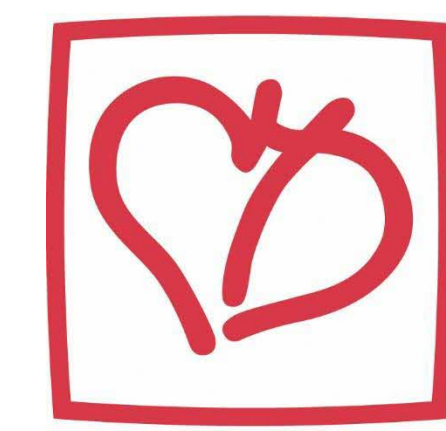




Singapore Healthcare Management 2021

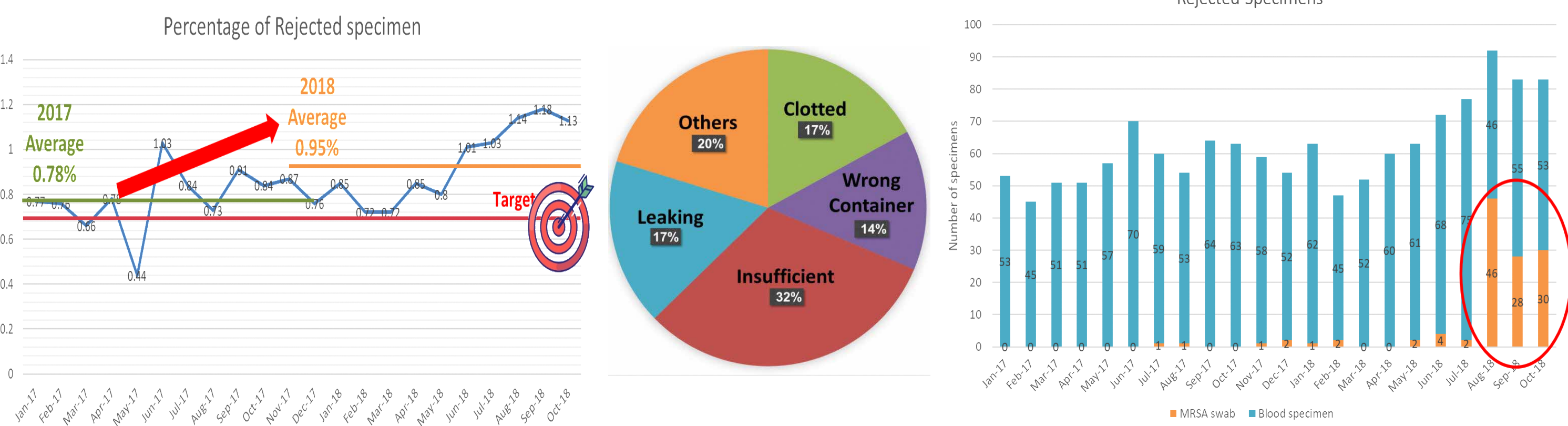
Reduce Rejected Specimen Rate

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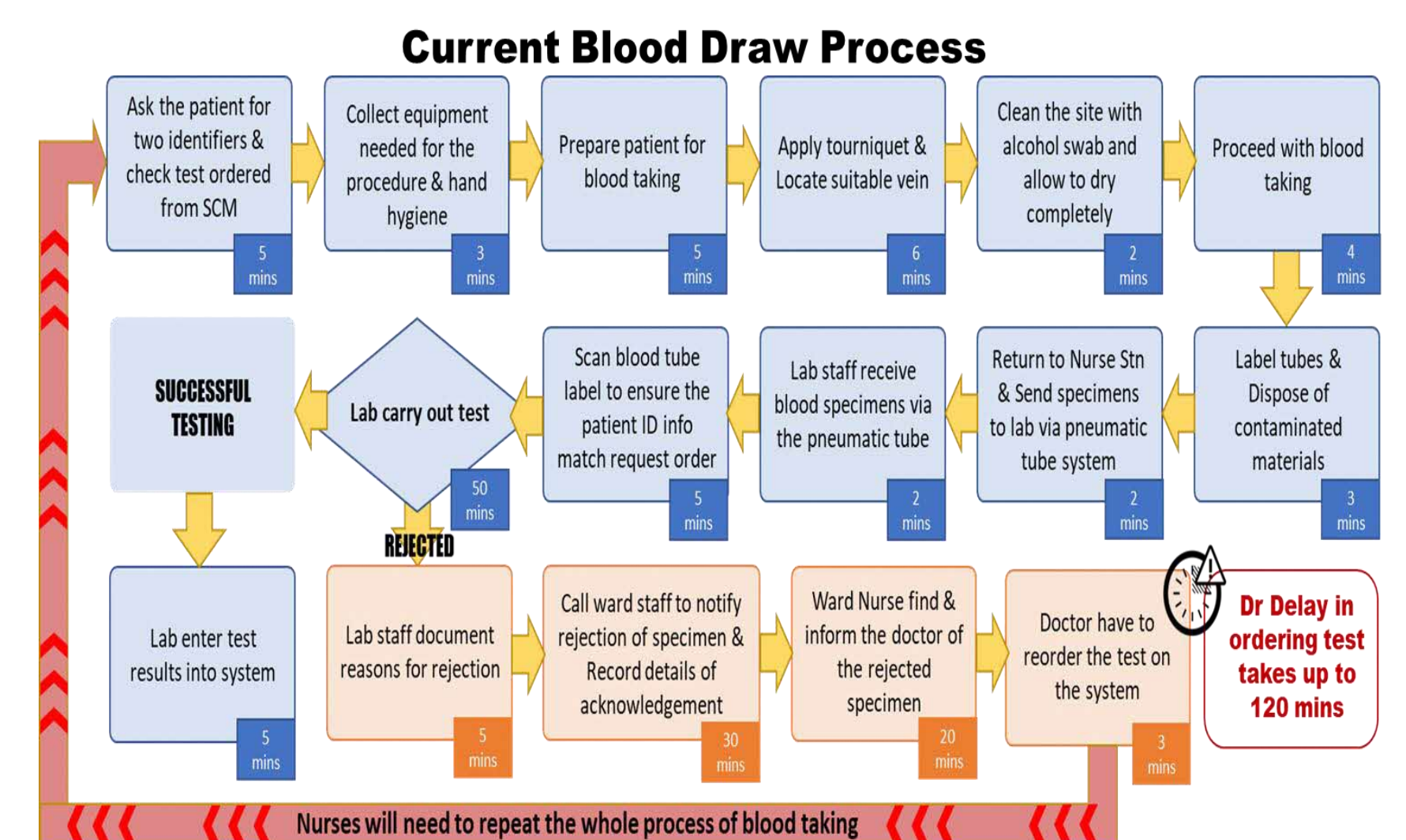
National Heart Centre Singapore
SingHealth

BACKGROUND



The number of specimen rejected by the laboratory is an area of concern. 32% of the total rejected specimen was due to insufficient specimen. 17% was due to leaking and another 17% was due to clotted specimen. The impact of rejected specimen is severe as it delays treatment, discharge time and caused unnecessary additional venipuncture for patient. The repeated blood taking process is chargeable to both the organization and patients.

On average, the blood specimen collection process takes 92 minutes to complete. In event of a rejected specimen, an additional 145 minutes is required to reorder and recollect the same specimen. This excludes an unforeseen delay of 2 hours for Doctor to reorder. This will further prolong the blood test result and delay treatment. Hence, this project targets to reduce the specimen rejection rate to 0.7%.

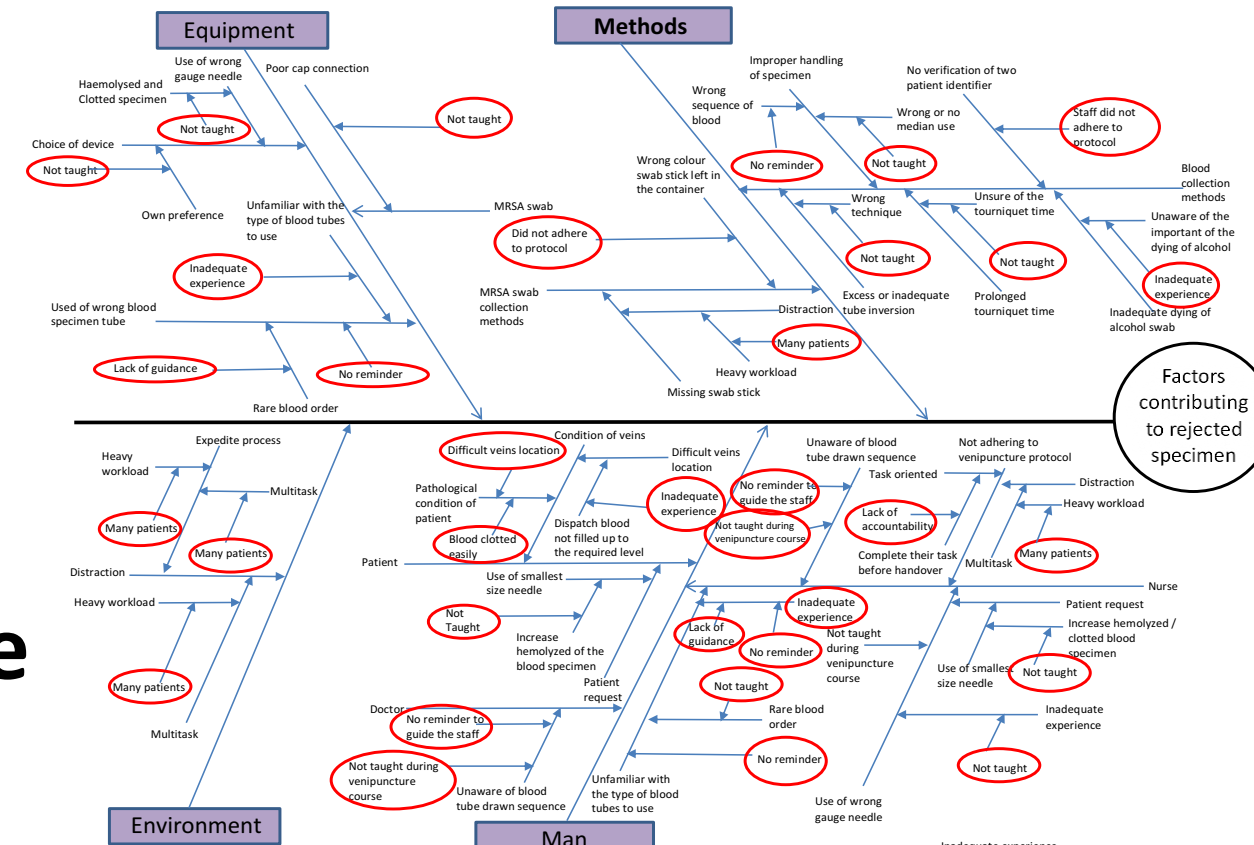


Target
Reduce Rejected Specimen to 0.7% or Less

METHODOLOGY

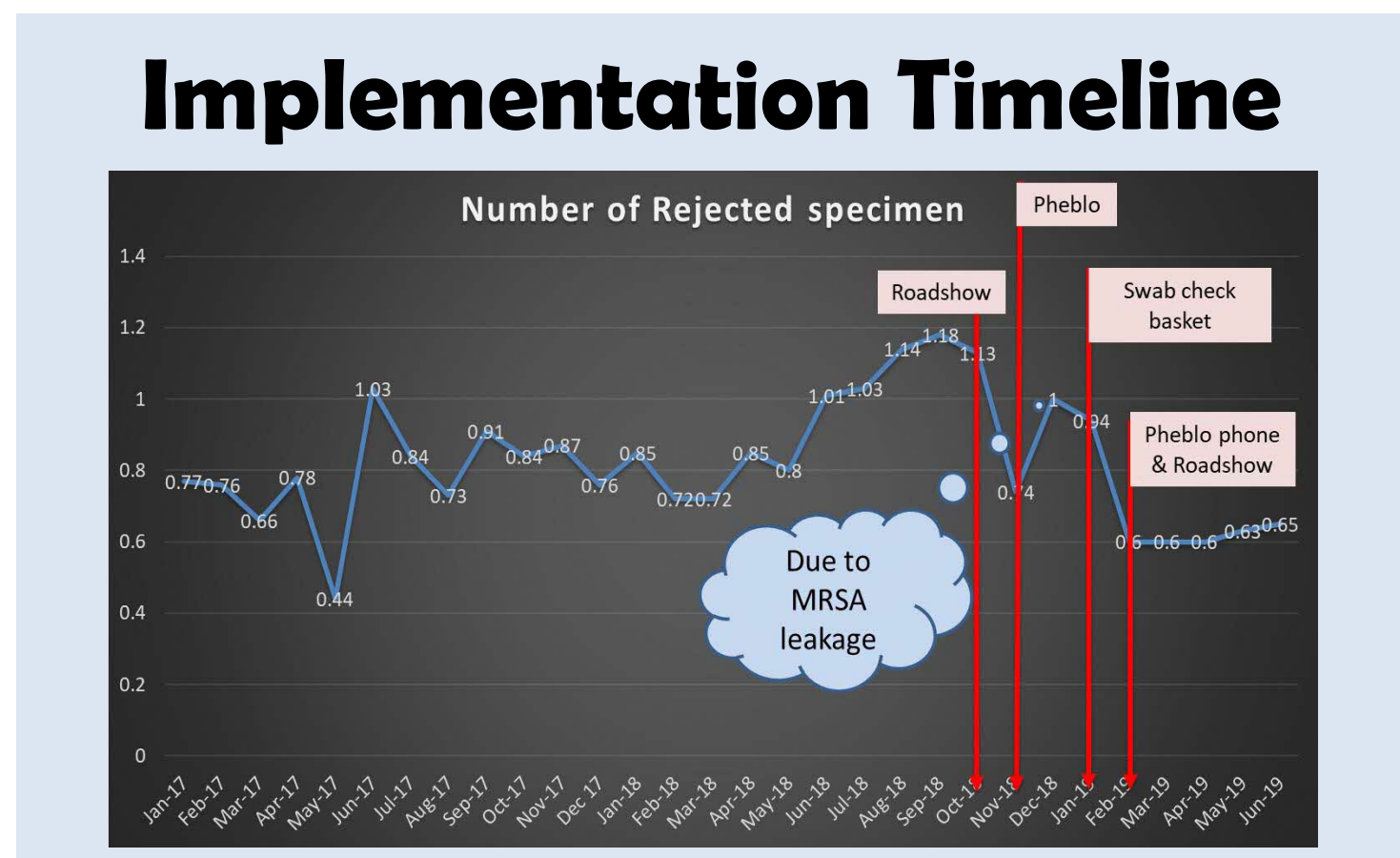
The final root causes were identified using a Cause and effect diagram and further analysed to determine the final root causes:

- 1) Inadequate experience,
- 2) Lack of guidance and
- 3) Insufficient teaching during venipuncture course resulted in knowledge deficit.



Solutions were brainstormed and discussed before going through a selection using the tree diagram.

Areas for improvement	Possible Solutions	Analysis of Solutions
		A B C Total
Provide guidance to inexperienced/new nurses	a) Put up poster to educate staff	22 24 26 72
	b) Assign nurse to guide other healthcare personnel during venipuncture	20 18 26 64
	c) Conduct roll call and meeting to reinforce proper collection of specimen	22 24 28 74
Increase exposure to specimen collection	a) Learning trips to other hospitals	4 3 4 11
	b) Dedicated Phlebotomist to standardize specimen collection	28 28 28 84
	c) Conduct roadshows on the effective methods of venipuncture	22 28 28 78
Improve knowledge on specimen collection	a) Provide in-service training to nurses	22 28 24 74
	b) Provide in-service training to nurses	22 24 28 74
	c) Conduct roll call and meeting to reinforce practice	22 24 28 74
Provide reminders on the types of containers to use and the amount of specimen required	a) Put up poster in clinical area	22 28 26 76
	b) Conduct audit test on nurses	22 22 26 70



A multi-prong approach was used to improve the efficiency in specimen collection.

Roll call and meeting to reinforce proper collection of specimen

Posters were put up on Computers on Wheels to reinforce staff on the sequence of blood taking.

SEQUENCE OF BLOOD TAKING

Specimen bottles or tubes: Blood culture, Sodium Citrate(4), Plain (5), SST w/10% gel (5), Lithium Heparin(5), 10-8mg Li+ang (5), Sodium Fluoride(8)

Conduct Roadshow to re-educate on the process of specimen collection.

Standardizing specimen taking

Up-skill Patient Care Assistant as designated phlebotomist

Samples placed at the pneumatic tube for visibility and comparison.

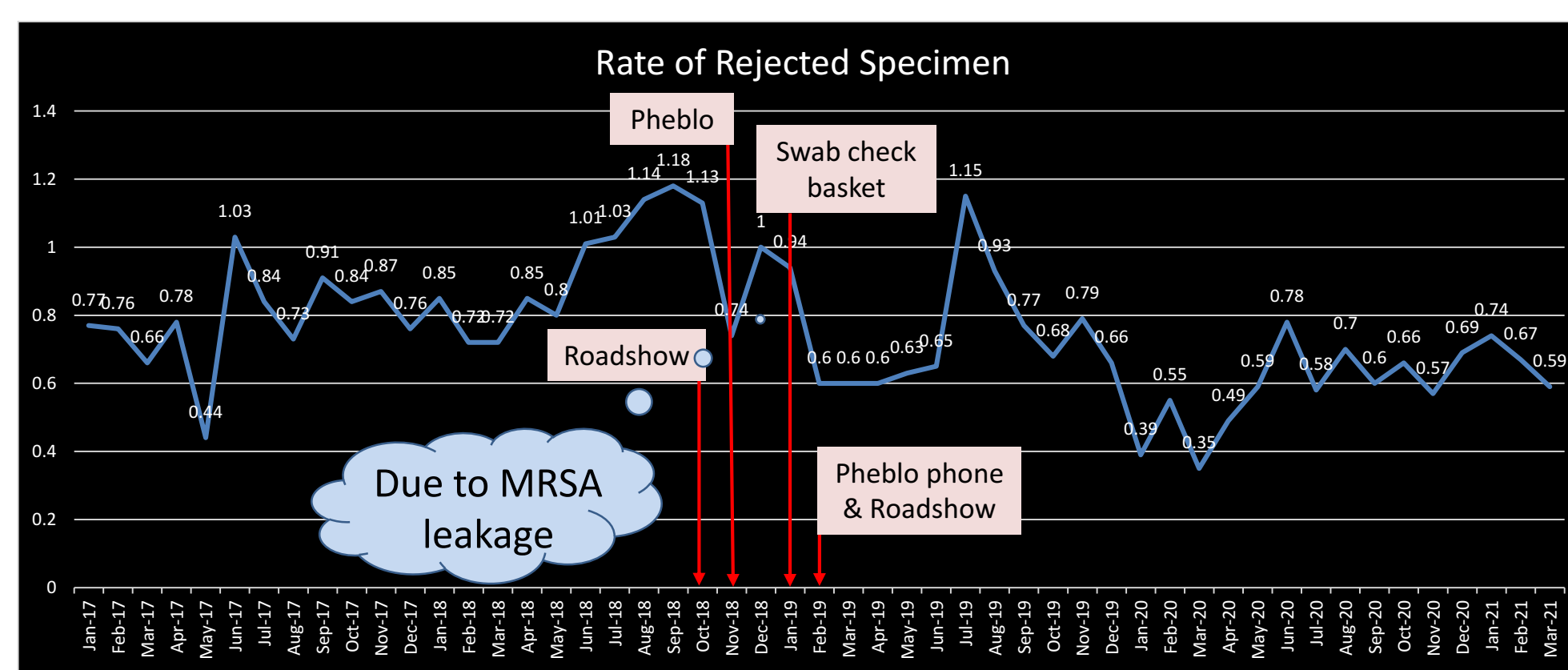
24Hour Phlebotomist on-call to attend to specimen taking requests

Phlebotomist no. 98752321

Weekly data collection & sharing during roll call to determine any trend of the rejected specimens

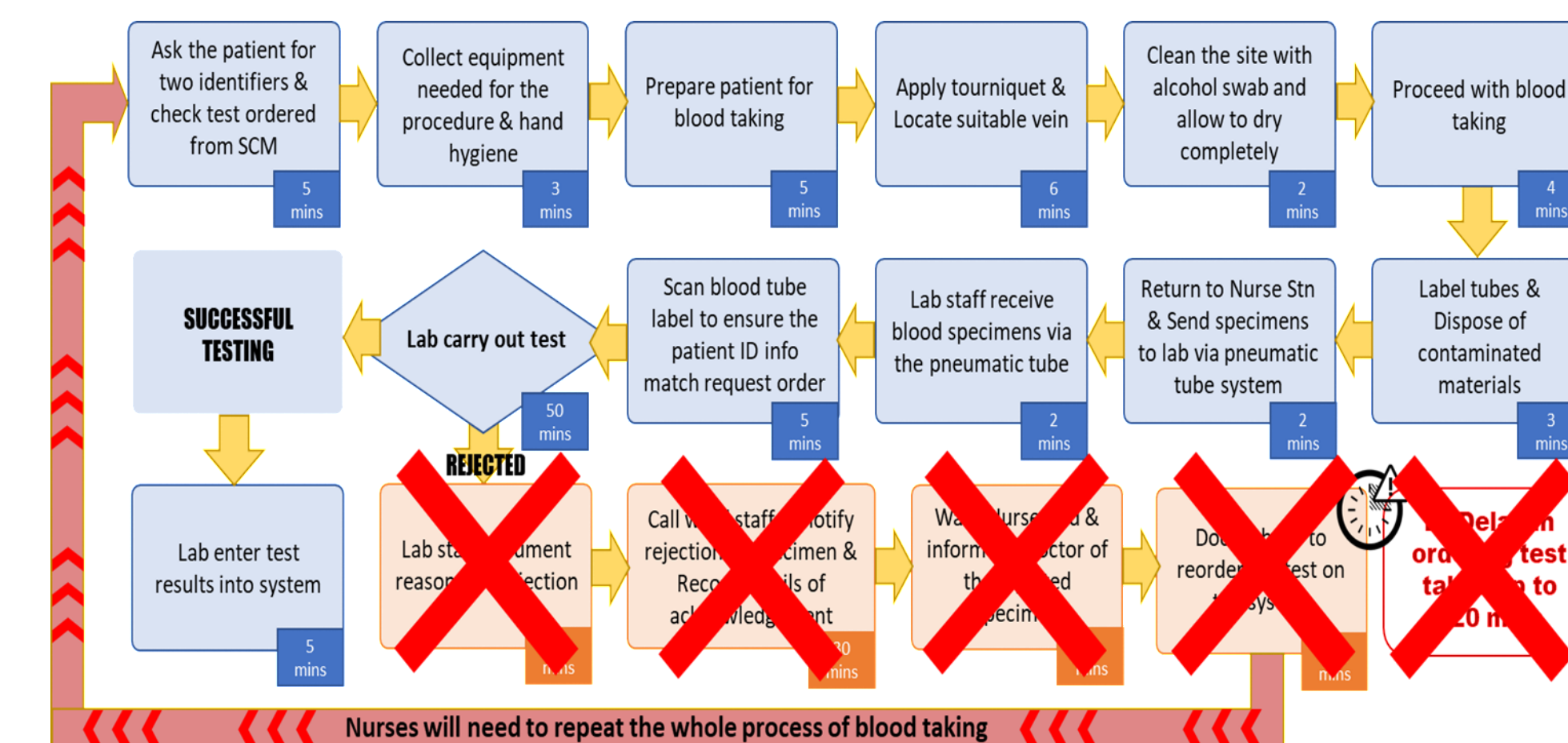
Additional Checks on specimen by ward clerks & Nurses.

RESULTS



Average Mean After Implementation
0.65%

2. Time Saved with New Process



749 HOURS Per Annum

Time Saved from 1 less Rejected Specimen = 145min

Average Improvement in Number of Rejected Specimen = 310/ Annum

3. Cost Savings with the Reduction in Rejected Specimen

Leakage Specimen \$1888.39 + Insufficient Specimen \$4704 + Clotted Specimen \$1079.61

Total Cost Savings Per Annum = \$7672

- Intangible Benefits**
- Improved Hospital Experience for Patients
 - Timely Treatment and Appropriate Care for Patients
 - Enhanced Teamwork for Holistic Patient Care
 - Improved Patient Satisfaction
 - Reduced Unnecessary Complaints and Potential Lawsuits
 - Maintain Professional Image of Hospital

SUSTENANCE

- Monthly data provided by the laboratory to monitor the specimen rejection rate
- Roll call and ward meeting to reinforce the calling of phlebotomist for blood taking
- Rejected specimen reported in monthly Management meeting
- Regular feedback from stakeholders