Communicating Critical Test Results, Part III

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General Introduction/Overview

Communication issues underlie many patient safety problems, and communication breakdowns are contributing factors in most malpractice suits. The following claim abstracts provide examples of communication breakdowns with respect to critical test results that can affect patient safety and result in liability claims for healthcare providers and/or organizations.

Healthcare risk management and patient safety literature contain numerous accounts of medical errors caused by communication failures and a high proportion of liability claims and malpractice lawsuits have been attributed, at least in part, to communication-related issues. Additionally, ineffective communication was the most frequently cited root cause of sentinel events reported to the Joint Commission between 1995 and 2004.

Common risk factors in these types of claims include:

• Failure or delay in ordering tests
• Failure or delay in detecting incorrect test results
• Failure or delay in reviewing test results
• Failure or delay in acting upon abnormal test results
• Failure to inform (provider, patient, primary care or attending physician) of existence of test results

And a trend that has recently resulted in some large claims:

• Failure to ensure that the patient has actually had the tests done that were ordered.

The above listed communication errors can happen in laboratory, radiology, and other diagnostic tests in inpatient, emergency and ambulatory settings.

Ordering tests, reporting results, reviewing results and acting on them are all steps in a complex medical care process. This process must be recorded in the medical record, both for quality of care needs and to provide a defense in the event of a claim.

In this issue of Risk Review, we conclude our three part series on this topic and review strategies for improving communication, with focus on reporting and acting upon critical lab test results, and action recommendations to improve communication among healthcare providers and between providers and patients.

The following Claim Reviews are based on actual professional liability claims, but the fact summaries do not reflect the events and proceedings exactly. Some facts have been modified to emphasize risk considerations. Each illustrates how inadequate communication of an abnormal test result can compromise quality care.

Case 1

This case demonstrates some common errors in critical test value communication:

• failure of lab staff to report the CTR to the responsible provider
• incorrect assumption by staff that the responsible provider is already aware of the result

Claim/Lawsuit Allegations

The Claimant alleges that defendants failed to inform him of results of

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abnormal blood culture performed in ED of community hospital. He also alleges failure to timely diagnose and treat endocarditis, which resulted in his suffering a stroke with resultant permanent injuries, including weakness on left side from his stroke.

Co-Defendants included the emergency group, the hospital, the treating emergency physician, hospital staff pathologist and the patient’s primary care physician, a family practitioner.

Case Summary

The 57 year old male patient presented to the local hospital ED with complaints of severe left lateral back pain, lethargy and fever. Chest x-ray was interpreted as showing retro-cardiac infiltrates and WBC was elevated (12.5). On physical exam, the ED physician found crackles and wheezes in the left lung. Blood cultures were drawn during the ED visit. A diagnosis of pneumonia was made. The patient was treated with antibiotic and discharged to home on a ten-day course of antibiotic. Written discharge instructions stated to take meds as prescribed and contact his family doctor if he had any of the following symptoms: trouble breathing, increased fever, chest pain or blood in cough; if not better in 2 days; not completely better in 10 days or if he experienced any new or severe symptoms.

Approximately 20 hours later, the pathology lab called the ED and advised the nurse that the preliminary blood cultures showed gram positive cocci in chains. The nurse brought this to the ED physician’s attention, and he called the patient soon after. There is a factual dispute, however, as to what happened during this call. The ED physician documented this call on a “Call Back Documentation” form. He wrote, “Called patient and updated him of results. Negative fever. Less pain. Negative cough. Negative nausea/vomiting. Negative lightheadedness. Will follow-up with family doctor. Return ED PRN.” He also noted, “positive blood culture: gram positive cocci in chains.” According to the patient, the ED physician simply asked him if he planned to call his PCP and the patient replied that he would.

The patient testified that the next day he called his primary doctor’s office, spoke with office personnel and told them he had been diagnosed with pneumonia at the Hospital ED. He did not make an appointment to see the doctor at that time, because (as he later testified), he was feeling better on the medication. The PCP did not call the patient, but initialied the message note.

The final pathology report of patient’s blood culture study revealed “viridians streptococcus group isolated both aerobic and anaerobic bottles.” This report automatically printed on the ED printer, according to the Pathology Lab director. (This report became available on the same day as patient’s call to his doctor’s office; also, there was another ED physician on duty that day.) The patient was not informed of the final test results, and the PCP did not see this final test result report.

Six weeks later, the patient went to his PCP with complaints of fatigue and body aches. At that time, the PCP obtained the prior lab results and learned that the patient’s blood culture tested positive for viridian strep, which can cause endocarditis. Also during this office visit, the patient first reported having had extensive periodontal work done in the month before the first ED visit. The PCP’s differential diagnosis after this visit included endocarditis, lung cancer and pneumonia.

When repeat blood cultures, drawn during that visit, came back positive for the same organism, the PCP admitted the patient to the hospital for IV antibiotic therapy. During this admission, a cardiac echo was interpreted as showing findings consistent with endocarditis with vegetation on the aortic valve. The patient was subsequently discharged to home after 4 days, with a treatment plan for continued IV antibiotics via a PICC line. Two days later, the patient suffered a stroke; he was initially brought to the community hospital, but then transferred to a tertiary hospital for further care.

The patient has permanent disability related to the stroke: Impaired neurological function of the left arm and leg; significantly impaired gait; and, he sometimes uses a cane to walk.

Case Outcome

The lawsuits were settled without trial, on behalf of the Hospital, Primary Care Physician, and ED Attending Physician.

Risk Issues

• Delay or failure to diagnose often arises when patients see several different healthcare providers who don’t communicate with each other, or when patient’s complaints aren’t taken seriously. In this case, blood cultures were ordered and begun while the patient was seen in ED, but was discharged home before results were available. The responsibility for notifying the patient or his PCP with critical test results was not clearly spelled out.

• The patient did not understand significance of his test result. To him, the information that he had a “positive blood culture” and was to follow-up with his family doctor did not mean he needed to see the doctor, but rather just that he should call the office and tell them of the ED visit.

• Final lab results were sent to the ED printer two days later; but not seen by the ordering ED physician. There was not a system in place that would ensure that an ordering ED physician actually reviewed results.

• Preliminary results were not communicated effectively to the patient’s PCP.

• PCP office staff did not follow up the patient’s phone call to try to obtain any lab test reports and bring them to the physician’s attention.

Case 2

The case shows communication errors in the transition of a patient from one facility to another.

Claimant is a 50 year old male who alleges failure by hospital 1 (H1) ED nursing staff to communicate preliminary blood test results to hospital 2 (H2), after he was transferred; he also alleges failure by H2 to follow up on test results (allegedly) provided to the attending physicians.

Co-Defendants included Hospital 1 (ED), Hospital 2 (ICU), H1 ED
Physician, 2 Neurosurgeons, 2 Infectious Disease specialists, Radiologist, Neuroradiologist, and nurses from both hospitals.

**Case Summary**

(Day 1) The patient initially went to the ED of a local hospital (H1) with complaints of fever, lower back pain, hallucinations. ED physician ordered back x-rays and urinalysis, which were unremarkable. He was diagnosed with strep throat/pharyngitis and back pain. The patient was discharged as stable, to home, with prescriptions for pain medication (penicillin and Darvocet), and instructed to follow up with his primary care physician (PCP).

(Day 3) The patient returned to the same ED, this time with complaints of continued fever and back pain, plus progressing neurological deficits (complete paralysis of lower extremities and partial paralysis of upper.) Blood was drawn for C & S studies, but results were not available when it was decided to transfer the patient to a tertiary care hospital (H2) for emergent MRI scan of the spine.

The patient was admitted to H2’s ICU, with differential diagnosis of epidural abscess and transverse myelitis. An MRI was done but no spinal abscess (infection) was seen. An Infectious Disease consulting physician started the patient on a high dose of IV antibiotic therapy, even though at the time, the physician was not aware of the positive blood culture results.

A factual dispute arose regarding the sending and receiving of the blood test results. ED Nurse (H1) alleged that she provided the report of positive blood culture study to the ICU (H2), by fax and phone. She noted the same in the nursing progress notes. However, the ICU nurse attending the patient (at H2) testified that she did not see a fax report nor take a phone call. There was no documentary evidence of the report in the medical record, and no notes confirming that anyone received a fax or took a phone call from the ED nurse. Moreover, the ED Nurse could not identify the person to whom she spoke or the number she had called. (Note: Some physician experts opined that, since the antibiotic given in the ICU was appropriate treatment for the patient's bacterial infection, whether or not the test report was received in the ICU was a moot point.)

(Day 5) The patient was transferred and admitted to a larger university-affiliated hospital (H3). Repeat MRI on day 2 of admission revealed evidence of a small epidural abscess and osteomyelitis. The patient remained at this hospital for 6 weeks, during which time he underwent a series of procedures, including drainage of the abscess, cervical decompression and stabilization. He was next transferred to a physical rehabilitation facility for about 6 weeks, and then discharged to home.

In the years since, the patient has suffered multiple medical complications related to his paralysis. He is permanently wheelchair bound and dependent for all activities.

**Case Outcome**

The lawsuit was settled without trial, on behalf of H2 and the ICU Nurse at H2. Suit was dismissed as to all other defendants.

**Risk Issues**

- The transferring hospital had a duty to ensure that an accurate record of the patient’s completed and pending tests were sent along with the patient at time of transfer. The attending physicians at the “receiving” hospital might have made a diagnosis of bacterial spinal infection sooner, in light of the lab result and clinical condition of the patient, had they been aware of the critical positive blood test results, in a timely manner, from the “transferring” hospital.

- Questions could be raised about whether all appropriate tests were ordered by the ED physician during the patient’s first ED visit.

**Case 3**

This case demonstrates the following errors in critical test value reporting:

- failure of radiology staff to report the value to the ordering physician
- failure of ED physician to communicate the result to the patient or his PCP

**Claim/Lawsuit Allegations**

Claimant alleges that all defendants failed to diagnose and inform him of a pelvic fracture, based on x-ray findings; that this failure resulted in a 7-month delay in getting treatment and much more extensive reconstructive surgery.

Co-Defendants were the Hospital, ED Physician, Primary Care Physician, Radiologist, and Physician Assistant (in ED), later dismissed.

**Case Summary**

The patient, a 58 year old man, was brought by ambulance to the ED of his local hospital after he had fallen out of his car and one of the tires rolled over his upper thighs. He complained of severe pain in his pelvic area and legs.

The patient was examined by a Physician Assistant (PA), who ordered X-rays of LS spine, pelvis, left hip and right lower leg. There was no radiologist present in the hospital at that time. (after 5 pm), so the PA looked at the films. She noted her impression: all the films appeared negative except for pelvic region, which indicated pubic symphysis dysaesthesia. She did not request an orthopedic consult or inform patient that a preliminary reading (before radiologist) of his x-rays showed a possible fracture of his pelvic bone. When she saw him, the patient was able to stand.

(Although it wasn’t established by the documentation, the PA testified that it would have been her practice to tell the ED physician what her impression was after reviewing films, and that she also would have shown the films to the ED physician.)

The PA turned the patient’s care over to the ED Physician when her shift ended at 11pm.

While in the ED most of the night, the patient received various pain medications. At 5am the next morning, the ED physician examined the patient, and concluded that he was pain-free and able to walk, and then discharged the patient to home. The patient was given instructions for contusion care, a prescription for pain medicine, and to follow-up with his PCP that day. The record did not reflect that the ED physician either informed the patient that he might have a fracture or referred the patient to an orthopedist.

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In the afternoon of the same day, the radiologist read the patient's pelvic x-ray as showing diastasis and minimal subluxation of symphysis pubis, with clinical correlation recommended. All other films were read as negative for fracture. Again, there was no documentation that this final reading was reported to that day's ED physician. Testimony revealed that the radiologist had issued a written report but, because he didn't follow the hospital's Radiology/ED “Follow-up Protocol” and complete the follow-up form correctly, the clerical staff in the ED was not alerted to call the patient with this diagnosis.

5 months later: The patient went to an orthopedist due to continuing pain. This physician ordered new x-rays and he diagnosed multiple pelvic fractures, dating from the initial accident, and disruption of the pelvic ring. This doctor informed the patient about the fractures and referred him to an orthopedic surgeon. 2 months later: The patient had reconstructive surgery to restore integrity of the pelvis. It was the surgeon's opinion that the procedure that was necessary after the 7-month delay was much more extensive than it would have been had the diagnosis been made immediately and the patient advised to seek further medical care.

Ultimately, the patient had an excellent result from the surgical repair. Currently he seems to be functioning well, with almost no residual disability, although he complains of constant back pain.

**Case Outcome**

The lawsuit was settled prior to trial, on behalf of the ED Physician, Radiologist and Hospital. The claim was dismissed without payment, as to the Primary Care Physician.

**Risk Issues**

- As noted above, the patient had been discharged several hours before the radiologist looked at the films. However, the Hospital and its ED failed to notify the patient and/or his PCP of the abnormal x-ray findings, once the report of the final reading (showing fracture) was issued.

- Even though the hospital had a policy and procedure for patient notification of test results, there seemed to be misunderstanding among the physicians (both Radiology and ED) about who had what responsibilities under it. By not complying with its own policy, the hospital put itself at risk for a claim of breach. Policies need to be clear as to responsibility.

- The radiologist issued a written report of his interpretation of the patient's films. There was, however, an error in the way he filled out a hospital form that went with his official report. Due to this error, the clerical staff in the ED were not alerted to make the follow-up contact with the patient, in accordance with the hospital policy.

- The radiologist failed to notify the ED physician on duty at the time he made his x-ray interpretation, although he knew or should have known that his diagnosis of fracture in the pelvic region was significant.

**Action Recommendations**

Based on the examples discussed above, taken from real claims, we have illustrated how negative consequences can occur as a result of ineffective communication of CTRs.

We suggest the following actions for hospitals:

- Hospitals need to develop policies which clearly define roles and responsibilities and timing for notifying the appropriate responsible provider (often the attending, or PCP). There also needs to be a back-up system, with clear identification of who get results when an ordering provider is not available, and when to use it.

- Pay attention to and develop special procedures for situations where delays typically occur:
  - post discharge (ex: transition from ED to home)
  - ambulatory areas (surgical suites, emergency department)
  - shift changes

- Agree on which specific tests require communication, and establish a shared policy for uniform communication for all types of test results (lab, radiology, pathology, etc.) to all recipients.

- Build in reliability: Create tracking systems to assure timely and reliable reporting of test results; require an acknowledgment of receipt of test results by the provider who can take action

- Provide ongoing education on procedures for communicating critical test results to all healthcare providers (physicians, nurses, lab personnel, all other clinical disciplines)

- Monitor effectiveness of systems (call schedules, feedback loops, response times, number of "lost" test results)

- Support infrastructure development. To the maximum extent possible, hospitals should adopt advanced communication technologies, and improve laboratory and other testing system capabilities.

The Massachusetts Coalition for the Prevention of Medical Errors has studied this issue extensively. The Coalition has developed a group of **Best Practice Recommendations** that hospitals should try to implement, to improve their ability to provide timely and reliable communication of CTRs. This information can be found at: The Coalition’s “Safe Practice Recommendations” was published in Feb. 2005 issue of the Joint Commission Journal of Quality and Patient Safety, Vol. 31, No. 2, http://www.jcrinc.com

Massachusetts Coalition for the Prevention of Medical Errors
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We suggest the following actions for Primary Care Physician Practices:

- Develop and implement systems that address critical value test results, to ensure that clinical information crucial to an accurate diagnosis and follow-up is received and handled by the office, and that it reaches the responsible physician quickly. This may involve a checklist for staff that identifies information that is considered urgent.

- Develop and implement an internal system for following up to ensure
that recommended tests or consults are actually completed as ordered.

- Develop a system which requires office staff to confirm, before patient documents (lab test results, consult reports, etc) are filed, that patients are promptly notified of abnormal test results, along with any recommended course of action.

- Document when the patient chooses not to follow up on recommended tests or referrals and that the patient has been advised of the consequences of not following up on testing recommendations or referrals.

Summary

The three cases discussed in this article were selected because they illustrate the importance of developing systems, policies and procedures for reviewing, reporting and acting on patients’ critical test results.

The process of test ordering, sample testing and results reporting involves many departments (nursing, ED, laboratory, radiology, etc.) and communication by many different personnel. The scope of this issue cuts across all clinical areas, inpatient as well as ambulatory settings.

By implementing the recommendations presented here, aimed at enhancing communication of CTRs, providers will improve patient safety and reduce risk in their organizations.

References:

Web-based patient safety resource and journal that showcases patient safety lessons drawn from actual cases of medical errors.

AHRQ's Patient Safety E-newsletter; http://www.ahrq.gov/qual/ptsflist.htm Patient safety news and information; features research findings, new product announcement, and update on initiatives in the safety and quality filed.

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Getting Results Reliably: Communicating and Acting on Test Results, 2006 by the Joint Commission on Accreditation of Healthcare Organizations; Joint Commission Resources, Inc.; ; Doris Hanna, Paula Griswold, Lucian Leape, David W. Bates

Kraser GD. Failure modes and effects analysis; building safety into everyday practice. (FMEA). Marblehead, Ma; HCPro, Inc. 2004.


Promotes change through development and implementation of a national strategy for health care quality measurement and reporting.

National Patient Safety Foundation
1120 MASS MoCA Way
North Adams, MA 01247
(413)633-8900 http://www.npsf.org/ Information, research and resources on professional, consumer, and systems issue related to patient safety. Online discussion forum about development of a safer health care system.

Patient Safety and Quality Healthcare http://www.psqh.com Provides broad range of safety and quality information for patients, clinicians and healthcare administrators, online and in print format.

American Society for Healthcare Risk Management
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