Improving Communication with Bedside Video Rounding

TCAB and technology enhance nurse–physician collaboration and patient care.

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In June 2004 Cedars-Sinai Medical Center in Los Angeles became one of the 13 hospital units participating in phase 2 of the Transforming Care at the Bedside (TCAB) initiative sponsored by the Robert Wood Johnson Foundation (RWJF). While still engaged in this initiative, in March 2006 we also became a site in the American Academy of Nursing's Technology Drill Down (TDD) project, also funded by the RWJF. Both projects aim to improve patient care on medical–surgical units. The TDD project has identified technologic means for improving medicals–surgical work environments in TCAB hospitals across the United States.[1] One solution that we generated, tested, evaluated, and incorporated into our care system was video rounding.

A consulting physician (Gerhard Fuchs, MD, on screen) at a remote location "visits" with a patient, primary care physician (Christopher S. Ng, MD), and nurse (Betty Nersesian, RN) using the video rounding system.

Our strong history of shared governance and nurse–physician collaboration on nursing units may have been the key to our willingness to test technologies and adopt successful improvements in clinical practices. Our collaborative history predates our participation in both RWJF projects. In 1998 the Cedars-Sinai MD–RN Collaborative Committee was established to improve relationships between physicians and nurses. Over the past decade it has evolved into a unit-based model with physician and nurse champions and monthly collaborative meetings that provide a social forum and a nonthreatening environment for reviewing regulatory requirements, participating in educational in-service activities, and celebrating collaborative efforts. The establishment of video rounding capability on two units located in 8 South at Cedars-Sinai is one example of how nurses and physicians have collaborated in using technology to improve patient care.

A TCAB UNIT FOCUSES ON COLLABORATION

The two units on 8 South are for surgical patients, specializing in abdominal, trauma, bariatric, urologic, and reconstructive plastic surgeries. Although the units organize their nurse staffing separately, they share a nurse manager. One of us (PBH) was the nurse manager at the time we began the TCAB work, and she implemented TCAB with focuses on shared governance and staff-driven improvement projects. PBH and CSN organized the nurse–physician collaboration on this unit and have been the chief promoters of TCAB on the unit and throughout the organization.

The first TCAB effort at Cedars-Sinai began with nurses on 8 South engaging in brainstorming sessions with a broad array of staff, including RNs, unit clerks, pharmacists, materials management staff, social workers, information technology staff, nutritionists, laboratory personnel, clinical engineering staff, physical and occupational therapists, and physicians. One of the top problems identified for improvement was nurses having to wait for physicians to return calls or visit so they could update the physicians on changes in their patients' conditions that could affect treatment

and discharge plans. Resolving this problem could result in more timely communication, shorter hospital stays, and reduced inefficiencies such as having to make repeated calls to physicians and search for nurses to take the returned calls.

Nurses and physicians brainstormed potential solutions to test and evaluate. We conducted each of three tests of change over 20 successive rapid cycles of the Plan–Do–Study–Act quality improvement model. Initially nurses tested making appointments with physicians for rounding in order to ensure that the nurse would be present when the surgeon arrived and avoid having rounding interfere with the physicians' office visits and operating room schedules. This phase of rapid-cycle testing improved the coordination of care and, nurses noted anecdotally, decreased the incidence of rounding when either the nurse or the physician was absent. But anecdotal reports revealed that reducing those missed visits didn't help nurses provide physicians with updated patient information in a more timely manner. This evidence was reflected in the annual physician and nurse satisfaction survey feedback.

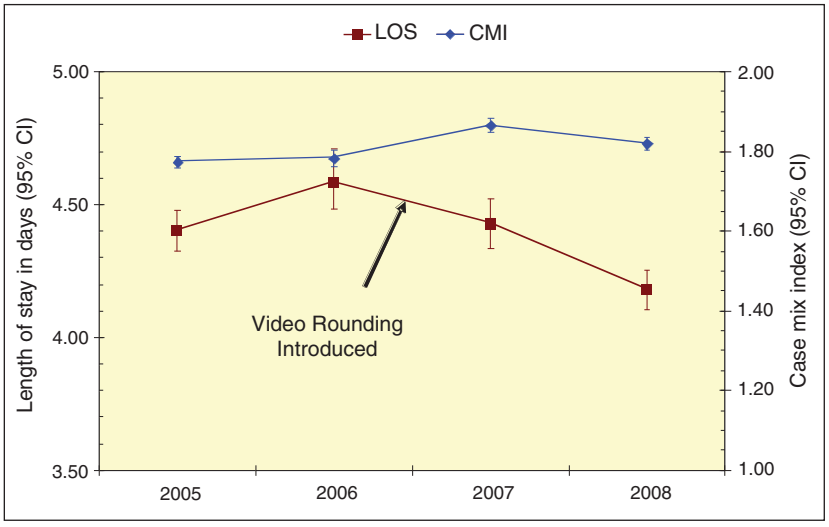

Figure 1. Mean length of stay (LOS) and case mix index (CMI) on 8 South. A case mix index above 1 indicates patient acuity is more severe than the national average. Trials of video rounding began in December 2006.

The second set of nine tests of change focused on using bedside rounding to improve nurse–physician communication. During rounds, the nurse summarized for the physician and the patient (and the charge nurse, in more complex cases) the patient's response to treatment, provided an update on the diagnostic results, and discussed self-care and treatment goals as well as discharge plans and postdischarge self-care needs.

This cycle of testing had positive results. Of the 29 tests of change that targeted reducing delays in nurse–physician communication about patient care, five were adopted. One was morning bedside rounding led by nurses following a specific protocol. The efficiencies in communication that resulted permitted us to discharge patients earlier in the day, changing the average discharge time from 2 PM to 11 AM. These changes to bedside rounding practices were then spread across all surgical units.

The final test of change to reduce delays in care caused by slow nurse–physician communication incorporated a technologic innovation to enhance bedside rounding.

VIDEO ROUNDING

One of us (CSN) recalled that in a prior technology project a remote-control robot had brought video and audio conferencing ability to patient rooms when physicians couldn't be physically present.[2] However, these robots were prohibitively expensive, could be used by only one physician at a time, and weren't very mobile. Accordingly, he suggested that we use a simpler, more cost-efficient video rounding system: preexisting Internet-based video chat software. Physicians could "chat" from their offices, operating rooms, or outside the hospital by using laptop computers with wireless Internet connections.

We decided to test this idea. Using video communication technology to eliminate delays in providing care meshed with another of our TCAB goals: reducing average lengths of stay by 25%.

The video rounding system development team included physicians and nurses. Cedars-Sinai information technology specialists were engaged to help the team select the equipment and software that would ensure that patient confidentiality and secure data transfer were maintained. The hospital's executives reviewed the business plan created by the development team and allocated the funds to purchase and test the system. Cedars-Sinai information technology specialists trained the staff nurses to use the technology. Trials were conducted with various wounds and body fluids to evaluate the quality of the images and ensure that the technology simplified, rather than confused, the physician's decision-making process. Then nurses, physicians, and patients together designed a survey tool to collect patient and clinician feedback about the quality of the communications conducted over the video system.

Between December 2006 and February 2007, the system was tested with 10 patients. These first 10 pilot cases indicated that video rounding provided the patient, nurse, and physician with the necessary

information. Nine patients reported that they could easily communicate with their physicians, and six believed that the video rounding system enhanced their care. All 10 patients agreed that video rounding should be used when a physician is unable to visit a patient and that the system should be adopted as a regular part of patient care.[3] Nurses and physicians unanimously agreed that the video rounding system was easy to use, enhanced their ability to provide timely care, was an acceptable method of communication if direct physician contact wasn't possible, and should be adopted as a regular part of inpatient care. Both nurses and physicians gave anecdotal reports of spending less time waiting for responses to inquiries about or clarifications in patient care instructions.

The video rounding system was used without modification in an additional 23 cases during 2008. All of the users reported being highly satisfied with the system, and now video rounding is being integrated into the nurse–physician bedside rounding process that was implemented throughout Cedars-Sinai to improve patient and team communication. The MD–RN Collaborative network helped to bring video rounding into labor and delivery rooms and into a multiphysician urology practice. In addition, all medical–surgical and critical care units are being wired to enable its use. A larger study involving a multispecialty physician group is being planned. It will take advantage of new computer technology, such as computer tablets with video capability and workstations on wheels, being installed for the new Cedars-Sinai electronic medical records system. Ultimately, providers will be able to upload video clips into medical records.

VIDEO ROUNDING IN ACTION

One patient's story illustrates the usefulness of the video rounding system. Mr. Steinway had undergone routine transurethral resection of the prostate. (The patient's name and clinical details have been changed.) He saw one of us (CSN) early in the morning the day after surgery and was cleared for discharge with a Foley catheter in place. As Mr. Steinway was preparing to leave, he noticed that his urine was becoming increasingly discolored. CSN needed to visually assess the urine to determine whether discharge could proceed, but he was in surgery and couldn't leave the operating room. The patient eagerly consented to having CSN "visit" him using the video rounding system.

Laptops were set up in Mr. Steinway's room and the operating room, and the urine bag—under adequate lighting—was placed in view of the video camera. With the circulating nurse holding the laptop for CSN, he was able to reassure Mr. Steinway (without having to break the sterile field) that the small amount of bleeding occurring was to be expected.

The physician's assessment allayed Mr. Steinway's concerns, allowing him to be discharged immediately and shortening his stay by at least half a day. A new patient was admitted to the bed within two hours of Mr. Steinway's departure.

MEETING CHALLENGES

We at Cedars-Sinai are proud of our engagement in TCAB tests of change that seek to redesign care processes, improve communication, and incorporate technology. On 8 South the case mix retains a high level of complexity, but we have been able to shorten the duration of the average hospital stay for urology patients from 4.6 days in 2006 to 4.16 days in 2008 (see Figure 1). No single intervention can be solely credited with producing that reduction, and we are planning a formal study that will measure the specific impact of video rounding.

Technologies that support patient care communication and documentation are emerging as dominant forces in health care delivery.[4-6] Ensuring that technology use improves the effectiveness and efficiency of care will be an ongoing challenge. The TCAB process, which instills the concept of continuous change into the culture of nursing units, provides a strong foundation for testing and implementing technologic innovations. ▼

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REFERENCES

1. Burnes Bolton L, et al. Technology solutions can make nursing care safer and more efficient. *Journal of Healthcare Information Management* 2008;22(4):24-30.
2. Ellison LM, et al. Postoperative robotic telerounding: a multicenter randomized assessment of patient outcomes and satisfaction. *Arch Surg* 2007;142(12):1177-81.
3. Kau EL, et al. Video rounding system: a pilot study in patient care. *J Endourol* 2008;22(6):1179-82.
4. Institute of Medicine (U.S.). Committee on Quality of Health Care in America. Using information technology. In: *Crossing the quality chasm: a new health system for the 21st century*. Washington, D.C.: National Academies Press; 2001. p. 164-80. http://www.nap.edu/books/0309072808/html/.
5. Medicare Payment Advisory Commission (MedPAC). *Report to the Congress: New approaches in Medicare*. Washington, D.C.; 2004 Jun 15. http://www.medpac.gov/documents/June04_Entire_Report.pdf.
6. Hillestad R, Bigelow JH. *Health information technology: Can HIT lower costs and improve quality?* Santa Monica, CA: RAND Corporation; 2005. RB-9136-HLTH. RAND Corporation research briefs; http://www.rand.org/pubs/research_briefs/2005/RAND_RB9136.pdf.