



The Case of the Terrible Code

Case by Dr. Tamara McColl

Case

Dr. Tamara McColl

Objectives / Questions:

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Expert Commentaries

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Curated Community Commentary

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Malory, a seasoned senior emergency resident, had just signed out his cases for the evening to his colleague. He grabbed his jacket and empty coffee mug and was just about to pass through the doors of the Emergency Department when he heard the alert sounding overhead: "Trauma Code - Emergency".

Having recently completed several trauma electives at various sites, Malory was always looking for opportunities to polish his trauma resuscitation skills and procedural dexterities. He looked at his watch, hesitated for a moment, and thought, "Well, maybe I will just peek in and see what it is. I'll be out of here in 30 minutes, max!"

He walked briskly towards the trauma bay, setting down his belongings on the nurses' desk, and then grabbing a trauma gown and mask off of a nearby shelf. Not surprisingly, a large crowd of various providers that had already gathered into the room. The trauma team, consisting of both emergency medicine and surgery providers, had already arrived and a veteran emergency medicine attending was leading the code.

Malory hung back beside the charting nurse and watched as the team worked together to revive an elderly man. The patient had been crossing the street when a car ran a red light and struck him before speeding away. As Malory observed the resuscitation, his gaze floated from the monitor to the patient, and onward to the nurse delivering chest compressions. His eyes finally rested on the emergency medicine attending calling out orders. He frowned as the entire picture came into focus.

The senior emergency medicine and surgery residents were frantically attempting to insert femoral and subclavian central lines as the junior surgery resident was struggling to successfully assemble the intraosseous drill. The patient had no vascular access! No fluids or medications had been administered. Malory also noticed that since the team was so focused on chest compressions and attaining venous access, no one had put in chest tubes or performed a bedside FAST ultrasound. The resuscitation leader, the emergency medicine attending, was calling out orders into the air, to no one in particular, and the nurses were scrambling around looking for blood and IV tubing. It was certainly a chaotic situation! Malory grew increasingly upset as the code continued. He debated whether it was appropriate to get involved. On the one hand, he felt that he had the skills and knowledge necessary to take over leadership, or at least assist in some way. "This is so disorganized and nothing is getting done! Should I say something? Should I just step in and help?"

On the other hand, there were several other staff physicians and residents in the room watching the code. No one else was speaking up or offering to help. And the emergency medicine staff physician leading the code, Dr. Berkley, was well respected. Malory couldn't just interrupt him! "Who am I to question a staff physician? I'm just a resident! If the other staff in this room are keeping quiet, I should just keep my mouth shut, right?" And with that, he made the decision to stand back and simply watch. Fifteen minutes later, the resuscitation was terminated.

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Questions for Discussion

1. Why was it so difficult for Malory to speak up? What are some potential barriers to speaking up during a resuscitation?
2. There is a hierarchy of structure in resuscitation scenarios with the team leader making the management decisions. If those observing or indirectly involved have differing opinions, when is a good time to speak up? And how should they do so?
3. How can we improve communication in code situations? Could simulation play a role?

Competencies

ACGME	CanMEDS
Professional Values (PROF1) Team Management (ICS2)	Professional Communicator Collaborator

Intended Objectives of Case

1. Discuss and identify learner-specific factors that inhibit participation in resuscitation situations.
2. Describe an approach for the handling the hierarchy of structure in resuscitation scenarios.
3. Create a list of strategies for improving communication in code situations.
4. Describe how simulation can be used to improve or prevent similar situations in the future.

Performing in High-stakes, High-stress scenarios

by Josh Kornegay MD & Lainie Yarris MD, MCR

In this scenario, Malory finds himself observing a trauma resuscitation and becomes concerned about multiple aspects of the case. Despite an awareness of his discomfort, he hesitates to speak up, and ultimately decides to remain silent. We suspect that Malory's experience would resonate with most trainees in that it is difficult to speak up in the moment and easy to regret not doing so. It prompted the following reflection from the first author of this commentary:

"Just last month I was walking out of our pediatric emergency department after a long, taxing shift when I heard overhead: "Code 3 ambulance, ETA 5 minutes." I am in a habit of quickly reading the EMS report and when I saw the ambulance was bringing in a post-cardiac arrest patient, I couldn't pass up the opportunity to stay to "observe" and "learn" from the case. While I watched one of my very skilled colleagues run the post resuscitation care of this patient, I couldn't help but notice things I may have done differently if I was at the head of the bed. However, despite being an attending with a clinical interest in post-arrest care, and the ACLS director for our institution, I, like Malory, watched silently without speaking up."

In these high-stakes, high-stress scenarios that define our clinical careers, there are many factors that may contribute to not speaking up: self-doubt, the feeling that "everyone else is doing (or not doing) it," intimidation, the desire to avoid stepping on toes, and "Fight, Flight, or Freeze" responses to stress.¹ Sometimes we are hindered by self-doubt - when a strong leader acts or speaks confidently, it may cause us to question our knowledge or impression if we don't concur. This can be compounded when everyone else in the room goes along with the course of action, either because they don't have the same concerns, or because the culture doesn't promote voicing dissenting opinion. Sometimes we have confidence that our approach is right, but are either intimidated by the personality or status of the code leader, or hesitate because we are not sure that it is our place or job to speak up. This factor is particularly prevalent if we are a more junior provider than the leader, or if we are not directly involved in the patient's care, both of which occurred in Malory's case. Finally, even when we are sure of the right course of action and want to speak up, like an athlete on game day, sometimes we "choke," overcome by the cascade of events incited by our sympathetic nervous system (fight or flight), and quite literally freeze, unable to form or speak the words to effectively convey our concerns.

Standard approaches to resuscitation, such as those taught by ACLS, ATLS, and PALS, recommend a hierarchy that can have benefits in a code situation, but can also serve as a barrier to communication. To overcome these barriers, team

leaders must encourage open communication and voicing of concerns, and there must be a culture that supports this. To ensure that a team functions at a high level, TeamSTEPPS outlines the responsibilities of the team leader, which include assigning members tasks and responsibilities, identifying and clearly articulating the plan, monitoring and reviewing team performance and providing feedback, modifying the plan when appropriate, managing resources, and facilitating and modeling information sharing, teamwork, and conflicting resolution.² To fulfill these responsibilities, team leaders must be aware they exist, possess the skills to achieve them, and avoid taking on roles that occupy their cognitive space or hinder their powers of observation, such as directly participating in procedures. To illustrate the impact of mindful role assignment, we share the following anecdote, again from the first author's experience.

"I recently conducted a simulated cardiac arrest training for the ICU team in our hospital. As part of the responding team one of our EM residents on service in the ICU participated. He quickly fell into the role of the recorder, which in my past experience has frequently been delegated to one of the RN code responders. This deviation from the norm was fascinating to observe as the resident participating as the recorder was able to provide ongoing guidance and feedback to the code leader in a more calm and collected fashion than usually occurs when the resident is the code leader. He was an observer in this case, but by being an engaged, active, and communicative observer he made valuable contributions to the resuscitation efforts."

As the observer in our case, Malory first becomes concerned that some crucial tasks, such as chest tube placement and the FAST exam, had not been performed because they were not assigned to specific team members. Further, the team leader was calling out orders without confirming who would complete them, which can be avoided by using closed-loop communication.³ Many of the team leader roles and team communication competencies are well suited to teaching and assessment using simulation, and participants can benefit from exploring learning opportunities in a safe, structured debriefing that combines rigorous feedback with genuine inquiry.⁴⁻⁶

Even providers who have practiced team communication and are familiar with the roles and responsibilities of each team member may, like Malory, find themselves hesitating to voice their concerns in these situations. Recent publications highlight the role that culture plays in presenting barriers to effective communication, and suggest that systematic changes may be needed to optimize communication.

Expert Response

Yamada and Halamek propose a direct application of the crew resource management principles from the commercial aviation industry as well as their specific lexicon.⁷ They argue that adopting terms such as “affirm,” “read back,” and “unable” during resuscitations may convey a more clear message than nonuniform terminology.⁷ Incorporating checklists may help assure important tasks are not forgotten, and novel educational interventions such as using game cards to introduce challenges into simulated team communication training offer promise.^{2,8} Others have proposed that having a nurse team leader in trauma and medical resuscitations may improve some aspects of communication.⁹

Communication skills are crucial for Emergency Physicians, but our practice environment poses unique challenges to effective communication during even routine cases. Cases like this, which combine high stakes, multidisciplinary and multi-specialty providers with variable experience levels, and many simultaneous communication encounters, true expertise is required to maintain effective communication. Although Emergency Physicians are generalists at heart, this case highlights two skill sets in which we are uniquely suited to demonstrate expertise – resuscitation and team communication. Just as we require training, deliberate practice, and ongoing self-directed learning to be experts in resuscitation, we should devote the same attention to teaching and assessing communication skills. This is one area where we are all truly life-long learners.

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About the Expert

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About the Expert

Lalena Yarris, MD is an EM Residency Director and Education Scholarship Fellowship Co-Director at Oregon Health and Science University. Her academic interests include education research methods, faculty development in education, feedback in medical education, and wellness in academic medicine.

Combating the acute stress response

by Christopher Hicks MD, MEd, FRCPC

Extreme time pressure, multiple priorities, diagnostic ambiguity, and treatment failure (no IV access) are among the most potent precipitants of an acute stress response. When an individual or team feels the demands of a given situation exceed the available resources to resolve the crisis, a threat appraisal results.¹ This is often disastrous for a team's ability to think laterally, communicate effectively, and devote attention to peripheral task-relevant cues - in essence, it obliterates the sort of shared mental models and sense of "we-ness" required for team cohesion.²

Based on the description of the chaos in the room, it seems likely that this team is stressed and task overloaded. It also seems likely that Malory found the situation stressful as well, which in part might explain his reluctance to become directly involved. One of the things about stepping up, speaking out, or declaring a crisis is that you then have to own that declaration, and often become responsible de facto for the next steps in management. What if you're wrong? What if you don't know what to do next? What if self-doubt is holding you back? In addition, socio-evaluative stressors - that is, the fear of scorn, judgment or retribution from one's peers (or worse still, one's superiors or supervisors) can be a powerful source of stress, and serves as an important and probably under-recognized deterrent to speaking up, even if it seems ethically or medically appropriate to do so. In this circumstance, the authority gradient between Dr. Berkley and Malory likely played a role in the socio-evaluative stress that seems to have held him back.

Here are a few thoughts on what might have helped mitigate the effect of stress on this team's performance, and perhaps empowered Malory to do what he believed was right, but couldn't act on.

- **Cognitive Re-Framing:** An elderly patient suffering a blunt cardiac arrest has a mortality of close to 100% -- not to suggest the team should give up; however, the simple act of framing the case in this manner to the entire team can at times empower individuals to do what they need to do, knowing that they can only help. To declare "This patient has lost their pulse, and all we can do is help the situation from here - so let's quickly set a few immediate priorities and talk about how and when we will reassess the situation" may help to re-frame the team dynamic from panicked and rushed to calm, purposeful and organized.
- **Helping vs. Interrupting:** A stressed individual doesn't tend to be all that receptive to input from others. Offering "help" might also not work, as Dr. Berkley, the team leader, likely doesn't have the bandwidth at that moment to describe a role

for a new team member. What can be effective is making an observation ("I notice we don't yet have vascular access") and pairing it with a recommendation ("I can take over that task while you focus on other issues") is generally more well received than simply asking "What can I do?"

- **Overcoming authority gradients:** We harm a lot of patients for fear of seeming rude or intrusive, or simply trying to be too polite. There are a few frameworks designed to help climb the ladder between a junior and senior team member in a graded, non-confrontational fashion. The most popular is the CUS (Concerned, Uncomfortable, Safety Issue) framework, or the two-challenge rule. A team member - any team member - first offers an observation or concern, ideally paired with a manageable recommendation ("I'm concerned that we are focusing too much on CPR and I suggest that we discontinue compressions to facilitate vascular access"). If an adequate response is not received and the safety threat is ongoing, the concern is escalated to convey discomfort ("I am uncomfortable that the patient and our team member is at risk with their sharps trying to place a subclavian line during active chest compressions"). Finally, if the situation is not resolved, you identify the issue as a safety threat, and "Stop the Line" - call in another senior consultant, offer to take over care, etc.
- **Rally Points:** Knowing when to articulate a concern is a fine art, and there is no easy answer. A team leader can facilitate this by building in pauses in the action to verbally re-assess and summarize the care to that moment - and in addition, ask the very important question, "Does everyone agree with that assessment? What am I overlooking?" This is a very powerful way to co-orient team members, establish a shared mental model, set priorities dynamically - and, importantly, allows for a set time for team members to express concerns or important observations. This doesn't have to take long; it can be under 30 seconds when time is tight.

Simulation can help. Practice, repetition, over-learning of both team and task-based skills can in part help mitigate the impact of acute stress on performance.³ Deliberate practice of crisis resource management skills is important, but often falls short of the mark - simply telling a team to "set priorities dynamically" or "avoid premature closure" is not helpful unless they understand the emotional, cognitive and ambient variables that are likely to influence their decision-making during challenging situations. Understanding the effects of stress on team performance is an important first step; the next is to use simulation-based instruction to rehearse the specific skills required to mitigate that effect.

Expert Response

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About the Expert

Christopher Hicks (@HumanFact0rz) is an emergency physician and trauma team leader at St. Michael's Hospital in Toronto as well as a Clinician Educator at the University of Toronto. His academic interests include simulation.

Curated Community Commentary

By S. Lockett-Gatopoulos MD, FRCPC (candidate)

This week The Case of the Terrible Code explored a trauma code gone wrong as experienced by Malory, a senior resident in the emergency department. Malory walks in on a trauma where there is no clear leader, orders being shouted but not followed, and basic procedures (like obtaining peripheral vascular access) not completed. Having done several trauma electives at a number of sites, Malory feels he should speak up, but - in the presence of multiple attendings and learners - does not.

The issues explored in the case commentary fell into three main categories. First, several participants pointed out reasons that it can be difficult for a resident like Malory to speak up in these situations. Second, participants debated whether Malory could have effected change in the code. Third, participants discussed strategies for intervening in a chaotic code.

Speaking up

Resident Dr. Krishan Yadav illuminated several reasons it can be difficult to speak up in the presence of a senior colleague or attending physician who may be mismanaging a resuscitation. He pointed out that inherent in speaking up are the risks of embarrassing someone senior, developing a reputation of being 'rude' or difficult to get along with, a poor shift or rotation evaluation, and increased chaos by virtue of adding another voice to the noise. Dr. Yadav pointed out that there exists 'a notion in medicine that you should not question your attending.' Julie Derringer, an emergency department nurse, related to Malory's hesitancy to challenge the code leader. She acknowledged that 'there is a prescribed dogma of certain attendings and even certain upper level residents that they are unerringly "right"'. She pointed out that it can take 'nerve and confidence' to question the code leader in this sort of environment.

While acknowledging that it can be difficult to speak up, particularly where senior physicians are forceful, Dr. Paul Dorio pointed out that 'anyone can potentially have something of value to offer' and explained that 'making a polite suggestion or asking if help was desired would not necessarily have been poorly received.' He followed up by adding in that 'it really depends on the knowledge and skills of the players' and that a good relationship with his colleagues and superiors should facilitate Malory being able to 'suggest helpful additions to the situation without usurping the position of the leaders.' He emphasized that medical care is 'not about egos. It's about handling the fine details of a code as best we can so we can help people. I don't know too many doctors who can't handle reasonable suggestions.' Dr. Loice Swisher wondered Malory's reluctance to speak up reflected not just the situation, but also an early stage of 'professional identity development'. She

Contributors

Thanks to the participants (in alphabetical order) for all of their input:

Krishan Yadav
Paul Dorio
Copake
Loice Swisher
Alex Chorley
Fareen Zaver
John Eicken
Julie Derringer
Edward Lew
Stephen Cox
Eve Purdy
S. Lockett-Gatopoulos

pointed out that 'Malory doesn't seem to have confidence in knowing his role or how to approach others in our field at various levels' and that 'there seems to be a high personal emphasis on hierarchy rather than collegiality.' Dr. Swisher suggested that this might get better with time and further experience.

Can we change the outcome?

A number of participants pointed out that the code situation may not have progressed differently had Malory spoken up. Dr. Dorio pointed out that 'code situations are very fluid, very complex, and very experience-dependent' and acknowledged that there had been many times during residency when he felt he knew more than some of his attendings 'but years of subsequent experience have taught [him] that those feelings were undoubtedly incorrect.' Dr. Swisher agreed that the outcome of the code may not have been different had Malory spoken up. She pointed out that many times she has seen residents 'believe that they have these "awesome, new ideas"' and may not take into account the hurdles that the faculty have already been through in trying to implement such ideas. Dr. Stephen Cox added that, with '25 years of ER experience, the odds of bringing back an elderly patient' under these circumstances 'are basically none, so [Malory] is very unlikely to make a difference in the outcome.' Dr. Fareen Zaver noted that Malory's intervention 'may have just added to the chaos and confusion' that had already been established.

Julie Derringer pointed to a powerful example of a situation where many on a code team believed the leader was in the wrong. The code leader was proceeding with a 'double down'

Curated Community Commentary

defibrillation that was unfamiliar to the team, who balked at this suggestion. Yet, education following the code showed participants that this is a legitimate treatment that had been undertaken by the physician managing the resuscitation.

Dr. Swisher criticised Malory for making the assessment that the code was not running smoothly and failing to go on to consider potential reasons or the ways he could have intervened in a helpful manner. Dr. John Eicken pointed out that 'it is certainly possible that the attending is fully aware that the code did not go as smoothly as desired' and felt that a non-judgmental debriefing might 'provide Malory the opportunity to share his observations, thoughts, and suggestions without appearing to lay blame'. Dr. Zaver agreed with the idea of a debrief, noting that 'if Malory felt the code was chaotic, changes are he was not alone'. She pointed out that 'creating a safe and comfortable environment for everyone to speak up and allow a debrief that does not point fingers at one specific person can be extremely helpful'.

How should we intervene?

Resident Dr. Alex Chorley offered some concrete suggestions for intervening in a code that appears chaotic. His first suggestion was that a senior resident could ask to run the code. He pointed out that the best way to become competent at resuscitation management is 'to practice with a staff [physician] observing and providing oversight so that they can give feedback afterwards.' In this particular scenario, Dr. Chorley suggested 'the resident could respectfully say to the staff, "Dr. Berkley, I've been doing a lot of trauma lately and I'm trying to work on my skills as a Team Leader. Would you be comfortable letting me run the code and giving me some feedback afterwards?"' Dr. Stephen Cox disagreed with this strategy, stating that 'it would be very presumptuous...for a third year resident to walk into a room full of doctors with more experience and ask in the middle of a bad code if he can run it,' certainly a caution for those who may employ this strategy.

A second option that Dr. Chorley offered was to find something specific that needs to be done, and then respectfully offer a suggestion. In this case, it might involve asking whether a FAST exam would be helpful and offering to retrieve the ultrasound machine. Dr. Chorley pointed out that 'sometimes a Team Leader's cognitive load is too high and they can benefit from outside input'. Dr. Swisher agreed, offering other suggestions like retrieving blood or setting up a pleural drain. She suggested that should she be the attending 'struggling with a cluster of a non-functioning team...[she] would hope that a seasoned senior resident hanging out late to practice skills would step up to teach a junior surgical resident to assemble the [intraosseus] drill' or retrieve the ultrasound machine and bring it to the bedside. Dr. Fareen Zaver agreed, adding that 'Malory did, however, have many opportunities to get involved as a senior resident', such as helping with the intraosseus line, chest tube, or FAST exam. Dr. Edward Lew has had a number of residents employ this strategy during codes and feels that 'it comes across only as helpful'; similarly, he has asked the same of fellow attending physicians, and feels that it 'advocates for a team approach'.

A final useful task for Malory, as described by Dr. Zaver, would have been 'moving excess people out of the room to allow more space, and decrease background noise for the team at work.' All agreed that, while there were barriers to Malory's intervention, he could have at least provided some useful input for the attending physicians attempting to run this difficult resuscitation.

About

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