Join an SOHM Subcommittee:

- **Coding and Billing**
  Contact: Yong Han, MD
  [yshan@texaschildrenshospital.org](mailto:yshan@texaschildrenshospital.org)

- **Community Hospitalists**
  Contact: Jack Percelay, MD
  [jpercelaymd@yahoo.com](mailto:jpercelaymd@yahoo.com)

- **Palliative Care**
  Contact: Maggie Hood, MD
  [Maggie.hood@multicare.org](mailto:Maggie.hood@multicare.org)

- **Critical Care**
  Contact: Kimberly Boland, MD
  [k.boland@louisville.ed](mailto:k.boland@louisville.ed) or
  Ben Alexander, MD
  [balexander@wakemed.org](mailto:balexander@wakemed.org)

- **Early Careerists and Pediatric Residents**
  Contact: Julia Aquino, MD
  [jaquino3@jhmi.edu](mailto:jaquino3@jhmi.edu)

- **Medical Informatics and Technology**
  Contact: Timothy Hartzog, MD
  [tim@hartzoghealth.com](mailto:tim@hartzoghealth.com)

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**Mark your calendar for future AAP National Conference & Exhibitions.**

- Oct. 11-14, 2008 in Boston, MA
- Oct. 17-20, 2009 in Washington, DC
- Oct. 2-5, 2010 in San Francisco, CA

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If you couldn't attend the 2006 NCE, you can visit us online at [http://www.aap.org/nce/](http://www.aap.org/nce/) for post-conference details and see and hear what you missed... the many wonderful educational and networking experiences!
I have just returned from the AAP’s National Conference & Exhibition in Atlanta excited and energized! We had a full house at our Section meeting – my thanks to Dan Rauch, our program chair, and everyone who presented posters. The great attendance at our Section meeting and the dedication (and determination) of our executive committee are both indicators of the energy and forward motion of the Section.

The big question for all of us now is where and how will all this energy be directed? That’s where you, the membership of the Section, come in. You are needed to participate in the Section activities and help us achieve our goals. What I hear from individual members and what I read from the AAP SOHM LISTSERV® is that many of us are facing the same difficulties and trying to find answers to the same problems. Some of these are clinical, some are administrative and some speak to the basic problems facing hospitalist medicine. We are all looking for evidence-based indicators to help us clinically, to define and prove our value to hospital systems, and to help us establish and maintain healthy, sustainable pediatric hospitalist programs. I am hopeful that the work of the Section will help provide the answers.

For those of you who missed our meeting, let me briefly bring you up to date. The AAP SOHM has been busy this year!

1. The AAP SOHM has taken on the responsibility for the planning of the next Pediatric Hospital Medicine Meeting, August 2-5, 2007. As some of you know, this is a tri-sponsored meeting involving the AAP, the Ambulatory Pediatric Association (APA) and the Society for Hospital Medicine (SHM). This is going to be a fantastic meeting with sessions on clinical medicine, education, research, and practice management. Look for the official brochure in February 2007 for registration details.

2. Several subcommittees of the AAP SOHM (Critical Care, Coding and Billing, Palliative Care and Medical Technology and Informatics) presented posters at the Section Meeting reflecting their work this year. (For details, see the subcommittee reports in this newsletter).

3. The Section has developed several brochures for the parents of hospitalized children. These are the first AAP brochures that are specific for the inpatient pediatric service. They cover the topics of Gastroenteritis, Croup, and Pain management. They are on their way to the AAP’s marketing department this fall.

4. The Section has purchased new software to upgrade our website with the goal of having an archive of the LISTSERV® topics and greater interactive capability of the website. We are looking forward to developing PodCasts in the future (and suggestions for topics are welcome).

5. The initial data from the Coding and Billing survey will now be presented to other committees and sections within the AAP. Our long-term goal is to provide our membership with a coding and billing guide specific to inpatient pediatric services. Look for a future newsletter devoted solely to this topic.

There is still so much to do. The AAP SOHM is the home for pediatric hospitalists and it can only achieve its goals if it is meeting the needs of the membership. So let us know what you need and what you think this Section should be doing with all its energy.

Here are some ways to become more involved:

1. Join PRIS (Pediatric Research in the Inpatient Setting) and help develop evidence-based research for pediatric inpatient medicine. Contact Christopher Landrigan at clandrigan@rics.bwh.harvard.edu.

2. Give us suggestions for educational topics and speakers for the National Conference & Exhibition. Contact Dan Rauch at Daniel.rauch@med.nyu.edu.

3. Contribute to our “Speakers Bureau” if you have heard a top-notch speaker. Contact Laura Mirkinson at mirkil@holycrosshealth.org.

4. Contribute to our newsletter as a writer or editor. Contact Jennifer Daru at jadaru@gmail.com.

5. Help develop our medical informatics, enhance our website, contribute your clinical guidelines and order sets, and develop PodCasts. Contact Tim Hartzog at tim@hartzoghealth.com.

6. Join a subcommittee and help set the goals and the direction for the Section. Contact our section manager Niccole Alexander at nalexander@aap.org.

Active membership in the Section is rewarding personally and advantageous professionally. Thanks to all you who make this section exciting and strong!

Laura Mirkinson, MD, FAAP
Chair, Section on Hospital Medicine
Welcome to the January 2007 Section on Hospital Medicine Newsletter. A special welcome as well to our new editorial board! With six new members on the editorial team from programs large and small across the nation, we expect to be bringing you the information that is most relevant to the care of children in the hospital and your practice. We’re still looking for a Billing and Coding Corner editor and an editor for the new Politics and Ethics column, so if you are interested, please contact me at jadaru@gmail.com.

We hope that this issue makes you think about your patients and your contract a little differently. The article from Hospitalists On-line expands on a conversation from the LISTSERV® by exploring the pros and cons of restrictive covenants. It’s something we all need to think about as we sign contracts. Also, there is a wonderfully thought out piece on how maternal use of SSRIs may be affecting our youngest patients. Our critical care article touches on the use of simulation in teaching and for the first time we outline a Canadian Hospitalist program. You Are the Consultant will help you think about what you might do at a community hospital to work up a complicated case before transferring. And then, of course, there are plenty of other care and policy updates in our other sections.

Give us your feedback, write an article or join our editorial staff. There’s plenty more to say!

Jennifer
jadaru@gmail.com

Letter from the Editor
Jennifer Daru, MD, FAAP, Editor -in-Chief

MEMBER CENTER
Section on Hospital Medicine
Be sure to visit the Members Only Center for a wealth of resources including
• Business/Coding
• Informatics
• Job/Educational Opportunities
• Improving and Developing Pediatric Hospitalist Programs
• AND MORE!
http://www.aap.org/moc/

Send an email to Niccole Alexander nalexander@aap.org for more info.

LISTSERV® Editor
Kevin Powell, MD PhD
kpowell@pol.net
Subcommittee Updates

Critical Care Subcommittee

The Society of Critical Care Medicine (SCCM) has decided to develop a Pediatric Fundamentals of Critical Care Support (P-FCCS) course for Pediatrics that will mimic the course SCCM currently offers for non-intensivist “adult” physicians who provide critical care services. This course will be used nationally and internationally to improve the skills of physicians other than pediatric intensivists who care for critically ill children.

The AAP Section on Hospital Medicine can be proud of our contribution to the development of this course. Our clamor for pediatric critical care CME for the non-intensivist was a major lobbying force behind the initial concept. Credit should be given to the work we have done over the past several years as hospitalists caring for children in the PICU in collaboration with our intensivist colleagues. Like PCPs, intensivists have come to recognize the benefits of working collaboratively with hospitalists. We are now clearly perceived as a crucial part of the solution—no longer as a minor role player.

Nothing definite yet, but hopes are high that SCCM will unveil P-FCCS with a two-day pre-course (August 1-2) at the AAP/APA/SHM Salt Lake City conference. This will be an opportunity to reinforce your critical care skills in a friendly, collegial setting in an audience of peers, and from a systems standpoint, our feedback will improve the course for future audiences, national and international, hospitalist and non-hospitalist. The draft outline for the course and textbook is listed below.

Membership in the AAP SOHM subcommittee on critical (and intermediate) care is open to anyone interested in the field. To join, contact subcommittee co-chairs Kimberly Boland at k.boland@louisville.edu or Ben Alexander at balexander@wakemed.org.

Basic Modules
1. Assessment of the Critically Ill Child: R Mejia, K Serrao
2. Airway Management
3. Cardiopulmonary/Cerebral Resuscitation
4. Diagnosis and Management of the Child with Acute Upper Airway Disease
5. Diagnosis and Management of the Child with Acute Lower Airway Disease
6. Mechanical Ventilation
   a. Non-invasive Ventilation
   b. Mechanical Ventilation
7. Diagnosis and Management of Shock
8. Acute Infections
9. Diagnosis and Management of the Child with Water, Electrolyte and Metabolic Disorders
10. Basic Trauma and Burn Management
11. Non Accidental Injuries Diagnosis and Management
12. Pediatric Disaster Preparedness
13. Poisoning
14. Transport of the Critically Ill Child
15. Neurologic Emergencies
16. Ethical and Legal Issues

Advanced Modules
17. Management of the Child with Congenital Heart Disease
18. Oncologic Emergencies
19. Diagnosis and Management of the Child with Acute Renal Failure
20. Post Operative Management
21. Sedatives, Analgesics and Neuromuscular Blockers
22. Tubes, Lines and Shunts
23. Hospitalists and the Critically Ill Child
24. Medical Emergency Rapid Intervention Teams
25. Hematology: Coagulation and Transfusions

P-FCCS STATIONS
1. Airway Management
2. Neonatal Resuscitation
3. Mechanical Ventilation
4. Trauma
5. Pediatric Disaster
6. Vascular Access
7. Invasive Procedures
8. Case scenarios

Early Careerists and Residents Subcommittee

The field of pediatric hospital medicine is growing, as is the AAP Section on Hospital Medicine. Since its establishment in 2000, the Section has created a forum for pediatricians involved in hospital medicine to meet and exchange ideas. In the coming year, the goal of this subcommittee is to involve more professionals in that forum, especially residents and young physicians. Our Winter 2006 newsletter was devoted to students, residents, and early careerists and proved to be an excellent source of information for those interested in the field. In the coming year, we plan to survey and publish residents’ attitudes and their exposure to hospital medicine and hospitalists. We also plan to be involved in residency career panels and fairs to raise awareness of hospital medicine as a career option. Finally, we are very excited to have formalized a resident liaison position to facilitate communication between physicians-in-training and the Section. The position, which had been held by Dr. Alison Holmes for the past few years, will pass to Dr. Julia Aquino, a second year resident at Johns Hopkins. The leadership of the Section on Hospital Medicine Early Careerists and Pediatric Residents Subcommittee is looking forward to a productive year.

If you are a resident or early careerist interested in joining the subcommittee, please contact Julia Aquino at jaquino3@jhmi.edu.

Palliative Care Subcommittee

The Subcommittee on Palliative Care has had a quiet quarter. One of our members has shared her plan about furthering her career in Pediatric Palliative Care. Nadia Tremonti writes, "I am currently in the middle of my fellowship year and actually am just finishing up a visiting rotation at Akron Children's Hospital with Dr. Sarah Friebert and the Pediatric Palliative Care Team. This is now only one of 2 hospitals in the country to offer a fellowship in pediatric palliative care (the program in Wisconsin is cancelled for now), and I will be rotating at the other program, Boston Children's Hospital, in January."
An Eleven Year Old with Joint Pain

Laura Davidson, MD
Children’s Medical Center of Dallas
Laura.Davidson@childrens.com

At the community hospital where you are a pediatric hospitalist, a family practitioner asks you to see a patient that she has admitted for an inpatient work-up. The patient is an eleven year old Hispanic female with a long history of migratory joint pains, intermittent fevers, fatigue, and weight loss.

You see the patient and obtain the following information: This young lady’s symptoms began approximately one year earlier when she developed pain in both her feet which progressed to involve her hips, shoulders, wrists, thumbs, and jaw. The pain is described as aching, 6/10 in severity, and lasting five to seven days then improving and moving to other joints. The pain is usually present simultaneously in a few joints and does not completely resolve before developing in another location. The patient reports some intermittent swelling noted at her thumbs and the tops of her feet but denies any redness. The pain is worse in the mornings and is associated with some stiffness and restriction in range of motion due to pain. The pain awakens her two to three times per night and improves somewhat with ibuprofen. Most recently, the patient has significant pain in her left jaw, left shoulder, and right foot. She denies any history of trauma. She also reports intermittent fevers in the range of 101-102°F for the past six months, but occurring almost daily for the past two weeks. She has generalized fatigue with weakness and has had difficulty climbing stairs and walking long distances. She has had a decreased appetite and a forty-pound weight loss over the past four months. On review of systems, she denies headache, seizures, chest pain, cough, abdominal pain, vomiting, diarrhea, constipation, dysuria, numbness, and mouth ulcers. She has occasional nosebleeds but denies further bleeding. She reports dark urine with no visible blood. She has noted diffuse hair loss over the past year with hair falling out in the shower and on her pillow in the mornings. She also has had intermittent eye redness and irritation for a year, but denies eye pain or visual disturbance. She reports a pink rash described as “flushing” that has appeared on her face for days at a time during fever episodes.

The patient was born in the United States via full-term c-section delivery with no pre- or post-natal complications. Her past medical history is significant for hip dysplasia treated with a Pavlik harness as an infant and vitiligo since infancy with recent areas of hypopigmentation developing on her feet and hands. She takes no medications, has no drug allergies, and is up to date on her immunizations. Family history is only significant for a maternal aunt with arthritis diagnosed in her thirties. The patient lives with her mother and brother in an apartment. She was previously a B to C student but since the onset of her symptoms is now failing most of her fifth grade classes. She denies recent travel, exposure to incarcerated persons or persons with tuberculosis, sexual activity, drug use, exposure to animal products, and ingestion of unpasteurized milk.

You review her vital signs: temperature 38.4°C, pulse of 160, respirations of 22, and blood pressure of 110/64. Her oxygen saturation is 99% on room air by pulse oximetry. Her weight is 62 kg (>95th percentile). She appears to be a well-developed and well-nourished girl who is nontoxic, completely cooperative, but quiet with slow movements. You note the following on physical examination: she has diffusely thinning hair and a faint violaceous rash over her forehead and cheeks with nasolabial sparing. She has scleral injection with dilation of the episcleral vessels bilaterally. She has a superficial ulcer on her hard palate with a small area of surrounding erythema. She is unable to open her mouth fully due to pain at the left temporomandibular joint. Her lungs are clear bilaterally and heart sounds are regular with no murmurs, rubs, or gallops. Her abdomen is soft, non-tender, non-distended without hepatosplenomegaly. Her extremities are warm with good perfusion and her nails and nailbeds are normal. She has sharply demarcated and fairly symmetric hypopigmented skin lesions on the dorsal surfaces of her fingers, hands, and feet. Joint examination is notable for decreased range of motion of her left shoulder with limited extension, abduction, and external rotation due to pain. She also has limited internal rotation of her hips. Her knees are noted to have small effusions with mild limitation on full extension but no increased warmth or erythema. She has no significant lymphadenopathy. Her cranial nerves are intact, and her strength, reflexes, and sensation are normal. Cerebellar function is intact and her gait is normal.

Initial laboratory analysis reveals normal electrolytes, BUN, creatinine, hepatic enzymes, PT, PTT, CK, LDH, and uric acid. Albumin is slightly low at 2.6 g/dl. CBC shows pancytopenia with WBC 4300/mm3 (41% segs, 29% bands, 7% monos, 23% lymphs), hemoglobin 10.8 g/dL with an MCV of 79 fl (low normal) and a reticulocyte count of 0.8%, and platelets 117,000/mm3. CRP is 0.7 mg/dl and ESR is 36 mm/hr. Urinalysis dipstick is negative except for 1+ protein and the microscopy shows 8 red blood cells/hpf. Plain films of the feet are normal.

At your institution subspecialty consultants are not available to see the patient, so you carefully consider which of the following would be the best approach to recommend:

a. Order ANA, complement levels, and “lupus panel” for suspected SLE.

b. Contact the pediatric hematologic service at the nearby children’s hospital to discuss transfer of the patient for bone marrow biopsy for suspected malignancy.

c. Order an upper GI series and contact the pediatric gastroenterology service at the nearby children’s hospital to discuss transfer of the patient for endoscopy for suspected inflammatory bowel disease.

d. Order an HIV test, PPD, and titers for CMV, EBV, and brucella and discuss the case with the infectious diseases service for evaluation of fever of unknown origin.

e. Arrange transfer to the nearby children’s hospital so that all the consultative services (rheumatology, hematology, gastroenterology, and infectious diseases) can be directly involved in the work-up.

Continued on p. 7
You Are the Consultant  Continued from p. 6

Discussion:
Answer: a

Based on the constellation of signs, symptoms, and laboratory abnormalities, you strongly suspect SLE to be the most likely diagnosis for your patient. The diagnosis of SLE is confirmed with the laboratory results: the ANA serology was positive with titers 1:1280 and C3 and C4 levels were both low at 34 mg/dl and 2 mg/dl, respectively. In addition, the patient had elevated titers of anti-double-stranded DNA, anti-Smith antigen, anti-SSA Ro, and anti-cardiolipin antibodies on the “lupus panel.”

SLE is a multi-system autoimmune disease diagnosed clinically by the presence of ≥ 4 of 11 criteria established by the American College of Rheumatology in 1982, revised in 1997. See Table 1.

Table 1: American College of Rheumatology criteria to diagnose SLE (must meet ≥ 4 of 11 criteria).

| 1. Malar rash         | 8. Neurologic disorder |
| 2. Discoid rash       | 9. Hematologic disorder |
| 3. Photosensitivity    | 10. ANA                 |
| 4. Oral lesion         | 11. Immunologic disorder |
| 5. Arthritis           | (e.g., anti-DNA, anti-Sm, |
| 6. Serositis           | anti-cardiolipin antibodies) |
| 7. Renal disorder      |                          |

Approximately 15% of all patients who have SLE are diagnosed in childhood, most often during adolescence with a female predominance.1,2 SLE is more common among individuals of Asian, Hispanic, or African descent compared to Caucasians. The most common initial manifestations of childhood SLE are musculoskeletal and mucocutaneous with associated constitutional symptoms. Musculoskeletal complaints include arthritis, arthralgias, weakness, and myalgias. The arthritis in SLE is typically polyarticular and symmetrical, involving both the large and small joints. It is often migratory and commonly painful out of proportion to clinical findings. Mucocutaneous involvement takes the form of a malar rash with nasolabial sparing in 85% of patients.3 Other common mucocutaneous findings include ulceration, vasculopathy, photosensitivity, discoid lesions, and alopecia. Mucous membrane lesions on the hard palate are associated with active disease and are usually painless and therefore may not be noticed by the patient. Ocular mucosa may be involved in the form of episcleritis, seen in 9% of patients in one study.3 Though episcleritis may be an isolated, idiopathic condition, patients with episcleritis caused by systemic inflammation typically have episodic flares with bilateral involvement. Patients complain of redness, irritation, and watering but have no eye pain or visual disturbance. Alopecia generally begins in the frontal areas and is diffuse. Constitutional symptoms such as fever, weight loss, and malaise are common in SLE. Approximately 70% of patients with SLE initially present with one or more blood cell lineages depleted. More than half have a normocytic normochromic anemia associated with chronic inflammation. Autoimmune thrombocytopenia may occur due to anti-platelet antibodies. Leukopenia (WBC <4500/mm³) with lymphopenia (<1500/mm³) may also occur. Renal involvement is found in 50% of patients at initial presentation, most commonly, diffuse proliferative glomerulonephritis. Pulmonary features may include pleuritis and effusions, and cardiac disease may involve any layer of the heart, most often the pericardium. Central nervous system features may include both psychiatric symptoms or neurologic symptoms such as seizures or headache.1,2

Your patient met 3 criteria for SLE based on the history and physical exam findings (malar rash, migratory polyarthritis, oral ulcer) with evidence of 2 more criteria on initial laboratory studies (proteinuria with microscopic hematuria, pancytopenia). Many of her other findings, although non-specific and not SLE-defining criteria, are consistent with SLE: fever, fatigue, weight loss, hair loss, episcleritis, and deterioration of school performance. By seeking further laboratory evidence of SLE with serology for ANA and other characteristic auto-antibodies, the diagnosis was confirmed. Involvement of rheumatology would be appropriate at any point along the process when the diagnosis of SLE is being strongly considered, and is necessary when the diagnosis is confirmed.

In the case of this patient, after the results of the laboratory studies confirmed the diagnosis of SLE, the pediatric rheumatologist was contacted and the patient was transferred to the nearby children’s hospital to his service. There the patient was treated with oral bolus steroid therapy for three days, plaquenil, and naprosyn twice daily for anti-inflammatory effects with excellent symptomatic relief. A chest x-ray was obtained which was negative for pleural effusions. A 24-hour urine collection was performed to evaluate renal function and quantify the degree of proteinuria. Her creatinine clearance was low normal range (83 ml/minute) and her urine protein was 527 mg/day which is consistent with low-grade proteinuria (150-1,000 mg/day). The patient was discharged to home with rheumatology follow-up as well as renal follow-up for renal biopsy for SLE staging.

Malignancy should always be high on the differential when evaluating a patient with unexplained fevers, weight loss, arthralgias or bone pain, and pancytopenia. Bone pain is a presenting symptom in 30% of acute leukemia and may be confused with rheumatologic bone pain particularly if joints are involved. In a study comparing onset of disease in patients with JRA and leukemia, nocturnal pain and non-articular bone pain were more commonly seen in patients with leukemia.4 Physical exam may reveal point tenderness over diaphyses of long bones, lymphadenopathy, hepatosplenomegaly, or signs of bruising and bleeding.5 Pancytopenia, is a red flag for possible malignancy, and may indicate infiltration of the bone marrow with malignant cells. Underlying malignancy was considered in the differential for your patient due to her unexplained fevers, significant weight loss, joint pains awakening her at night, and pancytopenia; however, the chronicity of her symptoms, localization of pain to the joints, as well as the additional physical exam findings of a malar rash, palatal erythema, and episcleritis pointed away from this diagnosis. Though your patient had pancytopenia, she did not have blasts on the smear and LDH and uric acid levels were normal, making the diagnosis of malignancy less likely.

Another consideration in the differential for your patient was inflammatory bowel disease (IBD) such as Crohn’s disease. Though most patients with inflammatory

Continued on p. 18
Practice Profile

Interview with Jeremy Friedman, MBChB, FRCP, FAAP, Head, Division of Pediatric Medicine and Associate Professor, Department of Pediatrics, University of Toronto; conducted by Susan Wu, MD, Assistant Professor of Clinical Pediatrics, Division of General Pediatrics, Children’s Hospital Los Angeles and University of Southern California. SuWu@chla.usc.edu

Program Name Hospital for Sick Children
Location Toronto, Canada
Academic Affiliation University of Toronto
Areas Covered Ward, Image Guided Therapy service, Consultation Service
FTEs 7.0 hospitalists, with 11 FTE other faculty
Unique Aspects Resident teams as well as staff-only teams; subspecialty fellows providing night and weekend coverage; Coverage of Image Guided Therapy Service

Program History and Overview
The general pediatric hospitalist program at the Hospital for Sick Children (HSC) in Toronto, Canada was created in 1995 in part as a response to decreased resident staffing and restrictions on resident duty hours. Since then, it has grown into a highly successful academic program, which incorporates direct patient care, teaching, research, and quality improvement. Initially the group started with 2 FTE’s, and has now expanded to 7 FTE’s. The Hospital for Sick Children is a tertiary care pediatric academic health science center in Toronto with 320 beds and 50,000 ED visits per year. The general pediatrics hospitalist service manages close to 3,000 admissions per year.

Ward Coverage
There are 3 general pediatric inpatient ward teams - 2 Clinical Teaching Units (CTU) and 1 Clinical Practice Unit (CPU). Table 1 outlines these teams. The CTU’s each consist of 1 attending physician, 2-3 PGY-1 residents, 1 PGY-3 resident, and 1-2 medical students. The CPU is a staff-only team, and consists of 3-4 hospitalists, 1 CNS-NP, 1 pediatric fellow, and sometimes, additional trainees (chief resident, residents or medical students on electives). The CTU’s are capped at 15 patients per team; the CPU has no cap, however the total census between the 3 teams is usually between 50 and 60. The CNS-NP cares for a subset of patients with special needs who are frequently admitted; this person also follows these patients in the outpatient clinic. The hospitalist group published a study comparing outcomes between the CTU and CPU (Pediatrics 2004;114(6):1545-1549). They found that the two groups had comparable mortality, readmission rates, or frequency of consultation. There was, however, a significantly lower length of stay for patients on the staff-only team, even controlling for age, gender, and co-morbidities.

All calls regarding general pediatric admissions are handled by the physician carrying the “bed manager” pager. This includes ICU transfers, outside hospital transfers, and emergency department admissions. When the physician holding the bed manager pager gets called, he/she calls the referring physician directly and determines whether it is an appropriate transfer for the general pediatrics service. If so, the physician assists the referring center with interim management, then calls the nursing leadership to assess bed availability and details of transfer. Then the patient is assigned to either the CTU or CPU at the discretion of the physician holding the pager. There are no private practice physicians who admit to HSC, except for those who participate as CTU attendings for at least 2 months/year. During the daytime, one of the hospitalists carries the bed manager pager. At night, the senior resident on the CTU carries the pager. The hospitalist staff attempt to direct more admissions onto the CPU during the day so the residents can prioritize teaching; during the nighttime, more admission are directed to the CTU’s. Although there are no formal guidelines for distributing patients to either team, many of the complex patients with frequent hospital admissions who are well known to the faculty will be admitted to the CPU for better continuity of care. Over time, the group has found that an increasing proportion of the complex care patients are being placed on the CPU team.

Staffing
Within the Division of Pediatric Medicine, there are 7 FTE of general pediatric hospitalists, as well as 11 FTE of other faculty. The hospitalists generally spend > 7 months of the year on inpatient care, whereas the other faculty spend 2-3 months on the teaching service. The hospitalists spend 1-2 months on the CTU with the rest of their inpatient service on the CPU. They are responsible for inpatient care from 8 am to 5 pm on weekdays, and round on the weekends from 9 am to 3 pm. At nighttime, residents staff the CTU’s, and pediatric subspecialty fellows cover the CPU. These fellows are mostly foreign.

Table 1. Hospital for Sick Children Patient Care Teams

<table>
<thead>
<tr>
<th></th>
<th>Clinical Teaching Unit (CTU)</th>
<th>Clinical Practice Unit (CPU)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attending Staff</td>
<td>1</td>
<td>3-4</td>
</tr>
<tr>
<td>Fellows</td>
<td>None</td>
<td>1</td>
</tr>
<tr>
<td>Resident staff</td>
<td>2-3 PGY-1, 1 PGY-3</td>
<td>Elective only</td>
</tr>
<tr>
<td>Medical students</td>
<td>1-2</td>
<td>Elective only</td>
</tr>
<tr>
<td>Other staff</td>
<td>None</td>
<td>CNS-NP, sometimes chief resident</td>
</tr>
<tr>
<td>Night coverage (after 5)</td>
<td>Housestaff (attending available from home)</td>
<td>Subspecialty fellow (attendings available from home)</td>
</tr>
<tr>
<td>Weekend coverage</td>
<td>Housestaff (attendings round from 9-3, then are available from home)</td>
<td>Subspecialty fellow (attendings available from home)</td>
</tr>
<tr>
<td>Census</td>
<td>Capped at 15</td>
<td>35-45 (no cap)</td>
</tr>
<tr>
<td>Patient type</td>
<td>Fewer special needs</td>
<td>More special needs patients</td>
</tr>
</tbody>
</table>

Continued on p. 9
Pediatricians doing subspecialty fellowships who are required to provide night and weekend coverage for the CPU as part of their contract.

Other Services
The HSC hospitalist service also provides coverage Monday through Friday 8 am to 5 pm for patients on the Image Guided Therapy (IGT) service. These are patients receiving radiology procedures, such as feeding tube placement, PICC lines, stents, biopsies and drainages. The physician on the IGT service is responsible for pre-operative evaluation and post-operative follow-up. They do not, however, provide sedation services. In addition, one hospitalist is assigned to the Inpatient Consultation service on a monthly rotation. This is usually staffed by an associate chief resident. Most of the consultations are provided to the surgical services. One of the hospitalists who has done a fellowship in Child Abuse, provides 50% of her time on the Suspected Child Abuse and Neglect (SCAN) team.

Academic Activities
As the hospitalist program developed, it evolved from a program primarily designed to meet staffing and throughput needs, to one that is broad and diverse. Each member of the hospitalist team has created their own unique job profile. As ward attendings, the hospitalist group is very involved in both bedside and didactic teaching of medical students, residents, fellows, and nurse practitioners. The hospitalist staff has won numerous teaching and departmental awards. They are involved in didactic as well as bedside teaching and supervision for CNS-NP’s, medical students, residents, and fellows. Faculty also lead small groups for medical students on the art and science of clinical medicine, and problem-based learning. They conduct bedside rounds with residents as well as give lectures on general pediatric clinical topics, medical education, quality, safety, and clinical research. In addition to ward attending duties, many of the hospitalists are involved in quality improvement, patient safety, drug utilization, research ethics board, morbidity/mortality review, and many other committees. Several of the hospitalists also have prominent positions in hospital management and administration; for example, the division chief is a hospitalist, as is the chief of undergraduate medical education. Research within the group includes a wide range of activities, from medical education to case reports to clinical trials. These projects have resulted in multiple publications in peer-reviewed journals, presentations at international meetings, and substantial intramural as well as extramural grant funding.

Fellowship Program
Due to the success of the hospitalist program, a large number of pediatric trainees have become interested in hospitalist careers upon graduation. Recently, a pediatric hospitalist fellowship program was started. This program is highly individualized, and allows fellows to develop a curriculum which meets their career objectives. The fellowship program includes direct patient care on the services described above, broad elective opportunities, night call, research, teaching, and the option of a masters level degree. Currently, one of the fellows is a former chief resident working on a masters in bioethics, and the other is an experienced hospitalist from the US completing a 2 year program focusing on teaching and clinical care.

New Directions
As the program grows, it is taking on many new projects to improve the care of children. In the near future, the group plans to establish a comprehensive complex care program for patients with special health care needs, who need coordination of both inpatient and outpatient services. They hope to examine the success of different models of care for this population. Another priority area is inpatient safety and quality assurance. One of the hospitalist members is undertaking a project on medication reconciliation. Medical education is another priority; in the upcoming years the division plans to strengthen its resident elective and hospitalist fellowship programs.

For more information, contact Dr. Jeremy Friedman, Head of the Division of Pediatric Medicine, or Dr. Michael Weinstein, Director of Inpatient Services at mweinstein@sickkids.ca, or (426) 813-5281.

Samir Shah
This text combines the advice of over 100 pediatricians and specialists to bring you the latest guidelines, procedures, and treatment and management strategies for inpatient pediatric care. Highly accessible and easy to use on the wards, this book is arranged alphabetically by clinical area, and organized in a consistent format with uniform headings throughout—perfect for whenever you need information fast. 978-4051-0428-9 • $39.95

In Bookstores Now or at LWW.com
Pediatric Critical Care & Sedation

Arming Pediatric Hospitalists for Critical Care Responsibilities

Stephanie N. Sudikoff, MD
Assistant Professor of Pediatrics
Medial Director, Pediatric Transport Services
Director, Pediatric Simulation Education
Co-Director, Pediatric Simulation

Linda K. Snelling, MD, FCCM, FAAP
Associate Professor of Pediatrics and Surgery (Clinical)
Chief, Pediatric Critical Care Medicine
Medial Director, Pediatric Inpatient Medicine
Medical Director, Pediatric Sedation Service

Pediatric Hospitalists are working in the Pediatric Intensive Care Unit (PICU) with increasing frequency. As opposed to the rapidly increasing number of pediatric hospitalists entering the field each year, the influx of pediatric intensivists is flat and continues to fall short of demand. Approximately 40% of pediatric hospitalists now short in intensive care units(1). The benefits of this development surpass the obvious advantage of increased numbers of providers; Tenner et al demonstrated that a PICU staffed with in-house Pediatric Hospitalists, with immediate phone availability of an intensivist, had a better survival rate and shorter length of stay than a PICU staffed with in-house residents with similar intensivist availability(2).

Preparing hospitalist physicians to care for critically ill children poses significant challenges. In a recent survey, 92% of pediatric hospitalists indicated greater skill levels in performing critical care procedures as the area most in need of attention(3). In addition to appropriate back-up from an intensivist, critical care requires the hospitalist to have appropriate cognitive expertise and procedural skills. Cognitive expertise improves with time, on the job experience, and appropriate teaching from involvement with pediatric intensivists. Telephone consultation is often sufficient back-up for developing cognitive skills, and complex advice and plans can be made with consultation from remote locations.

Procedural skills are a more urgent matter. Acute clinical situations requiring critical care procedural interventions are often high stakes, low volume events, and may not easily allow for sufficient or appropriate on the job “practice” before proficiency is required. Telephone consultation is not a substitute for experience when a procedure or emergency intervention is required, and some interventions cannot wait for the arrival of an out-of-hospital intensivist.

Medical simulation centers offers realistic clinical settings for introduction and enhancement of both cognitive and procedural skills. Medical simulation uses life-sized, high-fidelity computerized patient mannequins that respond in real-time to clinical interventions and medications. This allows trainees to learn and practice life-saving procedural, decision-making, and team management skills in an intense and life-like environment, before these skills are required in a real patient situation. A best evidence systematic review of the medical simulation literature from 1969 through 2003 identified key features contributing to the effectiveness of simulation based education. These features include provision of specific and immediate feedback, repetitive practice, a broad range of task difficulty, clinical variation, a controlled environment, individualized learning, and defined educational outcomes(4). Because the simulations are completely staged, participants perform critical interventions, witness their outcomes and learn from the experience without any risk to patients.

Simulation training is effective; when paramedic students were taught endotracheal intubation in a simulation center, their subsequent success with live patients was as good as students trained in an operating room(5). Second year pediatric residents at our institution participate in an 8 hour simulation based “airway day” at the Rhode Island Hospital Medical Simulation Center, based on our own data showing improvement in their performance after participating in this educational intervention.

The skill sets required for effective stabilization of a critically ill child are often organized or prioritized with the rubric “ABC”. Essential airway (“A”) skills include proficient bag-valve-mask ventilation, appropriate use of nasopharyngeal and oral airways, endotracheal intubation, and insertion of a laryngeal mask airway as an emergency airway rescue device. Critical “B” skills include needle decompression of a tension pneumothorax and performance of tube thoracostomy, either by the open or the Seldinger (“guide-wire”) technique. Both infant and school-age sized mannequins allow for placement of these devices.

Adequate “C” skills require complete mastery of several options to access the circulation, as well as use of cardiac electrical therapy devices. In an emergent situation, peripheral intravenous (IV) or intraosseous (IO) access may be more expedient than obtaining central venous access (or a CVL for central venous line). If urgent venous access is obtained via the IV or IO route, resuscitation can begin and a CVL can be deferred until the patient is more stable or a pediatric intensivist arrives. All sizes and models of pediatric simulators support placement of IV and IO infusion devices. In some critically ill patients, an urgent CVL will be necessary. Currently, no pediatric mannequins allow insertion of a CVL, but separate “task trainers” support internal jugular, subclavian and femoral vein cannulation. With proper staging of the environment, and “draping” of the task trainer, a realistic experience can be created for CVL insertion. Because the femoral vein is a relatively straightforward vein to cannulate, most pediatric hospitalists can learn femoral vein cannulation readily with a few supervised real-life experiences.

In addition to procedural and cognitive skills, orchestrating a successful emergency intervention or resuscitation requires effective team management and leadership. Emergency situations are, by definition, crises. With specific teamwork training, a pediatric hospitalist is more likely to transform a loosely organized working group into a superior performing team. Medical simulation is an excellent means of teaching.

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Spotlight on Research

MORE Evidence Based Medicine for Pediatric Hospitalists (excerpted with permission from the MORE website)

Pediatric Hospitalists have an opportunity to contribute to the development of Evidence Based Medicine within Pediatric Hospital Medicine by participating in the McMaster Online Rating of Evidence (MORE) project. It’s a fun, quick, stimulating way of keeping up with the literature, honing your analytic skills, and contributing to our discipline while collecting CME at the same time.

The Health Information Research Unit at McMaster University has developed the McMaster Online Rating of Evidence (MORE) system to help define the best research to support evidence-based clinical practice, tailored to the individual interests of clinicians. This past summer, MORE added Pediatric Hospital Medicine to the list of disciplines in which articles are reviewed.

MORE uses set methodological criteria to identify studies whose design warrants review. To these criteria, MORE adds ratings by clinicians (Sentinel Readers) to determine relevance to clinical practice and newsworthiness. Ratings are then combined to identify the highest rated articles in a given discipline.

The rating system supports an Internet-based alerting system and “best evidence” database of links to original articles and systematic reviews to help doctors keep up to date with the medical literature. MORE then uses the ratings to help select articles that are most interesting to raters and readers.

The rating system has several “perks” for raters:
1. MORE sends only articles that have passed defined criteria for scientific merit
2. MORE provides raters with scores from other raters for the same articles
3. MORE grants CME credits
4. MORE provides the highest rated articles to all raters in a given discipline

Ratings are used to prepare evidence-based journals and texts, including:
- Evidence-Based Medicine and bmjupdates+ for the BMJ Publishing Group
- Medscape Best Evidence Alerts for WebMD.

To become a contributor to MORE, send an e-mail expressing your interest to MORE@mcmaster.ca or check out their website http://hiru.mcmaster.ca/more/.

Pediatric Hospital Medicine articles reviewed by MORE recently and identified as stellar include the following:

Pediatric Critical Care and Sedation

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“crisis resource management” and effective leadership to pediatric hospitalists responsible for resuscitation and resource mobilization for critically ill patients. Finally, an often overlooked but essential component of effective emergency intervention is familiarity with the assembly and function of emergency equipment and supplies. Facility with equipment is critical for proficiency in critical care procedures, and is achieved only with hands on practice.

Expanding Pediatric Hospitalists’ procedural, leadership, and communication skills will optimize their ability to lead a multidisciplinary team effectively through a critical event. The usefulness of these critical care skills extends beyond the PICU. Acute decompensation can occur anywhere, and hospitalists may be the first (and most locally definitive) responders to many locations outside of a PICU, including a general care unit, emergency department or procedural sedation site. Medical simulation offers an efficient means of providing the necessary training for low frequency, high stakes events that are likely to be encountered by a pediatric hospitalist in a PICU – or elsewhere.

References
Selective Serotonin Reuptake Inhibitors
Effects in Pregnancy, Lactation and the Neonate

Ursula S. Kneissl MD (Ukneissl@chrc.org)
Angela Yerdon McLeod DO (Ayerdon@chrc.org)
Assistant Professors of Community and Family Medicine,
Dartmouth School of Medicine
New Hampshire/Dartmouth Family Practice Residency,
Concord NH.

Selective serotonin reuptake inhibitors (SSRIs) are commonly used to treat depression in pregnancy. There have been numerous reports of infants exposed to SSRIs in utero with adverse effects, prompting a Health Canada warning in August 2004 and an FDA warning in December of 2005. In our institution we have seen a number of SSRI-exposed infants develop symptoms after birth. In this article we examine the available evidence regarding the use of SSRIs in pregnant and lactating women and the effects on their offspring.

Mothers, Depression and Pregnancy
The overall prevalence of depression is 14-23% in women before pregnancy and 11-32% postpartum. Studies have shown that most women being treated for depression are on SSRIs medications. Discontinuing medication during pregnancy increases the risk of depression relapse from 23% (in treated patients) to 43% (in women who had discontinued their medications). Untreated depression in and of itself poses risks for both the mother and the neonate, resulting in increased risk of low birth weight, preterm birth, maternal suicide, infanticide, and a range of psychosocial consequences including loss of supports, increased drug and alcohol use, and lack of prenatal care.

The SSRIs have a mild side-effect profile. All are hepatically metabolized, lipid soluble, cross the placenta and are excreted into breastmilk. Table 1 lists how drugs are categorized during pregnancy. Fluoxetine and sertraline are pregnancy category B, citalopram, escitalopram and venlafaxine (SNRI) are category C, and paroxetine has a category D status for increased risk of congenital anomalies. Table 2 lists common SSRIs, their pregnancy category, percentage of dose transmitted to the fetus in breastmilk and half-life.

Newborns
The effects of SSRIs in the newborn are related to its actions in utero. Serotonin regulates cardiovascular and respiratory function, circadian rhythms, is a trophic signal for CNS development, plays a direct role in pulmonary artery smooth muscle development, modulates nociception and assists in platelet aggregation.

Infants exposed to SSRIs exhibit both unusual symptoms and increased incidence of some usual complications. Symptoms include irritability, restlessness, tremor, hypotonia, respiratory distress, feeding problems. Other, less common symptoms include hyper-reflexia and myoclonus, continuous crying, sleeping problems. This has been termed the “neonatal behavioral syndrome”.

One critical question is whether infants with in utero SSRI exposure are experiencing withdrawal or serotonin toxicity. Both syndromes are well-defined in adults. Multiple reports of babies with high Neonatal Abstinence Score scoring and low or undetectable serum levels of medication have lead many to classify this as withdrawal. However, particularly in drugs with long half-lives, toxicity is also likely. Laine et al demonstrated clear evidence of toxicity in a group of newborns exposed to fluoxetine in a prospective controlled follow-up study, they measured drug levels, an indirect marker of CNS serotonin activity and scored serotonergic symptoms and demonstrated that the symptoms correlated with low drug levels and high CNS serotonin activity. It seems most likely that both exist – some babies experience toxicity, some withdrawal and some may experience both.

Table 1. (Briggs GG, Freeman RK and Yaffe SJ. Drugs in Pregnancy and Lactation. In 7th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2005.)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Controlled studies in women fail to demonstrate a risk to the fetus in the first trimester (and there is no evidence of a risk in later trimesters), and the possibility of fetal harm appears remote.</td>
</tr>
<tr>
<td>B</td>
<td>Either animal-reproduction studies have not demonstrated a fetal risk but there are no controlled studies in pregnant women or animal-reproduction studies have shown an adverse effect (other than a decrease in fertility) that was not confirmed in controlled studies in women in the first trimester (and there is no evidence of a risk in later trimesters).</td>
</tr>
<tr>
<td>C</td>
<td>Either studies in animals have revealed adverse effects on the fetus (teratogenic or embryocidal or other) and there are no controlled studies in women or studies in women and animals are not available. Drugs should be given only if the potential benefit justifies the potential risk to the fetus.</td>
</tr>
<tr>
<td>D</td>
<td>There is positive evidence of human fetal risk, but the benefits from use in pregnant women may be acceptable despite the risk (e.g., if the drug is needed in a life-threatening situation or for a serious disease for which safer drugs cannot be used or are ineffective).</td>
</tr>
<tr>
<td>X</td>
<td>Studies in animals or human beings have demonstrated fetal abnormalities or there is evidence of fetal risk based on human experience or both, and the risk of the use of the drug in pregnant women clearly outweighs any possible benefit. The drug is contraindicated in women who are or may become pregnant.</td>
</tr>
</tbody>
</table>

There are multiple studies that have demonstrated an increased risk of respiratory distress in SSRI-exposed newborns. The most troubling study demonstrates an increased risk of persistent pulmonary hypertension in SSRI-exposed neonates. Chambers et al demonstrated an odds ratio of 6.1 of developing PPHN for SSRI-exposed infants over unexposed infants. This would translate to an absolute risk of 6–12 per 1,000 live births. SSRI exposure before 20 weeks gestation or other antidepressant exposure did not increase the risk of PPHN. In studies that have examined the timing of exposure, none have demonstrated significant effects in babies exposed before the third trimester.

There are excellent studies showing attenuated pain response in SSRI-exposed infants. However, the long-term implications of this are unclear. There are case reports of...
Neonatal Medicine Update Continued from p. 12

intracranial hemorrhage in term SSRI-exposed infants with no other risk factors for bleeding, but no higher-level evidence currently exists.

The biggest question for pregnant women is that of long-term effects. There have been 13 studies of long-term effects on neurocognitive development. 11 have found no long-term effects, 2 demonstrated mild motor delay 13. To date, no study has shown any long lasting effects on cognitive, emotional or behavioral development.

Table 2. (Data taken from Hale TW. Medications and Mother’s Milk. In 12th edition. Amarillo, Texas: Hale Publishing; 2006.)

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Pregnancy Category</th>
<th>Infant dose (relative % in Breastmilk)</th>
<th>Half Life (hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluoxetine</td>
<td>B</td>
<td>6.8</td>
<td>1 to 3 days</td>
</tr>
<tr>
<td>Norfluoxetine (active metabolite)</td>
<td></td>
<td></td>
<td>7 to 15 days</td>
</tr>
<tr>
<td>Sertraline</td>
<td>B</td>
<td>2.2</td>
<td>26-65</td>
</tr>
<tr>
<td>Paroxetine</td>
<td>D</td>
<td>2.1</td>
<td>21-26</td>
</tr>
<tr>
<td>Citalopram</td>
<td>C</td>
<td>3.6</td>
<td>36</td>
</tr>
<tr>
<td>Escitalopram</td>
<td>C</td>
<td></td>
<td>27-32</td>
</tr>
<tr>
<td>Venlafaxine</td>
<td>C</td>
<td>6.4</td>
<td>5-11</td>
</tr>
</tbody>
</table>

Lactation

All SSRIs are transmitted via breastmilk to the infant, however the relative infant dose varies (Table 2). It is clear that many infants can be exclusively breastfed and demonstrate no adverse effects even in the face of high infant serum drug levels. There have been case reports of infants with worsening symptoms and high levels who may have been poor metabolizers. Reviewing the current literature, it seems that breastfeeding is safe, and there is no reason to check levels unless the infant is symptomatic. If infants become symptomatic, checking levels and considering discontinuing nursing or switching the mother to a medication with a shorter half-life or lower infant dose could be considered.

Recommendations

Our recommendations given the current literature for pregnant women include: screen for depression and try adjunctive therapies (cognitive-behavioral therapy, psychotherapy). If medical therapy is needed, paroxetine should be avoided due to its category D status. Other SSRIs may be used after a discussion with the patient regarding the risks and benefits of therapy, both for herself and for her infant. The minimum effective dose should be used, and polypharmacotherapy should be avoided if possible.

Newborns born to mothers on SSRIs in the third trimester are clearly at risk of complications. They should be monitored closely, likely for 48 hours. Close follow-up should be assured, given the risk that symptoms may develop after discharge to home. Symptomatic infants should be treated with supportive care: low noise, low lights, swaddling and kangaroo care as much as possible. Infants with severe symptoms may need pharmacotherapy. There is no clear protocol, but SSRIs should not be given to the baby due to the possibility of toxicity.

Finally, it is critical that pediatricians continue to assess women for depressive symptoms during routine well child care as untreated maternal depression may have harmful consequences on a developing child.

References

**Hospitalists On-Line**

**Non-Compete and Restrictive Covenant Clauses: Pro and Con**

The issue of non-compete or restrictive covenant clauses in employment contracts for hospitalists is a hotly debated topic. The following two authors have bravely decided to offer their opinions on both sides of the discussion.

### Pro:

**Non-Compete Clauses in Physician Contracts - Why They Are Good For Hospitals**

Phil Kibort, MD, MBA  
Vice President Medical Affairs and Chief Medical Officer  
Children’s Hospitals and Clinics of MN  
Phil.kibort@childrensmn.org

I will start by stating that I am writing this piece from the viewpoint of the hospital, which has its own unique set of fiduciary responsibilities. If I were a physician who was still in practice or who had recently applied for a job, I would not automatically feel comfortable signing a contract with a non-compete clause, as many others have stated. Nevertheless, although the state of employment determines the degree to which they are enforceable, non-compete clauses are a reality that many physicians must face.

The most important reason for hospitals to use non-compete clauses in contracts with individual physicians and physician groups is to ensure that the hospital’s interests are protected if and when the physician or group decides to leave. If a physician or group moves to a competitor’s system, the original hospital or hospital system may suffer politically, economically, and from a market standpoint. Physicians possess several attributes, such as knowledge and technical skills, that hospital systems utilize to be successful. Because hospitals are competing with other local institutions, it is in their interest not to allow these attributes to be utilized by their competitors.

Non-compete clauses also allow hospitals to protect prior investments associated with the recruitment and hiring of physicians, including travel and moving expenses, office space and equipment, staffing, salary and benefits, as well as the time spent coordinating the process. For most physicians, the monetary investment can range from a quarter to a half a million dollars. If the physician leaves to work for the competitor, the move not only hurts the hospital financially, but it also causes the hospital to go through the entire recruitment process again.

Finally, consider the ramifications for the employer if it hires a bright and eager physician who can leave at will. The employer provides the employee with unlimited access to referral sources, patient lists, business models, and payer contract agreements. If the employee leaves, relocates geographically close to the former employer, and then sends a letter to each of the former employer’s patients, it could have a substantial negative impact on the former employer.

Non-compete clauses are the right thing to do with regards to the hospital’s fiduciary role. The hospital has legitimate interests to protect, and non-compete clauses do not keep physicians from applying their skills except in a very

### Con:

**Restrictive Covenants: Appropriate for Small Business But Not for Hospitals**

Richard Rohr, MD, MMM  
Director, Hospitalist Service, Milford Hospital  
Chair, Medical Procedures Subcommittee, SHM  
Richard.rohr@milfordhospital.org

Restrictive covenants were originally created to protect small business owners. For example, when selling a small business in which the owner deals directly with customers (as in a medical practice), the purchaser often pays a premium over the asset value of the business with the expectation that the established customers will continue to patronize the business. This premium is called the goodwill value. If the former owner then sets up a new business in the same general area as the original business, the customers may go to the new location. The new owner of the original business will not receive the goodwill value. Thus, sales contracts for small businesses typically contain clauses that prevent the seller from opening a similar business within a specified radius of the original business for a certain length of time. These covenants not to compete, also called restrictive covenants, are an essential part of commerce.

The use of restrictive covenants has been extended to situations in which an employee joins an established business, develops relationships with customers, and then leaves to set up a competing business. The employee is using the goodwill created by the former employer to establish his or her own business faster than would be the case if he or she had set up shop without joining the other business first. While there is a legitimate role for restrictive covenants in this situation, it must be noted that the employee starts creating his or her own goodwill from the first day of employment. After a period of time, the goodwill generated by the employee may equal or surpass the goodwill generated by the employer.

As a result, many lawyers now suggest that employment agreements contain a liquidated damages provision in place of a restrictive covenant. Liquidated damages refers to a fixed and agreed upon sum of money to be paid in the event of a breach of contract. In the aforementioned situation, the goodwill value is determined in advance. It should decrease over time, reaching zero within a few years. At any time, the employee can buy out of the contract for the specified price with no further restrictions.

Neither restrictive covenants nor liquidated damages provisions are appropriate for hospitalists employed directly by a hospital or medical school for several reasons. First, if a physician leaves the hospital to establish an independent practice, there is no loss of goodwill. The former employee may refer patients to the hospital for care, and the hospital can continue to use the same methods as before to encourage other patients to use

Continued on p. 15
Billing and Coding Corner

Same Day Admit/Discharge

Kathy Lindstrom, RHIT
Coding Training Manager
Children’s Hospitals and Clinics of Minnesota
Kathy.Lindstrom@childrenshc.org

Sheldon Berkowitz, MD, FAAP
Children’s Hospitals and Clinics of Minnesota
Sheldon.Berkowitz@childrensminn.org

This past summer, our section’s LISTSERV® had a flurry of discussion on the subject of coding for same day admit and discharge. As you can imagine, there was quite a bit of variability in how section members interpreted the coding “rules”. As a result, I posed the following question to Kathy Lindstrom, Coding Training Manager at Children’s Hospital and Clinics of Minnesota.

A patient is admitted in the evening and seen by the house staff. However, the attending physician does not see the patient until the next morning, at which time an Admission History and Physical is performed. Either at that time or later the same day, a decision is made that the patient can be discharged home (appropriately documented in the chart). Can the codes for Same Date Admit/Discharge (99234-99236) be used or must a Discharge code (99238-9) be used, since the patient was admitted the previous day?

1. Here is Ms. Lindstrom’s response, including a response from the American Medical Association’s CPT Information Services (you can contact the AMA directly with coding questions by accessing http://www.ama-assn.org and either logging in with your AMA ID if you are a member, or creating an account):

   If the attending did not see the patient until the second day, and on the second day, performed the work of both the admit and the discharge, then it would be appropriate to bill using codes 99234-99236 (admit and discharge same day).

   From the AMA CPT Information Services: “initial hospital care is the date the admitting physician had the first hospital inpatient encounter with the patient…if the physician provided all three of the key components …(history, examination and medical decision making) and discharged the patient on the same date, then the admitting physician should report the appropriate level observation or inpatient care services… performed for that date of service.” (Personal communication between Martha Espronceda of the AMA and Kathy Lindstrom of Children’s Hospitals and Clinics of MN, July 7, 2005)

   In the scenario presented, codes 99234-6 should be used, depending on the length of time involved and/or complexity. One additional question related to this topic is whether providing telephone oversight to the admitting resident the night the patient is admitted, even though the attending physician does not see the patient until the next morning, effects how you bill. Since the attending physician can only bill for services when the patient is physically seen by him/herself, then the first billing would be the day that the attending sees the patient.

Hospitalists On Line

Non-Compete and Restrictive Covenant Clauses

Pro: Continued from p. 14

confined area, for a short period of time. Non-compete clauses help hospitals protect themselves against the threat of a physician departing with a host of patients that he or she acquired only through his or her association with the hospital. In place of non-compete clauses, hospitals can instead require liquidated damages. In this case, the physician is required to pay the institution if they decide to leave. The payment may reflect their portion of the overhead for one year or a fraction of their salary.

Con: Continued from p. 14

its services. Second, the Tennessee Supreme Court has ruled that a patient has the right to choose his or her own physician, and that this right supersedes the need of the employer to protect whatever degree of goodwill exists.

Third, hospitals may argue that it is expensive to recruit employees, but the correct way to minimize recruitment expenses is to treat employees well with the intent of maximizing retention. Hospitals may try to recoup moving expenses from employees who leave within a short period of time, but this is a separate matter from restrictive covenants. Fourth, when there are multiple competing hospitals in the same geographic area, one institution may utilize restrictive covenants in an attempt to keep employees from going to a competitor. However, this incorrectly implies that employees are property of the hospital, and therefore should not be permitted by the courts.

Palliative Care Subcommittee Continued from p. 5

Otherwise, I will be meeting with my Pediatrics Department Chair in December to formalize plans for a program in Detroit.”

Meeting updates:

• Annual Assembly of the American Academy of Hospice and Palliative Medicine, February 14-17th in Salt Lake City, UT. Visit http://www.aahpm.org/ for more details.
• The Ohio Pediatric Palliative & End-of-Life Care Network (OPPEN) in conjunction with the Michigan Alliance for Pediatric Palliative Services (MAPPS) is hosting a pediatric palliative care conference in Akron, OH, on October 4-6, 2007. More info to follow.

If you are interested in joining the Palliative Care Subcommittee please contact: Maggie Hood (Maggie.hood@multicare.org).
Pediatric Hospital Morbidity & Mortality

Spotlight on Root Cause Analysis

Mary Ellen Valletta, MD, JD, FAAP
Assistant Clinical Professor
Pediatric Hospitalist, Inpatient Director
University of Florida College of Medicine
valleme@peds.ufl.edu

Case Presentation

Patient is a 12 year old male who was admitted through the ED on a Friday for fever and a warm, tender, erythematous area around the right ankle. There was a preceding insect bite which started as a small pustule but three days later had developed into a warm, erythematous painful swelling. The resident team in the ER cultured the wound and initiated IV antibiotic therapy with clindamycin for coverage of possible CA-MRSA based on prevalence in the community. The intake nurse recorded a penicillin allergy and noted a history of “respiratory distress and rash” as the reaction. The allergy was recorded in the hospital electronic database and reflected in pharmacy records. The patient was admitted to the floor for IV antibiotic therapy with clindamycin.

The weekend team cross-covering the floor patients followed up on the culture which was positive for methicillin sensitive staphylococcal aureus and tailored the antibiotic coverage by switching to oxacillin. The allergies were not noted on the resident check out sheet. The resident writing the order did not confirm allergies prior to writing the order. The medication was dispensed by pharmacy despite the pharmacy records reflecting the allergy. Nursing dispensed the medication despite the band on the patient’s wrist reflecting the penicillin allergy. The patient after having received several doses given by multiple nurses developed itching and rash and the error was ultimately discovered. Fortunately, the patient never developed any respiratory distress or anaphylactic reaction to the oxacillin.

The terms “sentinel event” and “medical error” are not synonymous; not all sentinel events occur because of an error and not all errors result in sentinel events. [2]

In evaluating our case scenario above, a sentinel event as defined clearly occurred. Although the event did not cause any serious injury, it certainly could have. This patient could have experienced anaphylaxis when exposed to the oxacillin. Our case scenario here, like many, was a “near miss.” Because “near misses” are neither JCAHO reviewable nor reportable events, the actual response by the institution remains in the discretion of the institution’s leadership. An event might be screened and no detailed analysis done because the cause was obvious and simply averted. However, JCAHO expects an “appropriate response” to the “near miss.” An “appropriate response” as outlined by JCAHO includes a “Root Cause Analysis” (RCA); development of an action plan to reduce risk of recurrence; implementation of the action plan; and evaluation of the effectiveness of the action plan. [2]

The “near miss” here was certainly unique and clearly exposed deficiencies in the system processes. As a defined sentinel event, JCAHO expects that the institution will perform RCA on this “near miss.” But how do we uncover the real root cause of a sentinel event? How do we perform RCA? Most hospitals have a multidisciplinary team which performs RCA on a regular basis. Many practitioners though are unfamiliar with the process. Numerous different techniques exist for performance of RCA. JCAHO requires certain characteristics for the RCA to be acceptable. There must be participation by the key individuals involved in the systems and processes under review (i.e., pharmacy, nursing, etc.) as well as individuals involved in the institution’s leadership. The RCA should focus on systems and processes, not an individual’s performance. It should start from the specifics of the scenario and broaden to the common cause in the organizational processes. Repetitively asking “Why?” forms the basis of the analysis. What were the human and other factors most associated with the event? The focus then shifts to “How?” How can one redesign or implement new system checks or processes which would reduce the likelihood of recurrence?

In evaluating our case scenario above, our

A sentinel event is an unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof.

Discussion

The Institute of Medicine (IOM) in its 1999 report To Err Is Hu-
man, Building a Safer Health Care System spotlighted the morbi-
dity and mortality resulting from medical errors. [1] As one might suspect, medication related errors constituted the majority. In an attempt to reduce medical errors, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) responded by requiring participating hospitals to identify and respond “appropriately” to all “sentinel events.” A particularly egregious subset of sentinel events are reportable and reviewable by JCAHO, including but not limited to patient death, paralysis, coma or other major permanent loss of function associated with a medication error. Fortunately or unfortunately, the “near miss,” although requiring an “appropriate response” by the hospital, is not reviewable by JCAHO. [2]
PEDIATRIC HOSPITAL MORBIDITY & MORTALITY

Sample Root Cause Analysis for Adverse Drug Event

<table>
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<tbody>
<tr>
<td>Proximate Cause</td>
<td>Contributing Factors</td>
<td>Action Plan</td>
<td></td>
</tr>
<tr>
<td>Resident Physician ordered drug to which patient was allergic.</td>
<td>1. Check out sheet did not reflect allergy.</td>
<td>- Senior resident reviews adequacy of sign-out sheets.</td>
<td>• Evaluate adequacy of supervision and training of trainee nurses.</td>
</tr>
<tr>
<td></td>
<td>2. Resident did not confirm allergies.</td>
<td>- Address workload of residents and education training.</td>
<td>• Readress manner and display of alerts.</td>
</tr>
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<td></td>
<td>3. Resident distracted because of busy schedule.</td>
<td>- Create new order page which reflects allergies with patient name for each order sheet.</td>
<td>• Readress manner and display of alerts.</td>
</tr>
<tr>
<td></td>
<td>4. Allergies were not reflected at top of order page.</td>
<td>- Door/bed signage and bright fluorescent colored wrist band on extremity which IV site is.</td>
<td>• Readress manner and display of alerts.</td>
</tr>
<tr>
<td></td>
<td>5. Resident assumed pharmacy would double check order.</td>
<td>- Consider institution of Electronic Medical Record (EMR).</td>
<td>• Readress manner and display of alerts.</td>
</tr>
<tr>
<td></td>
<td>6. Patient a minor and not familiar with allergies.</td>
<td>- Consider use of Computerized Physician Order Entry (CPOE).</td>
<td>• Readress manner and display of alerts.</td>
</tr>
</tbody>
</table>

Pharmacy dispensed medication to which patient was allergic. 7. Too many alerts such that allergy alert ignored. 8. Too easy for pharmacist to override alert. 9. Too easy for pharmacist to override alert. 10. Too many alerts such that allergy alert ignored. 11. Too easy for pharmacist to override alert.

Multiple nurses administered drug to which patient was allergic. 10. Trainee nurses acting without supervision. 11. Arm band and alerts ignored, perhaps not sufficiently obvious as multiple nurses ignored same.

The final step is to create an action plan. In the scenario above, numerous changes could be considered which would prevent recurrence. One, the institution could purchase and implement CPOE, although the same error might have been made by the physician if there are too many annoying, insignificant alerts on the CPOE. Two, the pharmacy program could be altered such that the pharmacist can no longer override an allergy alert without contacting the ordering physician and documenting such contact. Three, the pharmacy program could be altered such that history of a serious allergic response (respiratory distress, Stevens-Johnson, etc.) does not permit override at all. The allergy has to actually be removed by order of the physician. The goal of the action plan is to eliminate human factors and fallibility by creating additional safeguards. Obviously, numerous different approaches could be considered before deciding upon one.

Although institutions are encouraged to self report sentinel events and submit RCAs, they are not required to. For those sentinel events reported and/or reviewed, JCAHO may conclude that such events have been sufficiently frequent across member hospitals to warrant a “Sentinel Event Alert.” A Sentinel Event Alert is in the nature of a collective RCA, sort of “lessons learned.” These alerts are published and member hospitals are expected to follow the intended action plan reflected in those alerts. [3] An example is the medication reconciliation form now required upon transfer of patient care from one level to another or one practitioner to another. [4]

RCAs are labor intensive and have a significant cost to the institution. Their reliability and conclusions are not subjected to scrutiny or controlled studies. [5] However, they remain an integral part of JCAHO’s expectations for accredited member hospitals. For those pediatric hospitalists who participate in quality improvement initiatives, implementing or participating in the process of RCA can be very revealing and lead to implementation of changes that significantly improve pediatric inpatient safety. The next, more proactive step in pediatric inpatient safety, involves the use of the Failure Mode and Effects Analysis (FMEA). FMEA is often confused with RCA but is clearly a distinct and different entity. FMEA is intended to be proactive (not reactive like a RCA). Specific high risk processes are targeted for analysis with the focus to prevent events from occurring rather than avoiding recurrences. For a detailed discussion of FMEA and tools accessible see link below. [6] The pediatric hospitalist, by constant inpatient management, is in the unique position of discovering preventable errors in the inpatient setting and becoming a true advocate for pediatric patient safety.

RCA tools are accessible at http://www.jointcommission.org/SentinelEvents/Forms/.

References
3. Joint Commission on the Accreditation of Healthcare Organi-

References continued on p. 18
bowel disease present with symptoms of abdominal pain and bloody diarrhea, extra-intestinal manifestations occur in 25-35% of patients. Arthritis is one of the more common extra-intestinal manifestations of IBD and may precede the onset of gastrointestinal symptoms. Usually the arthritis is episodic, lasting a period of weeks, and is most commonly oligoarticular, involving the large joints of the lower extremity. Patients with IBD often have weight loss, poor growth, and fatigue. Mucocutaneous findings often include erythema nodosum or pyoderma gangrenosum and aphthous ulcers are common. Ocular involvement is rare but may cause uveitis or episcleritis in 2-5% of patients with IBD. Laboratory abnormalities may include anemia, mildly elevated hepatic enzymes, and hypoalbuminemia. Despite the systemic (fever, weight loss, fatigue) and extra-intestinal (arthritis, episcleritis) complaints, the chronicity of your patient’s symptoms with the absence of gastrointestinal complaints placed this diagnosis lower on the differential. Also, your patient had lymphopenia and thrombocytopenia, which are not typical of IBD.

Various infectious etiologies should be considered in a patient presenting with prolonged, unexplained fevers, weight loss, malaise, and arthralgias. HIV can certainly cause these symptoms as well as the bone marrow dysfunction leading to pancytopenia. Because your patient denied sexual activity or other high-risk behaviors and her history did not seem suspicious for sexual abuse, you first investigated other etiologies to account for her behaviors and her history did not seem suspicious for sexual abuse. A “shot-gun” approach may help limit expense, inconvenience, discomfort, and risk but must be balanced against potential delays in arriving at a diagnosis.

References
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Society of Hospital Medicine
SOHM Executive Committee

Laura J Mirkinson, MD  
*Chairperson*  
PH:  301/754-7232  
EM:  mirkil@holycrosshealth.org  

Jennifer A Daru, MD  
PH:  773/296-7905  
EM:  jadaru@gmail.com  

Yong S Han, MD  
PH:  832/824-2289  
EM:  yshan@texaschildrenshospital.org  

Timothy H Hartzog, MD  
PH:  843/876-8512  
EM:  tim@hartzoghealth.com  

Daniel A Rauch, MD  
PH:  914/493-7235  
EM:  daniel.rauch@med.nyu.edu  

Michael E Ruhlen, MD  
PH:  419/291-5643  
EM:  michael.ruhlen.md@promedica.org  

Jack M Percelay, MD, MPH  
*Immediate Past Chairperson*  
PH:  201/670-3603  
EM:  jpercelaymd@yahoo.com  

Julia Aquino, MD  
Section on Residents Representative  

AAP STAFF:  
S Niccole Alexander, MPP  
Manager  
Division of Hospital and Surgical Services  
Department of Community and Specialty Pediatrics  
American Academy of Pediatrics  
141 Northwest Point Blvd  
Elk Grove Village, IL 60007-1098  
PH:  847/434-4799  
EM:  nalexander@aap.org  

Committee on Hospital Care

Erin R Stucky, MD  
*Chairperson*  
PH:  858/966-5841  
EM:  estucky@chsd.org  

Jamie Calabrese, MD  
PH:  412/420-2268  
EM:  jca@the-institute.org  

Patricia S Lye, MD  
PH:  414/789-1817  
EM:  plye@mcw.edu  

Sanford M Melzer, MD  
PH:  206/987-2622  
EM:  sandy.melzer@seattlechildrens.org  

Anthony L Pearson-Shaver, MD, MHSA  
PH:  706/721-4402  
EM:  tpearson@mail.mcg.edu  

LIAISONS:  
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Barbara DeBenham Meeks, RN, MSN, MBA  
Liaison, American Hospital Association (AHA)  

CONSULTANTS:  
Timothy E Corden, MD  
JCAHO Hospital Professional and Technical Advisory Committee Representative  

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