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A varied approach

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Children's℠
Healthcare of Atlanta
Dedicated to All Better

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MedClips feedback
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Visit the Physician Portal at www.choa.org/md for access to key resources, news and important announcements.

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Dan's column

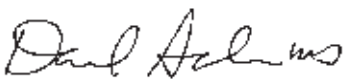
A progress report on statewide effort to improve the health of Georgia's kids

Throughout the past few weeks, one of the most common questions asked of the Children's leadership team is "How will the November elections impact Children's?" In some ways, regardless of who is declared the President of the United States, not much will change. The trend toward greater cost containment, transparency and reimbursements tied to patient outcomes will continue—as will the rising numbers of Medicaid recipients. Through our work with the Pediatric Healthcare Improvement Coalition (PHIC), we are collaborating with the state to improve the health of Georgia's children while creating a sustainable Medicaid system.

PHIC is making incredible strides with the Department of Community Health (DCH) to decrease many of the Medicaid administrative issues that made it difficult for pediatric providers to care for this growing patient population, including:

- Streamlining the credentialing process and creating a single point of entry for Medicaid and CMOs credentialing.
- Reducing prior authorization for OB ultrasounds.
- Decreasing Katie Beckett paperwork by 80 percent.
- Removing barriers to telemedicine services to improve access to pediatric specialists for underserved communities.
- Restructuring the MMIS IVR system to decrease providers' phone wait times.
- Standardizing payment methodologies to mitigate problems with transitions between fee for service and CMO programs.

As we wrap up 2012, PHIC continues to move forward with our 2013 priorities, which I will share in the December edition.



Daniel Salinas, M.D.,
Chief Medical Officer

Multimodal pain management: A varied approach

Pain management, especially pediatric pain management, is a practice that has evolved considerably in terms of when and how we treat patients for both nociceptive and neuropathic pain. Claudia Venable, M.D., Director of the Children's Center for Pain Relief, includes a multitude of strategies to address the physical and psychological factors that cause pain.

"Pediatric pain management continues to evolve. The pediatric pain patient has to be evaluated completely in terms of both physical and psychological issues," Venable said. "Because of the complex nature of pain, in general, and even more so in the ever-changing, maturing pediatric patient, multiple approaches need to be considered to maximize pain treatment."

With the highly addictive nature of opioids, Dr. Venable and her team apply a mixture of drug treatments and therapies to address both nociceptive and neuropathic pain.

"Recently a patient had a deep lower leg injury that involved repeated operating room visits for debridement. This teenager experienced escalating pain. She had nociceptive pain, which could be described as the pain that travels on A-delta pain fibers to the spinal cord," Venable said. "But, as the days went on, her pain developed a searing, burning quality—described as neuropathic pain that travels on C pain fibers. "

Pain signals are the same as other nerve messages. As such, Dr. Venable uses different medications to stem pain signals before they become unbearable.

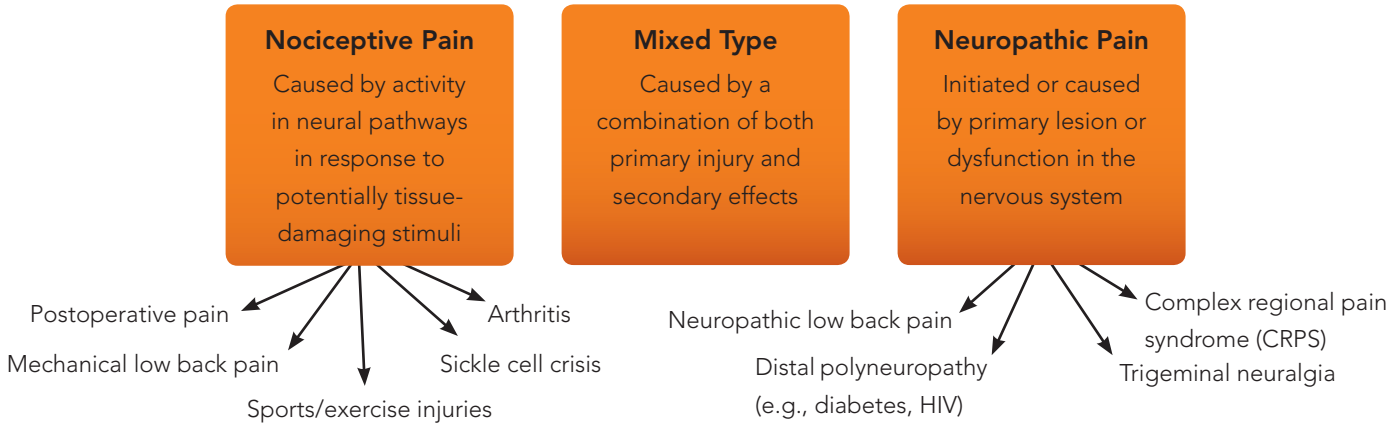
"This is important because while the nociceptive pain responds to opioid treatment and nonsteroidal, anti-inflammatory medications," Venable said. "Neuropathic pain responds to anticonvulsant type medications, such as Gabapentin. This patient also suffered at times from panic attacks prior to her hospitalization and thus, she found an anti-anxiety agent very helpful in decreasing her pain further."

This new approach, along with local analgesics, biofeedback and therapy, allows anesthesiologists to use different tools tailored to each patient, depending on their condition and specific pain needs.

"Our pediatric team reached out to our child life specialists and used other psychological methods to distract our patient from her pain. By trying to vary medications and use fewer opioids, we were able to send her home with good pain control," Venable said. "We hope to help our patients understand the complicated nature of pain and how to manage their pain, so that the pain does not manage them."

Visit www.choa.org/painrelief for more information about pain relief.

Nociceptive vs. Neuropathic Pain



NEWSandNOTES

Sports physical therapy at Satellite Boulevard moving to Duluth

Sports physical therapy services at Children's at Satellite Boulevard will be relocating to our new location in Duluth in December. In addition to Sports Medicine, our Orthotics and Prosthetics Program will also offer services at the new location. Children's at Duluth is located at 2270 Duluth Highway, Duluth, GA 30097.

11th Annual Donald Schaffner, M.D. Conference: Communicating Vaccine Science to the Public 7:30 a.m. to 8:30 a.m. Tuesday, Dec. 4

Paul A. Offit, M.D., Chief of the Division of Infectious Diseases and the Director of the Vaccine Education Center at Children's Hospital of Philadelphia, will discuss:

- Recognizing the influence of the media on parental concerns of vaccines
- Identifying effective methods of addressing parental concerns regarding vaccine safety
- Reviewing the history of misconceptions about the cause and treatments of autism

Visit **www.choa.org/cmeevents** or call **404-785-7744** to register.

Read the new digital format of MedClips

Visit **www.choa.org/medclips** to read MedClips in its new digital format, which is optimized for mobile devices. This will continue to couple with the current printed newsletter. No app is needed—use your web browser on computers or mobile devices—and zoom in or out for a better reading experience. The weekly MedBytes email will continue to provide updates between editions.

Q&A

Anesthesia and its effect on cognition

Lily Young, M.D., pediatric anesthesiologist, Children's Healthcare of Atlanta

Does anesthesia affect a child's development?

Bottom line is: We're not sure. We don't know if anesthesia is a marker for children who are sicker and would have developed problems regardless of their exposure to anesthesia? Or is the actual exposure to anesthesia causing the problem? There are some cohort studies that draw an association between being exposed to anesthesia at a young age and later developing behavioral or learning disabilities, but they can't prove that anesthesia is what caused the problem. For example, one study found that with one anesthetic exposure, there may be no difference in cognitive outcomes, but with multiple or prolonged exposures, then there was a difference. Others found an increased associated risk even after one exposure. And still, some studies have found no difference, including an identical twin study that suggested genetics plays a larger role in cognition than anesthetic exposure.

If there was a time to be careful, exposure to anesthesia during the third trimester up to age 3 years would be the time to do it. Every child's circumstance is different. Withholding anesthesia for necessary procedures or delaying necessary procedures for a theoretical increased risk in learning or behavioral problems is not recommended at this time. For elective procedures, it's really a discussion between the physician and the patient's family as to whether the benefits outweigh the risks.

How did the perception that anesthesia caused cognition problems develop?

In the last 15 years, all the animal studies in this area have very strong evidence that exposure to anesthesia at a young age causes neurotoxicity. This caused the animals' brain cells to die, which would not otherwise have happened had they not been exposed to anesthesia. When these animals were older, they started doing tests to see what their short- and long-term memory and learning was like. The animals exposed to anesthesia did not perform as well as those who were not exposed to anesthesia.

It's very problematic to generalize animal studies to humans. It's also very difficult to achieve the ideal study design in humans. Currently, research is being done to address the issue of anesthetic exposure on the developing human brain, though it may be years before we have an answer.

Sedation minimizes pain, enhances image quality

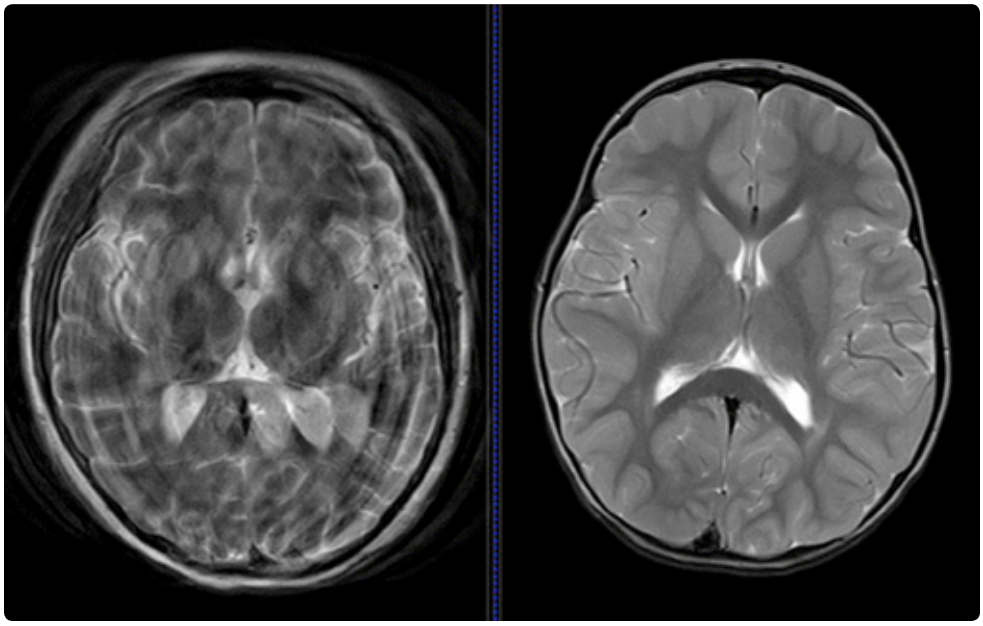
As recently as the 1990s, sedation orders for radiologic procedures were written by the radiologists and carried out by nurses. Repeat scans caused by movement artifacts limit efficiencies, and for scans requiring radiation exposure, it can be a health concern.

"We felt we could provide better sedative medicine—a deeper sedation with airway management and the ability of waking the patient up quickly," said David Banks, M.D.

Banks and Pradip Kamat, M.D., serve as Medical Directors of Sedation Services at Children's. Together, they developed a plan that centralizes various exams and procedures that require sedation, such as MRIs and lumbar punctures.

"Sedation creates an ideal circumstance for the radiologist. The scan time is very short. It increases access to care, and it's cost effective. Because of sedation, we can see more kids in a day," said Kamat.

Children's sedates more than 12,000 children each year, which is the largest number in the country, according to the Society for Pediatric Sedation. Emergency and ICU physicians primarily run the sedation service to manage the patient's airway and any other complications that come out of sedation. To ensure safety during deep sedation, Children's uses additional monitoring services, surpassing the AAP recommendations.



Sedation reduces movement artifacts (left) and results in better quality imaging (right).

"When you sedate a child, they can stop breathing, desaturate or become hypoxic. We primarily do deep sedation, which requires additional monitoring. We use pulse ox, end-tidal, heart and blood pressure monitors," said Kamat.

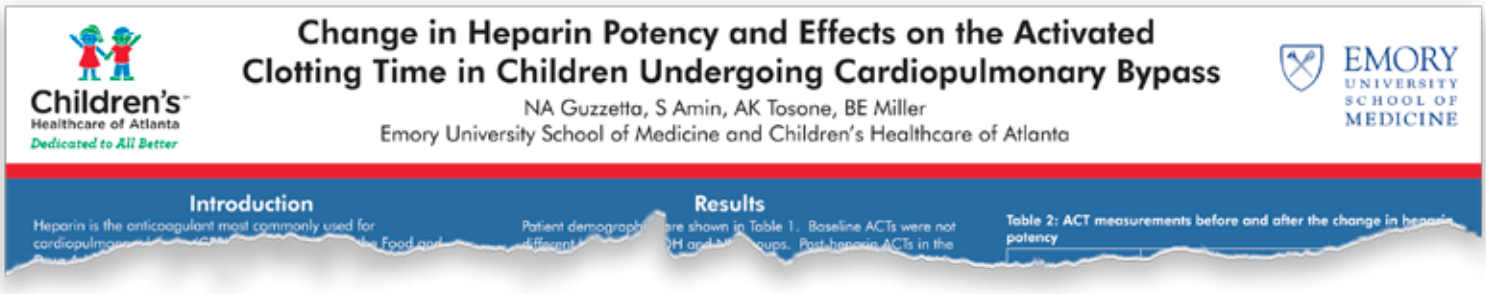
Through these monitoring methods, physicians can tell almost immediately if there are problems, such as clearing CO_2 from the body. According to Kamat, Sedation Services has not experienced many adverse events because of their extensive screening process. If a child is sick or has a difficult airway, sedation specialists consult with the anesthesia team to determine whether the patient should be sedated, receive general anesthesia or postpone the procedure for a later date.

In addition to producing improved image quality in a shorter amount of time, sedation is beneficial for the patients in regard to pain management—especially those having undergone dozens of painful procedures.

"Recently, I had a 14-year-old patient who developed leukemia after beating lymphoma when he was 4. His mother told me that she would have to pry his fingers off the bed to bring him to treatment because it was so painful," Banks said. "Because of sedation, he was able to complete his course of treatment and did not dread coming to the hospital."

Call 404-785-2139 to schedule an appointment with Sedation Services.

Heparin: Reduced clotting time a result of decreased potency



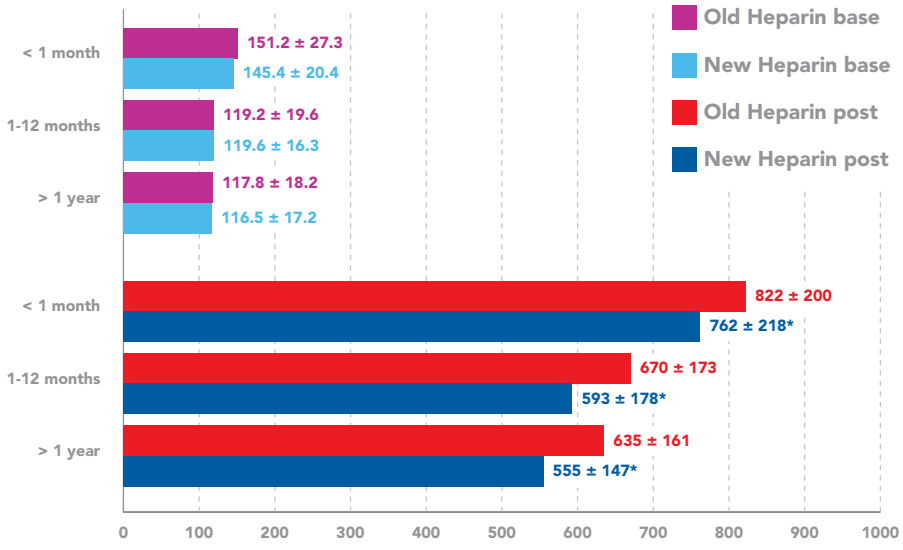
Anesthesiologists have multiple responsibilities in the surgical environment, including fluid management. When a pediatric patient requires complex cardiac surgery during a cardiopulmonary bypass (CPB), preventing clotting is the responsibility of the anesthesiologist. Part of this process involves an IV bolus of Heparin, an anticoagulant, which maintains an activated clotting time (ACT) of 480 seconds. In 2009, doses of Heparin were causing acute anaphylactoid reactions in adult patients undergoing dialysis.

"Back in the fall of 2009, there were some deaths linked to Heparin. The Heparin was contaminated," Nina Guzzetta, M.D., pediatric cardiac anesthesiologist at Children's Sibley Heart Center, said. "So the FDA mandated two changes to Heparin. The first change was that the FDA wanted some new quality tests because they believed the Heparin was contaminated with an unusually over sulfated form of chondroitin sulfate. The second change was that the FDA wanted a new dose reference standard."

When the contaminated Heparin was recalled, the United States Pharmacopia (USP) had different reference standards than the rest of the world. With these deaths, the FDA wanted a new reference standard that coincided with the worldwide standard. An improved Heparin formula did reduce, or eliminate, the risk of an acute reaction, but there was some disagreement between the USP and FDA about the potency of the new Heparin formula.

"The newly formulated Heparin was suspected to be about 10 percent less potent than old Heparin," Guzzetta said. "The USP announced that it did not anticipate that the change in Heparin resulting from its harmonization with the international standard would have clinical significance. But, the FDA said that it may have clinical significance in some situations."

ACT measurements before and after the change in Heparin potency by age group



*p < 0.05, values expressed as mean ± standard deviation

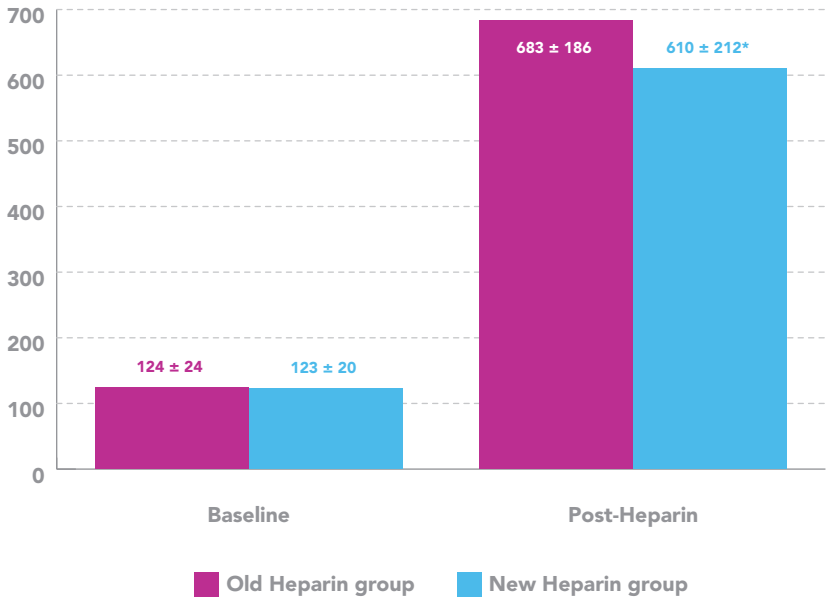
Dr. Guzzetta began a retrospective study evaluating the more than 1,000 children that received Heparin doses, both the new and old formulations for CPB, to determine if there was a difference in potency.

"We took a year of patients prior to the new Heparin and a year of patients that only had the new Heparin, and sure enough, when we looked at these children, the ACTs were actually shorter. That doesn't mean that every child needed more Heparin," Guzzetta said. "But, when we began looking at those children that did have an ACT less than 480, with the new Heparin it was a lot less. 28.5 percent of patients had an ACT less than 480 seconds—compared to about 12.5 percent on the old Heparin."

In a surgical environment where a heart-lung bypass machine is used, clotting can have lethal consequences. Retrospective studies, like Dr. Guzzetta's, can be the difference between an anecdote and establishing an improved clinical process.

Visit www.choa.org/heparin to read Dr. Guzzetta's poster: Change in Heparin Potency and Effects on the Activated Clotting Time in Children Undergoing Cardiopulmonary Bypass.

ACT measurements before and after the change in Heparin potency



*$p < 0.0001$; values expressed as mean ± standard deviation

Library Services UPDATE

Visit www.choa.org/medicallibrary to see the latest content added to our medical libraries.

PROFESSIONAL Staff Applications

The following applicants have applied for membership to the Professional Staff at Children's Healthcare of Atlanta. Current Professional Staff members who have information bearing on the applicant's qualifications for staff appointment or clinical privileges may fax that information to the Credentialing Services Office at 404-785-7498 or mail to 1584 Tullie Circle, Atlanta, GA 30329, attention Lisa Kuklinski, CPMSM, CPCS.

Name	Specialty
Augustine, Rose M.D.	Pediatrics
Boyd, William Bradley M.D.	Pediatrics
Butler-Rice, Angela M.D.	Pediatrics
Hendrick, Andrew M.D.	Ophthalmology
Jacobson, Lara M.D.	Urgent Care
Johnson, Melba M.D.	Pediatrics
Lazarus, Sarah D.O.	Urgent Care

Name	Specialty
McClinton, Mark M.D.	Otolaryngology
Patel, Kavita M.D.	Hematology/Oncology
Roehl, Brad D.M.D.	Dentistry
Wahbeh, Anthony David M.D.	Pediatrics
Washington, Keysra D.D.S.	Dentistry
Williamson, Anjali D.D.S.	Dentistry

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NOVEMBER Calendar

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11	12	13	14	15	16	17
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25	26	27	28	29	30	

7 Childhood obesity co-morbidities: Evaluating and managing hypertension in the primary care office webcast, 12:15 p.m., presented by Donald Batisky, M.D., Debby Pollack, M.D. and Stephanie Walsh, M.D. Visit **www.choa.org/webcast** to register.

15 Fall Gwinnett CME Dinner
1818 Club, Gwinnett Chamber of Commerce, Third Floor, 6:15 p.m.
Visit **www.choa.org/cmedinner** to register

29 Woodard & Parrott Visiting Professorship
Egleston, Classroom 5, 6 and 7, Guest speaker, Steve Skoog, M.D., and case presentations
Contact **kelli.mann@choa.org** for more information, 7:30-8:30 a.m.

Recurring Events

Pediatric Grand Rounds at Scottish Rite (GR-SR) occurs the first, second and third Tuesdays of the each month, Main Auditorium, 7:30 a.m.

Grady Pediatric Grand Rounds (GPGR), Clinical/Pathological Conference, Thursdays at Steiner Auditorium, 68 Armstrong Drive across from the Grady Emergency department, 8 to 9 a.m. Contact Jackie Riley at **jrile2@emory.edu** or **404-778-1415** for more information. These sessions have been approved for CME credit through Emory University.

Pediatric Grand Rounds at Egleston (GR-EG), Wednesdays, Classrooms 3, 4 and 5, 7:30 a.m.

Pediatric Surgery Conference (PSC), Fridays at 7:30 a.m., Egleston, Classrooms 3, 4 and 5 (video-conferenced at Scottish Rite). Contact Nancy Richardson, Program Specialist, at **404-785-7843** for CME information.

Marcus Autism Center Grand Rounds (GR-M), occurs the second and fourth Fridays of each month, Marcus Autism Center, 12 – 1 p.m. Contact Anne Symons at **404-785-7833** or visit **www.marcus.org/grandrounds** for more information.

For previous editions of MedClips, visit www.choa.org/medclips