

VIEWPOINT



Communicating Neurocritical Illness: The Anatomy of Misunderstanding

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Abstract

We talk, text, email all day. Do we perceive things correctly? Do we need to improve the way we communicate? It is a truism that providing insufficient information about a patient results in delays and errors in management. How can we best communicate urgent triage or urgent changes in the patient condition? There is no substitute for a face-to-face conversation but what would the receiving end want to know? One starting point for those practicing acute neurology and neurocritical care is a new mnemonic TELL ME (*T*ime course, *E*ssence, *L*aboratory, *L*ife-sustaining interventions, *M*anagement, *E*xpectation), which will assist physicians in standardizing their communication skills before they start a conversation or pick up a phone. These include knowing the time course (new and "out of the blue" or ongoing for some time); extracting the essentials (eliminating all irrelevancies); communicating what tests are known and pending (computerized tomography and laboratory); relaying how much critical support will be needed (secretion burden, intubation, vasopressors); knowing fully which emergency drugs have been administered (e.g., mannitol, antiepileptics, tranexamic acid), when transport is anticipated, and what can be expected in the following hours. Perfect orchestration in communication may be too much to ask, but we neurointensivists strive to convey information accurately and completely. Communication must be taught, learned, and practiced. This article provides guiding principles for a number of scenarios involving communication inside and outside the hospital.

Keywords: Communication, Neurocritical illness, Handoff, TELL ME

Introduction

We write and read notes; then we talk, call, text and email about our patients [1–4]. We can be reached instantaneously, but, in all sincerity, why are some messages unheeded? We all like to believe that we are getting the relevant information in a timely manner—but not necessarily. Bear in mind that providers are interrupted constantly [5]; plans change and decisions multiply rapidly throughout the day. Communication between health-care workers involves communication of an incoming patient or outgoing patient with transfer in the hospital or out the hospital. Handoffs (sign-outs) have been best studied and the importance of the handoff is bolstered by the observation that night interns reference the written

or verbal sign-out in order to answer questions that arise during the night [6].

At least one survey suggests that a "better" sign-out would lead to a reduction in adverse events [7]. Another survey study asked clinicians to identify for each patient whether they anticipated any nighttime events and what type of events they would expect. In handoffs of over 300 patients, nighttime clinicians were interviewed immediately after the handoff, before they cared for patients. Nighttime clinicians were only able to identify 53% of the daytime clinicians' diagnoses [8]. These were clustered into five predefined domains (hemodynamic, respiratory, metabolic, neurologic, and hematologic). Patients with changes in level of consciousness were less likely to have correctly identified diagnoses. In many instances, there was a fundamental misunderstanding of a patient's course. More seriously, communication errors may have contributed to

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underestimation of aspiration risk and cardiac arrhythmias [8].

A communication loaded with irrelevancies, extraneous detail or self-contradictory information, and a less-than-succinct summary clearly sets up a risk for missed vital information and misunderstanding. Without a standardized handoff, the risk of not communicating potentially relevant information may leave the recipient healthcare provider in a state of confusion [9–12]. In any case, improved provider perceptions of transfer workflow efficiency and patient safety may not be enough; communication must also include solutions for active medical problems and an outline of anticipatory guidance (“what if–what then” scenarios) in the event an acute change in clinical condition occurs.

Checklists improve communication [13, 14]. Incorporating the checklist into the electronic health record allows data to auto-populate and eliminates reliance on the provider’s memory for specific details of, for instance, medication dosages or administration times. The remaining problem is the sustainability of checklists and whether they may eventually disappear or remain unfilled. Checklists may not reduce intensive care unit (ICU) readmissions or rapid response team calls [13]. The rapid readmissions or so-called bounce backs remain difficult to predict, and communication failure is just one factor [15, 16]. Generally, inadequate communication leads to a diffused responsibility, and we will pay a price. In addition, physicians tend to overestimate the effectiveness of their communication. Moreover, when retrospectively surveyed, there is significant disagreement on what is the most important piece of communicated information. Cross-coverage demands solid communication. One important 4-month study at Brigham and Women’s hospital showed that the risk of a preventable adverse medical event was more than twice as likely with coverage by a physician from another team [17].

No currently existing tool, requirement, or system provides a standard system of communication. Most recently, the Emergency Neurological Life Support (ENLS) Lecture Series [18] provides communication tables with sample scenarios to use when transitioning care from prehospital to emergency department and to neurocritical care unit. In-hospital communication protocols have used the “Situation-Background-Assessment-Recommendation” (SBAR) model, but it lacks specificity. Use by nursing staff is inconsistent, and use by ICU physicians is virtually non-existent. Many derivatives of the SBAR model have been used but with insufficient validation in most of them [19]. In addition, there often is a lack of training on effective communication and how to avoid interruptions and distractions in a chaotic environment.

Most of the time, it appears there is inadequate amount of time for a successful communication.

The perfect note in the medical record may tell it all, but there cannot be a substitute for a face-to-face conversation. Once we have a detailed neurologic and physical examination, we should have a good sense of what we are up to and what might happen. I will explore the commonly encountered scenarios, communication style, and how to acquire the necessary skills. The goal is to help readers understand the great variety of responses to presented information. The information provided would help physician in all specialties and levels of training. This information may come from outside the hospital (Out–In) or inside the Hospital (In–In) or (In–Out) when it relates to transfers to the floor or other institutions such as skilled nursing homes. The purpose here is to do far more than examine our foibles and to present a framework for adequate communication in the form of a mnemonic.

Illustrative Examples

Without intentionally disparaging respected colleagues (and in full awareness that none of us are infallible), I offer a few examples (inspired by real events) to illustrate some of the issues at hand. I have added a more detailed description with each of these conversations to point out missed opportunities of communication. Typically, the most error-prone situations are the triage and direct admissions to the neurosciences ICU and the communications on management or transfer out of the ICU.

Communication with the Outside (Out–In)

Physician A: I have a patient here who is pretty much unresponsive after a fall and computerized tomography (CT) scan shows a hemorrhage. I want to send him over.

Neurointensivist: What more can you tell me?

Physician A: We are going to intubate him.

Neurointensivist: What does his examination show?

Physician A: Glasgow Coma Scale (GCS) of 3.

Neurointensivist: Can you tell me more?

Physician A: That is pretty much it. Otherwise stable.

The situation: The CT scan shows an acute subdural hematoma with shift. The brainstem reflexes are intact, but the pupil on the same side of the hemorrhage is wider. INR returns markedly elevated. Best advice is osmotic diuretics and adequate reversal of anticoagulation with PCC and IV vitamin K and to call a neurosurgeon before he arrives.

Any neurointensivist will instinctively ask, “What is the matter with this patient?” and look for patterns even when our referring colleagues do not explain things

Table 1 Less than clear phrases and imponderables

"Altered"
"Not talking and moving only on the left side"
"Going in and out of consciousness"
"Pupils are now sluggish"
"Staring and not responding"
"Shakin' all over"
"It is bad; I mean, really bad"
"No responses anywhere"

clearly. We have trouble understanding those who do not seem to understand and unintentionally make use of imponderables and less-than-clear phrases (Table 1). Inarguably, communicating insufficient information about the patient can result in insufficient or inappropriate care before transport, such as in the example above. Perfect orchestration in collaborative communication may be too much to ask, but the neurointensivist should continue to consider these three most pertinent questions:

1. Is the patient deteriorating and, if so, from what?
2. Is a neurosurgical (craniotomy) or neurocritical care intervention (osmotic agents) urgently needed?
3. Is an endovascular procedure needed?

Communication to transfer from the floor to the ICU (In-In)

Physician A: I am covering the rapid response team and I have a patient on the ward who just had a seizure and needs to go to the neuro ICU.

The neurointensivist: Why?

Physician A: The nurses are uncomfortable.

The neurointensivist: How about you?

Physician A: I still see some twitches, and she is not awake.

Note: This patient has a glioma and a stereotactic biopsy and has had new focal seizures throughout the day and multiple doses of lorazepam. Secretions and airway protection are an issue, and we need a blood gas to exclude CO₂ retention. A new CT scan should be done to look for hemorrhage inside the tumor bed, preferably before transfer to the Neuro ICU.

Calls from the rapid-response team are common reasons for intensive care admissions, and the rapid responder has (and should have) the upper hand. Information is fragmented, and rapid transfer takes preference above detailed planning. Some arriving patients look just fine; others are very unstable. Regardless, their arrival often leads to some sort of surprise. We have an obligation to support our colleagues who take on RRT services,

but we also hope for effective communication. Patients should not be different than "advertised."

Communication for Transfer Out of the Intensive Care Unit (In-Out)

The neurointensivist: We are going to transfer a TBI patient to you because he does not need any more ICU level of care, and we have a bed crunch.

The floor consultant: Anything more I need to know?

The neurointensivist: He has been doing fine. We kept him longer because there were some secretion and blood-pressure issues.

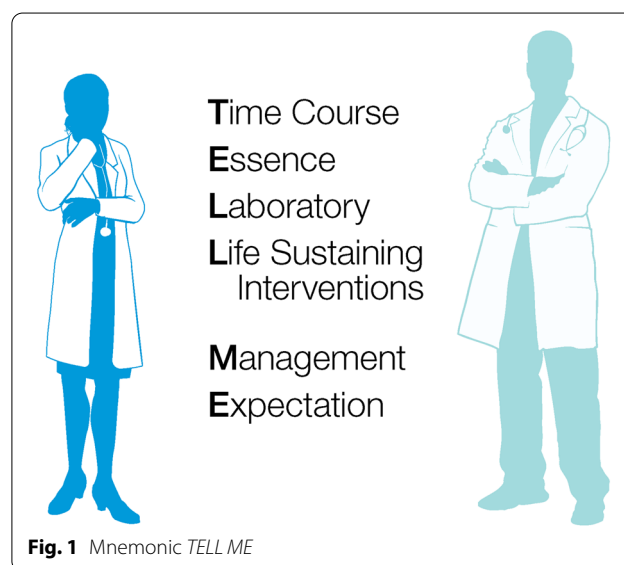
The floor consultant: Do you think the nursing staff will be comfortable with taking care of him?

The neurointensivist: I think so.

The situation: This patient just recovered from a ventilator-associated pneumonia. Moreover, there was an escalation of blood pressure medication and only 24 h of significant reduction of secretion burden. Six hours after transfer, the patient bounced back with difficulty clearing secretions and a blood pressure surge.

Suggesting a Mnemonic

How can we best communicate urgent admissions to and discharges from the neurosciences ICU? Ideally, correct information is provided, and no further questions are needed. Any tool must be both useful to the sender (who knows what to focus on) and receiver (who knows what to ask) and should be user friendly to all levels of expertise. One reasonable start is the mnemonic TELL ME (Fig. 1) to assist physicians to standardize their communication. Components of TELL ME include knowing



the time course (new and unexpected or ongoing for some time), extracting essential information from irrelevancies, communicating which tests are pending (CT and laboratory), relaying how much crucial support will be needed (e.g., secretion burden, intubation), knowing which emergency drugs have been administered (e.g., mannitol, antiepileptics, tranexamic acid), certainly when transport is planned, what neurosurgical procedure or endovascular intervention can be anticipated, and planning for worst-case scenarios. With this information, the staff knows exactly what to expect and is well prepared to intervene quickly.

Guiding Principles

Additional guidance will also improve communication. Here are 10 suggestions.

1. *Reverse the order.* Try starting with your final diagnosis and then discuss how you arrived there. The listener's mind is better attuned to hearing the key findings first, followed by an abbreviated timeline. While a few options can be mentioned, a full differential diagnosis takes too long and should be considered later.

2. *Extract the essence.* Our cognitive processing ability is continuously challenged. Vague descriptions (e.g., patients are unresponsive, seizing, trashing around) are not helpful. Avoid digressions as well as unnecessarily complex, repetitive, and long-winded exposition. Cut to the chase! Most healthcare workers with a lot on their plates have very short attention spans and little time for festooned language. If detail in neurologic examination is provided, remember that symmetric reflexes are not essential information (unless the patient has Guillain-Barré syndrome), sensation findings are seldom urgent (unless there is a clear spinal cord level or discrepancy between modalities), and same with tone (unless the patient has a serotonin syndrome or exhibits dysautonomic storming).

3. *Avoid numbers that lack specifics.* "This patient was found with a GCS of 5 and NIHSS of 10." Unsurprisingly, the most simple scales are the most likely to persist in medical practice, which also implies that they are too simplistic to be informative or have domains with little clinical applicability. Moreover, some scores may hide important information, and numbers are only useful with clinical trial statistics. Scales and sum scores have inflicted serious harm on how we communicate the results of the neurologic examination and neuroimaging. "The CT scan shows no bleed" is not an appropriate description. Instead, tell me what you looked for; for example, "the CT scan shows no hyperdense MCA or hyperdense basilar sign, or the basal cisterns are open, the ventricles are normal in size, there is no contusion or

traumatic subarachnoid hemorrhage, and there is no soft tissue hematoma."

4. *Avoid language we cannot understand.* Some vagueness can easily slip in (Table 1). We cannot expect superior knowledge of the neurologic examination and expert grasp of the meaning of clinical patterns mean from those less experienced in assessing acutely ill neurologic patients. But the sender of information should not attempt to compensate for lack of knowledge by guessing. Likewise, the receiver should not berate the sender. Most neurologic findings on examination require some deep thinking and time.

5. *What do I need to know for the night?* Communication during shift changes is crucially important. Neurocritical care is a *sui generis* specialty. One of the major paradoxes of neurocritical care is that the talkative, comfortable patient sitting in a chair after a ruptured cerebral aneurysm and in situ ventriculostomy is actually critically ill. Critical illness is not defined by systemic criteria but by the high likelihood the patient may deteriorate quickly from consequences of the initial injury—the second wave of devastating neurologic injury, so to speak. Summarize the examination and what it would look like when deterioration occurs (e.g., sleepiness, any confusion or agitation, new speech difficulties, new drift, not moving legs, cerebral vasospasm in the anterior cerebral artery).

6. *Which studies are repeated?* Which pending studies need review, and when are they expected? Electronic devices can set up alerts from electronic medical records in some institutions, but we still need to know when to expect the study. What are the potential expectations? Watch for new blossoming contusions, enlarging subdural hematoma, worsening hydrocephalus, to name a few. A good line of communication should establish what to expect.

7. *What is the resident or fellow's threshold to call a consultant?* Not a minor issue in training hospitals. Very few consultants routinely remain in the ICU overnight, and night is covered by residents and fellows. With standard staffing, a historical paradigm in the unit is an intensivist present during the daytime and taking calls from home at night, returning to ICU as deemed necessary. Shift work may not be the best solution. In fact, avoidance of shift work is the most common reason for emergency medicine physicians to retire as they age [20]. Easy remote access to patient data has reduced the need to be onsite. My residents always ask me when I like to be called, and I share my three criteria: call me 5 min before you get nervous, do not let me miss the excitement, and remember I am comparable to a 911 operator who will answer the phone immediately day and night. I do not ask the residents if I should come in (they always answer with an emphatic no), but I return to the hospital if there

is a potential benefit to the patient or family. I cannot promise anything less while on call. These directives have always been understood and worked very well.

8. *Call, text or email?* It is a new world of information gathering. For the younger generation, speaking on the phone is a lower priority. But a few simple suggestions are worthwhile. We should not email if we can text. E-mails should not be time-sensitive or require a response within a few hours. Texts are irreplaceable but should be considered urgent; a breezy, inappropriate subject line such as "heads up" downplays the urgency.

9. *Is your "listener" actually listening?* It takes a while to discern, but some behaviors clearly show that your listener is, indeed, *not* listening. Learn to recognize perfunctory attention from someone who is preoccupied or focused on something else (such as checking a smart phone while speaking). Behaviors include looking at the phone, an unfocused gaze, or mentioning another, imminent commitment (e.g., "Sorry, I have to run to another meeting," "I have to take this call").

10. *Do you become easily annoyed? Can you avoid being dismissive or overwrought? Do you recognize loss of resilience?* As a cautionary note to all of us: burnout manifests itself first in communication and is recognizable by irritating and snarky remarks. Dark sarcasm and compassion fatigue follow. It is eventually destructive and adversely affects care and professionalism. Moral distress, incivility, and conflict among colleagues are important drivers of burnout. One European multinational landmark ICU study found that personal animosity, mistrust, and communication gaps are the most common inter-professional, conflict-causing behaviors [21].

Conclusions

Communications with specialists with no neurologic background can be very successful but only if time is taken to discuss the presenting clinical picture in detail. It is a sad indictment of our profession that we have grown accustomed to disinformation, delayed information, or no information at all (and even no patient identity). However, most of us would strongly prefer it be otherwise, and it is something we need to address. To change a possible culture of using generalities, scores, scales and other inessentials, we need to engage many of our colleagues. We can expect a readiness to improve by all accounts, particularly if the outcome leads to more appropriate triage and better preparedness before the patient goes enroute.

Unquestionably, there is a need for research into how communication is used. We can consider using simulation centers, which might be ideal set-ups for communication scenarios; these could include scenarios with deliberately confusing or vague language to recreate

the potential downstream consequences for management. A control group could make use of TELL ME (Fig. 1) or other simple mnemonics. These might be more helpful than checklists, which can be too time consuming and too specific. Only with those data can communication be taught, learned, and practiced.

Ropper famously asked two crucial questions in *How to Determine if You Have Succeeded at Neurology Residency*. He provocatively asked, "Can you present a case to an intelligent colleague in 2 min?" and "Can you tell who is sick?" [22]. Many of us need to continue to hone our interpersonal communication skills, and the aforementioned fundamentals can help to change a culture of fragmented communication. It requires recognition of what is important (and what is not) and of how to avoid wasting time. However, as a whole, better communication means understanding what your listener wants or needs to hear. Ideally, the communicator is logically succinct, and the listener asks answerable questions. Every complex problem can be easily summarized in a few sentences with training.

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