Section on Anesthesiology & Pain Medicine

NEWSLETTER Spring 2016

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

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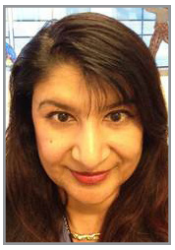
In This Issue ...

Chairperson's Report

Rita Agarwal, MD, FAAP


Rita Agarwal

I am so honored to be writing my first Chairperson's report for the AAP SOA Newsletter. The Section has been remarkably productive and influential these past few years, in large part due to Dr. Joe Tobias' tireless efforts. As a result of all his hard work, the Section and Dr. Tobias were presented with the AAP's "Unsung Heroes" award at the 2015 Annual Leadership Forum.

I hope you have all had a great first few months of 2016 and that many of you will be joining us for the SPA/AAP Pediatric Anesthesiology Meeting in Colorado Springs. We have some great sessions planned, including the presentation of the Robert M Smith Award to Dr. Lynne Maxwell from Children's Hospital of Philadelphia (formerly of John Hopkins). Please come and celebrate her remarkable career with us. She has been an extraordinary mentor, teacher, clinician and researcher (please see page 5 for more information on Dr. Maxwell and the Robert M. Smith Award). Our AAP Advocacy Lecture will feature Dr. David J. Schonfeld, Director of the National Center for School Crisis & Bereavement and Professor of Pediatrics at Drexel University College of Medicine, who will give a talk titled, "In the Aftermath of Crisis: Supporting Children, Families, and Ourselves". The Ask the Experts Panel will focus on diseases of the skin and will include Dr. Louise Furukawa from Stanford University discussing "Epidermolysis Bullosa" and Dr. Kenneth Furukawa (no relationship) from University of California, Davis, discussing: "Burns: Management and Complications". The final offering from the SOA will be the John J. Downes Resident Research Awards for the top three abstracts from our trainees. These trainees will have an opportunity to present their work in front of a discerning audience and will hopefully be encouraged to continue their research. The John J. Downes awards and oral abstract presentations are given as part of the scientific session that also rewards young investigators (SPA Young Investigators Award) for their work. On page 4, you can find more detailed information about all of the AAP Section sponsored activities occurring in Colorado Springs.

This summer there will be 2 more webinars produced by the AAP Section and the Section on Substance Use and Prevention in association with the Providers' Clinical Support System for Opioid Therapies Grant from SAMHSA (http://pcss-o.org). These will be the 3rd and 4th offerings of a 6-part webinar series aimed at prevention, identification, and treatment of opioid dependence. The two upcoming webinars will feature speakers on pediatric pain medicine and pediatric substance abuse and will help educate providers on children with pain and co-morbidities (both psychiatric and medical). Section member, Dr. Stephen Hays will be one of the speakers for the webinars. Stay tuned for more information. Last year's webinars by Drs. D'Souza and Golianu (Stanford University) and Dr. Breuner (Seattle Children's Hospital) were extremely well received and are archived for future reference at http://tinyurl.com/hhof3hg.

The ongoing initiatives of the AAP Section on Anesthesiology & Pain Medicine continue to focus on the improved health and well-being of pediatric patients of all ages. In October 2015, the AAP endorsed an updated version of the SmartTots Consensus Statement on

(Continued on page 2)

Chair's Report *(continued from page 1)*

the Use of Anesthetic and Sedative Drugs in Infants and Toddlers. It has been endorsed by over 20 organizations. In response to the Consensus Statement, the AAP Surgical Advisory Panel, an expert panel made up of the Chairs of each of the surgical sections within the AAP, has established a Subcommittee on Optimal Timing of Surgery (for more details, see page 10).

In 2015 the AAP Section on Anesthesiology and Pain Medicine released a new *Manual on Procedural Sedation for Infants, Children, and Adolescents* (for more details, see page 8) authored by Drs. Joseph Tobias and Joseph Cravero. It is directed at pediatricians and other non-anesthesia personnel who perform sedation. It has been extremely well received by our colleagues in pediatrics and will be an important addition to their armamentarium.

The revision of the AAP "Guidelines for the Pediatric Perioperative Anesthesia Environment," titled "Critical Elements for Anesthesia Care in the Pediatric Perioperative Environment," was published in *Pediatrics* in December 2015. In addition, a revision of the SOA/Committee on Fetus and Newborn Clinical Report, "Prevention and Management of Procedural Pain in the Neonate: An Update" was just published in February 2016. Dr Navil Sethna is a co-author of that paper. A new policy statement on the use of codeine in children is almost ready for publication thanks to the tireless work of Dr. Joe Tobias. For a full list of Section-authored statements recently published and in progress see page 7.

In December 2015, the U.S. Food and Drug Administration (FDA) held a joint meeting of its Pulmonary-Allergy Drugs Advisory Committee and its Drug Safety and Risk Management Advisory Committee. During the portion of the meeting dedicated to public stakeholder input, Chair of the AAP's Surgical Advisory Panel, Connie Houck, testified before the joint panel sharing the AAP's recommendation that codeine and codeine-containing products be removed from the over-the-counter (OTC) cough and cold monograph for the treatment of cough in children, and that codeine be contraindicated for the treatment of both cough and pain in all children. Note that the joint panel discussed the available data on the safety of codeine in children in three age groups – 0-6 years of age; 6-12 years of age; and 12 to 18 years of age – for both pain and cough. Following the discussion, the panel took votes on three questions related to the use of codeine in children, and the votes were overwhelmingly in favor of AAP's recommendations. For more information on this meeting, see page 13.

In October 2015, the AAP submitted a formal letter to the FDA in response to a request for comments on the international scheduling of the drug ketamine, published in the Federal Register on October 5, 2015 (Docket No. FDA–2015–N–0045). The AAP asserted that Ketamine is an essential agent for sedation in children in the United States and throughout the world. The controversy surrounding ketamine continues and was addressed in *Anesthesiology* in January. Ketamine is apparently the major drug of abuse in China, and China has asked the US to limit production, sale, and distribution of the medication.

Some very exciting news is that PediaLink, AAP's Online Learning Center, has formally approved our Section's application for an online CME course on pediatric pain management and opioid use/misuse. The course in now in development, and we expect that it will be released by September 2016. I am currently working on this effort along with Dr. David Casavant, a Pediatric Intensivist at Boston Children's Hospital. The project has been funded by a generous grant from the AAP's Friends of Children Fund.

The AAP National Conference and Exhibition will be held in San Francisco October 22-26, 2016. This year the AAP SOA will be sponsoring sessions on Integrating Acupuncture in Pediatric Practice and Anesthetic Neurotoxicity.

The SOA election is currently ongoing for the position of Chair-Elect. Please take a few minutes to vote (for more details, see page 6).

I look forward to seeing everyone in Colorado Springs soon. I hope that everyone will consider being an active part of the AAP and would welcome phone calls, curb side chats at meetings, or e-mails with suggestions as to how to improve our section.

EXECUTIVE COMMITTEE ROSTER

Rita Agarwal, MD, FAAP
Chairperson
Stanford, CA

Nina Guzzetta, MD, PhD FAAP
Atlanta, GA

Courtney A. Hardy, MD FAAP
Chicago, IL

Anita Honkanen, MD FAAP
Palo Alto, CA

Mary Landrigan-Ossar, MD, PhD, FAAP
Associate Newsletter Editor
Boston, MA

Joseph D. Tobias, MD FAAP
Immediate Past Chairperson
Columbus, OH

LIAISONS/REPRESENTATIVES

Randall P. Flick, MD MPH FAAP
Liaison, ASA Committee on Pediatrics

Constance S. Houck, MD FAAP
Liaison, AAP Committee on Drugs

STAFF

Jennifer Riefe, MEd
Section Manager
jriefe@aap.org

Calling for newsletter articles!

For our next SOA Newsletter, the Fall edition.

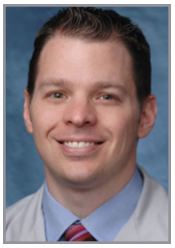
Please send proposals to Corrie Anderson or Mary Landrigan-Ossar at corrie.anderson@seattlechildrens.org or Mary.Landrigan-Ossar@childrens.harvard.edu by July 31, 2016


Corrie Anderson


Mary Landrigan-Ossar

Membership Chairperson's Report

Courtney Hardy, MD, FAAP


Courtney Hardy

Dear Section Members,

As your membership chairperson, I want to thank you for being a part of this very important and influential organization. Your Section continues to be vital, healthy, and growing. More of our colleagues continue to realize the importance of membership in the AAP, and our numbers at the moment are very strong. With 349 members, our voice within the AAP is multiplying.

I ask you to please spread the word. The difference you can make for children is leveraged 64,000* times with the AAP having your back. Parents value the FAAP letters that follow your name and indicate that you are a part of the respected group of professionals charged with caring for children.

Please know that this is YOUR Section, and the AAP has many opportunities to make a difference – look for a chance to get involved! **Here's a place to start...**

Tell your colleagues that joining the AAP is no more an option than being a member of the ASA or SPA. After all, we are PEDIATRIC anesthesiologists.

Share this newsletter with your colleagues. Point out the many ongoing activities that the section is working on as well as its many recent accomplishments, as highlighted in Dr. Agarwal's Chairperson's Report. You can also refer colleagues to our Section website, which provides a great snapshot of the ongoing efforts of the section - http://www2.aap.org/sections/anes/default.cfm.

As you know, membership in the section is currently discounted at 50% for folks who are new to the AAP (or whose membership has been lapsed for over a year). Please help us "talk up" the Section and promote this great discount. It is easy to join as a new member online – by filling out the Specialty Fellow application at the following link http://shop.aap.org/aap-membership/. If someone prefers to join over the phone, that is also an option; call 800-433-9016 and choose the option for membership. On page 24, you will find our section membership flyer, which we hope you will continue to share with your colleagues.

This is your chance to grow the Section as well as its voice and impact on behalf of pediatric anesthesiologists and the children we serve!

Thank You.

** the total number of AAP members*

Welcome New Members — Since October 2015

Titilopemi Aina
David Casavant
Paola Genovese
Julie Good
Denise Hall-Burton
Bommy Hong
Megha Kanjia
Melanie McKissack
Wanda Miller-Hance
Evelyn Monico
Yoriko Nishizawa
Chandni Pradeep
Zoel Quinonez
Laura Ryan
Samuel Seiden
Ravindra Sharma
Jamie Sinton
Rupa Thacker
Luigi Viola
Kenneth Wayman
Jeffrey Widelitz

VIP Network Webinar Pediatric Medication Safety in Adult Community Hospital Settings: A look into nationwide practice

Please join Matthew Garber, MD, FHM, FAAP, *VIP Network Medical Director* and Francisco Alvarez, MD, FAAP, Lana Ismail, MD, and Allison Markowsky, MD, of the Children's National Medical Center Division of Hospital Medicine, Washington, DC, for a discussion of "Pediatric Medication Safety in Adult Community Hospital Settings: A look into nationwide practice."

Date: Tuesday, April 5, 2016
Duration: 1 hour

In 2015, Drs Alvarez, Ismail and Markowsky sent out a survey to assess the practice of pediatric medication dosing and safety in adult community hospital settings. In this webinar, the pediatricians will address what their findings suggest are next steps to building a best practice for pediatric medication safety in adult community hospital settings (where 70% of children are cared for when presenting to a hospital setting).

Learning Objectives:

1. Understand some of the nuances that make pediatric patients more vulnerable to medication errors
2. Review and discuss pediatric medication safety infrastructure within adult settings survey findings
3. Discuss possible strategies on how to best implement or improve pediatric medication safety within adult settings
4. Determine next steps to develop solutions to medication safety deficiencies noted in survey

If you have questions, please contact Liz Rice-Conboy, MS, AAP Quality Improvement Innovation Networks (QuIIN) Program Manager at ericeconboy@aap.org.

No CME is available for this webinar, however, there is **no cos**t to register for the webinar. Thank you! To register, visit: http://tinyurl.com/hd5wtzr.

AAP – Sponsored Events and Awards at the 2016 SPA/AAP Winter Meeting

April 1-3, 2016 – Colorado Springs, Colorado

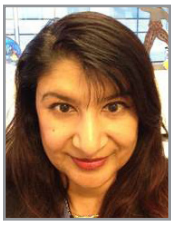
The AAP Section on Anesthesiology and Pain Medicine takes great pleasure in having the opportunity to partner with the Society for Pediatric Anesthesia (SPA) each year in offering the SPA/AAP Winter Meeting. This year's joint meeting will take place April 1-3 in Colorado Springs. The mobile meeting guide can be viewed at: http://www2.pedsanesthesia.org/meetings/2016winter/guide/

The AAP proudly sponsors a number of events and awards at the annual Winter Meeting. Please read on for information about the 2016 AAP Ask the Experts Panel, the 2016 AAP Advocacy Lecture, the 2016 John J. Downes Resident Research Award winners, and the esteemed 2016 Robert M. Smith Award winner.

AAP Ask the Experts Panel: Cutaneous Conditions

Saturday, April 2, 2016
1:30 – 2:30 pm

Moderator:
Rita Agarwal, MD, FAAP
Stanford University Medical Center
Stanford, CA


Rita Agarwal

Topics and Panelists:

Epidermolysis Bullosa
Louise K. Furukawa MD
Stanford University Medical Center
Stanford, CA


Louise K. Furukawa

Upon completion of this session, the participant will be able to:

- Identify the most severe forms of EB and describe cutaneous and extracutaneous manifestations as they impact the anesthesiologist.
- List the most common operative and non-operative procedures performed on patients with EB.
- Recognize challenges in monitoring, vascular access, airway management and securing these devices.
- Describe disease manifestations complicating airway management in patients with RDEB and JEB-H.
- Identify the major causes of mortality in patients with RDEB and JEB-H.

Burns: Management and Complications
Kenneth T. Furukawa MD
University of California Davis Health System
Sacramento, CA


Kenneth T. Furukawa

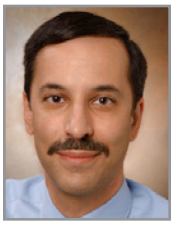
Upon completion of this session, the participant will be able to:

- Identify and manage the burned child with a compromised airway, including various components for inhalational injury.
- Recognize how burn injury affects drug pharmacodynamics and pharmacokinetics.
- Identify the unique challenges of anesthetic management of the child with burns.

AAP Advocacy Lecture
In the Aftermath of Crisis: Supporting Children, Families, and Ourselves

Friday, April 1, 2016
1:30 – 2:30 pm

David J. Schonfeld MD, FAAP
Professor of Practice, Social Work and Pediatrics, University of Southern California
Director, National Center for School Crisis and Bereavement
Commissioner, National Commission on Children and Disasters
Commissioner, Sandy Hook Advisory Commission in Connecticut


David J. Schonfeld

Upon completion of this session, the participant will be able to:

- Explain the importance of psychological first aid and basic supportive services for promoting adjustment after a crisis.
- Describe the range of reactions and concerns after a crisis beyond post-traumatic symptoms and reactions.
- Discuss the role of guilt in impacting adjustment to a loss or crisis.
- Discuss the general timeline for recovery after a crisis and the phenomenon of post-traumatic growth.
- Explain the importance of professional self-care and peer support and strategies and techniques that can be used.

2016 AAP John J. Downes Resident Research Award Winners

Each year, the AAP Section on Anesthesiology and Pain Medicine selects three abstracts to receive the American Academy of Pediatrics John J. Downes Resident Research Award. This year's winners are:

1st Place
Stephanie Cruz, MD,
Texas Children's Hospital
Effect of Surgical Stimulation on Anesthesia Induced Neuroapoptosis in the Mid-gestation Fetal Ovine Brain


Stephanie Cruz

2nd Place
Kristine Paik, MD,
Northwestern University Feinberg School of Medicine
Incidence, Independent Predictors, and Outcomes of Unplanned, Postoperative Intubation in the Pediatric Patient


Kristine Paik

3rd Place
Mumin Hakim, MD,
Nationwide Children's Hospital
Oropharyngeal Oxygen and Volatile Anesthetic Agent Concentration during the Use of Laryngeal Mask Airway in Children


Mumin Hakim

The oral abstract presentations and awards will be given on Saturday, April 2, from 10:00 to 10:45am.

2016 AAP Robert M. Smith Award Winner

Lynne G. Maxwell, MD, FAAP
Associate Director, Division of General Anesthesiology
The Children's Hospital of Philadelphia
Associate Professor of Anesthesiology and Critical Care Medicine
Perelman School of Medicine at the University of Pennsylvania


Lynne G. Maxwell

The presentation of the 2016 AAP Robert M. Smith Award will take place on Friday, April 1, from 1:15 to 1:30pm, preceding the AAP Advocacy Lecture.

Dr. Lynne Maxwell to Receive 2016 Robert M. Smith Award in Colorado Springs

By Dr. Genie Heitmiller

Dr. Lynne Maxwell, a leader in the advancement of the practice of pediatric anesthesiology and pain medicine, is being honored with the Robert M. Smith award for 2016. Dr. Maxwell is currently a Senior Anesthesiologist at the Children's Hospital of Philadelphia and Professor of Anesthesiology and Critical Care Medicine at the Perelman School of Medicine of the University of Pennsylvania. Her research has focused on perioperative care and pain management. Lynne has published over 100 original articles and book chapters focusing on regional anesthesia, pain management and anesthetic care of the neonate. She is a reviewer for multiple journals whose target audiences include pediatricians, pediatric anesthesiologists, and pediatric surgeons.

Lynne Gerson Maxwell was born and raised in Cleveland, Ohio and attended Cleveland Heights High School. She excelled in her studies and went on to attend Radcliffe College, the women's college partnered with the then all-male Harvard College. In 2015, she was inducted into the Cleveland Heights High School Distinguished Hall of Fame in recognition of her contributions to her profession and to her community. After graduation from Radcliffe, she went on to the Johns Hopkins School of Medicine, where she completed her MD degree and met her husband, Keith Maxwell. Lynne stayed on to train in Pediatrics on the Johns Hopkins Harriet Lane Service. After finishing her pediatric residency, she joined the Johns Hopkins Department of Pediatrics attending staff. During that time she had three sons over the course of just over three years. Then tragedy struck when her husband, who was a practicing obstetrician, died after developing cancer when her youngest child was only 2 years old.

After her husband's untimely death, Lynne began her anesthesiology residency at Johns Hopkins. After completing her residency training, she went on to do a fellowship in Obstetrical Anesthesiology. She joined the staff of the Department of Anesthesiology and Critical Care Medicine at Johns Hopkins as an Instructor in 1985, was promoted to Assistant Professor in 1986 and Associate Professor in 1993. During that time she was recognized as an outstanding educator and leader of the department. She received the Outstanding Teacher Award from the residents, was the Deputy Director of Pediatric Anesthesiology, and became the Coordinator of the General Operating Rooms. She did all of this while, as a single mother, she raised her three wonderful sons, Seth, Ryan and Micah.

After being a member of the Johns Hopkins community for nearly 30 years, she was recruited to join the staff at Children's Hospital of Philadelphia (CHOP) in 2002 as a Senior Anesthesiologist. Again, recognized as a leader, she became the Associate Division Chief of General Anesthesiology at CHOP. She was promoted to the rank of Professor at the University of Pennsylvania School Medicine in recognition of her scholarly work, and her national and international prominence.

Although she left Johns Hopkins in 2002, she maintained strong ties with her friends and with the institution. She has served as her Johns Hopkins medical school class representative since 2000, fostering communication among classmates, providing leadership for reunions, raising money for the Johns Hopkins Annual Fund. Continuing the Maxwell's legacy, her youngest son, Micah J. Maxwell, is a 2012 M.D., Ph.D. graduate from the Johns Hopkins School of Medicine, and after completing his pediatric residency at Pittsburgh Children's Hospital, he is back at Johns Hopkins for a Hematology-Oncology Fellowship. In honor of her husband, Lynne founded the Keith Maxwell Memorial Fund and the Maxwell Family Scholarship Fund together with her brother-in-law, Dr. R. Ryan Maxwell, Hopkins Class of 1977, and her mother-in-law, Dr. Grace Rushing Maxwell, both now deceased.

Lynne has been an active member of the AAP for decades, having become an AAP Fellow in 1979. She has served as a nationally elected member of the Executive Committee, Section on Anesthesiology and Pain medicine from 2000-2008, as well as a member of the executive committee of the AAP Committee on Drugs (2002-2008) and now as a member of the executive committee of the Section on Clinical Pharmacology and Therapeutics since 2009. She is currently a consultant to the FDA/NICHD for prioritization of off-patent drugs in accordance with Best Pharmaceuticals for Children Act and a consultant for FDA Center for Drug Evaluation and Research workshop in clinical trials of analgesics. She is currently involved in multi-center studies examining neurotoxicity of anesthetics in children.

When Lynne is not at work, she is caring for her dog, knitting (always knitting!), and enjoying time with her grandchildren, Isabella age 8 years and Sebastian age 4 years. She loves to travel and she has spent many of her vacations on scuba diving adventures across the globe. In June 2012, Lynne had the mind-blowing experience of being on a Malaysian dive boat that sank in the middle of the night. When she finally made it to land, the email message sent to her friends was: "*Boat sank. On small island in middle of nowhere. Lost a lot of stuff but safe and sound. Figuring out how to get home.*" She and the others were rescued, taken to an island close to Singapore that was basically a runway with a small resort and a smaller naval base, and were flown out on a Malaysian Air Force C130 (she had some awesome pictures)! Lynne has certainly had her share of unexpected turn-of-events, and has taken each one head-on with grace, fortitude, and a wonderful sense of humor.

Lynne has been a role model for a multitude of anesthesiology trainees and young faculty for her dedication to education and patient care as well as her collegiality, integrity, generosity, and professionalism. The Robert M. Smith award is a well-deserved honor in recognition of her life-time devotion to the care of children.

NEW in *Pediatrics*

Preterm Versus Term Children: Analysis of Sedation/Anesthesia Adverse Events and Longitudinal Risk – March 2016
http://pediatrics.aappublications.org/content/pediatrics/137/3/1.7.full.pdf

Diagnosis and Management of Infantile Hemangioma: Executive Summary – October 2015
http://pediatrics.aappublications.org/content/pediatrics/136/4/e1060.full.pdf

Dr. Raeford Brown Slated as Candidate for 2017-18 Section Chairperson-Elect

We are pleased to present Dr. Raeford Brown as the unopposed candidate for the position of Section Chairperson-Elect. If confirmed by our Section membership during the election this month, Dr. Brown will join the Section Executive Committee in November 2016. He will serve as Chairperson-Elect for one year and will then take over as Chairperson in November 2017 when Dr. Rita Agarwal completes her two year term.

Biographical Sketch
Rae Brown, M.D., FAAP
Professor of Anesthesiology and Pediatrics
University of Kentucky Medical Center
Kentucky Children's Hospital


Rae Brown

The American Academy of Pediatrics and the Section on Anesthesiology and Pain Medicine (SOA) has been an important part of my professional life since I finished my training in Anesthesiology, Pediatrics, Critical Care and Pediatric Anesthesiology in 1986. I served on the executive committee for several years in the late 90s while I was involved in the development of the original recommendations for accreditation of fellowship training programs with a group now termed the "Gang of Seven". Concurrently I was involved at the federal level with safety advocacy for children in open bed pick-up trucks. I also served as the liaison to the Medicare Committee tasked with understanding anesthesiology and whether anesthesiologists should get paid. These and other subsequent experiences have allowed me to develop a substantial understanding of the American Academy of Pediatrics and the place that anesthesiologists can play in informing this large and diverse group about issues new to them.

Subsequent illness hampered my ongoing involvement in the Section, but my current state of good health has renewed my enthusiasm for the Section and its place in the life of the AAP. It has long been my view that the important work of the section relates to education and advocacy; educating pediatric clinicians, ensuring that the focus of anesthesiologists includes an eye to raising the level of conversation on topics such as the provision of safe care for every child, the importance of having the right resources for the management of a sick child, the safe provision of acute and chronic pain control, and the growing issue of prescription drug addiction in adolescents. The section has been, and I would hope could continue to be the conscience of our profession. If elected to the position of Chair-Elect I will work hard, utilizing my knowledge and experience, to continue the work of our current leaders and, perhaps, to elevate the discussion by and exposure of our group.

On March 1st all members of the Section on Anesthesiology and Pain Medicine received a ballot to vote for two (2) positions on the SOA Executive Committee - for Chairperson-Elect as well as for the Executive Committee member position currently held by Dr. Anita Honkanen, who is running unopposed as the incumbent. The voting period is from March 1 to March 31.

Please go to http://www2.aap.org/elections to view the online ballot. You will need your AAP ID and password to log in. If you've signed up for healthychildren.org you will need to use your email address.

Please note, if you are a member of more than one Council and/or Section, you will only see ballots for the council(s) and section(s) conducting elections this year.

DEPARTMENT OF
FEDERAL AFFAIRS

A new Academic and Subspecialty Advocacy Report is available from the AAP Department of Federal Affairs. To read the full March 2016 report, visit: https://www.aap.org/en-us/my-aap/Documents/subpeds_report_academic_subspecialty.pdf.
The Report contains updates on the following topics:

- Access to Care
- Children's Health Insurance Program
- ACE Kids Act
- Academic and Subspecialty Workforce
- Support for Pediatric Subspecialists
- Children's Hospital GME Funding and Reauthorization
- Title VII Training Grant Appropriations
- International Physician Legislation Physician Payment Medicaid Payment Equity
- Pediatric Drugs and Devices 21st Century Cures Initiative/ Innovations for Healthier Americans
- Pediatric Drug Laws
- Pediatric Device Consortia Program Appropriations
- OxyContin Approval in Children
- Drug Shortages Pediatric Research
- National Institutes of Health Appropriations
- Precision Medicine Initiative
- National Children's Study
- Inclusion of Children in NIH-Funded Research
- Proposed Updates to Common Rule
- NIH-Wide Five-Year Strategic Plan
- Budget and Appropriations
- President's FY 2017 Budget
- Administration Proposes New Emergency Funding Measures
- FY 2016 Appropriations
- Emergency Medical Services for Children
- Federal Aviation Administration Emergency Medical Kits
- Grassroots Advocacy: AAP Key Contact Program
- How to Become a Key Contact
- FederalAdvocacy.aap.org: Dept. of Federal Affairs Online Resource Center
- Engage with AAP on Social Media
- AAP 7 Great Achievements Campaign
- Advocacy Training Opportunities in Washington, DC

Section Policy Statement Update – *Recently Published*

Critical Elements for the Pediatric Perioperative Anesthesia Environment – Published December 2015!
The AAP urges hospitals to look at the entire team and setting where children receive anesthesia to provide the best possible care. This includes recommendations that surgical facilities set a minimum number of pediatric anesthesia procedures conducted annually to maintain peak performance. The report states that high-risk pediatric patients need anesthesiologists with subspecialty certification in pediatric anesthesiology who dedicate at least 30 percent of their clinical practice to neonates and children with complicated medical conditions. Other recommendations include having a separate, family-centered preoperative area for pediatric patients and their families. The policy statement is aligned with the AAP-endorsed American College of Surgeons Children's Surgery Verification and Quality Improvement program standards.

View Full Text PDF: http://pediatrics.aappublications.org/content/pediatrics/early/2015/11/25/peds.2015-3595.full.pdf

Thanks to section members, Dr. David Polaner and Dr. Constance Houck, for this contribution to the AAP's policy library!

Prevention and Management of Procedural Pain in the Neonate: An Update – Published February 2016!
Pain that newborns experience from routine medical procedures can be significant, especially in premature infants with more intensive health needs. Research suggests that repeated exposure to pain early in life can create changes in brain development and the body's stress response systems that can last into childhood. Because of this, a new AAP policy statement, "Prevention and Management of Procedural Pain in the Neonate: An Update," recommends every health facility caring for newborns should use strategies to minimize the number of painful procedures performed, and routinely monitor and treat pain with greater emphasis on proven non-drug interventions.

View Full Text PDF: http://pediatrics.aappublications.org/content/pediatrics/137/2/1.61.full.pdf

Thanks to section member, Dr. Navil Sethna, for this contributions to this important joint statement of the SOA and the AAP Committee on Fetus and Newborn!

Section Policy Statement Update – *What's in Progress Now*

Various members of our AAP Section on Anesthesiology and Pain Medicine are currently serving as authors of the following AAP statements and clinical reports in progress:

NEW Statements and Reports

- **Codeine: Time to Say No** (Lead Authors: Joseph Tobias, Thomas Green, Charles Coté); A new joint clinical report from the AAP Section on Anesthesiology and Pain Medicine and the AAP Committee on Drugs; Status: Pending AAP Board of Directors Approval

Statements and Reports Undergoing Revision

- **The Assessment and Management of Acute Pain in Infants, Children, and Adolescents** (Lead Authors: Corrie Anderson, Nathalia Jimenez); A revision of the 2001 AAP statement with the same title: http://pediatrics.aappublications.org/content/108/3/793.full.pdf+html?sid=8c75b812-3af4-401c-9190-22d1e3d57402

  Status: First Draft in Progress

- **Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures** (Lead Authors: Charles Coté, Stephen Wilson); A revision of the 2006 AAP/American Academy of Pediatric Dentistry (AAPD) clinical report with the same title: http://pediatrics.aappublications.org/content/118/6/2587.full.pdf+html?sid=5470c831-f113-470f-9e37-4121ccb4b829

  Status: Pending AAP Board of Directors Approval

- **Interpretation of Do-Not-Attempt-Resuscitation and Resuscitation Limitation Orders for Pediatric Patients Who Require Anesthesia and Surgery** (Lead Author from SOA: Courtney Hardy); A revision of the 2004 AAP Committee on Bioethics/Section on Surgery/Section on Anesthesiology and Pain Medicine clinical report, "Do-Not-Resuscitate Orders for Pediatric Patients Who Require Anesthesia and Surgery": http://pediatrics.aappublications.org/content/114/6/1686.full.pdf+html?sid=58f49dab-604f-4ae6-8074-41d0b1877cb9

  Status: Internal Review of Manuscript by AAP Committees, Councils, and Sections complete; Revised draft being prepared.

HHS Releases Pain Strategy to Move Away From Opioids

A new federal strategy to address pain calls for better education of health care providers and improved access to pain management that doesn't rely solely on prescription medicines.

HHS released the strategy (available at: http://iprcc.nih.gov/National_Pain_Strategy/NPS_Main.htm) on March 18, 2016, following publication of final CDC guidelines to rein in primary care doctors' use of opioid medications to treat chronic pain.

The strategy was put together by the Interagency Pain Research Coordinating Committee, which sought to block CDC's guidelines in December because they weren't integrated with the committee's broader strategy, which includes evaluating pain management strategies to supplant opioid prescribing.

Those complaints were overpowered by federal health officials' concern about the prescription painkiller epidemic that is claiming 40 lives a day.

The report recommends improving pain care through research, improved care for disadvantaged groups, improved service delivery and payment and better education and training of the public and professionals about pain management.

Providers and patients need access to a larger range of pain treatment options, the report says, as well as awareness of treatment options and risks. The health care workforce historically has not been well-trained to treat pain.

Call for 2017 Robert M. Smith Award Nominees


Robert Smith

As you know, each year at the SPA/AAP Winter Meeting, the **Robert M. Smith Award** is given to recognize an individual who has made outstanding contributions to the field of pediatric anesthesiology. The AAP Section on Anesthesiology and Pain Medicine established the **Robert M. Smith Award** in 1986 to honor Dr. Smith for his contributions in the fields of pediatrics and pediatric anesthesiology. Dr. Smith was one of the pioneers in anesthesiology who felt strongly that one of the goals of the field should be to improve techniques and equipment for pediatric patients.

Robert M. Smith Award Winners

1986:	Robert M. Smith
1987:	William O. McQuiston
1988:	A. W. Conn
1990:	Herbert Rackow and Ernest Salanitre
1992:	Joseph Marcy
1993:	Gordon Jackson-Rees
1994:	Margery VanNorden Deming
1995:	Leonard Bachman
1996:	John J. Downes
1997:	C. Ron Stephen
1998:	John F. Ryan
1999:	George A. Gregory
2000:	Not Presented
2001:	David Steward
2002:	Dolly Hansen
2003:	Etsuro K. Motoyama
2004:	Theodore Striker
2005:	Not Presented
2006:	Al Hackel
2007:	Josephine Templeton
2008:	Federick Berry
2009:	Ryan Cook
2010:	Juan Gutierrez
2011:	Charles Coté
2012:	Nishan Goudsouzian
2013:	John Christian Abajian
2014:	Raafat Hannallah
2015:	Charles Lockhart
2016:	Lynne Maxwell

At this time, the AAP Section on Anesthesiology and Pain Medicine Nominations Committee is ready to review nominations for the **2017 Robert M. Smith Award**. If you have a potential nominee in mind, please do the following: 1. Complete the online nomination form at https://www.surveymonkey.com/r/RobertMSmith2017. Submit a 2-3 page bio-sketch of the nominee to Jennifer Riefe, Manager, AAP Section on Anesthesiology and Pain Medicine, at jriefe@aap.org. All nominations are due by April 22, 2016.

Thank you for your interest in the **Robert M. Smith Award** and for your consideration of becoming involved in the nominations process. The AAP Section on Anesthesiology and Pain Medicine Nominations Committee greatly appreciates the feedback of all pediatric anesthesiologists as it annually generates a list of potential individuals to receive this esteemed award.

Communication & Care Transitions

David Rodeberg, MD - Subcommittee on Patient Safety

SECTION ON SURGERY

Delivery of Surgical Care Committee February 2016

Situation

- The Joint Commission has reported that nearly 70 to 80% of sentinel events can be traced to breakdowns in communication.
- Care transitions are exchange points of patient information and responsibilities and have been identified as key points of communication breakdown.
  - The 2 most frequent transitions of care include handoffs between providers during a patients hospitalization, and then at the time of discharge
  - Poor care transitions contribute to high rates of healthcare cost, medication discrepancies, adverse clinical events, and poor patient satisfaction.

Background

- Transitional care has been defined as a "a set of actions designed to ensure the coordination and continuity of healthcare as patients transfer between different locations or different levels of care within the same location". This is complementary to but not identical to primary care coordination, discharge planning, disease management, or case management.
- The affordable care act outlines what is expected during care transitions and accountable care organizations will be required to submit performance data that will address care transitions across healthcare settings.

Assessment

- Handoffs
  - Clinical handoff may be defined as the transfer of professional responsibility and accountability for patients care to another professional.
  - The Joint Commission has recommended that the SBAR (situation background assessment results) format be used for handoff communications and that information technology, including the electronic health record, be utilized to streamline and standardize the transfer of patient information.
  - The joint commission has published guidelines using the acronym SHARE (Standardization, Hardwire, Allow questions, Reinforce, Education) for the development of handoff tools.
    - The handover process must include standardization of the critical content, hardwiring within the hospital system through use of standardized tools and methods, allow the opportunity for asking questions, reinforcement of quality and management through clinical governance and ongoing audit, and education and coaching of all parties involved in the handoff process.
    - The introduction of pro forma's and/or checklist to improve care is insufficient by itself
  - Multiple factors affect the quality of handoff including the context (why is there a transition), location, and staff involved (interprofessional versus single discipline).
  - A systematic review of surgical handoff by Pucher et al. has suggested that the majority of interventions designed to improve surgical handover currently in place can be grouped into two broad categories
    - Standardize handover proforma's such as checklists or computer-based systems. Optimally, the proforma's would be computer-based and interact and communicate with the electronic health record.
    - Standardize handover procedure.
    - 70 to 90% of handover protocols incorporate
    - Opportunities for questions
    - hardwiring into the system with checklist or proforma's
    - standardization of the information contained in the handover process.
    - 50% of the studies described education
    - 5% described longitudinal assessment and quality control with reinforcement to users and providers.
- Discharge
  - A recent systematic review of care transitions by Kansagara et al. identified that the interventions with the largest impact on preventing transitional care problems include
    - Comprehensive discharge planning including nurse led transitional care interventions from hospital admission and continuing after discharge including follow-up interventions with home visits or telehealth (video phone or telephone) patient contact. However, the effectiveness of post discharge calls to families has had more ambivalent results compared to home visits.
    - The contents of best practice discharge planning incorporated patient and caregiver goal setting, individualized care planning, educational and behavioral strategies, and clinical management
    - The review identified that cost savings of $3000-5000 per Medicare beneficiary, reduced hospital length of stay, and decreased readmissions.

Recommendations

- Implementation of "best practices" outlined above for care transitions for both handoffs (utilizing SBAR and SHARE) and discharges
  - Tailoring the amount of resources used at discharge based upon likelihood of adverse outcomes and readmission
- Because of the many steps in care transitions focusing improvement on only one step of care is unlikely to have significant benefit.
- A shared electronic health record across healthcare settings has the potential to improve communication and facilitate transitions.

News from the AAP Surgical Advisory Panel

Constance S. Houck, MD
Chairperson, AAP Surgical Advisory Panel


Constance Houck

A Little History….

As an organization dedicated to the health of children, the American Academy of Pediatrics has always recognized the importance of being inclusive of **all** physicians who care for children. Many of the adult specialty organizations were not initially supportive of pediatric specialization so the AAP became a "home" for pediatric surgical specialists. In 1948, just 17 years after the AAP was initially formed, 3 groups of pediatric specialists formed "Sections" within the Academy to provide a continuing education experience for their members. The Section on Surgery was one of these 3 original Sections and was the first physician organization focused solely on surgery in infants and children. By 1987, there were 12 medical and surgical Sections in the Academy, including the Section on Anesthesiology and Pain Medicine. As the number of pediatric subspecialists increased in the 1980's so did the number of AAP Sections. Currently there are 52 Sections (see list at: http://downloads.aap.org/DOSP/Section Forum Action Groups.pdf), which include not only medical and surgical subspecialty groups but also multidisciplinary groups of pediatric providers with an interest in a particular aspect of children's health. The Sections now provide the majority of the educational content at the AAP's annual National Conference and Exhibition and are important contributors to the development of AAP Policy.

What is the Surgical Advisory Panel?

The Surgical Advisory (SAP) is a collaboration between the Chairs of the 10 AAP surgical specialty sections: Anesthesiology and Pain Medicine, Neurological Surgery, Ophthalmology, Oral Health, Orthopaedics, Otolaryngology and Head & Neck Surgery, Plastic Surgery, Radiology, Surgery and Urology. SAP meets twice a year - in March at the Annual Leadership Forum and at the AAP National Conference and Exhibition in the fall. The Chair of the Surgical Advisory Panel serves on the Section Forum Management Committee and represents the pediatric surgical specialists at the AAP Board meetings in January, May and October.

Current Collaborative Perioperative Initiatives

- **Optimal Timing Task Force** – A task force is being formed within SAP to evaluate the evidence and make recommendations regarding the optimal timing of surgical procedures. The task force will be specifically looking at the timing at which function is optimized and perioperative complications are minimized.
- **Surgical Specialist involvement on Committees and Councils** – SAP has launched an effort to increase the number of surgical specialists on important AAP Committees and Councils. This effort has already led to a significant increase in the number of surgical specialists on several key committees over the last 2 years.
- **Specialty Fellow membership** – Medical subspecialists have recently formed the Medical Subspecialty Advisory Panel (MSAP), and they have joined our efforts to advocate for specialty membership options that include more streamlined benefits and reduced dues. We also have a surgical specialist on the Membership committee so we will continue these efforts in earnest.
- **Surgical Plenary Session at NCE** – Each year since 2012, the Surgical Advisory Panel has presented a Surgical Plenary session and reception at the NCE meeting. The Panel topic is designed to have broad appeal for all surgical specialists and in 2012 featured Randy Flick and Sol Soriano discussing Anesthesia Neurotoxicity. This year's Panel will be on co-management of surgical patients by pediatric hospitalists.

There are many perioperative concerns that we share with our Surgery, Dentistry and Radiology colleagues. Please email me: constance.houck@childrens.harvard.edu if there are other multidisciplinary issues and/or advocacy concerns that you think would benefit from a strong, collaborative effort with our surgical colleagues.

Special Supplement to Pediatrics Spotlights Care and Treatment of Children and Adolescents with Autism

The February 1, 2016 Issue of *Pediatrics* includes a special supplement featuring federally supported, collaborative research on the health care and medical treatment of children and adolescents with autism spectrum disorder (ASD) and other neurodevelopmental disorders. Released by the Autism Intervention Research Network on Physical Health (AIR-P) and Autism Speaks Autism Treatment Network (ATN), the supplement includes analyses of a database of more than 7,000 children and youth with ASD.

The supplement, "**Health Care for Children and Youth with Autism and other Neurodevelopmental Disorders**" (http://pediatrics.aappublications.org/content/137/Supplement_2) reports on a broad array of findings by network investigators, as well as other research supported by the U.S. Maternal and Child Health Bureau through its coordinated programs to improve care for children with autism and related conditions. The compendium also includes practice guidelines addressing anxiety treatment and studies on access to diagnosis of ASD, creating autism-specific care plans in hospitals, evaluation of emergency department care for children with ASD, transition services for youth with ASD and co-occurring symptoms such as depression, sleep, irritability and behavior problems.

Has Your Work Been Highlighted in a Recent News Article?

We are hoping to feature AAP Section on Anesthesiology and Pain Medicine "Members in the News" in upcoming editions of this newsletter.

If you have an article to share, please don't be shy! We'd love the opportunity to showcase the work that members of our AAP Section are involved in on a daily basis.

Help us with this effort by submitting your update to Corrie Anderson, Newsletter Editor, at corrie.anderson@seattlechildrens.org

Update on the American College of Surgeons Children's Surgery Verification and Quality Improvement Program

By Constance S. Houck, MD, FAAP, Jayant K. Deshpande, MD, MPH, FAAP, Lynn Martin, MD, FAAP, Randall P. Flick, MD, MPH, FAAP

As mentioned in the last Section on Anesthesiology and Pain Medicine (SOA) Newsletter, the Optimal Resources in Children's Surgery initiative that was originally launched in 2012 has now evolved into the 5th surgical quality improvement initiative of the American College of Surgeons, the Children's Surgery Verification and Quality Improvement Program (ACS CSV). The other four ACS quality improvement programs define optimal resources for Bariatric Surgery, Breast Disease, Cancer Surgery and Trauma. From the beginning, the Optimal Resources in Children's Surgery Task Force has included representatives from the American Academy of Pediatrics, Section on Anesthesiology and Pain Medicine, the Society for Pediatric Anesthesia (SPA), and the Committee on Pediatric Anesthesia (COPA) of the American Society of Anesthesiologists (ASA), and was endorsed by Children's Hospital Association (CHA). Last fall, this initiative was also endorsed by the AAP. This program represents "the nation's first and only multispecialty standards for children's surgical care." A summary of the scope of practice for the different levels of Children's Surgical Centers can be found in Table 1 (see page 12).

In the development phase, six hospitals, 3 pediatric specialty hospitals, 2 pediatric surgical programs within a larger hospital and 1 Level 2 pediatric surgical program volunteered to participate in the pilot verification program. All verification site visits took place in April and May 2015. The surveyor teams consisted of 2 - 3 children's surgeons, a pediatric anesthesiologist, a nurse reviewer, and observers from the American College of Surgeons. Pilot site reviewers included SOA members Lynn Martin, Jay Deshpande, Connie Houck and Randy Flick, all of whom have been involved with the development of the standards for this verification program. At the end of May 2015, the verification committee met in Chicago to discuss the lessons learned and update and streamline the standards. In October 2015, the Optimal Resources Task Force had its final meeting to finalize the standards and the program was officially launched in January 2016. To date, there have been more than 80 children's surgery programs that have expressed interest in verification by the ACS CSV program.

The final ACS Optimal Resources for Children's Surgical Care standards and the Pre-Review questionnaire for applicant organizations can be found on the ACS website at the following link: https://www.facs.org/quality-programs/childrens-surgery-verification

Though the Task Force has been disbanded, Drs. Houck and Deshpande will continue as the pediatric anesthesiology representatives to the ACS Children's Surgery Verification Committee. The CSV committee has engaged in several outreach efforts to the Anesthesiology community with presentations at the CHA Leadership Conference in 2014, the March 2015 International Anesthesia Research Society meeting, and the annual meeting of the ASA in October 2015. Dr. Houck will also present a short update about this initiative at the 2016 IARS meeting.

Of special interest to pediatric anesthesiologists are the standards that require that infants and children be cared for by pediatric anesthesiologists at level I and II centers. Only healthy infants greater than 6 months of age should be cared for at Level III centers by anesthesiologists with pediatric expertise. The CSV program uses the following definitions for Pediatric Anesthesiologist and Anesthesiologist with Pediatric Expertise. In addition, there are specific Alternative Pathway requirements for pediatric anesthesiologists who are not board eligible or certified.


Constance Houck


Jayant K. Deshpande


Lynn Martin


Randall P. Flick

A *pediatric anesthesiologist* is defined as an individual certified or eligible for certification in pediatric anesthesiology by the American Board of Anesthesiology or equivalent body, or who is similarly qualified by demonstrable experience and training via the Pediatric Anesthesia Alternative Pathway (see below).

***An anesthesiologist with pediatric expertise* is defined as an anesthesiologist either eligible to certify or with a current certificate from the American Board of Anesthesiology or equivalent. He or she must demonstrate continuous experience with children < 24 months of age, defined as 25 patients per anesthesiologist per year. In addition, this individual will demonstrate ongoing pediatric clinical engagement with patients ≤ 18 years of age and complete 10 or more relevant Category 1 CME credit hours annually.**

Alternative Pathway for Pediatric Anesthesiologists

- Successfully completed residency in anesthesiology, certified by a letter from the program director which details the pediatric component
- 30% or more of practice devoted to pediatric cases; including neonates and children < 2 years, and procedures considered high risk
- Current provider or instructor, Pediatric Advanced Life Support (PALS)
- 48 hours of children's anesthesia-related CME in last 3 years
- Documentation of membership or attendance at children's anesthesia meetings
- List of patients < 2 years of age and related procedures during the reporting year
- Licensed to practice medicine and documentation of privileges to care for children < 2 years by the hospital's credentialing committee
- The anesthesiologist's care will be evaluated by an on-site reviewer, with oversight by other anesthesiologists who are members of the CSV Committee

continued on page 12

Update on the American College of Surgeons Children's Surgery Verification and Quality Improvement Program *(Continued from page 11)*

Table 1: Summary of Children's Surgical Center with Scope of Practice

Level	I	II	III
Age	Any	Any	> 6 months
ASA	1-5	1-3*	1-2
Multidisciplinary management of co-morbidities	Multiple medical and surgical specialties; pediatric anesthesiology	Typically single surgical specialties; neonatology; pediatric anesthesiology	None
Operations†	Major congenital anomalies and complex disease including those that are uncommon or require significant multidisciplinary coordination	Common anomalies and diseases typically treated by most pediatric surgical specialists and that do not require significant multi-specialty coordination.	Common, low-risk procedures typically performed by a single specialty.
Ambulatory‡	ASA 1-3 Full term infants and preterm infants may be cared for as ambulatory patients based on written guidelines established by the pediatric anesthesiologist in charge of perioperative care. Institutional guidelines generally require full term infants < 4 weeks or preterm infants < 50 weeks PMA weeks to be monitored for at least 12 hours postoperatively.	ASA 1-3 Full term and preterm infants may be cared for as ambulatory patients based on written guidelines established by the pediatric anesthesiologist in charge of perioperative care. Institutional guidelines generally require full term infants < 4 weeks or preterm infants < 50 PMA to be monitored for at least 12 hours postoperatively.	Otherwise healthy (ASA 1-2) Age > 6 months

PMA = Post menstrual age

*Emergent procedures in some patients > ASA 3 may be appropriate in neonatal patients such as those with necrotizing enterocolitis.

† Depending upon patient age, co-morbidities and need for multi-disciplinary surgical approach, these may be appropriate for either Level I or Level II centers.

‡Ambulatory sites of care are included in these recommended levels of institutional designation when the onsite provider team possesses the requisite pediatric training and experience. The site of care may be physically attached/integrated into the hospital or may be a component of a demonstrably integrated health care delivery system that provides these defined resources.

Update from the Committee on Drugs: FDA Advisory Committee Meeting on the Use of Codeine for Children

Constance S. Houck, MD, Section Voting Member
AAP Committee on Drugs

Constance Houck

On December 10, 2015, the Food and Drug Administration (FDA) held a joint meeting of its Pulmonary-Allergy Drugs Advisory Committee and its Drug Safety and Risk Management Advisory Committee to discuss concerns related to the use of codeine in children. The meeting was convened in response to recent advisories from the European Medicines Agency and Health Canada that recommended that codeine be contraindicated for both cough and cold and pain in children < 12 years of age. Section members **Randy Flick, MD, MPH** and **Raeford Brown, MD** served as voting members on the Drug Safety and Risk Management Advisory Committee. The FDA presented a comprehensive overview of the pharmacokinetics and safety concerns with codeine that have been reported since the 1960's. One of the most compelling portions of this testimony was a review of the FDA Adverse Event Reporting System (FAERS) data from 1965 – 2015 in children who had used codeine or any codeine-containing products revealing a total of **64** cases of severe respiratory depression and **24** codeine-related deaths, 21 of which were in children < 12 years of age.

During the portion of the meeting dedicated to public stakeholder input, **Connie Houck, MD**, (who represented both the Committee on Drugs and the SOA) testified before the joint panel sharing the AAP's recommendation that codeine and codeine-containing products be removed from the over-the-counter (OTC) cough and cold monograph for the treatment of cough in children, and that codeine be contraindicated for the treatment of both cough and pain in **all** children. The full AAP public statement presented at the meeting can be found on page 14.

The joint panel discussed the available data on the safety of codeine in children in three age groups – 0-6 years of age; 6-12 years of age; and 12 to 18 years of age – for both pain and cough. Following the discussion, the committee members voted on three questions related to the use of codeine in children, and the votes were overwhelmingly in favor of the AAP's recommendations.

The questions and vote totals of the panel for each question are below.

1. *Based upon the discussion of the available safety data with codeine, should the current contraindication for codeine (for pain management in the post tonsillectomy and adenoidectomy setting) be expanded to a contraindication for codeine use **for any pain management** (emphasis FDA) in children?*

   As per 21 CFR 201.57c(5), a drug should be contraindicated only in those clinical situations for which the risk from use clearly outweighs any possible therapeutic benefit. Only known hazards, and not theoretical possibilities, can be the basis for a contraindication.

   A. Yes – contraindicate for any pain management in children younger than 6 years of age. **Vote: 2**
   B. Yes – contraindicate for any pain management in children younger than 12 years of age. **Vote: 6**
   C. Yes – contraindicate for any pain management in children younger than 18 years of age. **Vote: 20**
   D. No – no change to current contraindication. **Vote: 1**

2. *Based upon the discussion of the available safety data with codeine, should codeine be contraindicated **for the treatment of cough** (emphasis FDA) in children?*

   As per 21 CFR 201.57c(5), a drug should be contraindicated only in those clinical situations for which the risk from use clearly outweighs any possible therapeutic benefit. Only known hazards, and not theoretical possibilities, can be the basis for a contraindication.

   A. Yes – contraindicate for cough in children younger than 6 years of age. **Vote: 1**
   B. Yes – contraindicate for cough in children younger than 12 years of age. **Vote: 5**
   C. Yes – contraindicate for cough in children younger than 18 years of age. **Vote: 20**
   D. No – no change to current contraindication. **Vote: 3**

3. *Based upon the discussion of the available safety data with codeine, should codeine be removed from the FDA monograph for over-the-counter (21 CFR 341.1; 21 CFR 341.90) use for the treatment of cough in children? (Thus, codeine would no longer be available for a certain age range over-the-counter).*

   A. Yes – remove codeine from the monograph for children younger than 6 years of age. **Vote: 0**
   B. Yes – remove codeine from the monograph for children younger than 12 years of age. **Vote: 1**
   C. Yes – remove codeine from the monograph for children younger than 18 years of age. **Vote: 27***
   D. No – no change to the current monograph for codeine. **Vote: 0**
   E. **Abstain: 1**

   *Many who voted "C" on question 3 strongly supported the removal of codeine from the monograph for all ages, including adults.

The FDA will take these votes under advisement and consider further steps in the near future. SOA members **Joseph Tobias, MD** and **Charles Cote, MD** have co-authored a joint statement with Thomas Green, MD from the Committee on Drugs on the use of codeine for pain or cough in children. This statement has undergone review and revision by interested AAP Sections and awaits the approval of the Board of Directors.

Stay tuned for further developments on this issue as the FDA and AAP finalize recommendations over the next few months.

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

Statement of Constance Houck, MD, FAAP
On Behalf of the American Academy of Pediatrics

Before the Food and Drug Administration
Joint Meeting of the Pulmonary-Allergy Drugs Advisory Committee
and the Drug Safety and the Risk Management Advisory Committee

December 10, 2015

Good morning. My name is Dr. Connie Houck and I am a practicing pediatric anesthesiologist at Boston Children's Hospital and an associate professor in anesthesia at Harvard Medical School. Thank you for allowing me to speak here today on the use of codeine in children. I am here in an official capacity representing the American Academy of Pediatrics (AAP). The AAP is a non-profit professional medical organization representing over 64,000 primary care pediatricians and pediatric medical and surgical subspecialists. I am the current chair of the AAP Surgical Advisory Panel and I also serve on the AAP Committee on Drugs. We greatly appreciate that the Food and Drug Administration (FDA) is calling attention to the important issue of codeine safety and efficacy in children.

The members of the Academy have been concerned for a number of years about the potential adverse effects of codeine-containing medications administered to children. Though studies in adults in the 1960s had shown some efficacy of opioid-containing medications in the suppression of cough related to acute respiratory infections, no such efficacy has been found for children. A randomized study by Taylor and colleagues in 1993 found no improvement in cough symptoms compared to placebo in children receiving codeine-containing preparations. Subsequently, in 1997, the AAP Committee on Drugs published a policy statement that discouraged the use of both codeine- and dextromethorphan-containing medications for treatment of cough in children, citing both the lack of efficacy and the concern about serious adverse effects including respiratory depression with the use of these medications especially, in young children. In 2006 a set of evidence-based guidelines was issued by the American College of Chest Physicians warning against the use of codeine-containing medications for the suppression of cough for acute respiratory infections in children.

As a prodrug, codeine is dependent on cytochrome P450 CYP2D6 metabolism for its opioid effects, making it a drug with significant genetic variability in both its efficacy and side effects. There is increased conversion of codeine to morphine in ultra-rapid metabolizers, 1-2% of patients, which

increases the risk of codeine toxicity. In addition, 5-10% of patients who are poor metabolizers will have ineffective analgesia following codeine administration. There are case reports of morphine toxicity and even a death in breastfed infants of ultra-rapid mothers who had been prescribed and taken codeine. In fact, the FDA warned against codeine use in nursing women in 2007. Sadly, there have been more than a dozen deaths attributed to the use of codeine over the past decade and children are disproportionally overrepresented in these cases. Unfortunately, these guidelines, case reports and warnings have not had a significant impact on the prescription of codeine-containing medications to children. A 2014 study published in *Pediatrics* using a large national database showed no significant decline from 2001 to 2010 in the number of prescriptions for codeine to children 3-17 years of age for cough related to acute respiratory illness. Though a small decline in prescriptions occurred after the 2006 national guidelines were released, the change was not statistically significant.

With regard to postoperative pain management, the use of codeine for the treatment of pain in children in the perioperative period after adenotonsillectomy appears to have decreased since the black box warning was issued in 2012, but due to its continued ease of availability compared to other oral opioids for children, many practitioners have continued to use codeine-containing medications for the treatment of both acute pain and cough despite the many warnings from national organizations about its potential toxicity in children.

In order to address the increasing concerns about the risks posed by the use of codeine, a number of international organizations have responded by discouraging all use of codeine in children. In 2012, the World Health Organization removed codeine from its analgesic ladder and in June 2013, the Canadian Ministry of Health recommended against the use of codeine in children less than 12 years. Most recently, in 2015 the European Medicines Agency restricted codeine use to only those aged over 12 years. In the last several years, a number of children's hospitals throughout the U.S. have completely eliminated codeine from their pharmacies and have educated their physicians not only about the dangers of codeine but about alternative oral opioids that can be used for pain management in children.

Because of its variability in metabolism, the increased risk of adverse effects in children and the lack of data showing efficacy for treating cough in children, the use of codeine or any other opioid cannot be recommended for the treatment of cough in children. Likewise, for acute and postoperative pain in children, alternative strategies should be recommended, including other opioids. Therefore, the American Academy of Pediatrics recommends that codeine be contraindicated for the treatment of both cough and pain in all children and further recommends that codeine and codeine-containing products be removed from the over-the-counter monograph for the treatment of cough in all children.

Thank you for your time and consideration. We look forward to continuing to work with the FDA to ensure the safe and effective use of medications in children.

Marijuana in Adolescents

Abena B. Knight, MD, FAAP
Hospitalist, Children's University Medical Group, Seattle Children's Hospital
Clinical Assistant Professor, Pediatrics, University of Washington School of Medicine


Abena B. Knight

Introduction:

Marijuana is a drug that has long been used both medically and recreationally. In "developed" countries it is the most commonly used illicit drug. It is currently available for medicinal purposes in 23 states and Washington, D.C. and for recreational use in four states (Washington, Oregon, Alaska, and Colorado). With the continuing movements to at a minimum decriminalize possession in small amounts and at a maximum to legalize recreational usage in multiple jurisdictions, attitudes have notably shifted towards becoming more accepting of its use. The National Institute on Drug Abuse recently reported that daily marijuana use is now more common than daily cigarette use among high school seniors.[1] Furthermore, marijuana is also being perceived as a less harmless substance following legalization. The Washington Times reported that in pre-legalization Colorado, 54% of 12-17 year olds reported great harm with regular use. Post-legalization approximately 34% reported the same.[2] With these changing trends, it is important for providers to understand marijuana's mechanism of action and potential short and long-term effects of usage so that they are better equipped to clinically manage their adolescent patients.

Physiology:

Cannabis originates from the plant *cannabis sativa*. Marijuana is one of the three main forms of cannabis and is the least potent of the three. It is derived from the dried leaves and flowers of the plant and is usually smoked or ingested. The other two forms of cannabis are hashish, which is made from the resin of the plant, and hash oil, which is a thick oil derived from hashish and is the most potent form. The active ingredient in cannabis that is responsible for its psychoactive effects is Δ-9 tetrahydrocannabinol, otherwise known as THC. The strength of the effect of the drug is determined by the amount of THC present. THC is structurally similar to anandamide, an endogenous neurochemical, and is able to stimulate cannabinoid receptors (CB1, CB2) in the brain and peripheral nervous system to a greater degree than anandamide. The "high" that is experienced is thought to be secondary to the altered activity produced by stimulation of the areas of the brain with higher concentrations of CB1 receptors. Due to its fat-solubility, marijuana easily crosses the blood-brain barrier, and its ability to accumulate in fatty tissues affords it a half-life that can range from several days to one week.[3-5]

Short and Long-term Effects:

Withdrawal

Withdrawal is a known effect of cannabis usage in up to 85% of heavy users. One in six adolescent users experience dependence. Dependence is associated with usage at an earlier age, and frequent and heavy intoxication. Users typically experience anxiety almost immediately with other symptoms peaking around 10 days post cessation. As a result of these effects, cannabis withdrawal syndrome was added to the DSM-5 in 2013. Psychologic symptoms also include depressed mood, anger and irritability, insomnia, and altered dreams. Physiologic features include gastrointestinal symptoms, headache, and altered thermoregulation.[5]

Respiratory

Howden & Naughton found in a 2011 systematic review of the research that long-term marijuana smoking is associated with an increased risk of certain respiratory complications such as increased cough, sputum production, airway inflammation, and lung hyperinflation/wheeze. Nevertheless, the effects of marijuana use on measured pulmonary function have been unclear and inconsistent. Though marijuana smoke contains increased quantities of certain known carcinogens and the lungs have greater exposure to them secondary to deeper inhalation when smoking marijuana, an increased predisposition to the development of cancer in marijuana users has neither been proven nor disproven.[5,6]

Cardiovascular

Marijuana use acutely causes tachycardia and mild elevations in blood pressure, especially when supine, leading to an increase in oxygen demand, blood carboxyhemoglobin levels, and cardiac workload. In healthy adolescents, adverse cardiac events are typically not seen.

However, studies have shown an increased risk of myocardial infarction associated temporally with usage and dose-related mortality in those patients with risk factors for cardiovascular disease.[5,7] Though many case reports examining cerebrovascular events in marijuana users have confounding factors such as coingestion of alcohol and/or cigarette smoking, a systematic appraisal published in 2015 in *Stroke* supported a causal association of cannabis with acute stroke.[8]

Gastrointestinal

Marijuana usage can result in cannabis hyperemesis syndrome, which is characterized by abdominal pain often in the epigastrium, nausea and vomiting, and diarrhea. Hot showers or baths relieve symptoms, which are typically worse in the morning. Symptoms often do not resolve until several months after cessation.[5]

Cognitive

Adults who smoked marijuana regularly as adolescents have been shown to have fewer neural fibers in certain structures of the brain that are responsible for learning, memory, and higher level integration and executive functioning. A prospective study has shown a decline in IQ of eight points measured in adulthood despite controlling for confounding factors; unfortunately, IQ was not restored in adulthood even with cessation of usage, indicating that permanent remodeling has occurred.[5,9]

Conclusion:

Marijuana acceptance and usage has become more prevalent in society, and adolescent users are part of a cohort that experiences unique and long-term effects from exposure. Providers should be actively screening their adolescent patients to determine if they use cannabis in any of its forms and to what extent. Though much of the research to date is still unclear with respect to causal relationships between marijuana usage and adverse outcomes, known effects of marijuana could theoretically contribute to an increased risk for respiratory and vascular complications in patients who are undergoing anesthesia. Furthermore, unrecognized acute intoxication and/or withdrawal may contribute to an increased perception of pain and dysphoria in the perioperative period. Being aware of these risks will allow providers to better prepare to care for these patients in acute settings.

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Study Finds Birth Tourism in the United States Delivers Complex Medical Cases in Neonatal Units

Babies born to mothers who traveled to the United States intending to give birth have significant medical, social and financial challenges

Expectant mothers traveling to the United States with the expressed purpose of giving birth before returning home are presenting more complex medical, social and financial challenges at a large metropolitan children's hospital.

Research presented at the American Academy of Pediatrics (AAP) National Conference & Exhibition in Washington, DC, examines reported "birth tourism" in the United States and how it affects neonatal intensive care unit hospitalization. Researchers documented a higher medical complexity, longer hospital stays and increased re-hospitalization among babies born to traveling families.

Lead author Michel Mikhael, MD, FAAP, an attending neonatologist at the Children's Hospital of Orange County (CHOC) and assistant professor of clinical pediatrics at the University of California at Irvine, reviewed the medical records of all admissions to CHOC's neonatal intensive care unit between February 2012 and January 2015. He identified 50 admissions for 46 infants born to mothers documented in the records as having traveled to the United States with plans to deliver and return to their home countries after giving birth.

Compared to a control group of 100 randomly selected newborns, Dr. Mikhael found no difference in birth weight, gestational age, gender or 5-minute APGAR score (a clinical tool used to evaluate neonates in delivery rooms). However, he did find significant variations in other factors, such as maternal age; mothers in the birth tourism group were an average of 4 years older than those in the control group, for example.

Other differences:

- The median length of hospital stays was doubled among the tourism group babies, with half of them requiring one or more surgical procedures (compared with 20 percent in the control group).
- 9 percent of the birth tourism babies died in the hospital, compared with 1 percent of the control group, which was not statistically significant
- The birth tourism group babies were more likely to be re-hospitalized within 30 days of discharge.

Dr. Mikhael also examined the social and financial issues related to birth tourism. Although all the babies in the birth tourism group were uninsured upon delivery, one-third were enrolled in a public health care program after families changed their residencies to the United States in response to the complex health care needs of their children. Four of the babies (10 percent) were placed up for adoptions that were not planned before delivery. These four babies had ongoing medical needs that will require health services which might not be readily available at their biological families' home countries.

"As birth tourism increases in our region, so do subsequent NICU admissions and significant social and financial burdens arising from the unanticipated medical needs of the babies," Dr. Mikhael said. Further epidemiological studies are needed to broadly understand these issues and develop tools to define financial, social and psychological impact, he said.

- See more at: https://www.aap.org/en-us/about-the-aap/aap-press-room/pages/Birth-Tourism-in-the-US-Delivers-Complex-Medical-Cases-in-Neonatal-Units.aspx#sthash.bIJY6Tql.dpuf

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(Continued from page 16)

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Senate FAA Reauthorization Bill

On March 16, 2016, the U.S. Senate Commerce, Science and Transportation Committee passed its bipartisan Federal Aviation Administration (FAA) reauthorization bill, which includes an AAP-championed provision requiring the agency to update emergency medical kits onboard commercial airplanes so they contain appropriate medications and medical equipment for children.

The advocacy efforts of AAP members like you helped ensure that this key provision was included in the Senate's FAA reauthorization bill.

The AAP issued a press statement following the bill's passage, which is available at: http://tinyurl.com/zyzhfua.

Ultrasound-guided peripheral venous and arterial cannulation in the pediatric population: Ultrasound for vascular access

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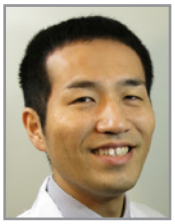
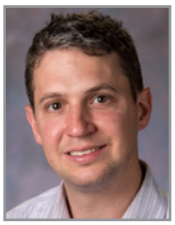

Mineto Kamata


Joseph D. Tobias


David P. Martin


Tarun Bhalla

Introduction

Attaining vascular access remains one of the most critical technical components of perioperative care. Depending on the magnitude of the surgery and the patient's condition, perioperative care may require central venous, arterial or peripheral venous cannulation. While generally straight-forward, difficulties in obtaining vascular access can delay or in rare cases, result in the need to cancel surgical procedures. Various factors including obesity, prolonged hospitalizations, multiple previous attempts, prematurity, and co-morbid conditions (shock, dehydration) can magnify problems with vascular access. In the emergency situation when routine peripheral venous access fails and access to the circulation is required urgently or emergently, the intraosseous (IO) route can be used to provide access to the circulation for the administration of life-saving medications. In non-emergent situations, ultrasound imaging can be used to facilitate vascular access in patients of all ages. While now considered the standard of care for obtaining central venous access, ultrasound is being used more commonly to facilitate peripheral venous and arterial cannulation. This practice has been facilitated by advancements in the design of ultrasound equipment with improvements in both the quality of the image and the portability of the device. The current article discusses the applications of ultrasound for placement of peripheral venous and arterial access in the pediatric population.

Peripheral venous cannulation

In the operating room, the establishment of peripheral intravenous access remains one of the most critical aspects of perioperative care in addition to airway management. However, it may at times be challenging especially in smaller or chronically ill pediatric patients. Excessive delays from the inhalational induction of anesthesia to the establishment of peripheral venous access may expose the patient to morbidity or even mortality related to gastric insufflation, vomiting with aspiration, atelectasis, hypoxemia, hypercapnia, hypothermia, and hemodynamic instability. Since IO cannulation is a simple and effective method of rapidly establishing vascular access, in the emergency scenario when the rapid administration of life-saving fluids or medications is needed, the IO route should be used.[1] However, in less urgent situations, other options may be considered.

In the patient with difficult peripheral venous access, ultrasound may be used to facilitate vascular access resulting in decreased preparation time, the ability to place large bore venous cannulas for the rapid administration of blood products, and a decrease in the need for central venous access.[2] With recent changes in practice, ultrasound machines are available in the majority of operating rooms as they have become the standard of care for central venous access or peripheral nerve blockade. Following its use for central venous access, the use of ultrasound has expanded to include peripheral venous and arterial cannulation. These techniques are being used in various clinical situations and locations including the operating room, the emergency department, and the inpatient pediatric ward. The successful use of these techniques for difficult venous cannulation has been demonstrated in both the adult and pediatric patient.[3-5]

The potential efficacy of ultrasound was demonstrated in a prospective, randomized study in 50 pediatric emergency department patients, younger than 10 years old who manifested difficult peripheral venous access, defined as the inability to obtain intravenous access after 2 unsuccessful traditional attempts or a history of difficult vascular access.[4] Patients were randomized to undergo peripheral venous catheter placement using the traditional technique (n=25) or ultrasound (n=25). Although the overall success rate was not significantly different (80% in ultrasound group versus 67% in the traditional attempt group, p=0.208), the ultrasound group required less time to achieve vascular access (6.3 versus 14.4 minutes, p=0.001) and fewer attempts (median of 2 versus 10, p<0.0001) than the traditional approach group.

Another prospective, randomized trial in 40 pediatric patients younger than 3 years old scheduled to undergo general anesthesia demonstrated similar outcomes.[5] With the use of ultrasound, the time to cannulation was shorter (median time of 63.5 versus 420.5 seconds, p<0.001), there was a decreased number of punctures (median of 1 versus 2.5, p=0.004), and an increased success rate on the first attempt (85% versus 35%, p=0.0012). There was no significant difference in overall success rate between the two groups (90% versus 85%, ultrasound versus traditional approach group, p=0.63).

Technique for peripheral venous cannulation: The above-mentioned studies parallel our clinical practice for peripheral venous cannulation as we apply ultrasound when superficial identification of appropriate veins is not possible or when traditional attempts have failed. Basic anatomical knowledge of the venous system is useful to facilitate identification of appropriate veins using ultrasound. The most commonly used sites are the saphenous vein immediately above the medical malleolus along

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Ultrasound for vascular access *(Continued from page 18)*

the medial aspect of the leg or as it crosses the medical condyle of the femur into the middle of the thigh. The deep veins of the forearm or upper arm (cephalic and basilic) can also be used (Figure 1). The antecubital area should be avoided in most cases as flexion during positioning may occlude the cannula in addition to the usual proximity of the vein to arteries and nerves. There are several options for the technique and equipment for peripheral venous cannulation. The hypoechoic vein is identified by its easy compressibility with minimal pressure from the ultrasound probe (Figure 2). A standard intravenous catheter can be used and advanced into the vein starting with the out-of-plane (transverse) view of the lumen of the vein (Figure 3). While the catheter may not be totally radio-opaque on ultrasound, displacement of the tissues and the vein can be seen as the catheter approaches and then enters the vein. Once blood return is observed in the hub of the needle, the ultrasound probe can be turned to the in-plane (longitudinal) view to watch as the cannula is advanced off the needle into the vein (Figure 4). If the target vein is small or winding, advancing the cannula with the out-of-plane technique may be recommended to keep the needle in the center of the vein. For this purpose, the catheter is advanced slightly and then the ultrasound probe moved up the vein to ensure that the tip of the catheter is still within the lumen of the vessel.

When accessing the deeper veins that are identified by ultrasound, standard gauge catheters (22, 20, and 18 gauge) that are longer than those used for standard peripheral access may be helpful (Figure 5)(BD Angiocath™, Becton Dickinson Infusion Therapy Systems Inc, Sandy, Utah). The Seldinger technique can be employed using a standard 3 French (20 gauge) or 4 French (18 gauge) central line kit. Alternatively, micropuncture kits are available which facilitate placement of either a 4 or 5 French catheter using a 21 gauge needle and 0.018" wire for vessel entry. All of these kits are commercially available from the Critical Care Division of Cook Medical (Cook Incorporated, Bloomington, IN, United States) and include an internal dilator which is removed resulting in a larger internal diameter of the catheter to facilitate fluid administration. As with the standard Seldinger technique for central venous access, the vein is entered with the needle and the wire threaded through the needle when blood return is noted. Unlike central venous access where a syringe is attached to the needle to aspirate during advancement of the needle, the needle without a syringe is advanced toward the vein during this procedure. There will be free flow of blood out the end of the needle when the vessel is entered. A third option is to use a catheter with a wire that passes through the lumen of the needle and into the vein (AccuCath®, Vascular Pathways, Naples, FL, United States). Once the vein is entered and there is blood return via flashback into the catheter shaft, the wire which has a J-tip at the end to avoid damage to the vessel is advanced into the vein (Figure 6). The catheter is then threated over the wire into the vessel.

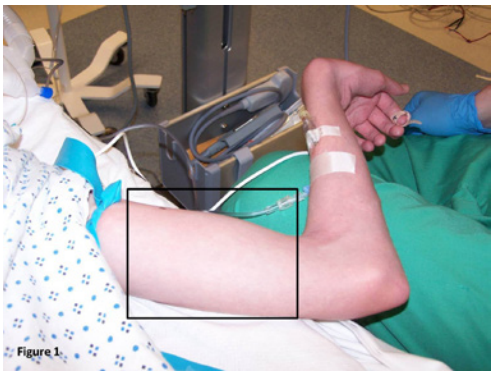

Fig. 1 Upper extremity with tourniquet applied for ultrasound–guided peripheral vascular access. The region enclosed in the black box is the suggested starting point for ultrasound scanning to identify deep venous structures in the upper aspect of the arm.

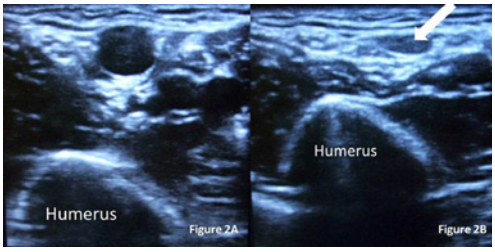

Fig. 2 Ultrasound image of a deep venous blood vessel in the upper forearm. The deep hypoechoic structure is the humerus (left – figure 2A). The vein (arrow) is easily compressible with minimal pressure from the ultrasound probe (right – figure 2B).

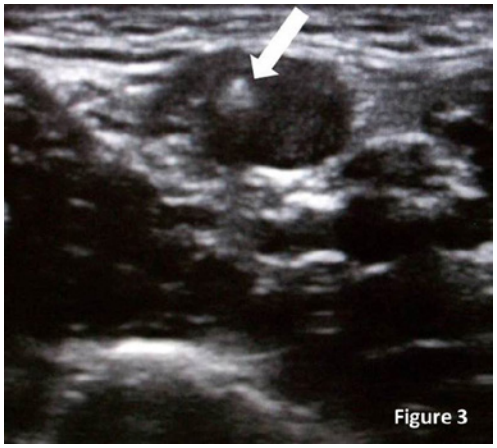

Fig. 3 Ultrasound image of an out-of-plane technique with visualization of the needle and cannula (arrow) entering the vessel.

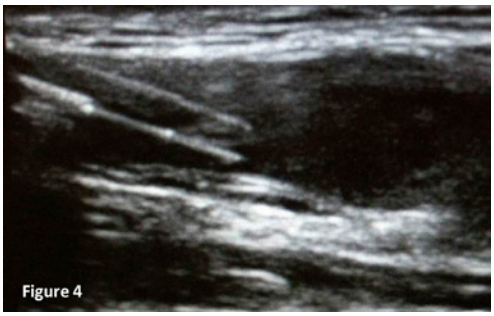

Fig. 4 Ultrasound image with the transducer turned for an in-plane technique. The catheter can be observed as it is threaded off the needle into the vessel.

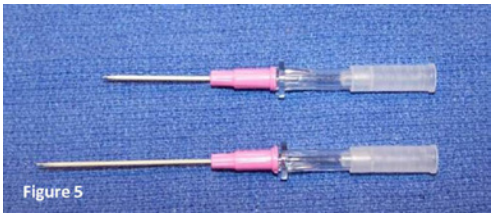

Fig. 5 Non-safety, 18 gauge catheter (BD Angiocath™, Becton Dickinson Infusion Therapy Systems Inc, Sandy, Utah) for ultrasound-guided peripheral venous access. These catheters are available in various gauges and lengths to facilitate cannulation of deeper venous structures (30 mm length above and 48 mm length below).

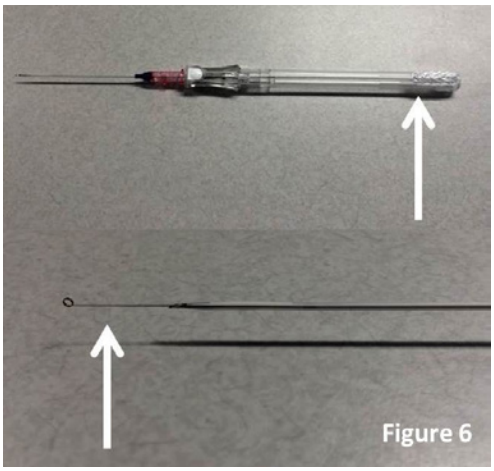

Fig. 6 Specialized catheter with a wire that passes through the lumen of the needle and into the vessel (AccuCath®, Vascular Pathways, Naples, FL, United States). Once the vessel is entered and there is reflux of blood into the shaft of the catheter, the tab at the end of the catheter (arrow) is advanced and the wire enters the vessel. The catheter is then threaded over the wire into the vessel.

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Ultrasound for vascular access *(Continued from page 19)*

Arterial cannula placement

Although the technique of arterial cannula placement varies among providers, in most cases, this is performed by using anatomical knowledge and palpation of the pulse with blind insertion of the cannula. The other techniques include the Seldinger technique with a separate needle, wire and catheter, or a specialized cannula with a wire within the lumen of the needle and catheter assembly (Arrow Arterial Catheterization Kit, Teleflex Corporation, Morrisville, NC, United States). As with peripheral venous access, the use of real-time ultrasound may also have a role in facilitating arterial cannulation.

Although some of the prospective studies in adults have demonstrated no differences in insertion times, complication rates, and number of attempts when comparing ultrasound and traditional direct palpation, in specific clinical situation (altered anatomy, low perfusion states, non-pulsatile blood flow, systemic anticoagulation, or when standard placement techniques resulted in failure), we have found that ultrasound may facilitate the procedure.[6,7]

The initial reports regarding the use of ultrasound for radial atrial cannulation have come mainly from the adult literature.[8,9] In the pediatric population, preliminary data regarding peripheral arterial cannulation using ultrasound have suggested a shorter time to successful cannulation, fewer attempts, and a higher success rate.[10-13] Schwemmer et al. prospectively randomized 30 children (age: 40 ± 33 months) undergoing radial artery cannulation to ultrasound or the traditional palpation method.[10] With ultrasound, there was a significantly higher success rate (100% versus 80%) and fewer attempts (average of 1.3 versus 2.3).[10] Ishii et al. also reported a higher success rate (76.3% versus 35.6%) of the first attempt, fewer attempts (median and IQR: 1 [1–1] vs 2 [1–2]), and a lower incidence of hematoma formation with ultrasound in their prospective study of 59 patients with a mean age of 18.4 months (range 7 – 28 months).[11] A meta-analysis that included seven studies with a total 546 adult and pediatric patients demonstrated an increased first-attempt success rate of radial artery cannulation (relative risk, 1.55; 95% CI, 1.02 – 2.35).[12] The first attempt success rate was even higher in small children and infants (relative risk, 1.94; 95% CI, 1.31 – 2.88).

Although the learning curve and the number of successful cannulations a provider should experience are not clear, ultrasound may be particularly useful for patients with bleeding issues or those receiving anticoagulation as it may decrease the risk of hematoma formation at the puncture of the artery. We have also found the technique to be helpful for patients with decreased peripheral pulses or those with contractures from cerebral palsy and other neurologic disorders, which limits standard positioning or distorts the underlying anatomy.

Technique for peripheral arterial cannulation with ultrasound: Either an out-of-plane or in-plane technique can be used. While the in-plane technique has been suggested to have a higher success rate with decreased potential for damage to the posterior wall in adults, our practice generally states with an out-of-plane technique to identify the artery and visualize the entry of the needle into the artery.[14] Following this, the probe can be turned in-plane to allow for real-time observation of the cannula as it is threaded off the needle and into the lumen of the artery. As the radial artery in neonates or young infants is very shallow, the in-plane technique may not be suitable to identify the puncture site of the artery. In that situation, an out-of-plane technique can be used as the needle is advanced. Once the needle is identified in the artery, both the probe and needle are advanced as the needle is kept in the center of the artery. Since the puncture on the artery in neonates and young infants is indicated by a brisk flashback of blood into the hub, we would recommend using a 24 gauge catheter that has been flushed with heparinized or normal saline to optimize the flow of blood. Alternatively, the use of a Seldinger technique whereby the artery is puncture with a needle followed by guide wire placement may increase the percentage of successful cannulations especially in difficult clinical scenarios. For this technique, we use either a 3 French cannula with a 22 gauge needle and 0.018" wire in older patients (more than 15-20 kilograms) or a 2.5 French cannula with a 24 gauge needle and a 0.015" wire in neonates and infants.

Summary

There are several clinical benefits that have been demonstrated with the use of ultrasound-guided techniques for vascular access. While ultrasound-guided central venous access is now considered the standard of care, these techniques are being used more commonly to facilitate peripheral venous and arterial cannulation. Given the advantage of ultrasound-guided peripheral venous and arterial access especially when superficial identification of appropriate veins is not possible or when traditional attempts have failed, we would suggest teaching these techniques as a routine component of fellowship training in pediatric anesthesiology. As with any new technology or technique, practice is necessary to become familiar with the use of ultrasound including knowledge regarding the machine, its working parameters, and how to successfully cannulate deep vascular structures. The likelihood of success can also be increased by having the appropriate machine and the correct equipment (needles, wires, dilators, and cannula) for vascular access.

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The Combined Pediatric and Anesthesia Residency: A Personal Perspective

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As the first graduate from a Combined Pediatrics and Anesthesia Residency Program, I am often approached by medical students, anesthesiologists and pediatricians to explain the benefits and logistics of the combined training. In this brief answer, I hope to explain my own decision to pursue dual training, while also identifying the change it brings to pediatrics and its subspecialties.

In 2010, two Combined Pediatrics and Anesthesiology Residency Programs were first approved at the University of California, Irvine and at Boston Children's Hospital (BCH)/Brigham and Women's Hospital (BWH). At this time, I was in my intern year in pediatrics at BCH aspiring to become a pediatric intensivist. With the help of my program director, Dr. Ted Sectish, and Dr. Mark Rockoff, who was a driving force to create the combined programs, I successfully entered the combined program as the first such resident nationally. Since 2010, seven combined programs have been formed and they are attracting increasing interest and enthusiasm amongst graduating medical students.

My decision to enter the combined program stemmed from a desire to obtain diverse clinical skills that was largely influenced by my role models at Boston Children's. While formal combined training programs are a new creation, there are over 30 members of the Anesthesia Department at BCH who have completed dual training in a traditional sequential fashion. Watching these individuals shape pediatric critical care, pain medicine, cardiac anesthesia, and the perioperative home, I recognized that the dual training afforded these physicians the skills necessary to not only to excel in, but also change their respective fields.

After five years of training, I graduated from the BCH/BWH combined program board eligible in pediatrics and anesthesia. The program was challenging. I completed every residency requirement put forth by the American Board of Pediatrics as well as the American Board of Anesthesiology in an expedited fashion (two and a half years of pediatrics training and two and half years of anesthesia training). Upon graduating, I started a one-year Pediatric Anesthesia Fellowship at BCH. Over the course of my training, my career goals changed, and at the completion of my fellowship in July, I will be practicing as a pediatric anesthesiologist in Maine.

Most commonly I am asked if the training was worth it. My answer is a resounding yes, though the program is not for everyone. The clinical skills and knowledge of pediatric medicine are exceptionally valuable in the operating room and outside. Understanding not only the operative course for a patient, but their entire journey through the hospital and recovery creates empathy and compassion for families during some of the most stressful periods of their lives. I am uniquely positioned to help families navigate the disparate worlds of pediatric medicine and pediatric surgery. With this comprehensive perspective, combined graduates develop the skills to excel in the operating rooms, intensive care units, and wards, but more importantly develop insight into the future of the pediatric surgical home and how to improve communication between services.

Despite these benefits, one must be realistic about the program's limitations. The expedited training limits elective time and makes pursuing research and longitudinal academic projects challenging, if not altogether impossible. Our clinical skills are often underutilized on the wards and in the ICU, and a specific educational curriculum addressing perioperative competencies and post-operative management is, as of now, lacking. Traditional pediatric fellowship programs also fail to account for the clinical skills obtained with anesthesia training. For example, traditional 3-year PICU fellowships seem outdated and unappealing to applicants when in contrast, adult anesthesia fellowships allow trainees to become board certified in critical care in just one year.


Jonathan Meserve

The role of the combined graduate in the pediatric medical and surgical home has yet to be determined, but I am confident that my training has left me uniquely equipped to tackle some of the looming problems. While our numbers are currently small, there is a rapidly growing interest in the educational opportunities offered by combined training. I am amazed by the diversity of my colleagues, their ideas and interests, and the caliber of the combined applicants. The question remains how the ACGME will continue to change the educational landscape to streamline the entry of these graduates into the fields of critical care, neonatology, pain medicine, pediatric anesthesia, and cardiac anesthesia. I have no doubt that once established in these fields, the combined graduates will change both pediatrics and anesthesia significantly and for the better.

Ultrasound for vascular access *(Continued from page 20)*

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Should all babies born at 22 weeks of gestation be resuscitated?

by John D Lantos, MD, FAAP, Children's Mercy Bioethics Center

A recent New England Journal of Medicine has a paper on the differences in rates of active treatment of babies by their assigned gestational age at birth. (Rysavy MA, et al. Between-Hospital Variation in Treatment and Outcomes in Extremely Preterm Infants. The New England journal of medicine. 2015;372(19):1801-11.) The study was done in hospitals that are part of the NICHD Neonatal Research Network, so they are all tertiary care centers. Among these elite, high-tech hospitals, there was pretty dramatic variation in the approach to babies born at 22 weeks of gestation. In four hospitals, no babies born at 22 weeks were resuscitated or admitted to the NICU. In six hospitals, all of the babies born at 22 weeks were resuscitated and admitted to the NICU. The other hospitals resuscitated some but not others. Overall, 22% of babies born at 22 weeks were resuscitated. Among the babies born at 22 weeks, 5.1% survived and 3.4% survived without severe impairment. Of the 22 week babies who received active treatment, 23.1% survived and 15.4% of those did not have severe impairment. (To frame this another way, two thirds (3.4/5.1) of the babies who survived were not severely impaired.)

The study has some interesting implications. First, it shows tremendous practice variation. At some centers, the variation seems to result from individualized decision making. That is, some babies are resuscitated and some are not. But much of the variation results from institutional policies. At those centers, it is all or none. The decisions are not, apparently, left up to doctors or parents (except in the sense that it is probably the doctors who make the policies.)

Another interesting implication is that many babies who might have survived are allowed to die. There were 357 babies born at 22 weeks. Of those, 278 did not get active treatment. Had they been treated, and had their survival rate been the same as that of the babies who were treated, then another 45 babies would have survived, 30 of them without severe impairment.

A third important finding is that the prevalence of severe impairment among survivors is better at each gestational age. But not remarkably better. For babies born at 23 weeks, 33% of the babies who received active treatment survived, and 25% (or 75%) did not have severe impairment. For those born at 24 weeks, 81% of survivors were relatively unscathed. Because more 24 weekers were resuscitated, however, there were more survivors with severe impairments in that group (217) than in the babies born at 22 (118) or 23 (217) weeks.

The official policy of the American Academy of Pediatrics, based on recommendations made by the President's Commission on Bioethics nearly 4 decades ago, is to encourage shared decision making for babies whose outcomes are considered to be "ambiguous or uncertain." The data suggest that there is disagreement in the professional community about whether or not outcomes should be considered ambiguous at 22 or 23 weeks of gestation. Overall, the trend has clearly been toward active treatment of smaller and smaller babies with improved outcomes at every gestational age. Based on these data, it seems likely that this trend will continue. Twenty-two weeks seems to be the clear threshold of viability.

Online Pediatric Bioethics Certificate Program: Engaging Pediatric Health Professionals

Bioethical decision-making in pediatrics diverges from similar decision in other medical domains because the young child is not an autonomous decision-maker. Thus the balance between autonomy and beneficence is fundamentally different in pediatrics than in adult medicine. Deciding what might constitute "harm" and where to draw the line between appropriate and inappropriate deference to a child's preferences and/or parental authority are the fundamental dilemmas of pediatric bioethics.

While ethical dilemmas that reflect these fundamental issues are common, many pediatric health care training programs do not delve into the issues or offer specific training on resolving these dilemmas. To meet this need, the Children's Mercy Bioethics Center (CMBC) in Kansas City, Missouri, created an online certificate program specifically dedicated to serving practicing, experienced pediatric health professionals.

The CMBC Certificate Program in Pediatric Bioethics is a single, intensive, and blended learning program lasting nine months.

The Fall 2015 AAP Section on Bioethics Newsletter featured a nice article on the Certificate Program. If you're interested in learning more, you can read the full article at:
http://downloads.aap.org/DOSP/BioethicsCertProgram.pdf

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Advance Directives, Autonomy, and the Elusive Authentic Self

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Chris Feudtner

People were upset. The young man in the ICU bed, intubated, had muscular dystrophy. He had been stable on his home regimen of nighttime BiPAP until last night, when he developed fever and mounting respiratory distress. His parents drove him to the emergency department of their local hospital. Confronting impending respiratory failure, he was intubated and then transported to receive ICU-level care.

Gathered outside the closed door to his room, one of the care providers spoke up. "I was there when we did advance care planning during his last admission, and he said he did not want a breathing tube or to be connected to a machine. We even wrote that down in his advance care document. How could this have happened?"

How, indeed? How — when an adult with adequate decision-making capacity has made decisions about the care that they would want to receive and not receive — how can this advance planning seemingly go unheeded? In my experience, this basic scenario — where a patient receives an intervention that seems to have been decided against in previous advance care planning — happens frequently enough that it is worth exploring the ways in which this can happen.

One way this can happens — rarely — is an egregious disregard of the advance care plan by a health care provider or team. The plan, although written down quite clearly, and backed up with supporting authorizing documents (such as official out-of-hospital care orders, like the POLST form), is overriden by providers who simply do not want to follow that course of action. Their reasons for doing so are up for debate: they may be scared, or practicing CYA medical care, or simply not comprehending or agreeing with not providing potentially life-prolonging interventions. Direct conversation with those involved is the only way to figure out what the thought process is, and potentially alter it for future cases.

More often than this rare scenario, though, are cases where the plan is not clearly documented, or supporting documents are missing, or the health care team is simply not aware that an advance care plan exists. When these events occur, we should work to identify what step in the process of advance care planning documentation broke down or could be improved upon, including the clarity, location, and "transportability" of the documents.

The most common scenario, though, is that patients can express a countervailing command or statement in the critical moment of decision as their physiological stability declines, running against the dictates of the advance care plan: "Don't let me die — save me." Or when asked, "Do you want us to put a breathing tube in you?" they say, "Yes." Importantly, in the large majority of cases that I recall, the patient subsequently states, when the crisis has abated, that they are grateful to have received the intervention, and that they would want exactly the same thing done again if ever they were in the same situation. And, also importantly and interestingly, when asked about their previous advance care plan and the preferences about care that were captured in that document, they say basically that that they still have those preferences, but that this specific situation was different.

Should we be surprised by this turn of events? Should we question whether these patients have sufficient decision making capacity, given the seeming inconsistency of their preferences, or explore whether they were somehow pressured into a change of mind? Should we chastise ourselves or other members of the health care team for failing to shield these patients from the important decisions that were about to be made on their behalf, believing that the advance care plan should have been all that was required to make the treatment decisions?

The answer to the first of these questions is no, we should not be surprised. People often simply do not have stable preferences, as much as we might wish otherwise. The literature of behavioral economics recounts innumerable well-controlled laboratory studies demonstrating that people change their preferences and the choices that they make when factors external to the decision itself change. If so-called framing and elicitation effects alter preferences in relatively calm laboratory situations, imagine what likely happens regarding preferences for care expressed in advance care planning, which are typically based on as-yet-never-experienced situations, providing a radically different context of sorting through one's preferences compared to confronting a living, breathing crisis.

I would answer no to the question regarding decision-making capacity, albeit with some qualifications. If having unstable preferences alone were proof that we lacked sufficient capacity to make decisions, then we would all be in the same incapacitated boat. Insufficient capacity would be a concern if the patient could not offer any sense of why they made the decision that they did. I write "sense" here, since I do not think we should expect or require people to provide cogent or eloquent justifications for their decisions, but they should be able to offer a "feel" for why they choose as they did, such as "I was scared and did not want to die".

I would also answer no to the question regarding whether the advance care plan should be relied upon to the point of not engaging the patient with real-time decision making. The issue here lies at the very heart of what advance care planning is striving to do, namely to enable people to exercise their autonomy and have care guided by their preferences, not the preferences of others. But, given that preferences can change, and often do in the face of a health crisis, which preferences are to be honored? We often start talking about "deepest" preferences, or preferences of the "authentic" self. But in my mind these are elusive notions, and while intuitively appealing, require an "unearthing" process that can introduce all sorts of biases. At the very least, any notion of more "core" preferences needs to be balanced by the person directly in front of me who is saying, basically, respect me and my preferences now!

In a scenario related to the one of a patient expressing seemly conflicting or ambivalent preferences, one or both of the patient's parents, or some other family member, may argue at the moment of medical decision making that this is not the situation that the advance care plan intended to address, and therefore the decision should not be guided by that document, but instead by their knowledge of what the patient would want done. Certainly, sometimes family members simply either do not agree with or cannot accept the advance care plan, and they just want to override the preset decision. But what I encounter more often is the family earnestly claiming that they know the patient's preferences and want to provide well-informed substituted judgment. If patients themselves sometimes express preferences at the moment of medical choice that are seemingly different than their advance care plans, are parents or family members necessarily wrong to argue similarly?

In the end, to be human is to be ambivalent. Not always, but often. So while I am a big fan of advance care planning (for a multitude of reasons that I'm not addressing here), I view even the best of these well-intended plans about the future with cautious and flexible skepticism, tolerant of the twists and turns in how we choose for ourselves, seeking to affirm and respect our elusive, authentic, ambivalent selves.

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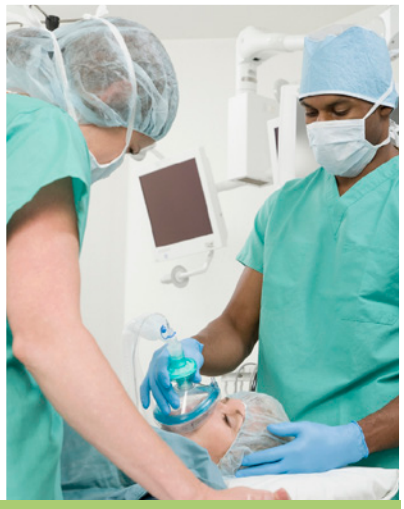

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