



Spring Newsletter

March 2025

President's Welcome



Robert Brustowicz, MD FAAP FACMQ FABQAURP CHCQM
(Boston Children's Hospital)

As the new president of WakeUp Safe I want to welcome all current members and all potential future members. 2025 promises to be a very exciting year for several reasons.

For WakeUp Safe our long-awaited database continues to be refined, and an increasing number of member institutions are actively entering data. With automated denominator downloads it should be easier to use than before. Our informatics team is currently developing a series of reports that will make concurrent analysis of the data available to member institutions.

While we are probably best known for our database, we are more than just a database. In our quest to improve patient safety WUS sponsors several educational activities.

We have strengthened our ties with the APSF and SPA's Quality and Safety Committee. We are also exploring possible collaboration with MPOG.

Our monthly conference calls continue to provide an opportunity to discuss hot topics affecting today's practice and a forum to exchange strategies for solving these issues. Every spring and fall our Education Committee prepares a program that supplements SPA's regular program with speakers on QI issues and QI Project presentations. We also

support research projects and WUS International which export our collaborative spirit to improve patient safety beyond our borders.

I will do my best to shepherd WUS through all the challenges these projects present. My goal is to make WUS a stronger organization before I turn the reins over to Megha our President elect. In the interim I want to thank our members for all their hard work and support which is paramount to our success.

Bob



Executive Director

Jay Deshpande, MD MPH FAAP

First, my thanks to outgoing WakeUp Safe president, **Dr. Anna Varughese**, for her support and guidance during my initiation as administrative support to WakeUp Safe Members. I now look forward to working with Drs. **Bob Brustowicz**, president, and **Megha Kanjia**, vp/president-elect, to continue to build productive collaborations within SPA as well as with safety and improvement colleagues at member hospitals, *APSF*, *MPOG* and the *American College of Surgeons*. Advancing perioperative safety takes concerted focus and effort from all of us. The work of WakeUp Safe has been recognized by our colleagues in surgery who have invited us to participate in their annual quality and safety conferences and on the Children's Verification program committee; *APSF* and *OpenAnesthesia* leaders have warmly welcomed contributions of WakeUp Safe Members, and several hospitals are currently working on the paperwork to become members. I have found that WakeUp Safe Members are passionate about patient safety and improvement and dedicated to making things better for patients. Members are facing increasing clinical demands because of ongoing personnel shortage and hospital needs.

WakeUp Safe is an excellent forum for busy clinicians to benefit by exchanging ideas on practice improvement, by learning from the shared data, by participating in our "all teach, all learn" opportunities, and by supporting and/or collaborating on projects that bring you academic recognition.

Thank you all for your commitment to making perioperative care better for children.

Jay

Data Governance Committee

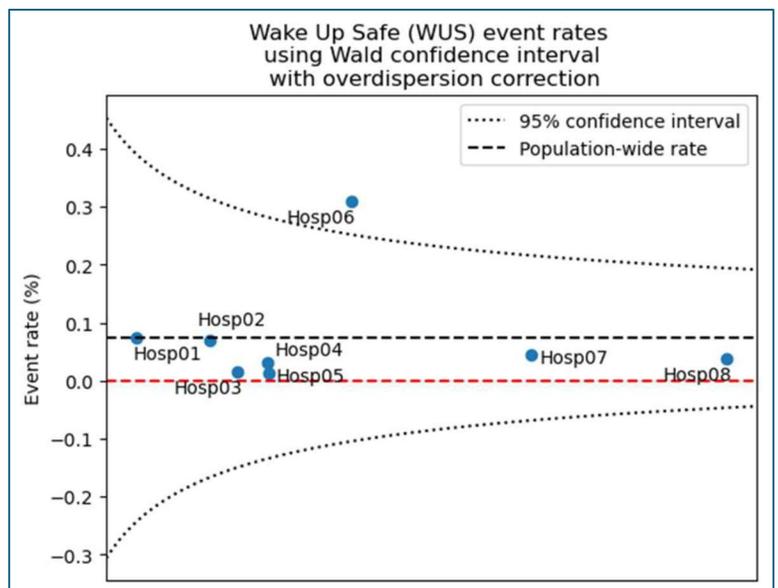


David Buck, MD & Gina Whitney, MD, Co-Chairs
Cincinnati Children's & Children's Colorado

(Data Governance Committee: Dr. **Bob Brustowicz**, Boston Children's; **Manon Haché**, MSCHONY Columbia U; **Raj Iyer**, CHOP; **Lena Sun**, MSCHONY Columbia U; **Sally Rampersad**, Seattle Children's; **Allan Simpao**, CHOP; **Imelda Tjia**, Texas Children's; **Rich Tsui**, PhD, CHOP; **Paul Kingsbury**, CHOP)

We are delighted to welcome back **Allan Simpao**, MD (CHOP) as an active member of the committee. The committee has worked closely with the Tsui Lab development team to create reports that will help Members and their institutions track their adverse events and identify areas of focus for improvement. We plan quarterly summary reports showing graphs of aggregated data for all member hospitals. Each Voting Member will be able to see the summary of events and related information for your own hospital. The first reports of the year were sent to all Voting Members for their comments and feedback. Future reports will be sent to Voting Members and Department Leaders for each hospital. Shortly, Voting Members will be able to get *ad hoc* detailed reports of your own data and how those compare to information for all of WakeUp Safe Members in aggregate. In response to Member requests, we are working with the Research Committee and QI Committee on the data request process for Members. This will allow Members to conduct more detailed analyses of the data to answer focused questions and to support collaborative quality improvement projects. This capability is one of the key responsibilities of WakeUp Safe as a PSO (patient safety organization) - to share lessons learned from analyzing our data.

Example of network data summary comparing the reported adverse event rate for each hospital. Graph shows data from 8 Member hospitals.



SPA Quality and Safety News



Priti Dalal, MD, Chair, *Penn State*

Time flies! With that, the Society for Pediatric Anesthesia Quality and Safety Committee (SPA-QS) has made big strides recently since a few of the SPA-QS projects are achieving completion.

The SPA-DEI collaborative (led by Dr. **Daniel Goldstein**, Akron Children's Hospital) have completed their project on healthcare disparity and nil per os violations in children which is awaiting a publication in a major journal. This group must be commended for their persistence in pursuing this multi-centric project. The Noise in the operating room (NOR) task force (led by Dr. **Christy Crockett**, Vanderbilt University and **Peggy Allen**, Akron Children's) has been diligently working on noise levels in the operating room. This group is contemplating IRB approved multi-institutional studies with the goal of evaluating NOR impact and possible recommendations and best practice guidelines. The SPA-QS-Checklist subcommittee (led by Dr. **Anna Clebone**, University of Chicago and Dr **Kim Strupp**, Children's Hospital Colorado) has done as usual an outstanding job of adding new checklist and revising old checklist. The **Pedi Crisis 2.0® App** has more than 30,000 downloads! New checklists and additions to existing checklists include tranexamic acid added to massive hemorrhage, hypotension definition for infants respectively.



This dynamic group works tirelessly in keeping track of all the checklists and adding new checklists. The group will be working on Peds Cardiac checklists, e.g., TET spells. Dr. **Steven Gleich** (Mayo Clinic) has formed an interest group on a new project regarding standardized intraoperative hand-off tool. They recently conducted a survey. There is more to follow. Dr **Devika Singh** and Dr **Harshad Gurnaney** from CHOP) are developing simulation scenario videos to demonstrate a scenario that 'went well' and a scenario that 'did not go well'. The goal of their project to have simulation videos of PediCrisis scenarios as learning tool located on checklist section of the SPA website. Hopefully, by the time this article reaches the readers, we will have the simulation videos uploaded. This will be a great learning resource in institutions with less learning resources. The SPAIN (Society for Pediatric Anesthesia Interest Network) group led by Dr **Joe Cravero** (Boston Children's), **Allison Fernandez** (Johns Hopkins All Children's Hospital), Dr **Kesavan Sadacharam** (Nemours's) have been working on ACL reconstruction and pectus excavatum projects. They have recently published an excellent article (<https://doi.org/10.1136/rapm-2024-105381>) in *Regional Anesthesia and Pain Medicine* Journal. The APEX group led by Dr **Joe Cravero** (Boston) and Dr **Sharon Levy** have obtained \$10 million grant from NIDA. SPAIN participates as a Clinical Trials Network within NIDA. APEX is a

prospective longitudinal observational study of adolescents undergoing major surgery with opioid exposures. The primary outcome measure is the Risk of Opioid Use Disorder (ROUD) as measured post-surgically and for up to 12 months. This is tremendous amount of work so congratulations to Dr Cravero and his team for obtaining this grant and embarking on this major project. The 'NPO clears' Task Force group recently published their survey results in the March 2025 issue of Anesthesia and Analgesia (<https://doi.org/10.1213/ane.0000000000007219>).

The QS poll group (led by Dr **Katherine Keech**, Iowa Children's) continues with their monthly poll question of the month with a view to gauging current opinion and practice related to a single issue. A 'Big Thank you' to members who take time in answering these polls. We strongly encourage participation with the poll question as it gives an idea of current trends in practice.

The Multicenter Perioperative Outcomes sub-committee led by Dr **Vikas O'Reilly-Shah** (Seattle Children's) and Dr **Morgan Brown** (Boston Children's) have a large database of about 2.8 million cases. The group has data on pediatric sustainability and quantitative monitoring measures, highlighting variability in performance across institutions. They have a recently organized a pediatric cardiac subcommittee. They have MPOG ABA MOCA part 4 program that has enrolled 1000 anesthesiologists over the last several years. Overall, the QS committee has several ongoing projects.

The QS-WUS collaborative group led by Dr. **Rahul Bajjal** (Texas Children's) and Dr. **Megha Kanjia** (Texas Children's) is a collaborative group of WUS and non-WUS members from the SPA-QS. This group has worked on publishing QS interest topics for the SPA Newsletter and the APSF newsletter. This has created lot of opportunities for junior faculty within the group for engaging in national level publications. It is a dynamic group, actively engaged and they have already 6 publications under their belt! The APSF newsletter covers over 80 countries, so the spread of knowledge and impact is tremendous!

I thank Dr **Anna Clebone** (University of Chicago), Dr **Kim Strupp** (Children's Colorado) and Dr **Brad Taicher** (Children's National DC) as QS Vice Chairs for their valuable support with their experience and insight. We always welcome new members and new projects. It is such a pleasure to work with our members who have a common goal in mind! We are at the forefront of pediatric anesthesia quality and safety to advance the well-being of children in keeping with the mission of SPA. *Priti*

2024 Fall Meeting Highlights



Neha Patel, MD, Shriners Pasadena, Director

We are thrilled to announce the appointment of two new Associate Directors of Education at WakeUp Safe, **Dr. Janice Man** and **Dr. Susmita Nesargi**. Both bring a diverse range of experiences and unique perspectives that will greatly enrich our educational initiatives. **Dr. Man** is a leader in safety, effectiveness, and quality at Stanford University and this reflects her passion for enhancing the safe and quality anesthesia care for all children with education and collaboration. **Dr. Nesargi** is a leader in quality and safety at Nemours Children's Delaware and excited about supporting our colleagues with tools and knowledge to deliver safe anesthesia care. Together, their leadership will add significant value to our organization, enhancing our ability to offer diverse, forward-thinking, and impactful educational programs. Their active involvement in planning our upcoming conferences has already proven to be invaluable. We look forward to the unique perspectives they will bring and the positive change they will inspire in our mission to empower and educate.



WakeUp Safe held its Annual/Fall Meeting in conjunction with the SPA Annual Meeting 2024 in Philadelphia, PA. The WakeUp Safe October business meeting was held prior to the start of the education session. **Dr. Bob Brustowicz assumed the role of WUS president.** **Dr. Megha Kanjia was elected as vice president/president-elect.** The annual budget for 2025 approved the Voting Members.



The education session followed and featured **Dr. Meghan Lane-Fall, MD, MSHP, FCCM, Executive Director, Penn Implementation Science Center, David E. Longnecker Professor of Anesthesiology and Critical Care.** Dr. Lane-Fall spoken on “Implementation Science, Learning health Systems, and Implementation science: different names for the same concept?”

Drs. **David Buck, Raj Iyer and Rich Tsui** presented an update on the database highlighting the added capabilities and plans for further enhancements.

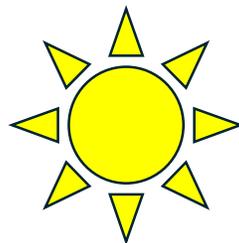
The session continued with a *Round Table Discussion on applying Implementation Science* with Dr. Lane-Fall (moderated by: Drs. **Neha Patel** and **Gina Whitney**) which was an open discussion with WakeUp Safe Members about their improvement projects. Dr. **Alfredo Burgos** (Arkansas Children's) discussed their project to reduce opioid prescriptions for children undergoing ACL repair; Dr. **Imelda Tjia** gave an update on the prevention of perioperative neonatal hypothermia project.



The program's final session was the *Advanced QI and Safety Seminar*, featuring a panel presentation by Drs. **Varughese, Kanjia, Koka, Tjia, Rampersad, Schleelein, Buck, Brustowicz and Iyer**. The session focused on Safety Frameworks and applications to current QI processes, as well as on how to apply tools for advanced analytical methods.



Attendees at the WakeUp Safe Fall Meeting 2024



Committee Highlights

Research Committee



Manon Haché, MD & Angela Lee, MD, Co-Chairs
Columbia MSCHONY Children's National DC

Research Committee members: Drs. **Amanda Lorinc** (Vanderbilt), **Kavitah Raghavan** (St Jude's) and **Lena Sun** (Columbia).

The Research Committee in collaboration with the QI Committee recently updated the *data request form*. Each institution through its Voting Member has full access to their own institution's data. Aggregated data are also available for Research and QI purposes. Members should submit the data request form and approval from the Research or QI committee. This process is necessary to maintain PSO safeguards and to allow for proper data provenance according to our participation agreements. The data request form will be available on the database site (<https://www.wusreport.com/>) once you log in.

The Research Committee has been working in collaboration with the Database Governance committee during the optimization of the current version of our database.

Current research projects include:

- Safe practice projects looking *prospectively* at anesthetic management for dental procedures within 5 WUS institutions.
- Retrospective analysis of adverse events in patients having dental procedures using the legacy database (v1.0) which was managed by Axio and contains aggregate data from the founding of WUS in 2008 to 2020. Our current database is v2.0).

QS-WUS Communications Committee



Megha Kanjia, MD & Rahul Baijal, MD Texas Children's

The **Communications Committee** is a collaboration with the **SPA Quality and Safety committee**. [Dr. **Christine Jette**, Stanford Lucille Packard; Dr. **Eva Lu-Boettcher**, Wisconsin; Dr. **Amanda Redding**, MUSC; Dr. **Lance Patak**, Seattle Children's; Dr. **Priti Dalal**, Penn State; Dr. **Joanna Rosing**, Cincinnati Children's; Dr. **Vanessa Olbrect** (Nemours Children's Delaware); Dr. **Rahul Koka**, Johns Hopkins Hospital].

Our ongoing relationship with the *SPA Newsletter* has allowed us to have publications on the following topics, which have been both relevant and helpful for our general SPA public.

List of SPA newsletter publications and topics:

- Sickle Cell Disease and Transfusion <https://spanews.wpengine.com/?p=438>
- ECPR <https://spanews.wpengine.com/?p=674>
- Unplanned Extubations <https://spanews.wpengine.com/?p=799>
- GLP-1 agonists <https://spanews.wpengine.com/?p=884>
- Fall 2023: Tiny Button, Big Risk: Button Battery Ingestion <https://spanews.wpengine.com/?p=887>
- Summer 2024: Updates in Sustainability for the Pediatric Anesthesiologist <https://spanews.wpengine.com/?p=989>
- Spring 2025: Apnea and the Premature Infant

To expand our reach based on our patient safety issues with the *SPA newsletter*, our team was invited to participate in the Anesthesia Patient Safety Foundation quarterly newsletter which we write to help reach academic, private practice, community anesthesiologists, as well as the international teams who care for pediatric patients on a daily basis. The *APSF Newsletter* currently has over 700,000 readers in

220 countries and is translated into 9 languages. There are over 830,000 pageviews with 480,000 of these pageviews from international locations.



We are currently selecting topics that have a national and international presence and are applicable to many different groups of anesthesiologists to share patient safety issues from the viewpoint of a pediatric anesthesiologist.

Some of the APSF topics have included:

- Sickle Cell Disease and Transfusion (6/24) (Kanjia, Baijal, Dalal)
- <https://www.apsf.org/article/preoperative-transfusion-and-sickle-cell-disease-in-the-pediatric-patient/>
- Pediatric Perioperative Medication Errors (10/24) <https://www.apsf.org/article/pediatric-perioperative-medication-errors/>
- Apnea and the Premature Infant (2/25)

To date, our podcasts include:

- APSF #211: Safeguarding Pediatric Patients with Sickle Cell Disease During Anesthesia (Kanjia)
<https://www.youtube.com/watch?v=HPj3E3ThGtM&t=5s>
- APSF #212: Managing Pediatric Patients with Sickle Cell Disease (Baijal)
<https://www.apsf.org/article/preoperative-transfusion-and-sickle-cell-disease-in-the-pediatric-patient/>
- APSF #238: (Lu-Boettcher and Koka)
<https://www.apsf.org/podcast/238-solutions-to-reduce-pediatric-medication-errors-during-anesthesia-care/>

We are also thrilled to be embarking on a new endeavor which includes a partnership between **WUS/QS** and **Open Anesthesia**, which “offers free online access to comprehensive, high-quality, peer-reviewed educational content on various anesthesiology, critical care, and perioperative medicine topics. Our site features podcast interviews with experts from anesthesiology and related fields, new in-depth articles on key concepts, vodcasts covering a wide range of subspecialty topics, and many more valuable resources for trainees and physicians.” Members of WUS/QS committee will continue writing key words for this group as well as review Quality and Safety related PowerPoints/audio lessons as well as continuing to assist OA with constructing a true QI and Safety curriculum mean to be used for trainees in the anesthesiology world. We are very proud of these accomplishments and the work that is being done and are happy to have team members who have constructed high quality and peer reviewed work that is currently being accessed around the globe.

The Communications Committee also has a team who are helping with re-vamping the WakeUp Safe website: Drs. **Rahul Koka, Lance Patek, Grace Hsu, Joanna Paquin, Megha Kanjia**. Working with the SPA office staff, we have a multiphase plan – first, basic aesthetic improvements and then address additional improvement in content and links of interest. *If you are interested in helping, please contact Megha Kanjia.*



Quality Improvement Committee



Imelda Tjia, MD & Kavitha Raghavan, MD, Co-Chairs

Texas Children's St. Jude Children's

Institutions from WUS continue to work on two collaborative safety initiatives, prevention of NICU hypothermia in NICU patients and reducing peripheral IV infiltrations and extravasations (PIVIE) and has recently commenced a third project, prevention of postoperative nausea and vomiting (PONV).

NICU Hypothermia Prevention Task Force: Drs. **Sarah Brown** (Seattle Children's Hospital), **Robert Brustowicz** (Boston Children's Hospital), **Priti Dalal** (Penn State), **Tatyana Demidovich** (SSM Cardinal Glennon Children's Hospital), **Jonathan Halem** (Penn State), **Rebecca Isserman** (Children's Hospital of Philadelphia), **Elizabeth Jacobson** (Seattle Children's Hospital), **Tessa Mandler** (Children's Hospital Colorado), **Jami Miller** (Dallas Children's Hospital), **Megan Nash** (Children's Hospital Colorado), **Marnie Robinson** (Arnold Palmer Hospital for Children), **Thomas Shaw** (Texas Children's Hospital), **Matthew Wilder** (Children's Hospital Colorado) **Barbara Winters** (Seattle Children's Hospital)

Understanding that the neonatal patient is very susceptible to temperature instability which increases the risk for complications including pulmonary hypertension, cardiac dysrhythmias, apnea/hypoxia, coagulopathy, surgical site infections, and metabolic acidosis, 1-3 the task force is exploring various thermoregulation strategies to decrease the incidence of hypothermia in neonates and maintain normothermia while transporting to and from the NICU for peri-procedural anesthesia that could result in complications.

References:

1. Duryea, E. L., Nelson, D. B., Wyckoff, M. H., Grant, E. N., Tao, W., Sadana, N., Chalak, L. F., McIntire, D. D., & Leveno, K. J. (2017). The impact of ambient operating room temperature on neonatal and maternal hypothermia and associated morbidities: A randomized controlled trial. *Obstetric Anesthesia Digest*, 37(1), 24–24.
2. Engorn, B. M., Kahntroff, S. L., Frank, K. M., Singh, S., Harvey, H. A., Barkulis, C. T., Barnett, A. M., Olambiwonnu, O. O., Heitmiller, E. S., & Greenberg, R. S. (2016).

Perioperative hypothermia in Neonatal Intensive Care Unit Patients: Effectiveness of a thermoregulation intervention and associated risk factors. *Pediatric Anesthesia*, 27(2), 196–204.

3. Schroeck, H., Lyden, A. K., Benedict, W. L., & Ramachandran, S. K. (2016). Time trends and predictors of abnormal postoperative body temperature in infants transported to the Intensive Care Unit. *Anesthesiology Research and Practice*, 2016, 1–7.

PIVIE Task Force: Dr. **Nathan Blair** (Stead Family Children’s Hospital), **David Buck** (Cincinnati Children’s Hospital), **Priti Dalal** (Penn State), **Jenny Dolan** (Johns Hopkins All Children’s Hospital), **Ahmar Husain** (Phoenix Children’s), **Rahul Koka** (Johns Hopkins), **Marc Mecoli** (Cincinnati Children’s Hospital), **Natalie Neiswinter** (Penn State), **Kavitha Raghavan** (St Jude Children’s Research Hospital), **Michael Tulio** (Texas Children’s Hospital) and **Anna Varughese** (Johns Hopkins All Children’s Hospital).

While infiltrations and extravasations from peripheral intravenous catheters can result in swelling, pain, blisters, chemical burns, soft tissue necrosis and possibly severe harm, such as compartment syndrome, 4-5 the PIVIE task force is assessing effective methods that will decrease the incidence of perioperative PIVIE events.

References:

4. Amjad, I., Murphy, T., Nylander-Housholder, L., & Ranft, A. (2011). A new approach to management of intravenous infiltration in pediatric patients. *Journal of Infusion Nursing*, 34(4), 242–249.

5. HADAWAY, L. Y. N. N. C. (2002). I. V. Infiltration. *Nursing*, 32(8), 36–43.

PONV Prevention Task Force: Dr. **Meenakshi Atteri** (Arkansas Children’s Hospital), **Anne Baetzel** (University of Michigan), **Ahmar Husain** (Phoenix Children’s Hospital), **Kavitha Raghavan** (St Jude Children’s Research Hospital), **Imelda Tjia** (Texas Children’s Hospital).

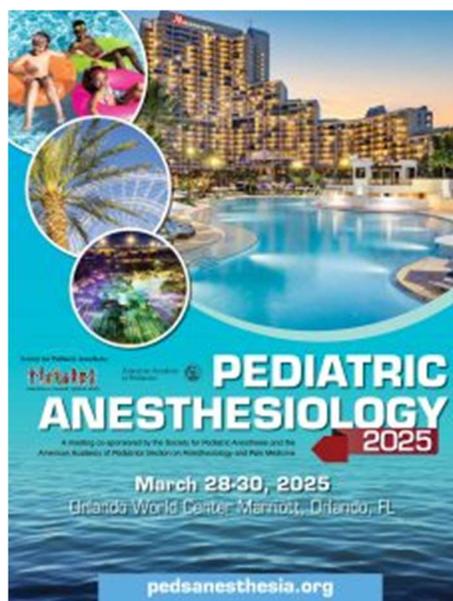
Postoperative nausea and vomiting (PONV) is the most frequent side effect after anesthesia 1, occurring in 30% of unselected inpatients and up to 70% of “high-risk” inpatients during the 24 hour period after emergence. 1 PONV can cause significant morbidity, including dehydration, electrolyte imbalance, suture tension and dehiscence, venous hypertension and bleeding, esophageal rupture, and life-threatening airway compromise; although the more severe complications are rare, common complications

include extended PACU stays or unplanned hospital admissions. 1-2 The PONV prevention task force are exploring strategies to enable tailoring prophylactic antiemetic administration based on PONV risk-stratification.

References:

6. Gan, T. J. (2006). Risk factors for postoperative nausea and vomiting. *Anesthesia and Analgesia*, 102(6), 1884–1898. <https://doi.org/10.1213/01.ane.0000219597.16143.4d>
7. Stoops, S., & Kovac, A. (2020). New insights into the pathophysiology and risk factors for PONV. *Best Practice & Research Clinical Anaesthesiology*, 34(4), 667–679. <https://doi.org/10.1016/j.bpa.2020.06.001>

In each safety initiative, the WUS teams are reviewing and evaluating approaches that advance drivers to achieve the goal such as employing specific equipment and technology, increasing education to specific team members and improving the safety culture. WUS hopes to demonstrate improved patient safety, positive patient outcomes and increased patient satisfaction.



See you in Orlando!

**The WakeUp Safe Spring Meeting 2025
in conjunction with
the SPA-AAP Pediatric Anesthesiology 2025
Meetings.**

**When: Sunday, March 30, 2025.
12:00 Noon - 5:00 PM.**

Where: Orlando World Center Marriott