



ED-to-ED Transfers: Optimizing Patient Safety

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These 3 case scenarios illustrate some of the issues that arise during ED-to-ED transfers, and opportunities for patient safety improvement.

Emergency Department (ED)-to-ED transfers are a reality of practice in emergency medicine, and they can certainly present a tall order for ensuring patient safety. Challenges abound in getting the right patient to the right place at the right time by the right transportation method.¹ A critically ill patient becomes a metaphorical baton to be passed on, requiring the best care along the way—even when the patient is not completely aware of the reasons for the transfer of care. For some EDs, ED-to-ED transfers have become a common daily occurrence. The realities of freestanding EDs, hospital overcrowding, and subspecialty coverage gaps create

challenges in direct hospital admission, necessitating a second ED stop before the patient reaches an appropriate destination and provider for definitive care.

The transfer of a patient is much more complex than arranging and carrying out an ambulance ride across town. If thought of as a process, with pre-transfer planning on the sending end, the transfer itself, and post-transfer assurance of care continuity on the receiving end, the quality of care and patient safety can be elevated. Emergency department-to-ED transfers require careful attention to communication, with important hand-offs between the sending facility, the ambulance personnel, and the

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receiving facility. To lead the discussion around the perils of interhospital ED-to-ED transfers, the following case reports illustrate some of the challenges encountered.

Case Scenarios

Case 1

A 58-year-old man presented to a free-standing ED at 10:30 AM with an approximate 1-hour history of severe epigastric pain. He was in significant distress and complained of nausea, noting that he had never experienced anything similar in the past. His remote medical history was significant for high blood pressure (BP), and he had no prior abdominal surgeries. The patient admitted to significant near daily alcohol use, but he denied tobacco use. Vital signs at presentation were: heart rate (HR), 41 beats/min; respiratory rate (RR), 18 breaths/min; BP, 205/110 mm Hg; and temperature (T), 98.4°F. Oxygen saturation was 97% on room air. On physical examination, the patient's abdomen was distended but nontender to palpation; distal pulses were symmetrical and equal in the upper and lower extremities.

The nursing staff obtained intravenous (IV) access, and blood samples were drawn. Parenteral pain control and antiemetics were administered while a computed tomography (CT) scan of the abdomen and pelvis with contrast was emergently in progress. Meanwhile, the laboratory test results included the following: lactate, 3.8 mmol/L; lipase 42 U/L; carbon monoxide, 14 mmol/L; white blood cell count (WBC), $12 \times 10^9/L$ without bandemia; serum creatinine, 1.0 mg/dL; liver function tests with a mild elevation of transaminases; and normal coagulation studies.

After reviewing the CT scan, the radiologist called to report a hyperdensity in the lumen of the superior mesenteric artery, which might represent a subsegmental dissection or a partial occlusion or plaque, with no radiographic evidence of bowel ischemia. Vascular surgery service was consulted, and the decision to start

IV heparin was agreed upon. The vascular surgeon requested that a mesenteric peripheral vascular laboratory examination (PVL) be arranged on arrival at the hospital ED, and an ED-to-ED transfer to the hospital was arranged. The case was discussed with the receiving day shift emergency physician (EP), who planned to order the mesenteric PVL immediately upon the patient's arrival.

Emergent transportation via an advanced life support (ALS) ambulance was arranged. The nursing report was called in to the hospital ED at noon, and the ALS unit had arrived and was ready to transfer the patient. Repeat vital signs were obtained, revealing an HR of 45 beats/min and a BP of 200/100 mm Hg.

After an uneventful transport, the patient arrived at the hospital ED at 12:45 PM during a very high-volume, double EP-covered shift. The nursing staff notified the accepting EP of the patient's arrival. The EP placed the order for the mesenteric PVL. Within an hour from arrival, the nursing staff noted that the patient had become diaphoretic and was complaining of a headache and notified the day shift EP. The day shift EP then placed an order for an emergent head CT scan without contrast, but did not evaluate the patient at the bedside. A work-shift change occurred at 2:00 PM while the patient was in the CT scanner. The oncoming evening shift provider team included a physician assistant (PA) and an attending EP. The PA arrived at the ED first that day and was approached by nursing to assist the patient; the PA immediately went to the patient's bedside when he returned from the radiology department. The patient was drowsy, but communicated he was experiencing a bad headache with double vision. The PA moved the patient to the resuscitation room, and the oncoming EP immediately went to the bedside, stopped the heparin infusion, gave protamine, and intubated the patient. The CT scan of the head revealed an acute subarachnoid hemorrhage.

Case Commentary

In this case, when the nursing assessment preceding transfer revealed sustained abnormal vital signs particularly the significant hypertension, reassessment and blood pressure management by the sending EP prior to transport may have diminished the poor outcome resulting from the intracranial hemorrhage. Ideally, BP control should have been implemented prior to transport—especially in the context of possible arterial dissection/occlusion with ongoing anticoagulation therapy. If such attempts to control BP prior to transport prove inadequate, a hand-off communication with the receiving EP is indicated, emphasizing the need for immediate evaluation and critical intervention upon patient arrival. On the receiving end of a patient transfer, it is good practice that all critically ill or injured patients be immediately assessed upon arrival at the ED, regardless of planned interventions by any other department.

Transport from another ED cannot mislead to a false sense of security that ED care is completed. Patients geographically located in the ED (especially those who are newly arrived) are the responsibility of the ED providers until that point where the next specialist provider clearly assumes care of the patient (see “ED-to-ED Transfers: Summary of Responsibilities.”). This point in handoff time can be murky and unclear; yet, as illustrated by this case, it is best to re-evaluate and ensure appropriate emergency care of the patient upon arrival. In addition, as with any other ED patient with a change in condition, timely re-evaluation of the transferred patient is indicated upon receiving the report from nursing that the patient’s condition had changed.

Transfers between EDs should be viewed as a process, and that each phase in the process is important—from the pre-transfer preparation at the sending facility, the physical transfer itself by transport personnel, and the post-transfer arrival that requires the receiving facility to ensure care contin-

ED-to-ED Transfers: Summary of Responsibilities

In cases where ED-to-ED transfer is required, the referring EP is responsible for determining the need for transfer, and for determining the appropriate mode of transport. The referring EP is also responsible for assessing risks/benefits and ensuring those are considered and shared with the patient (or representative.) The referring MD has responsibility for accurately communicating with the receiving physician, and in some cases, anticipatory guidance is appropriate. Responsibility for a patient in transit may belong to the referring EP, or might be shared or be that of the transport agency (eg, air medical service). Receiving physicians in the ED have duty as well, and the Emergency Medical Treatment and Labor Act is relevant in the process.

ues seamlessly and appropriately. Even in situations of high acuity and/or high volume, anticipation and timely attention is required by the receiving staff to ensure continuity of safe patient care. The metaphorical baton was dropped in this transfer.

Opportunities for Patient Safety Improvement.

The sending facility should always address any abnormal vital signs prior to patient transfer. The receiving facility should evaluate all transferred patients at the bedside as soon as possible upon arrival. Both facilities should take timely advantage of the information the nurses provide, especially when there is a change in the patient’s condition. All involved physicians from the sending facility should communicate to the receiving ED staff critical and potentially critical patient care information and concerns that pose a risk of deterioration of the patient’s condition.

Case 2

A 23-year-old woman presented to a community hospital ED with a sore throat, fever, and difficulty swallowing. The PA on duty saw the patient in the fast track section of the ED. The patient reported the sore throat had been persistent for the past 3 days, and that she began having difficulty swallowing the day of presentation. Her reported temperature at home was 102°F, but the patient said she had been unable to take acetaminophen or ibuprofen because it was too painful to swallow. The patient

had no significant medical history and reported no known recent streptococcal exposure. She denied alcohol use, but admitted to smoking an average of 10 cigarettes per day.

On physical examination, the patient's vital signs were: HR, 92 beats/min; RR, 11 breaths/min; BP, 122/65 mm Hg; and T, 99.5°F. Oxygen saturation was 98% on room air. She was not drooling or tripodding. Throat examination revealed posterior oropharyngeal erythema, edema, and exudate, with a uvula displaced to the left with a right-sided asymmetric tonsillar swelling consistent with a significant peritonsillar abscess. The remainder of the physical examination was unremarkable.

Rapid strep and monospot testing were negative; the patient's WBC was $9.1 \times 10^9/L$ with a normal differential. After discussion with the attending EP, an IV line was started, and clindamycin 900 mg and dexamethasone 10 mg were administered. Arrangements were made with the university hospital ED for ALS ambulance transfer, as there were no otolaryngologist services available at the community hospital.

Upon arrival, the patient was examined by the university attending EP and was found to have mild asymmetry of the tonsils, but no midline disruption or uvula shift. The patient was given advice on symptomatic management and was discharged home.

Case Commentary

It is likely that transfer of this patient and its inherent risks could have been averted had the community EP personally assessed the patient prior to transfer arrangements. Supervision of physician extenders and residents in the ED may present challenges to patient safety, diagnostic accuracy, and appropriate treatment, especially in this era of volume and time-driven throughput metrics.

Emergency department transfers are costly and place patients and transport staff at a certain degree of risk. Both

ground and air transfer include the possibility of collision, and ED-to-ED transfers should be reserved only for patients who need it. Furthermore, inappropriate transfers remove a transport vehicle and team from use by another patient in true need, resulting in added cost for no value to the patient, and negatively impact the receiving EP, who is left to answer the patient's questions regarding why they had to be transferred.

An additional point to consider is the management of patient's expectations when they are being transferred to a facility for more specialized care. At times, patients are led to believe they are being transferred for a certain test or procedure, yet when they arrive at the receiving facility, it is determined that intervention is no longer needed. Better patient communication on the part of the sending facility could help lessen the burden to the staff of the receiving facility when they need to explain why a certain test or procedure was actually not needed, despite the patient's transfer. This is especially important in rare circumstances when the sending facility is staffed only by a PA or NP and not an ED attending.

Opportunities for Patient Safety Improvement.

Active involvement of supervising attending physicians can mitigate the risk of inappropriate ED-to-ED transfers. The active supervisory role of attending EPs in patient care administered by physician extenders and residents is a serious responsibility that deserves priority. Communication with patients regarding their expectations should be initiated by the sending ED provider prior to transport.

Case 3

A primigravid 19-year-old woman at 24 weeks gestation with no prior prenatal care presented to a community hospital ED at 1:50 PM for evaluation of lower abdominal cramping. In addition to cramping, the patient further noted that she had been experiencing vaginal discharge of clear

fluid since 6 AM, and had been feeling fetal movement. On a gentle sterile speculum examination, the cervix was dilated at 4 cm and revealed visible membranes.

Since this community hospital had closed its obstetrical unit and moved all obstetrical and pediatric services to a sister hospital approximately 9 miles (13 minutes) away, the EP on duty immediately started IV fluids, ordered fetal heart tones (there was no fetal monitoring capability in the hospital), paged the obstetrician (OB) at the sister hospital, and activated an ALS ground transfer unit, all in parallel sequence. The OB on duty returned the page at 2:20 PM as the transporting ambulance arrived; however, he refused to accept transfer of this patient, who was in active preterm labor, stating transfer of any patient in active labor was an Emergency Medical Treatment and Labor Act (EMTALA) violation.

The discussion between the OB and EP included the risks and benefits of immediate transfer in the antenatal period versus the postpartum period; from the perspective of the EP, who had no access to safe fetal monitoring, labor and delivery support, or neonatal intensive care unit (NICU)/pediatric services, such transport was indicated. The EP felt strongly that the benefit of antenatal transfer outweighed the risk of delivering a late second-trimester fetus in an unsupported environment. However, the OB remained firm in his stance, and stated the patient was unstable and therefore could not be transferred under the law.

Hospital administration at the receiving hospital was paged to assist. The hospital administrator on duty returned the EP's call at 2:57 PM, and agreed that it was safer to transfer the patient, and he would communicate this to the OB. However, by this time, the patient's contractions had progressed. On reassessment, a fetal foot was evident on the perineum, and the fetus was delivered with an initial Apgar of 3 in the first minute. The nursing staff immediately paged anesthesiology services. After

suctioning, the baby girl was immediately intubated by the EP, by which time an anesthesiologist had responded to the call. Intravenous access was obtained, and cardiac monitoring and a warm environment were established. Endotracheal (ET) tube placement confirmation was made by auscultating bilateral breath sounds and chest X-ray. The mother was transported to the community hospital, and arrangements were made to transfer the baby to the pediatric hospital NICU.

The specialized pediatric transport team, with medical control from the pediatric hospital, arrived to transport the premature neonate in critical condition. Care was transferred to the transport team, but while preparing to load the patient into the transport incubator, the team questioned the position of the ET tube; they decided to extubate and reintubate the patient using their specialized equipment. The EP was not made aware of this decision. Unfortunately, after extubation, the transport team was unable to reintubate the neonate, who went into cardiopulmonary arrest and expired in the ED.

Case Commentary

Obstetrical emergencies are challenging even in a fully supported ED, and these challenges are heightened significantly in EDs that lack obstetric and pediatric support. In retrospect, it is truly difficult to determine if any action could or would have altered the outcome of this case.

In some circumstances, determining that a patient is "stable for transfer" or that the benefits of a transfer outweigh the risks is complicated and difficult. In this case, the patient was never "stable," as she was in active labor. The EMTALA statute and its provisions govern when and how a patient may be transferred from one hospital to another when an unstable medical condition exists, but does not prohibit transferring an unstable patient. The OB's understanding of the law was mistaken by the assumption that the patient was

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unstable and therefore could not be transferred at all.² The essential provisions of the statute state that any patient who comes to the ED requesting examination or treatment for a medical condition must be provided with an appropriate medical screening examination to determine if (s) he is suffering from an emergency medical condition.³ If (s)he is, then the hospital is obligated to either provide him/her with treatment until (s)he is stable or transfer him/her to another hospital that has the capability to provide definitive care for the patient, and the benefit of transfer for this stabilizing care outweighs the risk of the transfer.³

Under the circumstances of this case scenario, it seems reasonable to transfer a pregnant patient in labor if the transferring physician felt that the safety of both mother and baby would be best served at the receiving hospital with specialized services and that the timing of the transfer was appropriate, considering the clinical findings and distance to the receiving hospital—with anticipation that delivery is most likely to occur after arrival at the receiving hospital.⁴ Again, this is a very complex situation, and the possibility exists that if the transfer proceeds, delivery could occur in the ambulance, which may introduce an additional potentially adverse event.

There is no time to delay in this decision-making process, and the risks and benefits of transfer are not clearly defined. The additional circumstance of an extremely preterm infant who will require specialized NICU care augments the need for expeditious transport to the sister hospital, as contrasted with active labor in a full-term gestation.

Part of EMTALA states “hospitals with specialized capabilities are obligated to accept transfers from hospitals who lack the capability to treat unstable emergency medical conditions.” In this case, the risk of delivering such a preterm infant at a hospital not equipped with even basic

obstetrical and pediatric services may outweigh any potential risks of transport to a sister hospital 13 minutes away by ground transport. To mitigate the risk of an in-transit delivery, supporting the transport team with a physician or registered nurse to ride along may have been an option.

Finally, delivery of the premature newborn created a second unstable patient in even greater danger than the mother. Interhospital transfers of critically ill and injured pediatric patients to pediatric hospitals often involve specialized transfer units staffed by expertly trained paramedic and/or nurse teams under the medical control of the pediatric hospital. The unfortunate outcome of this premature infant may have been the ultimate outcome at 24 weeks, despite the extubation and inability of the team to re-intubate. However, communication with the EP in the department in the decision to change the ET tube may have been helpful to the team in the face of a difficult re-intubation.

Opportunities for Patient Safety Improvement.

A solid understanding of the EMTALA statute and its provisions is essential not only for providers in the ED, but also for consultants who must understand their responsibilities under the law. Timely transfer arrangements cannot be underestimated, and hospital policy should support expeditious positive responses in emergent situations. Active communication between the sending EP and transport team while still in the ED is prudent.

Conclusion

Interhospital ED-to-ED transfers are frequent occurrences in many EDs. An ED-to-ED transfer of a patient is a process that often involves complex decision-making and a rapid but thorough assessment of the potential risks and benefits. At each stage of the transfer process, each party involved must anticipate, to best degree possible, patient risks and communicate these risks clearly from the pretransfer phase to the transfer team and to the receiving facility.

Assurance of the six aims of the Institute of Medicine⁵ are central to good decision-making that leads to an appropriate disposition of patient transfer to another ED. These aims demand that care delivered is safe, timely, effective, patient-centered, efficient, and equitable.⁵ When interhospital ED-to-ED transfer is deemed necessary, the sending provider generally is responsible for making certain the right care at the right time is safeguarded from the time the patient enters the ED until he arrives at the receiving ED. The receiving ED then completely assumes the responsibility to evaluate and manage the patient until the definitive caregiver takes over.

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