CHAPTER 6

Communications and Teams

Communications need to take account of inadvertent error. To do so, apply the now-familiar three rules:

1. *Design the communication so that success is more likely than failure.*
2. *Let the sender determine if the communication succeeded or failed.*
3. *Let the sender make a correction on the spot.*

DESIGN FOR SUCCESS

Eschew pronouns. Pronouns invite ambiguity. Pronouns are never necessary. There are whole books, including this one, that contain very few pronouns.

Disambiguate. Be aware of medical terms that sound a great deal like each other, and take care to distinguish one from another.

Use the phonetic alphabet. Alpha, Bravo, Charlie, Delta, Echo, Foxtrot, Golf, Hotel, India, Juliette, Kilo, Lima, Mike, November, Oscar, Papa, Quebec, Romeo, Sierra, Tango, Uniform, Victor, Whiskey, X-ray, Yankee, Zulu. One, Too, T'ree, Fow-er, Fife, Six, Sev-en, Eight, Nin-er, Zee-ro. These words are immediately understood by the receiving party, and none sounds like another. This is particularly important with numbers, because the English words for numbers are not very distinct as conventionally pronounced. Say the numbers one at a time because, for example, *seventeen* and *seventy* are easily confused, while *one sev-en* and *sev-en zee-ro* are easily distinguished.

REPLY

The action moves to the receiving party, but the responsibility rests with the sender. The sender must require that the receiving party respond before taking any action that impinges on the patient.

The receiving party needs to communicate back to the sender that the message has been received and comprehended. "Yes, ma'am" does the first but not the second. Silence does neither.

The same applies for written as well as verbal communications.

If there is no reply, or if the reply is not sufficient, then the sender has no basis on which to decide if the communication was a success or a failure. The responsibility resides with the sender, so the sender must insist.

CORRECTION

If the sender determines that a correction is required, the communications task needs to start again. Furthermore, the process needs to have been designed to allow time for a corrective message or for mitigation after the fact. Allowing a little time seems to be the better course.

TEAMS

There are one-party communications, usually notes written to self. Most healthcare work, though, is done by several people assembled in teams, so error-resistant communication is key.

Surgical Teams

Talk about stress!

The stress is unavoidable, so the question is, can outcomes be improved by improving communications?

Dr. Paul Barach, an important figure in patient safety and an anesthesiologist by specialization, focuses on the human factors of pediatric cardiac surgery.

Dr. Atul Gawande (2009), surgeon, has written extensively on his own journey to find the best way to manage his surgical team in the interest of the patient. Dr. Gawande does not have a standing team to work with but rather draws nurses

and anesthesiologists from pools so that each surgery has a new team. To ensure a smooth procedure, Dr. Gawande moves systematically through the following process.

Before starting, Dr. Gawande reviews the patient's history out loud. Each person around the table is asked in turn to remark on any particular considerations, such as allergy to anesthetics. Dr. Gawande states out loud what he will do in the first surgical step and reads through a short checklist. He then executes the first surgical step, stops, invites comments, goes through a new checklist. And so on.

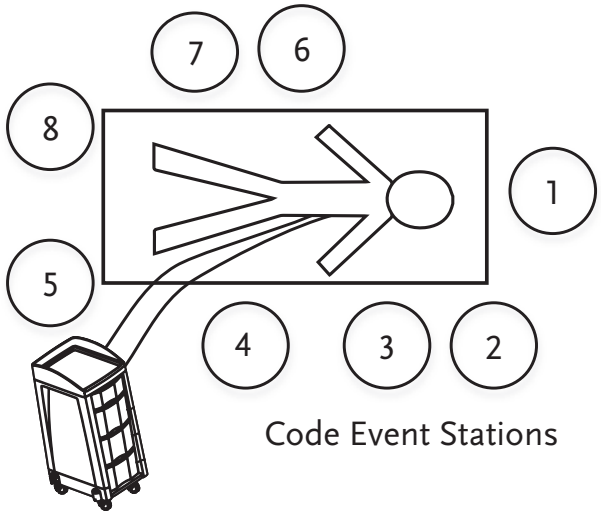
While all surgeons tell everyone to speak up and some even mean it, Dr. Gawande actually has everybody talking. That's a big difference, whether or not the team members are used to each other.

Ad Hoc Teams

Code or Code Blue events in hospitals trigger a call for all hands to rush to the bed of a patient undergoing cardiac arrest. The first one to get there starts doing something; there is no waiting for the whole team to assemble or to go through a preflight rehearsal. For the first several minutes, no one is in charge and yet the team is doing lifesaving work.

The University of Pittsburgh's Peter M. Winter Institute for Simulation, Education, and Research—WISER for short—has developed training programs for such personnel, shown in exhibit 6.1 and summarized as follows (DeVita et al. 2004):

Exhibit 6.1: Diagram of Code Events Stations



- The positions around the bed are assigned a number.
- Each position is assigned specific tasks.
- Each person arriving takes up an open position for which that person is qualified.
- No one changes position, even if a more-qualified person comes in.
- Drills help.

Relay Teams

Relay team members cooperate only at the moment of handoff, passing the baton.

Passing the baton looks like a simple thing, yet even so there are ways of doing things. In a short race, the runner with the baton is responsible for slapping the baton firmly into the hand of the next runner, whose head is turned the other way. In a longer race, the fresh runner looks back and is responsible for grasping the baton from the flagging runner.

In healthcare, the patient is handed over several times. An emergency patient is handed from the Emergency Department to a Medical-Surgical Department, then perhaps to X-Ray and Surgery, perhaps to the Intensive Care Unit (ICU), then to another Medical-Surgical Department, to Rehab, before step-down care and home care, and perhaps more. While in the hospital, the patient will have the attention of a case worker who makes sure each step is taken, and taken in a timely manner. Over the entire sequence, there is no single person who is directing the actions. The patient's primary care physician gets reports, but the primary care physician is pretty far away from the action.

So, as in a relay race, each leg is autonomous, and each handoff is vital to success.

Solo Relay

Solo relay? Self-relay? The point is that communications between people are fallible and always introduce some chance of things going awry. One way to avoid this is to reduce the number of responsible parties, letting one person take on consecutive tasks. The person needs to be qualified for each task, of course.

Task-by-task specialization, and therefore relaying, is efficient and ensures the greatest proficiency at each step. That's good. Having one person perform two consecutive tasks is likely to be less efficient when measured task by task.

In the bigger picture, however, with credit for the elimination of at least one relay handover, maybe the overall error count will go down.

SURGERY ICU TO MEDICAL-SURGICAL TRANSFER

Standards require that the receiving nurse be allowed to ask questions of the ICU nurse. This is not quite up to Six Sigma standards because the receiving nurse is made responsible for the communication. If questions are to be asked, it would be better if the ICU nurse asks the questions, after conveying the information, so that the ICU nurse, as the responsible party, is confident that the receiving nurse understood everything.

NURSING-SHIFT CHANGE

When the shift changes, responsibility for the patient passes from one nurse to another. It is good practice for both nurses to go the patient's room and take up positions on two sides of the bed. Nurse A reviews matters for Nurse B. Both nurses examine IV insertion points and the like. The patient can speak up to the benefit of both nurses.

HOSPITAL DISCHARGE

The literature is replete with data saying that patients don't remember doctors' instructions and generally misunderstand whatever instructions they do remember (Lieber 2015). Hospitals work hard to do better in this area. For example, the discharge nurse will take the time to instruct the patient on any follow-up care and then have the patient "teach it back." This closes the loop and gives the nurse the opportunity to verify that the patient understood what is to be done and to correct misunderstandings as necessary. Discharge does not occur until the instructions are understood and are confirmed to be understood. This conforms to the three Six Sigma rules, because the teach-it-back step allows the nurse to distinguish success from failure and to fix problems on the spot.

COMPUTER-TO-COMPUTER COMMUNICATIONS

Computer-to-computer communications are very carefully designed and tested because computers don't have any sense. Six Sigma computer-to-computer communications require the following:

- Computer-to-computer messages are specific.
- A message that does not conform to a known list of proper messages is rejected and reported back to sender.
- Messages that contain noise are rejected and reported back to sender.
- Successful messages are acknowledged back to sender.
- The sending computer will raise an exception if no feedback, positive or negative, is received in a timely manner.

In this last point, the sending computer is taking responsibility insofar as a computer can take responsibility in any meaningful way. At least the sending computer raises an exception and bumps the exception report up to the eventual attention of a human being. Timeliness and prioritization—both of which are computer system design issues not peculiar to messaging—then come into question.

DOCTOR'S ORDERS

Consider a doctor's orders for hospital care:

- Once the order is written, the action moves to the responsible nurse.
- The nurse will observe that the order is within a customary range of orders for the stated diagnosis.
- The nurse will check drug names and dosages against customary practices for the stated diagnosis and patient weight.
- The nurse will call the doctor before taking action if the nurse finds anything amiss or exceptional.
- The nurse *will not* call the doctor before taking action if the nurse finds the order to be ordinary.

This conforms only in part to Six Sigma task-design rules. The doctor does not know if the order was received and understood prior to the nurse's taking actions that might impinge upon the patient, and there is no possibility that the doctor can correct an inadvertent error before actions impinge upon the patient.

While this has been accepted practice for more than a hundred years, in this day of instantaneous messaging, it would seem to be possible to close the communications loop prior to actions being taken so that the responsibility resides with the doctor and inadvertent error can be dealt with at the right point in the process. See "Message Overload and the Time Basis for Computer-to-Person Communications" in chapter 8.

ELECTRONIC PATIENT RECORD NARRATIVE

Doctors and nurses are getting used to entering data into electronic records, checking boxes, typing in numbers, and writing or dictating a narrative. Concern has been expressed that both doctors and nurses are devoting less attention to filling in the narrative portion than in the past. As the point of the narrative is to record that which the box-checking doesn't convey, either this needs attention or the narrative concept should be abandoned.

The narrative does not conform to any of the three Six Sigma rules for task design. There are no standards for content of the narrative. The receiving party is not identified. There is no feedback path. The narrator cannot know if the narrative content was received and understood; therefore, corrections cannot be made in a timely manner.

The role of the narrative in this age of electronic records needs further consideration.