Section on Critical Care Newsletter

Summer 2009

In This Issue

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.

Editor
Mary Lieh-Lai, MD, FAAP
mliehlai@med.wayne.edu

Staff
Sue Tellez, Manager
stellez@aap.org

Newsletter Designer
Ruth Podjasek
rpodjasek@aap.org

Chair's Report
Donald D Vernon, MD, FAAP

Donald D Vernon

Dear PCCM Colleagues,

This letter is my first as the Chair of the Section on Critical Care, as I have succeeded Dr Alice Ackerman in this position (Alice could never really be replaced). I am honored by this position and hope that I can be as successful as Dr Ackerman was in this role. For those of you who do not know me, I am an intensivist at the University of Utah and Primary Children's Medical Center in Salt Lake City, Utah, where I have been now for 22 years.

Please make plans to attend the SOCC Program at the AAP National Conference and Exhibition next October in Washington, DC. The program promises to be exceptionally good this year. In particular, this year marks the 25th anniversary of the founding of the Section on Critical Care Medicine (some of us are old enough to remember that), which we are celebrating with a reception and special presentations. In addition, Dr Ed Conway, with help from others, has created a 25th Anniversary Booklet outlining the history and accomplishments of the SOCC over the past quarter-century. A number of copies of the booklet will be available at the session, and it will be available on the Section website.

As for the rest of the Section Program, Dr John Straumanis as the program chair has done his usual superb job in assembling an excellent educational program for us. Finally, the research presentations will be of extraordinary quality this year. So, please join us at the NCE, to attend a terrific educational session and enjoy a few days in the nation's capital.

The membership of the Section has been altered slightly. Last year, recognizing the increasing involvement of advanced practice nurses, nurse practitioners, and other non-physicians in pediatric critical care, we altered the bylaws of the Section to allow these health professionals to have Affiliate membership. Affiliate members have long been part of other Sections inside of AAP but our bylaws had not previously allowed for this. I am pleased to say that since that change, several advanced practice RNs have applied for, and been granted, Affiliate membership in our Section.

In closing, I would like to ask you all to consider increasing your involvement in the Section on Critical Care. The SOCC actually counts a good proportion of all subboard-certified pediatric intensivists amongst its number, but in general the involvement level of the membership has been modest. The Section has much to offer its members. The quality of the educational presentations at the NCE has been consistently superb. Further, the research presentation portion of the Section Programs has been a great place for investigators to present their work, particularly for fellows and other younger investigators.

Have a great summer. Looking forward to seeing you all in Washington, DC in October!

DV

See the
Section on Critical Care
NCE Educational Program
beginning on p. 4.

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In Memoriam: I. David Todres, MD, FAAP

After 37 years of service at Massachusetts General Hospital for Children, Dr David Todres passed away in September of 2008 at his home in Newton, MA, at the age of 73. He was the first recipient of the Distinguished Career Award of the American Academy of Pediatrics' Section on Critical Care in 1995. MassGeneral has established a Lectureship in Pediatric Medical Ethics to honor Dr Todres' contributions to Pediatrics and to the MassGeneral Hospital for Children.

Dr Ron Kleinman, head of MassGeneral Hospital for Children said of his friend and colleague,

David Todres was a founding father of pediatric critical care medicine, an internationally recognized expert in pediatric medical ethics, a scholar, an artist and a humanist. I remember him best for the sparkle in his eyes, the intense curiosity and energy that he directed towards everything he encountered in his professional life and for the warmth of his embrace. David mastered the integration of the right and left brain better than anyone I've ever met, and he served as a model of the physician-scientist-artist. We will miss him very much.

SOCC Distinguished Career Award 2009

Jerry J. Zimmerman, MD, PhD, FAAP has served as Director of Pediatric Critical Care Medicine at Seattle Children's Hospital, University of Washington, since 1998. He has been continuously board certified in Pediatric Critical Care Medicine since 1987 and is a charter member of the American College of Critical Care Medicine, Society of Critical Care Medicine.

Dr Zimmerman's current clinical/translational research focus is the neurogenic-immunologic-endocrinologic stress response in pediatric critical illness. He has served as chair of the Scientific Review Committee for Seattle Children's Hospital, Pediatric Clinical Research Center, Center for Clinical and Translational Research since its inception. Zimmerman is Co-editor for the textbook, *Pediatric Critical Care*, now under revision for a fourth edition.

Congratulations to Dr Jerry J Zimmerman!

SCCM Pediatric ICU Resident Education Committee

SCCM and the ICU Resident Education Committee has been in the process of updating and reformatting the Resident ICU Course (RICU). These include updated presentations with up to date content. In addition, voice-overs produced by the authors are now being included to improve the understanding of the visual material and allow self-study.

Nine presentations have so far been revised, with a plan to revise 12 more within the next year. Voice-overs are being added as they are being completed.

The current list of presentations being revised is:

- Airway Problems and Intubation
- Mechanical Ventilation
- Respiratory Failure in Children
- Cardiovascular Medications
- Shock and Sepsis
- DKA
- Spinal Cord Injury
- ARDS
- Status Asthmaticus
- Clinical Pharmacokinetics and Pharmacodynamics
- Toxicology
- Transport of the Critically Ill Child

With the incorporation of both adult and pediatric programs into RICU, even if your program has been previously registered, you will be have to re-register your program on July 1, 2009. A few weeks ago SCCM sent an email out to all program directors informing them that as of June 20th registration in the RICU courses (Adult and Peds) was closed in order to

Continued on p. 3

The Pediatric Critical Care Scientist Development Program
J Michael Dean, MD

The Pediatric Critical Care Scientist Development Program (PCCSDP) is entering its second funding period, and will be accepting applications for Scholar positions in the upcoming year. The deadline for the application is October 1, 2009, and funding for successful applicants will begin January 1, 2010. The PCCSDP program is a five year program with two distinct phases. During Phase One, which may last up to two years, the program will provide financial support for the Scholar that is similar to K08 or K23 support. During Phase Two, which is the remainder of the five year period after Phase One, the Scholar is supported by his or her own K08 or K23 grant, or alternatively, by the Scholar's home institution. It is a requirement that the home institution or Department must commit for the full five years, providing financial support during Phase Two even if the applicant has not obtained an independent grant award.

The application process is open to pediatric critical care board certified or board eligible physicians, generally within five years of their last training. The application format is a standard NIH K award application and is submitted directly to the Program Director, J. Michael Dean, MD at mike.dean@hsc.utah.edu prior to October 1. The applicant must attend a research retreat held in Deer Valley from November 11th through November 15th, during which each applicant is interviewed by the selection committee and participates in a variety of faculty development activities. Award announcements are made by the end of November.

For further information, please contact Dr Dean by email using the subject header "PCCSDP Applicant" in order to assure a prompt response. Applicants should also consult the Internet site www.pccsdp.org for additional information.

SOCC 25-Year Anniversary Donations Now Being Accepted!

Please mark your calendar now so that you can join us in Washington DC for the Section on Critical Care's 25th Anniversary Celebration, to be held on Sunday October 18th. A copy of the anniversary program, with confirmed faculty, follows.

The Section has planned an anniversary celebration, but we'd like to explore the possibility of making it even bigger and better with potential support thru the collection of donations for this purpose specifically from SOCC members. This means you! We do realize that these are tight financial times. If we collect enough money, we will have a banquet dinner; otherwise, a very nice reception.

If you are able/would like to contribute, please send a $25 donation (or larger) payable to AAP to: Sue Tellez, American Academy of Pediatrics, 141 Northwest Point Blvd, Elk Grove Village, IL 60007.

Dr Ed Conway, Jr., is moonlighting as an SOCC historian and has been poring over the archives to develop an anniversary booklet for this event. If you have any photos you'd like to share for possible use in the booklet and/or anniversary slide show (serious and not-so-serious), please send them directly to Dr Conway in the next few weeks at: EConway@chpnet.org

SOCC 25-YEAR ANNIVERSARY PROGRAM SUNDAY, OCTOBER 18, 2009

Critical Care in the AAP: Reflections on the First 25 Years & Visions for the Future

1:00 - 1:10 pm	**Introduction** *John Straumanis, MD, FAAP*
1:10 - 2:00 pm	**Pediatric Critical Care: Past** *Peter Holbrook, MD, FAAP*
2:00 - 2:50 pm	**Pediatric Critical Care: Present** *Joe Carcillo, MD*
2:50 - 3:10 pm	**Coffee Break**
3:10 - 4:00 pm	**Pediatric Critical Care: Future** *David Nichols, MD, FAAP*
4:00 - 4:30 pm	**Panel Discussion**
4:30 - 5:00 pm	**Presentation of Distinguished Career Award-Section on Critical Care**
5:00 - 6:00 pm	**SOCC Anniversary Reception/Poster Review/Awards Ceremony**

SCCM Pediatric ICU Resident Education Committee

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upload the revised presentations and to perform other housekeeping tasks. Registration had to be closed to the old existing program to allow the upload of the newer information.

To log on the SCCM's LearnICU web page - http://www.learnicu.org/Clinical_Practice/Fundamentals/RICU/Pages/default.aspx

Following is a message from Trish Glover – SCCM staff who is in charge of the RICU website:

Dear Program Directors,

The new **Resident ICU (RICU)** courses for the Adult and Pediatric patient are now available online and open to registration.

Please Note: Even if you were previously registered for the RICU or PICU course, you must re-register your program online by clicking on:

Adult ICU (AICU) for the adult course or
Pediatric ICU (PICU) for the pediatric course

You will receive a confirmation email within 48 hours following your registration. The confirmation email will contain your logon information and password. In addition, you will receive a link that you can send to your residents, allowing them to register themselves for your specific residency program.

New in this release of the Resident ICU course: you will not have to register yourself twice in order to monitor your students' progress and see the course materials. The one logon/password system allows you to view both without the hassle of double logon information.

If you have any questions, please email Trish Glover, Program Manager, at pglover@sccm.org or Ginger Johnston, Program Coordinator, at vjohnston@sccm.org.

Submitted by:
Dr Jeff Clark
Chair, SCCM ICU Residents Education Committee

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Section on Critical Care
Educational Program Schedule (Sun/Mon)
National Conference & Exhibition
October 18 - 19, 2009
Washington, DC

Sunday, October 18, 2009
8:00 am – 6:00 pm

SOCC Scientific Abstract Presentation Session & 25-Year Anniversary Reception – H2016

8:00 – 8:15 am **Introduction**
John Straumanis, MD, FAAP

8:15 – 9:30 am **Abstract Session I**
Moderators: John Straumanis, MD, FAAP and Mary Lieh-Lai, MD, FAAP

1. 8:15 am #8184 **Brian M. Boville, MD, MD, FAAP**
Ventilator Associated Pneumonia Registry (VAPoR): Prospective Application of CDC PNU1 Criteria

2. 8:30 am #7104 **Aaron J. Reitman, DO**
Procalcitonin as a Biomarker for Bacteremia in Febrile Pediatric Neutropenic Patients

3. 8:45 am #6335 **Kevin M. Valentine, MD**
Pharmacokinetics of Intravenous Minocycline in New Zealand White Rabbit Pups

4. 9:00 am #6150 **Phillip A. Jacobson, MD, FAAP**
A Mass Casualty Simulation Using Hi-Fidelity Simulated Mannequins

5. 9:15 am #7359 **Kurt D. Piggott, MD**
Mild Hypothermia Is Well-Tolerated in an Infant Piglet Model of Neurogenic Shock and May Prevent Secondary Spinal Cord Injury by Blunting the Inflammatory Response by IL-1 Beta

9:30 – 10:30 am **Poster Walk Rounds (see pp. 5-6 for listing) and Coffee Break**

10:30 – 12:00 pm **Abstract Session II**
Moderators: Donald Vernon, MD, FAAP and Richard Salerno, MD, FAAP

6. 10:30 am #7647 **Summer D. Bryant, MD**
Gender: An Independent Predictor of Mortality? An Analysis of Pediatric Wartime Mortality in U.S. Combat Support Hospitals

7. 10:45 am #5764 **Thomas Spentzas, MD**
Ketamine Suppresses the TNF Production of RAW264.7 Macrophages Stimulated with Community-Acquired Methicillin-Resistant Staphylococcus Aureus (CA-MRSA)

8. 11:00 am #6051 **Jill S. Sweney, MD**
Validation of Severity of Illness Scores for ICU Triage in the Pediatric Population

9. 11:15 am #6803 **Thuy L. Ngo, DO**
Safety and Efficacy of Intravenous Ketorolac in Infants and Children Following Cardiac Surgery

10. 11:30 am #6733 **Jason P. Cervenka**
Inefficiency of Pre-Rounding Activities of Residents in a Pediatric Intensive Care Unit

11. 11:45 am #5966 **M Michele Moss, MD**
Elimination of Pediatric CA-BSI

Educational Session: Section on Critical Care – H3012
Critical Care in the AAP: Reflections on the First 25 Years and Visions for the Future

1:00 – 1:10 pm **Introduction**
John Straumanis, MD, FAAP

1:10 – 2:00 pm **Pediatric Critical Care: Past**
Peter R Holbrook, MD, FAAP

2:00 – 2:50 pm **Pediatric Critical Care: Present**
Joseph A Carcillo, MD

2:50 – 3:10 pm **Coffee Break**

3:10 – 4:00 pm **Pediatric Critical Care: Future**
David G Nichols, MD, FAAP

4:00 – 4:30 pm **Panel Discussion**

4:30 – 5:00 pm **Presentation of Distinguished Career Award-Section on Critical Care**
Presented by: Peter R Holbrook, MD, FAAP
Award Recipient: Jerry J Zimmerman, MD, PhD, FAAP

5:00 – 6:00 pm **SOCC 25-Year Anniversary Reception**
Poster Review and Abstract Awards Ceremony *(see listing following Monday's schedule)*

Monday, October 19, 2009
8:00 am – 11:00 am

Joint Education Session-Sections on Critical Care and Transport Medicine – H3020
"Special Topics in Critical Care Transport"

8:00 – 9:00 am **Telemedicine and Transport**
Richard A Salerno, MD, FAAP

9:00 – 10:00 am **Subspecialty Transports**
M. Michele Moss, MD, FAAP

10:00 – 11:00 am **Patient Safety during Transports**
Joseph L Wright, MD, MPH, FAAP

Formal Section Program – Poster Presentations

Poster Walk Round — Group I
Moderators: Alice Ackerman, MD, FAAP and Richard Mink, MD, FAAP

1. #5528 **Martin Wakeham, MD, FAAP**
Intra-Hospital Transport of Critically Ill Children: Should We use a Checklist?

2. #5774 **Tracey M. Herstich, MSN, CNP**
Early Use and Rescue Therapy with High Flow Oxygen Therapy (Vapotherm®) in Pediatric Respiratory Failure: What Difference Does It Make?

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3. #5865 **Eleanor B. Peterson, MD**
Delivering Bad News in the Pediatric Setting: A Multidisciplinary Needs Assessment

4. #6256 **Beth Forst, MSN, CNP**
High Flow Therapy (Vapotherm®) in Pediatric Respiratory Failure

5. #6322 **Michelle L. Burke, MD**
Accurately Determining Fluid Status in a Pediatric ICU: A Multivariate Analysis

6. #6427 **Lily A. Maltz, BA**
Off-Label Drug Use in a Single Center Pediatric Cardiac Intensive Care Unit

7. #6891 **Jeri L .Burr, MS, RN-BC, CCRC**
Critical Pertussis in the United States

8. #6914 **Veerajalandhar Allareddy, MD, MBA**
Association Between Septicemia and Outcomes During Hospitalization for Cancer Treatment Among Kids in United States

9. #6958 **Ryan Wilkes, Pediatric Resident, MD**
Risk Factors for Prolonged PICU Stay Among Children with Neurogenic Scoliosis Undergoing Spinal Fusion

Poster Walk Round — Group II
Moderators: Edward Conway, Jr, MD, FAAP and Luke Zabrocki, MD, FAAP

10. #7656 **Maria A. Enrione, MD, FAAP**
Intensivist Preparedness in Providing Professional Feedback to Pediatric Residents: Preliminary Report of a Self-Assessment Survey

11. #7769 **Matthew Sharron, MD**
Dexmedetomidine Induced Bradycardia Progressing to Sinus Arrest: A Series of Three Patients

12. #7841 **Angela Mata, MD**
Evaluation of the Effectiveness of a Resident Teaching Module for Congenital Heart Lesions

13. #8045 **Kathleen A. Webster, MD, FAAP**
A Standardized Pediatric Sedation Wean Protocol and Withdrawal Assessment Score for Prevention and Treatment of Opiod and Benzodiazepine Withdrawal

14. #8068 **Tara Benton**
Assessment of a Telemetry Intervention in Pediatric Residents

15. #8285 **Claudiu Faraon-Pogaceanu, MD**
Safety and Effectiveness of Tight Glycemic Control Using an Insulin Infusion Protocol in Critically Ill Children

16. #8412 **Ibrahim S. Elsheikh, MD**
Risk Factors for Ventilator Associated Pneumonia & Tracheitis in Mechanically Ventilated Pediatric Trauma Patients

17. #8489 **Robert Tamburro, MD, FAAP**
The Impact of Aminophylline on the Inflammatory Response in Critically Ill Children

NOTE:
All posters should be set up between 7-8am on Sunday, October 18 and removed by 6pm the same day. Any poster materials left in the room at the conclusion of the SOCC program on Sunday will be discarded.

Upcoming CME Events

South Africa Critical Care Congress
August 16-20, 2009
Sun City, South Africa
http://www.criticalcare.org.za/

4th International Conference on Patient- and Family-Centered Care
Partnerships for Quality and Safety
August 17-19, 2009
Philadelphia, PA
www.familycenteredcare.org

World Federation of Societies of Intensive & Critical Care Medicine 10th Congress
August 28-September 1, 2009
Florence, Italy
http://www.wfsiccm-florence2009.it/en/index.php

1st Asian Congress of Pediatric Intensive Care
11th National Congress of Pediatric Critical Care
September 24-27, 2009
Chandigarh, India
http://www.apic2009.org/viewpage.php?page_id=1

European Society of Intensive Care Medicine
22nd Annual Congress
October 11-14, 2009
Vienna, Austria
http://www.esicm.org/Data/ModuleGestionDeContenu/PagesGenerees/07-congresses/0A-annual-congress/105.asp

AAP National Conference & Exhibition
October 17-20, 2009
Washington, DC
www.aapexerience.org

AAP Section on Critical Care
Scientific & Educational Program
25-Year Anniversary Event
October 18-19, 2009
Washington, DC
http://www.aap.org/sections/critcare/SOCCNCEProgram.pdf

Australian & New Zealand Annual Scientific Meeting on Intensive Care
October 29-31, 2008
Perth, Australia
http://www.intensivecareasm.com.au/

SCCM 39th Critical Care Congress
January 9-13, 2010
Miami Beach, FL
www.sccm.org

Welcome to the Section on Critical Care New Members!! July 2008-June 2009

Kimberly Baker
Mark Banks
Marissa Brunetti
Jeri Burr
Wai Chan
Amy Durall
Edward Faustino
Anoop Ghuman
Gerald Haase
Brian Hall
Kevin Haug
Benson Hsu
Tammara Jenkins
Jean-Sebastien Joyal
Susan Kaczorowski
Shesha Katakam
Michael Keenaghan
Keith Kerr
Alan Michael Koenigsberg
Adrian Lavery
Mohammad Malik
Mark Neumann
Christopher Page-Goertz
Kourosh Parsapour
Edwin Peters
Ravi Samraj
Alan Schroeder
Jennifer Schuette
Sophia Renya Smith
Dennis Super
Michael Tate
Thy Tran
Philip Verhoef
Karen Walson

15th International Symposium on Infections in the Critically Ill Patient
February 5-6, 2010
Barcelona, Spain
http://www.infections-online.com/

International Symposium on Intensive Care & Emergency Medicine
March 9-12, 2010
Brussels, Belgium
http://www.intensive.org/

Preventing Pediatric Medication Errors (The Joint Commission Sentinel Event Alert, Issue 39, April 11, 2008):

Takata et al (1) developed a trigger tool to detect adverse drug events in hospitalized children. They identified an 11.1% rate of adverse drug events in children, which is much higher than described in previous studies. The group also showed that 22 per cent of the events were preventable, of which 17.8 per cent could have been identified earlier.

Children are more prone to medication errors and resulting harm because of the following:

1. Most medications used in the care of children are formulated and packaged primarily for adults. The "original" medications have to be prepared in different volumes and concentrations, leading to more potential for errors.
2. Many health care settings are built around caring for adult patients to the extent that health care providers are not familiar with dosing for children. In addition, safeguards and policies to ensure safe dosing in children are not available. Emergency departments are at particular risk (2).

From January 1, 2002 – December 31, 2006: 29,801 medication errors in the ED reported to MEDMARX database.

Products Most Commonly Associated with Errors:

Heparin	Ibuprofen
Acetaminophen	Azithromycin
Insulin	Potassium chloride
Ceftriaxone	Levofloxacin
Morphine	Promethazine

Products Causing Harm:

Insulin	Fentanyl
Heparin	Potassium chloride
Morphine	Dopamine
Hydromorphone	Enoxaparin
Diltiazem	Warfarin

3. Young children, especially those that are critically ill are less able to tolerate medication errors because of immature renal, immune and hepatic function.
4. Young children may not be able to communicate problems related to adverse medication effects to health care providers.

2006 – 2007: USP MedMarx Database (3): 2.5% of pediatric medication errors led to harm.

Most Common Errors:

Improper dose/quantity	37.5%
Omission Error	19.9%
Unauthorized/wrong drug	13.7%
Prescribing error	9.4%

Others: wrong administration technique, wrong time, wrong dosage form, wrong route

Most Common Causes for Errors:

Performance Deficit	43%
Knowledge Deficit	29.9%
Procedure/Protocol not Followed	20.7%
Miscommunication	16.8%

Others: calculation error, computer entry error, lack of monitoring, improper use of pumps and documentation errors

Methods to Reduce Risks:

1. Establish and maintain a functional pediatric formulary system with policies for drug evaluation, selection and therapeutic use.
2. Limit the number of concentrations and dose strengths of high alert medications to the minimum necessary to provide safe care.
3. Standardize compounded medications and TPN used at home (should match those in the hospital).
4. Use oral syringes to administer oral medications.
5. Provide ready access to information.
6. For general hospitals that provide care for children, ensure pediatric representation on any committee responsible for medication practice oversight.
7. Orient/educate all pharmacy staff regarding medication use in children.
8. Use pre-printed order forms and clinical pathways when applicable.
9. Use technology judiciously: bar codes, infusion pumps, use physiologic monitoring consistently (pulse oximetry, etc.).

How to Establish a Safe Practice Environment:

1. Illumination
   a. Use fluorescent cool white deluxe lamps or compact fluorescent lamps.
   b. Use adjustable 50-watt high intensity task lights in areas where critical tasks are performed.
   c. Position all lighting to avoid glare on computer monitor screens.
   d. Provide magnifying glasses to read very small script
   e. Clean lighting fixtures regularly.
   f. Ensure illumination levels of around 100 foot candles.
2. Interruptions and Distractions:
   a. Minimize potential for distractions in critical medication areas.
   b. Teach workers to avoid interrupting coworkers for non-urgent reasons while they are performing medication-related tasks.
3. Sound and Noise
   a. Sound levels in medication use areas should be at the level of conversation.
   b. Provide a quiet area for use during critical medication use tasks.
   c. Reduce noise and other sensory interference: ceiling, wall and carpeting materials.

4. Physical Design and Organization of Work Space
   a. Keep areas where medications are stored organized and uncluttered.
   b. Ensure that the height of work counters and supply areas enhances task efficiency and visibility of products.
5. Establish Medication Safety Zones
   a. Importance principle: place important components in convenient locations (eg: trouble shooting for equipment).
   b. Frequency of use principle: locate frequently used items in areas where they can easily be found.
   c. Function principle: group items that are related to a function together.
   d. Sequence of use principle: place items in an order that supports the sequence needed to perform the task correctly.
6. Standardize everything that can be standardized.

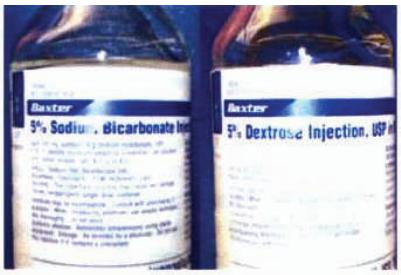
References:

1. Takata GS et al: Development, Testing and Findings of a Pediatric-Focused Trigger Tool to Identify Medication-Related harm in US Children's Hospitals. Pediatrics, 2008, 121:e927-3935. Available online: http://www.pediatrics.org/cgi/content/full/121/4/e927
2. Committee on the Future of Emergency Healthcare in the United States; the Institute of Medicine; Emergency Care for Children: Growing Pains. Available for purchase online: http://www.nap.edu/catalog/11655.html
3. Hicks RW, Becker SC, Cousins DD: MEDMARX^{R} Data Report: A Chartbook of Medication Error Findings from the Perioperative Settings from 1998-2005, 2006, Rockville, MD, United States Pharmacopeia Center for the Advancement of Patient Safety

I. MEDICATION ERRORS

A record number of deaths and serious injuries were reported in the first quarter of 2008. There were 20,745 new cases of serious injuries reported, which is 38% higher for any other quarter since 2006. There were 4,824 drug-related deaths reported, a 2.6-fold increase from the previous quarter and the highest number since 2006. In addition, 1,464 (7.1%) of all serious injuries were attributed to identifiable medication errors.

1. Death from inadvertent injection of topical epinephrine: a surgeon asked for lidocaine 1% with epinephrine 1:100,000 for injection as a local anesthetic. He was inadvertently handed a syringe of epinephrine containing 1 mg/mL (1:1,000). The patient immediately developed arrhythmias and cardiac arrest from which he could not be resuscitated.
2. Pharmacy staff accidentally compounded vancomycin for six children using 500-mL 5% sodium bicarbonate instead of 500 mL 5% dextrose (bottles looked very similar). The hospital had previously used the "Hospira" brand to help distinguish the solution from the Baxter 5% sodium bicarbonate solution. However, because of a backorder, the hospital switched to Baxter 5% Dextrose solution. Fortunately, the patients did not suffer any adverse effects.



500 mL glass bottles of 5% sodium bicarbonate and 5% dextrose look very similar.

3. Do not abbreviate "intranasal" as "IN." "IN" is often mistaken as "IV" – as in the case of a patient who received DDAVP IV instead of intranasally.

4. Discourage intimidating behavior and encourage personnel to question orders that they are not familiar or comfortable with: A physician ordered "1 liter bicarb drip" for a patient. While the physician intended to have "1 amp (50 mEq) of sodium bicarbonate in a 1 liter bag", the new pharmacist was too embarrassed and insecure to ask for help and dispensed a 1 liter bag of undiluted sodium bicarbonate (1000 mEq $NaHCO_3$). The pharmacy technician who prepared the infusion was also reluctant to ask questions despite the fact that he had to empty a liter bag and pump 20 vials of sodium bicarbonate into the bag. The nurse did not recognize the error and infused the solution, leading to the patient's death.
5. Beware of different trade names of sildenafil: Revatio, Cialis, and Levitra.
6. Beware of a branded warfarin product known as Jantoven. Health care providers may not realize that Jantoven is a warfarin product and continue to provide Coumadin (the more commonly known brand name) and patients may end up taking both products.
7. Topical Benadryl product can cause harm if swallowed: The product is known as "Benadryl Itch Stopping Gel" and contains diphenhydramine and CAMPHOR.

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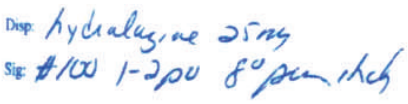
8. Be careful what you write: the physician intended to write hydroxyzine, but wrote hydralazine. Fortunately the error was caught by the pharmacist because the physician included the reason for the prescription.



II. WARNINGS

1. Patient Deaths from Luer Misconnections:
   a. Luer locks are often misconnected to one another:
      1) Tubing from blood pressure monitor connected to patient's IV line: massive air embolism.
      2) Air supply hose from a pneumatic compression device connected to a needleless IV tubing port.
      3) Ultrasonic lithotripter suction incorrectly inserted into the roller pump, pushing air into the kidney.
   b. Recommendations to prevent Luer connection errors:
      1) If possible, do not purchase non-IV equipment with connections that are compatible with female IV Luer connectors.
      2) Always trace a tube or catheter before connecting to a device or infusion.
      3) Recheck connections as part of the hand-off process
      4) Never use a standard Luer syringe for oral medications or enteric feedings.
      5) Inform staff about the danger at orientation and periodically throughout the year.
2. Preventing Patient Death from Fentanyl Patches
   a. Whenever possible, prescribe fentanyl patches only to those patients who are opioid-tolerant.
   b. Set dosing limits in computerized medication order systems.
   c. Educate everyone: practitioners and patients
   d. Warn patients about proper disposal – fold in half and flush down the toilet. Children have been known to pick up discarded patches and apply them to their own bodies (deaths reported).
3. Unretrieved Device Fragments (UDF's):
   FDA receives more than 1000 reports each year of device fragments breaking off during invasive procedures or from devices already implanted in the body that have been left because they could not be retrieved or because removal would result in greater risks. One patient died from cardiac tamponade after a fractured guide wire lodged in a coronary artery and could not be removed. In addition, metallic fragments left in the body can move or become heated during MRI and can cause injury.
   a. Inappropriate techniques that can cause catheter and guide wire fractures:
      1) Withdrawing a catheter through or over a needle.
      2) Shaping a device to conform to a patient's anatomy when the device was not designed to be reshaped.
      3) Using undue force and rotational force during insertion or withdrawal.
      4) Improperly manipulating a catheter.
      5) Using devices that are too small or too big.
      6) Using old or worn multiple-use devices.
   b. Dealing with UDF's:
      1) Make sure that the presence of device fragments are noted on the patient's record.
      2) Inform the patients and their families about the presence of device fragments to allow them to report this to other health care providers.
4. Patch Advisory: Warning regarding medication patches and MRI. Some medication patches contain aluminized backing or metal in a layer not visible on the outside. MRI requires the use of radiofrequency pulses to create the MR signal. Although the metallic component of the patches is not ferromagnetic, a concentration of electrical currents may cause heat build up and tissue damage.
5. Sulfamethoxazole/trimethoprim (Bactrim) has a potassium-sparing effect and can cause hyperkalemia. Trimethoprim blocks sodium channels in the distal tubule and inhibits potassium secretion into the urine, leading to reabsorption in the blood.
6. Never administer topical thrombin products intravenously: this can cause extensive intravascular clotting and death
7. Should anesthesiologists wear masks when administering intrathecal medications? Two women who had just delivered healthy babies developed bacterial meningitis with *Streptococcus salivarius* (a common organism in the mouth and respiratory tract). One died within days of acquiring the infection. The intrathecal injections were performed by the same anesthesiologist who did not wear a mask. There remains considerable debate with regard to the issue of wearing a mask during this procedure, but it seems to make sense to wear one.

Source: ISMP Medication Safety Alert

III. INTERESTING ARTICLES

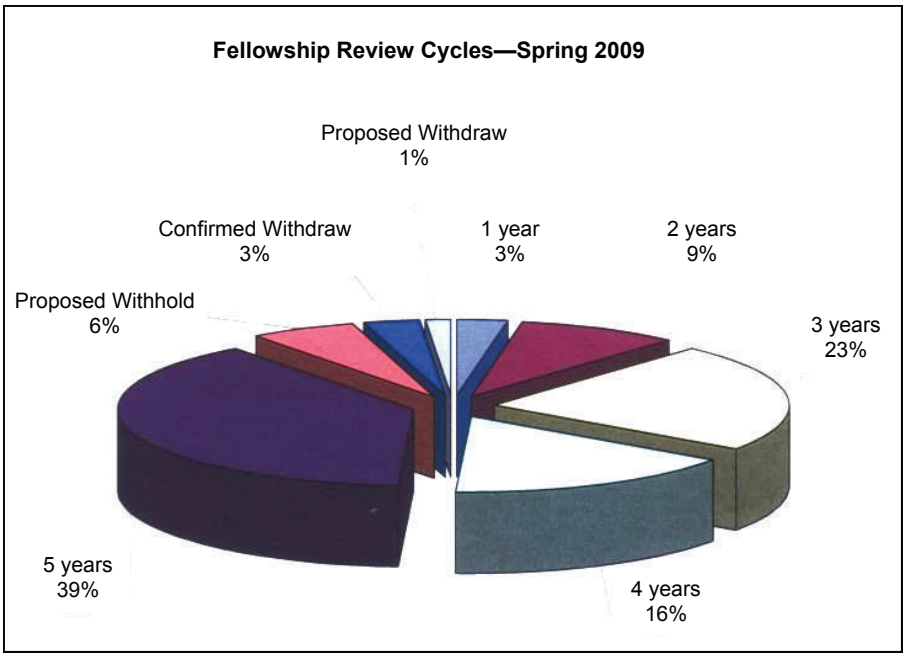
1. Tang BMP, Craig JC, Eslick GD, Seppelt I and McLean AS: Use of corticosteroids in acute lung injury and acute respiratory distress syndrome: A systematic review and meta analysis. Crit Care Med 2009; 37:1594-1603
2. Mettauer N, Brierley: A novel use of etomidate for intentional adrenal suppression to control severe hypercortisolemia in childhood. Pediatr Crit Care Med 2009; 10:e34-e37
3. A commentary on the findings of Mettauer and Bierley: Marokovitz BP: The drug that would not die (though patients receiving it do). Pediatr Crit Care Med 2009, 10:418-419.

ACGME-Pediatric Residency Review Committee Update
Mary W Lieh-Lai, MD, FAAP

I ended my 7-year term on the Pediatric Review Committee (RC) on June 30, 2009. It was an amazing experience and I learned a lot. From now on, ACGME RC updates will have to depend on information I can access from the ACGME website and from Dr Ann Thompson, who is still serving on the committee.

The Pediatric RC met in March 2009, and following are information from the meeting and what has been published in the June 2009 newsletter.

1. Decisions on Fellowship Programs Reviewed



2. Table of Most Common Citations for Fellowships

176 Programs Reviewed for a Status Decision Total of 781 citations — 4 citations/program	
1. **Practice Based Learning** — no ILP; no evidence of quality improvement project; no curriculum for teaching skills	99
2. **Scholarly Activities** — faculty and fellow scholarly activity lacking	56
3. **Evaluation of the Program** — not done annually; residents and faculty don't provide written, confidential evaluation; no evidence of action plan to address deficiencies	51
4. **Systems Based Practice and Improvement** — no/limited didactic and/or experiential; identifying systems errors; training in administering subspecialty; faculty oversight	51
5. **Evaluation of Fellows** — no semiannual written evaluations or evidence of final evaluation stating ability to practice without supervision	47
6. **Institutional Support** — internal review off schedule; facilities/working environment issues	43
7. **Qualifications of Faculty** — no ABP certification; no evidence of on-going scholarship	41
8. **Responsibilities of the PD** — PIF not complete or accurate	39
9. **Curricular Development** — general sub curriculum not covered during conferences; limited time devoted to required curricular; fellows involvement in conferences lacking	32
10. **Goals and Objectives** — not rotation and level specific or competency based	28

Continued on p. 14

A Career in Critical Care
Katherine E Potter, MD, FAAP

From the first day of medical school, our profession takes us down paths we might never have otherwise dreamed. The decision to pursue a career in critical care was not an intuitive one for me; far from my initial thoughts of a career in outpatient internal medicine, pediatric critical care has become my arena of expertise. The acuity of illness coupled with the strong likelihood of alleviation of disease made for a demanding work environment that was difficult to resist. The daily challenge of procedures, rounding and teaching is both stimulating and rewarding.

It is hard for me to imagine a life further removed from my initial plans than the hectic atmosphere of an intensive care unit. I have become used to explaining what I do as few members of the general public realize that such a specialty even exists. Even among my medical colleagues, the response to my career choice is frequently "how can you face that every day?" My internal answer to that question is "how can you face another day of ADD checks or ear infections?" The real answer to both of those queries is that there is a plan for each of our lives to be realized; using our talents and passion for learning and patient care in different ways allows for fulfillment in both professional and personal lives.

In particular, critical care has opened educational doors for me that I never appreciated were available. Interacting with students, residents and fellows maintains a level of curiosity and diligence in education that only benefits my patients more with every day. Taking time for scholarship even in the chaotic environment of the intensive care unit assures that I will remain current in my profession as well as become the best educator possible.

AAP Committee on Coding and Nomenclature (COCN) Accomplishments 2008

1) Immunization Administration Valuation

Responding to a COCN-initiated letter writing campaign, the Centers for Medicare and Medicaid Services (CMS) reversed its initial decision not to include clinical staff "quality" time in the practice expense relative value units for the immunization administration codes. Therefore, the 2009 Resource-Based Relative Value Scale (RBRVS) values now include clinical staff time for vaccine registry input, refrigerator/freezer temperature log monitoring/documentation, and refrigerator/freezer alarm monitoring/documentation. These practice expenses were formerly classified as "indirect" and, therefore, relegated to overhead. COCN was able to convince CMS to move them over into the "direct" practice expense pool, thereby allowing greater transparency for the codes' practice expense valuation.

2) New CPT Codes for Pediatric Critical Care

COCN worked with the Section on Critical Care to develop new CPT codes for pediatric critical care provided to patients 2 through 5 years of age. Previously, such reporting was only available through 24 months of age. The new codes (99475 and 99476) were published in *CPT 2009* and valued on the 2009 Medicare RBRVS physician fee schedule.

3) Renumbering of All Pediatric Evaluation and Management (E/M) CPT Codes for 2009

The neonatal and pediatric inpatient evaluation and management (E/M) CPT codes were renumbered for 2009. These revisions were proposed by COCN and implemented by the American Medical Association in an effort to allow sufficient room in the CPT nomenclature for potential expansion. The revised codes also allow for consecutive placement of codes within the family of neonatal and pediatric CPT codes.

4) AAP Coding Educational Materials

COCN developed the 14th edition of its *Coding for Pediatrics* manual and continued production of its monthly *AAP Pediatric Coding Newsletter*. Additionally, the ICD-9-CM Flipchart and RBRVS Brochure were both updated for 2009.

AAP GRAND ROUNDS
Critical Care
September 2008-July 2009

Michelle Zebrack
Hypothermia for Traumatic Brain Injury
AAP Grand Rounds, Sep 2008; 20: 28 - 29.

Luke Zabrocki
Early Thoracoscopy Leads to Shorter Length of Stay for Pneumonia Complicated by Pleural Effusion
AAP Grand Rounds, Oct 2008; 20: 42 - 43.

Susan L. Bratton
Clinical Practice Guidelines for Management of Encephalitis
AAP Grand Rounds, Nov 2008; 20: 50 - 51.

M. Paulina Velasquez and Virgina A. Moyer
Weighing the Evidence: Clinical Practice Guidelines
AAP Grand Rounds, Nov 2008; 20: 51.

Nikoleta Kolovos
Do Silver-Coated Endotracheal Tubes Decrease the Incidence of Ventilator-Associated Pneumonia?
AAP Grand Rounds, Nov 2008; 20: 56 - 57.

Susan L. Bratton
Risk of Death After Hematopoietic Stem Cell Transplantation
AAP Grand Rounds, Jan 2009; 21: 6.

Susan L. Bratton
Patterns of Septic Shock in Children: Warm versus Cold Shock
AAP Grand Rounds, Feb 2009; 21: 16.

Susan L. Bratton
Early Insulin Therapy in Very-Low-Birthweight Infants
AAP Grand Rounds, Feb 2009; 21: 20.

John Sanders
Perioperative Dexamethasone in Tonsillectomy May Increase Postop Bleeding
AAP Grand Rounds, Apr 2009; 21: 39.

Susan L. Bratton
Effects of Normalizing Blood Glucose on Outcomes of Intensive Care
AAP Grand Rounds, May 2009; 21: 57.

Jill Sweney
Swimming Lessons May Lessen Risk of Drowning
AAP Grand Rounds, Jun 2009; 21: 61.

Michele Munkwitz
Dexmedetomidine vs Midazolam in Critically Ill Patients: a RCT
AAP Grand Rounds, Jul 2009; 22: 7.

Excerpted from page 1 of ***Pediatric Program Directors***
complete edition accessible at
https://www.abp.org/abpwebsite/publicat/programdir09.pdf

Expanding Resources for Program Directors

Over the past two years, the Program Directors Committee of the American Board of Pediatrics (ABP) has worked diligently to compile resources specifically designed to assist you in a variety of areas related to program administration and resident and fellow education and assessment. With the help of other committees and the Association of Pediatric Program Directors (APPD), we are pleased to report that these resources have continued to expand.

New Maintenance of Certification (MOC) Presentation

As the implementation date of the newly redesigned Maintenance of Certification (MOC) program grows nearer, many program directors have requested a concise resource that clearly explains to both residents and fellows the implications of the new MOC requirements. With this in mind, the Program Directors Committee undertook the task of creating a customized PowerPoint presentation, with speaker notes, that provides an overview of MOC. By addressing specific questions and concerns that are unique to residents and fellows, this resource was created to be given as a presentation to a group or alternatively, to be sent electronically to individuals for self-study. To take advantage of our latest addition to resources for program directors, please visit our Web site at www.abp.org. The presentation can be found under the Program Director's heading on the homepage, providing you with easy access to this tool.

Professionalism Guide Available Online

As we mentioned in our last communication, the Program Directors Committee in collaboration with the APPD has also created an educational resource related to professionalism, *Teaching & Assessing Professionalism: A Program Director's Guide*, which has been posted to the ABP and APPD Web sites. Each year, program directors are asked by the ABP to determine whether each trainee in their program has met expectations in the area of professional conduct. In addition, program directors must verify that the trainee has achieved competence in professionalism at the end of training in order to be eligible to take the certifying examination. This guide provides educational activities and suggested evaluation tools that may assist you in this endeavor.

Electronic Program Director's Guide - Coming Soon

In an effort to unify the information related to the ABP for which you are responsible, the Program Directors Committee has developed content for a comprehensive guidebook, which includes the most up-to-date policies and procedures for program directors. We expect to distribute this new electronic resource in the coming months. As always, it is the goal of the ABP and the members of our Program Directors Committee to assist you in any way that we are able. If you have suggestions, comments or questions, please email us at gpcert@abpeds.org.

CoPS: PROVIDING A VOICE FOR THE PEDIATRIC SUBSPECIALTIES

Richard B Mink, MD, FAAP

The mission of the Council of Pediatric Subspecialties, or CoPS as it is known, is to integrate approaches to subspecialty education, research and patient care by providing a forum for members and other organizations and by serving as the common voice for the pediatric subspecialties. Now nearing the end of its third year of existence, CoPS is certainly fulfilling this mission. Although its initial endeavors were focused on issues related to fellowship training programs, CoPS has greatly expanded its activities.

When the Institute of Medicine issued new recommendations about resident and fellow duty hours, CoPS responded by participating in a rapid publication about the proposal ("Resident Duty Hour Restrictions: Is Less Really More?" (*J Pediatr* 2009;154:631-2), writing a letter to the Chief Executive Officer of the ACGME and participating in an ACGME sponsored duty hours congress (see the CoPS website at www.pedsubs.org for more information).

Furthermore, CoPS recently joined with other pediatric subspecialty groups to advocate for a Federal study of pediatric subspecialty workforce issues, an item that was requested in the Children's Health Insurance Program Reauthorization Act of 2009. The workgroup also suggested steps that might help to alleviate the shortage of pediatric subspecialists, including better reimbursement for subspecialists' services, loan repayment programs, and support for subspecialty fellowship graduate medical education.

CoPS is also developing a subspecialty description section on its website to provide residents with information about each pediatric subspecialty to help in making career decisions. In concert with the American Board of Pediatrics, CoPS is working on a program director handbook expressively for fellowship program directors, similar to the one devised for the categorical program directors. In the next few weeks, CoPS will be sending out a survey to "Super" Fellowship Directors, trying to identify how CoPS can best help with development of curricula.

Your CoPS representatives are Richard Mink (rmink@ucla.edu), an at-large member of the CoPS Executive Committee, and Christie Corriveau (ccorrive@cnmc.org). CoPS is very interested in your opinion so please feel free to e-mail them if you have any questions or comments.

Free Registration for Online Patient Safety Alerts from Health Care Notification Network (HCNN):

The HCNN delivers drug and medical device recalls to physicians and their staff securely online, replacing the current paper process that is both slow and error-prone. Registration to receive this service is free to AAP members, and it only takes a few minutes to enroll in the HCNN.

To register now go to: https://www.hcnn.net/registration/aap/registration.aspx

Information you provide is secure and used only for patient safety alerts and HCNN communication. Email addresses and contact information provided to the HCNN is not sold, shared or disclosed to third parties. All eligible AAP members are encouraged to register for these important patient safety notices.

For more information visit www.hcnn.net or call 1-(866) 925-5155.

ACGME-Pediatric Review Committee Update *Continued from p. 11*

3. **Scholarship Oversight Committee**
   Question: How often should the SOC meet with fellows during the educational program?
   Answer: The requirements state that the scholarly experience MUST BEGIN IN THE FIRST YEAR and continue for the entire period of education. As such, the RC expects that each SOC will meet with each fellow at least once during the first year and at least twice during the second and third year. The RC will also review fellows' scholarly productivity to determine the adequacy of the oversight provided by the SOC.

4. **Program Requirements Revision Process**
   The ACGME requires that each set of program requirements undergoes major revision at least once every five years. Approximately 18 months before the scheduled date of the next major revision for a particular set of requirements, the ACGME's Requirement Development Committee (RDC) reviews the existing requirements and program information form (PIF) and provides feedback to the Review Committee regarding potential areas for improvement. The Review Committee considers the RDC suggestions and also updates the requirements and PIF as needed based on input from the medical community. The revised requirements and PIF are then submitted to the RDC for consideration.

   Upon approval from the RDC, the revised requirements are posted, along with an impact statement on the SCGME website; program directors and Designated Institutional Officials (DIO) are notified through the ACGME weekly e-communication that the proposed requirements are available for review and comment for a period of 45 days. At the conclusion of the review and comment period, the RC reviews the comments submitted in response to the proposed requirements, considers whether additional changes to the requirements are needed in response to the comments, and prepares the final draft of the requirements for submission to the ACGME Board of directors. A summary of the submitted comments and the RC's response to these comments must accompany the requirements when they are submitted to the Board. Upon approval by the ACGME Board, the new requirements are posted to the ACGME website, along with the effective date. Program directors and DIO's are notified through the ACGME e-Communication.

To review the complete copy of the newsletter, log on to http://www.acgme.org/acWebsite/home/home.asp, click on "Review Committees," select "Pediatrics," then "Newsletters."

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