



## The Impact of Time-of-Service Screening Results on Workflow and Patient Satisfaction In an Academic Breast Center

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### About us . . .

-Breast Imaging at the University of Utah Hospital and Clinics (UUHC) currently consists of 2 diagnostic facilities and three screening-only facilities located in Salt Lake City, Utah.

-The main breast imaging facility Huntsman Cancer Hospital (HCH), is staffed 5 days a week with 2 physicians. One physician reads screens-with-results (SWR) while the other performs scheduled biopsies, diagnostic exams and clinic “add-ons”.

-The SWR physician is responsible for any “add-on” diagnostic exams that arise from the SWR service, and also performs same-day biopsy on these patients as indicated.

-The second diagnostic center is staffed 5 days per week with a single radiologist, who performs all the above functions at that site.

### Our rationale . . .

-There exists a current emphasis of harms over benefits of screening mammography in the United States; this informs policy and affects perception and participation. We acknowledge that the reduction of harms inherent to screening an asymptomatic population is of paramount importance.

-Commonly cited harms center around anxiety experienced by the patient. Anxiety and its consequences are significant, but difficult to quantify. Time can be used as surrogate measure; the less time a patient waits for results, the less time a patient has to experience harm.

-Historically, a screening mammogram (SCM) is perceived as a non-emergent exam, and is performed and interpreted at the convenience of the imaging center and the radiologist. This perception should change for the benefit of the patient.

-In a modern-day, academic breast imaging practice with sufficient resources, personnel and expertise, any delay experienced by the patient to receive final results beyond the screening appointment potentially represents an unnecessary patient harm.

### Problem and Goal Statements . . .

-Historically, women presenting for screening mammography waited an average of 6 days to receive final results by mail.

-In our practice, roughly 92% of women are given normal exam results after performing 4 routine views. With further imaging (BI-RADS 0—additional mammographic views and/or US) the percentage of women who are given normal results increases to approximately 98%.

-Time awaiting mammographic results is a source of anxiety (harm) for patients, especially those requiring additional imaging.

-Time is a quantifiable target measure for reducing harm in 98% of our patient population.

### Analysis and Implementation . . .

Collaboration with the Value Engineering Department was utilized to determine current workflow vs. an ideal workflow that incorporated the SWR program at HCH, prioritized to maintain historically high patient satisfaction scores **while functioning at the current staffing level**.

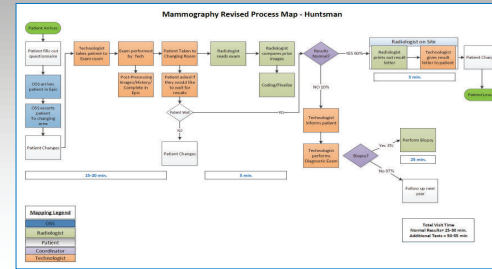
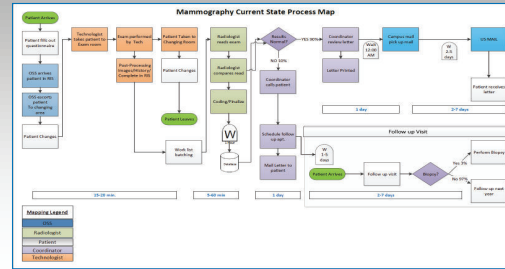
Pre-SWR process map (Mammography Current State Process Map) identified the main causes of delay in the legacy system as follows:

-Screening exams were performed throughout the day, and batch interpreted by the radiologist as the diagnostic schedule allowed, often at the end of the day. Not every screening exam was interpreted the same day it was performed. Letters for the day were printed after-hours for mailing the following day.

-Measured time in our system averaged 5-6 days for patients to receive normal results by mail.

-Patients needing additional imaging (BI-RADS 0) were contacted by phone by the Diagnostic Care Coordinator, who then scheduled the appointment. This call was performed the day after the screening exam was finalized. A follow-up letter was also mailed to the patient; however, the additional imaging was usually completed before this letter arrived.

-If biopsy was recommended, it was usually performed the day of the diagnostic exam.



### Improvement Design and Implementation . . .

A time-of-service screening mammography program was implemented Q1 2015 (Mammography Revised Process Map):

-Following completion of the exam, the mammography technologist asks the patient if they would like to wait for results (estimated to be less than 10 minutes wait).

-The exam is interpreted as the patient dresses in the dressing room.

-The final report is signed by the radiologist and the letter is printed in the technologists work area. The technologist verifies correct patient and mailing address. If the patient has waited and the results are negative or benign (BI-RADS 1 or 2), the technologist hands the patient the letter, obviating the need to mail the results letter.

-If BI-RADS 0, the additional imaging is ordered under the name of the interpreting radiologist and the imaging is performed at the same patient visit. After the additional imaging is completed, the patient receives results directly from the radiologist. If a biopsy is recommended, every attempt is made to complete the same day/same visit; this condenses three potential visits into a single visit.

-If the patient declines immediate results, a letter is mailed to the patient as per the legacy system, and future appointments are scheduled at a time convenient to the patient.

### Impact . . .

-When offered, 97-98% of women opted to participate in the SWR program.

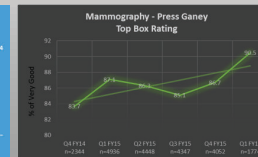
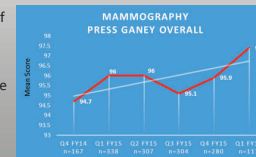
-**Wait times for normal results decreased from 6—7 days to less than 15 minutes for participants with normal initial results or after additional views.**

-**Screens read/day increased by 5%.**

-**No effect on call-back rate or cancer detection rate.**

-**Press-Ganey patient satisfaction scores maintained in top 1—2% of the nation; many patient comments now directly reference the SWR mammography.**

-**By performing same visit diagnostic exams/biopsy on the SWR population, the scheduling backlog was decreased.**



### Patient Comments . . .

*“I really appreciated getting the mammogram test results right away. This is a very helpful change. It eliminates the uncertainty of the waiting period before the letter arrives. Great job on all fronts in this clinic.”*

*“Thank you, thank you, thank you for having a radiologist read my x-rays immediately. It was such a joyous feeling walking out of my mammogram with the test results in my hand.”*

*“The most fabulous thing that happened during this experience was receiving my results within 5 minutes after the test. Further, my technician informed me that should I need something additional such as an ultrasound or biopsy, I would receive those immediately—no waiting. I can’t tell you how good this made me feel. A wonderful service.”*

*“I was very happy to wait 15 minutes (actual time closer to 8 minutes) to find out if I needed a re-take. I didn’t. It totally relieved the stress due to uncertainty of the test to walk away knowing it was normal. Thank you -- this is wonderful.”*

*“I want to comment that having the radiologist read my scans immediately was super important. It was so much better to go home knowing my results right away, rather than having to wait a week. For cancer screening, I think this is critically important, since the wait can be agonizing.*

*“LOVED, loved, loved the fact that the radiologist read the mammogram while I waited. This a HUGE plus. No more anxiety waiting for results! Kudos to whomever came up with the idea and implemented it. Thank you!*

### What’s Next..

-Plans for expansion of services include expanded clinic hours at main facility (HCH) and full service Saturday clinics twice a month at HCH.

-Additional screening facility scheduled to open in late fall 2015.

-Additional diagnostic facility is currently under construction in Farmington, UT, scheduled to open in late 2016 or early 2017.