

One-Stop Breast Clinic Improves Time to Diagnosis and Patient Satisfaction





St. Luke's University Health Network has 15 hospitals located in southeastern Pennsylvania and western New Jersey. Numerous network accolades have been received over the years, including 100 Top Hospitals and Top 15 Best Major Teaching Hospitals in the US. The network currently has a medical school and radiology residency.

Prior to COVID-19 in 2019, St. Luke's University Health Network breast imaging had a screening to pathology turnaround time of 14 days and a diagnostic imaging to pathology time of 8 days. While these numbers are certainly acceptable, some challenging patient encounters resulted in prolonged wait times and multiple appointments. For example, as a worst-case scenario, a patient may go from screening mammography to diagnostic imaging, to biopsy, to results, to breast MRI, to second-look ultrasound, to MR biopsy before finally receiving surgical consultation and definitive management for breast cancer. Such a prolonged workup can exceed 2 months, which is too long.

An Innovative Solution

Given its focus on quality, teaching, and innovation, St. Luke's University Health Network partnered with GE HealthCare and PINC AI Applied Sciences to develop the first of its kind One-Stop Breast Clinic in the United States. This clinic was modeled after the successful "one-day diagnosis" model developed at the [Gustave Roussy Institute](#) in France.

From the outset, we had several goals, the first and foremost of which was to develop a framework to minimize the number of appointments for a breast cancer workup and to minimize the time from diagnostic imaging to pathology, with a goal of 48 hours or less. Additional goals included:

- Identifying and prioritizing patients with the highest probability of malignancy
- Implementing a patient pathway to improve turnaround time
- Improving patient satisfaction by creating 1 appointment for the entire diagnostic process
- Decreasing costs associated with multiple appointments
- Improving access for all patients.

Contrast-enhanced mammography allows for a more tailored approach to using biopsies to prove extent of disease, and it often reduces the overall number of biopsies necessary for care management.

Implementation

The first iteration of the One-Stop Breast Clinic at St. Luke's University Health Network was launched in 2020 at a rural hospital campus. Available modalities included diagnostic mammography with tomosynthesis, ultrasound, and ultrasound-guided biopsy. We specifically selected this rural location to allow for staffing consistency and teamwork. Team members included a fellowship-trained breast radiologist, mammogram technologist, breast ultrasound technologist, and a nurse navigator. Patients were identified from their screening mammogram based on likelihood of needing a biopsy.

At first, 30 minutes were allocated for a diagnostic mammogram, 30 minutes for breast ultrasound, and 30 minutes for ultrasound-guided biopsy. After the first month, the overall process proved exceedingly efficient. The overall appointment was shortened, allocating 30 minutes for diagnostic mammogram and 30 minutes for a combined breast ultrasound and ultrasound-guided biopsy. This change required effective communication between team members and the ability to work on multiple patient care items in parallel rather than sequentially. For example, once it was determined that a biopsy was necessary, the radiologist would alert the nurse navigator, who could prepare

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2025 ACI Program Schedule

ACI: A Focus on Women’s Malignancies
Friday, Feb. 28, 2025
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ACI: A Focus on Toxicity Management
Friday, March 7, 2025
11 a.m.–3 p.m. ET | Virtual – Zoom

ACI: A Focus on Bladder & Genitourinary Cancers
Monday, April 7, 2024
11 a.m.–3 p.m. ET | Virtual – Zoom

ACI: A Focus on Gastrointestinal Cancers
Wednesday, April 23, 2025
1–5 p.m. ET | Virtual – Zoom

ACI: A Focus on Intratumoral Therapies, Vaccines and Cytokines
Thursday, May 8, 2025
11 a.m.–3 p.m. ET | Virtual – Zoom

ACI Session in partnership with Society of Interventional Oncology (SIO)
** Session Registration Coming Soon*
Thursday, June 5, 2025
8 a.m.–12 p.m. CT | Chicago, IL

ACI: A Focus on Cellular Therapies, T Cell Engagers and TIL Therapies
Friday, June 27, 2025
11 a.m.–3 p.m. ET | Virtual – Zoom

ACI: A Focus on Lung Cancers
TBD

ACI: A Focus on Skin Cancers
TBD

The 2025 Advances in Cancer Immunotherapy™ series is jointly provided by the Partners for Advancing Clinical Education and the Society for Immunotherapy of Cancer in collaboration with the Advanced Practitioner Society for Hematology and Oncology and the Association of Cancer Care Centers.

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a tray and finish the consent form while the patient was still receiving her diagnostic ultrasound. While the overall paradigm was successful, even after this workup, some patients still needed breast, MRI, and additional biopsies, all of which required additional appointments.

The following year, phase 2 of our One-Stop Breast Clinic sought to replicate the initial success at the rural campus of our flagship Regional Breast Center, which is in a suburban setting. The number of appointments offered per day was ramped up quickly to 6. The pool of participating radiologists and technologists increased by a factor of 5. The focus of the One-Stop Breast Clinic continued to include teamwork and efficiency. However, it was noted that different team members brought more variation to the process. Not all teams worked as efficiently together as others. Some patients still received breast MRI after their One-Stop Breast Clinic visit. At this point, it was also discovered that seeing 6 patients per day who were newly diagnosed with breast cancer was emotionally burdensome for the team.

Diagnostic imaging to biopsy time improved from 6.5 days to same day. Biopsy to pathology improved from 3 days to under 2 days. Diagnostic imaging to pathology improved from 8.5 days to 48 hours or less.

These realizations led to the third and current iteration of the One-Stop Breast Clinic. The clinic format was modified to see 2 patients per day, but the number of days per week was increased to maintain overall capacity. This change was well received and allowed the team members to continue to offer exemplary patient-centered, compassionate care. There were also 2 critical technological additions, which markedly improved the offerings at the clinic.

Leveraging Technology

The first technological innovation was the addition of contrast-enhanced mammography. This technology allows for local staging similar to breast MRI. Contrast-enhanced mammography also allows for a more tailored approach to using biopsies to prove extent of disease, and it often reduces the overall number of biopsies necessary for care management. This technology markedly reduced the number of patients who needed breast MRI after mammography to determine extent of disease. However, until recently, some patients would need breast MRI biopsy, depending on the results of the contrast-enhanced mammography. Now, contrast-enhanced, guided mammographical biopsy is possible, further decreasing the number of patients needing MRI-guided biopsy. Contrast-enhanced mammography has also

facilitated identification of numerous additional, unsuspected ipsilateral and contralateral breast cancers, which would have been undetected without this new technology.

The second major technological addition was Scout® radar localization (Merit Medical, South Jordan, Utah). This wireless localization technology allows for lesion localization at the time of biopsy, including both in the breast and the axilla. This technology obviates the need for a return visit for localization after meeting with a breast surgeon—a fine example of patient-centered care. Typically, localization is performed on a separate day from biopsy and is a billable service. However, at St. Luke's University Health Network, we bundle the localization with the biopsy, receiving no additional reimbursement for the localization itself.

The Role of the Nurse Navigator

The nurse navigator has proved tremendously important in the One-Stop Breast Clinic process. Prior to the visit, the nurse navigator will call the patient, review the procedures to be performed, and set expectations. Navigators also screen the patient for contrast eligibility and arrange lab testing, if indicated. During the visit, the nurse navigator will place the IV, focus on patient experience and family communication, review next steps, and discuss follow-up phone calls with the patient.

Patient Visits

Typical patient visits in the One-Stop Breast Clinic include the following activities (in order):

- Arrival and check-in
- Transfer to holding area and changing into a gown
- Review of paperwork and vital signs
- IV placement by nurse
- Contrast-enhanced mammogram is obtained
- Review of imaging by radiologist, mammogram technologist, and ultrasound technologist
- Ultrasound performed
- Review of imaging with the patient performed by the radiologist
- Consents for biopsy obtained
- Biopsy and localization
- Post-procedure mammogram
- Post-procedure care and discharge.

The radiologist is empowered to have an open, tailored conversation with the patient based on imaging. The probability of malignancy can be discussed, followed by next steps in care if results prove to be malignant. This process is well received by patients, as an immediate needle biopsy can be performed. Furthermore, at our institution, the radiologist performing the biopsy will give results. Thus, a thoughtful, in-person discussion during the one-stop visit yields an informed discussion with the patient about the biopsy results.

Our Results

Diagnostic imaging to biopsy time improved from 6.5 days to same day. Biopsy to pathology improved from 3 days to under 2 days. This improvement occurred primarily in coordination with pathology

by prioritizing all breast specimens for interpretation. Diagnostic imaging to pathology improved from 8.5 days to 48 hours or less. This decrease in wait time tremendously reduces patient anxiety and supports more rapid surgical intervention.

The addition of contrast-enhanced mammography increased the positive pathology from 50% to 70%. These data imply that many nonmalignant lesions were able to be cleared with imaging alone.

Operational and labor costs were cut in half for One-Stop Breast Clinic patients. There are several reasons for this cost decrease. A patient is scheduled for 1 visit as opposed to multiple visits, with only 1 phone call to nurses for a One-Stop Breast Clinic appointment versus separate phone calls for appointments on different days. Front office check-in and registration occurs only once. Imaging technologists will only need to review the case once, rather than having multiple technologists review the case on different days. Likewise, the breast imaging radiologist only needs to review the screening mammogram before directing additional imaging and care. It is no longer necessary to review multiple prior imaging studies and multiple prior reports.

Discussion

Nearly all patients are cleared for surgery after a visit to the One-Stop Breast Clinic. Some patients were previously sent to breast MRI biopsy for findings that can only be seen on contrast-enhanced mammography. With the addition of contrast-enhanced, guided mammographical biopsy, MRI utilization for breast cancer workup will further decline. However, contrast-enhanced, guided mammographical biopsy would still require a separate appointment to allow the contrast agent to clear from the patient's system prior to a second contrast bolus.

Some ongoing challenges were identified. The One-Stop Breast Clinic has been difficult to scale in 1 location. Multiple modalities are required for the provision of care. Any given modality may not be optimally utilized from a scheduling perspective. Conversely, by reducing the total number of appointments for a given patient, those downstream appointments become available for other patients.

During this process, several keys to success were identified. Maintaining adequate staffing levels is necessary and multiple redundant team members must be available for participation. However, at the beginning, consistency in staffing is critical.


Buy-in and good working relationships with referring providers is also crucial. When referring providers understand the rationale and methodology of a One-Stop Breast Clinic, almost all will offer support since it primarily benefits patients. It is important that referring providers allow conditional orders for additional imaging and biopsy, if indicated. This process prevents time wasted obtaining orders by telephone, or worse, not being able to offer a same-day biopsy. A process to identify patients and develop defined pathways is necessary for efficiency.

Wireless localization technology renders a downstream appointment for determination of localization unnecessary.

Initially, some processes were manual and in need of refinement. In the first phase, the radiologist emailed patient cases to a nurse navigator based on their likelihood of needing a biopsy. Currently, rather than emailing the nurse navigators about the eligible patients, we developed a streamlined process within our Epic electronic health record. The radiologist indicates within Epic at the time of screening interpretation that a patient will need a One-Stop Breast Clinic appointment and communicates the anticipated guidance modality. This work occurs behind the scenes and does not alter the imaging report. Thus, if patients decline enrollment in the One-Stop Breast Clinic, they can be scheduled as usual for a regular diagnostic imaging appointment. The need for a One-Stop Breast Clinic appointment populates on the nurse's worklist in Epic, eliminating the need to manage another communication system.

The role of nurse navigator cannot be understated throughout this entire process. Navigators are critical from the notification of patients requiring a callback to managing expectations through the diagnostic process to the successful execution of a One-Stop Breast Clinic appointment.

Lastly, investment in products and technology that allow patients to have fewer appointments is absolutely required. Contrast-enhanced mammography is an emerging imaging technology, but it has largely supplanted the use of breast MRI for these patients. Wireless localization technology renders a downstream appointment for determination of localization unnecessary. The patient can be referred to oncology without any anticipated downstream imaging, with oncologic care at the direction and on the schedule of the oncologists.

Ultimately, compressing the diagnostic workup, biopsy, and localization process into a 48-hour time period provides more timely, complete, and patient-centric care, which is, ultimately, most important. 

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