

# Bouncebacks

## The Case of a 17-Year-Old Male with Fever and Headache

Bouncebacks, in which we recount scenarios of actual patients who were evaluated in and discharged from an emergency department or urgent care facility and then “bounced back” for further treatment, appears semimonthly in JUCM.

Case presentations on each patient, along with case-by-case risk management commentary by Gregory L. Henry, past president of The American College of Emergency Physicians, and discussions by other nationally recognized experts are detailed in the book *Bouncebacks! Emergency Department Cases: ED returns* (2006, Anadem Publishing, [www.anadem.com](http://www.anadem.com)).] Also available at [www.amazon.com](http://www.amazon.com) and [www.acep.org](http://www.acep.org).

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This article is the third in a series in which we will sequentially answer the following questions:

- I. What is the incidence of bouncebacks?
- II. What is the incidence of bounceback admissions?
- III. What is the incidence of deaths in patients recently discharged from the ED?
- IV. What percent of bouncebacks occur because of medical errors?
- V. How can we use this information to improve patient safety?

This month, we will discuss Question III: What is the incidence of deaths in patients recently discharged from the ED?

In May 2007, Sklar et al performed a very interesting study concerning deaths that occurred within seven days of ED discharge. A similar study had been done in

1994 by Kefer et al, looking at medical examiner cases.

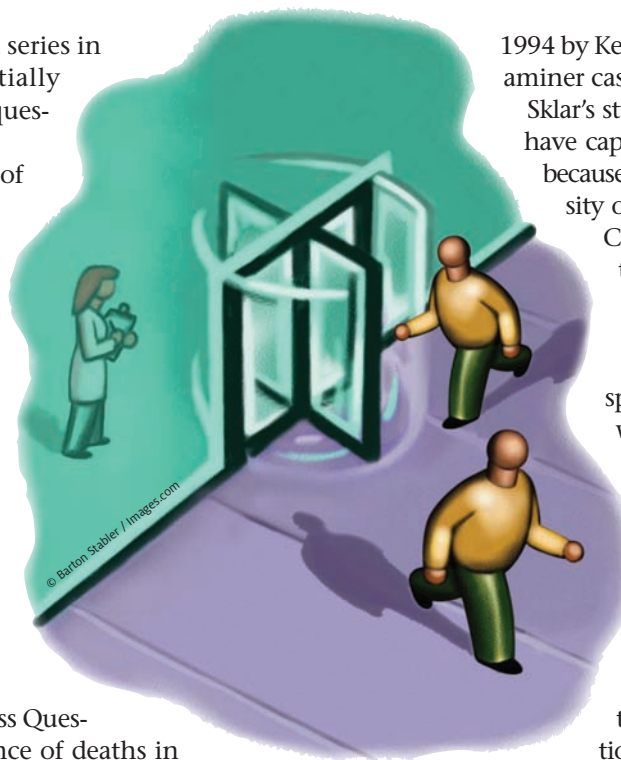
Sklar’s study, however, is more likely to have captured all unanticipated deaths because it was performed at the University of New Mexico Health Sciences Center, an urban tertiary care center and the University of New Mexico’s only medical school and Level I trauma center.

The Sklar study was a retrospective cohort of ED patients who were discharged to home.

Ten-year data review of 387,334 ED visits identified 117 patients who died within seven days of being discharged from the ED, equating to a death rate of 30/100,000.

Of the 117 patients, 50% (58 total patients) died of complications related to the initial visit; 60% of those 58 patients died due to a possible medical error (35 of the total 117 patients).

Frequent initial complaints included CNS symptoms (i.e., seizure, headache, dizziness), abdominal pain,



chest pain, shortness of breath, or weakness.

Common characteristics of the possible medical error cases include:

- atypical presentation of an unusual problem
- chronic disease with decompensation. (e.g., congestive heart failure)
- abnormal vital signs (tachycardia occurred in 25 of the 35 “possible error” cases)
- mental disability, psychiatric problems, or substance abuse, making it less likely the patient would return for worsening of symptoms

### Bringing it Home (to Your Home!)

Three percent of patients will return to the site of initial care within three days, 0.6% will bounce back and be admitted, 30 out of 100,000 will die within seven days, and nine out of 100,000 will die within seven days of ED discharge secondary to a possible medical error.

Looking at 2005, we can estimate that 34,500 patients representing 115 million ED visits died within seven days of their initial ED visit, including 10,350 unexpected deaths related to an initial ED visit in which a possible medical error occurred.

Though this study was performed in an emergency department and not an urgent care setting, the numbers are still scary.

(In some ways it may be even scarier, considering that 20% to 30% of ED patients are admitted, while nearly all urgent care patients are sent home.)

If you work 30 hours per week and see three patients per hour, you will see about 4,500 patients per year. Using the formula mentioned previously, 135 of these patients will bounce back each year, which is nearly one patient per shift; 24 to 40 of the 135 patients will bounce back because of a possible medical error.

At this rate, if your career spans 30 years, you will see a total of 135,000 patients. Using the ED ratios as a guide, we can deduce that during the course of your career you will send home 17 patients who will die within seven days of ED discharge due to a possible medical error.

This month’s case looks at a 17-year-old patient who presented with a complaint of fever and headache, as well as a slew of other problems.

What bad could possibly come to a healthy 17-year-old? And could knowledge of the Sklar study have helped this physician with his medical decision-making process?

## A 17-Year-Old Male with Fever and Headache

### Initial Visit

(Note: The following is the actual documentation of the providers, including punctuation and spelling errors.)

### CHIEF COMPLAINT (at 23:39): Fever

Time	Temp	Pulse	Resp
23:55	98.1	114	18
01:21	99.0		
Syst	Diast	O2 Sat	Pain
72	38	97%	5

### HISTORY OF PRESENT ILLNESS (at 00:19):

Pt c/o headache and neck being sore. He c/o weakness in the arms and legs “like I have no energy in them” as described by the pt. He states they were numb earlier. He c/o a sore throat since yesterday and fever. He took Nyquil for the symptoms and temp at 7 pm was 104. He c/o bilateral ear pain. He vomited once today. He denies ill contacts.

### PAST MEDICAL HISTORY/TRIAGE:

**Chief complaint/quote (per triage RN):** “fever headache legs and arms are numb” Pt. states he has had numbness in both arms and legs intermittently with stiff neck. Bilateral ear pain.

**Medication, common allergies:** None

**PMH:** Asthma

**PSH:** None

### EXAM (at 00:33)

**General:** Well-appearing; well-nourished; in no apparent distress.

**Head:** Normocephalic; atraumatic.

**Eyes:** PERLA; EOM intact.

**ENT:** TM’s normal; normal nose; no rhinorrhea; Throat is red, and mild exudates.. Moist mucus membranes.

**Neck:** Supple; nontender; no cervical lymphadenopathy. No meningeal signs.

**Cardiovascular:** Normal S1, S2; no murmurs, rubs, or gallops.

**Respiratory:** Normal chest excursion with respiration; breath sounds clear and equal bilaterally; no wheezes, rhonchi, or rales.

**Abdomen:** Normal bowel sounds; non-distended; nontender; no palpable organomegaly.

**Extremities:** Normal ROM in all four extremities; nontender to palpation; distal pulses are normal and equal.

**Skin:** Normal for age and race; warm; dry; good turgor; no apparent lesions or exudate.

**ORDERS/RESULTS (at 01:17):**

Rapid strep - Negative

**DIAGNOSIS (at 01:31):**

Unspecified viral infection

**DISPOSITION:**

Disposition - Discharged: The patient was discharged to Home ambulatory. Follow-up with primary physician if not improved in 3 days.

**Discussion of Documentation and Risk Management Issues at Initial Visit**

**Error 1**

**Error:** The history is really just a list of review of symptoms. Most of the symptoms listed (headache, fever, ear pain, vomiting, weakness) are just thrown into the HOPI, but not described further.

**Discussion:** Each symptom needs to be explored; for example, how long ago the headache started, acuity of onset, location, similarity to past headaches, sick contacts, any relationship to concerning symptoms such as rash, confusion, weight loss.

Just because the front desk decides the chief complaint is chest pain, for example, don't assume that all the other complaints are just associated symptoms (e.g., shortness of breath, diaphoresis, etc.)

**Teaching point:** The HOPI should be an *exploration* of the chief complaint(s), not a *re-listing* of the chief complaints.

**Error 2**

**Error:** Abnormal vital signs not addressed.

**Discussion:** Recheck abnormal vital signs and discuss further in a progress note. This patient had a blood pressure of 72/38 and was tachycardic—huge red flags waving for recognition.

When a test is done and there is an abnormal result, it needs to be explained.

**Teaching point:** They are called *vital* signs for a reason!

**Error 3**

**Error:** No neurologic exam.

**Discussion:** The physician note and the nurses' note both indicate a potentially major neurologic complaint: numb arms and legs.

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These are not typical symptoms for a healthy 17-year-old boy. It would be a huge stretch to attribute this to hyperventilation with a temp of 104 degrees and other complaints.

**Teaching point:** The physical exam needs to correlate with the history. If there are neuro complaints, there should be a neuro exam.

#### Error 4

**Error:** Poor medical decision-making process.

**Discussion:** While not every patient with a fever and headache needs a lumbar puncture, the responsibility is on the physician/provider to prove (with H&P, testing, or progress note) why they do not think the patient has meningitis.

This admittedly “guilty until proven innocent” approach is inherent in the nature of urgent care medicine.

Just as every young woman with lower abdominal pain is presumed to have an ectopic until proven otherwise, we need to look at the serious illnesses first, and work from there.

**Teaching point:** Address life-threatening etiologies of symptoms first and then rule them out with H&P and, possibly, further testing.

#### Error 5

**Error:** Inappropriate discharge program follow-up time.

**Discussion:** Some illnesses cannot be diagnosed with the patient’s current complaints.

For example, a patient with four hours of nausea may develop right lower quadrant pain six hours after leaving the urgent care center. At that point the diagnosis is easy—but only if the patient returns!

Our patient had multiple general symptoms (and some very abnormal vital signs). If he was discharged, a more reasonable follow-up time—return to the urgent care, primary care doctor, or to ED if not improved or worse—would be six to 12 hours.

With an unclear diagnosis and concerning symptoms, the patient and family should be informed that a definitive diagnosis has not been reached and that if symptoms worsen or do not improve, then they need further evaluation.

*“Address life-threatening etiologies of symptoms first and then rule them out with H&P and further testing.”*

**Teaching point:** The follow-up time needs to relate to the patient’s symptoms and correlate with the potential seriousness of the diagnosis.

#### 17-Year-Old Male with Fever and Headache Return Visit—12 Hours Later

#### CHIEF COMPLAINT: Unresponsive

**17:55 Triage note:** Pt. to ED per EMS after being found unresponsive on a couch

**18:00 Vital signs:** Temp 102.1, pulse 73, resp 20, BP 137/75, sat 97%

**18:03 History and physical exam:** Pt. obtunded, moaning. Has nuchal rigidity. Heart, lungs and abdomen normal. Skin—petechial rash on upper and lower extremities. Neuro: Does withdraw to pain, normal gag reflex, pupils react to light

**18:08 Treatment:** Rocephin 2 g IVBP, Decadron 10 mg IV

**18:48 Labs:** CBC 12.4, Hb 15.3, plt. 143, Lytes WNL except potassium 3.0, BUN/creat - 18/1.4

**18:59 Testing:** CT brain results; sinusitis, no mass

**19:14 LP:** 4cc cloudy return. WBC count 11,194 and gram negative diplococci on gram stain

**OUTCOME:** The patient did improve, was discharged to long-term rehab and was left with permanent neurological deficits.

#### Discussion of Visit and Risk Management Issues

In retrospect, it appears obvious that something was seriously wrong at the initial visit. However, we have an unfair advantage; we are reading about a patient in an article entitled Bouncebacks, and are not evaluating another 12 patients concurrently.

A healthy-looking 17-year-old boy with multiple viral-seeming symptoms could be easily discharged.

Consider this: How many patients with similar complaints do we see during cold and flu season?

This case is an excellent example of how to use the results of the Sklar study to improve patient safety. Abnormal vital signs was one of the four characteristics of “possible medical error” cases.



Our patient had two very abnormal vital signs—a pulse of 114 and a BP of 72/38—neither of which were rechecked before he was discharged, nor addressed in a progress note or further testing.

Recognition of these abnormalities could have resulted in patient reassessment before discharge. The provider could have performed a more complete history and explored an extended differential diagnosis for fever. He could have discussed, with the patient and family, the concern over serious etiologies of fever and headache, including meningitis, as well as the risks and benefits of lumbar puncture.

The provider could have also arranged a specific follow-up plan so if the patient did not improve or worsened, he would be seen quickly.

Finally, the provider could have documented the discussion and his concern in a progress note. As currently documented, the chart would be hard to defend in court.

### Discussion of Meningitis

The incidence of bacterial meningitis in the U.S. is between two and three per 100,000. *S pneumoniae* is the most common cause with the highest mortality rate (26% to 30%), while *N meningitidis* has the lowest mortality rate (3% to 10%).

A peripheral white blood cell count should not be used to rule out meningitis, as it is normal in about 1/3 of patients with meningitis. When our patient returned to the ED unresponsive, his WBC count was only 12.4 K/uL.

If meningitis is suspected, a lumbar puncture should be performed.

With a normal neurologic exam, a head CT is not required before performing a lumbar puncture. Indications for head CT before LP include head trauma, altered mental status, focal neurologic findings, papilledema, or inability to complete a fundoscopic or complete neurologic exam.

Antibiotics should be initiated when meningitis is suspected, ideally within 30 minutes of evaluation (another reason to *not* include WBC in the evaluation of headache). The antibiotics should not be delayed to perform a LP, as many pathogens can be detected using cerebrospinal fluid antigen testing.

Initial antibiotic coverage should be broad spectrum;

*“If meningitis is suspected, a lumbar puncture should be performed.”*

if the patient is being sent from the urgent care to the ED for LP, an IM dose of ceftriaxone (Rocephin) should be strongly considered.

### Summary

Our patient was clearly high risk; with several concerning symptoms (HA and fever, numbness) and abnormal vital signs. He had a cursory his-

tory, an incomplete exam, and was not appropriately diagnosed, likely resulting in permanent neurologic deficits.

Recognition of high risk features during the initial visit would likely have resulted in a better outcome. ■

### Suggested Readings

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