


COMPLIANCE

with Breast Cancer
Post-Therapy Surveillance



*A study measures
compliance rates
of patients with
state and federal
safety-net funding*

IN BRIEF

The multidisciplinary breast cancer clinic at St. Joseph Hospital, Center for Cancer Prevention and Treatment (CCPT), Orange, Calif., was designed with a specific infrastructure to serve women with state and federal safety net funding. In 2011 CCPT initiated a study to measure patient compliance with post-therapy surveillance in this population, conducting a descriptive retrospective chart review on previously diagnosed breast cancer patients seen at the multidisciplinary breast cancer clinic during the two years from 2011 to 2013. Post-therapy surveillance compliance was assessed in three categories: clinic appointments (n=82), annual mammography for patients with one or both breasts intact (n=75), and yearly evaluation for those prescribed

anti-hormone therapy (n=61). CCPT compared compliance rates based on patient characteristics: age, stage, distance from the clinic, insurance carrier, race, and ethnicity.

Study results found the average per patient combined compliance for all post-therapy surveillance to be 92.5 percent at 12 months, 54.4 percent at 18 months, and 82.4 percent at 60 months. When comparing characteristic groups by test categories, CCPT found no clinically significant patterns or trends; however, overall annual mammogram compliance was consistently higher than both clinic appointment and anti-hormone therapy compliance.

The St. Joseph Hospital, Center for Cancer Prevention and Treatment established its multidisciplinary breast cancer clinic in 2008 as a component of the National Cancer Institute Community Cancer Centers Program (NCCCP) grant. The goal: to serve women with a confirmed breast cancer diagnosis and “safety net” financial status—the patient population for the study discussed in this article.

Clinic components include scheduling, nursing, culturally geared navigation, operating services, breast imaging, electronic health records, translation services, and research (Table 1, page 37). As the breast cancer clinic is staffed by both hospital-employed and private practice multispecialty oncologic physicians, CCPT has developed guidelines for physician participation in the cancer program. Some physicians treat patients in the hospital’s outpatient

department and bill under 1206(d) in the Outpatient Prospective Payment System (OPPS), while others see patients in their private physician practice offices and bill for services under the Physician Fee Schedule (PFS).

The CCPT multidisciplinary breast cancer clinic follows National Comprehensive Cancer Network (NCCN) guidelines for breast cancer post-therapy surveillance, including clinic appointments, mammograms, and confirmation of anti-hormone therapy use. During this study period, the standard practice was to advise patients in accordance with NCCN post-therapy surveillance. Note: this analysis precedes the multidisciplinary breast cancer clinic’s consistent distribution of a formal breast-cancer-specific treatment summary survivorship plan, which is currently required by the Commission on Cancer (CoC).



Study Methods

In 2014 CCPT conducted a retrospective, descriptive chart review on 82 previously diagnosed breast cancer patients seen at the multidisciplinary breast cancer clinic between 2011 and 2013. Post-therapy surveillance consisted of:

- Clinic appointments every 4 to 6 months for the first 5 years after treatment.
- Annual mammograms for the first 5 years after treatment.
- Annual compliance with recommended anti-hormone therapy use for the first 5 years after treatment.

As is expected in the breast cancer patient population, CCPT believed that primary care providers, in a variety of settings, would potentially assume patients' long-term cancer surveillance.

Individual patient and test results were tallied and analyzed for compliance. All 82 patients were evaluable for clinic appointment compliance. For annual mammograms, the patients who were included in the study had one or both breasts intact (n=75), while patients with a history of bilateral total mastectomies were excluded. CCPT also assessed the compliance of all patients who had been prescribed anti-hormone therapy (e.g., aromatase inhibitors or tamoxifen); data was collected to document evidence of assessment and adherence at the follow-up appointments (n=61). Patients who were not prescribed anti-hormone therapy were excluded.

CCPT then compared compliance for the three main parameters based on subject characteristics:

- Age
- Stage at diagnosis
- Distance from home to clinic
- Type of insurance
- Race
- Ethnicity.

Table 2, page 38, shows the subject characteristics of the study.

Study Results

Overall, during the 5-year study period, the compliance rate for attending scheduled clinic appointments for all 82 patients ranged from 54.3 percent to 96.3 percent. Patient compliance with mammograms completed for 75 patients ranged from 78.6 percent to 97.3 percent. Finally, compliance with reported anti-hormone therapy use for 61 patients ranged from 62.5 percent to 93.3 percent. CCPT saw a large dropoff in the average per patient combined compliance for the three parameters 18 months post-treatment, but compliance increased and remained consistently higher after 2-years post-treatment (see Figure 1, page 40).

During analysis of the compliance with clinic appointments based on patient age, the average was approximately 70 percent throughout the groups. The average compliance of reported anti-hormone therapy use based on age groups was slightly higher at 81 percent, while mammogram compliance was the highest overall, with averages ranging from about 80 percent to 90 percent.

All patients in the study were newly diagnosed and staged at their initial multidisciplinary breast cancer clinic evaluation. When measuring the compliance with clinic appointment based on stage at diagnosis, the range was large—59.3 percent at Stage 0 to 80.6 percent at Stage III. The compliance with reported anti-hormone use based on stage at diagnosis was slightly higher with a range of 75.1 percent (Stage 0) to 87.5 percent (Stage IV). Mammograms completed showed the highest compliance, ranging from 85.1 percent (Stage II) to 91.7 percent (Stage IV).

As the distance from the clinic increased, the average compliance of all three post-therapy surveillance measurements did show a slight downward trend. For clinic appointments, the compliance was highest for patients who traveled 0.0 to 9.9 miles for treatment (76.6 percent), whereas the patients who traveled more than 20 miles had a slightly lower average (67.6 percent). The compliance with reported anti-hormone therapy use was around 77 percent. Again, mammograms completed were the highest all around, ranging from 81 percent (patients traveling 10 to 19.9 miles) to 93.5 percent (patients traveling 0 to 9.9 miles).

Table 1. Multidisciplinary Breast Cancer Clinic Infrastructure Elements

SPACE
• 3,300 square feet
• 4 examination rooms
• Scheduling desk
• A private consultation room
• A nurse practitioner room
• A navigator room
PERSONNEL
• Medical director
• 2 administrative assistants
• Medical assistant
• Nurse practitioner
• Financial navigator
• 2 nurse navigators
• 12 breast specialty physicians
• Social worker
• Translator (plus telephonic support)
EQUIPMENT
• Ultrasound machine

Based on insurance carriers, MediCal HMO patients had the highest percentage of compliance (95 percent; n=2). After that, the ranking was as follows:

- 73.7 percent compliance for patients under the Breast Cancer Early Detection Program (n=9)
- 68.6 percent for patients with Cal Optima (n=63)
- 68.2 percent for Medicare patients (n=2)
- 63.1 percent for MediCal patients (n=6).

While CCPT identified no statistical trends when stratifying the data by insurance carrier, compliance was overall higher (average of 90 percent) when compared to clinic appointment (average of 74 percent) and reported anti-hormone therapy use compliance (average of 87 percent). Of note: evaluation of the patients under the Breast Cancer Early Prevention Program revealed an 83.3 percent composite compliance.

The average compliance for clinic appointments based on ethnicity was approximately 70 percent throughout all groups, while average compliance for mammogram completed was around 88 percent. However, looking at reported anti-hormone therapy

use compliance, the averages ranged from 52.5 percent (Other) to 80.4 percent (Asian). The average compliance for ethnicity mirrored race.

Patient Compliance in the Community Setting

The journey through cancer care is long and arduous, resulting in a stronger relationship between patient and provider. Patients tend to place a higher level of trust in their cancer care professionals. In addition, cancer treatments are becoming readily available in the community setting, providing patients with more options close to home. While some patients still favor receiving care in an academic or tertiary care setting, a growing number of patients look to receive care in their community or close to home. (In general, 80 percent of initial cancer care is believed to be delivered in the community environment.)

Physicians make treatment recommendations and educate patients on both the benefits of following through and the risk factors of not adhering to these recommendations; however, socioeconomic and cultural factors interact and influence health-

(continued on page 39)

Table 2. Subject Characteristics

DEMOGRAPHICS	
Total number of patients assessed for compliance with clinic appointments	n=82
Total number of patients assessed for compliance with mammography	n=82
Total number of patients assessed for compliance with anti-hormone therapy	n=61
AGE GROUPS (AVERAGE=53.5 YEARS; RANGE 32.7 YEARS TO 69.8 YEARS)	
<40 years	3
40 to 49 years	25
50.0 to 59.9 years	37
60.0 to 69.9 years	17
STAGE AT DIAGNOSIS	
Stage 0	13
Stage I	24
Stage II	25
Stage III	18
Stage IV	2
DISTANCE TO CLINIC	
0.0 to 9.9 miles	32
10.0 to 19.9 miles	30
>20 miles	20
TYPE OF INSURANCE	
BCEDP (Breast Cancer Early Detection Program)	9
MediCal HMO	2
Medicaid	6
Cal Optima	63
Medicare	2
RACE	
White	49
Asian	30
Other	3
ETHNICITY	
Non-Spanish	55
Spanish NOS	19
Spanish Surname Only	8



(continued from page 37)

care compliance patterns and real-life factors affect adherence. Whether external—distance from the clinic, financial issues, the patient having to see multiple providers—or internal—competing priorities or educational status—the reasons for non-compliance are usually multi-faceted and difficult to assess using standard measurements. While there is not enough evidence to definitively identify these individual or group of factors at this time, this study documents the favorable outcomes that can be achieved in a multidisciplinary breast clinic designed with a population and culturally-sensitive infrastructure.

...the multidisciplinary breast cancer clinic is developing a well-structured process for transferring survivorship care to oncological or primary care facilities closer to the patients' residences.

Consistent with other reports analyzing post-cancer treatment adherence, this study documents a general dropoff in compliance at the 18-month mark. There are a number of potential reasons for this pattern, including financial burdens and a lower perceived notion of recurrence once the cancer is treated.¹ Patients may feel that once they are cancer free or have clear findings during the first year of post-cancer treatment screenings, they are no longer on “high-alert” for recurrence. Studies suggest that by verbally emphasizing the importance of annual screening at each patient encounter, and sending reminder notes and/or telephone calls, patient compliance can be improved. Specific educational interventions may be needed in survivorship care that can influence both survival and quality of life outcomes.^{1,2} The practice at CCPT is to counsel each patient at the end of each clinic visit, tailoring education based on individual socioeconomic and cultural considerations. This counseling includes educating

patients about the timing importance of follow-up tests and adherence to medication.

The consistently high overall compliance levels that were achieved in this study were likely a result of CCPT's well-designed and executed patient-centric infrastructure (e.g., financial navigator, language specific scheduling) and its ability to eliminate expected non-compliance patterns.

Compliance & Scheduling

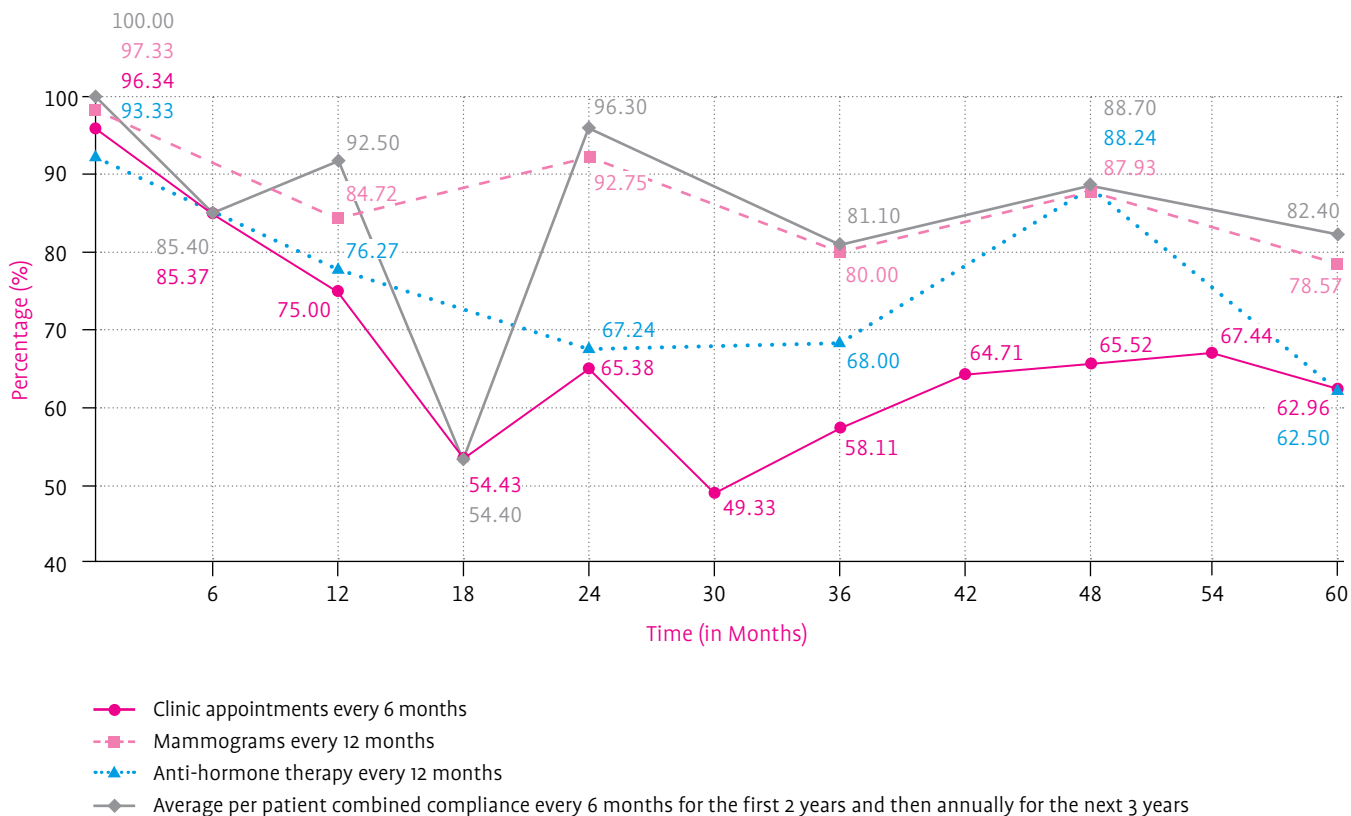
When comparing the three post-therapy surveillance parameters, overall mammogram compliance was consistently higher than clinic appointment and anti-hormone therapy compliance. Study data showed that many patients had appointments for mammograms and clinic appointments on separate days. This was done to ensure that providers had mammography reports and films at the time of the clinic appointment. Based on study data, this scheduling process affected the return of patients for their clinic appointments. To improve compliance with clinic appointments, the multidisciplinary breast cancer clinic now schedules mammograms and clinic appointments for the same day, pairing the highly compliant mammogram encounter with the slightly lower performing clinic appointment and anti-hormone therapy events (Figure 1, page 40).

Also, since the multidisciplinary breast cancer clinic is privately funded and resources are limited, CCPT is decreasing post-therapy surveillance care from 5 years to 3 years—with a return to the primary care provider for follow up, which may help CCPT manage patient volume. In accordance with recommendations from Advani et al., the multidisciplinary breast cancer clinic is developing a well-structured process for transferring survivorship care to oncological or primary care facilities closer to the patients' residences.

Compliance & Age of Patient

One study revealed a relationship between clinic attendance and age, where each year of increased age was associated with a 7 percent greater likelihood of re-attendance, as well as compliance to breast cancer screening practices like mammography.³ Another study measured the adherence of hormone therapy after breast surgery and found that the lower rate among younger patients

Figure 1. Compliance of Post-Treatment Surveillance by Month



was thought to be related to the adverse effects on sexuality, fertility, and menopausal symptoms.⁴ According to Calvocoressi et al., another factor that may explain low adherence among younger patients (<50 years) is that screening procedures, such as mammography, may not yet have become a habit for many younger women.⁵

In this study, CCPT observed no age-dependent pattern. If the sample size had been larger, a clearer trend or pattern may have emerged. While the low number of patients may explain the failure to identify a variation, this lack of variation may also be supported by the hands-on approach of the multidisciplinary breast cancer clinic staff to keep patients well-informed about importance of post-therapy surveillance.

Compliance & Stage of Disease

According to Brito et al., a correlation exists between adherence to anti-hormone therapy in breast cancer patients after surgery and stage of disease.⁴ Specifically, there was a lower compliance among patients at non-curable stages (Stages III and IV).⁴

In this study, CCPT saw consistency throughout all groups when evaluating stage of disease and compliance. To eliminate any pattern of non-compliance, care must focus on patient-specific needs, which includes culture, language, and individual concerns.

CCPT support staff maintained compliance for this patient population by adapting education and management techniques to fit the specific needs of individual patients.

Compliance & Travel Time

In the CCPT study, a mildly inverse relationship occurred—as the distance between the patient’s residence and the multidisciplinary breast cancer clinic increased, patient compliance decreased. A more significant pattern between travel distance and patient compliance may have been apparent with a larger study group. For example, one study measured adherence to breast cancer survivorship surveillance care and found an association with compliance and the distance from the patient’s residence to the cancer center for follow-up.² Researchers saw that the distance that patients had to travel to receive care was significantly associated with a lack of follow-up after treatment completion and with non-adherence to survivorship care guidelines.² Similarly, a comprehensive review of multiple studies revealed a strong relationship between travel burden and poorer prognosis due to non-compliance.⁶ Also, it has been suggested that patients who live further away may have continued their care with a provider closer to their place of residence.

Communication between healthcare providers and a formal “hand-off” may be beneficial. Of interest, the referral patterns for the group of patients described in the CCPT study are generally geographically restricted by county and administrative criteria. Thus, the referring physician’s practice has often pre-selected geographically desirable breast cancer facilities. Even the greatest distances observed in this community-based care delivery network may not be significant enough to impact compliance. Yet, this data emphasizes the importance of supporting community-based cancer delivery systems.

Compliance & Insurance

In general, access to medical insurance can play a role with a patient’s adherence to healthcare. Cancer patients without insurance or who are under-insured may be hesitant to seek care, follow therapy, and/or comply with post-therapy examinations. Personal and family financial burdens are also cited in the literature. For example, one study analyzed different socioeconomic predictors of regular mammography use among African-American women and found that loss or lack of healthcare insurance adversely affected adherence to mammography guidelines.⁷

In the CCPT study, all patients had some form of insurance coverage, explaining the lack of variation and consistency across all groups. Along with Medicare, MediCal, and state of California sponsored breast cancer support programs, CCPT has the philanthropic means to financially support care-based costs, including travel, co-pays, short-term rent, and personal expenses. Since access to insurance was constant across all groups, a different predictor (e.g., social, cultural, psychological) must have played a role in non-compliance.

Compliance, Race & Ethnicity


Based on both race and ethnicity, compliance levels were not different in the CCPT study. This uniformity could be explained by the culturally sensitive, language-specific education offered by staff at the multidisciplinary breast cancer clinic.

In one analysis measuring the treatment adherence and outcome in women with inflammatory breast cancer, results showed that race or ethnicity did not appear to impact treatment adherence with African Americans or Caucasians.⁸ However, another study demonstrated a significant interaction between Hispanic ethnicity and endocrine therapy, resulting in non-adherence to follow-up care guidelines, especially if language barriers or lack of a relationship with a provider existed.² Another study found that African-American women may not adhere to recommendations concerning breast abnormalities because of a lack of trust with their healthcare providers or lack of a consistent provider due to lower socioeconomic status.⁹

In order to overcome these non-compliance issues, a recent study suggests patients with lower socioeconomic status may need more one-on-one communication about their treatment plans since they tend to have less access to healthcare services.¹⁰ In addition to one-on-one “concierge” interactions, the multidisciplinary breast clinic’s consistent messaging and maximized

patient engagement and efforts to provide a safe, trusted care environment bolstered patient compliance.

Going Forward

Given the challenge of consistent, reliable follow up of patients with state and federal safety-net funding, the results of this analysis are quite encouraging, with high averages of overall compliance. The authors believe that this study serves as a real-life, practical, consistent community standard that can be achieved by similarly structured patient-centered programs. 

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