The Toys of the PICU. Bill Tsai gave a high tech presentation on the use of ultrasound in the PICU which went well beyond line placement. The guru of pediatric renal replacement therapies in the ICU, Tim Bunchman, gave an update on CRRT.

Boston's own, Francis Fynn-Thompson, provided the audience with a review of ECMO and ventricular assist devices including the Berlin Heart. In the second education session, Tom Kayrouz and Ed Conway challenged the audience with cases and scenarios we didn't learn in fellowship including a case of a NMDA secreting ovarian tumor and unusual poisoning cases.

Next year the Section on Critical Care will be exchanging baked beans for beignets as we join the AAP at the 2012 NCE in New Orleans. There will be a scientific session based on abstracts submitted in the spring of 2012. Be on the watch for the abstract deadline notice. The educational topics will be the treatment of respiratory failure. This session will include discussions on non-invasive ventilation and applied pressure release ventilation. The second session is co-sponsored by the Section on Emergency Medicine and will be on pediatric trauma and include a speaker from the front in Afghanistan. We look forward to seeing you in Nawlins in October 2012!

Timothy Yeh, MD - Acceptance Speech

we function as the air traffic controller of the intensivist led team, which as we all know, the pediatricians had put into practice long before the adult intensivists realized it was the way to go.

The quality improvement/patient safety initiative has done a number of important things for healthcare. It has increased awareness for the public that the care they receive can be provided safely and effectively. It has standardized practice to incorporate best evidence and allow us to better study the end result of the treatments that we provide. Without question, initiatives such as the Surviving Sepsis Campaign and the prevention of catheter associated blood stream infections, have saved lives. Unfortunately these efforts have also had unintended consequences. Complacency, inattention to detail and losing the desire to learn are all potential hazards in the implementation of standardized practice. Work becomes

formulaic and as the electronic health record becomes a universal reality, a few keystrokes, touches on a screen or clicks of a mouse can replace pulling out the handbook and doing calculations by hand. Are we moving towards better and safer patient care? Absolutely. An equally important question is: are those who are becoming physicians today learning what they need to learn? I think we are beginning to learn more about this each day.

There is no such thing as a routine or typical patient and one of the greatest mistakes a physician can make is to assume that there is. In the intensive care unit, the consequences are amplified by the severity of the problems as well as the compressed timeframe in which these problems evolve.

Benoit Mandelbrot, a mathematician and the inventor of the field of fractal

geometry in the 1980's had many wide-ranging interests. Throughout his career he analyzed economic behavior and extraordinary economic events. He was convinced that economists planned for "mild randomness" and misunderstood "wild randomness," learning from the averages and overlooking the outliers and in the end, underestimating catastrophic risk. He wrote in "The (Misbehavior) behavior of Markets" (2004) that "The financiers and investors of the world are, at the moment, like mariners who heed no weather warnings." As pediatric intensivists, we need to be mariners who "do" heed the weather warnings. Our weather warnings are the subtle signals we get from our patients that tell us they are continuously changing. How we respond and tailor our care can make all the difference in the world.

“Coincidence” is when false significance is attributed to chance occurrences. “Synchronicity” or meaningful coincidence” (Jung) is when an underlying principle unites discrete events, but they are not necessarily causal or related in a reproducible or deterministic way.

The English author Horace Walpole coined the word serendipity, when he formed the word from Serendip which was an old name for Sri Lanka. He explained that this name was part of the title of "a silly fairy tale, called The Three Princes of Serendip: as their highnesses traveled, they were always making discoveries, by accidents and sagacity, of things which they were not in quest of..."

“Serendipity” then is when you’re looking for something and you find something else that’s even better – think penicillin or Christopher Columbus.

With that in mind, here is a brief timeline of my serendipitous career...

In 1972 I entered the UC Davis School of Medicine. After graduating in 1976, I began my pediatric residency at the UC Davis Sacramento Medical Center. My attendings included Corey Frates, Ken Cox, Crystie Halstead and my Chairman, Eli Gold. It was from these individuals that I learned what a PICU was (even though we didn’t really have one) and how important it was to be a complete physician.

In 1979 I began my PCCM Fellowship at the Children’s Hospital National Medical Center with Peter Holbrook, Alan Fields and Murray Pollack. During our fellowship, we spent 2 months in the adult Medical ICU at George Washington University Hospital with Bill Knaus, Jack Zimmerman and the adult ICU fellow at the time, Art St. Andre. Bill Knaus had just developed APACHE and this caught my attention, since I had been looking for an idea for a research project. With guidance from Murray and Urs Ruttiman, this eventually led to a pediatric therapeutic intervention scoring system and then to a pediatric physiology based outcome score, the Physiologic Severity Index. Of course, as you all know, Murray took this initial effort several levels higher in the form of



PRISM, which is still a standard for pediatric outcomes determination.

After completing my fellowship, I started my first real job in 1981 at the Children’s Hospital of San Francisco as the Director of the just constructed PICU. During my time there, I worked with Ann Pettigrew and the other PICU Directors as part of the Pediatric Intensive Care Network of Northern and Central California. Ann, who had previously been in the Massachusetts Department of Maternal Child Health, was instrumental in helping us demonstrate to the State of California that regionalization of pediatric critical care was possible and necessary. This initiative was later taken up by District IX of the AAP and the California EMS-C Authority. Also at the Children’s Hospital of San Francisco, I met David Holman, an adult pulmonologist and Chair of the Bioethics Committee and Thomasine Kushner, the ethicist consultant to the Committee. It was from them that I developed my career-long interest in bioethics.

Also in 1981 I joined the Society of Critical Care Medicine and the Pediatric Section, where I eventually served as the Section Chair and along with Frank Gioia, a medical school classmate, began the first Pediatric Critical Care Clinical Review Series.

In 1983 I joined the American Academy of Pediatrics and have been fortunate to have had a role in guidelines development, advocacy and in the

activities of this Section on the executive committee and as Chair. In the Academy I have also chaired one of the SMC Action Groups and been a member of the COPEM, SOTM, SOHM and SOAPM.

I moved to the Children’s Hospital Oakland in 1987. While I was there, the CEO took a group of us to a quality improvement retreat not far from here at Brandeis. The retreat was led by Don Berwick, currently the Administrator of the Centers for Medicare & Medicaid Services (CMS), and formerly President and Chief Executive Officer of the Institute for Healthcare Improvement. He was just beginning to have a major impact on healthcare improvement and after returning to California, we began developing clinical pathways and implementing performance improvement measures.

One of my most rewarding experiences in Oakland was co-directing the joint PCCM fellowship program (CHO/UCSF). It was challenging and exciting and the fellows definitely kept me on my toes.

Along the way, I served on the AHA ECC Subcommittee on Pediatric Resuscitation and had an inside look at yet another professional organization.

In 1992, I was elected to the Board of Regents of the American College of Critical Care Medicine and eventually served as Chancellor of the College. In the early 2000’s after moving to the East Coast, I worked with Joel Portnoy and his colleagues at CHOP on several

patient safety projects and have continued to be involved with these initiatives at Saint Barnabas Medical Center. Finally in 2006 I began a term on the ABP PCCM Subcommittee, working with some of the smartest people I have known.

My career and the physician that I am today is in many ways the result of these serendipitous events, traveling along my path, looking for something and finding something even better at each turn.

Intensive care is a team effort. It is an interdisciplinary and multidisciplinary team effort. Even as we find our units becoming more and more specialized, the underlying concept remains the same. Each member of the ICU team is essential and never more evident than when one of them is missing.

Everyone has their good days and bad days. A good day in the ICU can mean any number of things. It can be something big, such as successfully getting the fresh neonate single ventricle repair through the first post-operative night. Or it can be a patient resuscitation, where each and every person present has been essential to the successful outcome. It can be the look on the resident's face as they understand why something they have just learned is now happening to their patient. It can be the relief that a parent feels when you tell them that their child has been weaned off the ventilator and is breathing comfortably on their own. A bad day in the ICU is when all your beds are full and there are 3 scheduled surgeries for the day. A bad day in the ICU is when your login password has expired and the new one you want to use isn't acceptable because you've already used it in the last 6 months. A bad day in the ICU is when you drop the guidewire for the central line you are inserting, onto the floor. A bad day in the ICU is when the coffeepot in the lounge is empty. A really bad day in the ICU is when you have spent an hour explaining brain death to a family and they tell you that they want everything to be done. But the worst day in the ICU is when your patient has died and you have done everything you know that can be done. Unfortunately, as critical care physicians, we encounter this more often than others might. It is part of what we do and cannot be avoided. So why do we come to work every day? It is because, on balance, the good days outnumber the bad and the best good day lessens the pain of the worst bad day.

If there is a central theme to what I am trying to say today, it is the importance of the human factor in critical care. The complexity of managing critically ill children can be aided by technology. Personalized medicine is becoming a reality as individualized therapies are being developed. An individual's stem cells can be induced to form cardiomyocytes that will allow us to determine their risk for disease and which drugs to take when they become ill. There will come a time when a hospitalized patient will be identified by their DNA, not their wristband. Today's educational session has highlighted some of the amazing things that we do with technology each day.

Certainly many critical care practitioners have been lured into the field by the promise of newer and fancier toys. However the foreseeable future does not include the replacement of the human element, Watson and Jeopardy and telemedicine, notwithstanding. A team coordinated by a computer does not feel the same. A discussion of prognosis with a family cannot be replaced by a Wikipedia link for hepatic failure. I do not believe that our patients and their families are ready for automaton medicine.

What is wonderful about our field of critical care? Let's look once again at the previous recipients of the Section on Critical Care Distinguished Career Award, who for me represent the very best of pediatric critical care. What is remarkable about them is how diverse and individual they are. The first recipient of the award, David Todres, greatly valued the humanistic aspect of medicine and applied this throughout his career. Jack Downes established the first multidisciplinary pediatric intensive care unit and is considered one of the founders of the field of pediatric critical care. George Gregory revolutionized the care of the newborn with respiratory distress syndrome. Dan Levin wrote the handbook that every resident and fellow who aspired to be a pediatric intensivist had to have. Peter Holbrook and Murray Pollack were my personal mentors and through their insight into the importance of pediatric critical care as a multidisciplinary specialty and demonstration of outcomes of care, they have helped our field to mature. Of course establishing a scientific basis for what we do is essential to maintaining credibility and this group is replete with outstanding clinical and basic scientists. Others have taken leadership roles in major professional organizations and academic institutions. Finally and perhaps most importantly, all of these individuals have been teachers, because it is only by passing along their knowledge that our specialty has been able to grow and develop. Through their teaching, they have inspired countless others to pursue this very rewarding career. With that thought and to all the students, residents and fellows that I have been privileged to teach, I leave you with this. I cannot take credit for the many wonderful achievements they have accomplished, but I am happy to have walked along the same path with them for a while.

Thank you for allowing me to share my thoughts on what it means to me to be a pediatric critical care physician and thank you to the Section on Critical Care for this very special honor.

Brain Death Guidelines

Executive Summary

Guidelines for the Determination of Brain Death in Infants and Children: An Update of the 1987 Task Force Recommendations

Thomas A. Nakagawa, Stephen Ashwal, Mudit Mathur, Mohan Mysore and the Society of Critical Care Medicine, Section on Critical Care and Section on Neurology of the American Academy of Pediatrics, and the Child Neurology Society

Pediatrics 2011;128:e720; originally published online August 28, 2011; DOI: 10.1542/peds.2011-1511

CONCLUSIONS AND RECOMMENDATIONS:

(1) Determination of brain death in term newborns, infants and children is a clinical diagnosis based on the absence of neurologic function with a known irreversible cause of coma. Because of insufficient data in the literature, recommendations for preterm infants less than 37 weeks gestational age are not included in this guideline.

(2) Hypotension, hypothermia, and metabolic disturbances should be treated and corrected and medications that can interfere with the neurologic examination and apnea testing should be discontinued allowing for adequate clearance before proceeding with these evaluations.

(3) Two examinations including apnea testing with each examination separated by an observation period are required. Examinations should be performed by different attending physicians. Apnea testing may be performed by the same physician. An observation period of 24 hours for term newborns (37 weeks gestational age) to 30 days of age, and 12 hours for infants and chi (30 days to 18 years) is recommended. The first examination determines the child has met the accepted neurologic examination criteria for brain death. The second examination confirms brain death based on an unchanged and irreversible condition. Assessment of neurologic function following cardiopulmonary resuscitation or other severe acute brain injuries should be deferred for 24 hours or longer if there are concerns or inconsistencies in the examination.

(4) Apnea testing to support the diagnosis of brain death must be performed safely and requires documentation of an arterial PaCO₂ 20 mm Hg above the baseline and 60 mm Hg with no respiratory effort during the testing period. If the apnea test cannot be safely completed, an ancillary study should be performed.

(5) Ancillary studies (electroencephalogram and radionuclide cerebral blood flow) are not required to establish brain death and are not a substitute for the neurologic examination. Ancillary studies may be used to assist the clinician in making the diagnosis of brain death (i) when components of the examination or apnea testing cannot be completed safely due to the underlying medical condition of the patient; (ii) if there is uncertainty about the results of the neurologic examination; (iii) if a medication effect may be present; or (iv) to reduce the inter-examination observation period. When ancillary studies

are used, a second clinical examination and apnea test should be performed and components that can be completed must remain consistent with brain death. In this instance the observation interval may be shortened and the second neurologic examination and apnea test (or all components that are able to be completed safely) can be performed at any time thereafter.

(6) Death is declared when the above criteria are fulfilled. *Pediatrics* 2011;128:

Full Clinical Report (September 2011): Guidelines for the Determination of Brain Death in Infants and Children: An Update of the 1987 Task Force Recommendations

<http://pediatrics.aappublications.org/content/128/3/e720.full.html>

AAP News Article (September 2011): Declaring Brain Death - Updated Guidelines Help Ensure Uniform Approach

<http://aapnews.aappublications.org/content/32/9/44.full?etoc>

The Resident Education and Recruitment Committee of SCCM's Pediatric Section

Chair: Katherine Potter, MD
Kosair Children's Hospital
Louisville, Kentucky

The committee continues to revise and update the PowerPoint presentations in the on-line Resident ICU (RICU) course. A special focus this year is to update the questions associated with the lectures to allow a more useable post-course knowledge assessment.

The committee also plans to focus more on the recruitment arm of our mission by identifying barriers in recruiting residents to a career in critical care.

Co-Chairs elect were voted on for the next two years. The Committee is fortunate to welcome Jim Killinger and Nga Pham to serve in this role.

Members of the pediatric section who are interested in joining the Resident Education and Recruitment Committee should contact Kate Potter at Katherine.potter@louisville.edu

Drug Update

Source of Information: Institute for Safe Medication Practices (ISMP) Medication Safety Alert Newsletters

I. MEDICATION ERRORS

1. Parenteral Nutrition Compounding Errors:
 - Bacterial (*Serratia marcescens*) contamination of parenteral nutrition – contributed to the death of nine patients
 - 6-week old died from a PN solution that contained 60 times more sodium than prescribed: prescription was for 14.7 mEq of sodium chloride and 982 mg of calcium. The pharmacy technician mistakenly entered 982 mEq of sodium into the automated IV compounder. The mistake was not detected in spite of the fact that the PN label indicated the high amount of sodium. Subsequently a sticker containing the originally-prescribed amount of sodium was placed on top of the other label and therefore, the nurse who started the PN did not see the error. When the infant's sodium was abnormally high, the physician assumed it was an error and asked for the lab test to be repeated, but this was never done as the child suffered a cardiac arrest and died.
 - A similar incident was described in 2007 when an infant died from a 1,000-fold overdose of zinc resulting from entering a PN order into an automated compounder. The pharmacist entered “mg” instead of “mCg”.
 - What can be done to reduce PN compounding errors:
 - o Compound PN orders during the day
 - o Standardize the format of PN orders
 - o Install, test and maximize automated dose-listed warnings especially for high-alert medications
 - o Use easy to read labels
 - o Carry out effective redundancies: age, weight, height, disease state, lab values. Verify order before and after entry into system; verify dose and volume of additives before addition and again after PN is compounded (inspect vials and syringes used); final verification of the compounded PN MUST include: review of the original order, product label, work label; and comparison of the expected weight and specific gravity of the product. If the values are off by 3% or more – the product should be prepared again. If the PN is outsourced, the pharmacist at the receiving hospital must verify that the product matches the order and the nurses should also independently check the same.
2. Other Compounding Errors: Bacterial endophthalmitis with alpha hemolytic streptococcus following intravitreal injections of bevacizumab
3. Mix-up between PPD and Polio vaccine: a nurse at an immunization clinic meant to administer a tuberculin PPD but instead administered 0.1 mL of injectable inactivated polio vaccine. The mistake was noticed right away and the

proper tuberculin PPD was applied. However, if the mistake had not been detected the erythema and tenderness associated with the administration of injectable polio vaccine could have been interpreted as a “positive PPD skin test”.

4. Preventing medication errors during codes: codes are generally done under very stressful conditions and there is usually no time for verification and discussion of the treatment plan. A number of studies have shown medication error rates during codes and simulations to be from 1-15%. Studies have also shown that patient harm from medication errors during code conditions is high and serious errors are often missed. These errors include dosing, drug selection, drug preparation, administration technique and omissions.

Risk Reduction Strategies to Prevent Medication Errors during Codes:

Code Cart Access and Standardization

If applicable, use separate adult and pediatric code carts in places that treat both adults and children.

In units that provide care to neonates (including obstetrical units), supply a designated neonatal emergency drug tray on the neonatal/pediatric code cart.

Standardize common code cart equipment throughout the organization (such as defibrillators).

Code Cart Stock

Require the pharmacy and therapeutics committee to approve emergency drug references provided on carts including concentrations, container sizes and quantities

Assign full responsibility to pharmacy for stocking/restocking all medications (carts should be locked)

Provide drugs in ready-to-use syringes/premixed solutions as much as possible to avoid errors in calculations and mixing

Provide all medications required in ACLS/PALS protocols. Do not stock medications not required by these protocols (e.g.: neuromuscular blocking agents, 3% NaCl)

Provide appropriate diluents and base solutions in amounts that correspond to protocols

Stock carts with equipment that is compatible with usual drug delivery systems in the system (syringe pumps)

Stock pediatric and neonatal emergency drug exchange trays with pediatric- and neonatal-specific formulations of drugs that match protocols and dosing guidelines. All staff must be informed of changes, particularly in these days of frequent drug shortages, where a different concentration may have to be used (e.g. epinephrine)

Provide preprinted ready to use labels in code carts to allow labelling of all drugs drawn up (including flushes)

Label each drug compartment in the code cart with the generic drug name and concentration, avoiding abbreviations and unsafe dose expressions

Establish a process for identifying expiration dates of drugs stocked in code cards and ensure replenishment for expired drugs

Familiarize all users with the contents of the cart

Accessibility of Drug Information during Codes

Provide standardized drug reference sheets and IV titration dosing guides for all drugs. Include administration info, dosing instructions, maximum dose limits, infusion rates and instructions for administration

If using Broselow tapes, require the pharmacy and therapeutics committee to approve the dosing guidelines on the tape, ensure that the most current tape is available, and verify that the doses and concentrations on the tape match those used in the institution (see warning section below)

Place a copy of the appropriate weight-based emergency drug dosage guidelines at the bedside. This is particularly important for pediatric patients

Make reference materials available electronically so they can be downloaded into handheld devices

Designate who responds to codes

Before, During, and After Codes

If smart pumps are available, include drug infusions used during/immediately after resuscitation in the drug library and set default starting doses

Conduct regular multidisciplinary simulation codes to help staff learn expected roles and practice skills that include prescribing/verifying medications and doses, finding medication in the cart, drawing exact doses into syringes, etc.

During the code, repeat back verbal medication orders for verification and clarify incomplete orders

Conduct regular interdisciplinary code review/debriefing

Establish clear roles and responsibilities for post-code procedures

From ISMP Medication Safety Alert, February 10, 2011, volume 16, issue 3

5. Consistent use of smart pump library: the lawyers have weighed on this -(JONA's Healthcare Law Ethics and Regulation, 2011; 13: 17-20): if the smart pump library technology is available but not used, or is bypassed and a medication error results, litigation could be successful in finding fault. Therefore, available smart pump technology should be fully maximized and used consistently, and any alerts must be addressed before starting parenteral therapy.

6. Errors in using Insulin for the treatment of hyperkalemia

- A physician ordered 50% dextrose IV injection WITH 4 units of regular insulin for a patient with renal failure and hyperkalemia. The nurse drew up 4 mL (400 units) of insulin into a 10-mL syringe and gave the dose IV. The patient became severely hypoglycemic and required ICU care.
- A nurse accidentally added 50 units of insulin to an existing IV infusion instead of the 5 units that was ordered. In this case, the nurse felt that the ½-inch insulin needle in the syringe was not long enough to insert into the IV bag and instead used a 3-mL syringe to draw up the insulin. She accidentally drew up 0.5 mL (50 units) instead of 0.05 mL (5 units). She showed this to another nurse who did not pick up the error
- A new graduate nurse was asked to prepare a 1:1 insulin infusion (1 unit/mL). This was checked by an experienced nurse who did not notice that the new nurse had drawn 10 mL (1,000 units) of insulin instead of 1 mL (100 units) and added to a 100-mL bag of 0.9% NaCl
- There are many other similar reports both in and outside of the US – insulin should always be considered a high-alert medication and specific guidelines for its use must be in place.

II. WARNINGS

1. Dolasetron mesylate should no longer be used to prevent chemotherapy-induced nausea and vomiting; causes dose-dependent QTc, P-R, and QRS interval prolongation. Warning labeling on injectable and tablet formulations, but oral tablets are still indicated/being used for post-operative nausea and vomiting.



2. Triaminic Fever Reducer: this product contains only acetaminophen but parents who are used to Triaminic being used as a cough and cold medication, might continue to give their children an “additional” product containing acetaminophen

3. Pradaxa (dabigatran etexilate mesylate): an oral direct thrombin inhibitor that is used increasingly. ADJUST FOR RENAL IMPAIRMENT. A patient with chronic stage IV renal disease was prescribed the drug by a physician who did not adjust for the renal impairment. The patient developed massive gastrointestinal bleed and had to be admitted to the ICU where he required multiple transfusions of FFP and PRBC.

4. EpiPen: a nurse unfamiliar with the new design of the EpiPen accidentally injected her thumb by pushing on the wrong end (orange tip) of the pen, assuming that it was similar to the NovoLog FlexPen (insulin aspart), which has an orange button to inject the insulin.

5. Serious burns may occur in patients undergoing MRI who are wearing transdermal patches that contain metal. The metal acts

as a conductor of radiofrequency pulses, inducing electric current.

6. **Broselow Tape for Chemical Warfare**
Recently, a Broselow Pediatric Antidotes for Chemical Warfare tape has become available and can be confused with the Broselow Emergency Tape. If your institution uses both, educate staff about the difference.
7. **Electrolyte shortages:** As all of you are aware, there have been multiple electrolyte shortages and substitutions using different concentrations are being resorted to. The staff should be educated about any substitutions; and a formal verification process should be in place and computer software must be updated. Electrolyte solutions for injection in short supply include concentration NaCl (14.6% and 23.4%), potassium phosphate, potassium acetate, zinc chloride, calcium gluconate and calcium chloride.
8. **Watch what you are doing:** There were two patients who came into the emergency department. One had lung cancer and needed treatment for dehydration. The other was a patient from a motor vehicle accident who needed intubation. The physician gave verbal orders for vecuronium and midazolam for the patient who had been in the MVA, but the physician entered the orders electronically into the chart of the patient with lung cancer, who received the drugs, suffered a respiratory arrest and died. While electronic medication order entry has reduced some types of medication errors, new types of errors have emerged. One of these errors includes medication order entry for the wrong patient, whose electronic chart happens to be open, and the physician mistakenly assumes that it belongs to another patient.
9. **Watch where you click:** Penicillamine instead of penicillin was mistakenly “picked” from an electronic list. A 9-year old patient had a positive culture for Strep. The child received the

chelating agent for two days and was brought back to the emergency department because he was not improving and was pale and sleeping more.

III. EQUIPMENT-RELATED INJURIES:

A wall-mounted IV pole with infusion pump was dislodged by a headboard while the bed was being raised. The pole and infusion pump fell on the patient’s head, causing significant intracranial hemorrhage.



The 2011 Elements of Performance for the Joint Commission National Patient Safety Goal includes the accuracy of patient identification. The practice of using at least two patient identifiers should be done when administering medications, blood, and blood components, when collecting blood samples and other specimens and when providing treatments and procedures. This verification should be accomplished when:

- physicians prescribe medication
- pharmacists and technicians enter/verify orders and dispense meds
- unit secretaries, nurses and other authorized staff transcribe med orders
- nurses and other qualified healthcare provides administer medications
- healthcare workers set up, obtain, receive, give, and/or document/file diagnostic test results (since treatments are based on these results)

Telling True Stories is an ISMP Landmark. Why telling medication error “stories” is important:

1. Stories attract attention
2. Stories promote critical thinking
3. Stories are memorable
4. Stories create empathy
5. Stories inspire and incite change

However...

1. Institutions should establish a safe and trusting environment for crafting and sharing stories without fear of external exposure, undue internal embarrassment or unjust discipline
2. Stories should be crafted with just enough detail to:
 - describe the key risks or events leading to the adverse event
 - describe the key causes of the risk or error
 - link the causes and adverse outcome to the desired system or behavioral changes
 - describe the lessons learned
 - make the story memorable

Remember....

While errors can result in adverse effects on the patient and their family, the person who committed the error is devastated and needs support as well.



HealthyChildren.org is the only parenting Web site backed by 60,000 pediatricians committed to the attainment of optimal physical, mental, and social health and well-being for all infants, children, adolescents, and young adults.

Whether you're looking for general information related to child health or for more specific guidance on parenting issues, you've come to the right place. Here, you'll find information regarding the American Academy of Pediatrics many programs and activities, our policies and guidelines, our publications and other child health resources, as well as much, much more. Best of all, you can rest assured that the information comes from the nation's leading child health experts and that we have scientific research supporting our recommendations

Report on Current Pediatric Initiatives of AACN

Debbie Brinker, RN, MSN

American Association of Critical Care Nurses

The American Association of Critical-Care Nurses (AACN) is the largest specialty nursing organization in the world, with a current membership of more than 91,000 (up 3% from 2010; the largest membership in history). Approximately 5% of the current membership identifies as working in Pediatric or Neonatal Intensive Care Units.

AACN provides education and resources to its membership through multiple venues and modalities. Current initiatives that address the needs of pediatric nurses are as follows:

Certification and Education

The AACN Certification Corporation offers certification and a credential as CCRN or CCNS for the pediatric and neonatal intensive care nurse. The current number of certified nurses (adult/peds/neo; CNS) is 64,000. Nurse manager certification (with online assessment, orientation, and study materials) is also available.

At the National Teaching Institute/Advanced Practice Institute in Chicago, May 2011, 7800 acute and critical care nurses participated; 36 clinical sessions were targeted to pediatric/neonatal nurses with additional sessions for all attendees such as professional development, ethics, evidence-based practice and research methodology. NTI 2012 is in Orlando, May 19-24, 2012. www.aacn.org/nti.

Current on-line continuing education provided at no charge to AACN members, includes 13 clinical topics of interest to the pediatric intensive care nurse, with additional access to professional development, patient safety and role related issues. <http://www.aacn.org/DM/CETests/CELibrary.aspx?mid=2864>

Pediatric Critical Care Nursing Conference was held in Las Vegas this month, with about 500 participants. This is an annual AACN/Contemporary Forums conference.

Go Simple Campaign: "Go Simple" campaign launched so readers can choose to receive only digital editions of AACN publications.

AACN2Go apps: Developed apps for iPhone, iPad, iPod touch and Android mobile devices, offering easy access to our journals and e-newsletters, practice alerts (EBP) and other resources.

Practice Alerts and EBP resources expanded, including 'Researching the Evidence' pocket reference card and 'Searching for Evidence' toolkit. www.aacn.org/ClinicalPractice.

Other resources to share with your nursing colleagues:

2010/2011 Nelson's Pocket Book of Pediatric Antimicrobial Therapy, 18th Ed.

Case Studies in Pediatric Critical Care

Compact Clinical Guide to Infant and Child Pain Management: An EBP Approach for Nurses

CrashCards Pediatric Emergency Resuscitation, 2nd Ed.

Awards and Research

The Beacon Award for Excellence™ includes 3 levels – bronze, silver, gold- so that a unit can chart its excellence journey over time. There were 43 awards given in 2011. These include pediatric and neonatal units:

PICU, Children's Hospital, Los Angeles (Silver)

Neonatal Intensive Care Unit, Children's National Medical Center, Washington (Silver)

Neonatal Intensive Care Unit, Children's Hospital Boston, Boston (Gold)

Medical and Surgical ICU, Children's Hospital Boston, Boston (Gold). www.aacn.org/beacon

HHS-CCS Awards: Presented first national team excellence awards for prevention of healthcare-associated infections. Co-sponsored with U.S. Department of Health and Human Services and Critical Care Societies Collaborative (AACN, AACP, ATS, and SCCM). Received more than 250 applications. The awards included pediatric/neonatal achievements in eliminating central line-associated bloodstream infections

Outstanding Leadership Award

Yale-New Haven Children's Hospital Newborn Special Care Unit, New Haven, Conn.

Children's Hospital & Clinics of Minnesota, Minneapolis, MN

Cook Children's Medical Center, Fort Worth, Texas

Sustained Improvement Award

Children's National Medical Center, Washington, D.C.

Akron Children's Hospital NICU, Akron, Ohio

AACN Impact Research Grant: Awarded first \$50,000 AACN Impact Research Grant: Impact of Tele-ICUs on Bedside Care. Up to two grants will be awarded in 2012.

www.aacn.org/grants

Distinguished Research Lectureship

AACN honors a nationally known researcher to present the annual Distinguished Research Lecture at the National Teaching Institute and Critical Care Exposition.

Dr Martha A.Q. Curley, Nurse Scientist in Critical Care at Children's Hospital Boston and Assistant Professor at University of Pennsylvania School of Nursing is the 2012 Distinguished Research Lecturer.

Healthy Work Environments Research and Resources

Silent Treatment Study:

'The Silent Treatment,' a five-year follow-up study to 'Silence Kills,' with VitalSmarts and AORN — Association of Perioperative Registered Nurses.

- o More than 80 percent of nurses conveyed concerns about dangerous shortcuts, incompetence and disrespect demonstrated by their colleagues.
- o More than half said shortcuts led to near misses or harm, yet only 17 percent of those nurses shared their concerns with colleagues.
- o More than a third said incompetence led to near misses or harm, yet only 11 percent spoke to the colleague considered incompetent.
- o More than half said disrespect prevented them from getting others to listen to them or respect their professional opinion, yet only 16 percent confronted the disrespectful colleague in question.

www.aacn.org/silenttreatment

Healthy Work Environment Resources:

AACN Standards for Healthy Work Environments are downloadable and free.

Online resource center and speakers bureau supported chapters, hospitals and others in presenting and implementing the HWE standards. www.aacn.org/hwe.

Niranjan “Tex” Kisson, MD, President

World Federation Conference in Sydney, Australia was very successful. The final reports are not yet in however by all accounts most participants were very pleased with the social as well as educational programs. The next meeting will be held in Istanbul, Turkey in 2014. The planning committee is now getting together to start the proceedings.

New Secretariat and PCO

WFPICCS has just hired Kenes as PCU and Secretariat. Kenes has a very good reputation in hosting international societies and is based out of Geneva. The WFPICCS team has visited the Geneva headquarters and has finalized the contract a few days ago.

WFPICCS International Sepsis Initiative

The first evaluation of outcomes for sepsis depending on resources has just been completed. The evaluation was limited to the areas of the world in which there are resources, i.e., industrialized nations. This was done because there were very few patients enrolled in resource-limited areas. We will need to work with our colleagues in these areas to further understand the burden of sepsis. This project is ongoing. I would encourage AAP members to visit the website www.wfpiccs.org for further news pertaining to some exciting developments and to participate in this endeavour.

In addition, WFPICCS has been a founding member of the **Global Sepsis Alliance** (www.globalsepsisalliance.org) which now includes many of the sepsis societies across the globe.

The **World Federation** would like to launch a series of programs to create a more vibrant society. They are as follows:

1. An educational platform: this is intended to be web based and provide information and resources for those who work in resource limited as well as resource dense parts of the world. One of the major challenges of WFPICCS is to assist both the developed and the developing world. This educational platform is intended to bring leaders and clinicians together worldwide for fruitful interactions and collaboration.
2. It is also WFPICCS intent to develop a group that can work with major agencies worldwide in assisting in acute disaster situations. There are many agencies that are already working in these areas and it is not the intent of WFPICCS to reinvent the wheel, but rather link with these agencies and provide the resources of its members such that we can lend our expertise in disaster situations.
3. One of WFPICCS major roles is also in advocacy. As such, we are forming an advocacy group to link with major organizations and interact with policy makers across the world to improve the outcomes of children.

I would hope that within the American Academy of Pediatrics and the Society for Critical Care Medicine we can create a groundswell, raise the enthusiasm level, participate in all these projects and also create a sense of excitement and common purpose to work with colleagues worldwide to improve the lot for children.

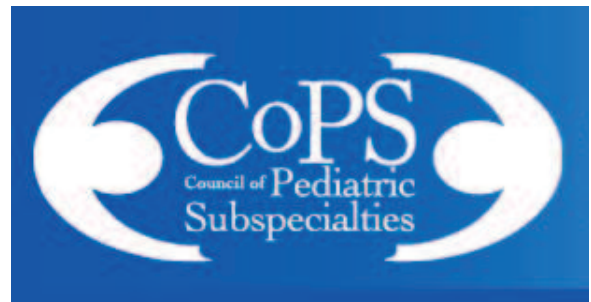
Richard Mink, MD, MACM

AAP SOCC CoPS Representative

The Council of Pediatric Subspecialties, or CoPS, is now entering its sixth year of existence. To guide its mission for the next five years, CoPS held a strategic planning meeting in January 2011 to refine its mission, vision and values and to develop short and long-term goals. At this retreat, CoPS identified four main goals, each with specific objectives, including 1) serving as a network of subspecialty organizations, 2) being a source of expertise, 3) facilitating workforce development and 4) ensuring the sustainability and strength of CoPS. Since this planning session, CoPS has made significant progress in achieving its short-term goals, particularly its sustainability.

In April 2010, CoPS launched its Subspecialty Descriptions section on its website. This is an effort to provide more information to medical students and residents about careers in the pediatric subspecialties. Each subspecialty has a page that includes information about clinical responsibilities, career opportunities, lifestyle, compensation, the application process, overall benefits of a career in that particular pediatric subspecialty and relevant hyperlinks. This endeavor has been quite successful. In the second quarter of 2010, there were approximately 1200 views, increasing to over 5800 in the second quarter of 2011. The section now averages over 2000 views per month with most visits to the hematology-oncology, critical care and neonatology pages. The Subspecialty Descriptions can be accessed at <http://pedsubs.org/SubDes/index.cfm>.

The American Board of Pediatrics has embarked on a new Initiative on Subspecialty Clinical Training and Certification (SCTC) to examine the current model of pediatric fellowship training and make recommendations, as appropriate. CoPS will serve as the main communication vehicle for this endeavor, both to provide information to and receive comments from subspecialists. For information about this initiative, visit the **CoPS website** (<http://pedsubs.org/issues/ABPinitiative.cfm>) or the **SCTC section on the American Board of Pediatrics site**. CoPS will solicit input when it is requested from the SCTC Task Force.



Calendar of Events

AAP Grand Rounds: Critical Care

Challenges in Pediatric Care

January 13, 2012
(Basel, Switzerland)
Innovations through Advanced Nursing Practice

SCCM Annual Congress

February 4-8, 2012
(Houston, TX)
www.sccm.org

Canadian Critical Care Conference

February 22-24, 2012
(Whistler, BC)
www.canadiancriticalcare.ca

Anesthesiology Summit

February 23-26, 2012
(Whistler, BC)
www.whistleranesthesia.ca

European Postgraduate Course in Neonatal and Pediatric Critical Care Medicine

March 15-17, 2012
(Berne, Switzerland)
<http://www.intensivecarecourse.com/>

AAP Chapter Advocacy Summit

March 15, 2012
(Schaumburg, IL)
[http://www.aap.org/moc/loadsecure.cfm/
stgovaffairs/Save%20The%20Date.pdf](http://www.aap.org/moc/loadsecure.cfm/stgovaffairs/Save%20The%20Date.pdf)

AAP Annual Leadership Forum

March 16-18, 2012
(Schaumburg, IL)
<http://www.aap.org/moc/alf/>

PAS Annual Meeting

April 28-May 1, 2012
(Boston, MA)
www.pas-meeting.org

Pediatric Critical Care Colloquium

September 9-11, 2012
(Santa Monica, CA)
Sponsored by Children's Hospital of Los Angeles
www.pedccc.com

AAP National Conference & Exhibition

October 20-23, 2012
(New Orleans, LA)
<http://www.aapexperience.org/>

World Congress on Pediatric Critical Care

May 2014
(Istanbul, Turkey)
<http://www.wfpiccs.org/>

Venu Amula
**Extracorporeal Resuscitation in
Childhood Cardiac Arrest**
February 2010

Susan L. Bratton
**Predicting Recovery After Traumatic
Brain Injury**
July 2010

Stephen Seslar and Susan Bratton
**Intracardiac Shunts in Children with
Sickle Cell Disease and Stroke**
September 2010

Deborah Frank
Shunt Type in the Norwood Procedure
September 2010

Gitte Y. Larsen
**Stabilization of the Critically Ill Child
for Transport**
December 2010

Katherine R. Gentry
**A Positive Respiratory History
Increases Anesthesia Risk**
January 2011

Kate Liesemer
**Endocrine Complications of Traumatic
Brain Injury**
February 2011

Katsuhide Maeda and Chandra Ramamoorthy
**Corticosteroids in Cardiopulmonary
Bypass Surgery**
April 2011

Susan Bratton
**Kawasaki Disease with Giant Aneurysms:
Long-term Outcome**
August 2011

Susan Bratton
**Consider the Influence of Influenza on
Complicated Pneumonia**
September 2011

Marc D. Berg and Susan L. Bratton
**Fluid Boluses Possibly Harmful in
Some Settings**
October 2011



Who is the Section on Critical Care?

The American Academy of Pediatrics (AAP) Section on Critical Care (SOCC), founded in 1984, is the leading advocate for critically ill and injured children and a professional home for Pediatric Intensivists. Its mission is to optimize the care of critically ill and injured children of all ages through the educational and professional support of its members. The SOCC provides a forum for Pediatric Critical Care Specialists and other members to meet, discuss, and develop ideas, programs, and projects to improve the care of children and to address issues of importance to pediatric subspecialists.

Benefits of SOCC Membership:

- * Advocacy (State & Federal)
- * Educational Programs & Online Self-Assessment
- * Scientific Abstracts, Research, Awards
- * Policy Guidelines & Section Newsletters
- * Leadership & Networking Opportunities
- * Collaboration with other Organizations
- * SOCC Members' Only Website & Listserv
- * Low Dues, Great Value!



How to Join?

It's easy! Go to the AAP Member Center <http://www.aap.org/moc/memberservices/sectionform.cfm> (members only) to complete a fast-track online application or call AAP Membership at (800) 433-9016 ext 5987.

We welcome health professionals in a related field (registered nurses, nurse practitioners, respiratory therapists, and physician assistants) to fill out an online Affiliate Application <http://www.aap.org/member/SectionMbrreq.htm>. Affiliates, including international members, must be actively involved in some aspect of the study or care of critically ill, infants, children, or adolescents.

Annual dues are \$10 for Residents, \$30 for Affiliates, and \$35 for all other member types.

Visit the SOCC website at <http://www.aap.org/sections/critcare/default.cfm>

American Academy
of Pediatrics



DEDICATED TO THE HEALTH OF ALL CHILDREN™

Save the Date

19th Pediatric Critical Care Colloquium

Santa Monica, California

September 6 - 9, 2012



SOCC Executive Committee (2011-2012)

Donald D. Vernon, MD, *Chair*
Edward E. Conway, Jr, MD, MS
Mary W. Lieh-Lai, MD
Richard B. Mink, MD, MAMD

Carley Riley, MD
Richard A. Salerno, MD, MS
John P. Straumanis, MD

Alice Dee Ackerman, MD, MBA
Immediate Past Chair
Brad Poss, MD, MMM
Program Chair

Sue Tellez, *Staff Manager*

How to Join

It's easy! Go to [Member Services](#) to complete a fast-track online application or call AAP Membership at 800.433.9016. Annual dues are \$40 for AAP Fellows and \$10 for Residents.

www.aap.org/sections/critcare