Improving Mammography Screening

Moving TCAB beyond medical–surgical units.

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Seton Southwest Hospital, a 17-bed community hospital in Austin, Texas, takes a holistic approach to inpatient and outpatient medical, surgical, obstetric, and rehabilitative care. In the fall of 2007 our chief operating officer called upon an eclectic group of employees (clinical and nonclinical, direct caregivers and supervisors, inpatient and outpatient) to spread unit-based process improvement techniques across our hospital as part of the Transforming Care at the Bedside (TCAB) initiative. Our sister hospital, Seton Northwest in Austin, was one of the three original TCAB facilities.

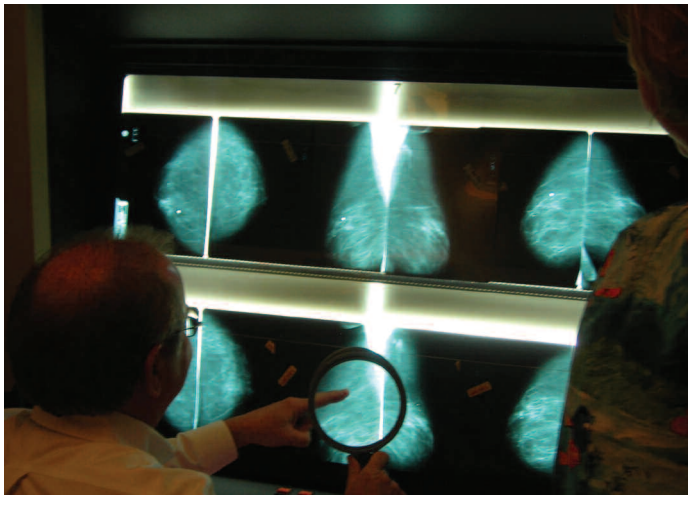
We selected mammography as an initial focus at the suggestion of one of the authors (EG), the imaging department manager and a TCAB team member. An outpatient service staffed by nonnursing personnel, mammography was a nontraditional setting for TCAB. We hoped that the characteristics of this service—its short duration, straightforward process, narrow client base, and single provider (one of us, PDL)—would make small tests of change relatively simple.

Our mammography services include basic annual screening exams and more intensive diagnostic exams for patients with abnormal results on screening, symptoms, breast implants, or a history of breast cancer. Since we began offering mammography in 2000, our volume has increased to approximately 80 patients per month; one-third are new to the hospital. The nondigital equipment precludes electronic transmission of images and requires a radiologist to travel to our site to interpret test results.

THE PROBLEM

We invited PDL, the mammographer, to participate in a brainstorming session led by our network TCAB facilitator, Claudia Perez. The most important problem PDL cited was having patients arrive for their appointments without films from prior mammograms. Prior films serve as a reference for the radiologist; without them, an abnormality not present on the last mammogram may go undetected, whereas a stable abnormality may trigger unnecessary workup.

When a prior mammogram isn't available at the time of screening, the radiologist typically waits to dictate the report. Because radiologists come to Seton Southwest only twice per week, that might delay the report for a week or longer. Similarly, a patient might have to reschedule the appointment. Thus, unavailable prior mammograms inconvenience the patient, referring physician, radiologist, and mammographer.



A study in the Netherlands considered whether the comparison of old and new mammograms could be safely eliminated as facilities transition to digital equipment. Roelofs and colleagues concluded that comparing prior films reduces the number of referrals and potentially of additional workups.[1] Boca Raton Community Hospital in Florida applied process improvement techniques such as process mapping and flow measurements to move from reading images in batches to reading them individually, significantly reducing the length of time patients had to wait for results.[2]

Our primary goal was to reduce the number of patients arriving without prior films to as close to zero as possible, although we knew that out-of-state and out-of-country films, forgetful patients, and films lost by previous providers would pose difficulties. We were addressing all four TCAB design themes: safe and reliable care, vitality and teamwork, patient-centered care, and value-added care processes. First and foremost, we wanted to improve the safety and reliability of care by improving the accuracy of mammogram readings and to eliminate unnecessary

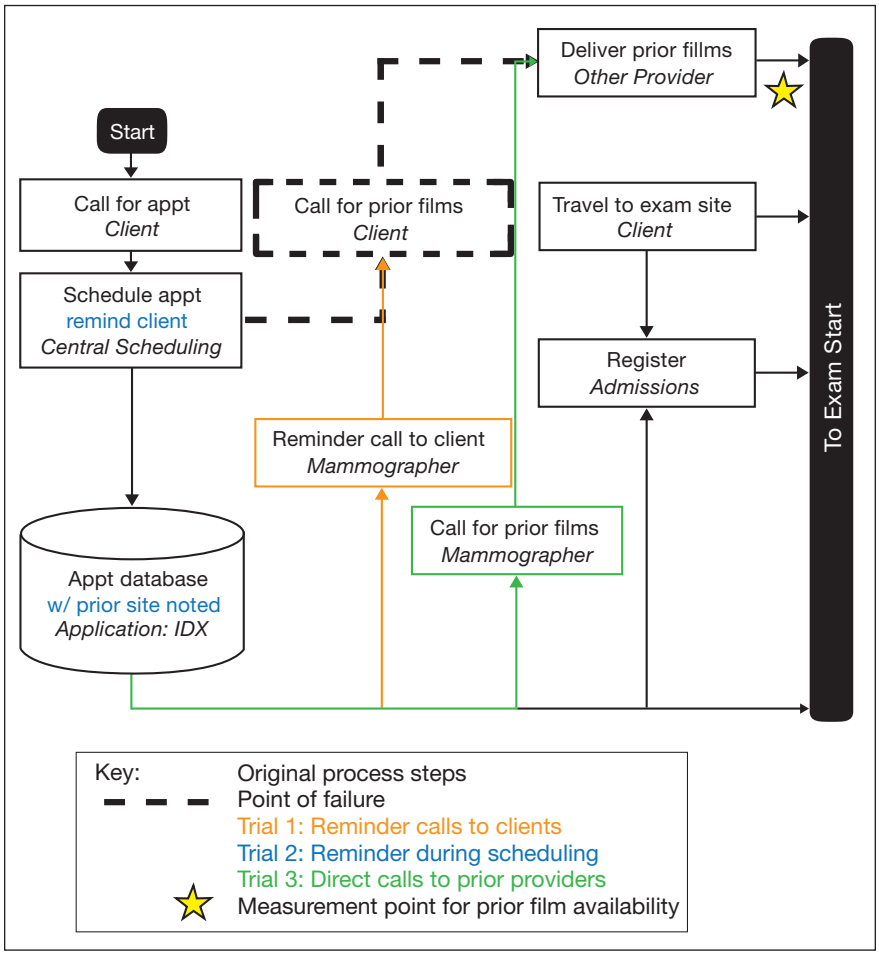


Figure 1. Service blueprint depicting steps in the mammography scheduling process.

radiologic exposure. Our second goal was to minimize the amount of time wasted and frustration experienced by the mammographer as a result of having to reschedule patients. Our third objective was to increase patient satisfaction by decreasing the need to reschedule appointments or delay results. Finally, we could enhance value-added care processes by eliminating space wasted in holding films for reading and time wasted with rescheduling.

TCAB ACTIVITY

We measured our success by first determining the percentage of patients whose prior films were available at their mammography appointment. Following TCAB guidelines, we gathered baseline data early in the last quarter of 2007 before making any process changes. During this time, the mammography schedulers noted on the schedule the existence and locations of prior films for 35% of patients. At exam time, prior films were available for only 56% of patients who had had previous mammograms.

We conducted a series of rapid-cycle tests and held weekly meetings to monitor our progress. To aid in measurement, we created a simple tool for the mammographer to record data on.

TCAB teams often map a process to help them find areas for improvement. We chose to create a service blueprint, which differentiates process steps by who takes them: the patient, staff visible to the patient, behind-the-scenes staff, and supporting technology.[3] We chose this method because our solutions spanned all of these roles, as Figure 1 shows.

The patient initiates the mammography process with a phone call to the central scheduling department, which coordinates appointments for imaging centers in all Seton facilities. The scheduler creates an entry in the IDX database, the software that we use for scheduling. During the phone call, the scheduler may provide instructions for exam preparation. But our baseline data indicated that communication about prior films was either not documented consistently or was ineffective.

Our first attempt at improvement was to have the mammographer make a reminder call to each patient a few days before the appointment. This wasn't successful because patients can make appointments within 48 hours. This tight time frame didn't allow for the reminder call and subsequent retrieval of films. With this system, there was no change from baseline measurements (see Figure 2).

Our second test of change expanded the role of the central schedulers of our parent network. The network TCAB facilitator warned that engaging an outside group that has limited visibility with any improvement might be difficult. One team member, recalling a session from a TCAB conference sponsored by the Institute for Healthcare Improvement, suggested that we use storytelling to influence change among the schedulers.[4]

We combined several true incidents involving unavailable prior films into a fictional account of one woman's mammography experience. One of us (JLB) turned the story into a PowerPoint presentation with animation, narration, and background music. We met with the schedulers in two groups, gave our presentation,

and shared our data on their performance—both the good (the impact their reminders made, when they were given) and the bad (the low percentage of patients who were given the reminders). This presentation effectively educated the schedulers on why they should ask for prior films. Their department manager also added a prompt asking for prior film information to their computerized scheduling form.

As a result of this process change, 87% of patients' schedule records had notations about the existence and location of prior films. But availability of prior films at the time of the mammography appointment showed negligible improvement, to 39%. We didn't know whether schedulers were failing to instruct the patients to get the films or whether patients were failing to comply.

Third test of change. Because schedulers were noting the locations of prior mammograms, we were able to take a different approach to securing them. The mammographer began to call the outside facilities before the patient's appointment. Based on the mammographer's estimate of the average length of a call and the number of calls, we estimate that this new practice consumes approximately one exam period of the mammographer's time on a monthly basis.

As seen in Figure 2, adding this step increased the number of patients who had prior mammograms available at the times of their appointments to almost all of them. This has improved safety for our patients and the efficiency of our staff.

We were recognized for our success at our network's quarterly TCAB meeting. We also won the Team Excellence Award—and $2,500—from a Seton Family of Hospitals program that recognizes teams that are improving care or services. We used the funds to redecorate the mammography exam suite to ensure it has a patient-centered atmosphere, based on advice from a breast cancer survivor and other community members. We removed a film-storage unit and a wall-mounted film viewer and installed decor with muted earth, textured fabrics; bariatric seating; and full-length mirrors.

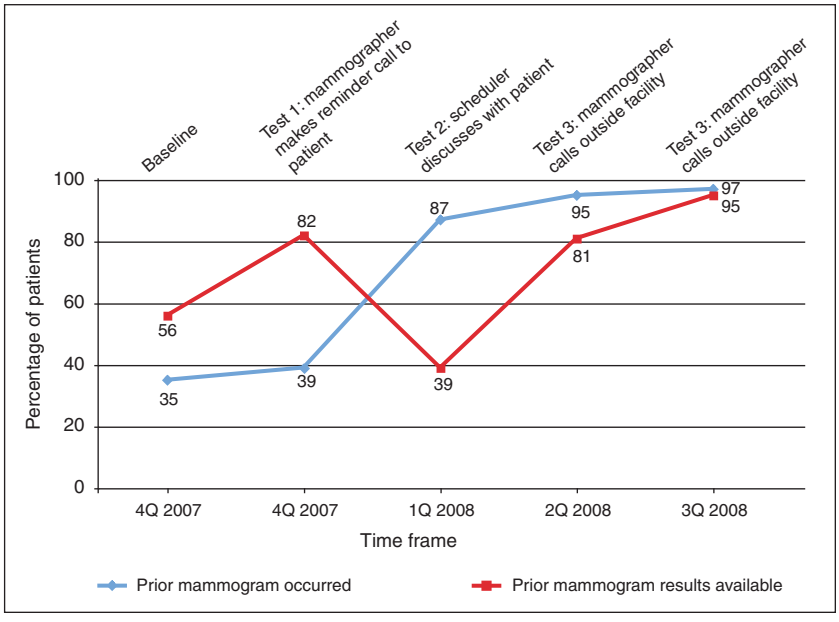


Figure 2. Percentage of Patients with Prior Mammograms

BEYOND AVAILABLE MAMMOGRAMS

Our mammographer and a number of patients also came up with other ideas for improvements. We have enhanced communication with patients by providing information about when and how they will hear results; offering bilingual, written correspondence; and using pink stationery to differentiate our letters from hospital invoices.

We held a Think Pink Day in the hospital lobby to raise money for breast cancer charities. Participants purchased baked goods, a potluck meal, and raffle tickets, and informational brochures on breast cancer were available. We raised more than $750. We also provided people with an opportunity to honor loved ones diagnosed with breast cancer by writing personal messages on a pink ribbon display. ▼

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