MISSOURI HOSPITALIST SOCIETY

Publisher:

Division of General IM

University of Missouri

Columbia, Missouri

Editor:

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MISSOURI HOSPITALIST

Issue 26 February 25, 2010

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Hospitalist Update

Primum non nocere

Carla Dyer MD

As a follow up to the *To Err is Human Report*, in 2001, the Institute of Medicine described six overall "aims for improvement" in healthcare: care that is patient centered, efficient, timely, equitable, effective and safe. While simple enough, as a practitioner of hospital medicine, one quickly realizes that the realities of universally achieving these goals can be, at the very least, challenging. Patient safety has played an increasingly prominent role in many hospitals over the past 25 years and many important strides have been made in this area.

One example is the *5 Million Lives Campaign*, sponsored by the Institute for Healthcare Improvement in 2006, with the goal of protecting 5 million lives from medical harm by using evidence-based standards of care. Over 4000 hospitals enrolled in that effort, including 60 from Missouri. However, care that does not meet these ideals continues to make headlines. Just this week, an article in the *Archives of Internal Medicine*, by Eber et al., estimates that 48,000 deaths were attributed to health care acquired sepsis and pneumonia in 2006, costing over 8.1 billion dollars (Eber, 2010). The numbers may be controversial and political opinions regarding "fixes" for the current system may vary but the reality remains that, in an era of rising health care costs, our healthcare system still has many opportunities to integrate proven methods to make our patients more safe.

Consider these 10 simple ways to improve the care of our patients. These suggestions are adapted from focus areas of the IHI's *5 Million Lives Campaign* and the 2010 National Patient Safety Goals for Hospitalized Patients (Joint Commission):

Ten Ways to Provide Safer Care:

1. Practice **good hand hygiene**. Plain and simple. This is the single most effective way to decrease the transmission of infections in hospitalized patients. Alcohol-based hand disinfectants or a 30 second soap and water scrub may be used.
2. Take a **"time-out" prior to invasive procedures**, including common, bedside procedures such as central line placement, thoracentesis, paracentesis, etc. Confirm two identifiers, purpose of procedure, site of procedure, etc. (continued, page 2)

3. **Prevent nosocomial infections**. Catheter-associated urinary tract infections and vascular-catheter associated infections are on the 2009 CMS list of "never events."

A. **Reduce indwelling urinary catheter use**

B. **Use a central line "checklist" for catheter insertion**. This bundle consists of 1. hand hygiene, 2. maximal barrier precautions, 3. chlorhexidine skin antisepsis, 4. optimal catheter site selection and 5. prompt removal of unnecessary lines. Units instituting this process have seen a dramatic decrease in central venous catheter-related bloodstream infections (Berenholtz, 2004)

C. **Use ventilator "bundle"** to prevent hospital acquired pneumonia: elevate the head of the bed, daily assessment of readiness for extubation, peptic ulcer disease prophylaxis and DVT prophylaxis.

4. **Prevent adverse drug events** through medical reconciliation. Approximately half of all medication errors occur during transitions of care, making medical reconciliation upon admission and at discharge essential.

5. Make **venous thromboembolism prophylaxis** a routine and consistent part of your patient's care. VTE is the most common preventable cause of death in the hospital setting (Geerts, 2008)

6. Prevent harm from **"high alert" medications**: i.e. insulin, anticoagulants, narcotics and sedatives. Adverse drug events from these medications account for approximately half of preventable events.

7. **Prevent decubitus ulcers**. Decrease morbidity related to pressure ulcers by assessing the skin condition daily, decreasing moisture accumulation, optimizing nutrition and minimizing local pressure.

8. Implement and utilize **Rapid Response Teams**: an unexpected decline in a patient's status should trigger the immediate response of an interprofessional team to assess, treat and determine the requirements for safe, continuing care.

9. **Demand effective patient handoffs**. Standardized checklists for patient handoffs are increasingly utilized in an effort to improve the thoroughness of information provided during transfer of care. Also, **SBAR techniques** for effective communication are increasingly utilized in healthcare; this system originated in the US Navy as a means of communicating information about submarines. It consists of 4 components: Situation—description of immediate issue; Background—description of clinical findings, related diagnoses, prior treatment etc.; Assessment—what is thought to be going on; Recommendation—for therapy or contingency plans.

10. **Report medical errors and near-misses**. While the culture of reporting these errors is gradually changing, it is important to recognize that transparency is essential to providing opportunities to improve the system and to thereby reduce such events in the future.

(continued, page 3)

National Patient Safety Awareness Week will be March 7-13 this year. Many such "awareness weeks" come and go with barely more than a sign in the elevator to recognize their existence. Take a few moments this next month to look at your own practices and determine which areas could be improved to ensure that safe care is always provided to your patients. Finally, make sure that your entire interprofessional team understands and maximizes their role to provide safe patient care. These efforts will certainly not create a perfect healthcare system but they will move us one step closer to achieving the goals of quality healthcare. *Primum non nocere*—first, do no harm.

REFERENCES:

Crossing the Quality Chasm: A New Health Care System for the 21st Century (Institute of Medicine, 2001)

Eber, et al., Clinical and Economic Outcomes attributable to Healthcare-Associated Sepsis and Pneumonia, Arch Int Med 2010; 170(4): 347-353

Berenholtz, et al., Eliminating catheter-related bloodstream infections in the Intensive Care Unit, Crit Care Med 2004; 32:2014-2020

Geerts, William et al., Prevention of Venous Thromboembolism: American College of Chest Physicians Evidence-based Practice Guidelines (8th Edition), Chest 2008; 133(6): 3815-4535

Institute of Healthcare Improvement: www.ihi.org

Joint Commission's National Patient Safety Goals:

www.jointcommission.org/patientsafety/nationalpatientsafetygoals

Society for Hospital Medicine: www.hospitalmedicine.org

National Patient Safety Foundation: www.npsf.org

Care of the Hospitalized Patient

Saturday, April 24, 2010

Eric P. Newman Education Center

Washington University Medial Center

Register: http://cme.wustl.edu

CASE OF THE MONTH Sumi Prakash MD, Rahul Shekhar MD, William Steinmann MD

A 67 year old Caucasian male presented to the Emergency Room with a 4 day history of increasing shortness of breath. He reported dyspnea with minimal exertion, dizziness on standing and chest pain with occasional radiation to his left arm; his companion noted that he had been making a rattling sound with respirations for the past few days. The patient had not been weighing himself but did notice swelling in his feet. He does not use home oxygen and denied any reflux symptoms, daytime or nocturnal cough, sputum production or history of asthma. He is a truck driver but denied any unusual travel; he also denied recent sick contacts, fever or chills. Six months ago, during a hospitalization for a burn, he was found to have a pleural effusion which, when tapped, was transudative; a workup for its cause, including an echocardiogram, was negative and the effusion resolved spontaneously.

The patient has a history of atrial fibrillation, diabetes mellitus type 2, arthritis, gout, hypothyroidism and hyperlipidemia. He underwent a gastric bypass procedure in 1976 and, despite having lost 200 pounds since that time, is still morbidly obese. Physicians have told him that he likely has obstructive sleep apnea but a sleep study has not be performed and he does not use CPAP. He denies tobacco, alcohol or illicit drug use. Allergy history is limited to Tylenol. Current medications included digoxin, aspirin, insulin, glyburide, furosemide, allopurinol, atorvastatin, tamadol, pregabalin, docusate and hydrocodone. His family history is negative for Cardiopulmonary disease.

Initial physical exam revealed T 36C, RR 18, P 56, BP 145/69 and O2 Sat of 94% on 4L. He was alert but in mild respiratory distress, developing dyspnea with minimal exertion. Oral mucosa was dry and no JVD was noted. Auscultation revealed good air flow bilaterally with coarse rales at the bases. Cardiac exam revealed a regular bradycardia with a 1/6 systolic murmur heard best at the apex with radiation to the axilla; a loud P2 was also noted. Abdominal exam was normal with no organomegaly. 3+ edema was noted in his lower extremities.

Admission lab data revealed: WBC 12.6 (80.5%G), Hgb 10.7, Platelets 144, INR 1.2, D dimer 1.3, Na 138, K4.2, Cl 99, CO2 25, BUN 104, Cr 1.7, FeNA 1.45 (on Lasix),, Glucose 205, Ca 8.8, TP 7.9, Alb 2.6, TB 0.9, AP 91, AST 36, ALT 34; ionized CA and Mg were normal. His CK was 90, CK-MB 2.3, Troponin 0.01. Digoxin level was 0.5 and BNP was 840 (Cr 1.7). His UA was unremarkable and the TSH was mildly elevated at 6. ABGs revealed a pH of 7.37, pCO2 46, pO2 73, HCO3 26, O2 sat 93% on 4L; his A-a gradient was 133.3 (nl 20.75).

Admission EKG revealed sinus/junctional bradycardia with a few PVCs but no evidence of acute ischemia. A CXR showed a right basal opacity (increased from previous studies), interpreted as possible basilar pneumonia; mild pulmonary vascular prominence was noted as well as mild, stable cardiomegaly. A VQ scan suggested a low probability of pulmonary emboli, with changes correlating with the right basilar infiltrate.

The patient was admitted with presumed RLL Pneumonia, acute renal failure and possible superimposed CHF. Due to his bradycardia, the digoxin was discontinued. He was started on renally-dosed Levaquin, Lasix was withheld and gentle IV hydration was initiated. An echocardiogram was read as demonstrating normal systolic and diastolic function. Oxygen requirement was 4-6 L/min and both insulin and statin therapy were continued. The patient remained afebrile and normotensive and his WBC fell to normal levels. Continued dyspnea prompted a followup CXR with revealed a right pleural effusion; a thoracentesis revealed transudative fluid and resulted in both improved symptoms and diminished O2 requirement. The pleural fluid gram stain and culture were negative. (continued on page 5)

Despite the normal echocardiogram, management was shifted toward a probable diagnosis of CHF, with sodium restriction, diuretic therapy and graduated compression stockings. Cardiology was consulted due to the persistent bradycardia; they recommended augmentation of his thyroid supplementation which, unfortunely had no effect on his heart rate or symptoms. A repeat echocardiogram again revealed a normal LV ejection fraction but showed dilation of the RV and LA. With these findings and his lack of clinical improvement, Cardiology elected to proceed with electrophysiologic studies for evaluation of possible sick sinus syndrome; in the course of pacemaker evaluation, a right heart catheterization was performed which demonstrated marked elevation of the PA and PCW pressures; his cardiac output did not improve with pacing and he was thus not considered to be a pacemaker candidate. Following the procedure, the patient developed hypoxic respiratory failure and he was transferred to the CCU, where he was managed with dobutamine, diuresis, sildenafil, fluid restriction and biPAP for presumed OSA. A repeat right heart catheterization showed mildly depressed cardiac function with moderately elevated PCWP and a mean PA of 40 (down from 60 on the initial study) but with no significant response to oxygen.

DISCUSSION: We believe that this patient's most likely diagnosis is progressive right sided heart failure, which has gradually worsened over the past 6 months; the etiology is probably OSA/COPD with diastolic dysfunction, exacerbated by inadequate thyroid supplementation, inadequate diuresis, bradycardia and chronic anemia. An initial diagnosis of pneumonia, based on leukocytosis, CXR and echocardiogram reports, set the stage for inadequate management of his actual underlying condition, pointing toward the problem of physician bias in response to diagnostic reports; clearly, a series of echocardiogram reports were misleading. Worsening of his clinical condition during the hospitalization resulted from too much reliance on these studies and more definitive evaluation was delayed. The potential role of inadequate thyroid supplementation remains uncertain and the possibility of thiamine deficiency, secondary to his past gastric bypass, is under investigation; serum thiamine, RBC transketolase activity, lactate and pyruvate have been ordered to rule out Beriberi.

FROM THE JOURNALS

KYLE MOYLAN MD

Mitnick, S. et al, for the American College of Physicians Ethics and Human Rights Committee. *Family, caregivers, patients and physicians: ethical guidance to optimize relationships.* J Gen Int Med 2010

http://www.acponline.org/running_practice/ethics/issues/policy

This new position paper from the ACP, in collaboration with 10 other professional societies, provides ethical guidance to physicians for developing mutually supportive patient-physician-caregiver relationships. The role of family caregivers is reviewed along with the problems that they encounter. The recommendations will be helpful to internists who provide routine care for older adults and communicate with informal caregivers.

McMurray, JJ., *Clinical Practice. Systolic Heart Failure,* NEJM 2010, Jan 21; 362(3):228-238

A case-based review of a very common inpatient diagnosis. The NEJM website provides supplementary materials and a teaching Powerpoint slide set.

Mirbagheri, N et al., *How do patients age 85 and older fare with abdominal surgery?* J Am Geriatr Soc 2010; 58:104-108

This article adds to what we know about surgical outcomes in the oldest old; this Australian cohort ranged from age 85-97. Mortality rate after abdominal surgery was 17.3%; however, ASA score and premorbid residential status were more predictive of mortality than was age. 62.8% experienced at least one complication; the most common of these were pulmonary edema and atrial fibrillation. This paper will help us provide patients and their decision makers with information that they will need to make difficult decisions in acute illness.

Barkun, AN et al., *International consensus recommendations on the management of patients with nonvariceal upper gastrointestinal bleeding*, Annals Int Med 2010; 152:101-113

Just what the name implies, the recommendations include the role of risk stratification to determine which patients should undergo early endoscopy and need prolonged observation. Other topics include the utility of high dose PPI therapy, parenteral PPI therapy, patients who require continued NSAID use and patients who need ongoing antiplatelet therapy.

ID CORNER

William Salzer MD

CATHETER-RELATED URINARY TRACT INFECTIONS

This is a problem that I see frequently: when should you culture or treat urine culture results from Foley catheters? It is frequently mismanaged, inappropriate antibiotics are given and multiresistant organisms are selected. The IDSA has published new practice guidelines: Hooten, TM et al., *Diagnosis, prevention and treatment of catheter -associated urinary tract infection in adults. 2009 International practice guidelines from the Infectious Disease Society of America.* Clin Infect Dis 2010; 50:625-663

http://www.journals.uchicago.edu/doi/pdf/10.1086/650482

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MISSOURI HOSPITALIST CALENDAR

Hospital Medicine 2010, April 8-11, Washington, DC, information online at www.hospitalmedicine.org

48th Annual USC Weil Symposium on Critical Care & Emergency Medicine, April 11-15, Westin Mission Hills, Rancho Mirage, CA, 800-USC-1119 or register online at www.peopleware.net/0128 and select course #2580

Internal Medicine 2010, American College of Physicians, April 22-24, Toronto, register online: www.acponline.org

Care of the Hospitalized Patient 2010, Saturday, April 24, Eric P. Newman Education Center, Washington University Medical Center, St. Louis; register online at http://cme.wustle.edu **LOCAL**

American Geriatric Society, Annual Meeting, May 12-15, Orlando, information and registration via www.americangeriatrics.org

Hospitalist Conference, Missouri ACP Meeting, September, 2010; presentations from MU, UMKC, Washington University; details to follow **LOCAL**

Please direct all comments, ideas and newsletter contributions to the Editor:

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Please forward this newsletter to Hospitalists that you might know!