Triggers: Rapid Response at Beth Israel Deaconess Medical Center

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The nurse's view: When working as a clinical staff nurse on a general med-surg unit on the evening or night shift, I would often need to exercise my clinical judgment about a change in a patient's status. Imagine this scenario: it is 2:00 a.m. and one of my patients developed a respiratory rate of 32. After my initial assessment of the situation, I needed to decide whether or not to call the physician. When the physician returned my call, he or she needed to decide whether or not to actually come to the bedside to evaluate the patient or just make recommendations over the phone. Some of the physician's decision might have been based on how well I described the clinical condition, how worried I sounded, or how well the physician knew me and trusted my assessment skills.

The physician's view:.When working as an intern on the wards at night, I relied on the assessment skills of the nurses and really hoped they always knew when to call. Imagine this scenario: it is 2:15 a.m. and I'd just admitted a worrisome sick patient. If he was with a nurse I knew well, then I was very comfortable. But, if he had a nurse I had not worked with much before, then I was nervous. In fact, with these kinds of patients (cared for by nurses I was unsure of), I would always try to sneak by in the middle of the night to double check, because I just wasn't certain that I would get a call if something changed. Of course, when I did get those calls, I had several decisions to make: Go and see him? Just make recommendations over the phone? Call my supervising resident? (sometimes) Call the attending? (rarely).

In 2005, the Institute for Healthcare Improvement launched the 100K Lives Campaign.[1] One of the recommended practices was that institutions develop rapid response teams to provide earlier intervention to the decompensating patient.[2] For 2008, the Joint Commission hospital accreditation standards include a new National Patient Safety goal which calls for improved recognition and response to changes in a patient's condition.[3] Understanding that studies have yielded conflicting results—and less resource-intense practices have not been tested—BIDMC approached these recommendations by launching the clinically resource neutral Triggers Rapid Response process for attending to decompensating patients.

BIDMC started by identifying a standard set of "triggers" (see Figure 1).[4-5] When a non-ICU patient meets the trigger criteria, the result is a standard communication from the nurse to the intern or resident caring for the patient, e.g., "Mr. S has triggered with a BP of 82/50." The intern or resident, and a senior nurse (clinical supervisor or clinical nurse specialist) then must come to the bedside to see the patient. If the trigger is a respiratory event, a respiratory therapist also comes to the bedside. Once the evaluation is complete, the intern or resident informs the attending that his or her patient has "triggered," then they discuss the plan of care.

To assist in this new process, BIDMC's Information Systems department created a "Trigger" multidisciplinary event note. Nurses can generate a Trigger event note by a single click in BIDMC's CPOE system. The note pulls a list of the active medications, recent lab results, advance directive status, and allergies so that when the team responds to the bedside, it has this key information at hand without needing to scan through the record. This event note provides the documentation of the interventions and helps to capture the truly multidisciplinary discussion of the plan of care for that patient with all team members. It has also provided access to day-to-day data on activity of the triggers program, helping team members track and follow up on the patients who trigger and to review the response and the interventions that occurred. Clinicians can also review the care of patients who require resuscitation to see if a trigger was called prior to a cardiac arrest or ICU transfer. Knowing which patients did or did not trigger prior to an event has allowed BIDMC to learn more about its systems of care and to identify areas of practice where educational reinforcement was needed.

One example of this was in management of oxygen therapy for medical and surgical patients. In several instances, BIDMC discovered that nurses would increase the oxygen delivery by turning up a nasal cannula delivery from 2L to 4L to 6L without calling a "trigger" because the oxygen saturation was remaining above 90. Retrospective review of several of these instances over time led to adding a new, more specific trigger criteria in 2007 and also led to enhanced nursing and physician education about oxygen management.

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Figure 1

Triggers

The acute, new development of any of these constitutes a Trigger:

- heart rate <40 or >130
- blood pressure decrease to <90
- respiratory rate <8 or >30
- Sa O_2 <90% with oxygen therapy
- any need for non-rebreather O_2
- urinary output <50 cc in 4 hours
- acute change in consciousness
- marked nurse concern

The Trigger team includes:

- the patient's house officer
- the patient's nurse
- the floor's designated senior nurse
- the floor's unit coordinator (if staffed)
- respiratory therapy (if needed)
- other providers as needed

Triggers (cont'd)

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So What Have We Accomplished?

Better Outcomes: BIDMC looked at the risk of full-code patients dying outside of an ICU—what the literature generally calls "unexpected mortality" or "non-ICU, non-DNR mortality." Since beginning the triggers program in 2005, unexpected mortality at the BIDMC has fallen by more than 50 percent, even after adjustment for age, case mix, and comorbidities.

A New Verb in Clinical Language: The Triggers Rapid Response process has helped to enhance collaborative communication by standardizing the expectations for response when a patient becomes unstable. The criteria and the naming of the program with the "trigger" phrase provides rule-based communication that eliminates ambiguity in the expected response. Over the past two years, the triggers program has become a part of the day-to-day work in the care of BIDMC's non-ICU patients. In interdisciplinary rounds, it is now common to hear "Mr. S triggered at 1300 for a low blood pressure." BIDMC now has a new verb!

We are particularly proud of the decision to use the existing primary care team to respond to the bedside; the patient is best served by an initial response by the physician who knows him or her.[6] This level of response also fits with BIDMC's teaching mission. And finally (and not insignificantly), this level of response did not require the addition of staff resources.

So if we think back to that long ago night shift on our medical surgical unit…

We no longer rely on the nurse to decide if a call is necessary, knowing that there are other factors that might influence the decision to call for help. We no longer rely on the intern or resident to decide whether the attending should be called, since there are other factors that might influence the decision to notify the attending physician of a change in the patient's status. We have standardized the rules and, in doing so, we have developed a new collaborative process for communication. ■

References

1. Institute for Healthcare Improvement. 100,000 Lives Campaign. March 20, 2005; www.ihi.org/IHI/Programs/Campaign/Campaign.htm.
2. Institute for Healthcare Improvement. Getting Started Kit: Rapid Response Teams. www.ihi.org/NR/rdonlyres/6541BE00-00BC-4AD8-A049-CD76EDE5F171/0/RRTHowtoGuide.doc. Accessed 19 January 2007.
3. Joint Commission on Accreditation of Healthcare Organizations (JCAHO). 2008 National Patient Safety Goals: Hospital. www.jointcommission.org/NR/rdonlyres/82B717D8-B16A-4442-AD00-CE3188C2F00A/0/08_HAP_NPSGs_Master.pdf. Accessed 21 September 2007.
4. Bellomo R, Goldsmith D, Uchino S, et al. A prospective before-and-after trial of a medical emergency team. *Med J Aust.* 2003;179(6):283–287.
5. Bellomo R, Goldsmith D, Uchino S, et al. Prospective controlled trial of effect of medical emergency team on postoperative morbidity and mortality rates. *Crit Care Med.* 2004;32(4):916–921.
6. Howell MD, Folcarelli P, Aronson M, et al. Can an intern lead a rapid response team? *Crit Care Med.* 2006;34(12):A23.

OR Collaboration (cont'd)

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That fear—that we're slowing things down with indiscriminate interruptions—can prevent some physicians from seeing that we are not talking about equal responsibility. The attending surgeon still makes the decisions even if the team disagrees, but we have to improve information transfer. Especially during periods of extreme stress or emergency, we need to flatten the hierarchy—temporarily—and then be able to immediately reconstitute it.

I also do a debriefing, essentially as a teaching tool, as we are closing. I say, "What do you think went well? What would anyone do differently?" When I first began talking about this to a national audience, somebody said "Well, I'd hope you wouldn't be disclosing any adverse event in front of the team." But that misses the point. Who am I trying to keep it secret from? They were all there and know what happened; what better time to talk about it and learn from it? Of course there are times when it is more appropriate to say "This might have been upsetting, it was upsetting to me, and if any of you feel that you want to talk about it afterwards, we should." But, generally, I want to take advantage of the learning opportunity while it's fresh in everyone's minds.

I am very lucky in that my division at BWH (Otolaryngology) has a mutually respectful relationship with our nurses, who are all talented and dedicated. But, like virtually every health care setting, we may at times work with people who are not usually involved with our particular procedures; there are sometimes staffing and training issues that may leave nurses not knowing exactly what they are supposed to be doing. That is, obviously, unfair to the patient as well as the nurses and physicians. But that is a systems problem, not an "incompetent nurse" problem (nor an incompetent anybody problem). A system that puts someone in a position of having to do something he or she isn't trained to do is a system that needs fixing. It's a huge issue that we all have to deal with—including those who are most vocal in complaining about it.

A second concern that, perhaps, gets less attention is when anyone fails to maintain respectful relationships with physician trainees. When I do see unprofessional behavior, often what I see are individuals looking for fault in other individuals—rather than trying to help each other or improve a failed system. Finger pointing is rarely helpful, and we need to address it.

The nature of health care is changing dramatically. Roles and responsibilities are shifting, modeling and mentoring are less emphasized, and we could all use a healthy dose of training around professionalism within the whole health care team. ■