



Emergency Department Process of Care Closed Claims Study: Focus on Diagnosis Case Types

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The emergency department (ED) is a fast-paced, high-pressure environment where people enter for healthcare 24 hours a day. The complexity of the ED environment cannot be diminished as a major factor for increasing the risks of diagnostic error. The patients entering are previously unknown to the ED healthcare providers. Frequent distractions, shiftwork, a wide range of patient ailments, patients arriving for care at unpredictable times and volumes, and noisy alarms are other contributors to potential errors. Patients and their families are expecting a quick response to their ailments. Good communication with staff members, other units, and patients and their families is essential to achieve safe patient care. Effective clinical systems ensure test results are directed to the correct healthcare provider, including any updated or revised reports. ED patients depend on healthcare providers to alert them for abnormal findings, even after discharge.

In 2011, CRICO released their annual benchmarking report, which centered on risks in ED care. The report followed the ED process of care through each phase of attention and treatment provided. The significant findings from the report illustrated that 47 percent of ED cases derived from an allegation of failure to diagnose. The severity level for ED cases was high, with 30 percent involving the death of the patient. Of those types of diagnosis cases, clinical judgment errors were very important: 41 percent of the claims showed an issue related to an inadequate clinical assessment that led to a premature discharge, and 39 percent of the claims revealed an issue with the ordering of a test or an image. Additionally, in that same group of case types, a failure or delay occurred in the ED with a consult. Interprofessional communication was seen in

one out of three claims in the ED. This report highlighted that diagnostic error in the ED is an important area to understand better.

The purpose of this study is to determine what the malpractice claims submitted to The Doctors Company that are based in allegations of diagnostic error about the ED process of care and how these findings compare to the 2011 CRICO benchmarking report.

Methods

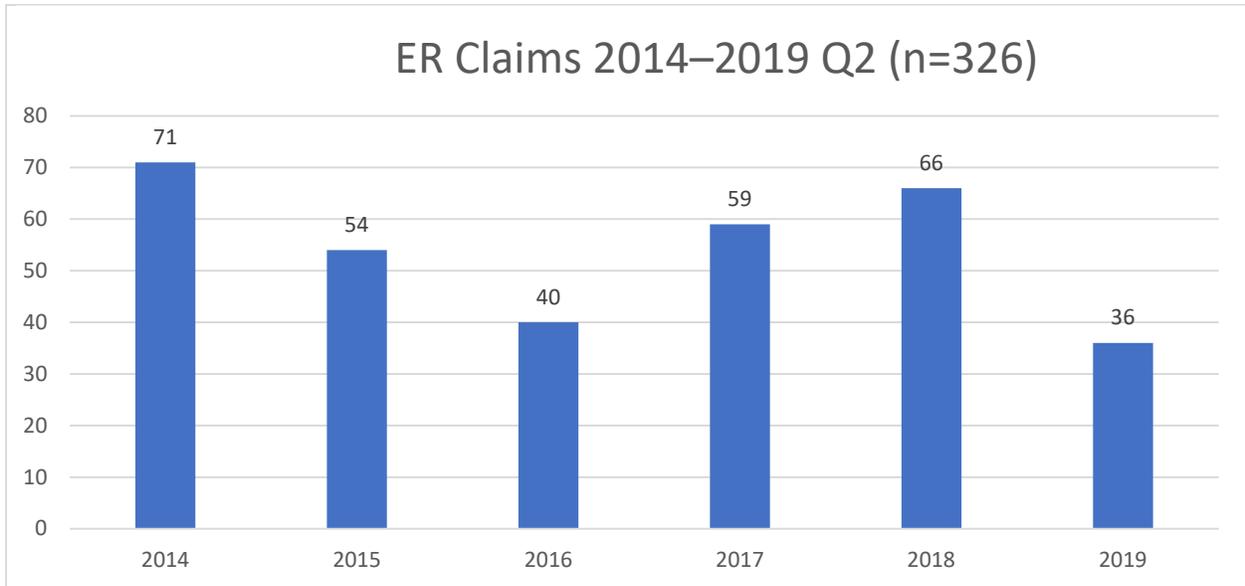
Closed claims that were completely coded dating from 2014 through the second quarter of 2019 were included in this study. Cases that had the location of ED were included. Low, medium, and high severity were selected using the National Association of Insurance Commissioners (NAIC) severity scale.

NAIC Injury Severity Scale	Descriptions
Low Severity	
1. Emotional only	
2. Temporary insignificant	Lacerations, contusions, minor scars, rash, no delay in recovery
Medium Severity	
3. Temporary minor	Infections, fractures, missed fractures, recovery delayed
4. Temporary major	Burns, surgical material left in patient, drug side effect, recovery delayed
5. Permanent minor	Loss of fingers, loss or damage to organs, non-disabling injuries
High Severity	
6. Permanent significant	Deafness, loss of limb, loss of eye, loss of one kidney or lung
7. Permanent major	Paraplegia, blindness, loss of two limbs, brain damage
8. Permanent grave	Quadriplegia, severe brain damage, lifelong care or fatal prognosis
9. Death	

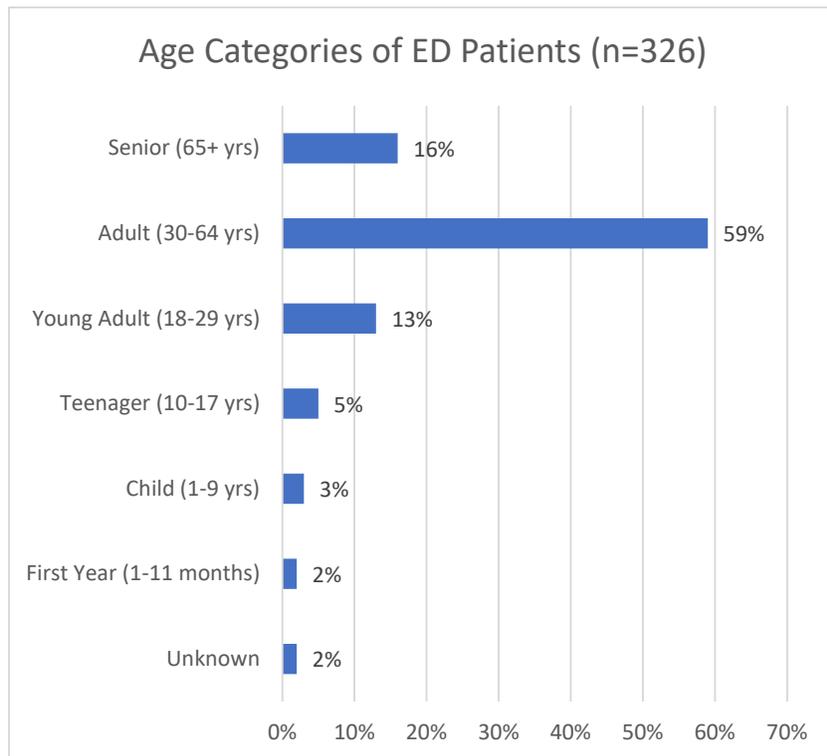
CRICO divides the ED process of care into an 11-step process that specifies 41 individual contributing factors (CF). Those CF were selected. Major injury, responsible specialty, final

Results

There was a total of 326 closed claims from 2014 to the second quarter of 2019.



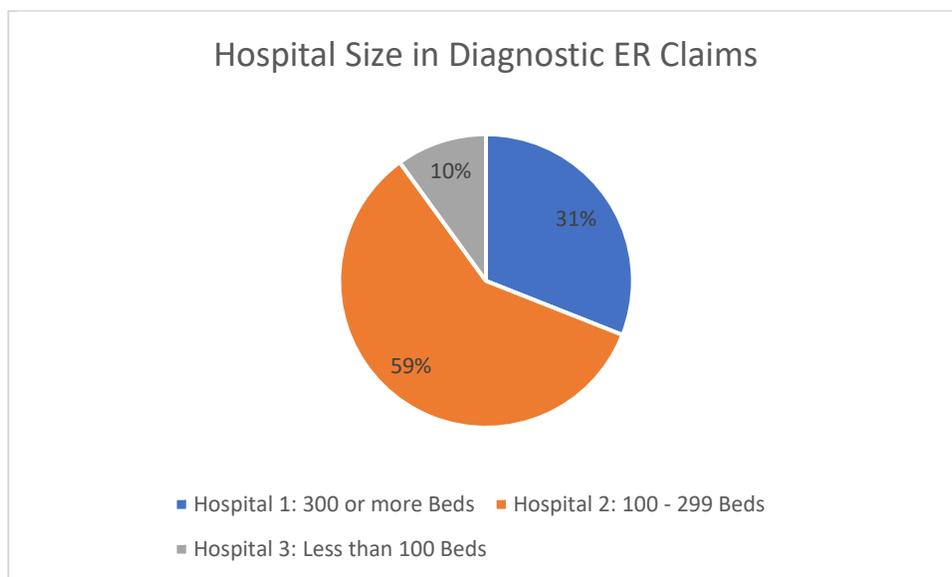
The sample was 49 percent female and 51 percent male. The most common age group was adult (30–64 years old) at 59 percent (n=191), followed by seniors (over 65 years old) at 16 percent (n=53), and young adults (18–29 years old) at 13 percent (n=43).



The major comorbidities of the ED patients studied were hypertension, smoking, diabetes, obesity, substance abuse, and cardiovascular disease. The severity was 60 percent high, 39 percent medium, and only 1 percent low; however, 40 percent of the high-severity injuries were deaths.

The Setting

The ED was the only location included in the study. Hospitals with a bed capacity of 100 to 299 beds composed the majority at 59 percent of the sample. There were 97 hospitals with more than 300 beds, 186 hospitals with 100 to 299 beds, and 32 hospitals with less than 100 beds.



Specialties Most Often Involved in ED Claims

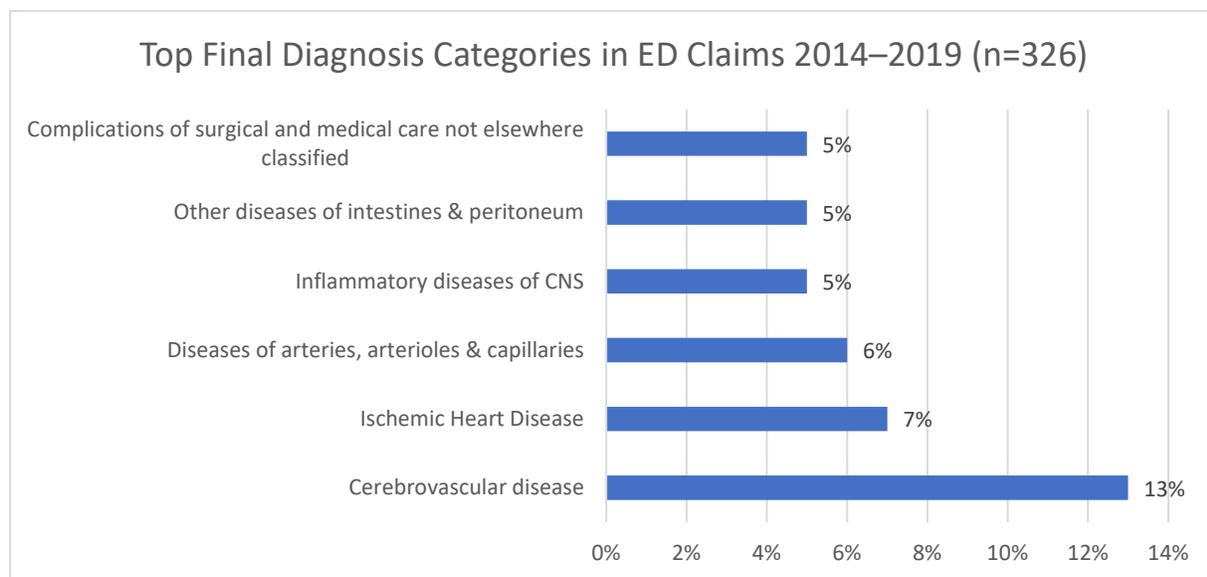
The two specialties facing the largest number of allegations of diagnostic error in the ED were radiologists and ED physicians. Other specialties were noted, but none represented above five percent of claims studied. Those specialties with paid indemnities included ED (69 percent), radiology (11 percent), neurology (4 percent), nursing (2 percent), orthopedic (2 percent), and a few others with 1 percent.

Final Diagnosis

When considering the final diagnosis with the claims, this coding would reflect what the diagnosis should have been. Among the individual final diagnoses, the most common were an acute myocardial infarction of an unspecified site (5 percent), a cerebral artery occlusion with an infarction (4 percent), and generalized sepsis (3 percent). Among claims with paid indemnities,

the top three final diagnoses were a cerebral artery occlusion with an infarction (7 percent), intraspinal abscess (5 percent), and an acute myocardial infarction of an unspecified site (4 percent).

However, the placement of the final diagnoses into ICD-9 categories clarified the assessment of missed, delayed, or wrong diagnoses in the ED, with the top category being cerebrovascular disease. This grouping included subarachnoid hemorrhages not associated with injuries and cerebral artery occlusions, with and without infarctions. The second most common set was ischemic heart disease, which would encapsulate acute myocardial infarctions of various locations, as well as coronary syndrome and coronary atherosclerosis. The diseases of arteries, arterioles, and capillaries encompassed various aneurysms with rupture/dissection and embolism or thrombosis of upper or lower limbs. Of note, all combined orthopedic injuries totaled 7 percent, but their categories differed in the ICD-9 coding.



The top categories for final diagnosis among the settled claims differed slightly. The highest classification remained cerebrovascular disease, but at a larger percentage (18 percent). The second grouping was inflammatory diseases of the central nervous system, which included in this study both intraspinal and intracranial abscesses (8 percent). With 6 percent of the settled claims, the categories of ischemic heart disease and diseases of arteries, arterioles, and capillaries completed the leading groupings of final diagnoses for claims with paid indemnities.

Findings from Focus on Diagnosis in the ED Process of Care

Step in ED Process of Care	Percent of Cases Showing Breakdowns in Care*
1. Patient notes problem and seeks care	4%
2. Initial assessment: History and physical exam	15%
3. Ongoing assessment: Monitoring of clinical status	32%
4. Ordering of diagnostic tests	53%
5. Performance of diagnostic tests	3%
6. Interpretation of diagnostic tests	18%
7. Transmittal of test results to (ED) provider	2%
8. Consult management	33%
9. Development of discharge plan	13%
10. Post-discharge follow-up (included pending test results)	5%
11. Patient adherence to plan	9%

*Cases may have breakdowns at various points in process

Triage and Ongoing Assessment Issues

Step 1: Patient notes problem and seeks care

Patients come into the ED wanting quick access and minimum waiting. In terms of patient safety, the goal is to achieve both. The 2011 CRICO benchmarking report noted 6 percent of their cases having this factor; similarly, only 4 percent of the claims in this study included this factor. Additionally, the [2017 National Hospital Ambulatory Medical Care Survey](#) showed that only slightly over 10 percent of the individuals that presented to the ED required immediate or emergent care.

Step 2: Initial assessment: History and physical exam

As the patient is receiving care in the ED, the patient is seen by several providers, such as a nurse, a physician, and possibly an x-ray technician or respiratory therapist. Each of these interactions offers an opportunity to take an accurate history from the patient, including any allergies. During this assessment period, the documentation of what is happening, being told, and seen is essential to assure that the entire ED team understands what is happening with the patient. This study showed an increase in breakdowns in care at step two, initial assessment, to

15 percent from the 11 percent shown in the 2011 CRICO benchmarking report. In this study, lack of or inadequate patient assessment with history and physical was a bigger problem than documentation issues.

Step 3: Ongoing assessment: Monitoring of clinical status

The clinical judgment that happens in the ED is essential in the diagnosis process. The main clinical judgment issues in this study were the failure to bring together all of the signs, symptoms, and test results, as well as over-relying on negative findings with continuing complaints or symptoms from the patient. Communication between providers was another factor that was seen in one out of five claims in this study, which may reflect the complexity of the multidisciplinary work in the ED. This study's results for step three were comparable to those of the 2011 CRICO benchmarking study, with 32 percent of the claims having issues, compared to 30 percent in the benchmarking study.

Tests and Consults

Step 4: Ordering of diagnostic tests

In this step, providers are working on establishing a diagnosis, ordering tests, and entering orders. Cognitive errors may be possible, as a patient could be having an atypical presentation, or the provider may be relying on the patient's previous diagnosis. A differential diagnosis may be overlooked. In this study the most common issue was the delay in ordering or the failure to order a diagnostic test. The most common tests not ordered in this study were CT scans (33 percent), MRIs (16 percent), and blood tests (10 percent). Many of the MRI issues included delays in ordering after the decision was made to admit the patient, such as a delay in ordering an MRI to rule out a possible stroke. Common patient assessment issues related to the failure to establish a differential diagnosis, as well as having a narrow diagnostic focus due to an atypical presentation. In this study, 53 percent of the claims had issues related to this step, compared to 65 percent in the CRICO benchmarking study.

Step 5: Performance of diagnostic tests

During this step, the clinical systems in the ED related to diagnostic tests are crucial. Any delays in the systems or malfunctions of equipment could impede the tests and delay the diagnosis. If the ED lacks specific supplies or if the test is mishandled, again the diagnosis is delayed, or the patient's condition can even be misdiagnosed. Alternately, the provider performing the test could

complete it incorrectly. In examining systems issues, there were delays or failures in scheduling or doing procedures. The most common procedures were MRI (36 percent), CT scans (27 percent), and blood tests (18 percent). The majority of MRIs involved epidural abscesses or were intended to rule out strokes and involved multiple specialties and transfers to other units. One issue seen was failure to make the test stat. rather than routine. The patient also failed to get reports from a culture after they were discharged and over-read of a radiology report post-discharge showing a variance. This study's findings related to breakdowns in care at step five were comparable to those from the 2011 CRICO benchmarking study, with 3 percent of the claims having issues related here compared to 5 percent in the CRICO benchmarking study.

Step 6: Interpretation of diagnostic tests

Various diagnostic tests are ordered and interpreted in the ED, from blood tests to EKGs to x-rays to CT scans and other tests. Additionally, multiple providers can be involved, including the ED physician, the radiologist, and other consultants. Both studies had similar findings, with 18 percent of claims submitted to The Doctors Company showing issues at step six, alongside 22 percent of the CRICO claims.

Step 7: Transmittal of test results to (ED) provider

Once the tests are completed, then the providers depend on their clinical systems to sufficiently function, such as having an electronic health record (EHR) send an alert when a new test result is available. However, it is through the failure of these systems that diagnoses are often delayed or missed. Often one interpretation of a diagnostic test is re-evaluated, leading to an updated diagnosis while the patient is in the ED, and this change may influence the clinical course for the patient—but if this new result is delayed or not even sent due to a breakdown in the system workflow or a failure in the notification system, then breakdowns in care can result. For example, a patient was discharged with a diagnosis of sprain after the initial negative x-ray for fracture. However, after the radiologist did an over-read, a fracture was noted, but the report was not sent to the ED, which was part of the workflow process. In this study, very few claims had these issues (2 percent), while 7 percent of the claims had this issue in the CRICO 2011 benchmarking study.

Step 8: Consult management

Patients often require additional evaluation in the ED by specialists. However, if the ED providers delay these consults or fail to call these specialties, the outcomes can become deadly. This study

showed an increase to 33 percent of the claims having an issue with either a delay or a failure with a consult in the ED compared with 26 percent in the 2011 CRICO benchmarking study. Overall, consult delays or failures occurred most often with neurology, orthopedics, and cardiology.

Preparation and Discharge to Home

Step 9: Development of discharge plan

Healthcare providers in the ED make a clinical decision to either admit or discharge the patient. The decision is based on the clinical status of the patient after an assessment is completed. If the choice to discharge is made, then discharge planning involves the education of the patient and their family. Discharge instructions would include medication side-effects, medication reconciliation, education on new medications including side-effects, self-care at home, what provider to call for problems, symptoms to be alert for, when the patient should call for help, and whom to call. Follow-up instructions would include when to return for the next appointment and whom to make an appointment with next. In the 2011 CRICO benchmarking study, 43 percent of the claims had these factors, but only 13 percent of the claims in this study had these factors. The one factor in this case that was common was the patient assessment issue of a premature discharge.

Step 10: Post-discharge follow-up (included pending test results)

The ED process does not always end when the patient is discharged, because often lab work or test results are still pending at the time of discharge. Facilities need to have in place processes that address laboratory and radiology studies that are reported after the patient's discharge from the ED. Patients should be aware of any tests that have not yet had results back and when they should expect to receive those results, as well as how they may access these results electronically, for example. However, the clinical system may lack appropriate safeguards to ascertain the provider is aware of any new findings. Another factor could be that the clinical system is functioning well, but the provider failed to document the test results, thus breaking the continuity of care. Five percent of the claims in this study included factors included in this step, compared with nine percent from the 2011 CRICO benchmarking study.

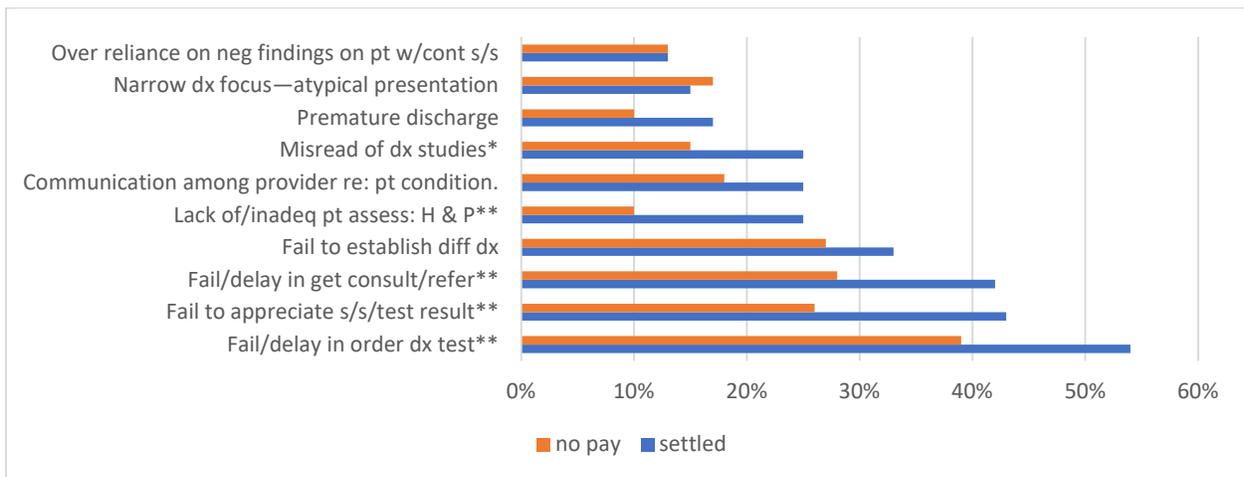
Step 11: Patient adherence to plan

Patients need to be involved in their care as well, such as by following up with their appointments and calls to their physicians after ED discharge. They also need to follow the plan of care. However, from previous research it is understood that lack of insurance, low health literacy, lack of transportation, dissatisfaction with care, and other factors can influence adherence. Nine percent of claims involved factors of nonadherence with follow-up calls and with treatment regimen, compared with 5 percent in the CRICO benchmarking study.

Significant Contributing Factors During Diagnosis in the ED Process of Care

Further examination showed ten individual contributing factors that were present in over 10 percent of the claims for both claims with an indemnity payment and claims without any indemnity. The chart below illustrates the findings from the study.

Further analysis was done using chi-square to determine if there was any statistical significance between those two groups. Significant differences were found in over half of the contributing factors, indicating that those claims with an indemnity paid had significantly higher percentages of claims with the contributing factor than those with no indemnity paid.

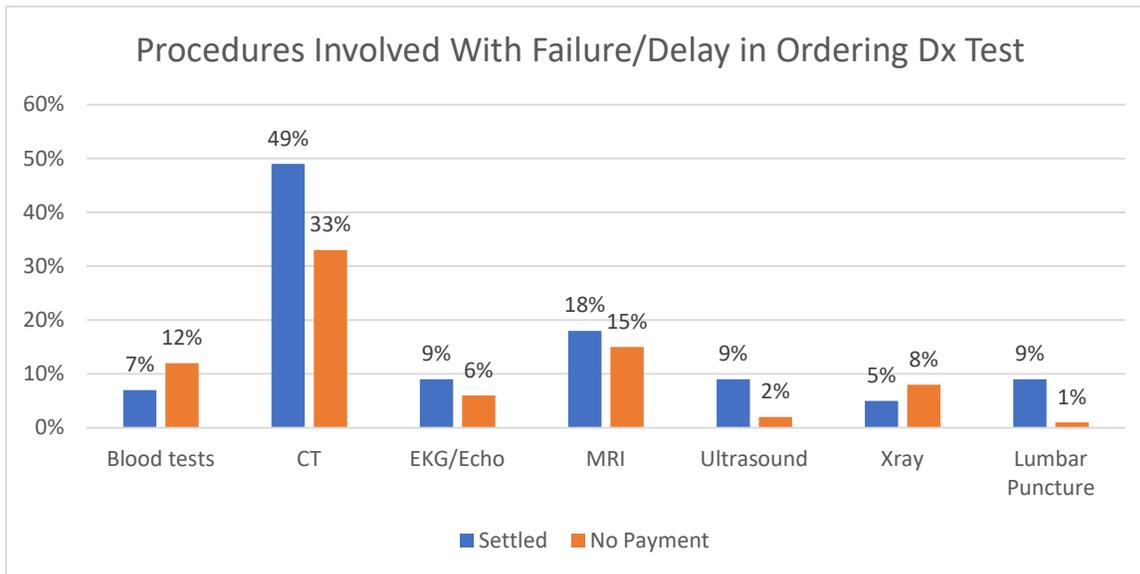


*Significant at .05 **Significant at < .001

Failure or Delay in Ordering Diagnostic Test

The contributing factor of the failure or delay in ordering a diagnostic test was the most common factor found in claims, and more common in claims with paid indemnities. CT scans were the diagnostic test most frequently not ordered or delayed among all claims, followed by MRIs. All

procedures, with the exception of x-rays and blood tests, appeared with greater frequency in settled claims than in those with no indemnity paid. CT scans, lumbar punctures, and ultrasounds showed the largest differences between their rates of appearance in claims with indemnity vs. those with no indemnity.



Case Example

A morbidly obese male (BMI over 50) presented to the ED with a fever (patient said his temperature was 103°F at home), headache, and back stiffness. The patient had diabetes and chronic back pain from an earlier injury. The ED doctor did a lumbar puncture, but she did not order any imaging or blood cultures. The patient did have elevated serum WBC. The diagnosis made by the ED doctor was viral meningitis. The patient was instructed to follow up with his family physician.

Three days later, the patient returned to the ED with complaints of back pain with radiation to the abdomen, as well as constipation, which the ED physician attributed to the hydrocodone prescribed at the first ED visit. The patient had taken all the previously prescribed hydrocodone. During the examination, the ED physician documented no midline tenderness in spine. The blood tests showed the WBC had decreased since the previous visit, but the bands were elevated. The patient did have a fever. The patient was diagnosed with a flare-up of chronic back pain. The ED physician ordered muscle relaxants and Percocet and discharged the patient.

Five days later, the patient returned to the ED with complaints of no feeling in his legs, inability to move his legs, and difficulty urinating. He was examined by another ED physician, who suspected cauda equina syndrome and ordered a stat MRI. The MRI was completed, although limited by the patient's habitus, which required a repeat MRI three to four hours later, which then showed an epidural abscess at T7–8 with cord compression. The patient was taken immediately into the operating room for a laminectomy and drainage of the abscess. He has incomplete paralysis of the legs and a neurogenic bladder. The patient uses a wheelchair.

The experts in this case were critical of the failure to note the symptoms of a spinal epidural abscess (SEA). As one expert noted, there are stages associated with SEA, and the stage the patient has reached at the time of diagnosis will determine the patient's prognosis. Stage 1 SEA is the spinal ache where the lesion is located, and the patient had likely reached this stage upon his first ED visit. Stage 2 SEA has back pain that includes radiation, and this patient reported this during his second presentation to the ED. Stage 3 SEA has the onset of neurological deficits, of which the patient showed evidence on his last visit. Stage 4 is paralysis.

With SEA, the patient should end up with neurological function equal to or better than just before surgery. Additionally, if the patient is at Stage 4 (paralyzed) and they have a laminectomy within 24 to 36 hours of onset, they are more likely to go to a Stage 3 (weakness).

Failure to Appreciate Signs, Symptoms, and Test Results

Another significant difference between settled claims and other claims involved courses of care showing failure to appreciate signs, symptoms, and test results during the ongoing assessment.

Case Example

An obese female in her late forties came into the ED over the weekend complaining of severe shoulder pain (10/10). She was seen by the ED physician, who noted that the shoulder was warm to hot to touch. The patient did not have a fever. Attempts to aspirate fluid from the glenohumeral joint and the subacromial

bursa resulted in no return of fluid. The ED doctor did order an MRI, which was done. However, prior to the results of the scan being returned, the ED physician diagnosed the patient with a rotator cuff injury, provided her with information on the injury, and discharged her.

Later that day, the ED physician said he had spoken to the radiologist, who said the MRI on the patient was unremarkable. The ED physician did not review the MRI scan or report. The ED physician called the patient later that evening and told the patient the MRI was normal and to follow up with an orthopedic doctor in a few days.

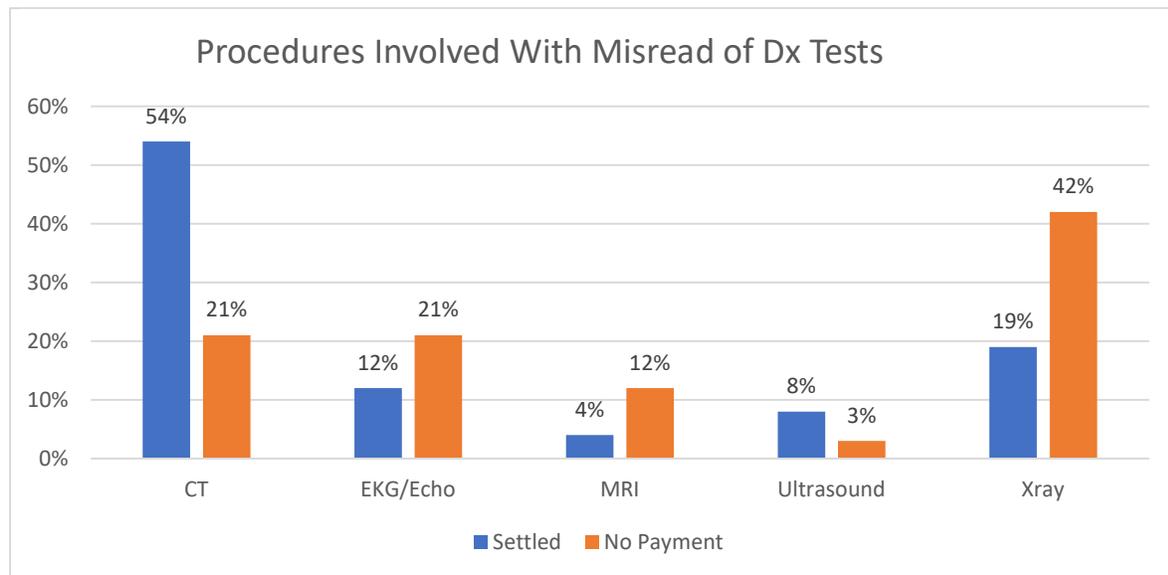
A few hours later, the radiologist dictated her report as subcutaneous edema overlying the shoulder, suggesting cellulitis. The radiologist also noted a possible abscess at acromioclavicular joint. The following day, the patient returned with low back pain and shoulder pain that had improved some. The same ED physician documented that the shoulder was swollen, warm, and red, but it was also noted that the day before, shoulder imaging had not shown anything. No other labs or imaging were ordered. No one read the MRI result from the prior evening. The diagnosis was a back spasm, and the patient was given a prescription for Flexeril.

The next morning, the patient was taken by ambulance to a different hospital. Her temperature was 104°F. She was admitted to the ICU. Her diagnosis was sepsis and shoulder infection. She had surgery and remained in the hospital for 10 days, followed by a six-week course of IV antibiotics at home through a PICC line. She has returned to her baseline health.

The expert reviewers in this claim could not support the standard of care. This patient clearly had signs of an infection on the MRI when she came into the ED. However, even given an accurate understanding of causation, it is likely the treatment would not have changed. But the failure of the ED physician to read the MRI results and communicate this did delay treatment.

Misinterpretation of Diagnostic Test

Among settled claims, the most frequently misinterpreted test was a CT (54 percent), followed by 19 percent of x-rays. X-rays were also the most commonly misinterpreted tests among those claims without payment, followed by both CTs and EKGs/echocardiograms. Misinterpretations were most often from radiologists and ED physicians.



Case Example

An eighteen-year-old, short in stature (5'2", 100 lbs.), came into the ED with worsening neck pain and body weakness. The patient said she had been having neck and upper back pain for months. While in the ED, the patient lost the ability to move her extremities and had no response to pain. She was anxious. The differential diagnosis was Guillain-Barre Syndrome (GBS) vs. meningitis vs. C-spine injury (skateboarder, no recent injury) vs. psychiatric illness. Antibiotics, a chest x-ray, lumbar puncture (LP), CT of C-spine/head, and toxicology screen were done. The patient was afebrile, with blood pressure of 145/79. The CT and CXR were read as negative. The patient had no feeling from the chest down, but the patient was not having any respiratory distress. Toxicology was negative. Four hours into ED admission, the patient had no patella reflexes, no clonus/rigidity, and no feeling below the neck. A urinary catheter was placed.

Five hours into admission, the neurologist called and provided an update with treatment plan for LP, nonemergent MRI, and CT of T-spine and L-spine. The plan was discussed with the patient and her mother (with help from an interpreter). The patient was sent to the ICU for closer monitoring. The CT and LP came back negative. The MRI was done nine hours after admission to the ED and showed a C3–5 epidural mass vs. infection and questionable bleeding.

A neurosurgeon consult was done. The patient was quickly taken to the OR for a cervical laminectomy and hematoma evacuation. Postoperatively, the patient showed minimal change. The patient remains quadriplegic and is ventilator-dependent at night.

The CT was misread initially, and although other physicians relied on the radiologist's review of the CT, the patient continued to worsen. An MRI needed to be ordered, because there is a three-hour window of time to decompress before permanent damage.

Delay or Failure in Obtaining a Consult or Referral

The delays or failures in consults occurred most often with:

- Neurology: Involving the diagnosis of acute ischemic strokes and the use (failure to start) of tPA.
- Neurology: In the diagnosis or further management of hemorrhagic strokes.
- Cardiology: Entailing the diagnosing of myocardial infarctions.
- Ophthalmology: Encompassing the failure or delay in the diagnosis of papilledema, increased ocular pressure, or the need for a closer eye exam, resulting in blindness.
- Infectious Disease: For delay in diagnosis of sepsis.
- General Surgery: For delay in diagnosis of ischemic bowel.

Case Example

At home around 11 PM, a female patient in her mid-fifties woke up with difficulty breathing, then fell as she attempted to stand. The EMS personnel noted that the patient had slurred speech, left-sided facial droop, and left arm drift, and they had alerted the

ED to a stroke alert. In the ED, she was seen by a PA. The patient had slurred speech and had an NIH score of four (minor stroke). Her symptoms were fluctuating. A CT of the patient's head was read as no acute bleed. There was an improvement in speech, and her face droop and arm drift were described as mild. The ED physician did not consult any neurologist, thinking the diagnosis was a TIA and that the patient was outside the three-hour window for tPA.

The patient was admitted to the hospital at 2:30 AM with a differential diagnosis of TIA vs. CVA. Thirty minutes later, the nurse noted that the patient's neurological signs had worsened, and her NIH score was 11 (moderate stroke). The patient was seen by a hospitalist, who ordered a neurology consult, MRI, and MRA. The patient was seen by a neurologist about six hours later. The neurologist noted the patient had left side weakness, decreased sensory perception, and facial drooping. The MRI was ordered stat. and an aspirin was also given. The MRI showed a moderate, large acute infarct in the right middle cerebral artery (MCA). The MRA indicated that there was no blood flow in the right internal carotid (ICA), and the MCA was consistent with possible dissection. The patient was evaluated by a neurosurgeon, but the patient was not a surgical candidate at that time. She had slurred speech, total left hemiplegia, and high blood pressure. She was transferred to ICU for monitoring and blood pressure management. Later in the day, a CT angiogram showed a bilateral ICA dissection. The decision was made to transfer the patient to a higher level of care. On transfer, the patient's NIH score was 19 (moderate to severe stroke). At the new facility, it was determined that medical management was the best option. The patient was discharged to a stroke rehabilitation facility for six months. She has a paralyzed left arm, walks with a left leg brace and cane, and had a memory deficit.

There were plaintiff and defense experts that were not supportive in this claim. There were several factors involved in this claim, but the ED physician failed to consult a neurologist early. The ED physician did not realize that the fluctuating neurological symptoms were actually an evolving stroke, and that tPA could have been started. Additionally, the radiologist failed to detect an abnormal dense right

MCA sign on the initial CT. This abnormality may have been detected by the consulting neurologist. A few defense experts were supportive of the ED physician on causation. They concluded that the outcome would have been the same, since the patient required an emergent clot removal, which could not have been accomplished at the first hospital. A transfer would have been required, and by that time the damage would have been done.

Lack of or Inadequate Patient Assessment: History and Physical

The importance of having a succinct history and physical from the patient and weaving that knowledge into the diagnosis and care plan for the patient showed significance in this study. Failing to have the complete history, or even not accounting for it, can prove deadly for patients.

Case Example

A male in his mid-sixties came into the ED after a motorcycle accident in which the patient was thrown from the motorcycle. The patient was wearing a helmet. He had no loss of consciousness but some mild abrasions on his hand, elbow, knee, nose, and chin. The patient had a history of stroke with some residual leg weakness. He had also had an aortic valve replacement. The patient was on Coumadin, and the ED doctor documented this in the record. The ED doctor did suture a minor laceration on the patient's hand. X-rays were negative for any fractures. The patient was alert, oriented, and had no neurological deficits. The patient was discharged with instructions to see his family doctor in a week to remove the stitches. He was found dead the next day by his family. An autopsy found that he had experienced a subdural hematoma.

The expert reviewers in this claim were critical of the ED physician. Given the patient's history of being on Coumadin and having recent head trauma, a CT of the patient's head should have been done prior to any discharge from the ED. Additionally, there were no head injury instructions given as part of the discharge instructions. Both of these failures contributed to the death of this patient.

Takeaways

- The misinterpretation of diagnostic tests, especially those involving imaging (CT scans and x-rays), was significantly more prevalent in claims that were settled than in claims that resulted in no payment. In these cases, especially with CT scans, cognitive errors may be an influence that can be mitigated by investigating computer aides for diagnostic assistance. Consider decision support systems to help overcome cognitive bias. Some of the current technology is relatively rudimentary, but it will evolve.
- Although not occurring at significantly different rates of frequency between settled claims and those not settled, close to 13 percent of the claims studied did have the factor of premature discharge. A recent study found that 20 percent of Medicare patients died within seven days of ED discharge with the diagnoses of malaise/fatigue, altered mental status, and/or dyspnea. This study included 8 percent of similar diagnoses resulting in medium-high severity outcomes. ED physicians should consider the ramifications of these diagnoses in patients among the older population when considering possible discharge.
- Findings from other studies have found similar final diagnoses that were missed or delayed, including fractures, as found in this study.
- Although not found to be a factor in this study, the importance of good communication with handoffs is essential. The Joint Commission has made this a National Patient Safety Goal. The Emergency Medicine Patient Safety Foundation recommends a standardized method. The five key steps for ED handoff are to:
 - *Record* on a sign-out form the patient and essential data, updates, and pending items.
 - *Review* the sign-out form and computer data at computer with minimal distractions. This is done to assure shared understanding.
 - *Round* at the bedside together to meet the patient and get “eyes on the patient”
 - *Relay* to the team the sign-out. This step allows for nurse input, increasing team understanding.
 - *Receive* feedback on clinical outcome with the sign-out tool. Additionally, this form can be used in QA.

Limitations

This study is not representative of all ED physicians and their practices. This study relied on closed medical malpractice claims from one large national malpractice carrier and also does not account for other malpractice claims in the United States. Only claims that were a diagnostic type of case were included. Studies of other types of claims, such as those alleging delay in treatment, improper performance of medical procedure, or medicine errors, may have different findings. Additionally, all injured patients do not seek legal action, and those patients' experiences are not captured in this study.

Conclusion

Findings from this study may enable providers and administrators to develop interventions to decrease the risks of error.

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