

A Study of Breast Imaging Timeliness at Froedtert Menomonee Falls Hospital

Froedtert Menomonee Falls Hospital offers comprehensive breast health services, including breast imaging (screening and diagnostic mammograms; ultrasound; MRI); stereotactic-guided core biopsies; wire and radioactive seed localizations (a wire or tiny radioactive piece of metal inserted into the breast to guide tissue removal); breast cancer treatment (surgery, medical therapies, radiation therapy); breast cancer risk assessment; and a full spectrum of supportive services. Our breast center is fully accredited through the National Accreditation Program for Breast Centers (NAPBC) and is recognized as a Breast Imaging Center of Excellence through the American College of Radiology (ACR).

The Froedtert & the Medical College of Wisconsin health network, of which Froedtert Menomonee Falls Hospital is a part, offers screening recommendations for women who have an average risk of developing breast cancer. These recommendations reflect national guidelines provided by the National Comprehensive Cancer Network (NCCN) and the ACR.

- Women who are at average risk should have a screening mammogram every year starting at age 40.
- Women should be familiar with how their breasts normally look and feel and should report any changes to their health care provider right away.
- We strongly encourage all women to talk with their doctors or other providers about the benefits of breast cancer screening, including the possible need for additional testing.
- Together with their providers, women should develop a screening schedule that is appropriate for their values and individual health histories.

A screening mammogram consists of four standard views of the breast. Screening results are shared promptly with patients via a phone call and mail and are available in patients' MyChart accounts.

If the screening mammogram reveals an abnormality, a radiologist may recommend a diagnostic mammogram and/or a breast ultrasound to further evaluate the breast tissue. We notify our patients and assist with scheduling the diagnostic breast imaging appointment.

During the diagnostic breast imaging appointment, we take additional mammogram images and sometimes perform an ultrasound. A radiologist who focuses only on breast imaging interprets the diagnostic results and determines if the patient needs a biopsy. A registered nurse then assists the patient with coordinating care and scheduling the recommended type of biopsy.

As a Breast Imaging Center of Excellence, Froedtert Menomonee Falls Hospital maintains high quality, care in the most timely manner possible. A review of 2017-2018 data showed an upward trend in the number of business days from the time of the screening mammogram to the date of the diagnostic mammogram. The data also reflected an increase in days from the breast biopsy recommendation to the date of the breast biopsy procedure. As a result, we initiated a quality improvement project to further examine the data, identify reasons for delays, compare our data to national benchmarks, review facility goals and determine opportunities for improvement.

We chose National Quality Measures for Breast Centers (NQMBC), a quality initiative of the National Consortium of Breast Centers, as a national benchmark for data comparison. The NQMBC enters data from participating breast centers, and reports can be generated showing the data's mean, median, mode and percentile rank. We used two quality indicators to measure timeliness of care: The time

between the screening and the diagnostic mammogram and the time between the diagnostic mammogram and a needle or core biopsy.

According to the NQMBC data covering July through December 2017, the average (mean) number of days from screening mammogram to diagnostic mammogram was 7.01. To reflect this national benchmark, the breast program at Froedtert Menomonee Falls Hospital established a goal of six days from the time of the screening mammogram to the diagnostic mammogram. In 2017, our average number of days from screening mammogram to diagnostic mammogram (excluding patient preference) was 2.1 days during the first quarter, 2.9 days during the second quarter, 6.1 days during the third quarter and 13.4 days during the fourth quarter. During calendar year 2018, the average number of days from screening mammogram to diagnostic mammogram was 9.27 days during the first quarter, 8.44 days during the second quarter, 10.7 days during the third quarter and 9.33 days during the fourth quarter.

To help determine causes for this upward trend, we reviewed diagnostic mammogram volumes. Froedtert Menomonee Falls Hospital experienced an increase in the total annual volume of diagnostic mammograms, going from 2,786 in 2016 to 3,419 in 2017. Of note, the number of patients called back for additional diagnostic images to evaluate a concern noted on the screening mammogram decreased from 862 in 2016 to 809 in 2017. These findings show that there were more patients coming to Froedtert Menomonee Falls Hospital for diagnostic imaging after having their initial imaging outside of this hospital. A key change during July 2017 was that Medical College of Wisconsin radiologists began to interpret results of all breast imaging throughout the health network, replacing the radiology group that previously interpreted breast image results. This change expanded access for patients to have breast imaging completed at different locations within our health network.

According to the NQMBC data from July through December 2017, the average (mean) number of days between diagnostic mammogram and needle or core biopsy was 6.17. To meet the national benchmark, Froedtert Menomonee Falls Hospital established a goal of six days from the date of the diagnostic mammogram to the date of the needle or core biopsy. In 2017, our average number of days from diagnostic mammogram to needle or core biopsy (excluding patient preference) was 2.04 during the first quarter, 2.8 during the second quarter, 2.81 during the third quarter and 4.67 during the fourth quarter. In 2018, time from diagnostic mammogram to biopsy began to rise: we averaged 6.79 days in the first quarter, 7.66 days in the second quarter, 7.09 days in the third quarter and seven days the fourth quarter.

The total number of needle or core biopsies increased from 384 in 2017 to 435 in 2018. During this time, we noted a slight decrease in the number of diagnostic mammograms and ultrasounds – from 5,065 in 2017 to 4,848 in 2018. We also saw an increase in the volume of patients who had diagnostic imaging at another location and a biopsy at Froedtert Menomonee Falls Hospital – from 19 % in 2017 to 21 % in 2018.

After the data review, we initiated breast imaging changes across our health network to assist in reducing the average number of days from a screening mammogram to a biopsy at Froedtert Menomonee Falls Hospital. These improvements included:

- In October 2017, the Froedtert & MCW Mequon Health Center began offering breast imaging services.

- In January 2018, the Froedtert & MCW Drexel Town Square Health Center began offering breast imaging services.
- Four fellowship-trained breast imaging radiologists were hired in 2018 and 2019, bringing the total of breast imaging radiologists across our health network to 13.
- Froedtert & MCW Froedtert Hospital in Milwaukee added an additional breast ultrasound machine, allowing an increase in diagnostic imaging appointments at that location.
- Several Froedtert & MCW locations expanded their diagnostic and needle or core biopsy availability to offer additional appointments for patients at a variety of locations. These locations included Froedtert Hospital; Froedtert Menomonee Falls Hospital; Froedtert West Bend Hospital; the Froedtert & MCW Westbrook Health Center; the Drexel Town Square Health Center and Mequon Health Center.
- In November 2018, we added 20 additional biopsy appointment slots per month at Froedtert Menomonee Falls Hospital.
- In December 2018, we added one Saturday per month for diagnostic mammogram and ultrasound appointments at Froedtert Menomonee Falls Hospital and Froedtert West Bend Hospital, which increased by 10 the diagnostic slots available at each location.
- We hired an additional breast care technician in 2019 to help improve the mammogram scheduling process and turnaround time for patients.
- In 2019, we added additional breast imaging nurse coverage to help improve the breast biopsy procedure scheduling process and turnaround time for patients.

In addition to the above changes, breast care leadership throughout our health network reviewed the protocol for follow-up imaging for patients who have had a breast lumpectomy (removal of a breast lump). We reviewed breast cancer recurrence rates, which reflected a very low recurrence rate within the first three years of diagnosis. As a result, we were able to revise the post-lumpectomy imaging protocol, decreasing the surveillance of patients who have had diagnostic mammograms from three years to one year. Two years after a lumpectomy, patients may return to annual screening mammograms unless diagnostic imaging is clinically indicated. This change in protocol reduces patient costs, decreases additional radiation exposure and improves access to diagnostic imaging for patients with symptoms and abnormal mammograms.

During calendar year 2019, we began to see improvements in our data due to the changes we implemented. The average number of days from screening mammogram to diagnostic mammogram (excluding patient preference) was seven days during the first quarter and 6.67 days during the second quarter of 2019. The average number of days from diagnostic mammogram to needle or core biopsy (excluding patient preference) was 4.57 days in the first quarter and 4.12 days in the second quarter of 2019.

Breast care leadership at Froedtert Menomonee Falls Hospital monitors this data on an ongoing basis. We will continue to evaluate and implement opportunities for improvement to achieve and maintain our goals.