Featured Stories:

- Profile: A Medicine-Pediatric Group in Minnesota
- Using Albuterol MDI versus Nebulizers in Acute Asthma Exacerbations
- Diagnosing Poor Weight Gain in a Child on Enteral Feeds
- Info on Free Patient Education Handouts (see pg. 9)

You are the Hospitalist:

A 6 year old boy with oral blisters and respiratory distress
Our Vision
The Section on Hospital Medicine of the American Academy of Pediatrics is dedicated to the health of all children in the hospital setting through advocacy, education and service—incorporating the core principles of safety, effectiveness, timeliness, efficiency, and equitability in family-centered health care.

Our Mission
Advocacy
The Section is dedicated to being a leader in inpatient Pediatric Hospital Medicine in the Pediatric community—advocating for the health and safety of hospitalized children.

Education
The Section is dedicated to being a leader in educating health care providers, patients and families.

Service
The Section is dedicated to being a leader in identifying the professional needs of Pediatric Hospitalists.

Publication of this news journal is supported by Mead Johnson Nutritionals.

inside this issue...

3 Making the Rounds
Letter from the chair of SOHM

4 Hospital Pediatrics — Entering a New Year
Letter from the Editor

5 Pediatric Hospitalist Associates
Practice Profile — Susan Wu, MD, FAAP, Editor

Case: 6 Year Old Boy with Fever, Bloody Oral Blisters and Respiratory Distress
You are the Hospitalist

6 Opportunities and Resources
For Your Information

10 Albuterol MDI vs. Nebulizer for Acute Asthma Exacerbation
Hospitalists On-line — Jennifer Maniscalco, MD, FAAP, Editor

12 Inpatient Management of Eating Disorders
On the Ward — Julie Lipps Kim, MD, FAAP, Editor

14 Predischarge Bilirubin Screening: Are We Impacting Severe Hyperbilirubinemia?
Neonatal Medicine Update — Ursula Kneissl, MD, FAAP, Editor

16 Pitfalls of Enteral Feeding in Children with Special Health Care Needs (CSHCN)
Caring for Children with Complex Needs

18 Q & A
Billing and Coding Corner — James O’Callaghan, MD, FAAP, Editor

19 The Combined Pediatric Emergency Department/Inpatient Unit: 4 Years of Experience
At the Community Hospital — John Pope, MD, FAAP, Editor

20 Family - Centered Care… An Idea Whose Time Has Come
Pediatric Hospitalist Programs

22 A Caveat in the Evaluation of Cervical Spine Tenderness
Critical Care Update — Linda Snelling, MD, FAAP, Editor

23 What’s New?
Subcommittee Updates

24 SOHM Forum
SOHM Web & LISTSERV® Updates — Liborio LaRussa, MD, FAAP, Web Master

American Academy of Pediatrics
Greetings to everyone and best wishes for a great New Year! It was, as always, a pleasure to see so many people at the 2007 American Academy of Pediatrics National Conference & Exhibition (NCE) in San Francisco during our Section meeting on October 29. In addition to a great Section meeting, several other activities of note occurred involving SOHIM at the NCE. Two new subcommittees were formed including the Subcommittee on Complex Care chaired by Allison Ballantine, and the Subcommittee on Family Centered Care co-chaired by Geeta Singhal and Ted Sigrest. In addition, the Subcommittee on Palliative Care sponsored a meeting to discuss the role of Pediatric Palliative Care within the AAP. All three of these groups reflect the initiative and diverse interests of the membership of the Section, and serve as an interesting marker for the complexity of care that is being provided by pediatric hospitalists.

In an effort to expand the range of services for our membership (we are about 700 strong), SOHM is going to provide a number of grants and travel stipends to members to attend various conferences in the coming year. These include the AAP's Legislative Conference, the national Pediatric Hospital Medicine Conference and the National Initiative for Children’s Healthcare Quality (NICHQ) Forum. A couple of these funding opportunities are being set aside specifically for residents.

December is always a good time to reflect on the accomplishments of the year that is ending and the expectations of the year to come. As many of you know, I moved from Maryland to New York last spring. If any of you are in the vicinity of Valhalla, New York, please come a visit me at Blythedale Children’s Hospital. I would be delighted to show you around our very interesting pediatric rehabilitation hospital.

My own personal goal for the Section is to involve as many members as possible. I strongly believe that the future leadership of SOHM will come from the ranks of the people involved in these activities and subcommittees. Look to the reports of the subcommittees in this issue of the journal for more details of their goals and projects. The Section on Hospital Medicine has become a recognized and respected presence in the AAP and our liaisons with other sections and committees of the academy are quite extensive. I look forward to more challenging work with the Section in 2008 and hope to see many of you during the course of the year. Until then, my best wishes to you for a happy, healthy, and productive 2008 with lots of interesting patients and lots of easy nights on call!

Laura Mirkinson

December is always a good time to reflect on the accomplishments of the year that is ending and the expectations of the year to come. As many of you know, I moved from Maryland to New York last spring. If any of you are in the vicinity of Valhalla, New York, please come a visit me at Blythedale Children’s Hospital. I would be delighted to show you around our very interesting pediatric rehabilitation hospital.

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Laura Mirkinson
I hope you enjoy this second edition of Hospital Pediatrics. You will notice that our News Journal has expanded to include the varied interests of the members of the section. I think you will find more than a few pearls to support your practice! In particular, the section on Billing and Coding is back with a new question and answer format and there is a wonderful piece on considering a child with special health care needs who doesn’t grow despite prescribing the right calories.

Our editorial board is geared up and ready to go, so if you have thoughts you want to add, something you want to tell your fellow hospitalists about or just want to experiment with publishing contact one of us!

There is plenty more to say!

Jennifer Daru

Recipent of the Section’s Inaugural Pediatric Hospital Medicine Research Award

ABSTRACT: PRIMARY OPERATIVE MANAGEMENT FOR PEDIATRIC EMPYEMA DECREASES HOSPITAL LENGTH OF STAY AND CHARGES IN A NATIONAL SAMPLE. Su-Ting T Li, MD, MPH,1 Robert L Gates, MD.2

1Pediatrics, UC Davis, Sacramento, CA; 2Surgery, UC Davis, Sacramento, CA.

Purpose
The optimal treatment of children with empyema remains controversial. The purpose of this study is to determine whether primary operative management (decortication within the first 2 days of hospitalization) decreases hospital length of stay (LOS) and total charges in children with empyema.

Methods
Retrospective cohort study using data from the Kids’ Inpatient Database (KID) for the year 2003 for children with empyema. Multivariable regression was used to control for patient and hospital characteristics. Primary outcomes were hospital LOS and total charges. Secondary outcomes included patient disposition, therapeutic failure, and complications.
Pediatric Hospitalist Associates
Children’s Hospitals and Clinics of Minnesota
Minneapolis, MN

Program History and Overview
The adult pediatric hospitalist program at Abbott Northwestern Hospital in Minneapolis is one of the oldest and largest hospitalist groups in the nation. Initially the hospitalist service covered only adult patients from local practices that they had long standing relationships with. However, many of these practices also had pediatric patients, for whom they wanted inpatient coverage. When the group hired two medicine-pediatric trained physicians 5 years ago, they took the opportunity to expand coverage to the adjacent Children’s Hospitals and Clinics of Minnesota (CHC). Now there are 47 medicine and 8 medicine-pediatric physicians who cover inpatient services at both hospitals. The adult medicine service is called the Abbott Northwestern Hospitalist Service, and the pediatric service is called Pediatric Hospitalist Associates (PHA).

Ward Coverage
Abbott Northwestern has 900 adult beds as well as labor and delivery services, with about 4,300 births per year. CHC is next door to Abbott Northwestern, and has 185 beds. About 90% of patients admitted to the internal medicine service at Abbott Northwestern are covered by the group. CHC has two hospitalist groups, so Pediatric Hospitalist Associates covers only a fraction of the total beds. PHA also covers patients in the newborn nursery and level II nursery at Abbott Northwestern.

Staffing
The medicine-pediatric service has 8 FTEs, and the medicine service has 47 FTEs. Every morning, a clinical nurse coordinator compiles information about all current and new admissions for both hospitals, and distributes the patients among the physicians rounding for the day. Typically each physician will have a census of about 12 to 15 patients. There are approximately 20 internists and 4 medicine-pediatric physicians rounding each weekday, and about half that on weekends. The pediatric patients are divided amongst the 4 medicine-pediatric physicians, and the rest of their census is rounded out with medicine patients. Depending on the time of year, each medicine-pediatric hospitalist’s census will be about 40-50% pediatrics and 50-60% medicine.

A typical month’s work schedule includes 13 shifts: 2 weeks on and 2 weeks off days, 1 in 4 weekends, and 1 night float every 2 weeks during the off weeks. The workday starts at 8:30 am, and physicians are expected to admit new patients that arrive before 4:30, and uncomplicated post-op patients until 5:00 pm. Those on service take turns, two at a time, staying late to perform admissions that come between 5:00 and 6:00 pm. At 6:00 pm, the night float team arrives. Two of the night float staff stay until 2:00 am, and a third person as well as one moonlighter work until 6:00 am. On weekends, there are only two night floats, who both stay until 6:00 am. In-house night float coverage is for the internal medicine side only. Pediatric residents at CHC admit patients at night and call the hospitalist to review the plan by telephone. In addition to night float coverage for the adult side, medicine-pediatric hospitalists take pediatric call 2 to 3 nights in a row, divided between 8 people. If babies are admitted to the level II nursery at Abbott Northwestern, the medicine-pediatric hospitalist must come in from home and admit the patient.

Adult Congenital Multidisciplinary Service
Because the medicine-pediatric members of the group work in both adult and pediatric inpatient settings, they have become experts in transition services for children with special needs. They are often called to consult on adult-aged patients admitted to the children’s hospital, and assist in finding primary care physicians and adult subspecialists for these patients. One year ago, they partnered with the Children’s Heart Clinic (a private Cardiology practice that practices at CHC) to establish the Adult Congenital Multidisciplinary Service, where medicine-pediatric physicians provide pre-operative assessments and post-operative consultation for adult patients with congenital heart disease who are receiving surgery at CHC. This model has been very successful, and CHC has been able to benefit from the expertise brought from the adult medicine literature.

Continued on page 15
You are the pediatric hospitalist taking admission calls on a busy winter day when you accept a 6-year-old boy as a direct admission from his primary medical doctor (PMD). The PMD tells you that the patient presented to her office with a 10-day history of fever up to 103°F, croupy cough, wheezing and a 3-day history of stomatitis. Due to the patient's history of asthma, the patient's mother began giving him levalbuterol, prednisone and his inhaled steroid 2 days ago, without much improvement. A rash began a few days earlier which was described as nonpruritic red macules over the boy's chest and abdomen which progressed over the last 2 days to painful blisters. The boy has developed redness in both eyes with some discomfort and painful sores in his mouth over the last 1-2 days with resultant poor oral intake and poor urine output. He denies headache, photophobia, nausea, vomiting, diarrhea, dysuria. In the office, the PMD noted bilateral conjunctival injection, mucosal erosions of his lips and mouth as well as a “crusty” rash on the boys chest and abdomen. The PMD would like to have the boy admitted for his inadequate oral intake, and his poorly controlled asthma exacerbation.

The PMD provides the patient’s past medical history which is significant for asthma, gastroesophageal reflux and occasional migraines. The patient is taking lansoprazole, levalbuterol inhaler, budesonide inhaler, and montelukast sodium. He is fully immunized and has had no surgical problems. He has not traveled overseas and there are no recent significant exposures. He has no sick contacts, no significant family or social history, and no known allergies

He is admitted directly to the pediatric inpatient unit and you immediately evaluate him when he arrives. On examination he is ill appearing but cooperative and in moderate respiratory distress. His temperature is 101°F (38.3°C), with a heart rate of 132 beats per minute, respiratory rate of 26 breaths per minute, and blood pressure of 124/57 mm Hg. He is saturating 100% on 3 liters of oxygen (93% on 2 liters). He has bilateral subconjunctival hemorrhages without significant discharge or crusting. There is scant crusty discharge at the nares. His lips are red, swollen, bleeding, with tender blisters and exudates on both upper and lower lips (Figure 1). The gums have scattered ulcers which bleed readily. His neck is supple without significant adenopathy. Respiratory examination reveals bilateral wheezing and subcostal retractions with moderately prolonged expiratory phase, but no rales. The cardiac examination is hyperdynamic with tachycardia but no murmur, gallop or rub. His abdomen is soft, nontender, nondistended with hypoactive bowel sounds but no masses or hepatosplenomegaly. There is erythema and swelling noted at his urethral meatus, but no discharge or bleeding. There are erythematous papules, coalescent macules and bullae on his trunk and back. Each bulla is approximately 1-3 cm in diameter, and most are intact. The others have flaccid overlying tissue or are denuded with sharply circumcised areas that are tender.

Initial laboratory investigations obtained by the PMD earlier that day revealed a white cell count of 17.9 x 10³/µL (with 78% neutrophils, 2% bands, 18% lymphocytes, 2% monocytes). His hemoglobin, hematocrit and platelets were within normal limits. His basic metabolic panel and urinalysis were normal. A chest radiograph shows a small right lower lobe consolidation and bilateral hilar prominence (Figure 2).

Which additional tests would help confirm the diagnosis?

A. Echocardiogram to evaluate for findings suggestive of Kawasaki disease.
B. Viral cultures and rapid viral testing of the gums and lips for herpes simplex viruses for possible herpes stomatitis.
C. Eye, throat, and skin cultures for staphylococcal scalded skin syndrome
D. Mycoplasma serology to identify an inciting cause for Stevens-Johnson syndrome

See page 8 for answer.
Opportunities and Resources

Get Involved

The Section on Hospital Medicine (SOHM) offers a number of opportunities for involvement in Academy activities and beyond.

Pediatric Hospital Medicine Award
The Section’s annual award includes a $500 honorarium and a plaque – both presented during the SOHM academic and scientific program at the Academy’s National Conference & Exhibition (NCE). The award recognizes outstanding original research presented at the NCE. Case presentations are not eligible. For additional information, please visit the SOHM web site at www.aaphospmed.org. Co-sponsored by the Children’s Dream Foundation

Grants for the NICHQ Forum
The National Initiative for Children’s Healthcare Quality’s (NICHQ) Annual Forum for Improving Children’s Healthcare is considered to be one of the primary venues to discuss the gap between “what is” and “what can be” in healthcare for all children. The forum features breakout sessions and in-depth workshops in four tracks focused around NICHQ’s Improvement Agenda:

- Childhood Obesity - Assessing, Preventing and Treating
- Chronic Conditions - Seamless, Evidence-based, Family-Centered Care
- Purging Harm from Healthcare
- Improvement and Innovation

The Forum is scheduled to take place March 19-21, 2008 in Miami. The Section offers an opportunity for up to four individuals to receive a $500 grant (each) to attend the conference. Although the official application deadline has passed (January 4, 2008), if you are interested in being considered, please send a copy of your CV along with a letter of interest to Nicole Alexander at nalexander@aap.org as soon as possible. In return for the grant, each recipient is expected to write a short article for the SOHM News Journal regarding his or her experiences at the conference.

Additional information on the conference can be found at www.nichq.org.

Representative to Attend the AAP Legislative Conference
In an effort to expand the Section’s reach into the advocacy world, Dr. Brian Kit has been selected to represent SOHM at the Academy’s annual Legislative Conference. SOHM covers registration as well as meeting-related travel expenses. If you are interested in being considered for 2009, stay tuned to your e-mail or to the Section web site at www.aaphospmed.org. The request will be circulated in late summer (August/September).

Specifically for Residents
Any residents interested in receiving a travel grant to attend the 2008 Pediatric Hospital Medicine Conference (July 24-27) should send their CV and statement of interest to Julia Aquino, MD, Chair of the Subcommittee on Residents and Early Careerists, at jaquino3@jhmi.edu by February 15, 2008. Recipients should be residents at the time of the conference and will be expected to write an article about their experience for the SOHM News Journal, Hospital Pediatrics.

Congratulations to Dr. Hidekazu Hosono for winning the Section on Hospital Medicine Career Survey raffle, in which residents were asked to provide their opinions on Pediatric Hospital Medicine as a career path. Dr. Hidekazu received $200.

Courses and Seminars

Building Bridges Between Radiology and Emergency Medicine – February 23–24, 2008 Orlando, FL
Consensus Conference on Imaging Safety and Quality for Children in the Emergency Setting. This conference has been designed for radiologists, pediatricians and other pediatric healthcare providers, technologists, administrators, individuals in relevant regulatory programs, and allied radiological professionals responsible for care (including imaging) of infants, children and adolescents in an emergency setting. This audience will include, as well, those interested in influencing and improving standards for the treatment of this pediatric population. Visit www.pedrad.org/ for brochure and registration.

Hospitals Moving Forward with Patient and Family-Centered Care – March 3–6, 2008 Atlanta, GA
An Intensive Training Seminar Enhancing Quality and Safety for Patients and Their Families: This seminar provides three and a half days of comprehensive and practical sessions designed to help administrative leaders, physicians, nurses and other clinical staff, patients, and families become effective agents for patient- and family-centered change in their institutions. Visit www.familycenteredcare.org for brochure and registration.

e-Sessions

Newborn Jaundice – Access Through December 31, 2010
The AAP’s Practice Guideline: Management of Hyperbilirubinemia in the Newborn Infant > 35 Weeks of Gestation is presented in this online module. Pediatric practitioners completing this module should be prepared to reduce the frequency of severe neonatal hyperbilirubinemia and the risk of bilirubin encephalopathy. Downloadable tools include a nursing assessment, a bilirubin nomogram, and phototherapy guidelines.

For more information please visit www.pedialink.org.

2007 Prep Self Assessment Online – Access Through February 28, 2010
PREP Self-Assessment Online is a compilation of clinically relevant

Continued on page 9
The constellation of symptoms, clinical course and physical findings lead you to the diagnosis of Stevens-Johnson Syndrome (SJS). Based on the pneumonia, you suspected Mycoplasma pneumoniae as the inciting agent, and ordered serologic studies which are consistent with recent infection:

\[ \text{IgM} = 1742 \text{ U/mL (normal < 770 U/mL)} \]
\[ \text{IgG} = 1.44 \text{ optical density units (normal # 0.90 OD)} \]

Although Mycoplasma serology helped to confirm the inciting agent, the tests for other infectious agents were also performed to help eliminate other important diagnostic considerations. All viral cultures and rapid viral tests were negative and serology for Epstein-Barr virus was negative. The surface cultures were negative for Staphylococcus aureus. An echocardiogram was not performed in this case.

**Introduction**

The definition and classification of SJS has evolved since its initial description in 1922 by Stevens and Johnson as “an extraordinary, generalized eruption with continued fever, inflamed bucal mucosa and severe purulent conjunctivitis.” SJS remains a clinical diagnosis based on a constellation of symptoms which include an acute febrile illness with characteristic target lesions, mucus membrane involvement and epidermal detachment. Toxic epidermal necrolysis (TEN) is considered a more severe form of this disease that involves more extensive skin sloughing.

Drugs are the most commonly identified inciting agent for SJS but other triggers include infections and malignancies. Mycoplasma pneumoniae has been implicated as the most common infectious cause of SJS. Anticonvulsants (phenobarbital, carbamazepine, oxcarbazepine, phenytoin and lamotrigine), nonsteroidal anti-inflammatory drugs (e.g., ibuprofen and naproxen), and antibiotics (penicillin, sulfa drugs, cotrimoxazole, cefuroxime and vancomycin) are the most commonly implicated drug groups.

Though the precise pathogenesis of SJS is still unknown, various theories have been put forth. One such theory proposes dysfunction in the detoxification of reactive metabolites in drug metabolism. Another theory proposes the role of an immune mechanism, likely T-cell-mediated, that leads to apoptosis in keratinocytes and thus epidermal necrosis and sloughing of skin. Likely multiple factors and mechanisms contribute to the recognizable clinical condition of SJS.

**Clinical Features**

Patients with SJS present with a prodrome of constitutional symptoms and fever prior to the onset of the skin eruption. Skin lesions typically begin as erythematous flat macules, frequently developing dusky central areas (targetoid) that progress to vesiculation, formation of bullae, with epidermal necrosis. Nikolsky sign (blister formation or extension with lateral traction on the skin) is present. Skin lesions can progress to an extensive blistering eruption with primarily facial and truncal distribution. If epidermal detachment involves less than 10% of the total body surface area the disease is referred to SJS, and beyond 30% it is called TEN, with 10-30% involvement referred to as SJS-TEN overlap. Mucosal involvement typically precedes the skin findings and usually includes the oral, ocular and genital mucosal surfaces. Painful oral mucosal erosions result in characteristic hemorrhagic-crusted lips, foul-smelling mouth, and decreased oral intake. Ocular involvement is manifested as photophobia, painful conjunctival erosions with purulent discharge which may lead to residual scarring, lacrimal abnormalities, and permanent visual impairment. Pain, erythema and bleeding may be seen at the urethral meatus in boys or at the introitus in girls.

Multiorgan involvement can occur, including hepatitis, arthritis, pancreatitis, carditis, nephritis, or lower respiratory tract disease. Potential complications include sepsis, pneumonia, dehydration, and ocular damage.

**Differential Diagnosis**

Other diagnostic considerations for this febrile boy with extensive targetoid and vesiculobullous lesions include erythema multiforme, toxic epidermal necrolysis, Kawasaki disease, and staphylococcal scalded skin syndrome. Erythema multiforme (EM), with no longer considered part of the same spectrum of disease as SJS, is characterized by symmetric target lesions with a predilection for the palms and soles, back of hand and feet and extensor surfaces of arms and legs. If there is mucosal involvement, it is limited to a single location, most commonly the mouth. Kawasaki disease is also characterized by a fever, rash and mucous membrane changes, but there may be some distinguishing features. In Kawasaki disease the conjunctival involvement is typically nonexudative and the oral mucosal changes tend to be more erythematous and chapped as compared to the hemorrhagic and erosive lesions seen with SJS. It is uncommon for the rash of Kawasaki disease to be vesiculobullous. Staphylococcal scalded skin syndrome (SSSS) can also present with a febrile prodrome that progresses to bullae, but there tends to be extensive painful erythema of the skin prior to the skin sloughing and the mucous membranes are spared. Nikolsky sign is positive in SSSS as well, but the level of skin cleavage is more superficial with SSSS compared to SJS. Herpes simplex virus (HSV) stomatitis is another diagnosis to consider especially with the fever and oral mucosal changes described in this child. Unusual for HSV stomatitis are the prodrome, the simultaneous bilateral ocular involvement, and the skin changes which began as widespread macules. Other viral illnesses including varicella virus, Epstein-Barr virus (EBV) and adenovirus infections can share some of the skin or mucosal changes, but not typically the full clinical picture described in this case.

**Evaluations**

Initial laboratory studies can help evaluate the baseline status, support the clinical diagnosis, and evaluate for complications and often include a complete blood cell count, comprehensive metabolic panel (including assessment of renal and liver functions), prothrombin time, partial thromboplastin time, blood culture, and urinalysis. If respiratory symptoms are present, a chest radiograph is frequently indicated given the propensity for respiratory involvement or if a preceding lower respiratory tract infection is suspected, as with this case. Etiological diagnostic evaluations may include Mycoplasma or EBV titers and viral cultures or rapid studies. Skin biopsy is helpful in differentiating SJS or TEN from SSSS since the plane of cleavage is distinguishing. If SSSS is a consideration, cultures of the blood, urine, anterior nares, eye, throat, axilla, or anus are indicated prior to initiating...
antibiotic therapy to try to isolate the organism, especially with the increasing prevalence of colonization with methicillin-resistant Staphylococcus aureus.

Treatment:
Optimal medical management of SJS requires early diagnosis, immediate discontinuation of the causative drug(s), supportive care and pharmacotherapy. Considering the propensity for major skin loss and hence the risk of sepsis and extensive dressing requirements, a center with an intensive care unit or a burn center provide an ideal management setting for these patients. Good supportive care includes maintaining hydration, appropriate oxygen delivery, proper nutritional support, pain control, skin and wound care, and ophthalmologic care.

Antimicrobial therapy is warranted for treatable infecting infections such as those caused by HSV or Mycoplasma, and for secondary infections. There is no role for prophylactic antibiotic therapy to prevent sepsis or to prevent other secondary bacterial infection.

Many immune-modulating treatments have been used in SJS including corticosteroids, plasmapheresis, and intravenous immune globulin (IVIG). The use of corticosteroids remains controversial with many advocating its use early in the disease for a short period, especially in drug-induced SJS. Others feel that corticosteroids can worsen outcome by increasing risk of sepsis and gastrointestinal hemorrhage. Plasmapheresis has been studied in children with TEN with some encouraging results. IVIG, which blocks the Fas receptor, is emerging as a most promising treatment. It appears to arrest progression of skin lesions, and speed recovery with a good safety profile, although there are some studies that have failed to show a benefit from this therapy.

Prognosis
The outcome in SJS is directly related to the degree and severity of skin involvement, with mortality approaching 30% in adults when there is extensive epidermal detachment. Children tend to have a better prognosis and lower mortality than adults. Ophthalmologic sequelae are among the most common causes of morbidity associated with SJS, and can include blindness. Skin scarring and changes in pigmentation can occur which can lead to disfigurement, deformity, or contractures.

Outcome
This patient was treated with azithromycin, prednisone (1 mg/kg/dose every 6 hours initially) and IVIG (0.5g/kg). He also received supplemental oxygen and levalbuterol every 2 hours initially. He was evaluated by ophthalmology and noted to have scattered sub-corneal bullous lesions and placed on erythromycin ointment to prevent infection and to provide lubrication. Due to blisters in his mouth, he was not tolerating oral intake and a nasogastric tube was placed for gastric feedings. Over the two days following admission and initiation of the treatments, the patient’s clinical condition improved significantly. His skin lesions stopped progressing and no new lesions were noticed. He began to eat small amounts of food. He was weaned off his supplemental oxygen and levalbuterol and his nasogastric tube was removed. Ten days after admission he was sent home on a prednisone taper, lansoprazole, and liquid oral nutritional supplements. He was directed to follow up with dermatology, ophthalmology and his PMD.

REFERENCES:

Interested in submitting a case for You Are The Hospitalist? Contact Lisa Zaoutis at zaoutisl@email.chop.edu

Opportunities and Resources
continued from page 7

questions written by practicing pediatricians. The material is presented in a logical, challenging, problem-solving format requiring you to select the single best answer. Electronic formats include animated illustrations, tables, photos, audio, and video clips.

For more information please visit www.pedialink.org.

Policy Statements and Reports

For information on any of the statements and reports noted below, please visit the Pediatrics web site at http://pediatrics.aappublications.org/.

1. Patient Safety in the Pediatric Emergency Care Setting Committee on Pediatric Emergency Medicine December 2007

General Information

Free Four New Patient Education Handouts Developed by the Section on Hospital Medicine
Visit www.aaphospmed.org to access the handouts during the one-week free preview period.

1. Croup: When Your Child Needs Hospital Care (English Only)
2. Gastroenteritis: When Your Child Needs Hospital Care (English Only)
3. Treating Your Child’s Pain: Medical Procedures (English Only)
4. Treating Your Child’s Pain: Surgery (English Only)

Resources for Members

Pediatric Hospitalist Programs of North America – Newly Updated
The Pediatric Hospitalist Programs of North America resource can be used by individuals and programs to network as well as by members to seek out contacts and job opportunities in a location of interest. Visit the SOHM web site at www.aaphospmed.org for more information.

Neonatal/Pediatric Transport Team Database – Newly Updated
The Neonatal/Pediatric Transport Team Database is a resource for professionals who are interested in reviewing transport programs across the country. Visit the Section on Transport Medicine web site at www.aap.org/sections/transmed for additional information.
Benefits of Albuterol MDI with Spacer versus Small Volume Nebulizer Machines for the Treatment of Acute Asthma Exacerbation

Francisco Alvarez, MD, Assistant Professor of Pediatrics, falvarez@cnmc.org
Children’s National Medical Center, Washington, DC

For more than 50 years, nebulized albuterol has been the mainstay of treatment for children presenting to hospitals with an acute exacerbation of asthma. The use of a metered dose inhaler (MDI) with a spacer has been primarily restricted to the treatment of mild exacerbations in the outpatient setting. Multiple studies have demonstrated that albuterol MDI with spacer (MDI/spacer) is not only as efficacious as nebulized albuterol1,2,4-6,10,12, but also results in shorter emergency department length of stay5,6,8,10-12 and reduces costs3,5,8,10,13,15. However, emergency departments and inpatient units are slow to adopt the use of MDI/spacer for hospitalized children.14 This article compares the use of albuterol MDI/spacer versus nebulized albuterol for the management of acute exacerbations of asthma in hospitalized children.

Clinical Efficacy
Several studies have compared the use of MDI/spacer versus nebulized albuterol for the management of acute exacerbations of asthma. There is no significant difference in the bronchodilatory effect of albuterol delivered via MDI/spacer versus nebulized albuterol.1,2,4,6,10,12 Also, many studies have shown that patients with asthma exacerbations of similar severity have comparable changes in clinical variables, regardless of treatment modality. For example, Ba et al. demonstrated comparable improvements in FEV1 following treatment in both groups.2 Burrows and Connett found that children treated with either MDI/spacer or nebulized albuterol had similar improvements in respiratory rate, pulse rate, and oxygen saturation.4 A review of 10 clinical trials concluded that there was no significant difference in post-treatment clinical scores (based on respiratory rate, dyspnea, wheezing, retractions, oxygen requirement, FEV1, cough) in children treated with MDI/spacer versus nebulizer.1

Hospital readmission rate was also found to be decreased in patients treated with MDI/spacer. In an urban emergency department, adult patients had significantly lower relapse rates at 14 and 21 days when treated with MDI/spacer versus nebulized albuterol.12 Similar findings have been demonstrated in children. Leversha et al. studied readmission rates for children ages 1 to 4 years in the emergency department. The MDI/spacer group had a readmission rate of 33% compared to 60% for the nebulizer group.10 Dewar et al. demonstrated that readmission rates for children 3 years and older hospitalized in a large teaching hospital were significantly lower in the MDI/spacer group (13.8% vs 27.2%).8 However, it must be noted that the patients and families in the MDI/spacer group received more inpatient education prior to discharge, which may have contributed to the lower readmission rates.

The Cochrane Database systematic review of 2066 children in outpatient settings and emergency rooms and 213 children in the inpatient setting concluded that “metered-dose inhalers with spacer produced outcomes that were at least equivalent to nebulizer delivery.”9 Another review stated that “data support the effectiveness of MDI with accessory devices as first-line treatment in acute childhood asthma… and should be considered the preferred mode of treatment of children with acute asthma.”11 The National Heart, Lung, and Blood Institute (NHLBI) asthma management guidelines recommend using an MDI with a valved holding chamber (VHC) for management of mild or moderate asthma exacerbations, and for the initial treatment of severe asthma exacerbations.10 Most studies concluded that 4-8 puffs of albuterol via MDI/spacer were equivalent to one standard nebulizer treatment, regardless of age or weight.9,10,11,16

Non-clinical Benefits
The use of MDI/spacer devices in the emergency department and inpatient units results in several additional benefits. In the hospital setting, the use of MDI/spacer is less expensive than nebulized therapy for a variety of reasons.3,4,8,9,10,13,15 The actual device is much less expensive, and the MDI/spacer does not require regular and perhaps costly maintenance to preserve function.10,13,15 Furthermore, a decrease in the amount of respiratory therapist time needed to administer the medication helps lower the cost, because fewer therapists are needed to treat the same number of patients. Also, time saved by the respiratory therapists could be “spent in additional revenue-generating activities,” such as patient education.3 One study examined the financial impact of changing from nebulizer treatments to MDI/spacer for hospitalized patients with asthma exacerbations and found that the direct annual cost was reduced by $26,510.13 This decrease was primarily due to decreased time spent by the respiratory therapist per patient.

In the home environment, the use of MDI/spacer may also be less expensive.4,8,9 Home nebulizer machines require delivery of the equipment by a medical equipment supply company, education regarding the use of the machine, and the use of electricity to operate the machine. While the cost in each case may be small, the total cost is huge when every household in the US with a nebulizer machine is considered.

The use of MDI/spacer devices in the emergency department results in shorter emergency room visits.5,9,12 One study found that the time spent in the emergency department was 66 minutes for children treated with MDI/spacer and 103 minutes for children treated with nebulized albuterol.9 Similar studies in the inpatient setting found no difference...
in length of stay for children treated with MDI/spacer versus nebulized albuterol. However, respiratory therapists spent less total time with patients treated with MDI/spacer compared to those who received nebulized albuterol.

The use of MDI/spacer in the emergency department or inpatient setting provides an important teachable moment for the patient and family. The health care provider or respiratory therapist has the opportunity to observe the use of the device and provide instruction on proper technique. Presumably, respiratory therapists delivering medication via MDI/spacer have more time to provide general asthma education as well. Studies found that the use of MDI/spacer was shown to decrease return emergency department visits and hospital readmission rates when combined with asthma education. This includes the review of the appropriate technique for use of the MDI/spacer, not only during acute asthma exacerbations but also for maintenance therapy.

**Discussion**

The current health care climate demands the delivery of high quality care while containing costs, and many institutions struggle to find an appropriate balance between the two. The use of an MDI/spacer device for the treatment of acute asthma exacerbations provides equal, if not better, care for these patients while potentially reducing costs. However, it must be noted that most studies to date are based on the chlorofluorocarbon (CFC) MDI devices. As these are replaced by the new, and more expensive, hydrofluoroalkane (HFA) MDI devices, additional cost analysis will need to be performed.

Education is an important component of asthma care. Hospitalists and other inpatient providers have a unique opportunity to provide general asthma education and training on the proper use of devices during the acute hospital stay. However, anecdotal experience implies that many patients are not consistently and effectively taught how to use the MDI/spacer while hospitalized, but rather are discharged with a prescription for an MDI/spacer for treatment at home. A valuable opportunity for education is lost.

Finally, while it has not been rigorously studied, the convenience of the MDI/spacer device cannot be overlooked. Nebulizer treatments can be a great asset for certain patient populations, but it is impractical to ask patients and families to take their nebulizer machine whenever they leave home or travel. Outside of the home or medical setting, an appropriately used MDI/spacer may be the only and best means of treatment for an acute asthma exacerbation, underscoring the importance of education regarding proper technique. Also, unless a nebulizer machine is being regularly maintained, there is no guarantee that the appropriate amount of medication will be delivered during a treatment.

As physicians taking care of children with asthma in the hospital setting, it is our responsibility to ensure the provision of high quality care and patient education that will have both immediate and potentially sustainable benefits. It is also important to advocate for insurance coverage of spacer devices, as these are necessary pieces of equipment that may greatly improve the care and outcomes for these patients.

Adopting the use of MDI/spacer in the hospital setting may be a difficult challenge for some providers and institutions. The question for all of us is: Are the benefits of MDI/spacer use enough to overcome our “nebulizer culture”?

**REFERENCES**


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**Interested in contributing to Hospitalists On-Line? Please contact Jennifer Maniscalco at jmanisca@cnmc.org with your ideas!**
Inpatient Management of Eating Disorders

Arash Anoshiravani, MD, Fellow in Adolescent Medicine
Lucile Packard Children’s Hospital, Palo Alto, CA

In the United States, as many as 10 million females and 1 million males are struggling with an eating disorder such as anorexia or bulimia. Most general pediatricians will encounter patients with disordered eating as the treatment of patients with eating disorders remains largely in the outpatient setting. However, many patients are hospitalized when the medical consequences of their illness become severe. Prevalence of medical admissions related to eating disorders is not well documented. What is known is that hospital lengths of stay tend to be long with relatively high acuity and costs. For the inpatient physician, familiarity with the medical sequelae of eating disorders, criteria for admission and basic inpatient management strategies can greatly improve the care provided medically unstable eating disorder patients.

Medical Instability
Although eating disorders, such as anorexia nervosa and bulimia nervosa, are primarily psychiatric conditions, the resulting malnutrition they cause can lead to physical and physiologic consequences. Less acutely worrisome but often dramatic abnormalities associated with eating disorders include emaciation, muscle atrophy, hair loss, lanugo, acrocyanosis, and cognitive and behavioral changes. The most severe and potentially life-threatening abnormalities include:

1. Bradycardia and/or dysrhythmias
2. Hypotension
3. Postural tachycardia and/or hypotension (“orthostasis”)
4. Hypothermia
5. Electrolyte abnormalities

Inpatient hospitalizations most commonly occur as a result of these more serious medical sequelae of the patient’s illness.

Justification for Admission
Several medical societies, most prominently the American Academy of Pediatrics (AAP) and American Psychiatric Association (APA), have developed guidelines for the evaluation and management of eating disorders in children, adolescents, and adults. Vital sign abnormalities, laboratory abnormalities, extreme low weight (for age, height, and sex), or poor outpatient treatment progress are all reasonable justifications for admission of patients with eating disorders. Table 1 summarizes the consensus guidelines as stated by each organization.

Inpatient Evaluation and Management
Hospital evaluation should include a full history and physical to assess the extent and severity of: 1) restriction of intake and other eating disorder behaviors, 2) physical and physiological sequelae of malnutrition (including syncope, menstrual irregularities, constipation, cold intolerance, etc.), 3) risk factors for severe medical complications or death (diet pill abuse, substance abuse, suicidality, prolonged duration of eating disorder, etc), and 4) stigmata of malnutrition and self-harm behaviors.

Further clinical evaluation includes assessment of vital signs and ECG upon admission and vital signs every 4 hours subsequently to evaluate for bradycardia, hypotension, orthostasis, and hypothermia. Continuous cardiac monitoring is often indicated, especially during the initial phases of hospitalization for patients with a history of bradycardia, abnormal ECG, or at risk for arrhythmias. Initial laboratories should include:

1. Full chemistry panel (including sodium, potassium, chloride, CO2, BUN, creatinine, glucose, calcium, magnesium, and phosphorus)
2. Liver enzymes and lipid panel
3. Toxicology screen
4. In girls, LH, FSH, prolactin, TSH, free T4, estradiol, and pregnancy test (to rule out other organic causes of menstrual irregularities / amenorrhea, including CNS tumors, thyroid dysfunction, pregnancy)

5. CBC and ESR (as a nonspecific screens for possible underlying chronic disease / inflammatory disorders)
6. Toxicology screen

The primary goal of hospitalization is nutritional repletion (“refeeding”) and medical stabilization. Depending on the institution, refeeding will begin with either liquid or solid nutrition, preferably by mouth. The well documented risk of the refeeding syndrome with its severe, potentially deadly electrolyte abnormalities dictates that physicians and support staff resist the urge to feed patients as much as possible, as quickly as possible. Phosphorus, potassium, and magnesium levels should be routinely followed, especially during the first 7-10 days of refeeding. Electrolyte supplementation should be provided as needed. Nasogastric feeding should be reserved for those who refuse to take nutrition during set meal times, and the medical and support staff should make every effort to switch to oral feedings as soon as possible. Parental nutrition is generally not indicated and has been not shown to improve outcomes.

A multidisciplinary team of inpatient physicians, psychiatrists, nutritionists, social workers, case managers, and nurses trained in the care of eating disorder patients is essential in the safe and timely stabilization of hospitalized eating disorder patients. Patients are generally considered appropriate for discharge once they are no longer medically unstable and have an outpatient follow-up team in place, generally including a psychiatrist and/or therapist, nutritionist, and medical doctor. Discharges without a clear plan for close monitoring often result in poor outcomes, readmission, and prolonged illness.
In Conclusion
The inpatient management of patients with eating disorders can be challenging, both medically and socially. However, the medical risks of these illnesses are real, and lifetime mortality rates are remarkably high. Inpatient physicians can find solace in the fact that most eating disorder patients, especially those who are adolescents or young adults, recover when they receive a combination of appropriate nutritional therapy and aggressive psychosocial support.

<table>
<thead>
<tr>
<th>MEDICAL INDICATIONS FOR INPATIENT TREATMENT</th>
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<td>(adapted from AAP^4 and APA^5 guidelines)</td>
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<thead>
<tr>
<th>AAP</th>
<th>APA</th>
<th>Adult</th>
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<tbody>
<tr>
<td>Child</td>
<td>Child</td>
<td>Adult</td>
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<tr>
<td>• &lt;75% ideal body weight</td>
<td>• &lt;85% of estimated healthy weight</td>
<td>• &lt;85% of estimated healthy weight</td>
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<tr>
<td>• refusal to eat</td>
<td>• weight, or acute decline</td>
<td>• HR &lt; 40 bpm</td>
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<tr>
<td>• HR &lt; 50 bpm daytime</td>
<td>• refusal to eat</td>
<td>• BP &lt; 90/60 mm Hg</td>
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<tr>
<td>• HR &lt; 45 at night</td>
<td>• HR near 40 bpm</td>
<td>• glucose &lt;60 mg/dL</td>
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<tr>
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<td>• BP &lt; 80/50 mm Hg</td>
<td>• potassium &lt;3 mEq/L</td>
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<td>• orthostatic pulse changes &gt; 20 bpm</td>
<td>• Orthostatic pulse changes &gt; 20 bpm</td>
<td>• electrolyte imbalance</td>
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<td>• Orthostatic changes in BP of &gt; 10-20 mm Hg</td>
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<td>• dehydration</td>
</tr>
<tr>
<td>• arrhythmia</td>
<td>• hypomagnesemia</td>
<td>• organ compromise requiring acute treatment</td>
</tr>
<tr>
<td>• syncope</td>
<td>• hypophosphatemia</td>
<td>• poorly controlled diabetes</td>
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<tr>
<td>• serum potassium &lt; 3.2 mmol/L</td>
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<td>• serum chloride &lt; 88 mmol/L</td>
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<tr>
<td>• esophageal tears, hematemesis, intractable vomiting, or suicide risk (typically in patients with bulimia nervosa)</td>
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Congratulations to Su-Ting T Li, MD, MPH, continued from page 4

Results
A total of 1,173 children with empyema were identified. Compared to children treated with primary nonoperative management, children treated with primary operative management had a shorter hospital LOS by 4.3 days (95% confidence interval (95% CI) 2.3 to 6.4 days), lower total hospital charges by $21,180 (95% CI: $8,248 to $34,111), and were less likely to be transferred to another short-term hospital (0% vs. 13.3%). In addition, children with primary operative management were less likely to have therapeutic failure (OR: 0.09; 95% CI: 0.05 to 0.16). There was no difference in complications between the two groups (OR: 1.01; 95% CI: 0.59 to 1.74).

Conclusion
This study suggests that primary operative management is associated with decreased LOS, decreased hospital charges, and decreased likelihood of transfer to another short-term hospital compared with primary nonoperative management.

From left to right: Daniel Rauch, MD, FAAP, Program and Education Chairperson and Section Executive Committee Member and Su Ting Li, MD, MPH.
Predischarge Bilirubin Screening: Are We Impacting Severe Hyperbilirubinemia?

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Severe hyperbilirubinemia and kernicterus have been the focus of renewed attention1,2. These preventable events cause significant morbidity and mortality, and so various strategies for prevention have been identified. In 2004, the American Academy of Pediatrics (AAP) issued a Clinical Practice Guideline, “Management of Hyperbilirubinemia in the Newborn Infant 35 or More Weeks of Gestation”3. After the issuance of this guideline, many clinical institutions have begun universal bilirubin screening of newborns prior to discharge, often in the form of transcutaneous bilirubin (TcB) measurement. In this article, we seek to examine the effectiveness of this practice in reducing hospital readmissions, reducing the incidence of severe hyperbilirubinemia, reducing overall costs and providing better patient care.

The goal of the AAP guideline was to decrease severe hyperbilirubinemia and kernicterus without increasing harm due to maternal anxiety, decreased breastfeeding, or unnecessary increase in testing or cost. This guideline recommended that physicians:

1. Promote and support successful breastfeeding
2. Perform a systematic assessment before discharge for the risk of severe hyperbilirubinemia
3. Provide early and focused follow-up based on the risk assessment
4. When indicated, treat newborns with phototherapy or exchange transfusion to prevent the development of severe hyperbilirubinemia and, possibly, bilirubin encephalopathy (kernicterus) 5

The AAP recommends 2 clinical options used individually or in combination for the systematic assessment of risk: predischarge measurement of the bilirubin level using total serum bilirubin (TSB) or transcutaneous bilirubin (TcB) and/or assessment of clinical risk factors. Further studies have shown predischarge assessment of total serum bilirubin to be the most reliable predictor of risk for severe hyperbilirubinemia, although neither strategy alone has both high sensitivity and high specificity4.

Transcutaneous bilirubin measurement has gained popularity as a screening tool because it is a fast and painless alternative to drawing blood for a total serum bilirubin measurement and can be used in any clinical environment. The BiliCheck device, specifically, has been shown to produce TcB estimates that are accurate and reliable predictors of TSB in newborns with varying degrees of skin pigmentation, including indigenous African populations5,6. All commonly used TcB instruments will underestimate bilirubin levels at high concentrations and should not be considered a replacement for TSB measurement. It is important for clinical institutions to define cut-off levels above which TcB should be confirmed by further testing7. Depending on the instrument, studies have shown this cut-off level to be between 11 and 13.1 mg/dL7,8.

Predischarge bilirubin measurement is typically assessed through the use of hour-specific nomograms8. These nomograms plot bilirubin levels at various hours of age along low, intermediate, and high-risk standard curves. They are based on the concept that if a baby’s risk factors for hyperbilirubinemia are present at birth, then early bilirubin levels should be indicative of the trend that the baby’s bilirubin will follow as it peaks (usually after hospital discharge). This can be an accurate predictor of necessary follow-up when used appropriately.

Clinical risk factors for hyperbilirubinemia have also been outlined by the AAP guidelines. However, the AAP has not provided clear indices for how combinations of these risk factors should be used to predict risk for subsequent hyperbilirubinemia and necessary intervention. When used in combination with predischarge bilirubin measurement/nomogram graphing, this information could provide additional predictive value4.

Have the AAP guidelines worked? Are we accurately predicting which newborns require intervention for hyperbilirubinemia and preventing the development of severe hyperbilirubinemia? We were able to find three studies examining this question; all indicate that the answer is yes.

Bhutani et al. published an observational study looking at the development of a systems approach to hyperbilirubinemia and its impact on the need for exchange transfusion, intensive phototherapy and need for readmission9. They followed over 31,000 well babies throughout the evolution of their intervention and saw a decrease in all adverse outcomes. The effect of the final, systems-based approach was a rate of intensive phototherapy of 1.3% and of exchange transfusion of 1 per almost 12,000 infants. This compares favorably to their rate with the initial phase of intervention (selective TSB measurement) of 3.65% receiving intensive phototherapy and 1.2137 requiring exchange transfusion. In this observational study, comparison statistics were not performed and the statistical significance of this data is not known.

Eggert et al. performed a historic cohort study, examining 101,272 newborns of 35 weeks gestation or greater, before and after the initiation of a universal
In summary, the practice of universal predischarge bilirubin screening has been shown to decrease hospital readmissions for hyperbilirubinemia. It appears to do so without significant increase in cost, with the primary cost of the practice seems to be in the initial purchase and use of the TcB devices. It could be reasonably argued that this front-loaded spending is far outweighed by the potential savings found in preventing the life-threatening consequences of severe hyperbilirubinemia and kernicterus. The reviewed studies have not addressed the question of increased maternal anxiety, nor the implied pressures to discontinue breastfeeding that might accompany the knowledge that hyperbilirubinemia and breastfeeding are closely linked. In addition, more studies need to be done looking prospectively at outcomes and costs under the 2004 guidelines.

REFERENCES

Interested in submitting an article to Neonatal Medicine Update?
Contact Ursula Kneissl at Uknneissl@crhc.org

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any children with special health care needs (CSHCN) require enteral feeds in order to maintain or restore optimal health. Inability to consume adequate calories orally may be due to a variety of problems such as poor endurance for oral feeds, oral aversion, dysphagia, aspiration, or increased metabolic demands. Inadequate oral intake frequently results in malnutrition, which in turn exacerbates underlying medical conditions and may contribute to poor wound healing. Exacerbations of chronic medical conditions lead to more frequent hospitalizations and longer lengths of post-surgical recovery in many cases.

Enteral feeding regimens must be individually tailored to patients based on degree of malnutrition, age, activity level, and fluid requirements. Published nutritional guidelines for the resting energy expenditure (REE) and recommended dietary allowance (RDA) based on a patient’s age and sex are a good starting place when designing a feeding regimen. The less physically active a child is, i.e. non-ambulatory quadriplegic CP, the more likely she is going to require fewer calories, sometimes less than the REE. As the REE provides only approximately 50-60% of the RDA, restricting calories may also mean restricting volume. Maintenance fluid requirement calculations must be made separately to ensure adequate hydration. Free water can be added to the enteral feeding regimen to ensure a minimum of 1600 ml/m2/day for maintenance fluids.

Some children will continue to fail to thrive after initiating enteral feeds even when appropriate catch-up enteral nutrition is prescribed. In these cases it is important to evaluate for different types of problems that may be leading to continued poor growth. For example, a previously healthy five month old, “Sue,” who developed failure to thrive after suffering a traumatic brain injury. During “Sue’s” three-week hospitalization for non-accidental trauma, her weight increased from 6.1 kg to 6.4 kg. She had been n.p.o. for several days and her feeds were advanced slowly first via the naso-gastric route and then orally. Prior to discharge she had a normal swallow study and was able to take standard infant formula feeds ad lib. “Sue” was discharged home with instructions to take 155 kcals/kg/day to promote catch-up growth.

One month after discharge, “Sue” weighed 6.3 kg. Her parents reported that she was not a hungry baby and she preferred sleeping to eating. “Sue’s” parents were encouraged to feed her every three hours and her formula was changed to 24 kcal/oz. Two months after her injury she weighed only 6.1 kg and her parents reported running out of 24 kcal/oz formula and restarting standard infant formula 2 weeks prior. Three months after “Sue’s” injury, she weighed 6.4 kg when she was seen in the emergency center with new-onset seizures. A diet history was not recorded at that visit.

Five months after her injury “Sue” weighed only 6.4 kg and was admitted for failure to thrive. Again, she had a swallow study, which this time revealed mild-moderate oral dysphagia and mild pharyngeal dysphagia that was expected to improve with therapy. On discharge one week later, “Sue” weighed 6.9 kg. She was discharged home on 24 kcal/oz formula with instructions to take 120 kcal/kg/day and with a referral to receive oro-motor therapy via ECI.

Three days after discharge, “Sue” had lost 110 grams and medication reconciliation revealed that her anti-spasticity medication, diazepam, had not been included in her discharge medications. The diazepam was restarted, naso-gastric tube (NGT) feeds were ordered and a surgery consultation for gastrostomy was requested. Unfortunately, for a variety of complicating reasons, “Sue” only sporadically received NGT feeds and never received oro-motor therapy.

Finally, seven months after her injury and around the time of her first birthday, “Sue” had a surgical gastrostomy performed. She received primary placement of a low-profile gastrostomy replacement device (LPGRD) or “button”. Prior to discharge, “Sue” was advanced to full enteral feeds with standard 30 kcal/oz child formula to provide 120 kcal/kg/day. She tolerated gravity bolus feeds well in the hospital and her discharge weight was 7.5 kg. Two weeks after discharge, “Sue’s” parents reported frequent vomiting after bolus feeds. A feeding pump was ordered to run feeds at a rate of 100 ml/hr. One month after discharge, “Sue” weighed only 6.9 kg and continued to have frequent vomiting in spite of the slowed feeds. An appropriate dose of ranitidine was started and feeds were increased to 140 kcal/kg/day.

Two weeks after her gastrostomy, “Sue” still weighed only 6.9 kg and her parents reported that although the ranitidine seemed to help at first, she had returned to frequent vomiting with feeds after a few days. At this time, an appropriate dose of lansoprazole was started. Two weeks later, “Sue” weighed 7 kg. Her parents reported that she was tolerating the feeds better and that her vomiting was much improved on the ranitidine and lansoprazole; however, she had only gained 1 g/kg/day. At this time a more detailed feeding history revealed a misunderstanding regarding the meaning of feeds every three hours.

Take home lessons
Many parents misunderstand feeding instructions. With the use of the feeding pump, the interval between “Sue’s” feeds increased by 50%. “Sue’s” parents
understood “q 3 hour feeds” to mean three hours from the end of the feed to the start of the subsequent feed. Since her pumped feeds were lasting 90 minutes, the interval became four and a half hours instead of three hours. As a result she was receiving less than 75% of the prescribed daily calories.

Mixing, concentrating, or diluting formulas may be confusing to parents, as they may not have adequate opportunities to practice and demonstrate the skills that they are taught. Language barriers and low-health literacy skills may exacerbate these difficulties.

Families run out of prescribed nutritional, just like they run out of prescription medications. The supply of medically prescribed nutritional may depend on a parent’s ability to keep appointments with WIC, navigate home health vendors, and complete insurance paperwork. Some parents do not realize that many of these issues can be resolved by telephone and may wait until the next scheduled appointment to address a deficiency.

Insured children may not receive all prescribed, medically necessary services or therapies. In spite of having home nursing arranged to instruct the parents on the proper technique for placement, care and feeding via NGT, “Sue” did not continue to receive NGT feeds after the first few days as the parents were unable to independently replace the NGT. Although ordered, the home oro-motor therapies did not begin due to multiple failures of communication between the parents and the agency. Parents may lack the motivation, knowledge or skills to provide home health care or advocate effectively for their children.

Children with cerebral palsy (CP) may have progressive dysphagia. Although CP is a static encephalopathy, fine and gross motor function can continue to decline as spasticity and tone increase. Infants who bottle feed well may progress into toddlers, children and adolescents who have worsening dysphagia and aspiration for varied consistencies of foods. These children require evaluation and therapy by speech or occupational therapist to maximize their oral feeding potential. Anti-spasticity medications such as benzodiazepines (diazepam) or muscle relaxants (baclofen) may ameliorate dysphagia symptoms.

Gastroesophageal reflux disease (GERD) may worsen after gastrostomy placement. Although “Sue” had tolerated bolus feeds in the hospital in the immediate post-operative time, at home she did not.

When troubleshooting clinical symptoms of GERD, a step-wise approach can be useful. First, increasing the time interval over which bolus feeds are given may be helpful. Typical gravity bolus feeds take less than 20 minutes. Slowing down feeds to be given over 30-45 minutes is helpful for some patients. Next, using medications to reduce stomach acidity (such as proton pump inhibitors or Histamine 2-antagonists) along with prokinetic medications to increase gastric emptying (such as metaclopramide, erythromycin or bethanechol) may be helpful. However, compared to other prokinetic agents (such as cisapride or domperidone) that have been withdrawn from the US market, the available prokinetic medications are of limited benefit. Next, using a feeding pump to give feeds at an even slower rate or continuously may be necessary.

When the above measures are unable to resolve feeding intolerance due to GERD symptoms with gastrostomy feeds, other options exist. For patients and families reluctant to undergo additional surgery, a gastrostomy button can be converted to a gastro-jejunal (G-J) button by an interventional radiologist as a simple outpatient procedure. Often feeding the jejunum with drip feeds will resolve the reflux symptoms. The total volume of feeds and water can usually be given over 12-16 hours so that the child and her family can have “pump-free” time for travel outside the home, etc. If changing to a G-J button is not appropriate or helpful, then fundoplication remains as a final option to improve reflux symptoms.

In summary, many CHSCN require enteral feeds due to the inability to consume adequate calories orally. Enteral feeding regimens should be individually tailored to CHSCN depending on their age, activity, and degree of malnutrition. However, some CHSCN will fail to thrive in spite of appropriate catch-up enteral nutrition. Hospitalists and other caregivers need to be aware of the common pitfalls of enteral feeding so they can assist these patients in growing and thriving optimally.
Q: Our hospitalist group recently reviewed our collections for the past 18 months. We noticed that we are being reimbursed for our initial inpatient consults, but we have not been getting reimbursed consistently for our daily follow up consults. Any thoughts?

A: CMS (Centers for Medicare and Medicaid Services) defines a consultation as a service “provided by a physician whose opinion or advice regarding evaluation and/or management of a specific problem is requested by another physician or other appropriate source.” CMS requirements for consultation coding are typically referred to as the 3 R’s:

1. A consult must include a request to the consultant by another provider for advice or an opinion. This request can be written or verbal, but must be documented.
2. There must be a reason for the consultation, which also must be documented.
3. Finally, there must be a reply by the consultant, back to the requesting provider, documenting the advice or opinion rendered.

If you are getting reimbursed for the initial consult, using CPT initial inpatient consult codes 99251-99255, then I suspect you are successfully meeting CMS guidelines for a consult. Your problem of proper reimbursement for follow up consults could either be a relatively easy fix or might involve a bit more work.

In 2006, a major change occurred in the follow up evaluation and management codes. CPT codes 99261-99263, which had represented follow up inpatient consult codes, were deleted. After an initial inpatient consult code, providers are now instructed to use the follow up subsequent hospital visit codes, CPT 99231-99233. Since your decrease in reimbursement for follow up consults occurred at this time, you might be using outdated CPT codes. If this is the case, this is a straightforward fix for your group.

However, if your group is using the correct CPT subsequent hospital visit codes, then the solution might be more complex. First, your subsequent follow up days may have been denied based on the content of your follow up notes. An initial hospital consult is expected to address the evaluation and management of a specific problem, including possible or potential future courses of action. Follow up consultation notes can be used to monitor progress and recommend management changes. For example, let us assume that a surgical colleague had consulted you about a child, who is now post-operative day #2 from an appendectomy, for evaluation and management of possible new onset rheumatoid arthritis. In your initial consultation note, you may have recommended a laboratory evaluation, the results of which may not be complete for several days. If your follow up daily consultation notes continually refer to the pending laboratory work up and offer no new management changes, then some insurers might deny payment for those subsequent days. A subsequent hospital visit code could be used once the laboratory evaluation is complete.

Second, it may be that you are using an incorrect code on the initial day. Returning again to the CMS definition, a consultation is defined as an opinion or advice. If you are being asked to co-manage a patient, then the initial hospital consultation code could be considered by some insurers, especially Medicare, to be an incorrect code. In this case, you are providing concurrent care and a more appropriate code for the first or initial day would be a subsequent hospital day code, CPT 99231-99233.

The amount of money by CMS for consultations, thanks in no small part to hospitalists, has skyrocketed in the past few years. CMS is expected to take a closer look at the use of initial consultation codes, beginning in 2008.

Coding practices can be complex and can be region-specific, as well as unique to individual insurance providers. Ideally, hospitalists would become familiar with current regional coding practices, or at a minimum each pediatric hospitalist group would have a designated “coding champion.” As always, it is recommended to work closely with local coding professionals.

Have a question for the Billing and Coding Corner? Email Dr. James O’Callaghan at james.ocallaghan@seattlechildrens.org.

What’s your focus?

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The Combined Pediatric Emergency Department/Inpatient Unit: 4 Years of Experience

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Franklin Square Hospital Center, Baltimore, MD

Introduction
Community hospitals increasingly depend on pediatric hospitalists to provide care for over six million children hospitalized annually in the United States (2000).1 Community hospitals and their hospitalist programs face significant challenges to providing quality care to children. Seasonal variation of the pediatric inpatient census negatively impacts the retention and quality of pediatric specific staff, and limits the cost effectiveness of maintaining a large dedicated pediatric unit. Community hospitals often admit children to a unit where they are mixed with a population that includes adult patients which has a negative effect on patient satisfaction. Recent data presented at the Pediatric Academic Societies meeting (2007) noted that 22% of pediatricians reported their local hospital combined the pediatric unit with an adult service, and 4% completely stopped providing pediatric inpatient care.2 Community hospitals and hospitalist programs develop strategies to remain financially solvent such as having hospitalists provide new services (caring for nursery babies) or offering services in a new geographic location to increase reimbursements.3 However, this creates challenges for the hospitalist who may struggle with the inefficiency, stress, or inability to cover simultaneous needs of the Emergency Department (ED), inpatient unit, nursery, or another geographic location. Franklin Square Hospital Center (Maryland) opened a combined Pediatric ED/Inpatient Unit in 2004 to address these challenges, and provide high quality pediatric inpatient care in a community hospital setting with a dedicated pediatric hospitalist program.

The Combined Pediatric ED/Inpatient Unit
The combined unit has 12 rooms and is physically situated adjacent to the main ED. The unit beds are “flexible” beds that can be utilized as semi-private pediatric ED beds or inpatient beds. The unit is under the medical direction of a pediatric emergency medicine specialist, but most of the care on the unit is provided by a pediatric hospitalist that sees pediatric ED and inpatients 24 hours per day, 7 days per week. The inpatient service is covered daily by another hospitalist and family practice residents during the daytime with coverage by the hospitalist in the ED after hours. The program is currently looking at additional coverage by a hospitalist in the overlap hours (4 P.M.-11 P.M.). The nursing staff is set at 1-2 “inpatient” nurses and 2-4 “ED” nurses although the exact nursing allocation depends on the daily inpatient census.

Outcomes
The transition to the combined unit has addressed established challenges to providing inpatient pediatric care in a community hospital, and has measurable positive financial, patient satisfaction, and...
Family-Centered Care…
An Idea Whose Time Has Come

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Family-centered care (FCC) is an approach to health care that shapes health care policies, programs, facility design, and day-to-day interactions among patients, families, physicians, and other health care professionals. An important component of FCC is the collaboration with families at all levels of health care. For hospitalized children, this includes the participation of families in daily work rounds and clinical decision-making regarding their child’s care. The concept of FCC is gaining momentum among pediatric hospitalists, and many programs and institutions are implementing family-centered rounds (FCR). This article provides a brief literature review of FCC for pediatric hospitalists and provides an update on related happenings across the country.

Literature Review
In early January 2007, a Cochrane review on FCC for hospitalized children was inconclusive due to a paucity of literature on the subject. Since then, several important articles have been published, particularly with regards to FCR. Sisterhen et al. reviewed the literature regarding bedside teaching, FCC, and interdisciplinary care, and proposed the following definition of FCR: interdisciplinary work rounds at the bedside in which the patient and family share in the control of the management plan as well as in the evaluation of the process itself. Muething et al. reviewed the implementation process of FCR at a large academic teaching institution. Family representatives involved in a multidisciplinary initiative to redesign the system of care suggested involving parents in attending teaching rounds in order to improve communication between staff and families. As the process of conducting FCR matured, several key components were recognized (Table 1).

Three common concerns about the implementation of FCR are discussed in the article. First, effective teaching during FCR requires a unique set of skills, and both teachers and learners must be willing to participate. The authors note that physicians who are uncomfortable with uncertainty tend to be less comfortable with FCC. Second, although FCR may take longer to complete than traditional work rounds, patient care may actually be more efficient. Nurses report a decreased need to page residents for order clarification, and the institution documented a significant increase in the number of children discharged early in the day.

Finally, confidentiality is an important concern, especially in semi-private or shared patient rooms. The authors underscore the importance of explaining the confidentiality issues to families so that they are aware that conversations may be overheard. Participation in FCR is then up to the family. Overall, despite these perceived barriers and concerns, 85% of the families at this institution request involvement in family centered rounds when offered the option.

Additional research regarding FCC has occurred in the Pediatric Intensive Care Unit (PICU) setting. Phipps et al. examined the effect of parental presence during bedside PICU rounds on duration of rounds, amount of teaching, and parental concerns about privacy. There was no significant difference between time spent on rounds or the time spent teaching by the attending physician. Parents did not report concerns about violation of privacy, and the majority of medical team members felt that parental presence on rounds was helpful. Another study examined the perceptions of various health care providers in the intensive care setting regarding family member presence during rounds, invasive procedures, and cardiopulmonary resuscitation (CPR). A total of 211 surveys were completed. Of these, 145 were completed by physicians. The remaining 66 were completed by nurses, pharmacists, and other health care providers. The majority of the respondents (65%) had encountered families that requested to be present during rounds. Despite concerns regarding family and provider stress or nervousness, or provider distraction, 77% of survey respondents agreed that family members have a right to participate in FCR. Similarly, most respondents supported family member presence during procedures (57%) and CPR (75%). Non-physicians providers were more likely than physicians to support the presence of family members during procedures and CPR. Of note, most of the survey respondents practice in PICU settings that have a formal policy regarding family presence during invasive procedures and CPR.

The FCC Movement in Pediatric Hospital Medicine
Family-Centered Care is a hot topic in pediatric hospital medicine right now, as evidenced by a growing literature base and the degree of related email traffic on the AAP SOHM LISTSERV®. The tremendous interest in FCC has resulted in the formation of both a FCC Special Interest Group in the Academic Pediatric Association (APA) and a Subcommittee on FCC within the AAP SOHM.

In addition, over 50 pediatric hospitalists interested in FCC convened at the Pediatric Hospital Medicine conference in Salt Lake City in August 2007. Led by Dr Ted Sigrest and Dr Geeta Singhal, this special interest group discussed the implementation of FCC at various programs and institutions and strategized about how to network and advance the concept of FCC in pediatric hospital medicine. Table 2 provides some examples of programs and institutions that have implemented FCR or are participating in ongoing research and education regarding FCC.

Prior to the conference, Dr Ted Sigrest conducted an informal survey of pediatric hospitalists regarding FCC through the AAP SOHM LISTSERV®
(Personal communication to Geeta Singhal, August 3, 2007). Of the 47 survey respondents, 60% have initiated some form of FCR at their institutions. The majority of these initiatives (82%) were spearheaded by the pediatric hospitalist service. However, most programs (71%) have not undertaken any formal evaluation process of FCR.

Most survey respondents expressed interest in participating in a multi-center study to determine the best structure for FCR and to evaluate the outcomes of FCR. Other potential research topics include the satisfaction outcomes of FCR. Interested in contributing an article? Please contact Jennifer Maniscalco at jmanisca@cnmc.org.

Welcome to a special column focused on Family-Centered Care! This column will complement the update provided by the new AAP SOHM Subcommittee on FCR. Interested in contributing an article? Please contact Jennifer Maniscalco at jmanisca@cnmc.org.

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**TABLE 1. KEY COMPONENTS OF FAMILY-CENTERED ROUNDS**

- The family decides how the rounds are conducted. The families may choose to participate or may decline.
- Families are given a “choice card” that details their preferences for rounds.
- Introduction is a key component to the rounds. Introduce at least 4 to 5 key members that provide care.
- Team members should be assigned roles and be encouraged to complete their work during rounds.
- The intern or student that is caring for the patient explains the purpose of rounds and encourages family involvement.
- The intern provides a summary of the patient’s medical status and treatment plans using both medical terminology and lay language. Invite the family to assist in establishing treatment goals.
- Nurses should be encouraged to contribute information about the patients during rounds.
- Families are active participants in rounds, which should also facilitate orders and decrease the need for changes later in the day.
- Throughout rounds, the attending looks for the intern’s understanding of the patient’s condition and the family and medical team’s comfort level.
- The teaching attending can model appropriate communication techniques to the learners.
- Supervising residents and teaching attendings ask families for permission to conduct additional teaching in the room.

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**TABLE 2. SAMPLE OF PEDIATRIC HOSPITALIST PROGRAMS CONDUCTING ONGOING RESEARCH OR EDUCATION REGARDING FCC**

(personal communication to Dr Geeta Singhal, October 2007)

<table>
<thead>
<tr>
<th>Institution</th>
<th>Contact Person</th>
<th>Research or Education Focus</th>
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<tbody>
<tr>
<td>Children’s Hospital of Dallas</td>
<td>Dr Vineeta Mittal</td>
<td>• Patient satisfaction with FCR</td>
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<tr>
<td></td>
<td></td>
<td>• Effect of FCR on patient throughput</td>
</tr>
<tr>
<td>Cincinnati Children’s Hospital</td>
<td>Dr Jeff Simmons</td>
<td>• Involvement of parents in safety discussion on FCR</td>
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<td></td>
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<td>• Parental activation of rapid response team</td>
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<td>• National workshops to educate providers about FCR</td>
</tr>
<tr>
<td>Cleveland Clinic Children’s Hospital</td>
<td>Dr Rita Pappas</td>
<td>• FCR by pediatric hospitalists determined to be best practice by Joint Commission mock surveyors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Now assisting the adult hospitalists with implementation of FCR</td>
</tr>
<tr>
<td>University of Arkansas</td>
<td>Dr Chris Smith, Dr Laura Sisterhen</td>
<td>Survey of pediatric residency program directors regarding FCR</td>
</tr>
<tr>
<td>University of Hawaii</td>
<td>Dr Lora Bergert</td>
<td>Patient, caregiver, and health care provider satisfaction with FCR</td>
</tr>
<tr>
<td>University of Rochester Medical Center</td>
<td>Dr Ted Sigrest</td>
<td>Design of multi-center study regarding FCR</td>
</tr>
</tbody>
</table>

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**REFERENCES**

A Caveat in the Evaluation of Cervical Spine Tenderness

Scott Hines, MD, Pediatric Resident (PGY3), scott_hines@yahoo.com
Michael Wallach, MD, Director, Division of Pediatric Radiology,
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The Warren Alpert School of Medicine at Brown University, Providence, RI

A 15 year-old female presented to the Emergency Department after a motor vehicle accident in which she was the front-seat passenger of an automobile rear-ended at high speed. She complained of neck pain following the accident, and was transported via ambulance utilizing appropriate cervical spine immobilization. Upon arrival in the trauma room, she complained of midline cervical spine tenderness and had no neurological deficit.

As part of her initial evaluation in the ED, she underwent anterior-posterior, lateral, odontoid, and trans-axillary (swimmer’s view) radiographs of the cervical spine. An attending radiologist read these films as normal. She was continued on spinal precautions because of ongoing midline cervical spine pain, and underwent a lateral flexion/extension radiograph later in the evening. A radiology resident read this as negative for fracture, noting it was a limited study providing adequate views of C2-C7 only. The patient then underwent an MRI of the cervical spine. The scan was read by a radiology resident as “no significant acute findings.” Based on the preliminarily read plain radiographic and MRI studies, the patient was discharged home with no collar. She continued to complain of neck pain.

An attending radiologist reviewed all films the following morning, determined that the MRI was suspicious for a type II dens fracture, and recommended a cervical spine CT. The patient was called back to the Emergency Department and again placed on spine precautions. A cervical spine CT revealed a type III dens fracture. She was admitted to the neurosurgical service for pain control and halo fixation.

This case demonstrates important points for the hospitalist who may participate in the evaluation of pediatric trauma patients, or who may be responsible for admission of “stable” trauma patients.

Alert children with isolated head injuries and no neck pain or neurological deficit do not need radiographic evaluation. Criteria that should be considered in assessing children with neck trauma are: 1) the presence of midline cervical tenderness, 2) any evidence of intoxication, 3) altered level of alertness, 4) focal neurological deficit, and/or 5) a painful distracting injury. If any one of these criteria is met, the child should be considered high risk for cervical spine injury and, at a minimum, cervical spine x-rays should be obtained. A high index of suspicion is essential in the presence of ongoing neck pain, even with normal plain radiographic evaluation of the cervical spine, as with our patient. In such cases, further evaluation is warranted with either cervical CT or MRI. CT is more sensitive in assessing for bony abnormalities, whereas MRI may provide additional information regarding ligamentous or soft tissue injury, particularly if utilized within the first 48 hours following injury.

No studies have systematically reviewed the role of CT in the evaluation of pediatric trauma patients, though studies in adults have concluded that there is added sensitivity and negative predictive value in assessing for cervical spine injury utilizing helical CT. In older children who may have injury patterns similar to those of adults, helical CT may be a useful adjunct to x-rays.

Key Point: In the pediatric trauma patient, the presence of midline cervical spine tenderness despite normal plain radiographic evaluation implies significant injury until proven otherwise by further imaging. Spine immobilization precautions should be continued until significant injury has been definitively ruled out. If a bony abnormality is suspected in the setting of normal plain films, CT is the preferred next imaging modality to assess for injury.

REFERENCES
What’s New?

Subcommittee on Complex Care
Allison Ballantine, MD, FAAP
ballantine@email.chop.edu

It is with great pleasure that we announce the launch of the Sub-committee on Complex Care. This Subcommittee hopes to provide a home for dialogue, research and education around issues pertaining to the acute inpatient care of children with complex medical conditions. Many different structures exist for caring for complex inpatients, varying from a single hospitalist with a specific interest in this population to a multi-disciplinary team on a dedicated floor. The Subcommittee seeks to link interested hospitalists through our new LISTSERV® (contact nalexander@aap.org to join LISTSERV®) as well as other avenues in order to share experience and knowledge about this growing field.

Much of the initial conversation has centered around the structure of existing services, resources, and the financial aspects of building a team. In addition to this area of focus, we are starting off with three other projects: clinical pathway development, educational resource exchange, and bridging to the outpatient realm. We also hope to develop some research projects in the near future. It is an exciting time, and we welcome all levels of experience in the field to join with us.

Interested in Complex Care or related areas? Want more information about the plans and workings of this new subcommittee? Write Allison Ballantine at ballantine@email.chop.edu if you’d like to get involved!

Subcommittee on Family-Complex Care

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Welcome to the newly formed Subcommittee on Family-Centered Care! After a resounding turnout at the Salt Lake City AAP Pediatric Hospital Medicine Conference last August, Ted Sigrest and Geeta Singhal took the lead in forming a subcommittee that is under the auspices of the Section on Hospital Medicine. We now turn to all of you for ideas, comments and suggestions about how to make this subcommittee helpful and a great success. We hope that this FCC Subcommittee will provide a forum for discussion of how to initiate family-centered rounds and how to maintain this important endeavor. This should serve as a venue to provide education for our colleagues so we can in turn share these ideas at our own home institutions. In addition, we hope to provide a research base and a platform in which to showcase your findings and work.

Would you like to know more about Family Centered Care? Want to become more involved in the new Subcommittee? Write Geeta Singhal at gsinghal@bcm.tmc.edu or Ted Sigrest at tsigrest@pol.net for further information.

Conclusions

Franklin Square Hospital Center (Maryland) opened a combined Pediatric ED/Inpatient Unit to address the challenges facing community hospitals that desire to provide cost effective and high quality inpatient services to pediatric patients. The combined unit is ideal for community hospitals with pediatric ED volumes between 12,000 and 24,000 and inpatient censuses below 1000 annually. The transition to the combined unit concept requires flexible physician and nursing staff, a cooperative ED group willing to revenue share pediatric visits, and understanding if state regulations prohibit inpatient and ED care from occurring in the same area or billing for two services on the same day.

REFERENCE

2. HCUP Fact Book No.4; AHRQ Publication No. 04-004. IBMM 1-SN763-137-7.
In the last decade medicine has seen a paradigm shift in the way that technology, in particular the Internet, has influenced its practice. What started with a few individuals and institutions has permeated through to every aspect of patient care, teaching, and communicating. Most of us have seen these changes in the form of email, computerized physician order entry (CPOE), electronic result reporting, and medical references (e.g. MD Consult, Up To Date, Medline/Pubmed to name a few). In our small corner of medicine, the AAP Section on Hospital Medicine, the SOHM LISTSERV® has been our primary method of using technology to enhance our practice. Feedback from SOHM members has led to the realization that it is time to move to the next stage in a continually evolving world of medical information exchange.

The SOHM executive committee has identified several areas where improving the technology we use within the AAP SOHM can improve the quality of care to patients, improve the sharing of experience and expertise, and promote collaboration on a wide range of issues. The first of these areas, led by Dr David Price of Duke University Medical Center, is to move from the old fashioned SOHM LISTSERV® to next generation SOHM Forum. The SOHM Forum is Internet driven, or web-based, rather than email driven. All of the same features of submitting a post or question and reading the responses are retained but many additional features come with this new method of communication. Every individual is able to set their own preferences, including what subjects/categories they want to receive (education, administration, clinical, etc.) and in what form they want to receive them (each post by email, a summary of the weeks posts, a link to read the posts, etc.). In addition, all of the postings are kept in a database that allows you to search for a previous posting or response.

While the SOHM Forum addresses the future of the SOHM LISTSERV® and how we share opinions and experience, another area for development is emerging, the sharing of specific practice information. The SOHM Forum is the place for one to ask “What has been the experience of IV versus PO...”, but what about the question “Does anyone have an orderset for...”? Rather than using the SOHM Forum to trade files and other digital media the SOHM Library has been created. Acting as an electronic filing cabinet, the SOHM Library is an Internet venue where SOHM Members can contribute and access files ranging from protocols and ordersets to lectures and other educational materials. These materials are kept in a database which, just like the SOHM Forum, can be searched and categorized. Other features of the SOHM Library include the ability to search both SOHM sites as well as the AAP, Google Scholar, and Pubmed. Additionally, all of the SOHM LISTSERV® postings which predate the SOHM Forum are archived in the SOHM Library and can be searched as well.

In order to address the concerns of members that this information, in particular the SOHM Forum and SOHM LISTSERV® Archives, not reach unintended audiences, these features are only available to SOHM members and those who subscribe the current SOHM LISTSERV®. Access is simple, only requiring a member’s email address. Once registered, individuals can set a password and other preferences for the SOHM Library and SOHM Forum. We encourage everyone to participate by first going to www.sohmlibrary.org. You will need to know your email address that is registered with the section or in the SOHM LISTSERV®. If you do not have a registered email, contact Niccole Alexander at nalexander@aap.org. For technical questions or access problems contact admin@sohmlibrary.org.

**Section On Hospital Medicine**

Review current pediatric hospitalist resources. Find out what other programs are doing.


And, the new SOHM Library at www.sohmlibrary.org.

And join the SOHM LISTSERV®.

E-mail Niccole Alexander at nalexander@aap.org