

# Optimizing Screening Mammogram TAT: A Quality Improvement Mission

Nanditha George MBBS, Thomas Brim DO, Aurela Clark MD, Fara Shikoh MD,  
Wendi Owen MD, Xiaoqin Wang MD



College of  
Medicine

*Department of Radiology*



# Background

- Screening mammograms remain an important tool for the detection of breast cancer in asymptomatic women, 40 years and older
- The FDA requires that facilities provide patients with an easy-to-understand report within 30 days of their mammogram
- Reviewing prior imaging is paramount
- Challenges in obtaining prior imaging, especially from outside institutions, have led to reporting delays
- At our institution, all radiology studies must be reported within a certain time frame to prevent loss of departmental revenue

# Objective

- The goal of this project was to improve identification of mammograms that were at risk of falling out of turn-around time (TAT) compliance. This would reduce lost revenue.
- The target was to improve reporting turn-around time of screening mammograms by 50% after the implementation of a color scheme interface.

# Methods

- The implementation of a color-coded interface for the screening mammogram list was created to provide a quick visual representation of which studies needed to be read before falling out of TAT compliance
- **Red** - 1 day to TAT violation
- **Yellow** - 2-3 days to TAT violation
- **Green** - 4 days to TAT violation
- Grey was used for the remaining studies on the list
- All breast radiologists were made aware of the new color-coding scheme
- The change was implemented on 12/1/2023
- The 3 months prior to and after the change were analyzed to gauge impact

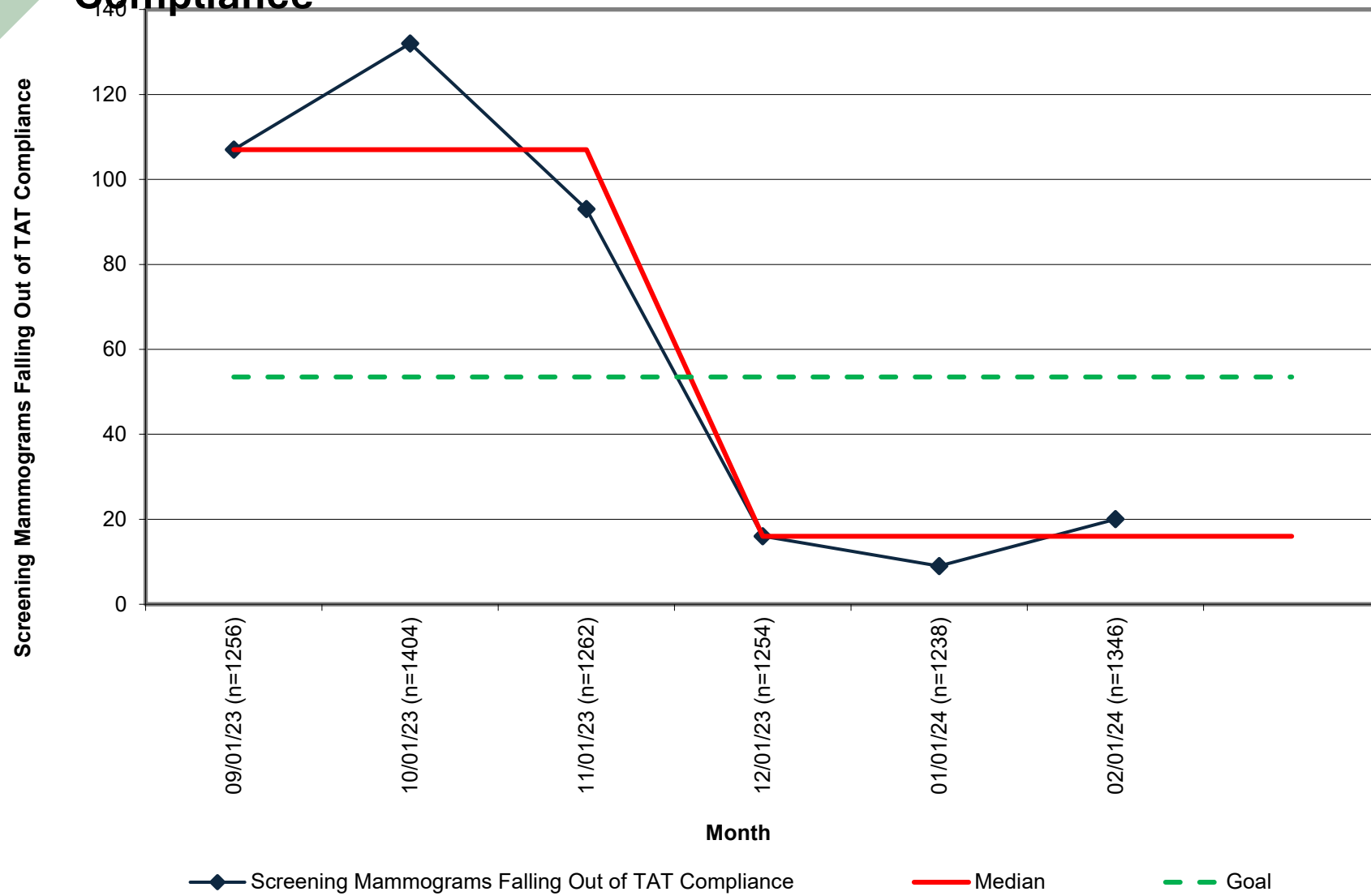
Example of color-coded interphase with grey (above), green and yellow (center) and red (below). Blue depicts the study that is being read.

Patient Name	MRN	Accession #	Date of Birth	Procedure	Reason for Exam	End Date	End Time	Residents	Assign...	S	Lock...
John Doe	12345678	98765432	1980-01-01	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Screening, Breast-contrast enhanced, average in the 40-49 years...	2023-01-01	10:00:00			1	
Jane Smith	23456789	87654321	1985-02-02	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Breast-contrast enhanced, screening, average in the 40-49 years...	2023-01-01	11:00:00			2	
Michael Brown	34567890	76543210	1975-03-03	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Screening, Breast-contrast enhanced, average in the 40-49 years...	2023-01-01	12:00:00			3	
Emily White	45678901	65432109	1990-04-04	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Screening, Breast-contrast enhanced, average in the 40-49 years...	2023-01-01	13:00:00			4	
David Green	56789012	54321098	1982-05-05	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Screening, screening, average in the 40-49 years...	2023-01-01	14:00:00			5	
Sarah Black	67890123	43210987	1978-06-06	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Screening, Breast-contrast enhanced, average in the 40-49 years...	2023-01-01	15:00:00			6	

Patient Name	MRN	Accession #	Date of Birth	Procedure	Reason for Exam	End Date	End Time	Residents	Assign...	S	Lock...
George King	78901234	32109876	1988-07-07	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Wait for screening mammogram	2023-01-01	16:00:00			7	
Olivia Queen	89012345	21098765	1992-08-08	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Screening, Breast-contrast enhanced, average in the 40-49 years...	2023-01-01	17:00:00			8	
Robert Duke	90123456	10987654	1970-09-09	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Screening, Breast-contrast enhanced, average in the 40-49 years...	2023-01-01	18:00:00			9	
Michelle Duke	01234567	09876543	1985-10-10	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Screening	2023-01-01	19:00:00			10	
Andrew Hamilton	12345678	98765432	1995-11-11	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Wait for screening mammogram	2023-01-01	20:00:00			11	
Grace Taylor	23456789	87654321	1980-12-12	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Screening, mammogram	2023-01-01	21:00:00			12	

Patient Name	MRN	Accession #	Date of Birth	Procedure	Reason for Exam	End Date	End Time	Residents	Assign...	S	Lock...
John Prince	34567890	76543210	1985-01-13	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Screening	2023-01-01	22:00:00			13	
Patricia Hamilton	45678901	65432109	1972-02-14	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Wait for screening mammogram	2023-01-01	23:00:00			14	
Paul Hamilton	56789012	54321098	1980-03-15	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Wait for screening mammogram	2023-01-01	24:00:00			15	
Anna Prince	67890123	43210987	1990-04-16	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Wait for screening mammogram	2023-01-01	25:00:00			16	
William Prince	78901234	32109876	1975-05-17	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Wait for screening mammogram	2023-01-01	26:00:00			17	
Patricia Duke	89012345	21098765	1982-06-18	Mammography, Breast-contrast enhanced, screening, average in the 40-49 years...	Screening, mammogram	2023-01-01	27:00:00			18	

# Run Chart depicting Screening Mammograms Falling Out of TAT Compliance



# Results

- The number of screening mammograms performed before and after the change were similar i.e. 3922 from September 2023 to November 2023 (pre-implementation) and 3838 from December 2023 to February 2024 (post-implementation)
- There was an 86.45% decrease in the number of screening mammograms that fell out of TAT compliance exceeding the 50% target
- There was a decrease in lost revenue by 81.81%

# Discussion

- The implementation of a simple, quick and cost-effective change to the worklist user interface greatly impacted the detection of at-risk screening mammograms and hence improved departmental revenue capture
- This project highlights how a color-coded interface can capture the attention of the reader and thus facilitate efficiency
- This process could be easily adopted by other radiology divisions or at satellite centers to help prioritize specific studies on the worklist



# Next Steps

- The TAT for screening mammograms and associated reimbursement will continue to be monitored for potential areas of improvement
- Incorporating a specific color label that identifies studies for which outside priors are being sought would perhaps help to further improve the turn-around time
- As Artificial Intelligence is further implemented into the radiologist's workflow, studies which have been identified as potentially having a critical finding could be visually tagged to decrease the time from imaging to communication of the critical result to clinical providers