

Presentation: M2-QI-6



Reducing Unnecessary OR calls Related to Specimen Imaging

A collaboration between Breast Imaging and Breast Surgery

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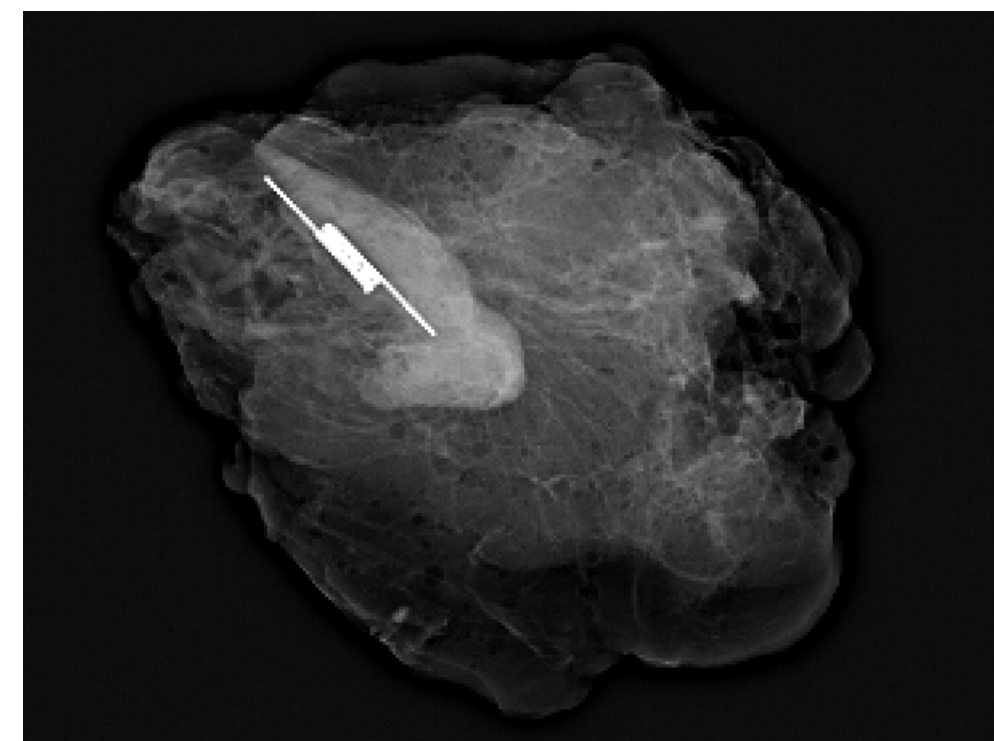
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Background/Problem Statement

- Timely interpretation of OR surgical specimen radiographs aids breast surgical care.
- At our busy academic center, we experienced frequent calls from the OR regarding specimen imaging workflows.
- This disrupts workflows and delays specimen image interpretation.
- We aimed to understand our specimen imaging process to reduce unnecessary phone calls to breast imaging radiologists and technologists.



Target State: SMART Goal

- Reduce the number of unnecessary calls from the OR staff to breast imaging from 35% of cases in December 2022 to 10% by April 2023.



Collection of data – Breast Imaging

4 categories of “unnecessary: calls

1. Call to reading room instead of dedicated specimen phone
2. Call to radiology/reading room instead of technologist for add on cases
3. Call to radiologist instead of technologist to request technical assistance with sending images to PACS
4. Other

Initial Data Collection:

17 OR specimens ordered in a 5-day period (Dec 2022).

- 35% of OR specimen had unnecessary phone calls (6 calls for 17 orders)
- 83% of calls were workflow related (5 of 6 calls) and 17% were equipment error (1 of 6 calls).

Root Cause analysis – Collaborative with imaging and surgical services



Overview of OR Specimen Workflow

Prior to the day of surgery, an X-ray specimen accession is generated:

- Wire localizations, initiated by OR
- Wireless localizations, completed at the time of surgical scheduling, by radiology

OR staff transfers tissue to specimen imaging equipment



Select the correct patient and accession number



Obtain specimen x-ray



Send images to PACS



OR calls dedicated breast imaging specimen line for image interpretation

Root Cause Analysis

Fishbone Diagram Data

PROCESSES

- Manual entry
- Confusion with accession worklist navigation
- Unable to find correct patient accession – wrong date/location

BEHAVIORS

- Redirecting calls without educating individuals
- Lack of continuous IT support for OR staff
- Add-on specimen imaging during surgery resulting in call to technologist

ENVIRONMENT

- Network connectivity
- Surgeons operating in various locations across health system

MATERIALS

- Two different versions of equipment with differences in workflow
- Unclear instructions per OR staff

SYSTEMS

- Incomplete OR access to PACS
- OR staff not checking for images in PACS before calling for interpretation

Experiment Plan

Interventions and Key Drivers

Key Drivers

Provide clear instructions – who to call for what and when

Ensure ease of finding correct accession/avoid manual entry errors

Network consistency

Identify differences between two versions of x-ray equipment

Confirm exams scheduled on the correct day and location

Interventions/counter measures

Update instructions to be clear and concise

Contact vendor to update equipment

Ensure consistent network connection to equipment
- convert to wireless system long term

Provide training for each unique piece of equipment

Distribute quick reference cards for each OR unit

Rad lead tech to share scheduled exams with OR 1 day prior (identify missing patients/accessions)



Data Collection 1

(Pre-intervention Dec 2022)

Root cause analysis
Key drivers identified with
experiment plan

- **Implemented new signage on Equipment**
 - **Instructions on who to call for what and when**
 - **Cheat sheets on how to operate the 2 different units**
- **Lead tech began daily emails with OR specimen list to OR to review for missing patients**

Data Collection 2

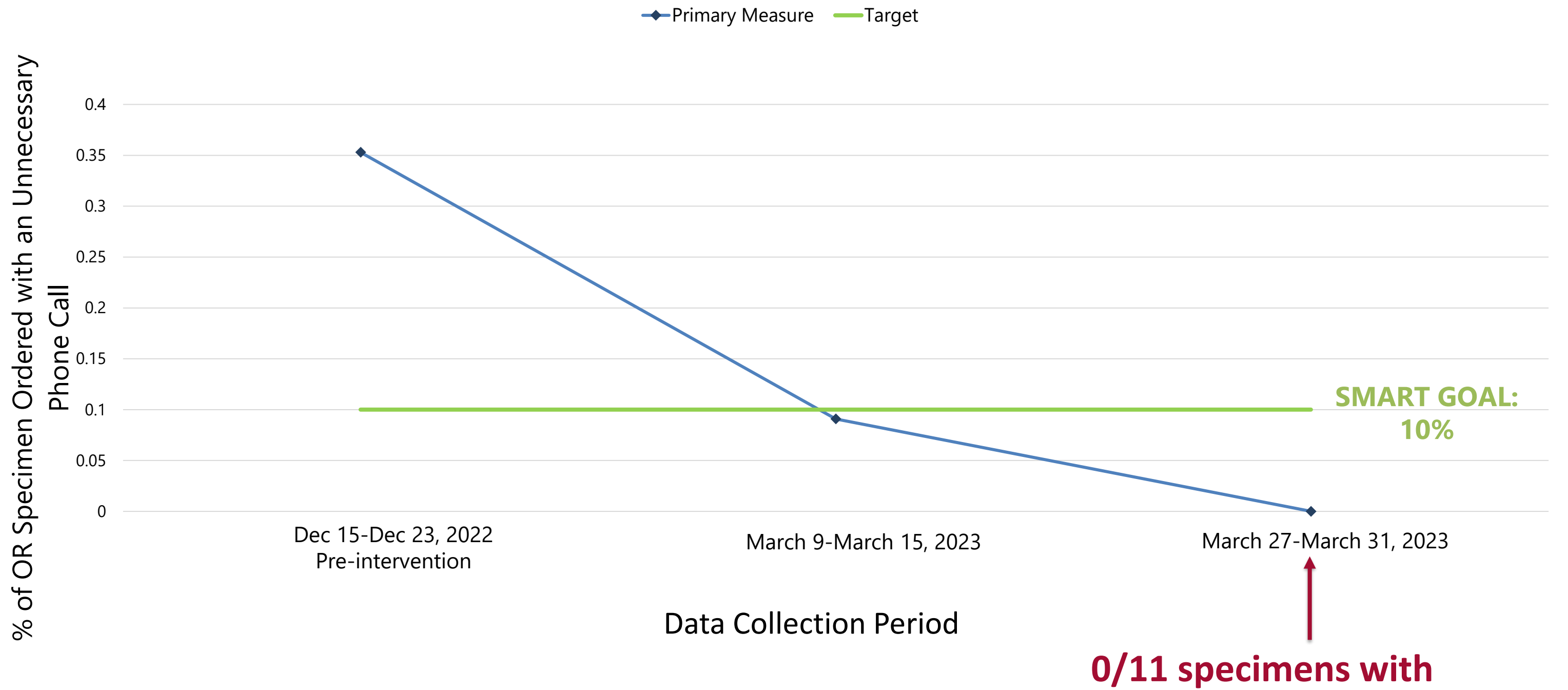
Begin discussing sustain plan

- **Reinforced equipment mgmt. at OR staff in-service**
- **Continued daily OR specimen list to OR leads for review of missing patients**
- **Contacted Vendor and IT regarding equipment upgrade options**
- **Updated breast surgeon "preference cards"**

Data Collection 3



% of OR Specimen Ordered with Unnecessary Phone Calls at Time of Interpretion



Sustain Plan and Conclusions

Interventions to sustain	Sustain Method and Frequency
Clear concise instructions from radiology to OR staff	<u>Quarterly</u> - review of the instructional sheet, PRN updates
Promote continued engagement with the correct workflow by OR staff – cheat sheets & in service	<u>Daily</u> - cheat sheets should be readily accessible to OR staff <u>Monthly</u> - OR staff in-services
Pursue upgrades to the equipment by vendor	<u>Semi-annually</u> - Maintain communication with vendor and hospital IT to update software when available

- We used a Lean A3 approach to identify root causes and key drivers in unnecessary OR calls to radiology for breast surgical specimen imaging
- Our interventions significantly reduced calls from 35% to 0% over a three-month period.
- **Limitations:**
 - We did not specifically study turnaround time though it is inferred
 - Implementation will vary across breast imaging/surgical departments based on workflow.
 - Our data collection periods were short (5 days) with a small sample size.