Access to Diagnostic Mammography in the San Francisco Bay Area

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ABSTRACT

Background: It is important to assess access to diagnostic mammography because of the high likelihood of breast cancer among women who need diagnostic evaluation. We studied access to diagnostic mammography in the Greater San Francisco Bay Area.

Methods: We identified facilities that provide diagnostic mammography in nine counties in Northern California. We tried to schedule a diagnostic mammogram for a 40–50-year-old simulated patient without health insurance who recently discovered a palpable breast mass. The study had three parts. First, the simulated patient called mammography facilities to schedule a mammogram without a physician’s referral; second, she called mammography facilities to schedule a mammogram with a physician’s referral; third, she called primary care facilities to schedule a physician’s visit in order to obtain a diagnostic mammography referral. For each scenario, our simulated patient recorded the time from the phone call until the first available visit.

Results: Overall, 86 mammography facilities were identified. Only 3 facilities were willing to schedule diagnostic mammography without a physician’s referral. With a physician’s referral, the median wait time for diagnostic mammography was 5 days (standard deviation [SD] 15 days.) The average wait time to schedule a primary care visit to evaluate the breast mass was longer than to schedule diagnostic mammography (mean wait time for a new primary care visit 38.5 days, SD 62.4 days.)

Conclusions: Access to diagnostic mammography was good in the Greater SF Bay Area if a woman had a physician’s referral. It was more difficult to schedule a primary care visit to assess a palpable breast mass than to schedule the diagnostic mammography. Difficultly accessing primary care physicians may contribute to delay in the diagnosis of breast cancer, and this might be particularly relevant for underserved patients who may be less likely to have a primary care provider.

INTRODUCTION

CONSIDERABLE VARIATION IS OBSERVED by race, ethnicity and socioeconomic status in the size and stage of breast cancers at the time of diagnosis. It has been reported that African American and Hispanic women tend to have larger and more advanced stage tumors at diagnosis in comparison to white and Asian women, and women lacking health insurance have later stage cancers.

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in comparison to insured women. There are substantial differences by race, ethnicity and socioeconomic status in the use of screening mammography, and poor and minority women use screening mammography less frequently than white women. The racial and ethnic differences in tumor characteristics at diagnosis are at least in part due to differences in the use of mammography, as the racial and ethnic differences in tumor size and stage at diagnosis are attenuated or eliminated once adjusted for differences in the use of mammography. Many papers have been published on why there is such variation in the use of screening mammography by race, ethnicity, and socioeconomic factors, and several factors, including access to mammography and differences in physician referrals for mammography, have consistently been identified as important factors in explaining this variation.

Patients with breast complaints and especially those with a palpable breast mass are at particularly increased risk for breast cancer. Among patients who obtain mammography, the likelihood of breast cancer is approximately 10-fold higher among women who report a breast mass compared with women who do not. Overall, approximately 5% of patients with a breast mass, as opposed to 0.5% of those without a breast mass, will subsequently be diagnosed with cancer.

There are several recent reports that have raised concern about decreased access to mammography as a result of facility closures and difficulty recruiting and retaining radiologists and technologists. For example, recent surveys have found shortages of key personnel, leading to delays in obtaining mammography, and that shortages of radiologists were common in community radiology practices. The Institute of Medicine and the Government Accounting Office recently concluded that, overall, there was likely sufficient mammographic capacity but that there might be shortages among certain subsets of women, such as rural and underserved women. There have been no studies particularly focusing on patients’ access to diagnostic mammography. It is possible that access to diagnostic mammography among underserved women may in part contribute to their later diagnosis of breast cancer. We sought to evaluate access to diagnostic mammography for an uninsured woman with a newly detected breast mass in the San Francisco Bay Area. We hypothesized that an uninsured woman might have difficulty in scheduling a diagnostic mammogram.

MATERIALS AND METHODS

The study was designed to assess access to diagnostic mammography in the Greater San Francisco Bay Area. We specifically sought to determine how difficult it was for an uninsured woman to schedule an appointment for diagnostic mammography and to assess whether there was a significant delay in obtaining an appointment. The clinical vignette was of a middle-aged woman who recently detected a large breast mass and wanted to schedule a mammogram to assess this mass as quickly as possible. Because poor and uninsured women are less likely to have a primary care physician who can order the mammogram, our simulated patient tried to schedule a mammogram both with and without a physician’s referral. Lastly, because we found it almost impossible for the simulated patient to schedule a mammogram without a physician’s referral, we determined how difficult it was for the simulated patient to schedule a new primary care physician visit in order to evaluate her breast mass, as this step was needed before a mammography visit could be obtained. Thus, the study had three parts. First, our simulated patient called mammography facilities to schedule a mammogram without a physician’s referral; second, she called mammography facilities to schedule a mammogram with a physician’s referral; and third, she called primary care facilities to schedule a new physician visit to evaluate the newly detected breast mass. The University of California Committee on Human Research approved the study.

Standardized patient

In all situations, a Caucasian honors high school student made phone calls to the facilities, pretending to be a low-income, uninsured, 40–50-year-old woman who recently detected a large breast mass, reported as the size of a walnut. The simulated patient asked to schedule the first available appointment for mammography or to see a new primary care provider to evaluate the breast mass. The calls were made between June 1 and July 31, 2005. The caller was unaware of any facility characteristics when calling the facilities.
First vignette: Scheduling mammography without a physician’s referral

We generated a list of mammography facilities in the San Francisco Bay Area and surrounding counties that provide diagnostic mammography, including those in Alameda, Contra Costa, Marin, Napa, San Mateo, Santa Clara, San Francisco, Solano, and Sonoma counties. We used several sources to generate this list, including the Yellow Pages, the White Pages, and the Bay Area Breast Cancer Resource Guide, 4th edition, of the Northern California Cancer Center and checked against a list of facilities approved to provide mammography by the Food and Drug Administration (FDA). After excluding facilities that no longer provided diagnostic mammography, facilities that would not accept appointments without insurance, and facilities that had constraints on their use (such as only serving military personnel or family or members of a specific health maintenance organization), we identified 86 facilities that provided diagnostic mammography at the time of the survey. The simulated patient called each mammography facility three times to schedule an examination in order to generate an average wait time for each facility. For each facility, calls were spaced at least 1 week apart. The caller asked for the first available appointment. If the appointment wait time was greater than 2 weeks, the caller asked if there were any earlier appointments. When/If the simulated patient was informed that an appointment could not be made without a physician’s referral, the simulated patient asked for suggestions on finding a primary care provider or for a referral to a primary care clinic. Several local primary care physicians allowed us to use their physician name and physician identification numbers in order to schedule the mammogram, as it was impossible to determine the next available appointment without this information. For each call, a mammogram was scheduled if possible and then cancelled on a repeat call.

Second vignette: Scheduling a mammogram with a physician’s referral

We used the same list of facilities and methods as described above to schedule mammography, with the only difference that the simulated patient now reported having a physician referral.

Third vignette: Scheduling a primary care visit

We generated a list of facilities that provide primary care to underserved women in two of the counties in our survey, San Francisco and Alameda. We focused on the two largest counties, as these counties have the largest number of uninsured and racially and ethnically diverse women. We thought it likely that there would be the greatest number of providers willing to take uninsured patients in these counties. We sought centers and providers that primarily provide care to underserved women, and our list of primary care facilities was drawn from primary care referral centers, a phone survey of the community hospitals, and recommendations from the mammography facilities. We identified 24 facilities that provide care to underserved women. We attempted to be as thorough as possible but did not attempt to identify every facility that might possibly provide care to underserved patients, but rather those facilities that focus on this population, such as county clinics. The simulated patient called each facility once, as we thought the scenario could not be easily repeated without raising suspicion at the facilities. The caller asked to receive the first available appointment.

Analysis

For each facility contacted, we recorded the time between the phone call and the first available appointment. We calculated the mean wait time for each facility, averaging the times obtained through the three phone calls. We calculated the overall mean wait time and standard deviation (SD) median and range in these times and assessed for differences between the counties in the mean wait time using analysis of variance (ANOVA).

RESULTS

Scheduling mammography without a physician’s referral

We identified 86 facilities in nine counties in the Greater San Francisco Bay Area that provide diagnostic mammography. Overall, only 3 (3.5%) of the facilities were willing to schedule a mammogram without a physician’s referral. Two of
these facilities specifically provide free mammography screening to underserved women, and two were located in Alameda County.

Scheduling a mammogram with a physician’s referral

It was relatively easy to schedule a mammogram with a physician’s referral. The median wait time for diagnostic mammography was 5 days, and the mean wait time was just over a week (9 days, SD 15 days). For most facilities, an appointment could be scheduled within 2 weeks (interquartile range 1–9 days.) The wait time was longer than 1 month in only five facilities (Fig. 1). There were significant differences in the wait times among the different counties ($p < 0.05$), and the mean wait time was longest in San Francisco County (Table 1).

Scheduling a primary care visit

There was significant variability in the time to schedule a physician’s visit for assessment of a breast mass. The mean wait time to schedule a physician’s visit was just over 1 month (38.5 days, SD 62.4 days.) The variation in the wait time is reflected in the large SD of 62.4 days, with a range of 0 days (several clinics provided same day assessment) to 6 months.

**DISCUSSION**

Timely access to diagnostic mammography is extremely important among women with palpable breast masses, given the high likelihood of breast cancer among women with palpable breast masses. Inability to schedule a diagnostic mammogram could be particularly problematic among underserved, low-income women. We found relatively good access to diagnostic mammography in the Greater San Francisco Bay Area as long as a woman had a physician’s referral for this examination. The mean wait time for diagnostic mammography was just over 1 week if a woman had a physician’s referral. This suggests there is adequate mammographic capacity in the San Francisco Bay Area and is consistent with a recent report on access to mammography. Without a physician’s referral, however, scheduling a mammogram was nearly impossible, and the time required to get a physician’s appointment varied substantially between clinics. Although the average wait time was just over a month (38 days), there were several facilities that took considerably longer, and the longest time quoted was over 6 months. Thus, it was more difficult to schedule a primary care visit to assess a palpable breast mass than it was to schedule the diagnostic mammography once a referral had been obtained.
It is important to differentiate access to diagnostic mammography that is needed to work up an abnormality detected on a screening examination (approximately 55% of diagnostic mammography examinations) from diagnostic mammography examinations needed to evaluate a palpable breast mass. In the former case, women have already demonstrated their ability to access mammography through receipt of their screening examination, and continued access to diagnostic mammography is likely ensured. In contrast, women with a palpable breast mass may not have yet accessed the healthcare system. A high proportion of breast cancers are associated with diagnostic mammography obtained to evaluate breast symptoms, and these cancers tend to be larger and more aggressive compared with cancers initially detected on a screening examination. Thus, it is imperative to ensure access to timely diagnostic mammography among women with a palpable breast mass to minimize delays in breast cancer diagnosis.

Having a primary care physician referral for mammography is a well-established predictor of receipt of screening mammography. However, we found that for our hypothetical patient without a primary care physician but with a very concerning breast mass, getting to a primary care physician was difficult. There have been several studies that address physician compliance with screening guidelines, but the difficulty we found was in reaching the primary care physician in the first place. Thus, our study suggests that barriers in accessing primary care may contribute to barriers in accessing mammography.

The study had several strengths. The list of mammography facilities reached was comprehensive, the scenario was identical in each circumstance, and each facility was called several times to get a stable estimate of the wait times. There are several limitations. The caller was an articulate and insistent white young woman, and it is impossible to tell if a less articulate caller or if a person of color would have had equal ability to schedule the mammogram. Some appointment clerks may have correctly surmised that the caller was not truly a 40–50-year-old woman and may have been suspicious about the call, making them less apt to be helpful. The woman was willing to pay for the cost of the mammogram, yet women in poorer economic situations might be unable to do so. The results reflect access to diagnostic mammography only in the Greater San Francisco Bay Area. Other geographic areas may have fewer centers of mammography and more obstacles. Importantly, even in the Greater San Francisco Bay Area where mammography capacity seemed to be adequate, our simulated patient had difficulty scheduling a primary care visit in a short time frame. We attempted to find the centers that provide a large proportion of primary care in the two largest counties in the survey but did not attempt to find every available physician. However, the places we included are the largest and best-known facilities that provide care to the underserved and would likely be the first places an underserved woman might go to for care. The phone calls were made in a few months in the summer, and potentially access to primary care might be different at other times of the year. The caller presented a dire situation. Should a breast

<table>
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<th>Number of facilities</th>
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<th>Standard deviation</th>
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<tr>
<td>Sonoma</td>
<td>7</td>
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<td>Overall</td>
<td>86</td>
<td>5.0</td>
<td>9.0 (15.0)</td>
<td>0-90</td>
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mass be smaller or the woman sound less urgently in need, it is conceivable that the eagerness to give aid would be diminished and access to a diagnostic examination would have been less. We did not assess characteristics that might impact wait times to schedule primary care or mammography visits, such as the size of the populations each facility served and their resources. These factors are likely important for understanding reasons for long wait time but are outside the scope of this project. Lastly, we found that there may be delays in accessing diagnostic mammography because of delays in getting a primary care appointment. We suspect that this might be particularly relevant for underserved women, who are less likely to have a primary care physician. However, all women without a primary care provider must first find a provider before obtaining diagnostic mammography, and we did not assess whether this varies by type of insurance.

In summary, we found that access to diagnostic mammography may be diminished as a result of a general diminished access to primary care. Although mammography itself could be a portal of entry into the healthcare system, this currently is not the case. We suggest that further study should be conducted about the accessibility of primary care doctors and the availability of free clinics for women who have palpable breast masses and the possibility that mammography could be a portal of entry into the healthcare system.

DISCLOSURE STATEMENT

No competing financial interests exist.

REFERENCES


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