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Improving Breast Care at the Kaiser Permanente Bellflower Medical Center

The goal was to reduce the number of days from initial clinical suspicion to biopsy for patients with abnormal mammogram results ...

This article describes recent improvements to the Breast Care Program at the Kaiser Permanente Bellflower Medical Center. The improvements resulted from the work of an interdisciplinary, multidepartment task force formed in January 1998 to develop and implement new care pathways and processes to reduce the length of time taken to diagnose breast problems. The Breast Care Task Force included stakeholders and process owners from the Departments of Radiology, Surgery, Primary Care, and Quality Management. The group used a structured process improvement approach to guide planning, implementation, and monitoring of the new care pathway.

The redesigned care pathway pays special attention to patients who have a palpable mass in the breast or a mammogram that prompts clinical suspicion. A Radiology Breast Center was set up for patients to receive evaluation and, if needed, ultrasonographic core needle or stereotactic biopsy. If a biopsy is required, it can be done in the Imaging Department, where the procedure can be completed the same day and produce minimal to no scarring. When the biopsy is performed in the Radiology Breast Care Center, the diagnosis is delivered to the patient by the same radiologist who did the procedure.

Introduction

An interdisciplinary project team was set up at the Kaiser Permanente (KP) Bellflower Medical Center to improve processes for obtaining breast diagnoses. The goal was to reduce the number of days from initial clinical suspicion to biopsy for patients with abnormal mammogram results, palpable lumps in the breast, or other breast problems. Processes were streamlined and improved, resulting in measurable improvement in quality of care, service and cost-effectiveness.

Before these program changes were implemented, breast care at KP Bellflower was fragmented. Patients were required to have multiple appointments, and many referrals preceded the biopsy and diagnosis. To confirm the diagnosis, patients with abnormal mammogram results were typically referred to the Surgery Department for open biopsy. High demand for surgical services created backlogs and delay in scheduling for breast evaluations and biopsies. Patients had to wait a long time to have their breast problems diagnosed. The time between initial suspicion of a breast lesion and time of biopsy was referred to as "Sleepless Nights." The need to reduce Sleepless Nights for members having breast problems diagnosed at KP Bellflower became a key priority for the medical center's Quality Council.

In the Fall of 1997, the late Lewis Hahn, MD (Assistant Area Medical Director) and Jacques Blanc, MD (Chief of Radiology at KP Bellflower) outlined a proposal for the Radiology Department to perform biopsies and render diagnoses for patients with palpable breast lumps or clinically suspect

mammography results. This new process would take full advantage of recent technologic advances that use ultrasound or stereotactic imaging in the biopsy procedure. In most cases, these new modalities can replace open surgical biopsy and be less invasive, quicker, and cause only minimal scarring.

In December 1997, key stakeholders from the Departments of Surgery, Radiology, and Quality

Table 1. Members of the Kaiser Permanente Bellflower Breast Care Task Force Team

Name	Title	Department
Jacques Blanc, MD	Chief of Radiology	Imaging
Elisa Chen, MD	Radiologist	Imaging
Lisa Heindl, MD	Surgeon	Surgery
Chonita Holmes, MD	Radiologist	Imaging
Tarala Kapadia, MD	Radiologist	Imaging
Marc Kurzbard, MD	Internist	Internal Medicine
Nita Rebeck, MD	Family Practice Physician	Primary Care
Rich Boersma	Assistant Medical Group Administrator	Clinical Support Services
Claudia Calandrino	Department Administrator	Imaging
Yolanda Bell, RN	Breast Care Manager	Surgical Services
Diane Hubler	Assistant Department Administrator	Imaging
Al Quitral	Assistant Department Administrator	Imaging
Sherry Beardon	Ambulatory Surgical Service Coordinator	Surgical Services
Dolores Rodriguez	Administrative Specialist	Clinical Support Services
Andrew Mollen	Process Improvement Consultant	Quality Management
Joseph Orth	Senior Analyst	Quality Management
Kay Simon	Quality Analyst	Quality Management

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The Breast Care Program at KP Bellflower compares favorably with more progressive breast care programs in the United States ...

Management presented a proposal to the Medical Center Administrative Team (MCAT) outlining a new process as envisioned by Drs. Blanc and Hahn. That same month, the MCAT provided seed money to begin the planning process. In January 1998, an interdisciplinary task force—the Breast Care Task Force—was set up to develop a comprehensive, unified, structured program to improve and streamline the process of diagnosing breast problems.

The Breast Care Task Force included key individuals from the Departments of Primary Care, Surgical Services, Radiology, and Quality Management (Table 1). This group was charged with reviewing existing processes and recommending and implementing program changes to reduce Sleepless Nights for Health Plan members seeking diagnosis and treatment of breast problems.

Scope and Significance of the Underlying Problem

The Clinical Strategic Goals for Kaiser Permanente in Southern California state increasing satisfaction with breast cancer care is a major clinical priority.¹ Specifically, the Breast Care Program at KP Bellflower affects all adult female Health Plan members in the KP Bellflower Service Area. The population targeted for screening generally is all women aged ≥ 50 years or, for women who have a first-degree relative diagnosed with breast cancer, ≥ 35 years. As of June 1999, the KP Data

Warehouse reported that the KP Bellflower Service Area included 78,061 female members aged ≥ 35 years.

The scope and significance of breast cancer across the United States can be seen in the following statistics:

- The National Alliance of Breast Cancer Organizations (NABCO) estimated² that breast cancer would be newly diagnosed in 178,700 women during 1998 and that 43,500 women would die from the disease that year. Breast cancer is the second leading cause of cancer death for all women and is the leading cause of cancer death among women between the ages of 40 and 55 years.²
- Approximately one million breast biopsies are performed each year in the United States, where traditional (ie, open) surgical biopsy is the method used most commonly.³
- Estimates are that one woman in eight will have breast cancer during her lifetime and that one in 33 women will die from the disease.⁴

Task Force Mission and Goals

The mission of the Breast Care Task Force was to develop an interdisciplinary Breast Care Center for quick, accurate diagnosis of breast problems. The goals of the task force were twofold: 1) ensure that the time from initial clinical suspicion of breast lesion to time

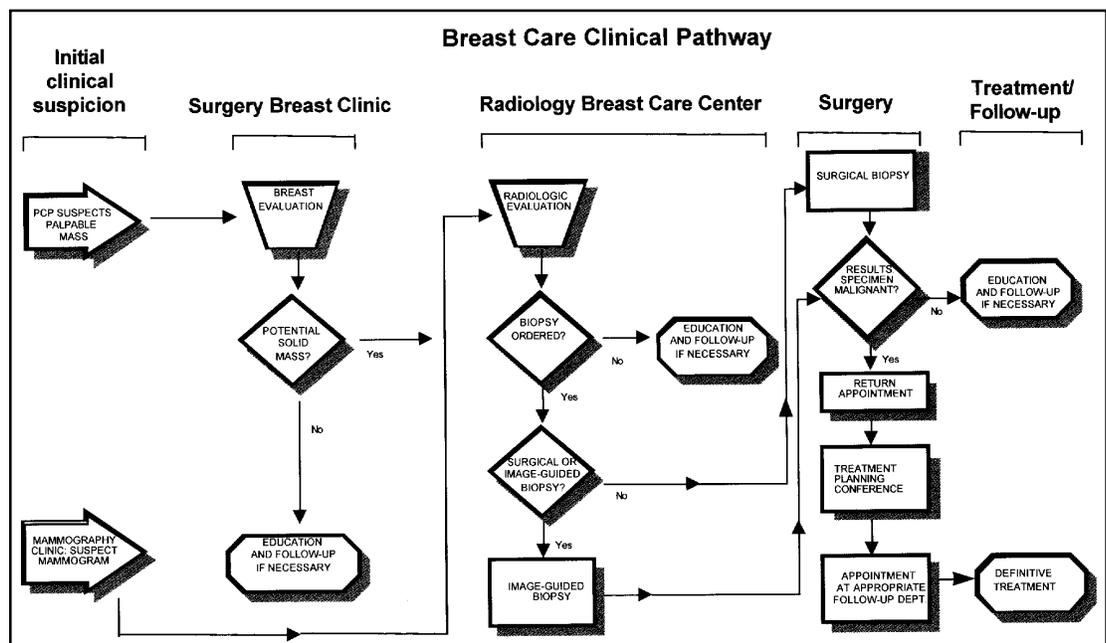


Figure 1. Clinical pathway for breast care at Kaiser Permanente Bellflower Medical Center

of biopsy does not exceed 14 days, and 2) reduce the number of surgical biopsies that yield negative results.

The primary focus of the Breast Care Task Force was to reduce Sleepless Nights for members who seek diagnosis of their breast problems. The Task Force thus focused on the goal to reduce the number of days between initial suspicion of a breast lesion and time of biopsy to 14 days or fewer. (Fourteen days is a common KP standard for access to routine appointments.) A telephone survey of leading medical centers in the community revealed that the mean time from initial suspicion of a breast lesion to time of biopsy ranged from 14 to 30 days.

Process Improvements

The Breast Care Task Force guided implementation in the following three improvement areas:

- Developed a unified clinical pathway (Figure 1) that guides patients from initial suspicion of a breast lesion through the evaluation stage (biopsy) to the confirming diagnosis. This new pathway replaced a fragmented and somewhat convoluted set of processes for breast diagnosis.
- Prepared a communications plan to educate referring physicians about new guidelines and expectations.
- Established, monitored, and reported performance on access time goals for each step in the care pathway.

The benefits resulting from these process improvements were at least three:

- Health Plan members are “handed off” to other departments and practitioners less often, require fewer appointments, and receive a diagnosis in much less time.
- All clinical findings related to the diagnoses are captured in one report.
- New technology is less invasive and leaves minimal to no scarring of the breast.

One of the first tasks of the Breast Care Task Force was to record all existing processes related to breast screening and evaluation. The result was a very large diagram depicting many fragmented and disconnected processes. The group proposed one simplified pathway for members in the KP Bellflower Service Area receiving breast evaluation (Figure 1).

The group developed referral guidelines (Figure 2) to inform physicians where to refer members for screening and evaluation. The breast care clinical pathway and the referral guidelines were combined

onto a single sheet, which was laminated as a desk reference for use by referring physicians. The guidelines referred patients with a suspect mammogram to the Radiology Breast Care Center for complete diagnostic evaluation. Patients who had a palpable mass in a breast were directed to the Surgery Breast Clinic for further evaluation. If indicated, these pa-

Sidebar: The Sacramento Experience

by Harold J Wadley, MD

Since 1997, the Kaiser Permanente (KP) Sacramento facility and its adjacent medical offices have streamlined the handling of abnormal mammograms. Instead of continuing to use the surgery clinic for needle localization and open surgical biopsy for such cases, most such procedures are now managed in a radiology interventional mammography clinic set up according to protocols agreed on by both the Surgery and Radiology Department. When an abnormal mammogram is logged, the patient is contacted by the Radiology Department to schedule a minimally invasive breast biopsy (MIBB) using either stereotactic or handheld vacuum-assisted biopsy techniques. The referring physician is notified, and the procedure is performed. If the pathology report indicates presence of malignancy or atypical findings, the patient is immediately referred to the Surgery Department for appropriate follow-up. This process has greatly reduced the time from mammography interpretation to diagnosis, an interval which is currently between seven and 14 days, depending on current demand.

MIBB statistics show that from January 1998 to August 2000, 1600 biopsy procedures were done and that of these, 35% showed malignancy, 5% showed atypical results, and 60% showed benign results. An additional 200 patients scheduled for MIBB did not have biopsy. Reasons included inability to target with either the stereotactic equipment or with ultrasound, patient weight exceeding table limits, allergies to lidocaine, or a history of bleeding. The radiologist is responsible for talking to the patient before the procedure about risks and complications, educating the patient about postbiopsy instructions, and informing the patient about biopsy results.

This process has resulted in several advantages. An intermediate physician visit is not required, because the patient is routed directly from identification of an abnormal mammogram to biopsy—thus saving patient time and reducing “sleepless nights.” At KP Sacramento, a mean seven days has been saved. The primary care physician, although still in the notification loop, can use these appointments for other patients. Surgeons are saved clinic appointment and surgical time by not having to deal with the benign cases. The operating suite in the inpatient and ambulatory centers is made available for other surgical procedures. Instead of more invasive excisional biopsy, patients also benefit from having minimal surgery, which results in less pain and scarring as sequelae. The Health Plan has been shown benefit from lower overall cost for this procedure than for excisional biopsy. ♦



Substantial improvements have been measured in wait time, patient satisfaction, and cost-effectiveness ...

tients were then referred to the Radiology Breast Care Center for full diagnostic evaluation.

The pathway depicts a process coordinated by an interdisciplinary team of physicians and supporting staff. Individuals involved in providing breast diagnostic services understand the whole process, the connections between each of the medical specialties represented on the pathway, and the standards expected of each of these specialties.

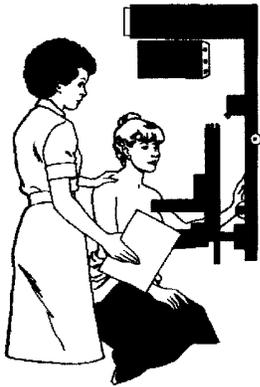
For members, this pathway results in fewer "handoffs" and the need for fewer appointments. From the beginning, members are informed of what to expect, and they interact with one set of caregivers throughout the process. The breast case manager and breast imaging radiologist work together on the patient's case and respond to the patient's fears and anxieties. Less time is spent waiting and worrying between tests, and the patient consults more closely with fewer caregivers, who explain the process and the patient's options.

All test results and clinical findings are recorded on one document and are placed in the medical record. Previously, results and findings from different medical specialties were recorded separately.

After a patient is referred to the Radiology Breast Care Center and a decision is made to do a breast biopsy, the procedure can be done that same day in the Radiology Department. The breast imaging radiologist can use either ultrasound or stereotactic image guidance to locate the suspect mass and perform a needle biopsy. This procedure is done on an outpatient basis, is much quicker (averaging 20 minutes of physician time), and leaves minimal to no scarring of the breast.⁵ Previously, these procedures were done in a surgical setting and often required an inpatient stay at the hospital.

The Breast Care Program at KP Bellflower compares favorably with more progressive breast care programs in the United States in implementing an interdisciplinary and comprehensive breast care center for diagnosing breast problems.⁶ Specifically, the most innovative program elements include the radiologist's enhanced role (ie, in coordinating the case and in delivering biopsy results) and greatly reduced wait time for diagnosis of breast problems.

Previously, radiologists at KP Bellflower read and interpreted mammograms. If the mammogram showed an abnormality, the patient was either called back for another study or referred to the Surgery Department



I. Candidates for Screening Mammography at Kaiser Permanente (KP) Imperial Medical Offices:

Who:

- Women aged >50 years with no breast problems (or women aged > 40 with no breast problems who request mammography)
- Women with a family history of breast cancer in a first-degree relative (mother, sister or daughter); starting at age 35 years or 5 years before age at which first-degree relative was diagnosed with breast cancer, whichever comes first
- Men with breast lumps

Where: • Mammography/Pap Clinic at KP-Imperial Medical Offices

II. Candidates for Diagnostic Mammography and Breast Evaluation

Who:

- Women with new breast lump or breast discharge
- Women with breast infection or any related problem which clinician determines might require further evaluation

Where: • A Breast Care Referral Form is used to refer patient to the Surgery Breast Clinic at KP-Bellflower. Patient is then referred to the Radiology Breast Care Center as needed.



Figure 2. Referral guidelines for breast evaluation

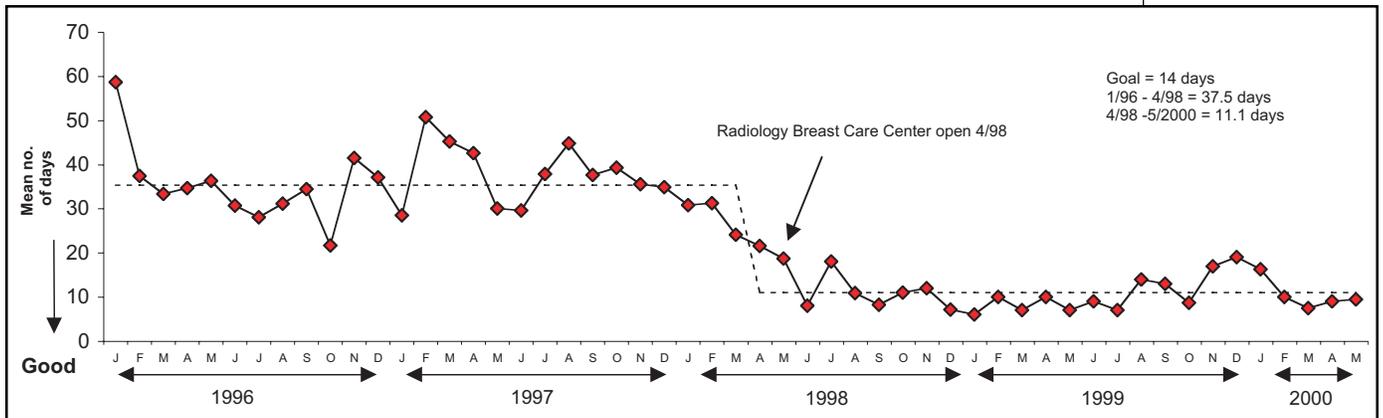


Figure 3. Mean number of days from initial clinical suspicion of breast lesion to date of biopsy

for a biopsy and diagnosis. In the revised process, abnormal mammogram results are followed up with comprehensive breast evaluation and biopsy in the Radiology Department. If indicated, an ultrasound or stereotactic core-needle biopsy is done, and the specimen is sent to the Pathology Department. The pathology report is returned to the radiologist, who reports the result to the patient. This procedure represents a departure from more common practice, ie, where the biopsy is done in the Surgery Department and results are reported by the referring physician or surgeon. Patients' positive responses to this change exceeded all expectations and were reflected by the consistently high scores shown in ongoing surveys of patient satisfaction. Results of patient satisfaction surveys are regularly reported back to the Breast Care Task Force and to clinical departments.

The dramatic improvement in reducing Sleepless Nights for patients in whom a breast lesion is suspected also sets this program apart as a "best practices" model. Results have been shared with other KP Southern California Medical Centers in the California Division, and similar projects are underway at other facilities.

Substantial, Measurable Improvements in Quality

Substantial improvements have been measured in wait time, patient satisfaction, and cost-effectiveness for obtaining diagnoses for breast abnormalities.

Since 1994, time from initial suspicion of a breast lesion to time of biopsy has been measured at the medical center as a "key medical center performance indicator" with a goal of not longer than 14 days. Before the Radiology Breast Care Center was established, mean performance on this indicator was 37.5 days. After its implementation and ac-

Table 2. Response rates for patient satisfaction survey conducted at KP Bellflower Radiology Breast Center

Month	No. of survey interviews ^a		
	Completed	Attempted	Response rate (%)
1999			
July	21	37	57
August	20	28	71
September	22	41	54
October	28	38	74
November	26	39	67
December	33	41	80
2000			
January	35	43	81
February	37	48	77

^a Unsuccessful attempts to interview some patients resulted from wrong or disconnected phone number for patient, phone not answered, or refusal of patient to participate in survey.

companying process changes, performance improved to a mean 11.1 days. Figure 3 shows this improvement trend by month.

Patient satisfaction with the new process is measured through an internally developed telephone survey of all patients who had a biopsy at the Radiology Breast Care Center. Patients are surveyed within a few days of their biopsy, and results are compiled and

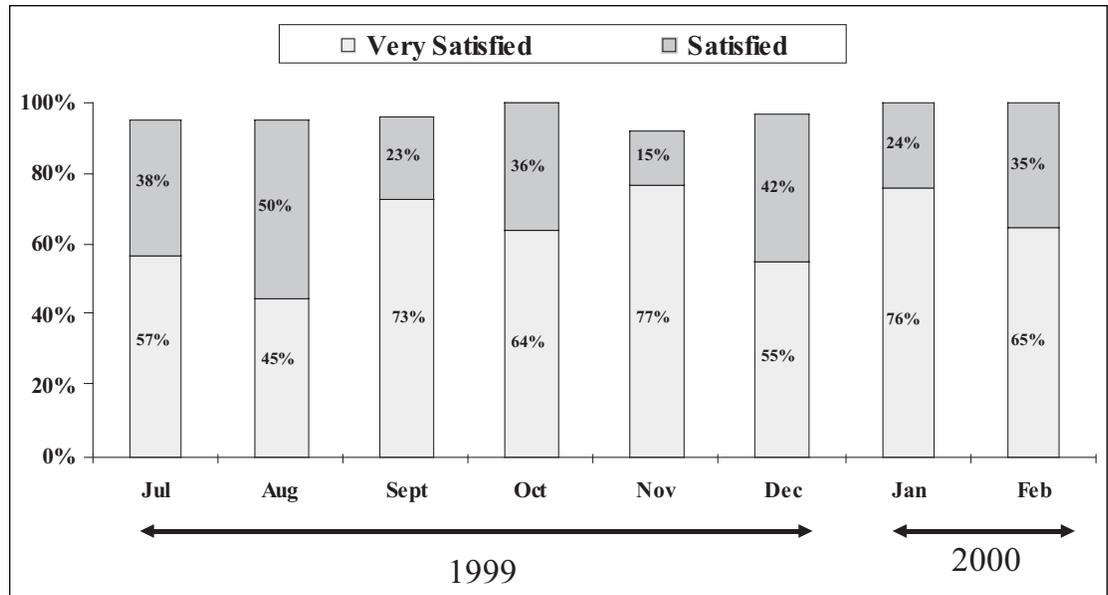


Figure 4. Overall patient satisfaction with care and services received at Radiology Breast Care Center, July 1999 through May 2000

reported monthly (Table 2). One survey question asks patients to rate their overall satisfaction with the care and services they received at the Radiology Breast Care Center. Overall satisfaction with the process is rated on a Likert scale (1 = “very dissatisfied,” 5 = “very satisfied”). The percentage of patients that report being “satisfied” or “very satisfied” has consistently been 95% or greater (Figure 4).

This result corresponds to findings reported in the 1997-1998 Breast Cancer Patient Satisfaction Survey commissioned by the KP Southern California Regional Breast Cancer Committee. This survey found a strong relation between patient satisfaction and length of time from suspicion to diagnosis. The highest satisfaction levels were among patients diagnosed within one week.^{7:11-2}

Interdisciplinary Approach

This project has resulted in practices that can be replicated at other KP Medical Centers that have ultrasonography or stereotactic imaging equipment and a radiologist willing to manage breast cases. Once these elements are in place, referral guidelines (such as those shown in Figure 2) and a care pathway (such as shown in Figure 1) can be developed and implemented. Indeed, implementation of similar approaches and processes are underway at other KP facilities in the California Division.

Success of this project was made possible through

an interdisciplinary effort involving process owners and stakeholders from the Primary Care, Surgical Services, Imaging, and Quality Management Departments. Physician leaders and management staff worked together to create new processes and to streamline existing ones to improve breast evaluation and diagnosis.

The process for diagnosing a suspected breast abnormality crosses over multiple departments and medical specialties. Involving stakeholders and process owners from different affected disciplines ensured that any approved process change would be fully understood and achieve the necessary “buy-in.” This shared understanding was critical also for coordinating all the steps and referrals involved.

Process Improvement Teams at KP Bellflower use a common approach—one called Plan, Measure, Assess and Improve (PMAI)—to structure process improvement initiatives. The PMAI approach consists of a set of steps that can apply to all processes and that represent a continuous cycle. This approach parallels other performance improvement models in use nationwide.

Conclusion

This project achieved substantial and measurable improvements in access times, patient satisfaction, and cost-effectiveness. Specific improvements were developed, implemented, and monitored by an interdisciplinary team that addressed a comprehen-



sive process involving multiple departments and medical specialties. For patients, the improvements resulted in shorter wait time and more personalized care; for the medical center, the improvements increased cost-effectiveness. As accrediting and quality reporting organizations give higher priority to timely performance of follow-up after abnormal mammogram results, KP Bellflower will be well positioned to exceed the expectations for excellence in this area. ❖

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A Great Leader

A leader takes people where they want to go. A great leader takes people where they don't necessarily want to go but ought to be.
Rosalynn Carter, Former First Lady, Author, Co-Founder of The Carter Center and Director of the Rosalynn Carter Institute for Human Development