Chairperson’s Report
Raeford Brown, MD, FAAP

One of my goals for the Section on Anesthesiology and Pain Medicine (SOA) during my time as Chair has been to communicate to all of our colleagues, within and outside the practice of pediatric medicine, the expertise and commitment of the AAP and the SOA. We have within our midst many recognized authorities in pediatric anesthesiology, pediatric pain medicine, and critical care. Historically, the Section has used its expertise to focus attention on elevating the standards of perioperative care for infants, the provision of safe sedation for every child, and the safe and effective management of acute and chronic pain in pediatric patients. Recently, we have extended our message to the protection of all children including the plight of immigrants, and the horrors of gun violence, in line with the strong message from the Academy. That we have extended our interests and our work to the broader aspects of child safety reflects our maturity as an organization. I view with some pride the work of many in our midst for the good of all children. The Academy owes its success to the substantial work of the members of sections such as ours. The Section owes its success to our members and to our affiliation with colleagues in the AAP; together we have produced a strong message spoken from our hearts.

Section on Anesthesiology and Pain Medicine – Joint Meeting with SPA in Houston

As a co-sponsor of the joint spring meeting, the Section will be in the limelight from first to last. The Society for Pediatric Pain Medicine (SPPM) meeting will start Thursday with a discussion of the problems associated with opioids in children and adolescents. I will kick off with a brief review of the science that suggests an increased sensitivity of adolescents to opioid use and abuse. During the general session on Friday we will present the AAP Advocacy Lecture on Neonatal Abstinence Syndrome and will also present the Robert M. Smith Award to Dr. Nancy Glass. For information on all of the AAP sponsored sessions at the joint meeting, see page 3.

The SOA @ the AAP’s National Conference and Exhibition – October 2019 in New Orleans

The SOA has the distinct honor this fall to host the AAP’s Pediatrics-for-the-21st Century (Peds-21) program at the 2019 National Conference and Exhibition (NCE), which will take place in October in New Orleans. Peds-21 is an annual half-day educational program at the National Conference designed to address issues that are actively impacting the practice of pediatrics and pediatric care. The 2019 program will occur on Friday, October 25, and is titled: Opioids Through the Ages – Caring for Children and Families in the Wake of the Opioid Crisis. For the tentative Peds-21 schedule and for detailed information about the Call for Abstracts, which is now open, see page 6. In addition to Peds-21, the SOA will co-sponsor two other programs at the 2019 NCE, one with the Section on Hospital Medicine titled “Pediatric Pain Management for Hospitalists: A Life Course Perspective” and one with the Section on Integrative Medicine and the Section on International Child Health titled “Integrative Approaches to Pain: Non-pharmacologic, non-invasive options amid the opioid crisis.” Detailed information about these programs is also available on page 6 of this newsletter.

© American Academy of Pediatrics Section on Anesthesiology and Pain Medicine 2019
(Continued from page 1)

Moving Towards Pediatric Pain Medicine as a Recognized Subspecialty

The development of Pediatric Pain Medicine (PPM) as a recognized subspecialty continues apace. We are much further along in the process than we were two years ago. In some respects, the progress has been astounding.

We have recognized the multidisciplinary nature of PPM and the manifest differences from the treatment of pain in adults. As a professional organization, the SPPM has been involved in discussions with other similar organizations (AAP, APS, IASP) and has made great strides in beginning to integrate all of our colleagues into a subspecialty that, in ten years, will be a mature organization. The work that SPPM has done in the last year to offer membership to non-physicians with an interest in PPM will be invaluable to the future growth of the specialty. Extending a hand to other groups, often against a prevailing wind, has not been easy, but it assures ongoing progress. PPM is not a field that will be well served by exclusion. It will require our best efforts to continue the work of inclusion – physicians, nurses, psychologists, physical therapists – into a single dynamic specialty. We must take the unique knowledge and skill sets from each of these groups and others to produce a sophisticated and efficient work force recognized for excellence in the care of complex pediatric disease processes. The leadership of the SPPM are to be congratulated for the very positive role that they have played.

In conjunction with the SPPM and the AAP, and under the leadership of Dr. Bill Zempsky from the Connecticut Children’s Hospital, a group has been formed to explore the future progression of PPM. Dr. Zempsky, a pediatric emergency medicine physician, has a long and very successful history in treating pain in children and in investigating unique approaches to pain management. His work has been marked by multidisciplinary approaches to pain management, and this makes him an excellent choice to lead the group. As I have reported in the past, principals of the American Board of Anesthesiology (ABA) and the American Board of Pediatrics (ABP) are working with this group. At some point, the work of the group would be expected to consider an approach to ACGME recognition for PPM and perhaps a structure for Board certification – either through the ABA, the ABP or both. The group has obtained funding from the Mayday Foundation to offset the initial costs of this work; another singular success.

The Opioid Epidemic

The work of reducing the risk of harms from opioids in children and adolescents continues. We have worked for the last four years to prevent the further expansion of the number of opioid formulations (currently there are 896 approved formulations listed in the Orange Book of Drug Approval). Industry continues to apply pressure to market increasingly more potent, divertible, and addictive formulations. The continued mortality reports and continued prescribing behavior that is in excess of historic norms is disturbing; In Kentucky, we continue to bury children because of opioid poisoning. For those of us that advocate for children, the continued presence of opioids in the environment, whether prescribed to adolescents or not has risk harm from diversion. Work in this area will continue within the AAP with a focus on provider and public education; the SOA will play an important role with the upcoming publication of policy statements focused on the treatment of acute and chronic pain in children. Please stay tuned!

Call for 2020 Robert M. Smith Award Nominees

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.

At this time, the AAP Section on Anesthesiology and Pain Medicine Nominations Committee is ready to review nominations for the 2020 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/Y6QYZ2L. 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 May 15, 2019.

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.

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
2017: Peter Davis
2018: Robert Friesen
2019: Nancy L. Glass

Robert M. Smith Award Winners

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
2017: Peter Davis
2018: Robert Friesen
2019: Nancy L. Glass
AAP –Sponsored Events and Awards at the 2019 Winter Meeting
March 15-17, 2019 – Houston, Texas

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 March 14-17 in Houston. The mobile meeting guide can be viewed at: http://www3.pedsanesthesia.org/meetings/2019winter/guide/

The AAP proudly sponsors a number of events and awards at the annual Winter Meeting. Please read on for information about the 2019 AAP Ask the Experts Panel, AAP Advocacy Lecture, John J. Downes Resident Research Award winners, and the esteemed 2019 Robert M. Smith Award winner.

AAP Ask the Experts Panel
The Pediatric Victims of Gun Violence: Health Effects, Injury Prevention, and Advocacy Efforts
Saturday, March 16, 2019
1:30 – 2:30 pm

Moderator:
Mary F. Landrigan-Ossar, MD, PhD
Children’s Hospital Boston
Boston, MA

Panelists:
Mary L. Brandt, MD, FAAP,
Bindi J. Naik-Mathuria, MD, MPH, FAAP
Texas Children’s Hospital
Houston, Texas

Upon completion of this session, the participant will be able to:
• Discuss the epidemiology of injury for pediatric patients with respect to firearms
• Discuss methods by which physicians can advocate for research into injury prevention

AAP Advocacy Lecture
Neonatal Abstinence Syndrome: New Insights into Epidemiology, Assessment, and Treatment
Friday, March 15, 2019
11:15am – 12:00 pm

Stephen W. Patrick, MD, MPH, MS, FAAP
Assistant Professor of Pediatrics and Health Policy
Vanderbilt University School of Medicine
Attending Neonatologist
Monroe Carell Jr. Children’s Hospital at Vanderbilt

Stephen W. Patrick

Upon completion of this session, the participant will be able to:
• Discuss factors which place infants at increased risk of neonatal abstinence syndrome (NAS).
• Describe novel approaches to the treatment of NAS.

2019 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
Senthil Packiasabapathy, MBBS, MD,
Riley Hospital for Children
Is postoperative day 1 discharge with excellent outcomes possible following pediatric posterior spine fusion?

Senthil Packiasabapathy

2nd Place
Tiffany Kim, MD, Loma Linda University
A Comparison of Virtual Reality Headset and Touch Screen Tablet for Minimizing Anxiety during Separation from Caregiver and Induction of Anesthesia in Children: a Non-Inferiority Randomized Trial

Tiffany Kim

(Continued on page 4)
The oral abstract presentations and awards will be given on Saturday, March 16, from 10:15 to 11:00am.

2019 AAP Robert M. Smith Award Winner

Nancy L. Glass, MD MBA, FAAP
Professor, Pediatrics and Anesthesiology
Baylor College of Medicine
Houston, Texas

The presentation of the 2019 AAP Robert M. Smith Award will take place on Friday, March 15, from 12:00 to 12:15pm, immediately following the AAP Advocacy Lecture.

A Tribute to Dr. Nancy Glass for the Robert M. Smith Award

By Arvind Chandrakantan

My first introduction to Nancy was when I began working at Texas Children’s Hospital (TCH) two years ago. I showed up for a regular clinical day and was in and out of the office. Nancy's office was right across from mine, and she was there when I showed up - at 6:30am on a non-clinical day - and was still there at 8:00pm when I left. I asked her about it, and she told me something I will never forget, "Your non-clinical time is precious; make the most of it. When it goes away you never know when your next one will come." To say that Nancy has made excellent use of her non-clinical time would be an understatement. Nancy Glass has had an absolutely magnificent career as a clinician-educator, and I am honored to have the opportunity to share some details about her life’s work.

She received her undergraduate degree in Medieval German Literature from Rice University, and her MD from the Baylor College of Medicine (BCM). Her postgraduate training was at Baylor (Pediatrics), Children’s National Medical Center (Pediatric Critical Care Medicine), and University of Texas Houston (Anesthesiology). She then spent 4.5 years at UT Houston practicing in Anesthesiology and Critical Care before coming with Burt Dunbar to Texas Children’s Hospital to form the Pediatric Anesthesiology Department. This is where she would continue for the next 27 years, before becoming more and more deeply involved with Pediatric Palliative Care; she eventually became board certified in Hospice and Palliative Care in 2012.

Deciding that her education was still incomplete (or that she hadn’t paid sufficient tuition to Rice), Nancy pursued her MBA at Rice University’s Jones Graduate School of Management (completed in 2002) and received the Jones Citizenship Award. Currently, she is pursuing a Masters degree in Liberal Studies, also at Rice, which she hopes to complete in 2019.

Nancy’s professional accomplishments are numerous. She served as the President for Society of Pediatric Anesthesia from 2012 to 2014. She also served as an Oral Board examiner for the American Board of Anesthesiology for 22 years, from 1995 to 2007. In addition her Palliative Care board certification noted above, she is board certified in Pediatrics, Anesthesiology, and Pediatric Critical Care Medicine. She was the program director for the Pediatric Anesthesia fellowship at TCH from 2004 to 2010 and also led Anesthesia education. In addition, she has received numerous prestigious awards from the Baylor College of Medicine including the Fulbright & Jaworski Faculty Excellence Awards for Teaching and Evaluation and was inducted into the Baylor College of Medicine Academy of Distinguished Educators. She was also recently awarded the Baylor College of Medicine Master Clinician Award for Excellence in Patient Care, the highest clinical award at BCM.

In 2012, Nancy took on the role of physician for the pediatric hospice team at Houston Hospice, caring for both adults and children at the end of life, both inpatients and outpatients. She describes this as “A privilege, indeed, the purest form of medicine, the relief of suffering…..” Over the last 2 years, Nancy has become more and more involved with Palliative Care and now works in the Palliative Care Section with Dr. Tammy Kang. She has also led annual medical missions to Antigua and Guatemala with the Houston based group, Faith in Practice, since 2012.

As for her personal life, Nancy has been married for 41 years to John Belmont, MD, PhD, who is a pediatrician-clinical geneticist-scientist. She describes him as the person “from whom I learned so much about how to deliver bad news with compassion, the kindest person I know, and my partner in adventures of all sorts!” Her daughter, Andrea, works in a law office in downtown Houston, and Nancy describes her as the “most generous person I know.”

Nancy’s passions are multi-faceted and extend well beyond clinical medicine. She loves music, especially chamber music and opera and supports several young local musicians. She also engages in bird-watching and photography and attributes her knitting hobby to Lynne Maxwell. She is a self-described #TractorQueen and loves being out in the country clearing walking trails on her big orange Kubota tractor!

These last lines will not be lost on anyone who knows Nancy…She is full of zest, energy, and enthusiasm for patients, trainees, and colleagues alike. Her continued passion for clinical medicine is the embodiment of the Robert Smith Award. Nancy has served as a mentor and role model for many of us in the field and has been a trailblazer- with and without her Kubota tractor!
CATCH UP ON YOUR READING

Seen in PEDIATRICS, Hospital Pediatrics, Pediatrics in Review, AAP Grand Rounds, and NeoReviews...

On Pain Management...
Patient- and Nurse-Controlled Analgesia: 22-Year Experience in a Pediatric Hospital – February 2019
Efficacy and Safety of EMLA Cream for Pain Control Due to Venipuncture in Infants: A Meta-analysis – January 2019
A New Mobile Application to Reduce Anxiety in Pediatric Patients Before Bone Marrow Aspiration Procedures – October 2018

On the Opioid Epidemic...
Nonmedical Prescription Opioid Use by Parents and Adolescents in the US – March 2019
Public Health Surveillance of Prenatal Opioid Exposure in Mothers and Infants – March 2019
Novel Drugs of Abuse – February 2019
Youth and the Opioid Epidemic – February 2019
Fetal Opioid Exposure and Smaller Birth Head Circumference: Cause for Concern? – January 2019
Neonatal Head Circumference in Newborns With Neonatal Abstinence Syndrome – January 2019

Positive Predictive Value of Administrative Data for Neonatal Abstinence Syndrome – January 2019
Children in the Opioid Epidemic: Addressing the Next Generation’s Public Health Crisis – January 2019

On Marijuana/Cannabis...
Ethical Implications for Providers Regarding Cannabis Use in Children With Autism Spectrum Disorders – February 2019
Medical Marijuana for Minors May Be Considered Child Abuse – October 2018

On Palliative Care...
Outcome Dimensions in Pediatric Palliative Care – January 2019
When Parents Have Misunderstandings About the Risks and Benefits of Palliative Surgery – December 2018
When Parents Have Misunderstandings About the Risks and Benefits of Palliative Surgery – December 2018
Titrating Clinician Directiveness in Serious Pediatric Illness – November 2018

On Medical Decision Making...
Principles of Pediatric Patient Safety: Reducing Harm Due to Medical Care – February 2019
Optimizing Drug-Drug Interaction Alerts Using a Multidimensional Approach – February 2019
Off-label Medication Prescribing Patterns in Pediatrics: An Update – February 2019
Pediatric Readiness in the Emergency Department – November 2018
Shared Decision-making in Pediatric Practice: A Broad View – November 2018
Cross-cultural Interactions and Shared Decision-making – November 2018
A 4-Step Framework for Shared Decision-making in Pediatrics – November 2018
The Natural Order of Time: The Power of Statistical Process Control in Quality Improvement Reporting – October 2018

On Perioperative Care...
Predicting Postoperative Physiologic Decline After Surgery – March 2019
The Link Between School Attendance and Good Health – February 2019
Sleep-Disordered Breathing in Children – January 2019
Clinical Practice Guideline for the Management of Infantile Hemangiomas – January 2019
Neonatal Intubation Practice and Outcomes: An International Registry Study – January 2019
The Incidence and Nature of Allergic and Anaphylactic Reactions During Pediatric Procedural Sedation: A Report From the Pediatric Sedation Research Consortium – January 2019
Clinical Practice Guideline: Maintenance Intravenous Fluids in Children – December 2018
The Role of Pediatricians in Global Health – December 2018
Ultrasound Guidance for Pediatric Central Venous Catheterization: A Meta-analysis – November 2018
Orthopedic and Surgical Management of the Patient With Duchenne Muscular Dystrophy – October 2018
Respiratory Management of the Patient With Duchenne Muscular Dystrophy – October 2018
Better Pairing Propofol Volume With Procedural Needs: A Propofol Waste Reduction Quality Improvement Project – October 2018
Anesthetic Exposure and Neurodevelopmental Outcomes in the Neonate – October 2018
Don’t Eat Now: Deciding When to Sedate in the Pediatric Emergency Department – October 2018
Care Standardization Reduces Blood Donor Exposures and Transfusion in Complex Cranial Vault Reconstruction – October 2018
Improving Outcomes in a Complex Health Care System: Lessons From Complex Cranial Vault Reconstruction – October 2018
Pediatrics for the 21st Century
Opioids Through the Ages: Caring for Children & Families in the Wake of the Opioid Crisis

This inspiring, thought-provoking program will examine the effects of the Opioid Crisis on child and adolescent health and will address the pressing question of what pediatricians and other medical professionals can do to care for children and families who have been impacted by this public health emergency.

CALL FOR ABSTRACTS
The Call for Abstracts for the Peds-21 poster session is NOW OPEN! To view the call for abstracts and to submit, Click Here. Abstracts submitted for the 2019 Peds-21 program should be related to pediatric pain management or issues related to the opioid crisis. Topics that will be considered include but are not limited to: Neonatal Abstinence Syndrome; Substance Use – Screening, Prevention, & Treatment; Poisoning – Prevention & Treatment; Management of Acute Pain in Infants, Children, and Adolescents; Management of Chronic Pain in Infants, Children and Adolescents; Non-Pharmacological Approaches to Treating Pediatric Pain.

In addition to Peds-21, abstracts are currently being accepted within 30+ Section/Council programs. To see a complete list of programs and additional details Click Here.

TENTATIVE SCHEDULE – FRIDAY, October 25, 2019
1:00-1:30pm Poster Session
1:30-1:35pm Welcome & Introduction
Dr. Kyle Yasuda, AAP President
1:35-1:40pm Moderator Sets the Stage
Dr. Rita Agarwal
1:40-2:00pm Exposed in the Womb: Managing Neonatal Abstinence Syndrome in the NICU & Beyond
Dr. Matt Grossman
2:00-2:20pm Toddlers and Up: Unintentional Exposure, Prevention, and Treatment
Dr. Gary Smith
2:20-2:40pm Youth at Risk: Understanding Co-Occurring Diseases, Recognizing High-Risk Populations and Screening for Opioid Use Disorder
Dr. Lucien Gonzalez
2:40-3:00pm Q&A
3:00-3:30 Break with Posters
3:30-4:00pm Addiction and Dependence: Opioid Use Disorder from a Patient’s Perspective
4:00-4:20pm Acute Pain and Multi-Modal Analgesia
Dr. Stephen Hays
4:20-4:40pm Chronic Pain: My "<Insert Body Part Here> Still Hurts," What Can You Do to Help Me?
Dr. Anjana Kundu
4:40-5:00pm The Mind-Body Connection and Biobehavioral Techniques that Everyone Can Use
Dr. Melanie Brown
5:00-5:30pm Q&A

Joint Program: Section on Integrative Medicine, Section on Anesthesiology & Pain Medicine, and Section on International Child Health

Integrative Approaches to Pain: Non-pharmacologic, Non-Invasive Options Amid the Opioid Crisis
This program will focus on integrative approaches to acute and chronic pain in children amid the era of an opioid crisis. Topics covered will be non-pharmacological, non-invasive integrative therapies including the integration of acupuncture, mind-body skills, hypnosis, massage, distraction and others into clinical practice, approaches to pain in low resource environments, and also the psychology of pain and pain memory. All are invited to attend.

LEARNING OBJECTIVES
1. Identify integrative approaches to both acute and chronic pain.
2. Recognize the psychology of pain and impact of pain on mental health, in order to integrate methods into practice that minimize and address psychiatric components of pediatric pain and pain memory.
3. Recognize useful approaches to pain in low resource environments.

4. Determine opportunities to incorporate integrative therapies into clinical care of patients with pain.

**TENTATIVE SCHEDULE – SATURDAY, OCTOBER 26, 2019**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00-2:30PM</td>
<td>Hey Doc- why do I hurt? The psychology behind pain</td>
</tr>
<tr>
<td></td>
<td><em>Melanie Noel PhD; University of Calgary</em></td>
</tr>
<tr>
<td>2:30-3:00PM</td>
<td>Stop the Pain! An Overview of Integrative Options</td>
</tr>
<tr>
<td></td>
<td><em>Stefan Friedrichsdorf, MD, FAAP; Children’s Minnesota Pain &amp; Palliative Care</em></td>
</tr>
<tr>
<td>3:00-3:30PM</td>
<td>Treating Pain in Low Resource Environments</td>
</tr>
<tr>
<td></td>
<td><em>Anjana Kundu MBBS, MD; Dayton Children’s Hospital</em></td>
</tr>
<tr>
<td>3:30-3:45PM</td>
<td>Panel/Roundtable Discussion</td>
</tr>
<tr>
<td>3:45-3:55PM</td>
<td>Mindfulness Moment</td>
</tr>
<tr>
<td></td>
<td><em>Erica Sibinga, MD</em></td>
</tr>
<tr>
<td>4:00-6:00PM</td>
<td>Abstract Posters and Networking</td>
</tr>
</tbody>
</table>

**Joint Program: Section on Hospital Medicine and Section on Anesthesiology and Pain Medicine**

**Pediatric Pain Management for Hospitalists: A Life Course Perspective**

Updates in pediatric pain management will include non-opiate pharmacologic, interventional, and multidisciplinary techniques for acute and chronic pain, symptom management at end of life, and a debate on the management of NAS. A keynote lecture on social determinants of health for hospitalists will be presented after the Section business luncheon.

**TENTATIVE SCHEDULE - SUNDAY, OCTOBER 27, 2019**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM</td>
<td>Welcome</td>
</tr>
<tr>
<td></td>
<td><em>Abby Nerlinger, MD, MPH, FAAP</em></td>
</tr>
<tr>
<td>8:10 AM</td>
<td>Presentation of Pediatric Hospital Medicine</td>
</tr>
<tr>
<td></td>
<td>Abstract Research Award</td>
</tr>
<tr>
<td>8:15 AM</td>
<td>Poster Viewing Session</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Evidence-based Approaches to Pediatric Acute Pain Management</td>
</tr>
<tr>
<td></td>
<td><em>Anjana Kundu, MD, ABIHM, FAAP</em></td>
</tr>
<tr>
<td>10:00 AM</td>
<td>Break</td>
</tr>
<tr>
<td>10:15 AM</td>
<td>Goals of Care and Symptom Management at End-of-Life</td>
</tr>
<tr>
<td></td>
<td>* Carly Levy, MD, FAAP*</td>
</tr>
<tr>
<td>11:15 AM</td>
<td>A Multidisciplinary Approach to Pediatric Chronic Pain Management</td>
</tr>
<tr>
<td></td>
<td><em>Neil Schechter, MD</em></td>
</tr>
<tr>
<td>12:15 PM</td>
<td>Break</td>
</tr>
<tr>
<td>12:30 PM</td>
<td>Section on Hospital Medicine Business Luncheon</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>Laura Mirkinson, MD, FAAP Lecture: Social Determinants of Health and</td>
</tr>
<tr>
<td></td>
<td>Pediatric Hospital Medicine</td>
</tr>
<tr>
<td></td>
<td>Do the Missions Align?</td>
</tr>
<tr>
<td></td>
<td><em>Veronica Gunn, MD, MPH, FAAP</em></td>
</tr>
<tr>
<td>2:00 PM</td>
<td>A Panel Discussion on Neonatal Abstinence Syndrome Management</td>
</tr>
<tr>
<td></td>
<td><em>Matthew Grossman, MD, FAAP, Scott Wexelblatt, MD, FAAP</em></td>
</tr>
</tbody>
</table>

**Dr. Mary Landrigan-Ossar Slated as Candidate for 2019-20 Section Chairperson-Elect**

We are pleased to present Dr. Mary Landrigan-Ossar as the unopposed candidate for the position of Section Chairperson-Elect. If confirmed by our Section membership during the election this month, Dr. Landrigan-Ossar will join the Section Executive Committee in November 2019. She will serve as Chairperson-Elect for two years during Anita Honkanen’s term as Chairperson and will then take over as Chair in November 2021.

**Biographical Sketch**

Mary Landrigan-Ossar
Senior Associate, Perioperative Anesthesia
Boston Children’s Hospital
Assistant Professor of Anesthesia
Harvard Medical School
Boston, Massachusetts

Mary Landrigan-Ossar, MD, PhD, FAAP, FASA is honored to be considered as chair for the AAP Section on Anesthesiology and Pain Medicine. She currently serves as the Section’s Newsletter Editor and as Chair of the Section’s Education Subcommittee. The Section’s mission to communicate with the general pediatrician community and the public at large about pediatric anesthesiologists’ priorities for delivering safe, high-quality care of children both in and outside the operating room is increasingly important in the changing health care environment. Physicians who can work comfortably and productively in multi-specialty settings will aid in the establishment of our specialty’s goals as our work continues to bring us outside the doors of the operating room.

Dr. Landrigan-Ossar is Senior Associate in Perioperative Anesthesia at Boston Children’s Hospital and Assistant Professor in Anaesthesia at the Harvard Medical School. She received her MD and a PhD in molecular biology from Mt. Sinai School of Medicine (now Icahn School of Medicine) in New York, NY. She completed anesthesia residency at Mt. Sinai Medical Center and pediatric anesthesiology fellowship at Boston Children’s Hospital. Dr. Landrigan-Ossar is board certified in anesthesiology and pediatric anesthesiology. Her clinical practice focuses on non-operating room anesthesia and on patients with vascular anomalies. Dr. Landrigan-Ossar is director of anesthesia for Interventional Radiology, the Chair of the hospital’s Sedation Committee, and a member of the Boston Children’s Hospital Vascular Anomalies Center, roles that require a high level of interdisciplinary collaboration.

**On March 1st all members of the Section on Anesthesiology and Pain Medicine received a ballot to vote for Chairperson-Elect. The voting period is from March 1 to March 31.**

Please go to [http://www2.aap.org/elections](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.
NEW AAP Policies of Interest

Updated Clinical Report on Health Care Transitions for Youth and Young Adults

The National Survey for Children’s Health reveals that only 15% of youth with and without special health care needs receive transition planning assistance from their health care providers. To address this gap, the American Academy of Family Physicians and American College of Physicians join AAP in calling on clinicians to establish a structured process to ensure a planned transition from pediatric to adult health care as part of routine care for adolescents and young adults.


“This new 2018 Clinical Report is an exciting extension of the thoughtful work of the AAP, AAFP, and ACP to offer practical assistance to their members regarding needed transition services for adolescent and young patients. It also identifies where further work is needed in the transition field,” said Dr. Patience White, lead author of the report.

The 2018 report describes an evidence-informed, structured health care transition process called the Six Core Elements of Health Care Transition, developed by Got Transition, that guides clinicians in the development of transition services and have been shown to improve health care transition processes in primary care, subspecialty care, school-based health clinics and Medicaid managed care. The Six Core Elements process clarifies the roles of pediatric, family medicine, med-peds, and internal medicine clinicians in the transition process. Practical tools are provided and designed to be customized by the practice according to the needs of their patients and the resources available.

In addition, the report summarizes the status of transition preparation among US youth, common transition barriers and preferences experienced by youth and families as well as pediatric and adult clinicians, outcome evidence, and recommendations for infrastructure, education and training, payment, and research.

The transition from pediatric to adult health care is especially important for youth and young adults with special needs or chronic conditions, according to the report. Research has shown that without a structured transition process, youth and young adults are more likely to have problems with medical complications, limitations in health and wellbeing, difficulties with treatment and medication adherence, discontinuity of care, preventable emergency department and hospital use, and higher costs of care. This 2018 clinical report addresses the needs of special populations, including those with medical complexity, intellectual and developmental disabilities, behavioral health conditions, and social complexity.

“When health care clinicians working in pediatric and adult care settings communicate with each other during the transfer of care and share records with each other and with youth and young adults, it assists the receiving clinician to offer better continuity of care,” said M. Carol Greenlee, MD, FACP, Chair, Council of Subspecialty Societies, the American College of Physicians, also an author on the paper.

“Having the adult care clinician know something about them and their medical issues at that initial encounter helps the young adult feel more comfortable with their new clinician.”

Health care transition includes the process of moving from a child to an adult model of health care – with or without a transfer to a new clinician. That means having time alone with their clinician to respect their confidentiality and to learn how to manage their health on their own to the best of their ability. Physicians can help by recognizing how cultural beliefs and attitudes as well as social determinants of health may affect the youth’s and young adult’s health care transition.

“Do not instantly become adults when they turn age 18, regardless of their new legal status,” said Dr. Michael Munger, President of the American Academy of Family Physicians. “It is important to continue to build self-care skills and greater engagement in care with young adults. This report provides a framework to help make that happen.”

Clinical Practice Guidelines

Outline Use of Intravenous Fluids for Children

A new evidence-based guideline for administering intravenous fluids to children was published in the December 2018 issue of Pediatrics to provide supportive care for acutely ill children. The American Academy of Pediatrics in 2016 convened a multidisciplinary subcommittee of medical experts to develop the guideline, “Clinical Practice Guideline: Maintenance Intravenous Fluids in Children,” after an extensive review of research. Despite the common use of maintenance intravenous fluids, the AAP notes that there has been a wide variety of prescribing practices and lack of an evidence-based guideline for deciding on optimal fluid composition and electrolyte monitoring. The guideline details the best choice of fluid composition for use in patients from 28 days old to 18 years of age. The recommendation does not apply to patients with neurosurgical disorders, cardiac disease, cancer, diabetes or other disorders that are specified in the report. The guideline is intended to prevent a condition called hyponatremia, an abnormal blood sodium which contributes to a fluid-electrolyte imbalance. This condition can lead to excess water into the brain, causing swelling and other neurological impairment or death.

Understanding Liability Risks and Protections for Pediatric Providers During Disasters

The AAP, which has long educated and advocated on the importance of disaster preparedness and urged its members to respond to these events, has released a new policy statement, “Understanding Liability Risks and Protections for Pediatric Providers During Disasters,” published in the March 2019 Pediatrics. The policy statement and a technical report carrying the same title recognize the unique professional liability risks that can occur when caring for patients and families during a disaster, whether acting as volunteers or employees. Natural or manmade disasters such as a hurricane, infectious disease outbreak or terrorism attack may result in perilous conditions, such as working with less staff or space, electricity or equipment. The AAP recommends that pediatric leaders continue to promote the importance of preparedness for disasters at the federal, state and local levels to ensure that children's needs are adequately addressed and maximize medical liability protection for healthcare responders. Pediatricians should review the status of current disaster liability-related laws applicable at the federal and state level and take steps to minimize gaps in protection. The AAP recommends that pediatric providers strive to understand their own liability risks, protections and limitations during disasters and develop a disaster readiness plan in order to be poised to respond when disaster strikes.
Distance to Nearest Pediatric Surgeon a Potential Barrier for Millions of U.S. Children

Many families must travel at least 60 miles to access pediatric surgical care, according to research presented at the American Academy of Pediatrics 2018 National Conference & Exhibition.

Children who need surgery, statistics show, have fewer complications when it’s performed by doctors with specialized pediatric surgical training in regionalized centers where a high volume of procedures are performed. But in ongoing efforts to develop these regional “centers of excellence,” researchers presenting new findings at the American Academy of Pediatrics (AAP) 2018 National Conference & Exhibition suggest, the distances families must travel to access pediatric surgical care should be considered.

The study abstract, “Geographic Distance to Pediatric Surgical Care within the Continental United States,” available below, was presented on Saturday, Nov. 3, at the Orange County Convention Center in Orlando, Fla.

As of the last U.S. Census, more than 10 million children lived more than 60 miles from the nearest pediatric surgeon, according to the abstract authors. Another 7 million children lived more than 40 miles from one.

Longer distances can be a concern for some families, said senior author Capt. Robert Ricca MD, FAAP, Pediatric Surgeon and Director of Surgical Services at the Naval Medical Center in Portsmouth, Va.

“Children and families who live significant distances away may face greater risk for treatment delays, as well as added costs from travel, time away from work, and child care for other children at home,” Dr. Ricca said. “With ongoing efforts to build and identify centers of excellence for pediatric surgical care, it is also important to consider the distance-to-care as a potential barrier for access to care.”

For their analysis, the researchers used 2010 U.S. Decennial Census and American Pediatric Surgical Association membership data to calculate straight-line distances between pediatric surgeons’ ZIP codes and population blocks. They said they hope their findings will provide a framework to use publicly available data from the next census in 2020 to guide appropriate regionalization efforts for subspecialty care based on patient location.

“While not necessarily related to our role as military physicians, our practice in pediatric surgery has led us to develop an interest in the effects of regionalization of health care on the distance patients must travel to receive subspecialty care,” said Lt. Christian McEvoy, M.D., M.P.H., an abstract author and Health Analysis Fellow and surgical resident with the Naval Medical Center. “Ensuring equal access to pediatric surgical care for all children is a goal in line with regionalization efforts to ensure care is provided at an appropriate center.”

Half as Many U.S. Children Die from Firearm Injuries Where Gun Laws are Strictest

Research presented at American Academy of Pediatrics 2018 National Conference & Exhibition finds strong correlation even after adjusting for factors such as poverty, unemployment and education rates.

New research shows dramatic differences in the number of children hospitalized and killed each year in the U.S. from firearm-related injuries based on their states’ gun legislation, even after adjusting for poverty, unemployment, and education rates. It found twice as many pediatric firearm deaths in states with the most lenient gun regulations compared with states where gun laws are strictest.

(Continued on page 10)
Researchers presented an abstract of their study, “Strict Firearm Legislation Is Associated with Lower Firearm-Related Fatalities among Children and Teens in the United States,” available below, at the American Academy of Pediatrics 2018 National Conference & Exhibition. Study authors examined pediatric injury-related deaths and mortality rates derived from the National Vital Statistics System maintained by the Centers for Disease Control’s National Center for Health Statistics and then compared regional injury with the Brady Campaign scorecard, which rates gun law stringency by state.

Beyond lower pediatric firearm-related mortality within individual states, the study researchers found that stringency of a neighboring state’s firearm legislation was also associated with pediatric firearm mortality rates. The researchers also found that firearm laws specific to child access prevention (CAP), including locking mechanisms or storage requirements, were associated with decreased firearm suicide rates among children. States without CAP laws had pediatric firearm suicide rates more than four times as high as those with CAP laws.

“Firearm-related injuries are the second leading cause of death among children in the United States, but we found a clear discrepancy in where those deaths happen that corresponds with the strength of states’ firearm legislation,” said Stephanie Chao, MD, FAAP, FACS the abstract’s lead author. “In states with lenient laws, children die at alarming greater rates.”

The same researchers also presented findings from a related study they performed, “U.S. Regional Trends in Pediatric Firearm-Related Injuries.” In this study, analysis showed regions with high average Brady scores (Northeast and West) were associated with 7.54 injuries per 100,000 children, while rates in low Brady scores regions (Midwest and South) had 8.30 injuries per 100,000 children.

“Each year, more children die from firearm-related injuries than from cancer and heart disease combined,” said Dr. Chao, Trauma Medical Director and Assistant Professor of Pediatric Surgery at Stanford School of Medicine. “However, each and every one of these deaths is preventable. Our study demonstrates that state-level legislation prevents children from dying from guns.”

Dr. Chao and co-author Jordan Taylor, MD, Postdoctoral Research Fellow in Pediatric Surgery at Stanford, said a better understanding of regional differences in pediatric patterns of firearm-related injuries, compared with existing firearm legislation, can better inform each region’s targeted prevention efforts.

“While federal legislation on firearms remains a contentious and gridlocked issue,” Dr. Chao said, “we found that state legislation may be an opportunity to prevent pediatric deaths from firearms.”

Abstract Title: Strict firearm legislation is associated with lower firearm-related fatalities among children and teens in the United States

Jordan Taylor, MD; Sriram Madhavan, MS; Stephanie Chao, MD
Stanford, CA

Introduction: Firearm-related injuries are the second leading cause of pediatric death in the US. We sought to evaluate the effectiveness of state child-access prevention (CAP) laws and gun regulations on pediatric firearm mortality (PFM). We hypothesized that states with more stringent firearm legislation had lower PFM.

Methods: We used 2014-2015 PFM data from the Web-Based Injury Statistics Query and Reporting System, 2014 Brady scores (used to quantify stringency of state gun regulations), and 2014 CAP laws (indexed by the Law Center to Prevent Gun Violence). Spearman rank correlations and linear regression were used to determine the relationship between PFM and gun regulations.

Results: Annually, there were approximately 2,715 pediatric firearm fatalities; 62.1% were homicides and 31.4% were suicides. There was a significant negative correlation between states’ firearm legislation stringency and PFM (p = 0.66), and between presence of CAP laws and firearm suicide rates (p = 0.56). There was a positive correlation between unemployment rate and firearm homicide rate (p = 0.55), and between teen tobacco use and firearm suicide rate (p = 0.50). After controlling for poverty, unemployment, and substance abuse, the association between firearm legislation stringency and PFM remained significant (p < 0.01). There was an association between CAP laws and firearm suicide rate after controlling for socioeconomic factors and other firearm legislation (p < 0.01).

Conclusion: Strict gun legislation was associated with fewer pediatric firearm fatalities. CAP laws were associated with fewer firearm suicides. State-level legislation could play an important role in reducing pediatric firearm-related deaths.

Abstract Title: US Regional trends in pediatric firearm-related injuries

Jordan Taylor, MD; Sriram Madhavan, MS; Lakshika Tennakoon; Kristan Staudenmayer, MD; Stephanie Chao, MD
Stanford, CA

Introduction: Firearm-related injury (FRI) is a major cause of preventable death and disability among children in the United States. However, little is known about regional patterns in pediatric FRI and regional firearms legislation. We hypothesized that regions with more stringent firearm legislation would have a lower incidence of pediatric FRI.

Methods: The study examined inpatient admissions for pediatric patients in 2012 using the Kids’ Inpatient Database (KID), Healthcare Cost and Utilization Project, Agency for Healthcare Research and Quality; US Census Bureau; and the 2013 Brady scorecard, which assesses gun law stringency by state. The average Brady scores were computed for each US region and compared to FRI incidence rates.

Results: In 2012, 6,941 children (0-20 years) were hospitalized for FRI. Among pediatric FRI, 36% occurred in the South, 22% in the West, 25% in the Midwest, and 17% in the Northeast. Overall, 6.9% resulted in fatalities. Boys, older children, children in low-income zip codes, and black and Hispanic children were disproportionately affected. More stringent regions with high average Brady scores (Northeast and West) were associated with 7.54 injuries per 100,000 children, while rates in low Brady scores regions (Midwest and South) were 8.30 injuries per 100,000 children (difference in FRI of 0.76 per 100,000 children, 95%CI:0.38-1.13, p<0.001).

Conclusion: At a high level, rates of injuries are associated with stringency of gun laws. A better understanding of regional variations in pediatric patterns of FRI and existing firearm legislation can better inform each region’s targeted prevention efforts.
Clinical Feature from the AAP Section on Nephrology

Report on the Nephrotoxic Injury Negated by Just-in-Time Action (NINJA) initiative

Stuart L. Goldstein, MD, FAAP, FASN, FNKF, Clark D. West

Many of the advancements in the field of medicine have been achieved by the development of medications targeted at severe acute and chronic underlying conditions such as infection, heart disease, and cancer. Unfortunately, many of these medications are nephrotoxic, meaning that they are injurious to the kidney and can cause acute and in some cases irreparable damage to the kidneys. Nephrotoxic medication exposure is nearly ubiquitous for hospitalized patients and is one of the most common causes of acute kidney injury (AKI) in the hospital.\textsuperscript{1,2}

There is the potential perception that provision of nephrotoxic medications and the associated AKI is “just the cost of doing business” and a necessary evil of tertiary health care. Such a perception ignores an opportunity to expose patients to only the nephrotoxic medications they need for the time that they need them. Furthermore, since many nephrotoxic medications are excreted by the kidneys, they or their metabolites can accumulate and cause worsening AKI or other systemic organ injury and dysfunction.

The confluence of standardized- and validated serum creatinine-based AKI diagnostic and severity criteria and the requirement for, and adoption of, electronic health records provided us with the opportunity to expeditiously catalog nephrotoxic medication exposure and burden as well as AKI development and severity. In 2011, we initiated a single center quality improvement program called Nephrotoxic Injury Negated by Just in Time Action (NINJA) which had the goal of reliably quantifying high nephrotoxic medication exposures and associated AKI rates in non-critically ill hospitalized children. It was our hope that such systematic focus on the nephrotoxic practice would decrease nephrotoxic AKI rates and severity.

Table 1

<table>
<thead>
<tr>
<th>Measure Name</th>
<th>Numerator</th>
<th>Denominator</th>
<th>Clinical Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>High NTMx Exposure Prevalence Rate (per 1000 patient-days)</td>
<td>Number of new patients with high NTMx exposure in the calendar week of study</td>
<td>The total number of non-critically ill patient hospital days standardized per 1000 patient-days in the calendar week of study</td>
<td>This measure generates a normalized rate of high NTMx exposure cases per study week.</td>
</tr>
<tr>
<td>AKI Prevalence Rate (per 1000 patient-days)</td>
<td>Number of patients with high NTMx exposure who developed AKI in the calendar week of study\textsuperscript{*}</td>
<td>The total number of non-critically ill patient hospital days standardized per 1000 patient-days in the calendar week of study</td>
<td>This measure generates a normalized rate of AKI cases per study week.</td>
</tr>
<tr>
<td>Rate of Patients with High NTMx Exposure who Develop AKI (%)</td>
<td>Number of patients who develop AKI\textsuperscript{*}</td>
<td>Number of new patients with high NTMx exposure in the calendar week of study</td>
<td>This measure generates the fraction of patients with high NTMx exposure who develop AKI</td>
</tr>
<tr>
<td>AKI Intensity Rate (per 100 exposed patient-days)</td>
<td>Number of days patients have AKI</td>
<td>The total number of exposed patient days standardized per 100 exposed-days</td>
<td>This measure depicts a normalized duration of AKI per exposed days</td>
</tr>
</tbody>
</table>

\textsuperscript{*} AKI development factors into the numerator of the week that the patient became exposed if AKI develops in a different calendar week than when a patient became exposed.

NTMx = nephrotoxic medication

The NINJA Program Inception

NINJA uses an automated program to extract data in near real-time from electronic health record to flag non-critically ill hospitalized children exposed to three or more nephrotoxic medications simultaneously or an intravenous aminoglycoside for 3 or more consecutive days. These exposure criteria were viewed as high risk for AKI given observations from the published literature.\textsuperscript{1,2,3} The NINJA intervention was to require systematic kidney function surveillance with a daily serum creatinine measurement in all exposed patients. We also developed a number of novel outcome measures to track the impact of the NINJA program on nephrotoxic medication rates, associated AKI rates and duration of AKI (Table 1).

In the first year after NINJA implementation,\textsuperscript{4} we observed that 25% of exposed patients developed AKI, with more than 50% experiencing severe AKI, defined as a doubling of serum creatinine from baseline.\textsuperscript{5} In addition, in this first year, we observed the rate of AKI per 1000 patient days was 10-fold and 3-fold higher than our hospital wide catheter associated urinary tract infection and central line associated blood stream infection rates, respectively. Finally, we observed a 42% decrease in AKI intensity (days of AKI per 100 exposure days), which yielded an avoidance of over 900 days of AKI. Many quality improvement initiatives do not sustain their initial success, so we looked at the first 3½ years of the NINJA project at our center, we observed a 38% decrease in the rate of exposures and concomitant 64% decrease in AKI rates, which was associated with avoidance of more than 800 exposures and nearly 400 AKI episodes, respectively.\textsuperscript{6} Given that many of the nephrotoxic medications are antimicrobials, there was a potential concern that decreasing exposure could lead to a rise in inadequately treated bacterial or fungal infection. However, the rate of persistent infection, defined as persistence of a positive culture for 7 days remained constant for the entire 3½ years of observation.

The association with development of chronic kidney disease is another concern about nephrotoxic medication associated AKI, or any form of AKI for that matter. We have shown that patients in the NINJA program who developed AKI demonstrated a very high rate of CKD. Seventy percent of patients had evidence of residual kidney damage (reduced eGFR, hyperfiltration, proteinuria, and/ or hypertension) six months after an episode of AKI, whereas none of them had any CKD signs before the AKI episode.\textsuperscript{7} We
Dissemination of NINJA

In 2014, nine US pediatric centers developed a working collaborative to disseminate NINJA to their institutions. This effort, funded by the Casey Lee Ball Foundation and the Agency for Healthcare Research Quality, aimed not only to achieve successful implementation at these centers, but also to evaluate the contextual factors that accelerated or presented barriers to implementation using a statistical method termed qualitative comparative analysis (QCA). For this reason, the institutions chosen had varying characteristics in terms of size and structure (e.g., free standing children’s hospital vs. a pediatric institution within a larger healthcare system), information technology capabilities, quality improvement support, safety culture readiness and pharmacy integration into clinical workflows. The initial outcomes of the collaborative were presented at the American Society of Pediatric Nephrology/Pediatric Academic Societies’ meeting in May 2018. The collaborative achieved sustained improvements in the AKI rate per 1000 patient days (22% reduction) and AKI rate per exposure (28% reduction). These resultant rates are similar to the sustained rates seen at our pilot single center. The QCA revealed that for an individual center, active participation in the network (consistent monthly data submission and participation in monthly data and process sharing webinars) was necessary but not sufficient for AKI reduction. Of particular importance was the observation that competing priorities, especially with respect to any updates or new rollouts to the electronic health record, were sufficient for failure of NINJA implementation at an individual site. The collaborative continues to explore other aspects of nephrotoxic medication associated AKI. Different work groups are assessing AKI rates in different services lines (e.g., oncology, pulmonology etc), or the effect of specific medication combinations on AKI rates. These more detailed aspects of the nephrotoxic medication landscape will likely yield disease-specific reductions in exposure and AKI. Other centers have started to implement the NINJA program in the neonatal intensive care unit. This so-called Baby NINJA effort has led to reductions in AKI in a single center in Alabama, and submission of these data is pending.

What Does the Future Hold for NINJA?

Based upon the reproducible and sustained results noted above, Nephrotoxic Acute Kidney Injury and the NINJA methodology has been adopted as the next Hospital Acquired Condition to be disseminated by the 130 pediatric hospital Solutions for Patient Safety Collaborative (www.solutionsforpatientsafety.org/). Starting in July 2018, thirty “pioneer” hospitals in the SPS collaborative will start to implement the NINJA program in non-critically ill patient wards, and some hospitals have opted to implement NINJA in the intensive care unit setting.

In addition to the national SPS initiative, the original NINJA collaborative plans to leverage its existing reliable and robust infrastructure to conduct translational research projects aimed at further decreasing nephrotoxic medication associated AKI. Two potential strategies currently under investigation aim to optimize risk assessment for nephrotoxic medication associated AKI: 1) novel kidney injury biomarker assessment and 2) assessment of genetic predisposition to specific nephrotoxic medications associated AKI. While much of the existing biomarker work has focused on detecting sub-clinical kidney injury with known nephrotoxins, a recent study demonstrated that urinary neutrophil gelatinase associated lipocalin (NGAL) was associated with decreased tobramycin clearance and an increased area under the curve (AUC) in patients with cystic fibrosis. Since NGAL and tobramycin utilize a similar transport receptor, megalin, these results suggest that other biomarkers may also be predictive of disordered pharmacokinetics for other medications depending on their respective transport physiologies. Finally, a recent combined adult and pediatric international multicenter initiative has been aimed at assessing for genetic predisposition to medication associated AKI using genome wide associated studies. In conclusion, the NINJA program has demonstrated that nephrotoxic medication associated AKI is a potentially modifiable adverse safety event and the future holds promise for further reduction via more personalized healthcare interventions.

References:


Reprinted from the Summer 2018 issue of the AAP Section on Nephrology Newsletter
**Dental Anesthesia and Sedation: Where Are We Now? LESSONS LEARNED IN CALIFORNIA**

**By Rita Agarwal, MD, FAAP, FASA**

In 2015, healthy, happy 6 ½ year-old Caleb Sears suffered a cardiac arrest in his oral surgeon's office after receiving midazolam, ketamine, propofol, fentanyl, and nitrous oxide, and became apneic. He later passed away. His devastated family could not understand how this tragedy had happened and set about trying to change the California law that governs the administration and monitoring of anesthesia and sedation provided by dentists/oral surgeons. Their initial attempt, spearheaded by Caleb's aunt, Anna Kaplan, MD, resulted in the passage of AB 2235 authored by former Assembly Member Tony Thurmond (D-Richmond) that required the Dental Board of California (DBC) to review and report on the laws and regulations governing dental anesthesia at that time. This was known as Caleb's Law Part 1, and there is more information at: Parents Who Lost Son Struggle to Strengthen Rules. The next step was to codify all the recommendations made by the DBC, which included the provision of a separate dedicated and independent anesthesia provider for children less than 7 years of age undergoing deep sedation or general anesthesia. AB 224 (Thurmond, Caleb's Law Part 2) was proposed in the California Assembly in January 2017 and included a complete representation of all the patient safety recommendations from the DBC. It was sponsored by the American Academy of Pediatrics-California Chapter (AAP-CA), the California Society of Anesthesiologists (CSA) and the California Society of Dentist Anesthesiology (CSDA). At the same time, SB 501 authored by Senator Steve Glazer (D-Orinda) was also introduced and was sponsored by the California Association of Oral and Maxillofacial Surgeons (CALOMS) and strongly supported by the California Dental Association (CDA). The full details of the struggle to pass meaningful legislation is chronicled in a series of excellent reports by CSA lobbyists Bryce Docherty and Vanessa Cajina in the Under the Dome series.

In summary, AB 224 (Thurmond) failed to reach Governor Brown’s desk, largely due to fierce opposition from CALOMS and the CDA. The CDA was able to convince the Legislature that having additional personnel in the dental office dedicated to ensuring proper monitoring of the dental anesthesia would make access more difficult for children seeking these dental procedures and significantly increase costs. Only after much debate and significant amendments to strengthen several provisions, SB 501 (Glazer) was eventually signed into law by Governor Brown in October 2018. The major provisions of SB 501 can be found here.

Some of the most significant parts of the new law pertaining to deep sedation and general anesthesia have been copied in Addendum 1. The major area of disagreement for dentist anesthesiologists and the CSA is the statute which continues to allow for the single operator-anesthetist model of practice, whereby the operating dentist/oral surgeon can supervise and provide anesthesia at the same time. This law attempts to make that practice safer by mandating that at least one other person, in addition to the “anesthesia permit holder” in the room, is certified in Pediatric Advanced Life Support or “the board may approve a training standard in lieu of Pediatric Advanced Life Support (PALS) certification if the training standard is an equivalent or higher level of training for pediatric dental anesthesia-related emergencies than PALS.” Since this law continues to allow the use of dental sedation assistants, whose curriculum and training is determined and overseen by a handful of California oral surgeons, and who do not receive enough general medical education to understand or pass PALS, we remain skeptical as to the quality and manner of dental-anesthesia related emergency training that these assistants receive.

There were some clear wins in SB 501 (Glazer), however, the most important of which were:

- Mandated reporting of adverse events to the DBC, and maintenance of these records for at least 15 years
- Adoption of standard ASA and CMS terminology for levels of sedation and anesthesia.
- An analysis of cost of providing care with a separate anesthesia provider, versus care with a single provider.
- The Law adds a requirement for a pediatric endorsement:
  - A dentist may apply for a pediatric endorsement for the general anesthesia permit by providing proof of successful completion of all of the following:
    - (1) A Commission on Dental Accreditation (CODA)-accredited or equivalent residency training program that provides competency in the administration of deep sedation and general anesthesia on pediatric patients.
    - (2) At least 20 cases of deep sedation or general anesthesia to patients under seven years of age in the 24-month time period directly preceding….
  - A requirement for 24 continuing education hours in sedation and anesthesia over 24 months.

All of these seem to be positive developments, but not quite enough to ensure that every child undergoing sedation or anesthesia whether in a dental office, clinic, outpatient unit or operating room, receives the same standard of care as a child receiving sedation or anesthesia in a medical setting.

Yikes, that doesn’t seem enough? Are there any other wins?

- As previously noted, there has been high visibility media coverage of these issues, featuring the AAP’s own Karen Sibert, MD, FASA, bringing this issue to the public’s attention. This attention has been sustained and can be found in video, print and social media.

  - Megyn Kelly Dental Sedation
  - 9 Questions to Ask your Dentist Before Sedation

- CSA contacted and deployed joint AAP-AAPD guideline* authors Charles Cote, MD, and Steven Wilson, DMD, to assist in lobbying efforts on why a separate dedicated and independent anesthesia provider is needed in a dental office to safely provide deep sedation or general anesthesia.


- Charles Coté, MD, gave generously of his time and expertise by flying to Sacramento several times to testify and meet with key legislators at the State Capitol.

- Charles Coté and co-author, Steven Wilson, are currently working on a 2019 update to the AAP/AAPD “Guidelines for Monitoring and Management of Pediatric Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures”

- The outrage related to unnecessary dental sedation deaths has led to many articles in the anesthesiology, pediatric, and pediatric dentistry literature as well as mainstream media questioning these practices.

(Continued on page 14)


Office-Based Anesthesia: Safety and Outcomes in Pediatric Dental Patients. Spera AL et al. Anesth Prog. (Fall)


Governor Signs Finley’s Law in Hawaii Hawaii News Now 2017 July 10

Increased interest nationally from physician anesthesia advocates in other states (Pennsylvania, Wisconsin, Texas). Advocacy workshops focusing on Dental Anesthesia and Caleb’s Law around the country.

New information for parents.

Both the AAP and the CSA continue to make safer dental anesthesia a priority. The ASA and the Society for Pediatrics Anesthesia are joining the fray to help with national initiatives. There is a growing coalition of interested organizations who will continue this fight.

There have been social media campaigns to improve knowledge about the differences between dental sedation practices and medical sedation practices.

A coalition representing Pediatric Dentistry, Pediatrics, Anesthesiology, Dentist Anesthesiologist and Dr. Anna Kaplan presented the tool used by the Pediatric Sedation Research Consortium to the Dental Board of California. This tool is a simple, easy to use, inexpensive, and objective way to gather data. Hopefully the DBC will seriously consider the use of this tool, which will allow them to easily store data for the required 15 year minimum.

What Else Can We Do?

There is still a lot that is unknown, and some of the deaths in children are not easily explained. Gathering high quality data regarding all sedation events could really make a difference in determining best practices.

We must encourage the DBC to adopt the data tool used by the Pediatric Sedation Research Consortium or work with them if they choose to develop their own tool.

Consider support for additional legislation once the update to the AAP/AAPD sedation guidelines is published.

Continue to be vigilant and look for opportunities to improve patient care in all settings.

Consider literature on dental sedation and anesthesia for families on parent education/organizational websites.

Revised from Original Publication by the California Society of Anesthesiology February 4, 2019

WELCOME NEW MEMBERS!!

Steven Bourland, DO, FAAP
Monica Chen, MD, FAAP
Surendrasingh Chhabada, MD, FAAP
Erin Conner, MD
Lynn Correll, MD, PhD, FAAP
Clinton Fuller, MD, FAAP
Caroline Gomez-Di Cesare, MD, PhD, FAAP
Allison Heizelman, MD

Marie Jean-Baptiste, DO
Benjamin Lippert, DO, FAAP
Ann Ng, MD, FAAP
Barbara Nzegwu, MD, FAAP
Felipe Perez, MD
Krista Preisberga, MD, FAAP
Elizabeth Shaffer, MD, FAAP
Tammy Wang, MD, FAAP

Calling for newsletter articles!

For our next SOA newsletter, the Fall edition

Please send proposals to Mary Landrigan-Ossar, Newsletter Editor, at Mary.Landrigan-Ossar@childrens.harvard.edu

By August 1, 2019
News Articles, Letter from the President, Advocacy

We stood firm in 2018 to meet challenges to child health
by Colleen A. Kraft M.D., M.B.A., FAAP, President, American Academy of Pediatrics

As 2018 AAP president, I envisioned advocating for regulatory reforms and exploring how we can use technology and innovation to increase efficiencies and improve patient care. I traveled the country meeting with primary care pediatricians, specialists and subspecialists to learn about and share new programs, ideas and resources. And I helped champion our Pediatrics for the 21st Century program, "Leveraging New Technologies to Transform Child Health," at last month's National Conference & Exhibition.

But early this year, I learned that we often are not in control of all the issues that affect our children.

A little over a month into my presidency, Marjory Stoneman Douglas High School in Parkland, Fla., became the scene of one of the deadliest mass shootings in modern U.S. history.

It was both horrifying and horrifyingly familiar. For more than two decades, the AAP has been at the forefront of keeping children safe from gun violence - an effort that has left us continually frustrated by lawmakers' collective inaction.

But this time, things were different. This time the survivors rose up and organized. Students began literally marching for their lives, and we pediatricians were right there with them.

We renewed our call for a public health approach to gun violence. And after years of asking the federal government to support and fund original gun safety research, we decided to take this on ourselves. We launched the AAP Gun Safety and Injury Prevention Initiative to bring together experts from around the country to solve this epidemic.

In May, the Department of Homeland Security (DHS) announced its policy to separate migrant parents and children at the border. We wrote to the DHS secretary and embarked on the most consequential media blitz in AAP history: 250 media interviews with various AAP spokespeople, all spreading the word that family separation can cause toxic stress and hurt brain development. The widespread coverage - and our powerful message - helped shift public opinion and led to a reversal of the family separation policy. We continue to monitor the situation and make sure these kids are treated with compassion and not exposed to conditions that could further harm them.

We sounded the alarm on vaping and e-cigarettes, which threaten to addict a whole new generation to nicotine. We educated children, parents and the public about the harmful effects of e-cigarettes on developing brains. We sued the Food and Drug Administration to take immediate regulatory action and review these products before they come to market to prevent even more young people from being exposed to lethal compounds or beginning a life-long addiction.

In addition, we achieved an impressive list of legislative victories with large national investments in nearly every priority we had in the federal government. Through our hard work, we:

- secured a 10-year extension for funding for the Children's Health Insurance Program;
- enacted federal legislation that will improve the child welfare system;
- made major progress toward a comprehensive solution to end the opioid crisis;
- strengthened support for grandparents who are parenting grandchildren;
- added new research dollars to the National Institutes of Health; and
- increased funding for child abuse and lead poisoning prevention, children's hospital graduate medical
News Articles, Letter from the President, Advocacy

education and many other vital programs.
And we celebrate one of our AAP members who was elected to Congress! Kimberly Schrier, M.D., FAAP, from Washington state will represent her district and advocate for accessible health care in a way that only a pediatrician can!

Our work this past year is not only a source of pride for us, but a source of hope for children and families. Together we demonstrated the powerful role the Academy plays in building our nation’s future and what being the voice of child health and protection really means.

It has been my honor to have been on this remarkable journey with you. And I look forward to continuing this important work with our incoming president Kyle Yasuda, M.D., FAAP, - and all of you - for years to come.

We never stood down.
We never gave in.
We never gave up, and we never will.

Reprinted with permission from AAP News; Original Publication: December 7, 2018

Also From Dr. Colleen Kraft, AAP’s Immediate Past President...

Colleen A. Kraft, MD, MBA, FAAP, Immediate Past President of the AAP, recently wrote an Op-Ed on conditions observed in a family detention center in Dilley, Texas. Her article, “I saw the toll ICE detention takes on families and children,” ran in USA Today on March 5, 2019.

Dr. Kraft notes that she “identified at least 10 children who needed to be seen urgently, including two who had serious medical issues.”

She concludes: “Children are not just small adults, and their signs of illness are subtle. They can appear quite healthy, running around and playing, while their little systems are shutting down. Children need practitioners who can recognize the differences between a mildly ill child and a seriously ill child. The lack of access to specialized care I observed, particularly for the babies and breastfeeding mothers, was alarming…I firmly believe no child should ever be detained in the first place. The American Academy of Pediatrics has said that no amount of time in detention is ‘safe for children.’”

View the full text of the article at: https://www.usatoday.com/story/opinion/2019/03/05/doctor-sick-immigrant-children-border-detention-centers-captivity-conditions-column/3050522002/

2019 AAP Legislative Conference

Registration for the 2019 AAP Legislative Conference is officially open!

The conference will take place April 7 – 9 in Washington, DC.

Each year, the conference brings together pediatricians, residents and medical students from across the country who share a passion for child health advocacy. Participants attend skills-building workshops, hear from guest speakers, learn about policy priorities impacting children and pediatrics and go to Capitol Hill to urge Congress to support strong child health policies.

For the fourth year, the conference will feature a Pediatric Subspecialty Advocacy Track with specific legislative and skills building workshops uniquely focused on the interests and needs of pediatric medical subspecialists and surgical specialists.

For more information and to register, please visit aap.org/legcon. We hope to see you in April!
Priorities for 2019 focus on health of children and physicians
by Kyle Yasuda M.D., FAAP, President, American Academy of Pediatrics

The past year has been one of challenge and achievement, and I look forward to the many more great things we will do together in 2019. As I begin my term, I'd like to share a few thoughts starting with several areas I plan to focus on for the coming year.

Investing in early childhood

My first goal is to expand opportunities for all children and families through a renewed attention on early childhood, including quality child care, parental support, home visitation and education. Three decades of research show that for every $1 spent on quality early child care, the return is $13. Investing in early childhood programs is not just good social policy, but an economic imperative.

Physician wellness

I also want to focus on you by addressing physician wellness. U.S. physicians have the highest suicide rate of any profession - higher than the military and more than double that of the general population.

With more than one medical student or physician committing suicide each day, physician resiliency is not just a concern; it's an emergency. On every flight, we're told to put on our oxygen mask first before tending to a child or infant. Similarly, we must take care of ourselves in order to care for the children of our country.

Pediatricians become burned out not because we're weak but perhaps because we care too much. Burnout occurs when we know what to do for our patients, but we're unable to do it because too many suffer from social inequities and a lack of resources. Add to that the administrative and regulatory burdens (billing, inadequate payments, documentation), and we start to feel less like healers and more like data entry clerks, spending more time on tedious things and less on what matters most.

We've been working with the National Academy of Medicine and dozens of other groups to address the causes of physician burnout. I pledge to act on what we're learning for the sake of our health, our profession, the quality of care we provide our patients and to help restore the joy in our life's work.

Connecting children and families with nature

My third goal is to share a personal passion of mine: connecting children and families with nature. Many children have little to no exposure to the natural world. Whether due to overuse of electronic media or urban sprawl, kids have become disconnected from nature and the outdoors.

That's a shame. Research shows children do better physically and emotionally when they're in green spaces, benefiting from greater physical activity, better mental health, reduced stress and increased resilience. Nature helps improve their executive function, their ability to learn and their relationships with their families and other children.

Living near parks and woods affects the health of children, regardless of social class. Yet, as with many things that promote good health, there is not equal access. Many children do not have safe places to play. Urbanization and the loss of green space have occurred, especially in low-income areas. So, we need to partner with communities to reduce these barriers.

Organization built on relationships
Finally, I recognize that the AAP is an organization built on relationships. I will work hard to nurture and grow relationships with our members, lawmakers, other like-minded organizations and our sister pediatric societies from around the world so that we continue to build upon all the good we do for children and the profession of pediatrics.

And I will support efforts to help you build and maintain the unique and valuable relationships you have with patients and families to preserve the sacred trust they place in us.

Thank you for the trust you have placed in me and the opportunity to serve as your president. No doubt, the year ahead will be full of times that will try us, challenges that will test us and people who will inspire us. I look forward to working with you to help rediscover the joy of our life’s work and to continue to support and expand opportunities for children and families.

Reprinted with permission from AAP News; Original Publication: January 2, 2019

Severe bleeding associated with use of tainted synthetic cannabinoids – February 2019

In the past decade, synthetic cannabinoids have emerged as a drug of abuse in the United States. These compounds originally were developed to study the structure and function of cannabinoid receptors. Recently, these compounds reached the global market as an alternative to illegal marijuana.

A multicenter prospective, observational study suggested that adolescents ages 13-18 years account for almost one-quarter of synthetic cannabinoid intoxications (Riederer AM, et al. MMWR. 2016;65:692-695).

In March 2018, the first case of hypocoagulopathy associated with synthetic cannabinoid use was reported in Illinois. Since then, 320 additional cases with severe bleeding and abnormal coagulation profiles have been reported in Illinois. Florida, Indiana, Kentucky, Maryland, Missouri, North Carolina, Pennsylvania, Virginia, West Virginia and Wisconsin have experienced similar cases, including eight fatalities.

Patients presenting with signs and symptoms of coagulopathy require treatment with vitamin K and frequent coagulation profile monitoring. Vitamin K should be given at much higher doses and for longer periods to reverse superwarfarin effects. Health care providers should consult with local poison control centers and health departments for specific management considerations.

Full Text at link above and here.

Pediatric Trials Network studies lead to medication label changes – January 2019

To facilitate the study of off-patent drugs and devices in children, the Eunice Kennedy Shriver National Institute of Child Health and Human Development has established the Pediatric Trials Network (PTN) at the Duke Clinical Research Institute (https://pediatrictrials.org/). The PTN creates an enriched academic environment and infrastructure that allows investigators, thought leaders and trial operations experts to partner to develop meaningful pediatric pharmacology clinical trials.

PTN trials are conducted across the U.S. and other countries in partnership with the NIH, and eight clinical trials are ongoing. More than 100 clinical sites are enrolling children in PTN trials, and more than 7,000 children have been enrolled to date. The PTN has submitted data to the FDA for 21 drugs and devices. To date, eight label changes have been made based on clinical trials sponsored by the NIH BPCA program.

New pediatric sites are needed as the PTN is planning to implement additional protocols each year. Those interested in becoming part of the PTN should complete the general feasibility survey at https://www.pediatrictrials.org/for-health-care-professionals/.

Full Text at link above and here.

(Continued on page 20)
AAP pushes for appropriate medical care for immigrant children

by Devin Miller, Washington Correspondent

In the hours, days and weeks following the deaths of two immigrant children in U.S. Customs and Border Protection (CBP) custody, the Academy served as the leading child health expert. It called for improved conditions and adequate medical care that could have saved the lives of 7-year-old Jakelin Caal Maquin and 8-year-old Felipe Alonzo Gomez and sought answers from federal government officials.

The Academy maintains that children should not be subjected to CBP processing centers because conditions are inconsistent with AAP recommendations for appropriate care and treatment of children. Additionally, separation of families or detention of children with their parents is not a solution for the poor conditions in CBP custody.

The deaths of Jakelin and Felipe spurred a national dialogue about the medical care of immigrant children in CBP custody. Pediatricians reiterated that children have unique vulnerabilities that may be easily overlooked by medical professionals without pediatric expertise.

"When it comes to the medical care of children, if you're not trained in pediatric care, you don't know what you don't know," AAP Immediate Past President Colleen A. Kraft, M.D., M.B.A., FAAP, told "PBS Newshour."

The Academy is urging CBP to ensure all children receive the medical care they need from professionals trained in pediatric care. In the days following Felipe's death, Dr. Kraft spoke to CBP Commissioner Kevin McAleenan, sharing this message, asking questions and offering the Academy's expertise.

The Academy repeatedly has called on the federal government to appoint an independent group of medical experts with full access to these facilities to ensure optimal care for children.

"As pediatricians, we know that children are not small adults," said Julie M. Linton, M.D., FAAP, co-chair of the AAP Immigrant Health Special Interest Group, in an interview with "PRI's The World." "They present with subtle findings, and they tend to get sick more quickly because their bodies are smaller and they have less reserve." Instead of subjecting children to facilities that are inappropriate for them, the AAP recommends alternatives such as community-based case management.

Conversations with CBP are ongoing as the AAP continues to offer its assistance and learn more about the processes in place to provide medical treatment to immigrant children.

House bill seeks universal background checks for firearms

During their first full week in session, members of the U.S. House of Representatives introduced bipartisan legislation to require universal background checks for the purchase of firearms, a long-standing advocacy priority for the Academy to protect children from gun violence.

In a press statement following the bill's introduction, AAP President Kyle Yasuda, M.D., FAAP, said it is "an important, long overdue step forward to protect children from gun violence and should serve as a starting point for more needed progress."

The bill, the Bipartisan Background Checks Act of 2019 (H.R. 8), would require background checks on all firearm sales and most firearm transfers. The original co-sponsors include House Speaker Nancy Pelosi (D-Calif.) and Reps. Mike Thompson (D-Calif.), Peter King (R-N.Y.), Jerrold Nadler (D-N.Y.), Brian Fitzpatrick (R-Pa.), Sheila Jackson Lee (D-Texas), Brian Mast (R-Fla.), Robin Kelly (D-Ill.), Fred Upton (R-Mich.), Lucy McBath
Washington Report, News Articles, Advocacy, Immigration

(D-Ga.) and Christopher Smith (R-N.J.).

The Academy is urging lawmakers to advance this legislation without delay and will reach out to members with advocacy opportunities as the bill advances through Congress.

In addition to the progress on background checks, the AAP is continuing to call for other common-sense, comprehensive policies to keep children safe, such as $50 million in federal funding to support gun violence prevention research.

"As we begin a new year with a newly elected Congress, the AAP looks forward to working with both chambers to advance this legislation without delay, and to continue to work across the aisle on policies that help ensure all children are safe from gun violence where they live, learn and play," Dr. Yasuda said.

Reprinted with permission from AAP News; Original Publication: January 31, 2019

(Continued from page 18)

Also Seen in AAP News...

Monitoring programs, state regulations help physicians prescribe opioids responsibly – December 2018

In response to the growing opioid crisis among youths and adults, many states have adopted prescribing guidelines for primary care physicians from the Centers for Disease Control and Prevention (CDC) and have passed laws and regulations to reduce the supply of unused, misused and diverted prescriptions. Pediatricians who prescribe opioids must understand their state laws to prescribe responsibly and lawfully.

In addition, most states have established prescription drug monitoring programs (PDMPs) and intensified state medical board (SMB) regulations and oversight to help physicians make more informed prescribing decisions and be mindful of their prescribing histories.

Heightened scrutiny by law enforcement and regulatory agencies increases physician exposure to fines, SMB discipline, loss of license and medical liability claims.

PDMP mechanisms are particularly valuable for patients with recurrent medical need for powerful pain medications; PDMP use protects the provider and ensures patients who require extensive amounts of opioids are receiving them from only one provider or practice.

For the full text of the article, which includes a discussion of risk management practices that support sound pain management principles to improve patient safety, reduce the supply of misused opioids and increase defensibility in the event of a claim, see link above or click here.