

CASE CONFERENCES

STRUCTURED COMMUNICATION FOR PATIENT SAFETY IN EMERGENCY MEDICAL SERVICES: A LEGAL CASE REPORT

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ABSTRACT

Providers of emergency medical services (EMS) must communicate vital information during critical phases of operations. Errors in communications, for example, the failure to hear a directive, will compromise safe and effective patient care. This article presents a case that resulted in litigation because of communication failures during the interfacility transfer of a trauma patient who subsequently died in the ambulance. The communication failure involved members of a ground ambulance crew, their dispatcher, and a supervisor. The failure of the emergency medical technician (EMT) who was driving to hear from the treating EMT and her dispatcher vital information pertaining to changes in their destination and of plans to intercept another ambulance, or alternatively, the driver's ignoring this information, led to a delay in care and may have contributed to the patient's death. Factors contributing to the cause of this communication failure may have been related to the nature of the EMS setting: the physical separation between crew members (the driver, and the care provider in the back of the ambulance); the noise of the ground ambulance transport environment, most notably, the siren; and the stress of treating a patient in critical condition. The case highlights the importance of using structured forms of communication, specifically the read-back tool and the critical assertion strategy, to limit failures in communication during EMS operations and in operations in other high-risk medical settings. **Key words:** emergency medical services, ambulance safety, patient transfer, commu-

nication, medical error, liability, read-back, critical assertion strategy

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INTRODUCTION

Communication failure is the primary root cause in more than 70% of sentinel events reported to the Joint Commission on Accreditation of Healthcare Organizations, and of these, approximately 75% are associated with the patient's death.¹

Likewise, the operational setting of emergency medical services (EMS) contains many hindrances to effective communication. It takes place between multiple people, many of whom serve different roles, and in different environments; and it is associated with risk to patients related to medical interventions. Not surprisingly, then, "communication problems in transport medicine are numerous and a leading cause for breakdown in patient care."²

This article, using a recently litigated case,³ examines how the fundamentals of communication relate to operations in EMS. It also discusses structured forms of communication that have been applied to other health care settings, which may be applied to the EMS setting to limit communication failures and to improve patient safety.

CASE REPORT

At about 2:30 AM, a man injured in a motor vehicle collision was transported to the nearest hospital, where an open femur fracture and a fractured pelvis were diagnosed. He was treated at the hospital for approximately two and a half hours, and then the decision was made to transfer him to a trauma center. At about 5:30 AM, the dispatched ambulance crew arrived and learned that the patient was hemodynamically unstable. (There were separate claims against the hospital.) The transfer status was changed to highest priority, and the ambulance left for the trauma hospital with two emergency medical technicians (EMTs) on board.

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Shortly after departure, the patient began to “thrash around” and pulled off his oxygen mask. The treating EMT in the back of the ambulance ordered the other EMT, who was driving, to radio dispatch and ask for another ambulance to meet them because she needed assistance in managing the patient. The EMT-driver complied with the treating EMT’s order. A supervisor from the ambulance service, upon hearing the EMT’s request for an intercept, instructed the EMT-driver to use a nearby hospital as an intercept point. The EMT-driver later testified in legal proceedings that she believed the dispatcher had stated that another ambulance would be sent to intercept the ambulance. However, she also testified that she never heard the supervisor’s order to meet the intercepting ambulance at the hospital.³

The treating EMT, after hearing the supervisor’s order to go to the nearby hospital, reportedly “shouted” to the EMT-driver on more than one occasion from the back of the ambulance that the driver should “divert” to that location. The treating EMT later testified, “I was communicating with her [the other EMT]. As far as whether she heard me at that time, I could not say.”³

An EMT and a paramedic at a nearby ambulance station, overhearing the radio transmission requests for an intercept, immediately responded to the nearby hospital to meet the transporting ambulance. On their arrival, the transporting ambulance was not there, and they informed the dispatcher about the situation. Almost immediately, this intercepting crew heard a “broken-up” message from the EMT-driver to the dispatcher, whereby she made a second request of the dispatcher for an intercept and gave her present location as the point of intercept. The impetus for this second request was her hearing the treating EMT request that she pull over to the side of the road and assist her in caring for the patient. Minutes after the EMT-driver pulled over, the crew of the intercepting ambulance arrived. With the EMT from the intercepting ambulance assisting, they resumed transport to the trauma center. About 3 minutes before their arrival, the patient became pulseless and apneic. He was unable to be resuscitated. His death was determined at autopsy to be due to the loss of blood resulting from his open femur fracture.

At trial the jury was presented with two different stories of the same event. The EMT-driver testified that she never heard orders from the treating EMT or her dispatcher to divert to the nearby hospital, whereas the treating EMT testified that the EMT-driver knew that she was to divert and that she had ordered her to divert three times. To find that the ambulance service was grossly negligent (the standard required in the state where the incident occurred), the jury needed to find that the EMT-driver actually heard and subsequently ignored the orders. Although the jury found that the EMT-driver did not hear the directive, the trial court judge found that the jury’s verdict was against the

great weight of evidence. The appellate court conceded that “there certainly was evidence that placed [the EMT-driver’s] testimony into doubt,” but that there was insufficient evidence to go against the decision of the jury. Consequently, the trial court’s order granting a new trial was reversed, and the judgment rendered after the jury trial finding in favor of the ambulance service was reinstated.³

DISCUSSION

Safety in EMS depends on highly reliable communication, yet personnel are exposed to many risks of communication failures. They must perform essential tasks rapidly and accurately, for example, the choosing, preparation, and administration of medication. Emergencies generally engender periods of high “communication load” and so are problematic because the sheer volume of information overwhelms short-term memory.⁴ Additionally, EMS operations often occur outdoors and in view of the public, where they must contend with changing circumstances relating to weather, traffic, and pedestrians in addition to patient needs.⁵ EMS providers must interact with a variety of persons, such as those in fire departments and law enforcement agencies, many of whom have different, perhaps conflicting, roles.

Patient transport often involves multiple transitions of care between persons who may not share the same frame of reference. During patient transport, ground ambulance-based providers are subject to noise—which interferes with accurate encoding and decoding of messages—of the engine, siren, and traffic. Furthermore, the driver is separated from the patient care provider, both physically by the barrier that separates the front seat from the patient care compartment and visually in that the crew members are unable to communicate face-to-face.

In this environment, vital information is particularly prone to be misspoken, unheard, or misheard. Therefore, it is essential that EMS providers use structured forms of communication, such as those used in other health care settings, to prevent communication failure.

Two important structured forms of communication are the *read-back tool* and the *critical assertion strategy*.

Read-Back Tool

Many high-performing teams use the read-back tool. The term *read-back* applies when someone reads aloud information he or she has written down, for example, an order taken over the phone.⁶ When information has been exchanged orally and has not been written, the receiver of the information provides a “repeat-back” or “hear-back.”⁶ (For simplicity, this article uses the term *read-back* regardless of whether the information was exchanged orally or written down.) The read-back sequence is shown in Figure 1.

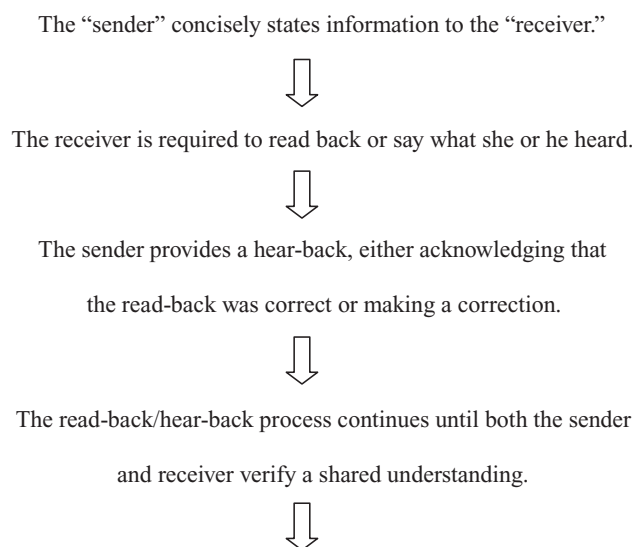


FIGURE 1. The read-back process. Adapted from: Joint Commission on Accreditation of Healthcare Organizations. Closing the communication loop: using readback/hearback to support patient safety. *Jt Comm J Qual Saf.* 2004;30:460–3.

In health care settings, the read-back process is increasingly recognized as essential for communication among caregivers to reduce patient harm. It was included as an item in the “30 safe practices for better health care” by the Agency for Healthcare Research and Quality (AHRQ),⁷ and it has been the subject of education and patient safety goals issued by the Joint Commission.⁸

The read-back tool is effective because it incorporates many elements proven to reduce the risk of communication failure, especially when oral information is exchanged in complex environments. These preventive elements include active participation, the building-in of redundancy for clarity, and the closing of communication loops—whereby there is a verified mutual understanding between team members that helps to avoid errors of omission or commission that would arise from misunderstandings.

Read-back provides a structure to communication that allows participants to clearly, unambiguously, and unequivocally send and receive verbal signals. Exchanges using read-back methods contain the essential pieces of information in the most efficient form possible for fatigued participants who might otherwise communicate in a “partial or muddled form.”⁹ Read-back enhances responsibility for different tasks and components of care by stating and repeating who is responsible for what.⁹ Finally, it is suitable for use across authority levels.⁹

The read-back strategy should not be used in all interactions in clinical care. To require its use in too broad a fashion would diminish its effectiveness and result in its not being used at all. A better approach is to tailor use of the read-back to specific operational contexts: 1) during critical phases of operations and 2) when nec-

essary for the effective exchange of vital information.

Critical phases of operations are defined as states of change or transition that affect operations or periods when systems are inherently unstable or are in transition. For example, in the hospital, read-backs may be used before, during, and after surgery, and when “trending” the clinical status (that is, establishing a baseline or the trajectory of a disease process) of an unstable or potentially unstable patient. These phases are in contrast to routine phases of operations, when there are no expected changes, for example, when the patient is clinically and hemodynamically stable and changes in the patient’s condition are not expected.

Vital information is information that is integral for the safe and effective performance of the task at hand. It generally is “high-risk,” meaning information that is prone to being misspoken or misheard. Such information typically is numerical, alphabetical, or relational. In out-of-hospital care, vital information concerns such things as medication type and dosing, equipment settings, types of interventions, and anatomic position (primarily right side versus left side).

Critical Assertion Strategy

As members of high-performing teams go about accomplishing their tasks, communication may involve primarily the read-back tool. But when circumstances develop that threaten safe and reliable operations, there must be a mechanism to change or re-create a shared mental model (views and opinions). In other words, during the course of what may constitute routine operations, there must be an effective way for a team member to “penetrate[e] the shield of implicit assumptions” under which other team member may be functioning.⁹ By making an assertion (statement or declaration), a team member characterizes the relative safety of operations and then, if necessary, is free to explain or state his or her reasons for that characterization. A critical assertion strategy involves the use of *standard* verbal content to facilitate exchange of this type of information.

There are, in general, two types of critical assertions. The first type serves simply as “alerting” signals—a means to communicate threats that will lead to harm if others do not recognize and immediately act on them. In health care, the term *stat* is well known as a means to signal that a task must be performed “at once.” Alerting signals, in perhaps their most useful form, may be effective in signaling an end to what may otherwise be complacent-prone, routine operations, because they override the background noise of normal operations.

The second type of critical assertion is used as part of a communication *strategy*. These critical assertions promote safe and reliable operations because they flatten an otherwise steep authority gradient. A frequent barrier to effective communication stems from the reluctance of team members to challenge the actions of

persons having greater hierarchy or higher rank.^{10,11} A tendency to defer inappropriately to those higher in the organizational hierarchy has been studied in the health care setting. In the operating room, investigators have identified three forms of recurring silence: “absence of communication; not responding to queries or requests; and speaking quietly.”¹² The absence of communication may occur when team members do not seek clarification, fail to ask follow-up questions, or fail to communicate immediately relevant information.¹²

The critical assertions strategy, because it entails the use of a previously agreed-on rhetoric, gives all team members a structured means to signal that they should “stop and listen because we may have a problem” and to invite an exchange between team members of their reasoned beliefs of the safety of operations. In this way, a critical assertion strategy discourages diffusion of responsibility by creating the expectation that team members speak up when they see something questionable taking place. And by virtue of this expectation, the critical assertion alleviates stress for persons who sense that something potentially harmful may occur but otherwise would not believe they have the power to prevent it.⁹

One critical assertion strategy presently used in the health care setting is the CUS program. CUS stands for “I’m concerned; I’m uncomfortable; this is unsafe.” The CUS program has been incorporated into the surgical¹³ and neonatal intensive care unit¹⁴ settings and into health care simulation exercises.¹⁵ This strategy is particularly useful because it can be applied to any circumstance where a team member believes that safety is threatened. A critical assertion strategy “creates a clearly agreed upon communication model that helps to avoid the natural tendency to speak indirectly and deferentially.”¹⁶

CONCLUSION

Structured forms of communication can be effective in limiting communication failures, including those of the type that occurred in the case described in this article. The read-back tool, by requiring closed-loop communication, ensures that the receiver understands a sent message and either will comply with it or discuss its appropriateness. If the treating EMT in this case had asked for a hear-back after the radio dispatch asking for back-up, she would have realized right away that the EMT-driver was not acting on the information that the dispatcher conveyed. Similarly, the critical assertion strategy provides an effective way for that type of discussion to take place. When issues of safety arise, team members taught this strategy feel compelled to express their concerns promptly and without ambiguity. Furthermore, it a mechanism for team members to escalate their expressions of concern for safety to higher levels when a team member does not realign his or her actions appropriately.

In the case presented, the result of a failure of communication was that the emergency vehicle and crew transporting the patient were delayed in meeting the intercepting ambulance crew that was dispatched to assist with patient care. Given that the intended, but failed, intercept point was a hospital, the transport may have progressed to an actual *diversion*—a word that the treating EMT used in her recollection of the event. By using the hospital not as a place to intercept but as a diversion facility, the patient likely would have received treatment in the emergency department, and this might have resulted in successful patient resuscitation.

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