

Project Title

Focused Echocardiograms Allow Cardiac Diagnostic Laboratory to Accommodate More Breast Cancer Patients

Project Lead and Members

Project lead: Loh Yu Xuan

Project members: Amy Koh Yoke Leng, Carrie Yan Mei, Chan Po Fun, Christopher Koo Chieh Yang, Manjit Kaur, Nur Haleeza Nasron, Pong Lee Yeng

Organisation(s) Involved

Ng Teng Fong General Hospital

Healthcare Family Group(s) Involved in this Project

Medical, Nursing, Operations, Allied Health

Applicable Specialty or Discipline

Cardiology, Medical Imaging

Aims

We aim to (i)accommodate at least 80% of breast cancer patients for an echocardiogram without the need for special arrangements. (ii)show that this workflow is sustainable for at least 6 months.

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Lessons Learnt

Solving a demand problem does not mean that we instinctively look to increase the resource allocated to us. We can also address the issue by fine-tuning the process, like getting rid of the superfluous and only doing only the necessary.

Conclusion

See poster appended/ below

Project Category

Care & Process Redesign

Value Based Care (Patient Satisfaction)

Keywords

Echocardiograms, ECHO, Breast Cancer, Lab, Anthracycline

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FOCUSED ECHOCARDIOGRAMS ALLOW CARDIAC DIAGNOSTIC LABORATORY TO ACCOMMODATE MORE BREAST CANCER PATIENTS

- SAFETY
- QUALITY
- PATIENT EXPERIENCE
- PRODUCTIVITY
- COST

MEMBERS:

LOH YU XUAN, AMY KOH YOKE LENG, CARRIE YAN MEI, CHAN PO FUN, CHRISTOPHER KOO CHIEH YANG, MANJIT KAUR, NUR HALEEZA NASRON, PONG LEE YENG

Define Problem, Set Aim

Problem/Opportunity for Improvement

Breast cancer patients on Anthracycline treatment may develop heart failure. Echocardiograms are performed at 3-monthly intervals to monitor their heart function.

Echocardiograms are a limited resource. Estimated wait-time for an outpatient echocardiogram is between 6 to 7 months. It is near-impossible for breast cancer patients to obtain their echocardiograms on time unless special arrangements are made. On average, only 29% of breast cancer patients manage to secure an echocardiogram without a special arrangement.

We recommend a focused study targeting only the left heart function for these patients, instead of a standard echocardiogram. A focused scan is performed in 15 minutes instead of the usual 60 minutes, and can be accommodated on top of the day's usual workload. No special arrangement is necessary.

We aim to

- (i) accommodate at least 80% of breast cancer patients for an echocardiogram without the need for special arrangements.
- (ii) show that this workflow is sustainable for at least 6 months.

Establish Measures

Outcome Measures

- (i) % of breast cancer patients who do not require special arrangements for an echocardiogram

Process Measures

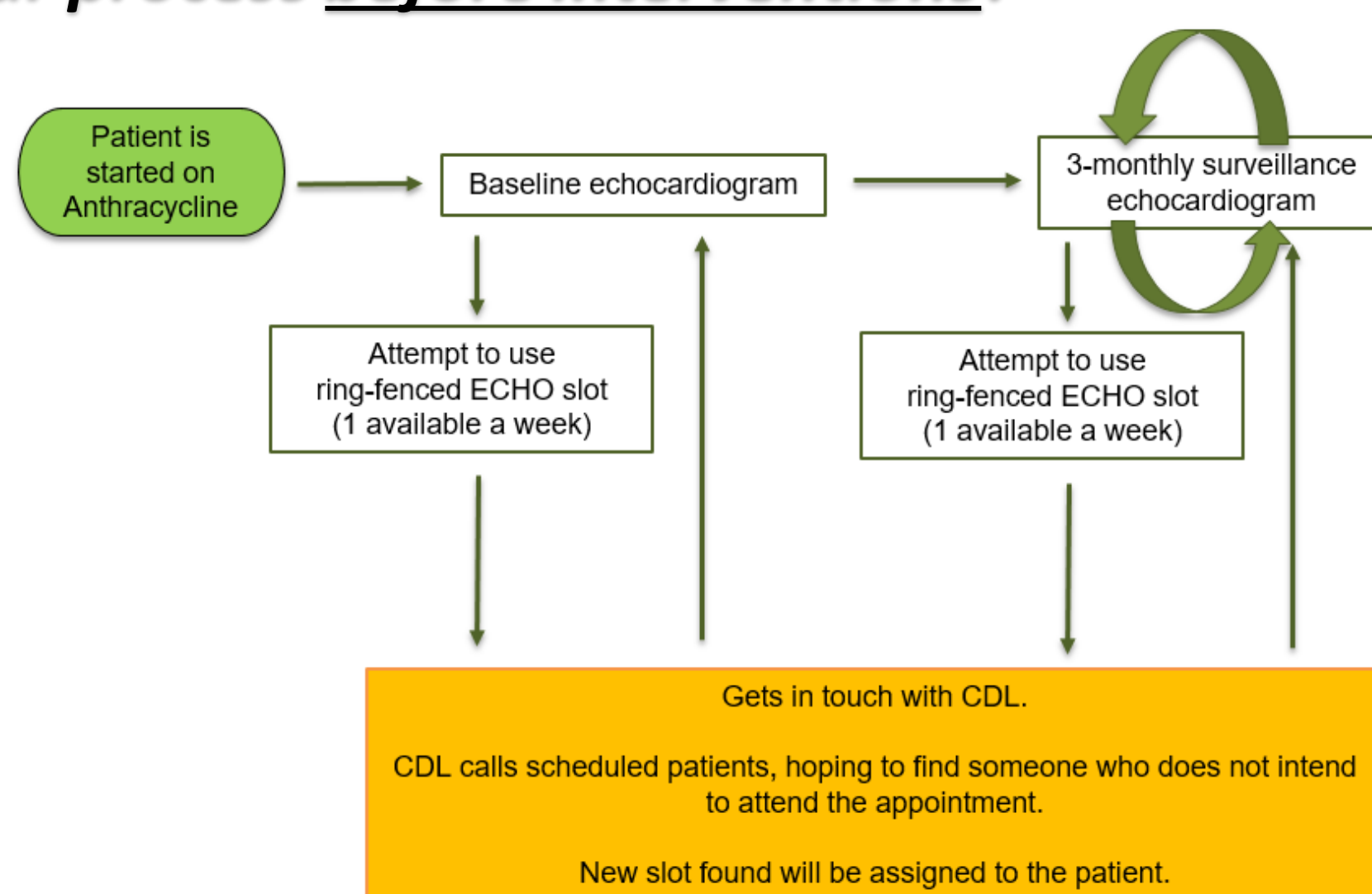
- (i) Patient satisfaction score
- (ii) Physician satisfaction score

Balancing Measures

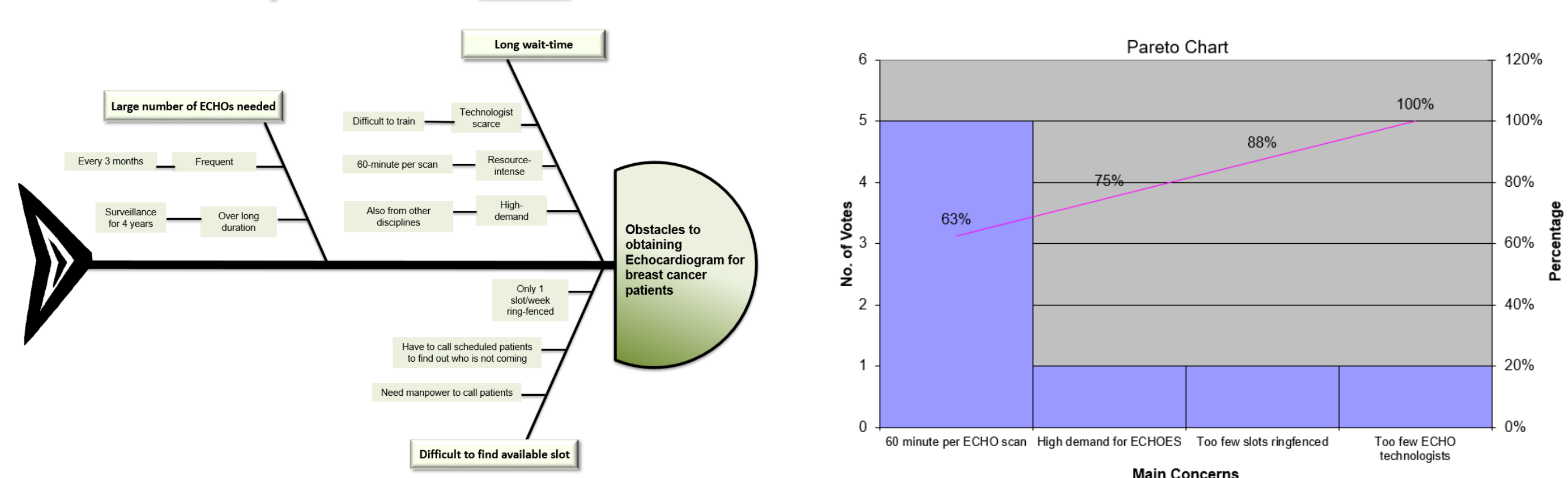
- (i) % of patients found to have a missed cardiac condition due to a focused echocardiogram

Analyse Problem

What is your process before interventions?



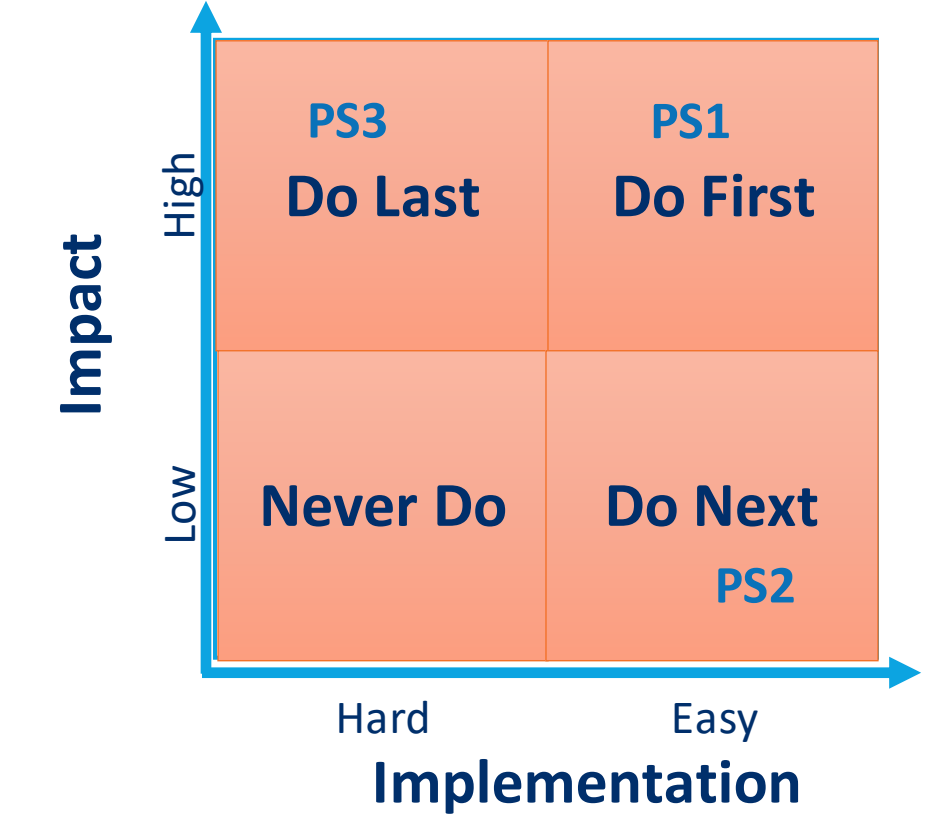
What are the probable root causes?



Select Changes

What are all the probable solutions? Which ones are selected for testing?

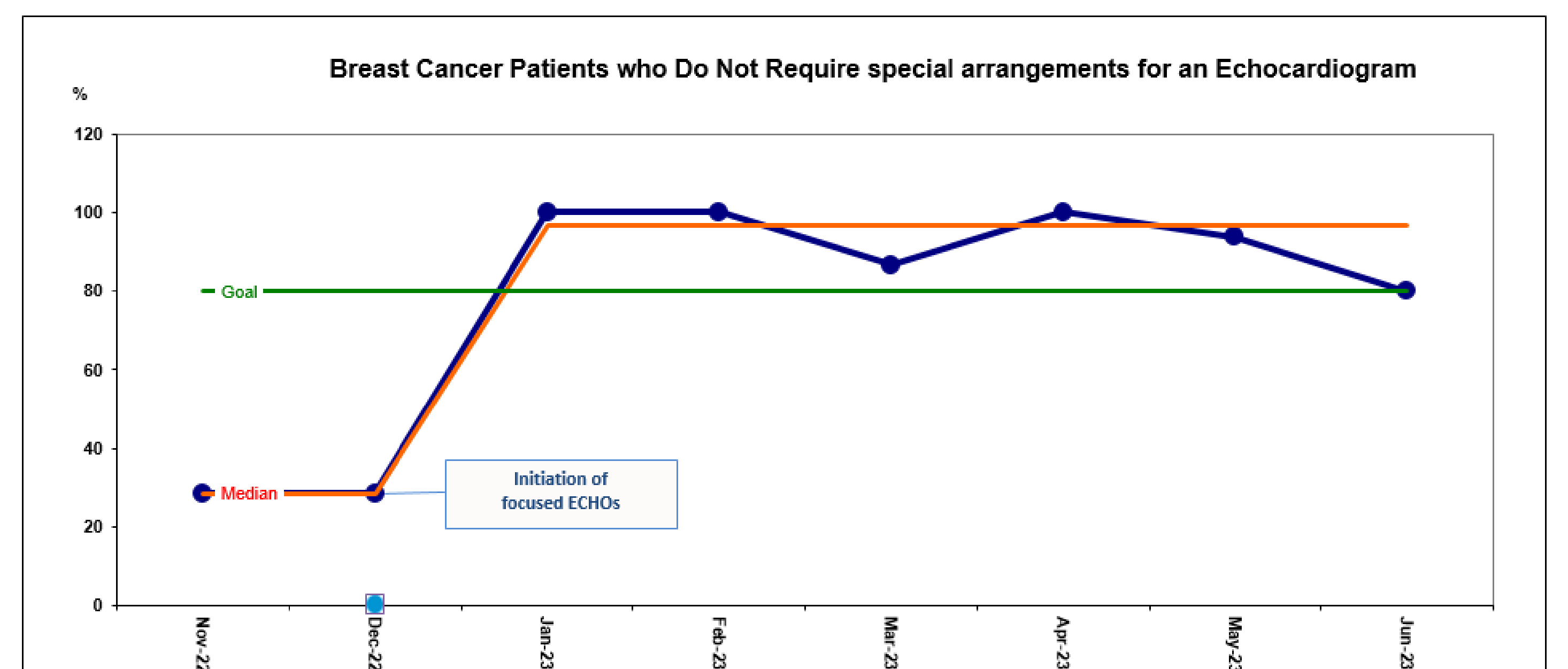
Root Cause	Potential Solutions
Long wait-time	1 Shorten echo – Do only what is necessary
	2 Ringfence more echo slots
	3 Employ more Echo technologists



Test & Implement Changes

How do we pilot the changes? What are the initial results?

CYCLE	PLAN	DO	STUDY	ACT
1	Test-run logistics feasibility, by the committee, at the Cardiac Diagnostic Laboratory, on 21/12/2022.	Participants' feedback: 1. Focused study is able to provide adequate information. 2. Focused study can be performed in 15 minutes. 3. Additional load is not feasible for CDL rooms with heavy inpatient load.	Attempted focused study on 1 patient.	Adapt workflow for focused ECHO study to be performed at 8.30am by ECHO Room 2.
2	Implement new workflow, by the committee, at the Cardiac Diagnostic Laboratory, on 03/01/2023.	All members felt comfortable with the new implementation.	4 focused ECHOs were done in the first month. Smooth transition from test-run to actual operations.	Allow daily booking of focused ECHO at 8.30am, at ECHO Room 2.



Patient Satisfaction Score: 4.8/5

Physician Satisfaction Score: 5/5

Missed cardiac condition: 0%

Cost-saving per ECHO per breast cancer patient: \$282.20

Number of ECHO slots saved, and allocated to other patients (in 6 months): 53

Spread Changes, Learning Points

What are/were the strategies to spread change after implementation?

After implementation, we identified other common cardiac conditions whereby focused studies will be adequate. We have since converted standard echocardiograms for our patients with (i)dilated aortas, and (ii)heart failure, to focused ones. These has freed up standard echocardiogram slots for other patients who require them.

What are the key learnings from this project?

Solving a demand problem does not mean that we instinctively look to increase the resource allocated to us. We can also address the issue by fine-tuning the process, like getting rid of the superfluous and only doing only the necessary.