

# Improving the Mammography workflow in the Radiology Unit at Cambridge Health Alliance

Aliysa Rajwani, BDS, MPH; Mary Kearns, RN; Leah Harrington; Hetal Verma, MD; Carol Hulka, MD, MBA; Gouri Gupte PhD, MHA

Cambridge Health Alliance

## Introduction to the Problem

- The Radiology unit identified problems with getting patients through the unit and delays in completing mammograms during the scheduled appointment time.
- A multidisciplinary team was created with radiologists, technologists and administrative staff in the mammography unit.
- Increase patient wait and cycle times affected efficiency and effectiveness of care.

## Aim

To develop an efficient process and schedule for ultrasound and mammography to allow performance of tomosynthesis on all patients and reduce patient cycle time.

## The Team

### Quality Management

- Aliysa Rajwani, BDS, MPH: Quality Project Improvement Advisor
- Mary Kearns, RN- Director, Quality Management
- Gouri Gupte, PhD, MHA- Director of Performance Improvement

### Radiology

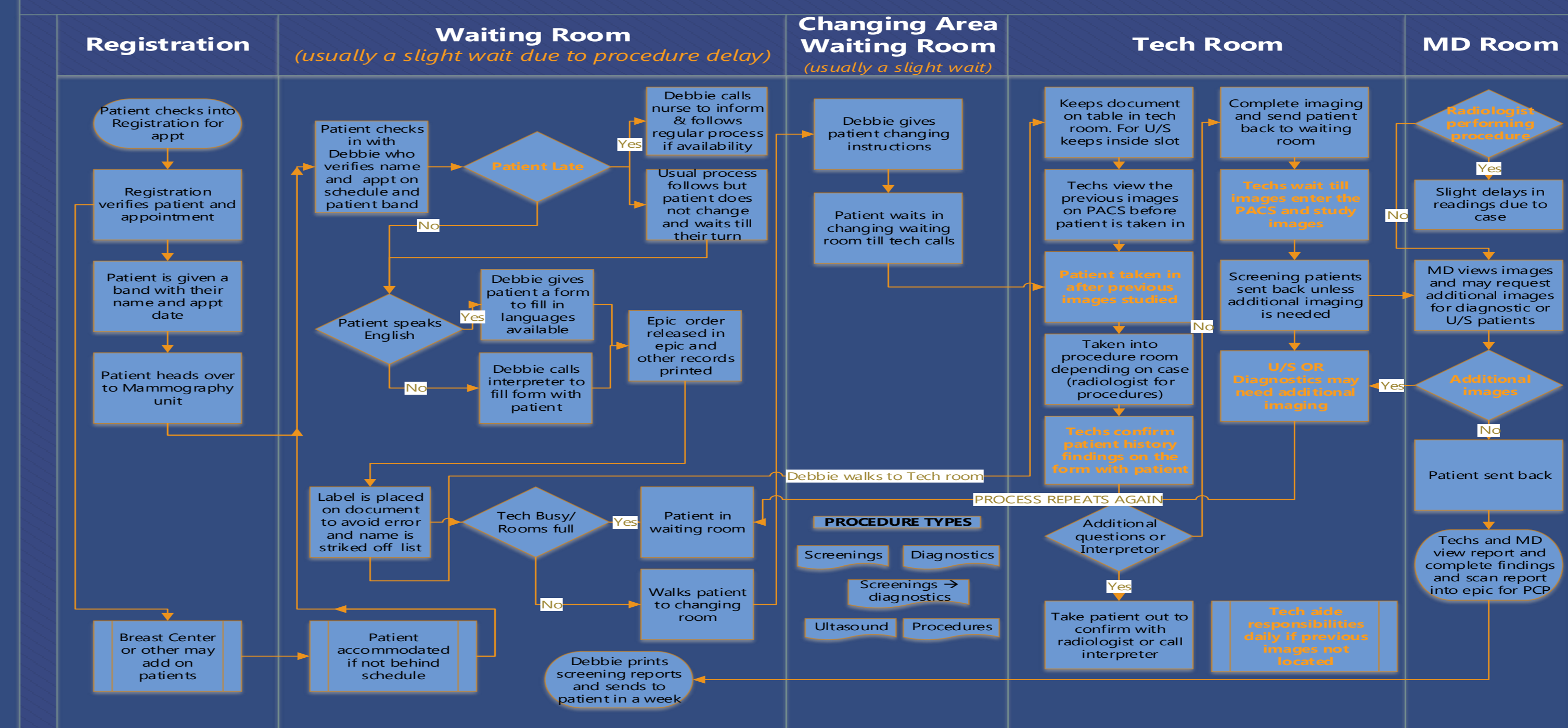
- Leah Harrington, RT. (R)(M)-Manager, Breast Imaging
- Linda Lowery- Radiation Technologist
- Hetal Verma, MD-Director, Breast Imaging
- Doris Gentley- Senior Director, Radiology
- Carol Hulka, MD, MBA-Chief of Radiology

## The Interventions

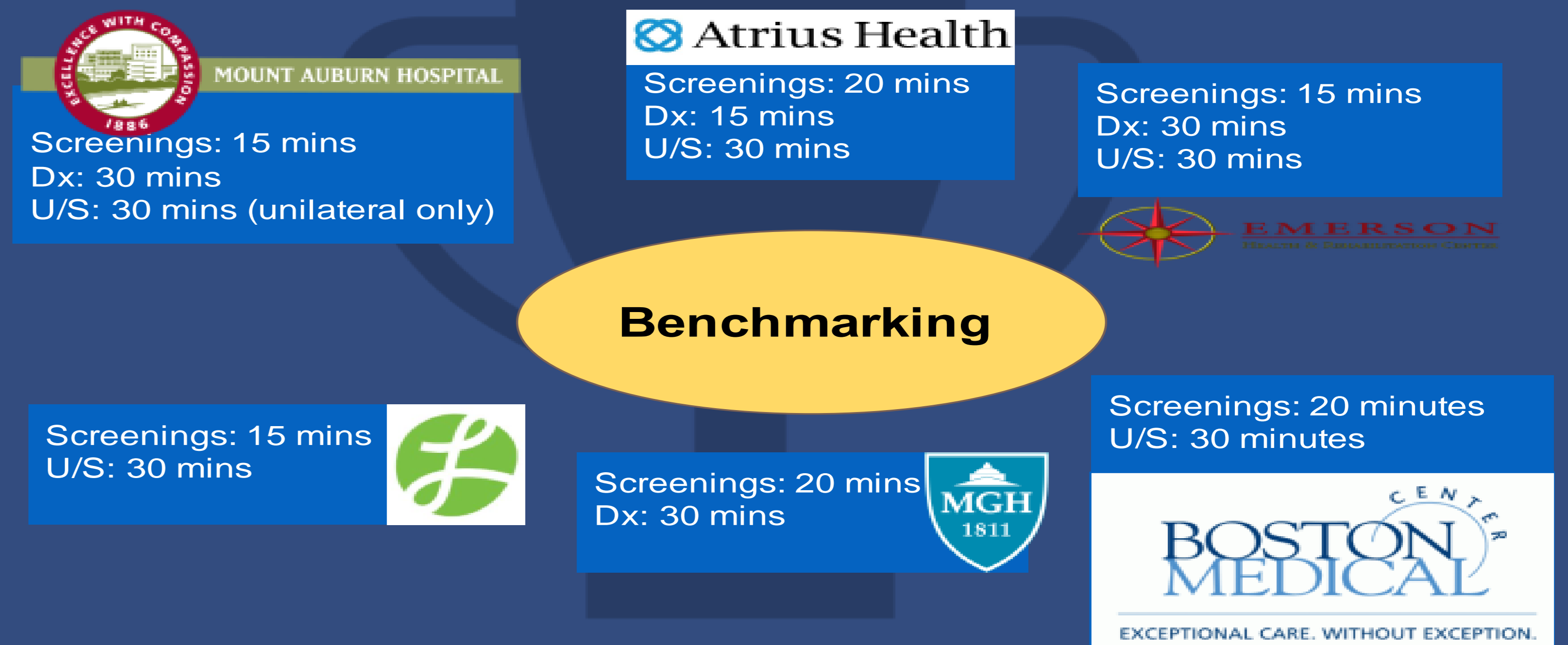
- GEMBA walks and observational studies
- Data analysis using observational study data and analyzing current schedule
- Process Mapping and Root Cause Analysis using Fishbone diagram
- Benchmarking
- Developing and implementing recommendations using the Impact Effort Matrix

## Interventions-Process Mapping and Benchmarking

Mammography Unit Process Flow (some bottlenecks and inefficiencies in orange)

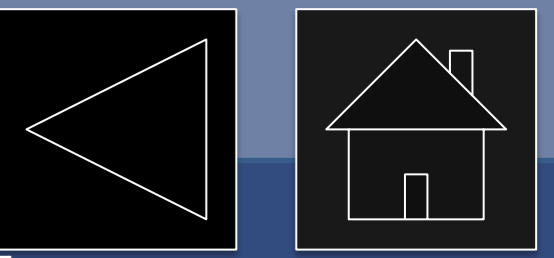


- Process mapping was completed with all members of radiology team.
- It helped highlight inefficiencies and waste in process



For more information, contact:

Aliysa Rajwani, BDS, MPH- Quality Project Improvement Advisor: Cambridge Health Alliance

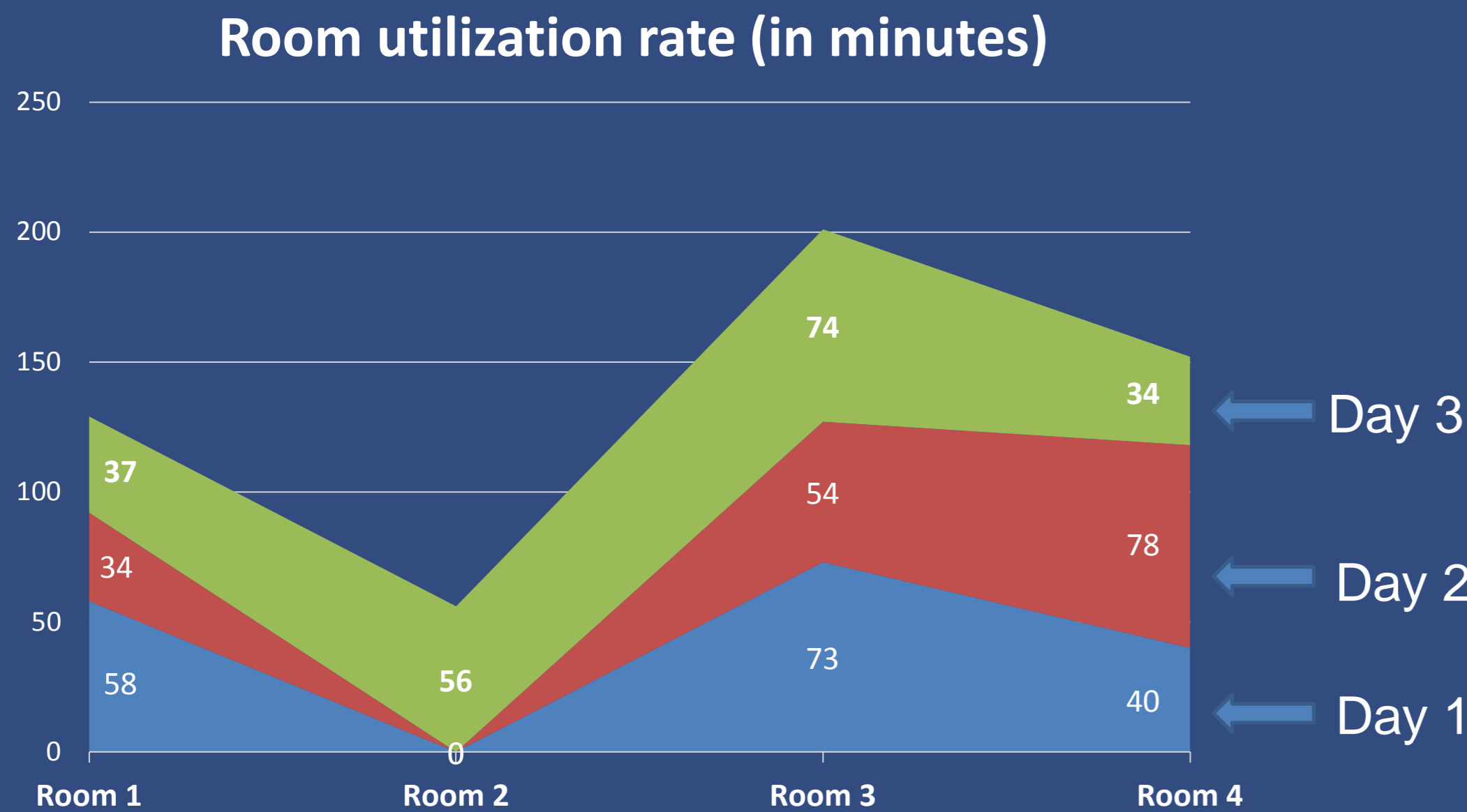


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## Interventions: Data Analysis and Impact Effort Matrix



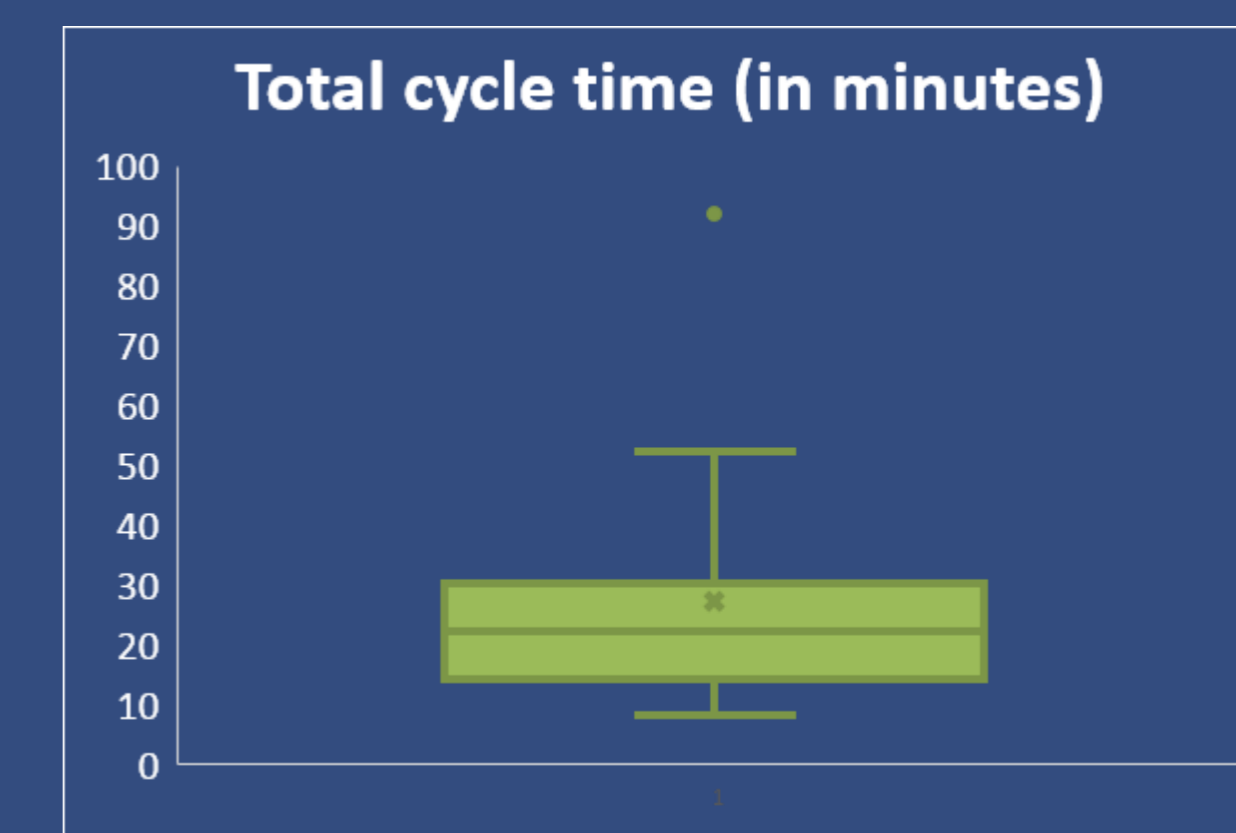
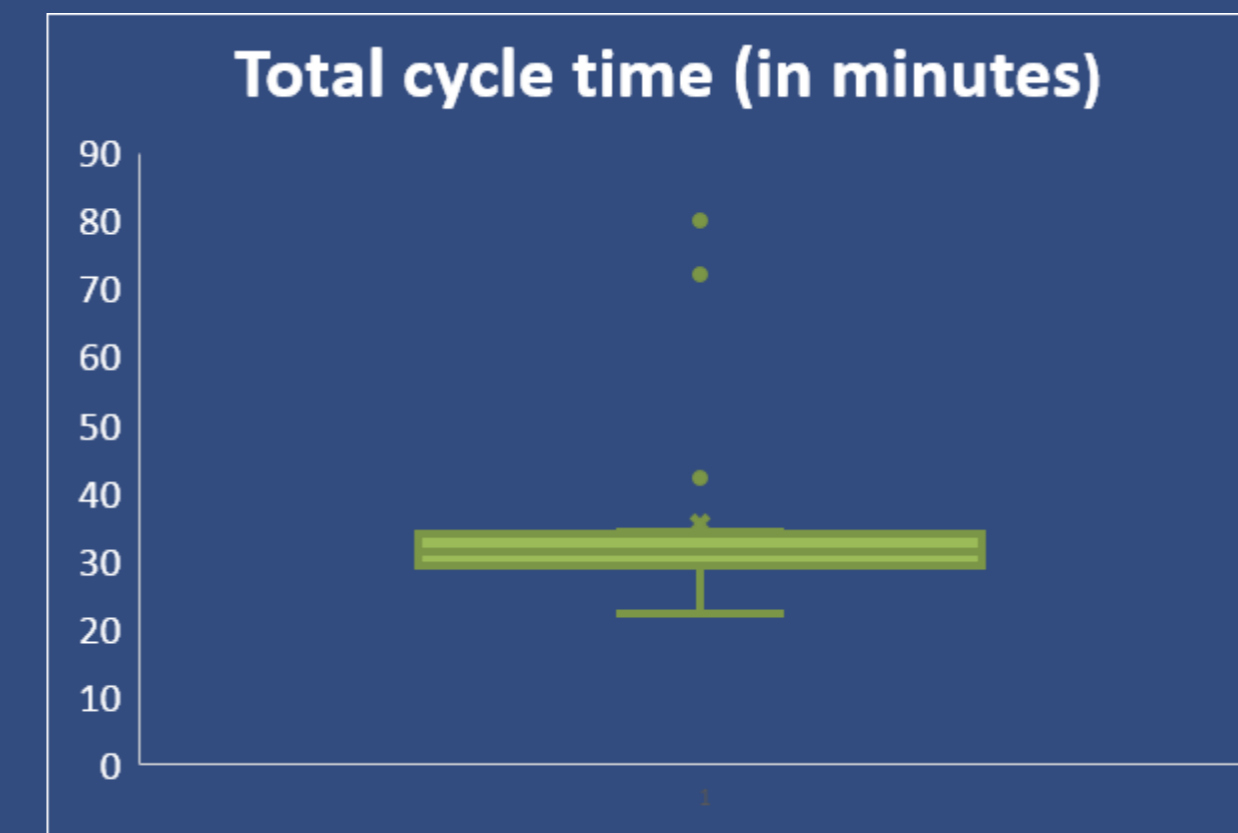
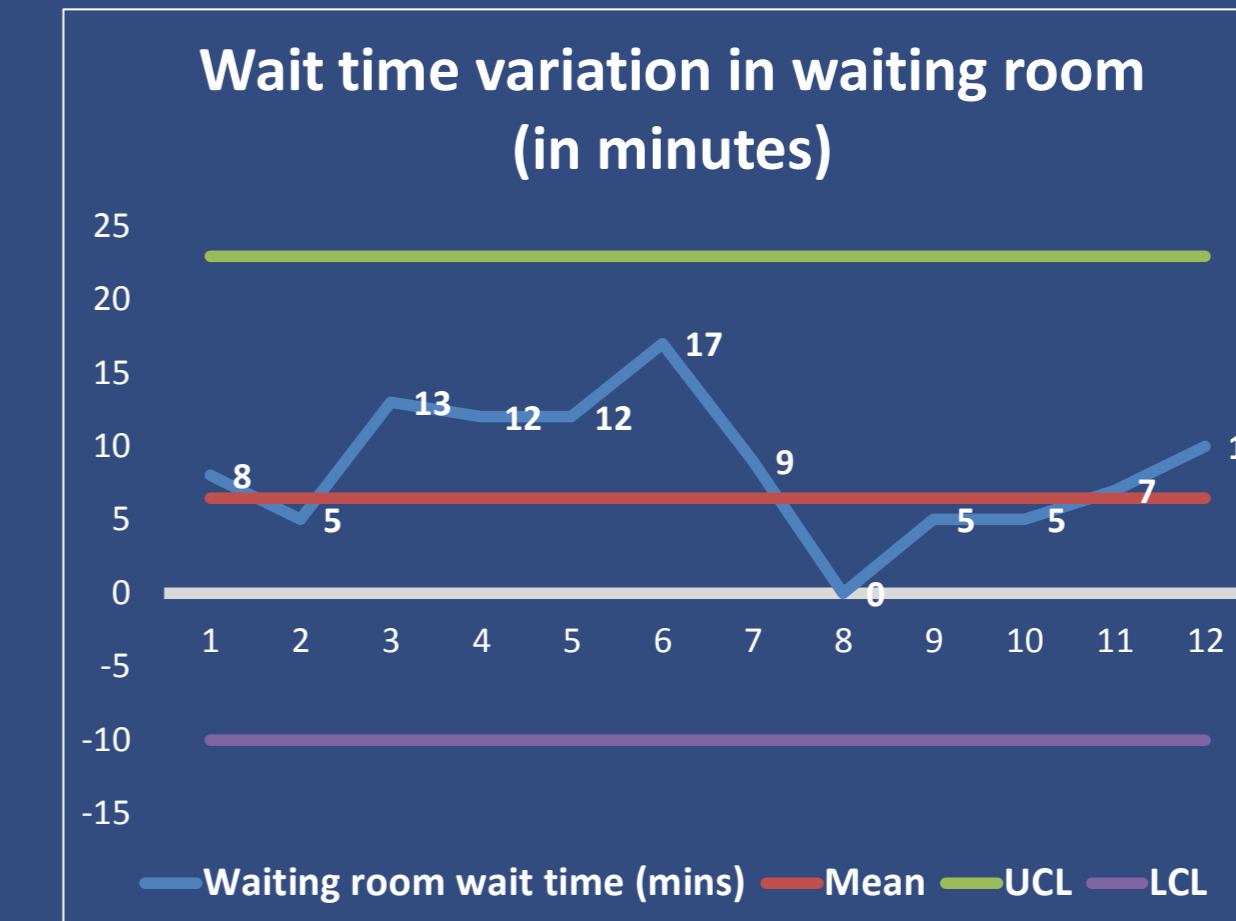
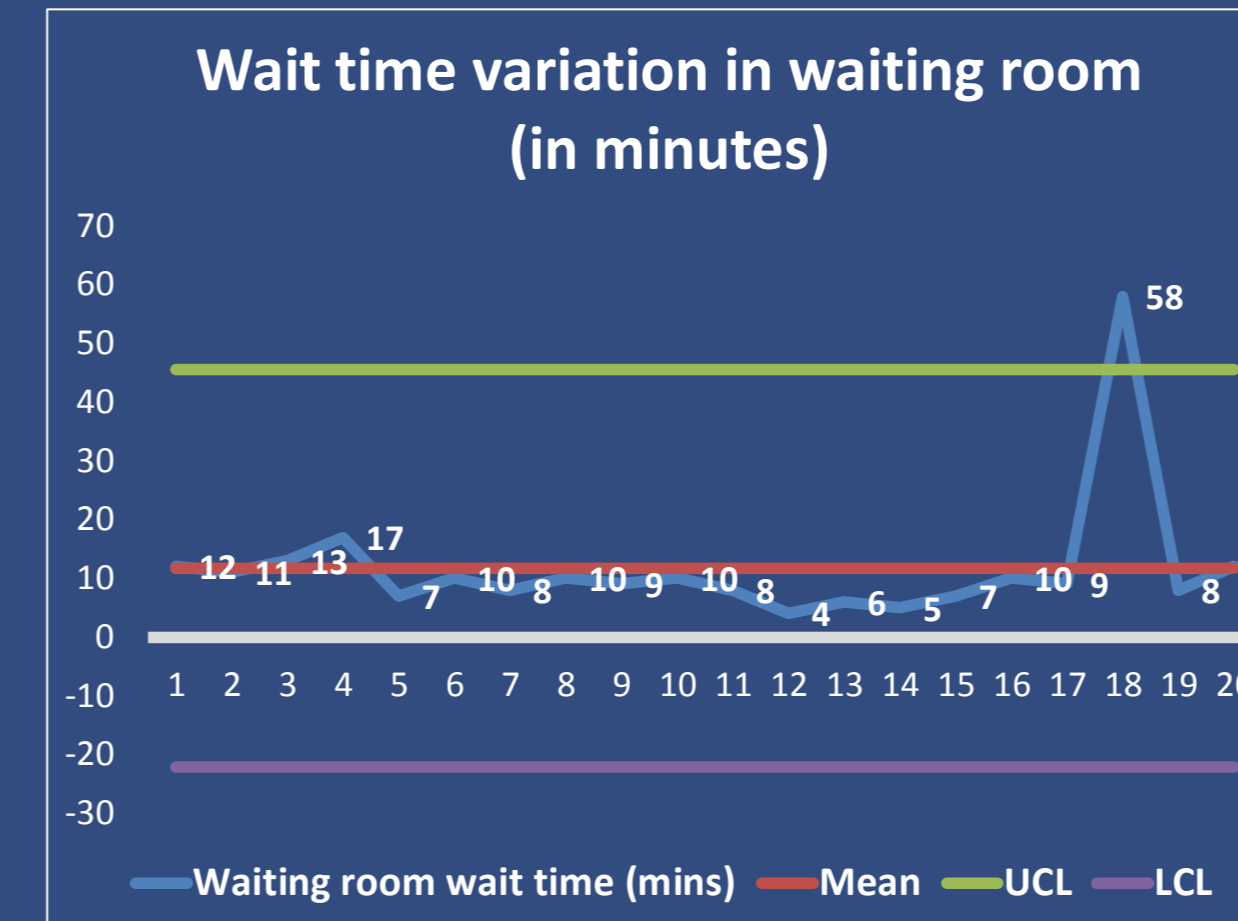
- Room 4 is utilized for Ultrasounds and Rooms 1 & 3 for Mammograms
- Near equal utilization of rooms 1, 3 and 4
- Ultrasounds took longer than the scheduled time and caused backlogs that affected workflow for screening mammograms and also led to increased patient wait times

IMPACT	High	<ul style="list-style-type: none"> <li>• Change U/S time slots to 30 minutes</li> <li>• Include Quality Check time in daily schedule</li> </ul>	<ul style="list-style-type: none"> <li>• Patient delay policies - to be provided during appointment scheduling and reminder phone calls</li> <li>• Periodic check ins with entire mammography team</li> </ul>
	Low	<ul style="list-style-type: none"> <li>• Algorithm for double booking- contingent on capacity</li> <li>• More double bookings as first appointments to counter patient delays</li> </ul>	<ul style="list-style-type: none"> <li>• Design communication workflow and escalation process for machine efficiency related matters</li> </ul>
		Low	High

An Impact Effort Matrix was created based on findings from Gemba walks, root cause analysis and data. The team focused efforts on:

- Increasing the time in appointment slots for ultrasounds to prevent future backlogs
- Including Quality Check time as part of the current schedule to reduce variability
- Implementing patient delay policies

## Results



Before Implementation

After Implementation

Success metrics impacted positively include:

- Reduced lead time which includes wait time and other non value added time per patient
- Decrease in total cycle time per patient
- Decreased variability in imaging time for mammograms and ultrasounds
- Increased patient and staff satisfaction

## Lessons Learned

- The optimization of the workflow and schedule improved **Patient Access** in the unit.
- Lean methodology tools, leadership and staff engagement have been useful in successfully implementing evidence based recommendations for the PDSA cycles.

## Next Steps

- Next steps would be to utilize the unit to its complete capacity by scheduling more mammograms due to improved throughput within unit. This would increase volume of screening mammograms done in the unit using 3D tomosynthesis.

**For more information, contact:**

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