Section on Anesthesiology & Pain Medicine NEWSLETTER

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

Spring 2024

https://tinyurl.com/anesthesia-pain

In This Issue

Calling for Newsletter Articles!
For the Fall 2024 Edition
Submit to Debnath Chatterjee by Aug 15
debnath.chatterjee@childrenscolorado.org

Chairperson's Report

Debnath Chatterjee, MD, FAAP, FASA

Dear Friends,

I hope all of you are doing well and enjoying spring weather. As Chair of the AAP Section on Anesthesiology and Pain Medicine, it is an honor to be a part of this amazing group of AAP members, dedicated to advocating for children's health. I'm excited to share several updates from the AAP and our Section.

The AAP recently restructured its Committees, Councils, and Sections into six Pediatric Alliances- Career, Health Care Delivery, Pediatric Medical Specialties, Pediatric Surgical Specialties, Promotion of Child, Youth and Family Health, and Organizational Competencies. This was a well-thought-out and strategic move by the AAP Leadership to align entities for optimal collaboration, improve transparency and communication, and embed the principles of equity, diversity, and inclusion within and across all Alliances. Our Section on Anesthesiology and Pain Medicine is a part of the Pediatric Surgical Specialties Alliance (PSSA), which replaces the previous Surgical Advisory Panel. Dr. Kenneth Gow, Chief of Pediatric Surgery at Stony Brook Medicine in New York, is the inaugural Chair of the PSSA; we look forward to collaborating with our surgical colleagues from ten other Sections to improve the perioperative care of all children. Please keep an eye out for future editions of 'Huddle,' the quarterly newsletter from the PSSA, which will include information on upcoming PSSA webinars.

I hope many of you are planning to attend the upcoming 2024 SPA/AAP Pediatric Anesthesiology meeting in Anaheim, California, April 12th-14th. Dr. Justin Long, AAP SOA Executive Committee member, is the Program Chair for the upcoming meeting. He and his team have put together a fantastic program, and the theme of the meeting is 'reimagining pediatric anesthesia delivery.' The AAP Advocacy lecture will be presented by Dr. Angela Rabbit, a Professor of Pediatrics at the Medical College of Wisconsin in Milwaukee, who will speak on "Identification and Healthcare Response to Sex Trafficking of Minors." The AAP Ask the Experts Panel will be on the topic of childhood obesity and adolescent bariatric surgery. Dr. Marc Michalsky from Nationwide Children's Hospital in Columbus, Ohio, will present on "Pediatric Metabolic and Bariatric Surgery: Evidence, Outcomes, and Ongoing Challenges". Dr. Jessica Berger from the Children's Hospital of Philadelphia will present on "Anesthetic Implications of Pediatric Obesity and its Management." I personally can't wait to hear these lectures. For more on all of our AAP sponsored events at the meeting in Anaheim, please see page 9 of this newsletter.

I would like to congratulate Dr. Elliott Krane from Stanford University for being chosen for the 2024 Robert M. Smith award, a well-deserved recognition of a legend in our field. Drs. Rita Agarwal, Genevieve D'Souza, and Anita Honkanen have penned a beautiful tribute to Dr. Krane on page 5 of this newsletter. Each year, our Section selects three abstracts to receive the AAP John J. Downes Resident Research Awards. Please check out page 4 of this newsletter for more details on the award winners. As always, our Section will have a booth in the exhibit hall at the meeting. Please stop by to say hello and discuss opportunities for getting involved in our Section. We welcome ideas for new initiatives and projects.

In other meeting-related updates, the AAP Advocacy conference this year will take place in Washington, DC, from April 14th-16th, 2024. This conference is a great opportunity to learn first-hand how to be an effective child health advocate, build on your advocacy skills, and meet with your congressional offices and staff. Unfortunately, the overlap with the SPA/AAP Pediatric Anesthesiology conference this year will limit our attendance, but it's an event to keep in mind for the future. The 2024 AAP National Conference and Exhibition (NCE) will unfold in Orlando, Florida, from September 27th – October 1st. Dr. Meera Gangadharan from our Section will be leading a clinical skills lab titled "Crash Course in Pediatric Sedation," which was presented at last year's NCE and was very well received. Congrats to Meera and her team on this achievement; getting on the NCE's program from year to year is not an easy feat, and we are excited to see the SOA represented on the schedule for this year and possibly into the future with this topic.

Our Section has been very active in authoring and reviewing policy statements and clinical reports in collaboration with other AAP Committees, Councils, and Sections. Statements in progress with SOA as the lead author include:

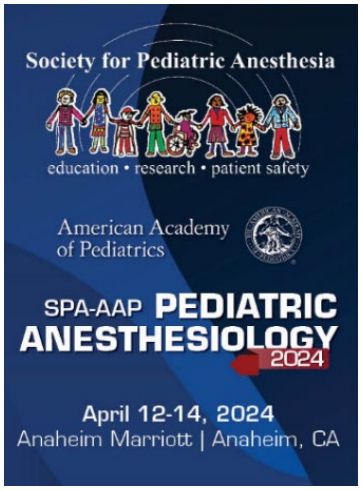
1. Critical Elements for the Pediatric Periprocedural Anesthesia Environment
2. The Pediatrician's Role in the Evaluation and Preparation of Pediatric Patients Undergoing Anesthesia
3. Codeine: Time to Say "No"
4. Chronic Pain in Infants, Children, and Adolescents

Statements in progress with SOA as co-authors include:

1. Recognition and Management of Iatrogenically-Induced Opioid Dependence and Withdrawal in Children – a collaboration with the Committee on Drugs
2. Oral Health Care for Children and Youth with Developmental Disabilities- a collaboration with the Section on Oral Health
3. Preoperative Clearance of Pediatric Patients with Congenital Heart Disease- a collaboration with the Section on Cardiology and Cardiac Surgery
4. Mitigating the Environmental Impact of the Operating Room: The Role of Pediatric Surgeons and Anesthesiologists – a collaboration with the Section on Surgery and the Council on Environmental Health and Climate Change

In closing, we have an exceptional group of dedicated anesthesiologists in our Section, and I urge all of you to stay involved and make a difference. I hope you will encourage your colleagues who are not yet AAP members to join our Section and improve the perioperative care of all children. The future of this world depends on them!

AAP –Sponsored Events and Awards at the 2024 SPA-AAP Meeting PEDIATRIC ANESTHESIOLOGY, April 12-14, 2024, Anaheim, CA



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 Pediatric Anesthesiology Meeting. This year's joint meeting will take place April 12-14, 2024, in Anaheim, California. The mobile meeting guide can be viewed here.

The AAP proudly sponsors a number of events and awards at the annual Pediatric Anesthesiology meeting. Please read on for information about the 2024 AAP Ask the Experts Panel, AAP Advocacy Lecture, John J. Downes Resident Research Award winners, and the esteemed 2024 Robert M. Smith Award winner.

AAP Ask the Experts Panel
Pediatric Obesity in the Perioperative Setting
Saturday, April 13, 2024
8:15 am – 9:30 am

Moderators:
Moderators: Debnath Chatterjee, MD, FAAP; Brittany L. Willer, MD, FAAP

8:15am – 8:45am
Pediatric Metabolic and Bariatric Surgery: Evidence, Outcomes, and Ongoing Challenges
Marc Michalsky, MD, MBA, FACS, FASMBS, FAAP

Upon completion of this presentation, the participant will be able to:
1. Become familiar with relevant demographic and co-morbidity data supporting the use of metabolic and bariatric surgery in the pediatric population.
2. As delineated in recent publications from the American Academy of Pediatrics (i.e. 2019 AAP Policy Statement and 2023 AAP Clinical Practice Guidelines), learners should be able to cite best practice recommendations, including general eligibility criteria for metabolic and bariatric surgery as treatment for severe childhood obesity.
3. Become familiar with major findings related to the Teen Longitudinal Assessment of Bariatric Surgery (Teen-LABS) study and recognize that a number of key challenges remain regarding current and future access to care.

8:45 AM – 9:15 AM
Anesthetic Implications of Pediatric Obesity and its Management
Jessica Berger, MD, FAAP

Upon completion of this presentation, the participant will be able to:
1. Summarize the impact of general anesthesia on the physiology of the obese pediatric patient.
2. Describe the pharmacologic effects of glucagon-like peptide (GLP) 1 receptor agonists and implications for patients under general anesthesia.
3. Assess the obese patient's risk for aspiration using point of care gastric ultrasound.
4. Develop a safe, comprehensive anesthetic plan for the obese pediatric patient.

9:15 AM – 9:30 AM
Q & A Discussion

****

AAP Advocacy Lecture
Human Trafficking - Identification and Healthcare Response to Sex Trafficking of Minors
Friday, April 12, 2024
11:15am – 12:10pm

Angela Rabbitt, DO, FAAP
Professor of Pediatrics
Children's Wisconsin/Medical College of Wisconsin
Milwaukee, Wisconsin

Dr. Rabbitt is board certified in General Pediatrics and Child Abuse Pediatrics. Her clinical duties include the provision of medical care to children and adolescents when there are suspicions of physical or sexual abuse or neglect. Her research interests involve assessing the knowledge and confidence of medical providers in recognizing and responding to patients at risk for commercial sexual exploitation, exploring the medical needs of individuals impacted by the sex trade, and in the assessment of

educational programs meant to address knowledge gaps in the medical response to sex trafficking. She has led multidisciplinary initiatives in Wisconsin to develop protocols for the investigative, medical, and advocacy response to potential victims of maltreatment and sex trafficking. Dr. Rabbitt has also served on national committees to improve the medical response to sexually exploited youth and participated in the creation of educational programs for the response to human trafficking at the state and national level. She is the co-director of the Healthcare Collaborative Against Sex Trafficking, a collaborative of healthcare systems, community agencies, and survivors working to improve the heath care of patients impacted by sex trafficking in Wisconsin.

Learning Objectives

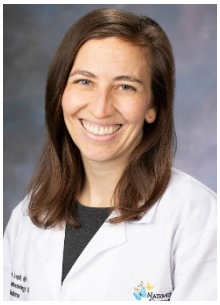
Upon completion of this presentation, participants will be able to:

1. Discuss the identification and recommendations for screening of sex trafficking from the perspectives of youth with lived experience.
2. Review vulnerabilities of youth that predispose to coercion by traffickers.
3. Discuss youth and young adult's perspectives of healthcare and community responses that aid in exiting and recovering from a trafficking situation.

****

2024 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
Savannah Aepli, MD, Nationwide Children's Hospital
Association of Primary Language and Neighborhood Opportunity with Pediatric Day-of-Surgery Cancellations

2nd Place
Jeffrey Yu, MD, Stanford University
Perioperative Methadone in Pediatric Patients with Severe Obesity Undergoing Bariatric Surgery

3rd Place
Simone Laing, MD, Virginia Commonwealth University
Association of Postoperative Preventable Harm with Mortality and Morbidity in Children

The oral abstract presentations and awards will be given on Saturday, April 13, from 10:20 to 11:00am.

****

2024 AAP Robert M. Smith Award Winner

Elliot J. Krane, MD, FAAP
Professor Emeritus, Anesthesiology, Perioperative & Pain Medicine, and Pediatrics
Stanford University School of Medicine

The presentation of the 2024 Robert M. Smith Award will take place on **Friday, April 12, from 12:10 to 12:30 pm**, immediately following the AAP Advocacy Lecture.

Tribute to Dr. Elliot Krane
by Rita Agarwal, MD, FAAP; Genevieve D'Souza, MD; Anita Honkanen MD, FAAP

The prestigious Robert M. Smith (RMS) Award is presented annually to honor an individual who has made outstanding contributions to the field of pediatric anesthesiology and/or pediatric pain medicine. These are truly remarkable individuals who have made many important advances in our subspecialty.[1]

The winner of this year's RMS Award, Dr. Elliot J. Krane, Emeritus Professor of Anesthesiology, Perioperative and Pain Medicine (Pediatric Anesthesia) at the Stanford University Medical Center is someone who I have admired for many years. He was one of the founders of pediatric pain medicine and a highly respected academic pediatric anesthesiologist. He created the Division of Pediatric Anesthesiology in the 1990s at Stanford against considerable resistance.

Dr. Krane completed residencies in pediatrics and anesthesiology at Massachusetts General Hospital and finished a fellowship in pediatric anesthesiology and critical care at Boston Children's Hospital. He started his career at the University of Washington and Seattle Children's Hospital, where he practiced OR anesthesiology, pediatric critical care medicine and pain medicine. He started one of the first pain centers for children in North America. Working with several other accomplished leaders in the field, he helped create one the first pediatric anesthesia databases and, in fact, one of the first such multi-institutional endeavors in anesthesia in the country. The Pediatric Regional Anesthesia Network (PRAN) has gone on to be incredibly influential and impactful both in the US and internationally, spawning many articles regarding the safety and efficacy of regional anesthesia in children.[2,3]

In 1994 he moved to Stanford as Chief of Pediatric Anesthesiology and Chief of Pain Management. He remained Chief of Pediatric Pain Management until 2023. He holds board certification in Pediatrics, Anesthesiology, Pediatric Anesthesiology, Critical Care Medicine, and Pain Management and is a Fellow of the American Academy of Pediatrics (whew, we are exhausted just thinking about all those boards!).

Elliot Krane has received multiple awards, including the Physician's Recognition Award in both Anesthesiology and Pediatric Critical Care from the American Medical Association, the Jeffrey Lawson Award for Advocacy in Children's Pain Relief from the American Pain Society (APS), the Ellis N. Cohen Achievement Award from the Stanford University Department of Anesthesiology, Perioperative and Pain Medicine, and the International Association for the Study of Pain (IASP) Distinguished Career Award in Pediatric Pain. He has also been the recipient of grants from the Mayday Fund, the NIH, the AMA, the Diabetes Research and Education Foundation, and the ASA. He has been involved in research, education, pain advocacy and patient care his entire career and has written many articles on a variety of topics, from the effects of halothane on children's physiology to cannabis use for pain and symptom management.

His greatest contributions have been in the area of regional anesthesia and pain management, but most importantly he has been an incredible champion for patients. He has received thousands of notes and letters from grateful faculty, families, and patients, some of which are shared below.

From Families/Patients:

"…As I have said numerous times, you have changed my life. To have a doctor who believes you and will do anything to help you is the greatest blessing a person can have. From the time I met you, I knew there was something different. I finally believed that something could be done to help me. And I finally felt like there was hope. …"

"…I wanted to thank you again for all of your help during those challenging times of my life. I worked very hard to not let pain take over my life and would like to report I am doing very well. I graduated from Cal Poly with a BS in Kinesiology and am currently in the middle of my first year in Physician Assistant School at Loma Linda University….I worked in a surgery center……in Pain management. I ended up doing many of the procedures that you did on me. I loved being able to help so many people relieve their pain without having to be on narcotics all day….So thank you again for all of your hard work. I know it is not easy at times, but you are making a huge impact on our lives."

"I just wanted to take a moment to thank you for all you've done for me. Although it has been many years since treatment, the results of your care will, quite literally, last a life time……..PS. I am doing well at UC Berkeley….I also recently hiked Half Dome in Yosemite. Take that CRPS!"

"I will always carry with me the intelligence and kindness with which you cared for our daughter the last six days of her life. My wavering belief in the medical system of our country has been transformed and renewed from my experience at Children's. I am grateful for the integrity and compassion of yourself and the Children's ICU staff, grateful for your assisting us in creating a safe and honorable passage for her, our beloved daughter…..I know she would extend her thanks now as I am doing… Dr. Krane, Thank you."

From Faculty:

"Thank you for being the most amazing leader and greatest boss."

"I think the most heartfelt thing I can say about Elliot is that he is the primary reason I went into pediatric anesthesiology AND pediatric pain management. That's how much I respect him. His magic blend of intelligence, knowledge, skill, energy, passion, and compassion is inimitable. Plus, he is quite facile and convincing with a blow torch !" (TED talk: The Mystery of Chronic Pain)

"You have been a role model and inspiration for the kind of doctor I want to be."

"I worked extensively with Elliot on one of my first research projects which was started when I was a young resident. He taught me so much…..He opened so many doors for me with his funding and wealth of knowledge…..I hold him in high regard as a mentor to early career physicians."

Congratulations to the 2024 Robert M. Smith Award Winner, Dr Elliot J. Krane!

References:

1. Fifty years of the American Academy of Pediatrics Section on Anesthesiology: a history of our specialty. Agarwal R, Riefe J, Houck CS. Paediatr Anaesth. 2017 Jun;27(6):560-570.
2. Asleep Versus Awake: Does It Matter? Pediatric Regional Block Complications by Patient State: A Report From the Pediatric Regional Anesthesia Network *REGIONAL ANESTHESIA AND PAIN MEDICINE* Taenzer, A. H., Walker, B. J., Bosenberg, A. T., Martin, L., Suresh, S., Polaner, D. M., Wolf, C., Krane, E. J.2014; 39 (4): 279-283
3. Interscalene brachial plexus blocks under general anesthesia in children: is this safe practice?: A report from the Pediatric Regional Anesthesia Network (PRAN). *Regional anesthesia and pain medicine* Taenzer, A., Walker, B. J., Bosenberg, A. T., Krane, E. J., Martin, L. D., Polaner, D. M., Wolf, C., Suresh, S.2014; 39 (6): 502-505

Call for 2025 Robert M. Smith Award Nominees

Each year at the SPA-AAP PEDIATRIC ANESTHESIOLOGY 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 2025 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/QNRBVHD. 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 June 1, 2024.

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
2020: Jayant K. Deshpande
2021: Corrie T.M. Anderson
2022: Shobha Malviya
2023: Navil Sethna
2024: Elliot J. Krane

Seen in Pediatrics, Pediatrics in Review, Hospital Pediatrics, NeoReviews, & AAP Grand Rounds

NeoReviews™ AN OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS MOC
AAP Grand Rounds™ AN OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS MOC
Pediatrics in Review AN OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS MOC
Hospital Pediatrics AN OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS
PEDIATRICS OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Pediatric Anesthesia

Neonatal Surgical Procedures in the Intensive Care Unit versus the Operating Room

Regional Anesthesia for Neonates

Benefits to Clinicians of Nonpharmacological Distraction During Pediatric Medical Procedure

Nonpharmacological Interventions to Reduce Sedation and General Anesthesia in Pediatric MRI: A Meta-analysis

Poke Plan: An Initiative to Improve Distraction and Pain Mitigation With Venous Access in Hospitalized Children

We Can End the Harm Caused by Preventable Needle Pain: The Promise of Quality Improvement

Pediatric Pain Medicine

Management of Acute Sickle Cell Disease Pain

Safety and Efficacy of Gabapentin for Pain in Pediatric Patients: A Systematic Review

Peripheral Nerve Stimulation for the Management of Pediatric Neuropathic Pain

Advances in the Care of Infants With Prenatal Opioid Exposure and Neonatal Opioid Withdrawal Syndrome

The Impact of Standardized Recovery Pathways on Language Barriers and Inpatient Pain Management

Opioids vs Non-opioids After Humeral Fracture Surgery

Eat, Sleep, and Console for Neonatal Opioid Withdrawal

Minimize Opioids After Adolescent ACL Reconstructions

Pediatric Hospital Medicine

Type 1 Diabetes Management in the Hospital Setting

Inappropriate Use of Peripherally Inserted Central Catheters in Pediatrics: A Multisite Study

Pulse Oximetry in Bronchiolitis: Have We Reached Saturation?

Measurement of Ambulatory Medication Errors in Children: A Scoping Review

Safely Shifting MRIs for Seizure Evaluation to the Outpatient Setting

A Review of Creative Play Interventions to Improve Children's Hospital Experience and Wellbeing

Pediatric Palliative Care

Code Status Discussions in Pediatric Patients With Heart Disease During Terminal Admissions

Pediatric Surgical Care/Trauma/Emergency Care

Bridging the Gap: Pediatric General Surgery for the Pediatrician

Reducing Time to Postintubation Sedation in a Pediatric Emergency Department

School Shootings in the United States: 1997-2022

Firearm-Related Tips in a Statewide School Anonymous Reporting System

Trends in Nonfatal and Fatal Injuries in Children

Pediatric Sport-related Concussion: Recommendations from the Amsterdam Consensus Statement 2023

Pediatric Critical Care

Dexmedetomidine During Therapeutic Hypothermia: A Multicenter Quality Initiative

Endotracheal Tube Size Adjustments Within Seven Days of Neonatal Intubation

Pharmacologic Adjuncts for Neonatal Tracheal Intubation: The Evidence Behind Premedication

Adolescent Medicine

Suggestions to Avoid Perpetuating Tobacco Industry Reduced-Harm Marketing Tropes

Disposable E-Cigarette Use and Subsequent Use Patterns in Adolescents and Young Adults

Outcome of BMI2+: Motivational Interviewing to Reduce BMI Through Primary Care AAP PROS Practices

Antidepressant Dispensing to U.S. Adolescents and Young Adults: 2016-2022

MTBI and Risk for Affective and Behavioral Disorders

Diversity, Equity, Inclusion

Addressing Disparities and Underutilization of Adolescent Metabolic and Bariatric Surgery

2023 Update on Pediatric Medical Overuse

Disparities in Racial, Ethnic, and Payor Groups for Pediatric Safety Events in US Hospitals

Medical Education

The Role of Medical Education Podcasts in Pediatrics

IN CASE YOU MISSED IT….

AAP PODCAST: "PEDIATRICS ON CALL"

"Pediatrics on Call" is the AAP's podcast, exploring the latest news and innovations in children's health, discussing the science behind child health recommendations, and providing a forum to hear first-hand from leading experts in child and adolescent medicine. Each 30-minute, weekly episode features interviews about new research and hot topics in the field of pediatrics.

Some recent episodes of interest include:

Pediatrics Research Roundup, Protecting Kids from Climate Change – Episode 196
04/02/2024
In this episode Alex R. Kemper, MD, MPH, MS, FAAP, deputy editor of the journal Pediatrics, offers a bird's-eye view of the April issue. Hosts David Hill, MD, FAAP, and Joanna Parga-Belinkie, MD, FAAP, also speak with Samantha Ahdoot, MD, FAAP, about the effects of global climate change on children's health.

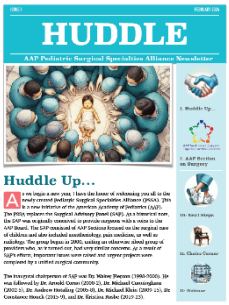
Pediatrics Research Roundup, Surviving and Preparing for Disasters – Episode 194
03/05/2024
In this episode Rachel Moon, MD, FAAP, associate editor of digital media for the journal Pediatrics, shares a research roundup from the March issue. Hosts David Hill, MD, FAAP, and Joanna Parga-Belinkie, MD, FAAP, also talk to Felicitas Livaudais, MD, FAAP, and Cindy Calderon, MD, FAAP, about surviving disasters and learning how to prepare for the future.

Identifying Suicide Risk, Food Insecurity Discrimination – Episode 187
01/16/2024
In this episode Maria Rahmandar, MD, FAAP, explains ways pediatricians can identify suicide risk in adolescents. Hosts David Hill, MD, FAAP, and Joanna Parga-Belinkie, MD, FAAP, also talk with medical student Alexis Cacioppo about how food insecurity in caregivers can lead to discrimination.

The 75th Anniversary of the Journal Pediatrics – Episode 185
12/19/2023
In this episode hosts David Hill, MD, FAAP, and Joanna Parga-Belinkie, MD, FAAP, are joined by three of their favorite guests, the editors of Pediatrics. Rachel Moon, MD, FAAP, Alex R. Kemper, MD, MPH, MS, FAAP, and Lewis First, MD, MS, FAAP, celebrate the 75th anniversary of the journal with a look at the past, the present and the limitless future.

New episodes are released on Tuesdays. See all episodes at www.aap.org/podcast.

AAP Pediatric Surgical Specialties Alliance Newsletter


HUDDLE
AAP Pediatric Surgical Specialties Alliance Newsletter
Huddle Up…

We are pleased to share with you the very first edition of the AAP Pediatric Surgical Specialties Alliance (PSSA) newsletter, HUDDLE. The PSSA is a new initiative of the AAP, which replaces the former Surgical Advisory Panel (SAP).

Stay tuned for future editions of HUDDLE!

Equity, Diversity, and Inclusion – SPOTLIGHT

Lessons in Leadership and Promoting Language Access: Reflections from a Mission Driven Mentoring Program Scholar

Clarice Nguyen, MD
Fellow Physician, Lucile Packard Children's Hospital/Stanford Health Care

Throughout my combined residency training in general pediatrics and anesthesiology, I have had diverse clinical experiences, from examining a newborn during their first clinic visit to caring for a child during their congenital heart surgery. In all of these settings, communication with caregivers and families is critical to providing the best care possible for pediatric patients, even more so for our families who primarily speak a language other than English. Several terms have been used to describe individuals whose preferred language is not English: limited English proficiency (LEP), non-English language preference (NELP), or speaking a language other than English (LOE). More recent literature favors the use of terminology that de-emphasizes the dominance of the English language and deficit-based view of a person's language proficiency.[1,2]

Studies have shown that disparities in perioperative care exist among children of families who speak a LOE, including fewer pain assessments in the postanesthesia care unit and on the pediatric wards postoperatively.[3,4] At our institution, anecdotal evidence and clinical practice data revealed a disparity in the use of caudal analgesia for urologic procedures among pediatric patients from families whose preferred language is Spanish, with 63% of Spanish-speaking patients receiving a caudal block compared to 79% of English-speaking patients (X^2=6.35, $p<0.05$). This finding paralleled a previous study by Lo et al., who found that 65% of Spanish-speaking parents declined a caudal block, and of those receiving a caudal block, a higher percentage were primarily English-speaking.[5]

With support from the Society for Pediatric Anesthesia's Mission Driven Mentoring Program (MDMP), our group sought to develop a quality improvement project to better characterize the key drivers impacting the utilization of caudal analgesia for pediatric patients undergoing urologic procedures and reduce the disparity for children of primarily Spanish speaking families. In this first year, we focused on using qualitative methods to study the current state and identify barriers and facilitators to receiving caudal analgesia. We obtained IRB approval and collaborated with our institution's Family Centered Care Department and Latinx Advisory Council, as well as our Spanish perioperative interpreters, to develop and pilot an interview guide for our Spanish-speaking caregivers. Additionally, we interviewed our Spanish perioperative interpreters, pediatric urologists, and pediatric anesthesiologists. The interviews were transcribed, translated, and inductively coded. Using thematic analysis, we developed preliminary themes.

To date, we have interviewed 22 participants, including 11 caregivers (8 Spanish-speaking, 3 English-speaking). Our preliminary themes highlight the role of caregivers' experience with labor epidurals as influencing their perceptions of caudal blocks, as well as the impact of medical literacy and trust in health care providers on decision-making. Several possible interventions were suggested by participants, such as holding discussions about caudal analgesia before the day of surgery and involving surgeons and the urology clinic in these discussions. We plan to continue interviewing more participants in the coming months and use these findings to develop and implement interventions in partnership with our Spanish-speaking family advocates.

Many lessons were learned during the course of this past year, namely the importance of embracing collaboration and engaging multiple stakeholder perspectives. The involvement of our Family Centered Care Department, Latinx Advisory Council, and perioperative interpreters was crucial to ensuring our ability to respectfully and honestly elevate the voices of our Spanish-speaking families and patients. The support provided by the MDMP furthered our understanding of how to engage in quality improvement work and research that will minimize disparities and not perpetuate them.[6]

From a personal and professional standpoint, the MDMP has provided me with the foundation and tools for developing an

academic career that dovetails the promotion of health equity with pediatric anesthesia. I have learned that flexibility and adaptability are essential to this work. Furthermore, the program has provided me with role models who embody effective mentorship and sponsorship, skills I hope to develop as I begin my career after training. Joining the pediatric anesthesia community is an exciting and meaningful transition, and the MDMP has allowed me to jump in headfirst with direction and purpose.

References:

1. Yeboah D, McDaniel C, Lion KC. Language Matters: Why We Should Reconsider the Term "Limited English Proficiency." *Hospital Pediatrics*. 2023;13(1):e11-e13. doi:10.1542/hpeds.2022-007014
2. Ortega P, Shin TM, Martínez GA. Rethinking the Term "Limited English Proficiency" to Improve Language-Appropriate Healthcare for All. *J Immigrant Minority Health*. 2022;24(3):799-805. doi:10.1007/s10903-021-01257-w
3. Jimenez N, Jackson DL, Zhou C, Ayala NC, Ebel BE. Postoperative Pain Management in Children, Parental English Proficiency, and Access to Interpretation. *Hospital Pediatrics*. 2014;4(1):23-30. doi:10.1542/hpeds.2013-0031
4. Dixit AA, Elser H, Chen CL, Ferschl M, Manuel SP. Language-Related Disparities in Pain Management in the Post-Anesthesia Care Unit for Children Undergoing Laparoscopic Appendectomy. *Children*. 2020;7(10):163. doi:10.3390/children7100163
5. Lo C, Ross PA, Le S, Kim E, Keefer M, Rosales A. Engaging Parents in Analgesia Selection and Racial/Ethnic Differences in Analgesia Given to Pediatric Patients Undergoing Urologic Surgery. *Children*. 2020;7(12):277. doi:10.3390/children7120277
6. Lion KC, Faro EZ, Coker TR. All Quality Improvement Is Health Equity Work: Designing Improvement to Reduce Disparities. *Pediatrics*. 2022;149(Supplement 3):e2020045948E. doi:10.1542/peds.2020-045948E

Acknowledgements: James Xie, MD, Marina Faragalla, BS, Maria Valentina Suarez-Nieto, BS, Sandy Orozco, BA, Allyson Farran, MD, Amber Slaton, MAT&I, Karen Wayman, PhD, Marsha Perez, Helen Lee, MD, MPH, and Nathalia Jimenez, MD, MPH

Rising Tide of Childhood Obesity has Implications for Perioperative Care

October 1, 2023
Olubukola O. Nafiu, M.D., FRCA, M.S., and Elizabeth Drum, M.D., FAAP

Obesity prevalence has reached alarming rates among U.S. children. Even more concerning is the escalating proportion of children with severe obesity (Skinner AC, et al. *Pediatrics*. 2018;141:e20173459).

Beyond the long-term health implications, high body mass index (BMI) is associated with risks for children with obesity who require surgery or anesthesia.

Since pediatricians often are the first contact with the health care system on a child's surgical journey, they can play a pivotal role in identification and management of preoperative risk and perioperative obesity education.

Preoperative assessment and risk identification

A thorough preoperative assessment is crucial for ensuring the safety and optimal outcomes for all children requiring surgery or anesthesia, including those with obesity.

Most children presenting for non-bariatric procedures may not have undergone a comprehensive preoperative clinical and laboratory screening that typically precedes bariatric surgery. Therefore, the pediatrician's input in preoperative preparation is crucial.

In addition to conducting a standard medical history and physical examination, it is critical to identify patients with comorbidities, such as obstructive sleep apnea or cardiopulmonary dysfunction. Gathering detailed sleep health history is important, as habitual snoring, daytime somnolence, nocturnal enuresis and morning headaches may be strong indicators for obtaining a preoperative polysomnogram, as appropriate.

Subclinical cardiac dysfunction is seen in children with obesity (Cozzolino D, et al. *PLoS One*. 2015;10: e0123916), which may be unmasked by general anesthesia and surgery. Although there are no specific guidelines for identifying subclinical cardiac dysfunction, further cardiac screening may be warranted in patients with a history of effort dyspnea and poor exercise tolerance.

Furthermore, a comprehensive evaluation including lipids, fasting HbA1c and measures of liver and kidney function prior to surgery may be indicated.

Previous research has emphasized the missed opportunity for providing "teachable moments" in the preoperative setting. While acknowledging the unique nature of the preoperative environment, it is crucial to explore ways to maximize every interaction between children with obesity and the health care system to address nutrition and promote healthy lifestyles.

Perioperative consequences of childhood obesity

Perioperative complications of obesity in children include hypoxemia, hypoventilation, and perioperative respiratory adverse events.

The pathophysiology of obesity-related hypoxemia includes reduced functional residual capacity, postinduction upper airway obstruction, basal atelectasis and increased oxygen consumption.

Children with obesity also are more susceptible to difficult mask ventilation and, less frequently, difficult laryngoscopy. Other complications include difficult vascular access, positioning challenges and increased susceptibility to pressure injuries (Mpody C, et al. *Curr Opin Anaesthesiol*. 2021;34:299-305).

Perioperative medication dosing for children with obesity presents unique challenges. Weight-based dosing strategies may result in excessive exposure to anesthetic drugs, while employing dose-capping measures could lead to inadequate dosing (Mulla H, Johnson TN. *Arch Dis Child Educ Pract Ed*. 2010;95:112-117).

Additionally, obesity induces physiological changes, including increased body fat mass, altered hydration of lean mass and variations in bone mineral content compared to children of normal weight. These obesity related changes significantly impact drug metabolism and alter the pharmacokinetics of medications, potentially compromising their efficacy and increasing the risk of severe adverse events.

In children with severe obesity (defined as a BMI equal to or above 120% of the 95th percentile on the Centers for Disease Control and Prevention's BMI-for-age and sex growth charts), comorbidities are more prevalent and often cluster, making perioperative management notoriously difficult.

Pediatricians, anesthesiologists and surgeons increasingly will encounter children with obesity and comorbid conditions. These children present unique perioperative challenges due to obesity-related physiological changes and concurrent chronic illnesses. Implementing comprehensive preoperative assessments; optimizing perioperative care, including obesity education and nutritional care; and promoting long-term management strategies can enhance surgical outcomes and improve the overall well-being of children with obesity.

Dr. Nafiu is a pediatric anesthesiologist in the Department of Anesthesiology and Pain Medicine at Nationwide Children's Hospital in Columbus, Ohio. Dr. Drum is a member of the AAP Section on Anesthesiology and Pain Medicine Executive Committee.

New Policies of Interest from the AAP

AAP Provides New Guidance on Collaborative Care of Hospitalized Children

The care of children with acute or complex diagnoses often requires teams of health care providers. The AAP recently issued a clinical report, "**Comanagement of Surgical Pediatric Patients in the Acute Care Inpatient Setting**," published online on December 18 and in the January 2024 issue of *Pediatrics*, offering guidance for pediatric health care teams on how best to work together to ensure the highest quality of care for children with surgical problems. According to research, the number of pediatric hospital medicine programs involved in caring for surgical patients increased from 44% to 90% between 1997 and 2020, and about 40% of pediatric surgery and 60% of pediatric orthopedic programs use comanagement for patient care. This clinical report, which drew input from experts in pediatric specialties—such as orthopedics, neurosurgery, surgery, anesthesiology, urology, and others—addresses the need for standards, training, and best practices to guide these collaborative programs. Clinical reports created by AAP are written by medical experts, reflect the latest evidence in the field, and go through several rounds of peer review before being approved by the AAP Board of Directors and published in *Pediatrics*. This clinical report sets standards for identifying hospital leaders of comanagement programs; elucidating goals, expectations and requirements of these programs; ensuring additional training required by members of the health care team; and establishing metrics on program outcomes. Given the high prevalence of collaborative care of hospitalized children with surgical problems across all types of hospitals and practices, this clinical report will assist hospitals, doctors and other health care providers involved in creating and improving comanagement programs.

AAP Warns of Climate Change Impacts on Children in Guidance Update

A new **policy statement** and **technical report** lay out risks to children, highlighting how existing inequities pose bigger challenges

As climate change disrupts the planet through powerful weather patterns, rising temperatures and ecological disruption, children are especially vulnerable. They receive greater exposure to air, food and water contaminants per unit of body weight, and their development and growth depend on a healthy environment.

The American Academy of Pediatrics calls for taking action to protect children in a policy statement, "Climate Change and Children's Health: Building a Healthy Future for Every Child." The statement and an accompanying technical report update previous recommendations from 2015. They were published in the March 2024 *Pediatrics* (published online Feb. 20, 2024).

The latest policy and technical report will help guide a new AAP strategic initiative on environmental health and disaster readiness. The initiative is among four priorities outlined by the Board of Directors to shape the Academy's work in 2024.

"We see firsthand the effects of air pollution, wildfires and heat on our children with asthma and respiratory illnesses," said Samantha Ahdoot, MD, FAAP, a lead author of the statement, written by the Council on Environmental Health and Climate Change, Council on Children and Disasters, Section on Pediatric Pulmonology and Sleep Medicine, and Section on Minority Health, Equity, and Inclusion.

"Children who already bear a higher burden of disease because of poverty, structural racism and less education or who speak languages other than English face even higher risks of climate change hazards. But we understand the cause of this problem, so we know how to fix it. Climate solutions are the foundation of a healthy future for every child."

The AAP policy statement offers recommendations for the medical sector and government, encouraging the adoption of policies that reduce reliance on fossil fuels, promote cleaner air and facilitate walking and bicycling. The statement urges the use of more sustainable diets and increased access to nature.

The accompanying technical report provides the scientific basis and knowledge about the effects of higher concentrations of greenhouse gases on earth systems, as well as the child health impacts.

The AAP recommends:

- Physicians can incorporate climate change counseling into clinical practice. Assess climate risks and recommend climate solutions when screening for and addressing social determinants of health such as energy, food, and housing security. For example, encourage active modes of transport or promote consumption of plant-based proteins to reduce carbon emissions.
- Incorporate climate, health, and equity curricula into medical school, residency, continuing education, and board examinations.
- Reduce emissions and waste in the health care sector.
- Serve as a role model in the personal and professional community for practices that promote sustainability and advocate for equitable climate solution policies at the local, state, national, and international level.

The AAP recommends that policymakers promote energy efficiency and renewable energy production at the federal, state, and local levels, and preserve essential public health protections in the Clean Air Act. Governments can expand public transportation, increase construction of safe bikeways and walkways, and support urban planning designs that reduce dependence on automobile transit. The government can also provide funding as an incentive to reduce reliance on livestock as food and promote plant-based diets.

"We all want our children to grow up healthy, safe and secure. Building a healthier planet is essential to reach that goal in the midst of uncertainties about what climate change will bring," said Carl R. Baum, MD, FACMT, FAAP, co-author of the policy statement. "A pediatrician can help families understand the ways big and small where we can help. We are in this together."

American Academy of Pediatrics Updates Guidance on Addressing Suicide Risk Among Adolescents

AAP recommends pediatricians and health professionals screen for suicidal ideation and risk factors of suicide

In an updated clinical report addressing adolescent suicide risk, the American Academy of Pediatrics (AAP) offers guidance for pediatricians and pediatric health care providers to assess the possibility of suicide, reduce risks and connect adolescents and their families with mental health resources.

The clinical report, "**Suicide and Suicide Risk in Adolescents**" was published in the January 2024 issue of *Pediatrics* (online Dec. 11). The AAP, American Academy of Child and Adolescent Psychiatry, and Children's Hospital Association recently declared a national state of emergency in children's mental health, partly based on a significant increase in suicides among youth 10 to 24 years old. During the beginning of the COVID-19 pandemic in 2020, emergency department visits for suicide attempts further increased among adolescents 12 to 17 years of age (50.6% higher in girls and 3.7% higher for boys).

"Suicide is complex but often preventable," said Janet Lee, MD, FAAP, one of the authors of the suicide report. "Because of their long-term relationships with teens and their families, pediatricians and other pediatric health care providers are in a unique position to have open communication with young people to discuss mental health and suicidality. This clinical report supports pediatricians in the work they do every day around suicide prevention by helping them recognize risk factors and highlighting evidence-based interventions."

In the clinical report, the AAP recommends pediatricians and health professionals screen for suicidal ideation and risk factors of suicide. A range of interventions are recommended, including:

- Personalize coping strategies for patients such as religious activities and group exercise

- Gauge potential access to deadly devices, particularly firearms, during preventive care visits and provide counseling to decrease or eliminate access
- Engage parents and families in suicide prevention and treatment efforts such as sleep hygiene, community engagement
- Explore school-based interventions that educate students and staff on recognizing signs of depression

The updated clinical report highlights the online **Blueprint for Youth Suicide Prevention** that serves as a resource for health care providers to support adolescent patients who may be at risk for suicide. The Blueprint outlines a 3-tiered pathway that begins with a brief screen lasting no more than one minute. Next is a brief suicide safety assessment for anyone who screens positive that evaluates the frequency of suicidal thoughts, plans, mental health symptoms, and suicide history. The final component is to identify the next steps for care.

The AAP also makes recommendations around language to be used when speaking with youth and families about suicide, including phrasing such as "suicide attempt" instead of "failed suicide attempt." AAP also advocates for adequate payment for providing suicide risk screening and assessment services, as well as funding for additional time, training and care coordination services for professionals who manage mental health conditions.

AAP RESOURCES - ARTIFICAL INTELLEGENCE IN PEDIATRICS

The development and application of artificial intelligence tools in health care is growing rapidly. AAP is creating and sharing resources to help pediatricians and pediatric specialists understand and utilize these tools to decrease burden, promote health equity, and improve the overall quality of pediatric health care.

AAP "AI in Pediatrics" Webinar Series – Recorded Episodes

Generative Artificial Intelligence: What Pediatricians and Pediatric Specialists Need to Know

Generative AI for Medical Education in Pediatrics

Generative AI for Clinical Scenarios in Pediatrics

Generative AI for Administrative Tasks in Pediatrics

Frequently Asked Questions About AI in Pediatrics - Part 1

AI and Medical Liability in Pediatrics

Registration is open for AAP's next two AI webinars!

AI and EHRs Part 1: Connections and Applications Outside the EHR
Join us for an exciting discussion of how pediatric clinicians and practices can integrate third-party AI tools as part of the care they provide.
Thursday, April 18
11:00 AM Central
Speakers:

- Chip Hart, Director of Pediatric Solutions, PCC
- Rachel Bakersmith, Practice Administrator, Children First Pediatrics

Register for **AI and EHRs Part 1** here: https://bit.ly/3Vu5zKG

AI and EHRs Part 2: How Are EHR Vendors Thinking About AI?
In this webinar, we'll learn about how and where EHR vendors are integrating AI tools and functionality within their software.
Thursday, May 16
11:00 AM Central
Speakers:

- Janet Campbell, HIMSS EHRA
- Sabrina Braham, MD, FAAP

Register for **AI and EHRs Part 2** here: **https://bit.ly/3x90Cji**

These webinars will be recorded. Even if you can't attend the live events, please register so you can receive a link to the recordings when they are available! Questions and comments about these webinars, or AI in pediatrics more broadly, can be directed to **cocit@aap.org**.

A Brief Primer on ChatGPT and Large Language Models

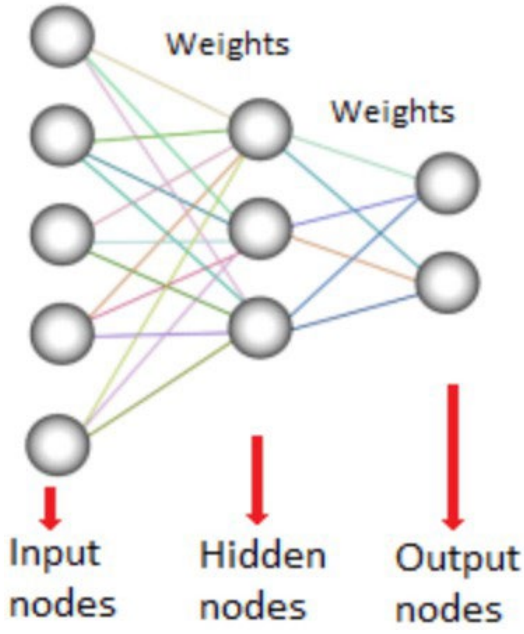
By R. Brandon Hunter, MD, FAAP; rxhunter@texaschildrens.org

Most of us have heard about ChatGPT in the news, and whether you sit in the camp of wondering whether this is an overhyped text completion algorithm or the first sign of the arrival of our AI overlords, having a basic understanding of how these models work will be critical for clinicians and industry professionals alike in the coming years. There are a TON of articles exploring how LLMs may be applied in clinical decision support, patient and clinician education, and administration. Instead of reiterating those points here, I wanted to just briefly talk about how the models are trained and function to help empower clinicians and industry professionals interested in engaging with their early application.

Unpacking the Definition

Large Language Models (LLMs) are advanced AI systems designed to process, understand, and generate human-like language based on vast amounts of text data. They are artificial neural networks made up of **nodes** which are the basic units of the network that can process information. These **nodes** are connected by **parameters** which represent the weights and biases of the model and allow it to process information in complex ways.

So "Large" in the term Large Language Model usually refers to the number of parameters (weights/biases) present – there were 175 billion parameters in GPT-3 (the old model powering ChatGPT), and though we can't say for sure, likely as many as a trillion in the newer version powered by GPT-4. "Large" can also refer to the amount of text data used to train the models, also on the order of billions of webpages.



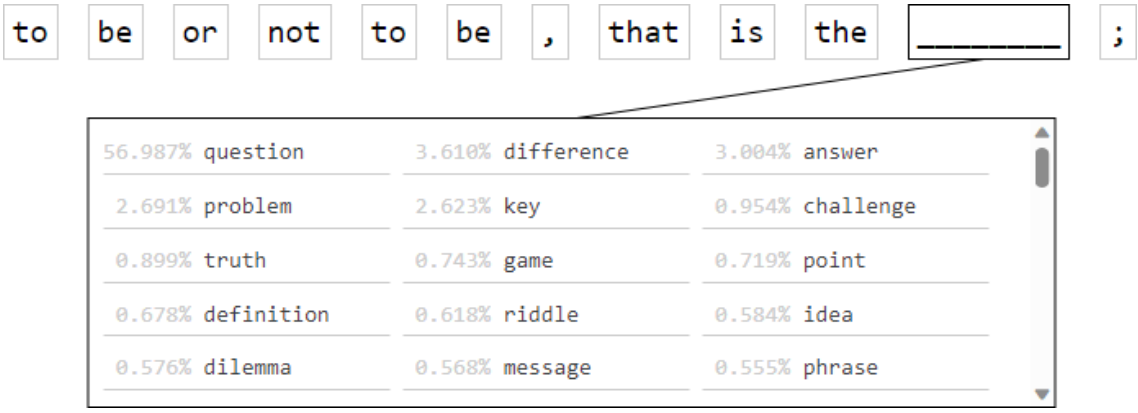
(Figure source: https://www.saedsayad.com/artificial_neural_network.htm)

How are LLMs Trained?

We say that LLMs are trained on billions of webpages of data, but what does this really mean? One common example of a training strategy is known as Masked Language Modeling, which is a type of self-supervised learning. Basically, the

model takes a sentence of text from the internet and randomly masks some words (or more specifically, "tokens," which are small pieces of meaningful text) within the sentence. The objective of the model is to predict these missing words/tokens based on the context provided by the unmasked words. After making a prediction, the model compares its guess to the actual text observed on the internet to learn and adjust its contextual associations. Over time, the model can predict that certain words will appear at certain frequencies based on exposure to billions of webpages.

With this in mind, we can see how the models are prone to bias. The model, for example, would likely associate the north pole with words like cold, snow, freezing, etc., because they tend to be written about together on the internet. Problems can arise if similar language associations arise based on text observed about groups of people and can lead to potential bias within the system. Not discussed here, but even after these associations are made, Reinforcement Learning from Human Feedback (RLHF) is a critical (and often cryptic) part of determining the LLM's ultimate behavior and very much dependent on company-specific human input and guidance.



In this example, the model knows that usually the next word in this sentence is 'question,' but other words do still appear, though less frequently (Merve, N. (2023). Fill-in-the-blank. Hugging Face Spaces. https://huggingface.co/spaces/merve/fill-in-the-blank).

How do LLMs Work?

Stephen Wolfram has a phenomenal article that anyone interested in the subject should read (see figure citation), so much what follows is based on his impactful writing. At the end of the day, LLMs like ChatGPT/GPT-4 generate natural-sounding text by selecting words (tokens) that form a "reasonable continuation" of whatever text has been provided input text – this process is not so different from the completion training discussed above. The model's parameters, adjustable numerical values that define its architecture, capture relationships and weigh dependencies between words (tokens), enabling the model to predict the likelihood of a what the next string of text should be based on its prior training.

{The best thing about AI is its ability to,
The best thing about AI is its ability to learn,
The best thing about AI is its ability to learn from,
The best thing about AI is its ability to learn from experience,
The best thing about AI is its ability to learn from experience.,
The best thing about AI is its ability to learn from experience. It,
The best thing about AI is its ability to learn from experience. It's,
The best thing about AI is its ability to learn from experience. It's not}

learn	4.5%
predict	3.5%
make	3.2%
understand	3.1%
do	2.9%

Wolfram, Stephen. (2023, February 14). What Is ChatGPT Doing … and Why Does It Work? Stephen Wolfram Writings. https://writings.stephenwolfram.com/2023/02/what-is-chatgpt-doing-and-why-does-it-work/&#8203

So, in the example above, ChatGPT knows that when it has seen the text "The best thing about AI is its ability to…", the next most common text it has observed is "learn," so it puts in that text. It now has a new string of text and repeats this process over again. It is remarkable to note that whether ChatGPT is answering a question or writing a book, it is simply repeating this process over and over again – asking itself "given the text here so far, what is a reasonable continuation at this point?"

This explains the basic idea, but what about creativity? Well, by adjusting a feature called the "temperature," a LLM will randomly choose a text continuation that is not the most common choice (in the example above, it might choose "predict" or "make" rather than "learn"). By doing this, the model can generate creative, interesting, and human-like responses. I personally have to pinch myself to remind me that this is how it works – there is almost nothing in my direct experience of reading the well-organized and formatted responses of ChatGPT that indicate this is what's going on!

I hope this was helpful! Understanding the basics of how the models are trained and function is critical to understanding their current strengths, limitations, and risks. I do believe these models will have an incredible impact with how we deliver care to children in the coming years and am excited to see how the AAP SOATT can help lead in this space! On a selfish note, if anyone is interested in researching or collaborating on work implementing these models, please get in touch!

Reprinted with permission from the Section on Advances in Therapeutics and Technology Fall 2023 newsletter.

Moving Pediatrics Forward: A History of Advocacy Within the AAP

Advocacy on behalf of the health of all children is in the organizational DNA of the American Academy of Pediatrics. It was an original goal of the founding members of the AAP to build an organization dedicated to advocating for children. Since the development of pediatrics as a specialty field, pediatricians & pediatric medical and surgical specialists have played a powerful role in creating lasting and meaningful change for the patients they serve.

The AAP has compiled a timeline (from the 1940s to today) to highlight some of the most significant moments in its long history of advocacy, complete with new video clips looking back on each decade.

Take a moment to learn more about the AAP's decades of progress here.

Promoting Gun Safety is an Uphill Battle

Beryl Rosenstein, MD, FAAP (Baltimore, Maryland)

As pediatricians, we are aware of the toll that gun violence is taking on the youth of America. The statistics are frightening. According to provisional 2022 data from the Centers for Disease Control and Prevention analyzed by the Johns Hopkins Center for Gun Violence Solutions, guns remain the leading cause of death for children and teens ages 1 to 19, climbing 87% in the decade from 2013 to 2022 and accounting for 4590 deaths in 2022. The data also show that gun violence continues to have a disproportionate impact on Black children and teens who have a gun homicide rate twenty times higher than their white counterparts. Additionally, the gun suicide rate reached an all-time high, and for the first time the rate among Black teens surpassed the rate among white teens. The Black child and teen suicide rates have tripled over the past two decades.
There are evidence-based strategies that have been shown to lower firearm death rates, including: implementing permit-to-purchase laws; using Domestic Violence Protection Orders and Extreme Risk Protection Orders ("red flag laws"); investing in community violence intervention programs; investing in gun violence prevention research; and adopting child access prevention laws mandating safe firearm storage in households with children and/or teens. This last strategy is one that is strongly supported by the American Academy of Pediatrics (AAP).

About one-third of American children live in homes with firearms, and of these households, 43% contain at least one unlocked firearm. Thirteen percent (13%) of households with guns contain at least one firearm that is unlocked and loaded or stored with ammunition. For safe and secure firearm storage, guns should be unloaded and locked up in a secure place such as a gun safe or secured by using safety devices such as cable locks. The key or lock combination should only be accessible to authorized users. According to the AAP, a large majority of the public supports a mandate requiring gun owners to safely secure their firearms. Most gun owners agree, but under intense political pressure from gun lobbyists in our politically polarized environment, less than half of the states have passed legislation mandating safe and secure storage of firearms.

Unfortunately, efforts by pediatricians and gun dealers to have meaningful interaction with families about gun safety have run into legal roadblocks. In 2011, the Republican-controlled Florida legislature, with the support of the Republican governor Rick Scott, passed a law, aimed primarily at pediatricians, restricting the first amendment rights of medical providers to discuss the safe storage of guns with patients and families. Under the law, doctors could lose their licenses or face large fines for asking patients or their families about gun ownership and gun habits. The National Rifle Association supported the law, viewing the medical community's gun-related questions as discriminatory and a form of harassment. The law was appealed, and fortunately in 2017, The United States 11th Circuit Court of Appeals overturned the 2011 law, concluding that doctors could not be threatened with losing their license for asking families about gun ownership and gun safety since doing so would violate their first amendment right to free speech. For pediatricians, discussing the safe storage of guns goes to the heart of their ability to protect patients from harm.

Recently, a comparable situation has arisen in Maryland under a 2022 law passed in Anne Arundel County (part of the Metropolitan Baltimore region). According to the law, gun shop retailers are required to display and distribute pamphlets created by the Anne Arundel County Health Department that provide information regarding suicide prevention, mental health, non-violent conflict resolution and gun safety. The law was challenged in the U.S. District Court of Maryland by four gun retailers and a non-profit called Maryland Shall Issue, advocating for the preservation and advancement of gun owners' rights. Their suit was based on a claim that the bill infringes on the first amendment rights of gun shop owners by forcing them to become conduits for government messaging. In March 2023, a U.S. District Judge ruled in favor of the County, but the gun retailers and Maryland Shall Issue filed an appeal to the United States 4th Circuit Court of Appeals to reverse the judge's decision. Fortunately, more than twenty parties including various medical societies and a host of medical organizations, including the American Academy of Pediatrics, have filed amicus briefs in support of the Anne Arundel County law. Oral arguments are set to take place in December 2023 with a decision issued in early 2024.

The legal challenges that have played out in Florida and Maryland highlight the battles that gun lobby groups will wage to block gun safety laws that could save the lives of children and teens.

Reprinted with permission from the Winter 2024 edition of the AAP Section on Seniors Newsletter

Pediatric Considerations for Radiological & Nuclear Events, Accidents, and Emergencies

Steven L. Simon, PhD, FHPS
National Cancer Institute, National Institutes of Health (*ret.*)

This report briefly summarizes what I presented on Oct. 23, 2023, to the Senior Section at the AAP National Conference in Washington, DC. As a radiation physicist working in radiation epidemiology for the last 25 years, this is my interpretation of the issues important to pediatricians with respect to radiological and nuclear events and accidents, and related exposures. I will emphasize environmental exposures that are almost always received without consent and sometimes without knowledge or understanding.

Readers should be aware of and peruse with some diligence two previous AAP publications (2003, 2018). These present many of my points in greater detail than I can in this short article.

Radiation Risk

Radiation risk is the concept that expresses the likelihood, i.e., the probability, of something unwanted happening to an individual (e.g., development of cancer) as a consequence of exposure. Our field, as in other specialties, uses data on the frequency of cancer development following exposure within a population of people of similar attributes and extrapolates from the observed frequency in the group to the individual level by redefining individual risk in terms of probability. There are hundreds of publications on radiation risks for specific exposures (see, for example, Simon et. al., 2023).

For most of the range of exposures, there is usually a clear linear relationship demonstrating an increase in risk with equal increases of exposure. What is important to know is that below a certain dose level, the data on cancer incidence is statistically unstable and some interpretations are necessary. Many argue about what the true relationship is at very low dose levels, in the range, for example, of doses received from diagnostic x-ray imaging. Most, but not all, radiation health experts endorse the *linear no threshold hypothesis* (LNT) which extrapolates the reliable data at somewhat higher doses to the intersection of zero dose and zero excess risk with a straight line. I endorse this concept as the best understanding we have given the limitations of our knowledge and I recommend you accept it as well. It forms the basis for radiation protection in the U.S. (Puskin 2009, Shore et al. 2018)

Age at time of exposure matters with children who are almost always more susceptible to radiation damage than adults. The reasons depend on biological mechanisms as well as behaviors. This is discussed more in the AAP statements.

Basic Tenets of Radiation Protection

The three most important principles to protect from the harmful effects of radiation are: (i) minimize time of exposure (i.e., time near a radiation source), (ii) maximize the distance between the source of radiation emissions and the person potentially exposed, (iii) maximize the shielding between the source of radiation and the person potentially exposed. Shielding could be buildings, concrete, steel, lead, or any solid, dense material. These tenets apply equally to children as to adults.

Defining Accidents

Radiation incidents and accidents generally are unforeseen and unplanned releases of radioactive materials to the environment or unplanned exposures of people, usually, but not always, with a lack of intention. The underlying causes vary tremendously and include poor judgment, engineering failures, acts of nature and can even be extended to acts of political violence, i.e., radiological terrorism, designed to induce terror and inflict damage. Various technical definitions of incidents and accidents exist, usually based on the minimum radiation dose received.

Understanding Radiation Dose Units

Radiation dose units are a confusing subject even for professionals, partially due to their technical definitions, but also to the changes in recent years from what were considered traditional units (e.g., roentgens, rads, rems) to the more modern and more widely accepted standardized (SI) units which are based on Gray (Gy) and Sievert (Sv) units. These are rather large units of dose

so typically they are expressed as milliunits (mSv).

Some simple guideposts can give pediatricians a good sense of the magnitude of an exposure:

- Fractions of a mSv – typical doses received from transcontinental air travel, considered safe
- 1 mSv – typical 'natural' terrestrial radiation dose received in 1 year
- 2 to 4 mSv – typical 'natural' total natural radiation received in 1 year (including cosmic rays + radon)
- A few mSv – typical organ doses from CT exams or other medical imaging
- 50 mSv – annual occupational dose limit for workers in the US
- 1,000 mSv or more – can induce radiation sickness if the dose is received in a short time.
- Several thousand mSv or more – life threatening.

Some Major Accidents and Radioactivity Releases

Radiation accidents and unintended exposures result from a number of different types of activities including nuclear weapons testing, intentional nuclear detonations, nuclear reactor releases (accidental and intentional) such as occurred in the Chernobyl and Fukushima accidents, and the misuse of no longer needed radiation sources, often called "orphaned sources."

Orphaned sources of Cesium-137, used for many years in radiotherapy machines (replaced today by accelerators) are sometimes discarded in developing countries resulting in serious and life-threatening exposures of people who unknowingly misuse the materials, either in the process of collecting scrap materials for recycling or for production of construction materials, e.g., rebar. Two notable accidents occurred in Goinia, Brazil in 1987 and in Taiwan in 1982.

Understanding Radioactive Iodine

Iodine-131 (I-131) is but one isotope of about 37 known isotopes of iodine. All are chemically identical but differ in their atomic mass and all are radioactive except Iodine-127, which is a necessary nutrient for the human body. The body, however, cannot discriminate between necessary I-127 and radioactive isotopes of iodine, making radioactive iodine that might be present in the environment or in foods a particular hazard.

Iodine is particularly soluble and once it enters the environment from a nuclear reactor release or from fallout originating from a nuclear detonation, it easily moves by rainfall into plants and can be subsequently found in cows' milk due to contamination of pasture grasses. The pathway of exposure from radioactive fallout to children is well documented because of the cow-milk-man pathway and resulted in exposures across the U.S. during the 1960s when atmospheric nuclear testing took place.

The uptake of radioactive iodine into the thyroids of a person who may be exposed can be prevented by first saturating the thyroid gland with stable (non-radioactive iodine) by administering potassium iodide (KI) pills, a process usually called iodine prophylaxis. Dosages of KI are discussed in Yoshida et al. 2014. However, the window of opportunity to administer the KI is only within 24 hours of the expected exposure. Administration at later times serves no useful purpose. Furthermore, KI is not protective of any other radiation exposure.

The "elephant in the room" of Radiation Protection

My knowledge of possible exposures and negative health outcomes from accidents and releases of nuclear materials suggests that there is an *elephant in the room* of radiation protection today, i.e., a major problem that is present but avoided as a subject for discussion because it is not comfortable to do so. This *elephant* is the consequential radiation exposure that would result from the use of nuclear weapons in combat. Today, with large-scale conflicts in Eastern Europe and the Middle East and with both conflicts sided by countries with nuclear weapon capabilities, an intentional nuclear exchange is possible. a scenario with potentially unfathomable consequences.

Use of nuclear weapons could cause; immense physical and economic destruction and large numbers of fatalities; radiation exposures of large populations; and true global damage by inducing nuclear winter conditions resulting in mass starvation due to obscuration of sunlight from ash and debris released to the atmosphere. The severity of the conditions that would be induced by even a moderate usage of nuclear weapons in combat creates conditions for which I cannot offer any suggestions for individual protection, other than the simplest of guidelines already discussed.

Radiological terrorism might be thought of as the smaller and less dangerous sibling to nuclear combat. Terrorist actions could take the form of the IND (improvised nuclear device) – an amateur construction of a nuclear bomb, a dirty bomb (conventional explosives laced with radioactive materials), a targeted attack on civilian or military nuclear facilities resulting in releases of radioactive materials, hidden (clandestine) radioactive sources planted in areas of public gatherings, and radionuclide poisoning, for which only one case is on record. If such an event seems likely based on your observations, expertise should be sought from reliable authorities including experts at the U.S. national laboratories or REACT/S (Radiation Emergency Assistance Center/Training Site (REAC/TS) (orau.gov)).

Looking Into the Crystal Ball for Radiation Protection Issues of the Future

The science of radiation protection will need to continue to address numerous issues to ensure safe use of radiation in our society. My 'short list' of issues which seem timely and important, and which will be particularly challenging:

(1) future generations of nuclear power reactors and their safety,
(2) the problems of radioactive waste, orphaned sources, and contaminated sites,
(3) national security issues, e.g., dirty bombs, improvised nuclear devices, radiological terrorism, and the use of nuclear devices in combat (nuclear war).

Resources for Your Further Education, Interest, and Use

Below the reference list are links to websites that provide reliable information on radiation exposures and risks, as well as some possibly useful tools.

Conclusions

Protection of the pediatric population should remain a priority and it is useful to recognize that radiation protection strategies for children are largely the same as for older age groups. The main difference in the application of radiation protection principles for children is that they are under the care and responsibility of adults and any exposures of children as well as the protective actions taken, are the responsibility and the outcome of actions of adults.

REFERENCES

AAP. The 2003 American Academy of Pediatrics Policy Statement: Radiation Disasters and Children, Pediatrics Vol. 111(6), June 2003. Radiation disasters and children - PubMed (nih.gov)

AAP. The 2018 Technical Report: Pediatric Considerations Before, During, and After Radiological or Nuclear Emergencies, Linet et al., Pediatrics. 142(6), Dec. 2018. Pediatric Considerations Before, During, and After Radiological or Nuclear Emergencies | Pediatrics | American Academy of Pediatrics (aap.org)

Simon SL, et al. Radiat Res. 2022 Dec 1;198(6):615-624. The Evidence for Excess Risk of Cancer and Non-Cancer Disease at Low Doses and Dose Rates - PubMed (nih.gov)

Puskin JS. Perspective on the use of LNT for radiation protection and risk assessment by the U.S. Environmental Protection Agency. Dose Response. 2009 Aug 21;7(4):284-91. Perspective on the use of LNT for radiation protection and risk assessment by the U.S. Environmental Protection Agency - PubMed (nih.gov)

Shore RE, et al. Implications of recent epidemiologic studies for the linear non-threshold model and radiation protection. J Radiol Prot. 2018 Sep;38(3):1217-1233. Implications of recent epidemiologic studies for the linear nonthreshold model and radiation protection - PubMed (nih.gov)

Yoshida S, Ojino M, Ozaki T, Hatanaka T, Nomura K, Ishii M, Koriyama K, Akashi M. Guidelines for iodine prophylaxis as a protective measure: information for physicians. Japan Med Assoc J. 2014 May 1;57(3):113-23. Guidelines for Iodine Prophylaxis as a Protective Measure: Information for Physicians - PMC (nih.gov)

SUGGESTED INTERNET RESOURCES

General information

Nuclear & Radiation Events | Disaster Medicine Section (acep.org)

Radiation emergencies (who.int)

International Atomic Energy Agency | Atoms for Peace and Development (iaea.org)

Radiation Emergency Assistance Center/Training Site (REAC/TS) (orau.gov)

REMM - Radiation Emergency Medical Management (hhs.gov)

At-Risk / Special Needs Populations - Infants and Children - Radiation Emergency Medical Management (hhs.gov)

Ionizing Radiation Exposure of the Population of the United States (NCRP).

https://ntsi131.nci.nih.gov/ (Nevada nuclear testing I-131 Thyroid Dose and Cancer Risk Calculator: National Cancer Institute (NCI)).

Tools for dose and risk estimation and medical triage following group radiation exposures

REMM - Radiation Emergency Medical Management (hhs.gov)

Download Mobile REMM - Radiation Emergency Medical Management (hhs.gov)

Biodosimetry Assessment Tool (usuhs.edu)

Medical Management of Radiological Casualties. handbook (usuhs.edu)

Reprinted with permission from the Winter 2024 edition of the AAP Section on Seniors newsletter

---

WELCOME NEW MEMBERS! – Since Fall 2023

Kyle St. Louis, Westmount, QC, CANADA
Tasnim Elzini, Long Branch, NJ
Ashley Smith, Columbus, OH
Brian Weimerskirch, Dayton, OH
Ernestina Hansen-Sackey, Corpus Christi, TX

AAP Section on Anesthesiology and Pain Medicine Executive Committee Roster 2023-24

Debnath Chatterjee, MD, FAAP
Chairperson
Denver, CO

Christina D. Diaz, MD, FAAP
Chairperson-Elect
Milwaukee, WI

Elizabeth T. Drum, MD, FAAP
Philadelphia, PA

Justin Long, MD, FAAP
Atlanta, GA

Lena S.Y. Sun, MD, FAAP
New York, NY

Brittany L. Willer, MD, FAAP
Columbus, OH

Mary Landrigan-Ossar, MD, PhD, FAAP
Immediate Past Chairperson
Palo Alto, CA

Yuan-Chi Lin, MD, FAAP
Liaison, Society for Pediatric Pain Medicine (SPPM)

James J. Fehr, MD, FAAP
Liaison, Society for Pediatric Anesthesia (SPA)

Adam C. Adler, MD, MS, FAAP
Liaison, AAP Committee on Drugs (COD)

Debnath Chatterjee, MD, FAAP
Liaison, American Society of Anesthesiologists (ASA) Committee on Pediatric Anesthesia (COPA)

Staff

Jennifer Riefe, MEd
Section Manager
jriefe@aap.org