COMMUNICATION CRISIS

Prevent medical errors & unnecessary spending with effective communication

By **James Woodson**, MD & **E. Stein Bronsky**, MD

Medical errors, or preventable adverse events, are estimated to cause somewhere between 250,000 and 400,000 deaths in the United States every year.[1]

Experts say the most common causes of medical errors are communication problems and inadequate information flow.[2]

Perhaps more significant is that up to ten times as many patients may be seriously harmed but not killed.[3] These cases often include those where providers don't even realize the impact that mistakes might have on final outcomes.

MISCOMMUNICATION IN EMS

In the emergency setting, we don't have much research about medical errors. Reporting is now being encouraged through systems such as the EMS Voluntary Event Notification Tool (EVENT), but even for agencies that track such occurrences, are they examining the right cases?

If an ambulance stays on scene for several minutes attempting to get IV access on a st-elevation myocardial infarction (STEMI) patient instead of rapidly transporting to a cath lab, isn't that a medical error?

In EMS, we're more likely to make a big deal over a miscalculated drug dose with no impact than a delay in care that might not kill a patient, but may lead to more heart damage and worse outcomes down the road.

Even without good data, we suggest that the potential for communication failures is high during the treatment of time-sensitive conditions such as stroke, STEMI, trauma or sepsis from the field to the ED, the trauma bay or cath lab. Consider this:

- Every patient treated by EMS goes through at least one, if not multiple handoffs from one provider to another.
- Critical patients with time-sensitive emergencies are often treated by multiple providers in the course of less than an hour—the first responders, the transporting paramedics, ED nurses and physicians, and specialty teams.
- A delay in care for a patient with a time-sensitive emergency can be more harmful than a medication error—and the number one cause of treatment delays that result in bad outcomes is communication failure.[4]
- The sometimes chaotic and unpredictable nature of treating critical patients in the field makes communication even more important, but often more difficult.

Yet when mistakes occur, we typically don't focus on communication. Instead, we decide the providers need more education. Or protocols need to be changed. Sometimes we don't even consider it a "mistake."

Rarely is the solution to improve communication and bring the entire team together—from EMS to ED to STEMI, stroke or trauma team—to streamline and improve care.

A GAME OF 'TELEPHONE'

We take communication for granted. Despite widespread acceptance that regionalized systems of care improve outcomes for STEMI, stroke and trauma patients and likely people with sepsis and other conditions, communication remains siloed.

Take a typical stroke case. In most systems, EMS providers use the radio to talk to an ED nurse, who passes along information to an emergency physician. Then someone at the hospital pages the stroke team—which includes not only specialized stroke nurses, techs and neurologists, but also possibly a radiology tech, radiologist, pharmacist and, in some cases, a neurointerventionalist, anesthesiologist and interventional radiology (IR) team—but passes on very little information about the actual patient.

Members of the team call the operator or another hospital staff member to let them know they're on their way. By the time they arrive, they receive a report from the ED staff, because the EMS providers are already cleaning up, working on their patient care report (PCR) or on their way to the next call.

This game of telephone leaves much to be desired. Critical information gathered at the scene is often unavailable or incorrect by the time it reaches the neurointerventionalist removing the stroke-causing clot. Although technology now allows for the EMS PCR to be delivered electronically to the hospital, that record is rarely complete, transmitted and accessible to the team treating the patient in time to help impact the treatment plan.

EMS providers who often take patients to multiple hospitals and interact with different healthcare providers at receiving facilities each day face another challenge: Each hospital, each

specialty team—sometimes even each member of the receiving facility staff—wants different information, presented in a different way.

These barriers to effective patient handoffs lead to lapses in communication. In a recent study, researchers in a large academic medical center recorded patient handoffs between EMS and ED teams for patients with critical conditions and found that many were lacking vital information, such as results of a physical exam or past medical history.[5]

There are several possible reasons cited by the researchers, including an "authority gradient" that might leave EMTs and paramedics hesitant to tell physicians what they found during assessment, as well as the simple fact that handoff for critical patients is "often rushed and portions… are deferred in the interest of expedited patient care." Other research has also shown that many EMS providers feel ED staff sometimes prefer not to receive a handoff report, or they simply ignore the one they're given.[6]

Handoffs at the patient bedside also lead to information loss, as both the EMS providers delivering the information and the hospital staff receiving it are busy moving a patient, transferring the patient to hospital equipment and performing other tasks.

Suggestions for improving handoffs include not performing them at the same time as the physical transfer from the stretcher to the bed as well as standardization of the information and the way it's delivered. Standardization of the information provided by EMS in the field to the hospital was associated with decreased door-to-treatment times for stroke.[7]

Another reason handoffs might not be adequate is an assumption on the part of providers that the written or electronic report will be available to the hospital teams treating the patient. However, with the rapid nature of treatment for patients with stroke, STEMI, trauma or sepsis, that EMS report often hasn't yet been completed or included in the patient's medical record—and won't be until well after the initial and most critical interventions.

In addition, although ED nurses and physicians often know to look for the EMS PCR, members of specialty teams have little interaction with EMS, instead relying on second- or third-hand reports of how the patient presented in the field.

WHAT EMS SYSTEMS CAN DO

In Colorado Springs, Colo., more than one dozen fire and EMS agencies were treating and transporting critical patients to five hospitals owned by two major hospital systems: UCHealth and Centura Health. With so many different members of the regional system of care, multiple methods of communication existed. The potential for delays in treatment or other mistakes during care for patients with time-sensitive conditions was high.

Recognizing that this potential was a system problem, not an EMS problem, local EMS and fire department leaders sat down with members of the stroke and STEMI teams from both hospitals. Although wary at first, the competing hospital systems soon recognized that finding a regional solution would benefit both hospitals, and, most importantly, all patients.

Now, nearly every time EMS transports a STEMI or stroke patient in Colorado Springs, providers use one mobile app to enter vital information and provide it to both ED staff and specialty teams instantaneously with the tap of a button—no matter what hospital they're transporting to. With some hospitals, EMS providers are delivering information about every patient—not just STEMI and stroke—using the same software.

Colorado Springs implemented changes that illustrate four critical steps to improving communication between teams caring for these critical patients and reducing the potential for patient harm:

1. Communicate in parallel. Too often, communication between EMS, ED and specialty team personnel happens in series. A paramedic calls the ED, often speaking to a charge nurse; that information may or may not be passed along to the nurse or physician caring for the patient; a member of the cath lab team may or may not speak to a member of the ED staff. Chances are that by the time the cardiologist is notified, any details about the patient have been passed along verbally several times—or not at all.

In systems where the EMS field crew can transmit the ECG to the hospital, it might have to be printed and then faxed, the cardiologist might only be able to access it when he or she arrives in the ED, or there might be 14 ECGs sitting in an inbox, without an easy way to ensure hospital staff view the right one.

Consider how much easier, accurate and more efficient this can be. When a customer orders a product on Amazon using the app on a smartphone, it doesn't set off a game of telephone. Instead, everyone who needs to know receives an instant notification with information directly entered by the consumer.

That's how communication in healthcare could happen. In Colorado Springs, the EMS crew with a STEMI patient transmits information about the patient to the ED staff and to the on-call members of the cath lab team *all at the same time*. By communicating in parallel—sending one piece of information to multiple parties at once—rather than in a series, they save time and reduce the chance of incorrect information being passed along.

2. Provide the right information at the right time. In many regional systems of care, the specialists never sit down with EMS leaders to discuss what information would be most useful to know prior to the patient's arrival at the hospital. Standardizing reports and handoffs has been shown to improve communication and reduce mistakes.

For example, one of the most critical pieces of information that we want in the ED, is the patient's history. Yet, because of tradition and privacy concerns, EMS field providers are discouraged from providing protected health information prior to arrival, which would allow us to look up a patient's medical record. There are many ways to deliver this information and still be compliant with privacy laws, including the Healthcare Insurance Portability and Accountability Act (HIPAA). In today's hospital, being able to access patients' information and register them before they arrive can save critical minutes.

3. Take advantage of technology. There are times when we talk about technology like it's the solution to all of our problems. Although that certainly isn't the case, technology has changed how we communicate with each other in every aspect of our lives. Just one generation ago, we had to memorize our friends' phone numbers and leave them messages on an answering machine, and once we were out of the house we couldn't be reached. Now we have devices with us 24/7 that allow us to call, text, video chat or use a multitude of apps to contact people.

Think about how most stroke systems of care handle communication. Is it much different than it was a generation ago? Mobile radios, landline phones, fax machines, pagers, hospital operators—they're all still used like they were decades ago. New technologies can improve communication, create a record of those communications and enhance data collection and analysis, to name a few advantages.

Technology certainly can't replace people, but it can make people's jobs easier, more efficient and more effective. Every provider in the

system of care, from first responder to neurologist, typically has access to multiple mobile devices, yet we don't take advantage of those technologies to deliver safer care to our sickest patients.

4. Close the loop. One of the most frustrating aspects of emergency care can be rarely finding out what happens to a patient after you treat them. This is true for EMS personnel and sometimes even ED staff, who might transfer a patient to a specialty care center and never receive follow-up. This final step in the communication process isn't just about satisfying their curiosity.

Take a new medic who's deciding whether or not to activate an entire system of care for a STEMI patient. Providing near real-time feedback might be the best way for him—or any provider—to continuously improve and gain the confidence needed to make those life-saving decisions again and again for his patients.

Lastly, closing the loop helps make everyone involved in the care process feel like they're part of a team within a system of care, encouraging further collaboration and cooperation.

CONCLUSION

Though the total impact of miscommunication between caregivers during treatment of time-sensitive emergencies is unknown, evidence points to a high likelihood that communication errors occur and lead to delays and other negative outcomes.

No single solution to preventing medical errors exists, and the best interventions focus on creating a culture of safety and collaboration.[8] Any solution needs to start with improving communication among the many different members of the care team. EMS agencies can be the driver behind change, bringing members of the regional system of care together to ensure everyone is on the same page. JEMS

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Figure 1: Patient-centered healthcare communication

Sending critical patient information to all members of the team, at the same time, reduces opportunities for communication errors. All departments have the important data they need, and can work in parallel, to provide the appropriate care in the most effective way.