

Winter 2009-2010

Issue 1 Volume 3

The Third Annual Pediatric Conference

at Dell Children's Medical Center will take place on Saturday April 10, 2010. This conference will feature a preeminent national pediatrician as the Karen W. Teel, M.D. Lecturer (keynote address). A roster of local faculty members will provide important updates on key topics. Please refer to our website for information: www.dellchildrens.net/pediconference. A save the date card will be mailed out shortly. Please contact either Dr. Meena Iyer (mganesh@seton.org) or Dr. John Luk (jluk@seton.org) for more information or suggestions.

EDITOR'S WELCOME



The arrival of winter brought snow to Austin, but we're still awaiting the influx of children with RSV-laden secretions here at DCMC (numbers of positive tests remain relatively low, to-date). In the meantime, enjoy this Winter 2009 edition of the LINK Letter. It's packed with useful updates from around the hospital, to include introductions to a new reconstructive plastic surgery institute and a new dental medicine program, as well as updates on resident and medical student education. Sarah Pickel, M.D., one of our stellar third-year pediatric residents provides a brain-teaser in our PCRS Puzzler. Lynn Campbell, M.D., shares some of her extensive inpatient and outpatient experience with some tips for prepar-

ing for office emergencies.

An ongoing theme in this newsletter has been family-centered care, and our NICU colleagues share some of their successes on their journey towards partnership and collaboration. I would like to add my vote for the transformative conference that is referenced within their article. Entitled Hospitals and Communities Moving Forward with Patient- and Family-Centered Care, this truly intensive seminar is probably the most worthwhile learning event that I have attended in recent memory. The next session will be right next door, in Dallas, April 19-22, 2010. See the article for a link with more information. At DCMC, patient-centered care will take on new meaning as we have our first Youth Advisory Council meeting this week.

I would love to promote a focus on the pediatric health of our community as this newsletter matures and in this edition, you will find updates on the both the CATCH program and plans for an Obesity Center. If you would like to promote any community health initiatives, please send some news this way. Of course, a community of care cannot exist without solid and reliable lines of communication and our PCRS group is in the midst of a quality project to improve the timeliness of our discharge letters. Our aim is to have all letters dictated, transcribed (initial draft) and faxed within 2 calendar days of discharge and we are currently leading a national collaborative to this end. We hope that you have noticed our efforts and as always, your feedback is needed if we are to continually improve.

Mark Shen, MD
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New Seton Institute of Reconstructive Plastic Surgery Restores Patients' Quality of Life



The Seton Institute of Reconstructive Plastic Surgery team includes (from left) Drs. Adam B. Weinfeld, James Cullington, Steven L. Henry, Patrick Kelley, Raymond Harshbarger, III and Sanjay Sharma.

With the opening of the new Seton Institute of Reconstructive Plastic Surgery, patients with complex reconstructive surgery and microsurgical needs can now turn to the Seton Family of Hospitals for the very best in care.

Reconstructive plastic surgery is not new to University Medical Center Brackenridge, as many complex procedures have been performed there with talented community plastic surgeons. However, the formation ensures quality care can be provided for all Central Texans — young and old.

“The idea for this group came from the need to establish Level I trauma services* in Austin, specifically at UMC Brackenridge,” Dr. Sharma said. “To that end, the ability to have microsurgical capability and perform replantation of amputated digits and parts was paramount in achieving Level I trauma status for University Medical Center Brackenridge.”

The Seton Institute of Reconstructive Plastic Surgery treats complicated and traumatic cases such as free tissue transfer procedures, nerve reconstruction and replantation of amputated extremities. The full scope of the practice encompasses hand surgery, head and neck reconstruction, breast reconstruction, craniofacial trauma and reconstruction as well as general plastic and aesthetic surgery.

Most faculty members are fellowship-trained plastic surgeons

who have particular expertise in the broad discipline of Plastic Surgery. Dividing their time between Dell Children’s and UMC Brackenridge, the six physicians are involved not only in clinical endeavors, but also in developing education and research initiatives.

Reconstruction and Microsurgery

Most wounds and surgical defects can effectively be reconstructed with local movement or rearrangement of skin and subcutaneous tissue or muscle. These “tissue flaps” can be used to close and heal lower extremity injuries, facial defects, or complicated wounds.

Often, the plastic surgeon will be called to help manage complex wounds or injuries that require the skills of a microsurgeon. Microsurgery involves utilizing delicate and precise techniques with the aid of high-power microscopes and operative loupes to perform reconstructive procedures. For instance, following cancer ablative surgery of the mandible, the plastic surgeon can reconstruct the jaw by transferring a bone from the leg with its artery and vein, shaping it and connecting it to an artery and vein in the face. This highly technical procedure is called “free tissue transfer” and is performed only by surgeons with expertise in microsurgery.

Breast Reconstruction

It is estimated that one in eight women will get some form of breast cancer in their lifetime. Formal mastectomy or surgical removal of the breast leaves both psychological and physical scars. Breast

reconstruction offers a woman emotional well-being after breast cancer removal.

Today, skin-sparing mastectomies can be performed by cancer surgeons greatly facilitating the overall look and shape of a normal breast. Options available to women for breast reconstruction fall into two main categories: autologous and implant reconstructions.

Autologous breast reconstruction borrows a woman's own tissue (abdomen or back), sculpting the fat and skin into a breast. Implant reconstructions are usually two-staged, with tissue expanders placed first to stretch the skin, then replaced with permanent implants at a later date to match the opposite breast. The physicians of the Seton Institute of Reconstructive Plastic Surgery offer and perform both types of breast reconstruction and can counsel women to help them make informed decisions.

Hand and Wrist Surgery

Hand surgery is a specialty unto itself. The intricate anatomy and complex functional aspects of the hand present many challenges to even the most well-trained surgeons in plastic, orthopedic or general surgery. Those who seek an additional year of subspecialty training in surgery of the hand hope to better their patients' outcomes with a greater knowledge of understanding hand and wrist injuries.

The surgeons at the Seton Institute of Reconstructive Plastic Surgery treat numerous conditions that afflict the hand and wrist and offer state-of-the-art procedures such as endoscopic carpal tunnel release, wrist arthroscopy, distal radius fractures and arthritis management, especially basal thumb joint disease. Other treatable entities include wrist pain, nerve compression syndromes, trigger fingers, masses and ganglions as well as Dupuytren's contracture. Additionally, they offer services for complex hand or wrist injuries, congenital hand surgery or upper extremity trauma reconstructions. Faculty members treat congenital hand differences at the Strictly Pediatrics offices located on the Dell Children's campus.

Facial Trauma

Facial trauma represents a high percentage of cases a plastic surgeon is called in to evaluate. Often, patients present to the emergency department with multi-system injuries; however, facial injuries are often most compelling because of the immediate disfigurement. Restoring lost form, structure and function is the goal of the craniofacial surgeons at the Seton Institute of Reconstructive Plastic Surgery.

From complex facial lacerations and scalp avulsions to pan-facial fractures and LeFort injuries, the team provides ample expertise for treating these devastating injuries. Often collaborating with

Dr. Sanjay Sharma and Dr. Steven Henry hold pediatric hand clinic at Dell Children's and are able to treat the following conditions:

- Syndactyly (fused digits)
- Polydactyly (extra digits)
- Thumb hypoplasia
- Constriction band syndrome (aka amniotic band syndrome, or congenital amputations)
- Trigger thumb
- Clinodactyly (crooked finger, usually the 5th finger)
- Camptodactyly (bent finger, also usually the 5th finger)

As well as symbrachydactyly, acrosyndactyly, ectrodactyly, macrodactyly, brachydactyly, mirror hand, cleft hand, radial dysplasia, ulnar dysplasia, brachymetacarpia, and phocomelia and others.

Neurosurgery, the surgeons assist with cranial vault and base of skull injuries as well as frontal sinus fractures. They also treat the late effects of facial trauma such as malocclusion, double vision (from orbit fractures), nasal deformities and telecanthus (abnormal width between the eyes). The practice also manages and treats congenital craniofacial and cleft lip deformities at Dell Children's.

Other interests of the Seton Institute of Reconstructive Plastic Surgery surgeons include skin cancers reconstruction, pressure ulcers, complex wounds, sarcoma reconstruction and aesthetic surgery. The Wound Care clinic is staffed by a member of the group and hand therapy services are offered on-site through the Physical Therapy/Occupational Therapy departments at University Medical Center Brackenridge.

** In August, the State of Texas designated University Medical Center Brackenridge and Dell Children's as Level I trauma centers. To qualify for these comprehensive designations, the Seton Family increased trauma research and educational activities at both of the medical centers. To address the need for special procedures including microvascular surgery and digit/limb reattachment, the network formed the new Seton Institute of Reconstructive Plastic Surgery of Central Texas.*

Seton Institute of Reconstructive Plastic Surgery

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DCMC Welcomes New Dental Medicine Program



The Dell Children's Craniofacial and Reconstructive Plastic Surgery Center has now added a pediatric Dental Medicine program. The mission of the Pediatric Dental clinic is to provide the highest quality dental care possible, utilizing the latest technological advances, in order to prevent oral health problems and to provide a dental home for medically complex patients. We strive to treat each child based on his or her individual needs. The clinic provides

dental care and support to patients of the following hospital programs: craniofacial program, cardiac program, hematology/oncology program, trauma program, and inpatients.

Medically complex patients often have issues that affect the oral cavity. By starting early, the pediatric dentist can begin helping with feeding issues, changes in oral structures, and preparing the child for developmental changes. If a medically complex patient is given early preventive therapeutics and parental education, he or she should not be more prone to common dental problems such as tooth decay and gum disease.

The American Dental Association (ADA), the American Academy of Pediatrics (AAP) and the American Academy of Pediatric Dentistry (AAPD) all support the Dental Home—a concept now synonymous with the age one dental visit. The AAPD defines the dental home as an “ongoing relationship between the dentist and the patient, inclusive of all aspects of oral health care delivered in a comprehensive, continuously accessible, coordinated, and family-centered way.” Fortunately, those patients on Medicaid in Texas can participate in the First Dental Home Initiative. This is a legislatively supported initiative aimed at improving the oral health of children 6-35 months of age on Medicaid in Texas. In this program, recall dental visits can occur as often as every three months for children at high risk for severe early childhood caries. During this visit, the dentist performs the following:

- Review of dental and health history
- Comprehensive oral evaluation
- Caries risk assessment
- Dental prophylaxis
- Oral hygiene instructions with primary caregiver
- Nutritional counseling
- Application of topical fluoride varnish
- Dental anticipatory guidance
- Establishment of recall schedule

Early professional treatment and daily care at home can allow medically complex patients to enjoy the benefits of a healthy mouth. The Dental clinic shares space with the orthodontic clinic inside the Craniofacial Center at Dell Children's Medical Center. It is located at 1301 Barbara Jordan Blvd., Suite 301. The pediatric dental medicine clinic accepts all types of dental and medical insurances including Medicaid and CHIP. All patients are seen on a referral basis. Please call 324-0920 to make a dental appointment or FAX a referral to 324-0645.

Lisa S. Jacob DDS, MS
Chief of Pediatric Dental Medicine

Medical Student Education Update



Austin continues to be a popular site for UTMB students' pediatric rotation. The students have enjoyed their time at Dell Children's Medical Center, Brackenridge nursery, and with their ambulatory preceptors. Our ambulatory preceptors continue to earn high marks by the students, and we have heard nothing but positive feedback.

I'd like to take this opportunity now to congratulate two of our preceptors for winning the UTMB Top Doc award for the 2008-2009 academic year – Dr. Mrudula Deshpande and Dr. Roger Pruitt. Dr. Deshpande and Dr. Pruitt have been volunteering their time to our students for several years and have consistently mentored several students each year.

Students' comments for Dr. Deshpande include: “very good preceptor experience,” “fabulous preceptor to do outpatient work with,” “Dr Deshpande is a great role model!” “Working with Dr. Deshpande was a great experience. She gave a lot of learning issues, which really helped me out studying for the shelf exam,” “Dr. Deshpande is a great preceptor. She allowed me to see her patients before she did, present to her and then would let me follow up with them.”

Students' comments for Dr. Pruitt include: “Dr Pruitt was an excellent preceptor. He was very sensitive to my learning requirements. He was extremely knowledgeable and taught and asked questions frequently. I learned more on this 3 wk rotation than at any other community site during my 3rd year. Excellent preceptor,” “I couldn't have hoped for a better ambulatory rotation. The working environment is exceptional and there were ample learning opportunities,” “Dr. Pruitt is the type of physician I hope to be. He is excellent both with his knowledge of medicine and patient contact. UTMB should absolutely use him as a preceptor as long as he will let students shadow him,” “Dr. Pruitt was a fantastic preceptor. He is very knowledgeable and respectful. He encourages participation and learning. He is a great teacher.” Congratulations again to Dr. Deshpande and Dr. Pruitt.

We are always in need of more ambulatory preceptors who would be willing to take our students in 3 week rotations. If you are interested in this teaching opportunity, please do not hesitate to contact me at vannamalai@seton.org, 324-0165 or Brian Sullivan, Capital AHEC senior program coordinator, at bsullivan@captialahec.org or at 472-8921, ext. 302. We appreciate all of our preceptors volunteering their time and mentoring our medical students, and look forward to hearing from you.

Sincerely,
Valli Annamalai, M.D.
UTMB Austin Pediatrics Clerkship Director

News from the Pediatric Residency Program

George Edwards, M.D.

As 2009 draws to a close, there is exciting news from the Pediatrics Residency Program.

- **Accreditation.** The program has received full accreditation on a five year cycle for the fourth consecutive time. The ACGME does not award a cycle for less than five years, so a five year cycle indicates that the Residency Review Committee finds no significant weaknesses regarding the program's compliance with national standards. A five year cycle is not awarded to the majority of programs. In 2008 ACGME reviewed 55 pediatric programs. Eight programs received adverse actions for withdrawal of accreditation to probation. Of the 47 which received full accreditation, 31% received one or two years cycles, 37% received three or four year cycles, and only 32 % received a five year cycle.

- **Transition.** Effective December 1, 2009 UT Southwestern has become the sponsor of the pediatric residency program. The new partnership among the Seton Family of Hospitals, UT Southwestern, and the University of Texas System will promote further development of the Austin academic medical center and the investment in research infrastructure.

- **Honors.** Pediatric faculty have received several honors including

- Valli Annamalai, MD was named 2009 Austin Educator of the Year by UTMB to acknowledge her exceptional contributions to medical student education in Austin. Austin faculty in all the residency programs, including internal medicine, family medicine, general surgery, ob/gyn, neurology, psychiatry and dermatology were eligible for the award.
- George Edwards, MD was accepted into the Ray Helfer Society. The Helfer Society is an honorary society of physicians seeking to provide leadership to enhance the prevention, diagnosis, and treatment of child abuse and neglect.
- Stephen Pont, MD was accepted into the Society for Pediatric Research. The SPR is one of the Pediatric Academic Societies, and its purpose is to encourage young investigators engaged in research that is of benefit to children.

- **Grants.** Thanks to the leadership of ambulatory faculty member, Dr. Stephen Pont, Dell Children's Medical Center has received a \$1 million grant from the Michael and Susan Dell Foundation for the development of the Texas Center for the Prevention and Treatment of Obesity at DCMC. (See accompanying article for more information).

Ambulatory faculty member Dr. Marilyn Doyle and the DCMC mobile health van received a federal HRSA grant through the Children's Health Fund to support the expansion of health services to pregnant and parenting teenagers in area high schools.

Ambulatory faculty member Dr. Roberto Rodriguez received a CATCH grant from the American Academy of Pediatrics that supported a symposium regarding medical-legal partnership.

- **Fellowships.** Current third-year residents who have matched for fellowships include the following:

- Jennie Chung, M.D. - neonatology at Georgetown University in DC.
- Jamie Jaqua, MD - pediatric emergency medicine at Wakeforest University in Winston-Salem.

Former residents who are currently in fellowships include:

- Jaya George, MD - genetics at the University of Cincinnati
- Amal Aqul, MD - GI at UT Southwestern in Dallas
- Hector DeLeon, MD – child neurology at University of Washington in Seattle
- Anne Mahan, MD – pediatric critical care – UT Southwestern in Dallas
- Pankaj Nagaraj, MD – neonatology at Georgetown University in DC
- Mark Taborrok, MD – pediatric emergency medicine at UT Southwestern in Dallas
- Marlin Touma, MD – neonatology at Harvard University in Boston
- Nancy Beck, MD – endocrinology at University of Arkansas in Little Rock
- Ben Tippets, MD – pulmonology at Medical College of Wisconsin in Milwaukee
- Gonzalo Wallis, MD – cardiology at University of Florida in Gainesville.

Gift to Establish Childhood Obesity Center

The Michael & Susan Dell Foundation has granted the Children's Medical Center Foundation of Central Texas a gift to establish the Texas Center for the Prevention and Treatment of Childhood Obesity at Dell Children's Medical Center. The center, built upon the success of the current Healthy Living, Happy Living multidisciplinary childhood obesity intervention, will include multiple elements, such as a multidisciplinary obesity clinic and education, advocacy and research efforts. Drs. Stephen Pont, Kim Avila Edwards and Jane Gray will lead the efforts at the center, representing collaboration between Dell Children's Medical Center, UT-Southwestern - Austin Programs, UT-Austin and the Texas Child Study Center. The multidisciplinary clinic is currently in the planning phase, but please stay posted for its opening in the next 3-4 months.

Healthy Living, Happy Living / Vida Sana, Vida Feliz is an after-school, family-based obesity intervention at Dell Children's Medical Center, provided through generous support from the RGK Foundation, St. David's Community Health Foundation, and Aetna. Our program includes the four key components of successful obesity interventions: physical activity, nutrition, mental health/behavior change, and family involvement. Our current program targets overweight and obese children aged 6-11 years and their parent or guardian. The program runs approximately 2 1/2 hours, once a week, for 10 weeks and progressively integrates and builds upon healthy living themes over the 10-week program.

For questions regarding the developing obesity programs or regarding the 10-week Healthy Living, Happy Living program please feel free to contact us.

Best regards,
Stephen Pont

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PCRS Puzzler:

An infant with vomiting and lethargy

By Sarah Pickel, M.D.

A 15 month-old female is brought to an outside ER by her primary caregivers for vomiting. She was previously healthy and had no diarrhea, fever, or ill contacts. She had been listless and had about fifteen episodes of emesis in the twelve hours prior to presentation. The initial emergency room noted lethargy, dehydration and heme positive emesis. The patient was sent to the Dell Children's Medical Center Emergency department by private vehicle for further evaluation.

At DCMC, the patient had an abdominal x-ray concerning for possible thickening of the colon wall. She also had a normal complete blood count and lipase, and a comprehensive metabolic panel revealed an AST of 608 and an ALT of 608. A hepatitis panel and acetaminophen level were added to the blood work, and the patient was admitted to the general ward service with the diagnosis of hepatitis, dehydration and colitis.

The past medical history was significant for a prior ED visit 8 months prior to admission, where the patient refused to turn her head to one side. CT of the neck had been normal. In addition, the patient had recent macrocephaly noted by the primary care physician and performed a CT of the head 3 months prior to admission, which had been normal. There was no relevant family history. The social history was significant for the patient living with the maternal aunt and uncle and their two teenage sons. The child was not in daycare and spent time with a variety of family members. The mother was active military and stationed in Dallas. She visited frequently. The father has not been involved in care.

Upon admission to the floor the patient was noted to have an irregular heart rate and fussiness. An EKG revealed sinus arrhythmia, and an ultrasound to evaluate for intussusception was normal. The patient was continued on IV fluids with plans to monitor her clinical course. Early in the morning of hospital day two nurses began noticing episodes of hypertension up to 156/87. When evaluated that morning by the medical team, it was noted that patient was very fussy with abdominal exam and refused to straighten her legs. Transaminases were improving. A stat air contrast enema was done due to continued concern for intussusception. When that study was normal an abdominal CT was done to further evaluate. The CT only revealed an incidental pleural cyst on the right medial lung base.

Upon re-evaluation in the afternoon of day two of hospitalization, the patient was found to have relative bradycardia, continued episodes of hypertension, and lethargy. A diagnostic procedure was performed.

Community Corner: CATCH If You Can

Do you have an idea for a community-based program to address a children's health need in our area? Do you just need a little funding to get a pilot project off the ground? If so, you should consider applying for a CATCH grant from the American Academy of Pediatrics. The AAP's CATCH (Community Access to Child Health) program provides small grants (up to \$12,000) to pediatricians working in their local communities to improve children's access to a medical home or other needed health-care services.

The program has two main grant cycles each year, one for Planning Grants and the other for Implementation Grants. During each cycle, there are also separate Resident Grants, which can have both planning and/or implementation components. Currently, the Implementation Grant cycle is open, with applications due January 29, 2010. Implementation Grants support initial implementation and pilot activities as well as project promotion/outreach and evaluation expenses.

Recent CATCH grants in Texas have included a Planning Grant that funded a needs assessment related to barriers to care in the Muslim community in Houston and an Implementation Grant that supported a program linking children referred by CPS to medical homes in San Antonio.

The CATCH program has at its core the belief that local pediatricians are effective agents for improving children's health at the community level. The program's foundation is community pediatrics, which the AAP defines as:

- A perspective that enlarges the pediatrician's focus from one child to all children in the community;
- A recognition that family, educational, social, cultural, spiritual, economic, environmental, and political forces act favorably or unfavorably, but always significantly, on the health and functioning of children;
- A synthesis of clinical practice and public health principles directed toward providing health care to a given child and promoting the health of all children within the context of the family, school, and community;
- A commitment to use a community's resources in collaboration with other professionals, agencies, and parents to achieve optimal accessibility, appropriateness, and quality of services for all children...; and
- An integral part of the professional role and duty of the pediatrician."*

For more information on the current CATCH funding cycle, see <http://www.aap.org/catch/implementationgrants.htm>. You are very welcome to contact me at louisa@austinpcc.org for additional information on CATCH. Texas also has two CATCH Chapter Facilitators to provide technical assistance to pediatricians interested in applying for a grant: Dr. LeAnn Kridelbaugh, (leannkridelbaugh@aol.com) and Dr. Carl Tapia, MD, MPH (ct692423@bcm.tmc.edu).

I know we have a number of pediatricians with great ideas out there. Please consider a CATCH grant to help you get your idea for community advocacy into action!

Louis Appel, MD, MPH, is Chief Medical Officer at People's Community Clinic and serves as the District CATCH Facilitator for AAP District VII.

* American Academy of Pediatrics. "The Pediatrician's Role in Community Pediatrics." *Pediatrics* 2005; 115:1092-1094.

Pediatric Office Emergencies - Are You Prepared?

Lynn Campbell, M.D.

Children with potentially life-threatening illnesses and injuries are sometimes taken to primary care offices, which often serve as the child's medical home, by caregivers seeking help from the health care professionals that they best know and trust. The office then serves as the entry into the emergency care system and it is there that vital care is provided.

Several studies have shown that emergencies are common in pediatric primary care practices and that children continue to be taken to primary care offices at the time of an emergency. In one study published in *Archives of Pediatric and Adolescent Medicine*, 52 pediatric offices were surveyed and it was found that these practices saw a median of 24 emergencies per year. Most of the offices (82%) reported that they had at least one emergency each month.¹ In another study published in *Pediatrics*, 62% of pediatricians and family physicians in urban settings reported that they assessed more than one patient each week who required hospitalization or urgent stabilization.²

The most common types of emergencies include respiratory emergencies such as status asthmaticus and upper airway obstruction, seizures, infections in young infants, significant trauma, endocrine emergencies and dehydration with cardiovascular compromise. Appropriate stabilization and timely and safe transfer to an appropriate facility for definitive care are important responsibilities of every pediatric primary care provider. The consequences of being unprepared are serious and yet most practices are unprepared and ill-equipped to treat such critically ill children. In an extensive survey of 280 pediatricians and family physicians only 27% of surveyed staff were BLS certified and only 17% were PALS certified. Many offices were not equipped with routine emergency equipment such as oxygen, epinephrine and other drugs, intravenous catheters, bag-valve-mask devices and nebulizers.¹⁻⁴ Furthermore, some health care providers discount the need for such preparation. Reasons cited are that "emergencies are not very common", "we rely on rapid response from EMS services", "we practice nearby a hospital", and "keeping and maintaining emergency medicines and equipment is prohibitively expensive". While some pediatric primary care providers have interpreted risk-management guidelines to mean that having emergency equipment and medications on site will increase their liability in emergency situations, studies have suggested that lack of preparation may be a true cause of increased liability.

Optimizing office readiness for an emergency begins with a consideration of the unique aspects of each office practice, the types of patients and emergencies that have been or might be seen there, the resources on site, and the resources of the larger emergency care system of which the office is a part. Completion of a standardized office-based self-assessment can be a starting point for optimizing office readiness. Questions to consider include those listed in Appendix A.

Effective parent and patient education can prevent some emergencies that present to the primary care office or redirect them more appropriately to an emergency department. Improved outcomes have been shown if parents have been instructed in CPR and

educated about how to prevent injuries, recognize an emergency, and respond appropriately in terms of first aid, CPR, accessing the office or EMS, and choosing the appropriate facility for care. Other important anticipatory guidance that should be provided to families includes when and how to access EMS (9-1-1), posting the Poison Control Center Number, a means of obtaining after hours advice, the need for consent for treatment of minors, and what facilities to access in a true emergency. In addition, advance directives and limitations of life-sustaining treatment should be discussed and documented prior to the emergency developing. An understanding of the local regulations regarding the recognition and respect of pediatric advance directives is critical in caring for such patients and if necessary, a discussion of these with local EMS personnel may be necessary. Finally, primary care providers who care for children with special health care needs can help provide emergency care for these children by having the appropriate, specialized equipment that is needed for these children in their office and by providing a brief but comprehensive summary of important information for hospital and pre-hospital providers that is hand carried by the parents at all times.

At the time of an office emergency, good resuscitation knowledge and skills are essential to provide high quality care and ensure the best possible outcomes. Successful stabilization requires an effective team and thus the members of the office staff must have adequate knowledge, training, and resources to respond to emergencies. They also need an opportunity to practice and an awareness of each member's role in the emergency to be most effective. Clear response plans for office personnel have been found to be very helpful, especially for those times when the office is open but not fully staffed.⁵ Office staff cue cards (posted by the telephone) have also been shown to be very helpful in accessing emergency help and providing appropriate information to those who will be responding.⁶ Similarly, pediatric care protocols adapted from EMS providers can provide a basis for the development of individualized office based protocols and scenarios for the most common emergency conditions.

Trained office personnel must have rapid access to appropriate emergency equipment and medications. For those who practice in or close to a hospital, all that may be needed is basic airway equipment. However, for practices and offices that have prolonged emergency response times, stabilization may need to continue for up to 30 minutes until EMS arrives. For these offices, additional equipment and medications may need to be available. Resuscitation equipment and medications must be kept in a place where all office personnel can access it so that no time is wasted in an emergency. Recommended equipment and medications are listed in Tables 1 and 2. In these tables certain items are thought to be essential (E) and others are suggested for those offices if EMS response times are likely longer than 10 minutes (S). Equipment and medications should be pre-stocked in an organized way, replaced when used, and checked on a regular basis to ensure that all essential items are present, operating properly, and not expired. Finally, some system must be used to help to reduce medication and equip-

Table 1: Recommended Equipment for Pediatric Office Emergencies

Pediatric Office Emergencies	
Oxygen-delivery system	E
Bag-valve-mask (450 and 1000 mL)	E
Clear oxygen masks (infant, child, adult)	E
Suction device, tonsil tip, bulb syringe	E
Nebulizer (or metered-dose inhaler with spacer/mask)	E
Oropharyngeal airways (sizes 00–5)	E
Pulse oximeter	E
Nasopharyngeal airways (sizes 12–30F)	S
Magill forceps (pediatric, adult)	S
Suction catheters (sizes 5–16F) and Yankauer suction tip	S
Nasogastric tubes (sizes 6–14F)	S
Laryngoscope handle (pediatric, adult) with extra batteries, bulbs	S
Laryngoscope blades (0–2 straight and 2–3 curved)	S
Endotracheal tubes (uncuffed 2.5–5.5; cuffed 6.0–8.0)	S
Stylets (pediatric, adult)	S
Esophageal intubation detector or end-tidal carbon dioxide detector	S
Vascular access and fluid management	
Butterfly needles (19–25 gauge)	S
Catheter-over-needle device (14–24 gauge)	S
Arm boards, tape, tourniquet	S
Intraosseous needles (16 and 18 gauge)	S
Intravenous tubing, microdrip	S
Miscellaneous equipment and supplies	
Color-coded tape or preprinted drug doses	E
Cardiac arrest board/backboard	E
Sphygmomanometer (infant, child, adult, thigh cuffs)	E
Splints, sterile dressings	E
Automated external defibrillator with pediatric capabilities	S
Spot glucose test	S
Stiff neck collars (small/large)	S
Heating source (overhead warmer/infrared lamp)	S

E = essential S = suggested

ment size errors that are much more common during emergency resuscitations. Proper use of Broselow tape is one such system that has been shown to reduce such errors.⁷

In the setting of an emergency, pediatric primary care providers must be able to provide basic airway management and initiate treatment for shock. The skills required to perform these tasks are usually acquired during training but are generally not maintained because of the infrequency of such emergencies in practice. Main-

taining such skills via PALS or APLS recertification will help to ensure that the best care can be provided to a child brought to the office with an emergency. In addition, it has been demonstrated that pediatricians who maintain such certification are more likely to have appropriate emergency equipment, medications and office staff who are prepared for these rare but significant events.⁴

The most effective tool for risk management of office emergencies is documentation of efforts taken to improve office readiness including purchase and maintenance of equipment and medications, training provided to staff and the policies and practices for patient education, patient triage and office practices when such emergencies occur. Documentation should also be included in office training and mock codes and, most importantly during true resuscitation efforts. An accurate record should include the date and time of treatment, the estimated or actual weight of the child, medications given with dosages and response noted, fluid type and volumes given, information and explanations given to the family, and the condition of the child at the time of departure from the office. This information is vital for ongoing care, especially at the time of transfer of care.

Summary recommendations:⁸

1. Perform a self-assessment of office readiness for emergencies based on a review of experiences of common emergent, urgent, and acute conditions treated in the office, including events involving children with special health care needs – Appendix A
2. Develop an organizational plan for emergency response in the office to include:
 - a. Recognition of an emergency
 - b. Staff communication, roles, and responsibilities
 - c. Protocol to access EMS
 - d. Maintain readiness through practice (mock codes)
3. Maintain recommended emergency equipment (Table 1)
 - a. Organize emergency equipment in a way that facilitates access to appropriate type and size at the time of an emergency
 - b. Develop a system to check equipment on a regular basis to make sure that it is immediately available and functioning properly
4. Maintain recommended emergency medications (Table 2) and use a resuscitation aid or tool that provides suggested protocols with pre-calculated medications doses
 - a. Develop a system to check medications on a regular basis to make sure that stock is always present and expired medications are disposed of properly
5. Develop a plan to provide education and CME for all staff
6. Practice mock codes in the office on a regular basis
7. Educate families about what to do in an emergency
 - a. Encourage first aid and CPR training for parents/caregivers
 - b. Provide access number for after-hours advice, emergency response system, and poison information to families.
 - c. Educate families about symptoms and situations for which they should access office advice, EMS and poison information.
 - d. Facilitate use and maintenance of emergency information forms for children with special health care needs.

Table 2 - Office Emergency Drugs

Table 2 - Office Emergency Drugs	
Drugs	
Oxygen	E
Albuterol for inhalation*	E
Epinephrine (1:1000)	E
Activated charcoal	S
Antibiotics	S
Anticonvulsant agents (diazepam, lorazepam)	S
Corticosteroids (parenteral/oral)	S
Dextrose (25%)	S
Diphenhydramine (parenteral, 50 mg/mL)	S
Epinephrine (1:10 000)	S
Atropine sulfate (0.1 mg/mL)	S
Naloxone (0.4 mg/mL)	S
Sodium bicarbonate (4.2%)	S
Fluids	
Normal saline solution or lactated Ringer's solution (500-mL bags)	S
5% Dextrose, 0.45 normal saline (500-mL bags)	S

E = essential S = suggested

*Metered-dose inhaler with spacer or mask may be substituted

- Partner with EMS and hospital based emergency providers to ensure optimal emergency care and emergency/disaster readiness for children.

Appendix A – Office Self Assessment for Office Emergency Preparedness

- What emergencies have you experienced in the office and how often do office emergencies occur in your practice?
- What is your office setting? Are there immediately available resources outside of your office that you could call on during an office emergency?
- What are the high and low staffing points during the times when your office is open? Remember to include nights and weekends if applicable.
- What is the emergency readiness training of the staff present during those times?
- Have non-clinical staff been trained to recognize a potential or actual emergency?
- What anticipatory guidance and education do you provide parents regarding injury prevention, first aid and CPR training, recognizing and responding to emergencies and accessing EMS and poison control?
- Is your waiting room under direct observation or screened frequently by a clinical staff member? Is it childproofed?
- Does your practice have a written protocol for response in an office emergency? Does the protocol cover times of low staffing?
- Do all staff members know how to access the EMS system? Do

you have a card available that will prompt them to give the correct and necessary information?

- Do you have specific telephone triage protocols for non-clinical and clinical staff?
- How far is your office from a site of definitive care, such as the nearest ER?
- How long does it take for EMS to respond to a 9-1-1 call from your office? What is the point of entry for you local 9-1-1 response team – where will they (by protocol) transport your patient?
- Does your office use oxygen? If so how is it supplied and do all clinical staff know how to operate the canister and where the key is kept?
- What emergency dosage strategy do you use in the office (code card, length based tape, dosage book)?
- What airway equipment do you stock? Does your staff know how to locate the equipment and get the right size for the patient?
- Do you have appropriate equipment and supplies for practicing universal precautions?
- Does your practice care for any children who are technology dependent or have special health care needs? Do you have need for any additional equipment or expertise should a technology-dependent child have an emergency in your office?
- Do you have written office protocols for common office emergencies?
- How do you document events during an office emergency?
- How do you and your staff maintain skills and readiness?
- How do you document parent education, staff training, protocols and stocking for emergencies?
- What is your risk-management company's policy regarding emergency preparedness of your office?

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A head CT revealed bilateral subdural hygromas. Neurosurgery was consulted and an MRI was obtained. The MRI confirmed bilateral hygromas measuring 7-8 mm on each side, and a small area of ischemia in the right parietal and occipital region was noted. Due to continued lethargy the patient was scheduled to undergo burr holes to relieve intracranial pressure.

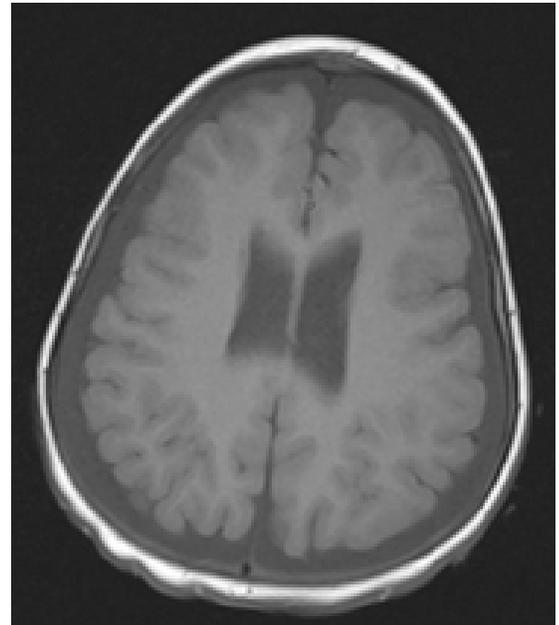
Hygromas are cerebral spinal fluid collections often considered to be chronic findings associated with infection, trauma or neurosurgical procedures. However, hygromas may occur acutely when trauma causes tears in the arachnoid layer allowing CSF to fill the potential subdural space.¹ Given the patient's presentation of acute decompensation with vomiting, altered mentation and unstable vital signs, it was felt she had an acute change in her intracranial pressure. The caregivers denied any history of trauma. The lack of etiology for the hygromas and the elevated liver-associated enzymes supportive of blunt abdominal trauma prompted a skeletal survey and retinal exam by ophthalmology. When the skeletal survey revealed a broken clavicle with no sign of callous, a formal CATCH consult was ordered and child protective services became involved. The ophthalmology exam did reveal too numerous to count bilateral retinal hemorrhages.

Intussusception has an incidence of 1-4/1,000 and a peak occurrence under 2 years of age. A pediatrician must always be quick to think of intussusception in a fussy infant or toddler. If untreated, intussusception has a rapidly increasing mortality rate after 24 hours.² However, the normal abdominal studies in our patient made intussusception very unlikely.

The constellation of continued lethargy despite hydration, vomiting, relative bradycardia and hypertension makes it essential to evaluate for signs of increased intracranial pressure. It is the pediatrician's responsibility to always consider non-accidental trauma on the differential diagnosis. The United States has an estimated 6 million cases of child abuse per year. The majority of abused children have delayed presentation to medical care or are brought to medical attention without history of abuse. Unfortunately if the abuse is not detected and stopped nearly half of children will be abused again and 10% will die at the hands of their abuser.³

Differentiating medical conditions from non-accidental trauma is very important and history may provide important clues about possible abuse. Red flags must be raised if the history is incompatible with developmental age or physical exam, and if it is vague and/or changing. Other red flags for child abuse are lack of a caretaker bond with the child, evidence of poor caretake-

Image 1:



Brain MRI showing bilateral hygromas

Image 2:



Brain CT following burr holes, notice resolution of hygromas and increased ventricle size following decompression.

ing (dressing inappropriately for the season, tattered clothes or filth), delay in seeking medical care or atypical response to the severity of the injuries.⁴

In cases where physical abuse is suspected, a detailed history with focus on present illness and social factors is necessary. In infants, if the physical exam or history is suspicious for trauma or abuse, screening studies including liver-associated enzymes, urinalysis for blood, skeletal survey, intracranial imaging and retinal exam should be strongly considered.⁴ A negative or inconclusive work up should not stop one from making a report to child protective services if suspicions for abuse remain.

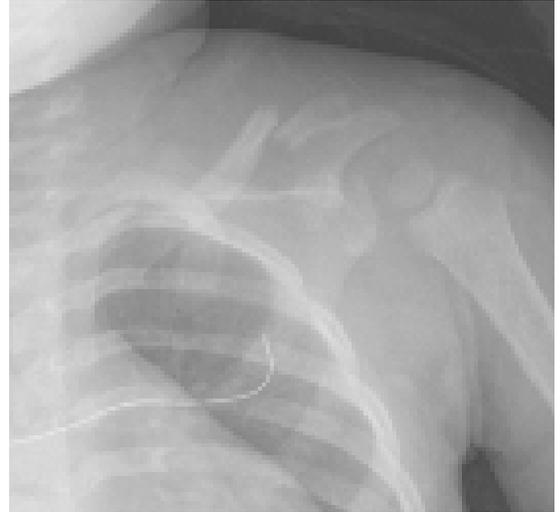
When this patient was medically ready for discharge, child protective services cleared her Mother to take custody with the agreement that the Aunt and Uncle could not provide care until further investigation had been completed. At follow-up in trauma clinic she was alert and playful and not showing overt signs of neurologic deficit. A repeat skeletal survey revealed healing of the clavicular fracture and no new fractures (images 3 and 4). Repeat head imaging showed resolution of the hygromas. While she is presently doing well, continued follow-up for developmental delays will be important.

Sarah Pickel, M.D., is a third-year pediatric resident in the UTSW Austin Pediatric program. She will be pursuing a career in primary care pediatrics upon completion of her training.

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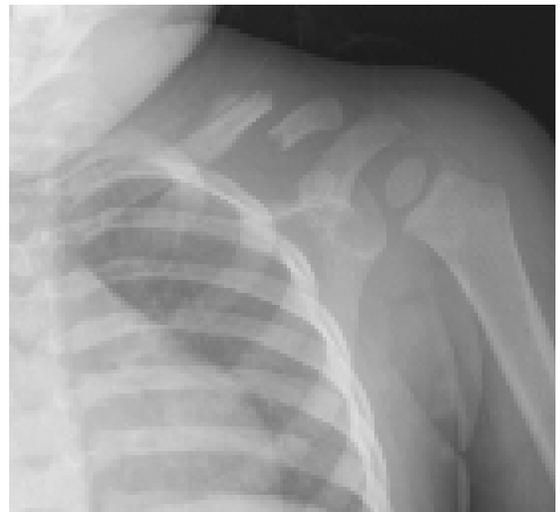
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Image 3:



clavicle fracture without callous formation

Image 4:



clavicle fracture one week later, notice development of callous

Partnering with Parents in the NICU

The Seton Family of Hospitals' Neonatal Intensive Care Units are collaborating to provide Family-Centered Care throughout the network and target all disciplines interfacing with our patients. Our recent journey began about 18 months ago, while we always felt we cared for both baby and family, we found that often we were not partners with our families and did not always work with them to provide the best care possible for their infants. One important initiative we wished to adopt was to change our view of parents as "visitors" and understand that they are a crucial member of the healthcare team. This important principle of family-centered care includes parents as partners in their infant's health care team to provide the best care possible to each infant individually.

In an effort to support the overall NICU goal, each NICU nurse, CA, dietitian and lactation consultant included in their FY 10 evaluations goals to attend at least 2 educational offerings related to Family-Centered Care. Acceptable family-centered care education includes presentations, webinars and parent panels. The desired outcome for this education was to provide the NICU staff a better understanding of Family Centered Care and its basic principals. Parent panels offer the NICU staff unique perspectives on the effect of care on NICU affects families.

The NICU hosted several focus groups during the summer led by Organizational Development facilitators. The feedback provided by staff working directly with families, facilitated understanding of the challenges and support from leaders needed by staff to provide family centered care. In addition, this feedback helps to direct the course of the NICU Family-Centered Care steering committee. The NICU learned that although they were not ready to open nursing shift change to parents, they were ready to have a policy with more flexibility regarding the number of people present at each infant's bedside and open the unit to siblings of all ages who pass a health screen.

The NICU Family-Centered Care Steering Committee developed a new policy, 'Supporting Family Presence in the Neonatal Intensive Care Unit.' This policy was a collaborative effort between doctors, nurses, dietitians, lactation consultants, respiratory therapists, child life specialists and, most importantly, parents. This policy went into effect in November 2009 and will be the standard for all six neonatal units in the Seton Family of Hospitals. To see the complete policy, go to the Seton Intranet and look under "Policies & Procedures."

In October Dr. Pat Hodges, DCMC NICU Medical Director, Gwenn Gallagher, DCMC NICU Manager, and Amy Brandes, Chair of NICU Family-Centered Care Steering Committee,

attended an extensive conference on Family-Centered Care in Minneapolis, MN. Several other NICU team members attended the same class previously including Susan Crane, Vice President of Neonatal Services, Todd Scharnberg, Medical Director of Pediatrix, Elizabeth Garza, March of Dimes Family Support Specialist for Seton Medical Center Austin and University Medical Center Brackenridge, and Catherine Carby, SMCA NICU Manager. All have found the class informative and motivating. Dr. Hodges said, "The conference was wonderful. I had high expectations, and it met or exceeded all of them. Listening to parents share their experiences in the health care system revealed that despite the best of intentions, our care is not always very family friendly. Listening to their stories, it was clear that we have not truly partnered with them, as we thought we were. It was also very beneficial to speak with staff from other hospitals farther along in this process than we are. It was an enlightening and energizing experience. I wish everyone on our staff could attend". The NICU plans to continue to send representatives each time this intensive seminar is scheduled. Our first effort has been to send the NICU leadership team (managers and medical directors). Plans are to send Dr. John Loyd, SMCA NICU medical director, Jane Cassel, UMCB, clinical manager, and Dr. Sikander Adeni, UMCB NICU medical director, to the April 2010 offering. To learn more about this extensive training, go to <http://www.familycenteredcare.org/events/seminars.html>.

We have had the different team members attend three seminars over the past 18 months. Each time, the team returns refreshed and energized and with many more ideas how to move in our journey to providing family centered care. We have learned so much using the resources provided in these seminars, partnering with the Dell Children's family Centered Care Committees, from our parents and from the DCMCCT family advisory committee. Our goal is to continue on this very important journey expecting that the changes we are making will result in improved care for babies, empowered and satisfied parents, and excellent job satisfaction for our staff.

Amy Brandes, RD, LD, CNSD, IBCLC is the clinical manager for neonatal nutrition and lactation services. She acts as the facilitator for patient and family-centered care for all of the Network NICUs. Susan Crane, RNC-NIC, MBA, MSN, HC, NEA_BC is the Vice President for Network Neonatal Services.