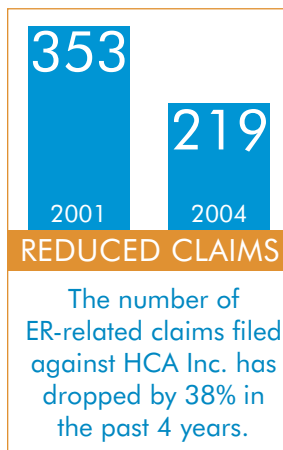


SAVING LIVES, REDUCING RISK

Dramatic Malpractice Reductions with the Emergency Medicine Risk Initiative!

The Emergency Medicine Risk Initiative is now in place in over 400 US hospitals, and several of our clients have experienced dramatic reductions in medical malpractice claims. HCA Inc., with approximately 190 hospitals, implemented the TSG risk initiative in late 2001 while closely monitoring malpractice cases. An article published in Business Insurance magazine on April 18, 2005 reports that HCA experienced a 38% reduction in EM malpractice claims in the three years following implementation of the program. (See Figure 1). To view the article visit www.thesullivangroup.com and click on "What's New."



The EM Risk Initiative is a system solution designed to improve patient safety and reduce medical errors. TSG has drawn heavily on lessons learned from the airline industry, an industry that has attained a remarkable safety record through a comprehensive and systematic approach to risk and safety. The TSG system involves the implementation of a standardized web-based risk and safety education, utilization of real-time risk management charting tools at the bedside, and a powerful web-based risk and safety audit tool. As our clients will attest, the resulting change in the practice of emergency medicine is remarkable.

For more information about the risk initiative or for copies of the Business Insurance article, contact us at info@thesullivangroup.com or call 1-866-MED-RISK. (866-633-7475).

IN THIS ISSUE

Emergency Medicine Malpractice Case Reporter	02
Risk and Safety Update	06

EMERGENCY MEDICINE MEDICAL MALPRACTICE CASE REPORTER

By Jim Hubler, MD JD FACEP FAAEM FCLM

Case Overview:

The following is a real case brought against an emergency physician and hospital for failure to diagnose and appropriately treat sepsis. (Note: Although names have been changed to protect the interest of the treating emergency physician and hospital, the facts are taken directly from the case).

Mrs. Yeater vs. Affiliated Hospital

The patient, a 59-year-old white male who presented with confusion and altered mental status, had been sent home from work earlier that day due to unusual behavior. Interestingly, the patient had not missed a day of work in over 10 years. Upon arrival home, he immediately went to bed where he stayed for almost 12 hours. His family had difficulty waking him and took him to the local emergency department. He voiced no complaints, except that he had a small burn to his right lower leg. His past medical history was unremarkable, and he had not seen a doctor in over 30 years.

The patient presented to triage and was designated to be non-urgent. The vital signs on arrival were: heart rate 120, blood pressure 72/38, respiratory rate 24, and temperature 100.1° F. He waited for 90 minutes to be seen by the emergency physician. The patient was examined by the emergency physician while

sitting in a wheelchair and was never placed in a patient gown. He rolled up his pant leg and showed the doctor a small 2cm burn to his right leg, which he stated had happened to him numerous times in the past while at work. The patient was asked whether he had any other symptoms to which he responded “no”.

Upon physical examination the treating emergency physician noted a small 2cm ulcerated burn to the right medial calf. It was cool to the touch with minimal erythema and no pus. He performed a cursory lung, heart, and abdominal examination, which apparently were normal.

During Mr. Yeater’s ED visit the family reported to the nurse that he was hallucinating and had to be assisted to the bathroom. He had diarrhea and later became incontinent of his bowel. Despite being informed of the hallucinations and documented low blood pressure, the emergency physician failed to perform a re-examination of the patient.

At the time of discharge the emergency physician noted that the patient’s blood pressure was 103/50, heart rate 105, and respiratory rate 18. He called the patient’s occupational health physician and arranged an appointment for 8am the next day. Mr. Yeater sat in the waiting room for another four hours while attempting to urinate for a work-required drug screen. He had no

further rechecks or documentation of his vital signs or mental status.

The patient presented to his occupational health appointment as directed, where he was noted to be febrile, hypotensive, and had an altered mental status. The occupational health physician immediately diagnosed him with sepsis. He was transferred by ambulance to the emergency department where he was diagnosed with sepsis. The treating emergency physician noticed a purpuric rash. He administered IV fluids, IV antibiotics, vasopressors, and intubated the patient. Despite the aggressive treatment Mr. Yeater expired in the intensive care unit later that day. The cause of death was determined to be streptococcal sepsis.

The Litigation

The family sued the emergency physician for:

- Failure to recognize the low blood pressure
- Failure to address the hallucinations
- Failure to address the incontinence of the bowel
- Failure to address the weakness and difficulty with ambulation
- Failure to perform any rechecks despite notification of the change in condition
- Failure to perform any laboratory testing
- Failure to administer IV antibiotics and IV fluids

The family sued the hospital for:

- Failure to treat or re-evaluate the patient's blood pressure
- Failure by the nurse to communicate to the doctor that Mr. Yeater had bowel

- incontinence and altered mental status
- Failure to go up the chain of command when the ED physician failed to re-evaluate the patient.

Case Discussion:

The History and Physical Examination

The first treating emergency physician failed to recognize that the initial blood pressure was abnormally low for an otherwise healthy adult male. He also failed to appreciate the patient's tachycardia despite lack of fever, dehydration, or complaints of pain. He neglected to perform any neurologic examination, despite the nurse informing him of the hallucinations. In addition, he did not re-evaluate the patient. Although he did arrange follow-up with the occupational health physician, it was not enough to overcome his negligence in the overall management of the patient while in the emergency department.

Failure to identify abnormal vital signs is a recurrent theme in sepsis malpractice cases and is covered in depth in The Sullivan Group's online CME programs - Core 1: Sepsis: Medical Error and Risk Reduction. The Sullivan Group currently provides a web-based audit for more than 400 EDs. There is high-risk data from more than 200,000 patients in the database. We review about two-thirds of those patients for abnormal vital sign information.

To date, we have analyzed 90,000 patients for 'very abnormal' vital signs. To create the denominator, we include patients with a: pulse rate over 110; respiratory rate over 24; systolic

Table 1: Vital Sign Analysis

Very Abnormal Vital Sign Analysis	Results
Number of patients in this analysis	89,895
Number of patients with a very abnormal vital sign	9,838 (11%)
Number of patients who had a repeat of the very abnormal vital sign	8,276
Number of patients who did not have a repeat of the very abnormal vital sign	1,562 (15.9%)



blood pressure over 180; diastolic blood pressure over 110; and a temperature in adults of over 104°F. The numerator equals the number of patients who had a single repeat of the abnormal vital sign before discharge.

As you can see, the data from more than 10% of US EDs, with an N of 90,000 patients reveals a remarkably high number of patient discharges without a repeat of a very abnormal vital sign.

This audit was set up conservatively so that there would be no question as to whether the data represented medical errors. It is our position that each discharge of an abnormal vital sign is a medical error, a risk to patient safety, and probably a breach in standards of emergency medical and nursing care.

With more than 100 million ED visits each year, consider the volume of patients with abnormal vital signs being discharged from EDs.

Pulse Rate

A critical analysis of all vital signs is important in evaluating patients with infectious diseases. Pulse rate analysis appears to be the most important vital sign in "failure to diagnose" sepsis cases. Similarly, pulse rate analysis appears to be the most important vital sign in "failure to diagnose" pulmonary embolism cases.

It is critical that medical and nursing practitioners understand the relationship between body temperature and pulse rate. Anything beyond the expected increase is abnormal and should result in the practitioner's consideration of more serious problems.

Pulse Rate in Adults

Studies on naturally occurring fever in adults have generally shown a modest relationship between pulse rate and temperature, with pulse rate increasing 11.7 to 19.8 beats/min for every 1°C (1.8°F) increase in body temperature. The largest of these previous studies was performed on prison inmates between 21 and 84 years of age. The results show an increase in pulse rate of 11.7

beats/min for every 1°C (1.8°F) increase in body temperature. It is essential to be aware of the expected pulse rate related to body temperature.

The Sullivan Group's vital signs data and the numerous cases presented in the Core 1 Curriculum coursework clearly establish a problem with identification and re-evaluation of abnormal vital signs.

Whatever the cause, when a patient presents with tachycardia the patient has had a significant change in physiology that requires further investigation. If the patient does not have an obvious cause for the increased rate, consider re-evaluation, observation, or admission.

Vital Sign Recommendations

1. Recognize that vital sign analysis is a significant problem in your ED if you have not specifically addressed the issue and organized a system solution to address the problem.
2. Recognize that the problem is a "systems issue," and that ED systems are not currently set up to properly manage this critical issue.
3. Be aware that each time emergency practitioners fail to re-evaluate an abnormal vital sign that is a medical error that may result in patient morbidity or mortality.
4. Establish systems in your ED to make this problem go away.
5. Note the following opportunities to make the problem go away:
 - a. If you have an electronic system, program the system to provide a warning when either the nurse or the physician is about to discharge a patient with an abnormal vital sign.
 - b. If you do not have an electronic system, utilize a templated medical record system that prompts both the nurse and the medical practitioner to re-evaluate vital signs.
 - c. If you are working with any kind of paper system (ie, template, dictation, handwriting) have the physician sign off, perhaps initial, the last set of vital signs before discharge.
 - d. Educate the entire staff regarding this vital sign issue.

- e. Audit this issue and stay with it until the problem is completely eliminated from your ED.

Documentation

Although the treating emergency physician claimed that he was aware of the discharge vital signs, they were not included in his initial dictation. Apparently, he dictated an addendum to the chart without noting it to be an addendum. It was easily discovered by the plaintiff's attorney that the addendum had not been made until after Mr. Yeater had returned the next day and the ED physician was made aware of his sepsis. Unfortunately, the ED physician deceptively noted in his deposition that he added the addendum at the end of his shift. The plaintiff's attorney subpoenaed the dictation records, which revealed that the dictation occurred the following day. Following this type of deceptive documentation, the jury will find it hard to believe the treating physician to be credible on other issues. Deceptive chart altering has a very powerful effect on the jury.

Although this documentation was deceptive, not all addendums should be construed as deceptive practice. Adding an addendum may actually help defend a malpractice action. Any addendum to a chart is high risk. In a case like this call counsel in order to determine if the change to the medical record will help or hurt you in any potential litigation. All addendums to the medical record should be dated and timed. Unless you document appropriately, altering a chart may lose the case before it has even started.

Communication

The treating emergency physician claimed he was unaware of the patient's inability to void for his urine sample for four hours. In addition, he claimed that the nurses failed to communicate that the patient had incontinence of the bowel. Finally, the ED nurse was aware that the patient was hallucinating, and she did notify the physician of this fact. While the emergency physician has a duty to re-evaluate the patient,

the ED nurse should have been a patient advocate and insisted that the physician address the problem and re-evaluate the patient. Knowing that the patient had several worrisome findings including low blood pressure, altered mental status, incontinence of the bowel, and delay in voiding, the nurse had a tremendous amount of information that should have been communicated to the physician. This being said, the burden remains on the ED physician to address these issues during his own detailed history and review of systems.

There was no chance for the defense attorney to take this case to trial after discovery of the deceptive dictation by the treating ED physician. The inadequate history and physical examination made it hard enough to defend this case without the fraudulent documentation. This case settled for \$850,000, giving closure to all parties involved.

Conclusion

Cases of misdiagnosed sepsis are all too common in our nation's emergency departments. As presented in this case as well as in numerous cases found in The Sullivan Group's online CME program, Core 1: Sepsis: Medical Error and Risk Reduction, frequently the signs and symptoms of sepsis go unrecognized. Healthcare providers encountering patients with fever, tachycardia, low blood pressure, or altered mental status should consider sepsis in their differential diagnosis. Laboratory testing may not always indicate sepsis - it may be a clinical diagnosis. Once the diagnosis of sepsis is made, it is imperative that the septic patient receives rapid IV fluid resuscitation and IV antibiotics. Those patients who do not respond to IV fluids will require vasopressors to maintain adequate perfusion. Low dose corticosteroids may be of some benefit to the septic patient and should be strongly considered by the ED physician.

TSG, together with nationally renowned stroke expert Dr. Fred Callahan, has created the New HOPE for Stroke Program to assist hospitals in developing stroke centers of excellence and in attaining stroke center certification. As Dr. Callahan puts it: "This is not about giving t-PA to stroke victims, it is about raising the bar for the entire spectrum of stroke care." TSG is looking for emergency physicians, allied health practitioners, and nurses interested in consulting opportunities in this important area. If you are interested contact Darlene Steinhart at 630-268-1188 or send your CV to info@thesullivangroup.com.

RISK AND SAFETY UPDATE

TSG has recently organized a physician and nurse advisory panel. Among other important activities, the panel meets each month to review all recent publications related to risk and safety in emergency medicine. Beginning with this issue, we include a "Risk & Safety Update" based upon our literature review. We would love to hear your feedback on the new addition.

1. Corticosteroid Use in Sepsis

A recent study published in the April 2005 issue of the Annals of Emergency Medicine evaluated the use of corticosteroids to decrease mortality in sepsis. The authors combined a Cochrane Review as well as Evidence Based Medicine Teaching Points. Data was extracted and evaluated from trials comparing corticosteroids versus a placebo in severe sepsis and septic shock. In a subgroup analysis of five trials that tested long course (>5 days) treatment with low dose corticosteroids (< 300 mg hydrocortisone per day or equivalent dose of methylprednisolone, betamethasone, or dexamethasone), they found a reduced relative risk for death at 28 days of 0.80 (95% CI 0.67 to 0.95; P= 0.01) in favor of the corticosteroids group. In another subset (4 trials, n= 425), corticosteroids reduced ICU mortality and increased reversal of shock when measured at 7 days and 28 days. There was no increased risk of gastroduodenal bleeding, superinfection, or hyperglycemia.

While the overall corticosteroid usage did not change the 28-day mortality in severe sepsis and septic shock, the subgroup treated with long courses of low dose corticosteroids had lower 28-day all-cause mortality and improved hemodynamics with reduced treatment times with vasopressors.

Conclusion

These Cochrane reviewers suggested that corticosteroids be given only to septic shock patients with evidence of adrenal insufficiency, as represented by random cortisol level of less than or equal to 414 nmol/L. Since it is unlikely that the cortisol levels will be readily available in the emergency department, it appears that it may be beneficial to initiate low dose corticosteroids (hydrocortisone 100 mg IV or the equivalent) for the treatment of suspected septic shock patients in the emergency department pending results of cortisol levels.

2. Risk of Adverse Outcomes in Septic Patients Soars with Antibiotic Delays

A recent study first published in ACEP News determined that the risk of death from sepsis increases by 6% to 10% with every hour that passes from the onset of septic shock until the start of effective antimicrobial therapy. This report stems from the review of more than 2600

consecutive cases at 15 intensive care units in five US and Canadian cities. The median emergency department time to treatment was 4.5 hours. In this study, 89% of patients receiving antibiotics within the first hour survived. For those patients who did not receive antibiotics until the second hour the survival rate dropped down to 84%, and the survival rate continued to drop by 7.5% every hour thereafter.

Conclusion

The authors and The Sullivan Group's panel of experts recommend starting antibiotics in suspected sepsis patients before a definitive source of infection is identified. All too frequently emergency physicians await the results of chest x-rays, urinalysis, or white blood cell count. In a patient with suspected sepsis, it is of paramount importance that antibiotic therapy be started promptly. In pneumonia patients, delaying parenteral antibiotics until the patient arrives on

the floor has been shown to significantly increase mortality. In those studies it was shown that prompt initiation of antibiotics was more important than the particular choice of antibiotic.

Bibliography:

Graham, T. Evidence-Based Emergency Medicine/Systematic Review Abstract, Do Corticosteroids Decrease Mortality in Sepsis? *Ann Emerg Med* 2005;45:330-332.

See also, Minneci PC, Deans KJ, Banks SM, et al, Meta-analysis: the effect of steroids on survival and shock during sepsis depends on the dose. *Ann of Intern Med.* 2004;141:47-56.

See also, Annane D, Bellissant E, et al, Corticosteroids for severe sepsis and septic shock: a systemic review and meta-analysis. *BMJ.* 2004; 329:480-488.

Sepsis Risk Soars with Antibiotic Delays, *ACEP News*, Vol. 24 No. 3 March 2005.

TSG IN THE NEWS



TSG has received press coverage in recent articles published in *The Wall Street Journal* on March 29th and in an article entitled "Fewer mistakes, and lawsuits" in the June 20th issue of *Crain's Chicago Business* magazine.

For more information click on the "What's New" hyperlink on the TSG homepage.

PHYSICIAN AND NURSING PROMPTCHARTS EM™

You think you are getting an electronic medical record (EMR) soon? Think again.

For more information
visit us at
www.thesullivangroup.com
or call us at
866-MedRisk
(866-633-7475).

The Sullivan Group provides risk management and patient safety on both electronic and paper template medical records. If you need to implement a risk and safety solution today – **PromptCharts EM™** allows you to do just that. PromptCharts EM™ is a paper-based medical documentation tool for physicians and nurses that provides real-time risk management at the bedside.

- Brings the ED team together to provide high quality emergency care
- Prompts physicians and nurses to address key clinical indicators
- Creates opportunities to make diagnoses and avoid medical errors
- Assists triage personnel to identify 'seconds to minutes' emergencies
- Results in an incomparable level of documentation

PromptChart EM™ clients find that improved documentation results in increased revenue.