

Project Title

Enhancement of eLinen Management System

Project Lead and Members

Project lead: Lim ShiHui Celine

Project members:

- Charis Chang Pei Lee
- Selena, Nguyen Thi Tuyet
- Yamin Yuper Zin

Organisation(s) Involved

Singapore General Hospital

Project Period

Start date: June 2020

Completed date: November 2020

Aims

To streamline work processes seamlessly through introducing the use of technology to increase staff work productivity and stay cost effective.

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Lessons Learnt

- Inaccuracy of wards/departments linen norm resulting in more time to consolidate the latest data master sheet.
- Tracing and correcting data during the trial stage prolonged the testing phase that shaken the confidence of the staff.

Conclusion

- Enhanced linen management system provides a systematic solution to capture data and provide information of different types of linen utilization. The data can be translated into a meaningful information to determine linen usage, over or under linen supplies.
- Moving forward, other manual processes within the Linen Supplies Unit ecosystem are being review to further enrich the utilization of electronic solutions to maximize the process efficiency.
- Change initiatives have perceived its intended outcome, adopted to create staff upskill to maximize work efficiency.

Project Category

Technology, Automation, IT & Robotics Innovation

Keywords

Technology, Automation, IT & Robotics Innovation, Quality Improvement, Ishikawa, Pareto Chart, Plan Do Study Act, Time Saving, Healthcare Administration, Singapore General Hospital, Environmental Services, eLinen, Linen Supplies Unit, Linen Management

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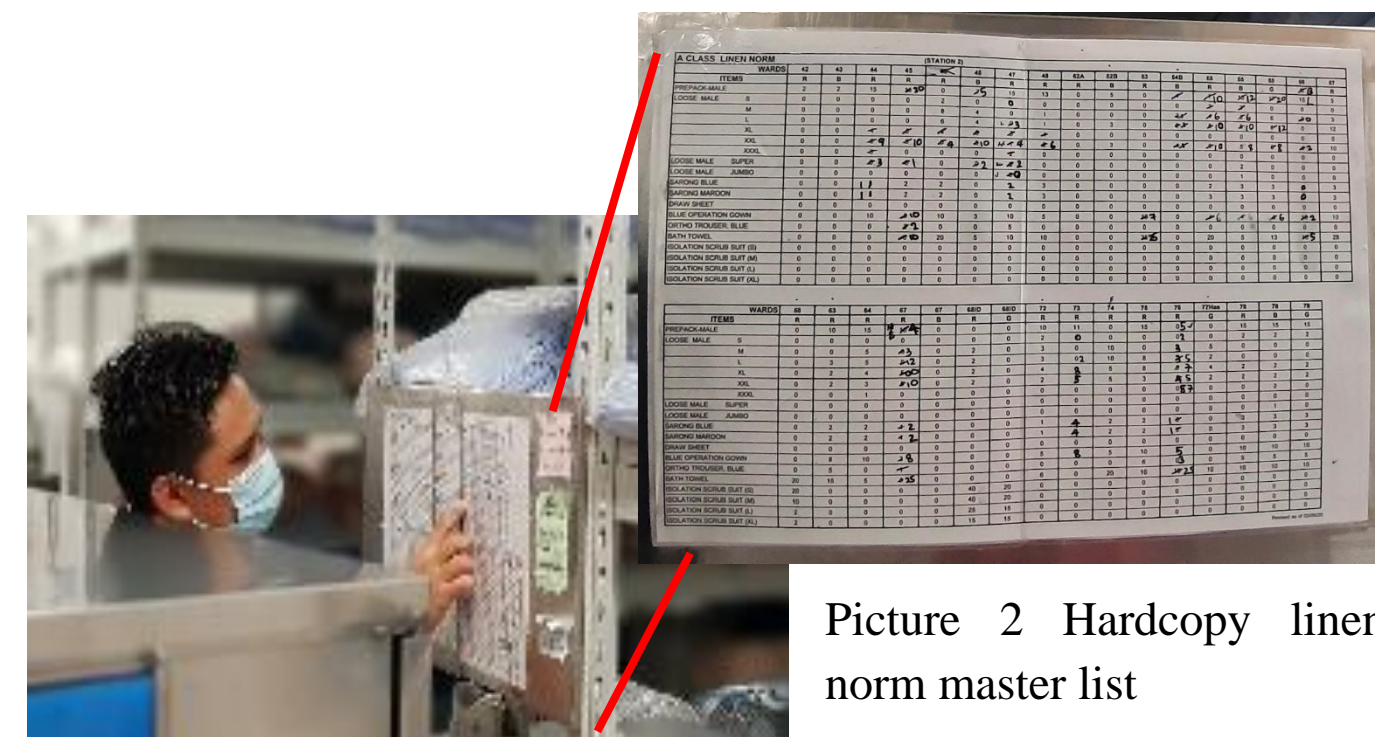


Enhancement of eLinen Management System Linen Supplies Unit (LSU)

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Background of the problem

Linen Supplies Unit provide clean linen supplies to wards and ancillary departments based on linen norm. Prior to the implementation, linen staff (packers) were packing the linen into linen trolley (in Picture 1) using a hardcopy linen norm master list (in Picture 2) indicating an approved list of linen norm for respective wards and departments.



Picture 1 Packers use hardcopy linen norm master list to pack linen into linen trolleys

After the packers pack the linen into the linen trolleys, additional staff was deployed to count the linen quantity inside linen trolleys and input into system. This resulted in time wastages.

Mission Statement (AIM)

To reduce the time taken by packers to pack daily linen norm into the linen trolley from 8.5 mins/trolley to 5 mins/trolley within/by 4 months

1. Area of improvement – Streamline work process with the use of technology and gain efficiency through lean process flow by removing the repetition of works.
2. Cohort of participants – Packers
3. Stretch Goal – Increase productivity by reassigning the staff to perform / focus on other tasks
4. Time frame – To address the underlying root causes by enhancing the linen management system within 6 months.

Analysis of problem

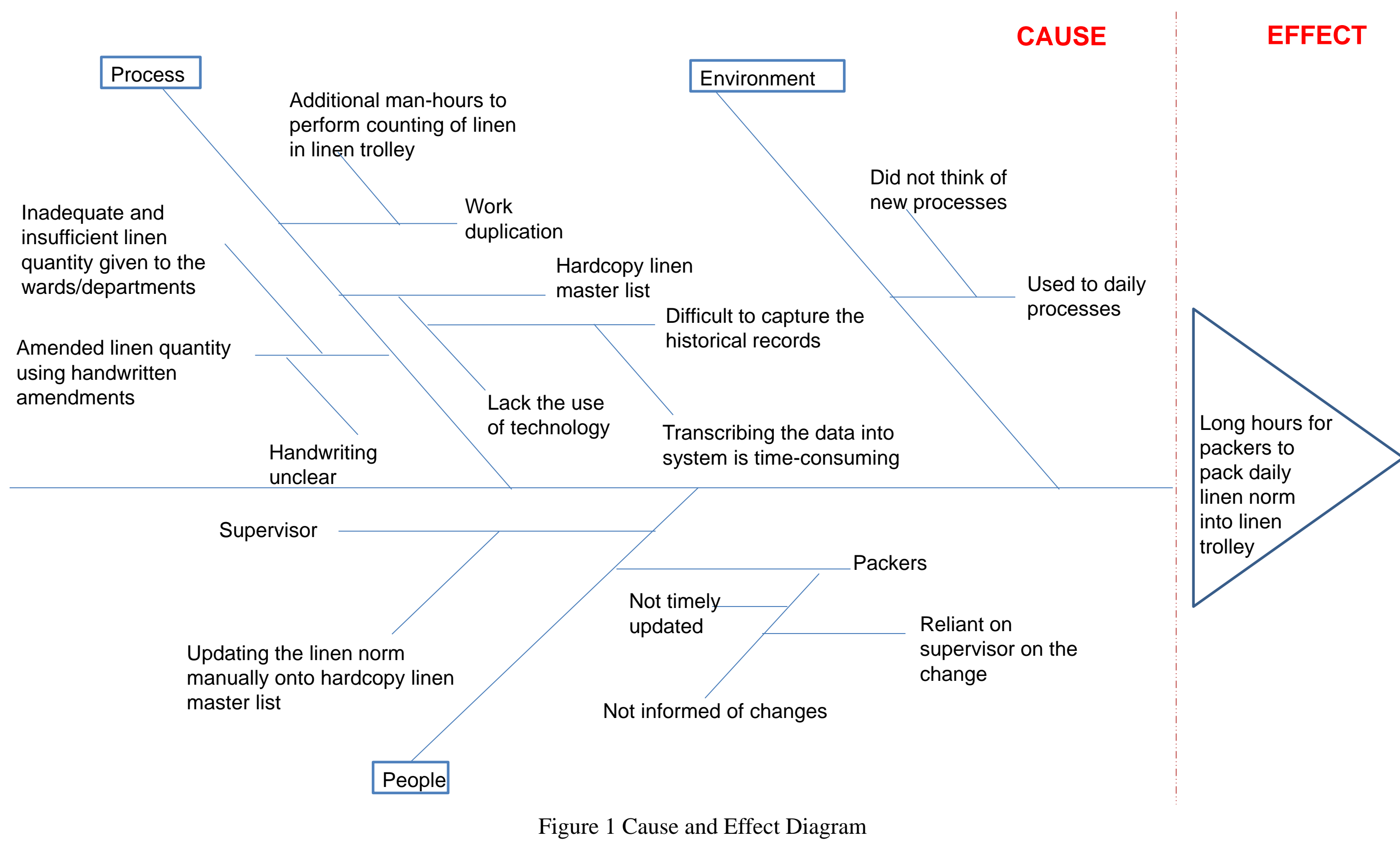


Figure 1 Cause and Effect Diagram

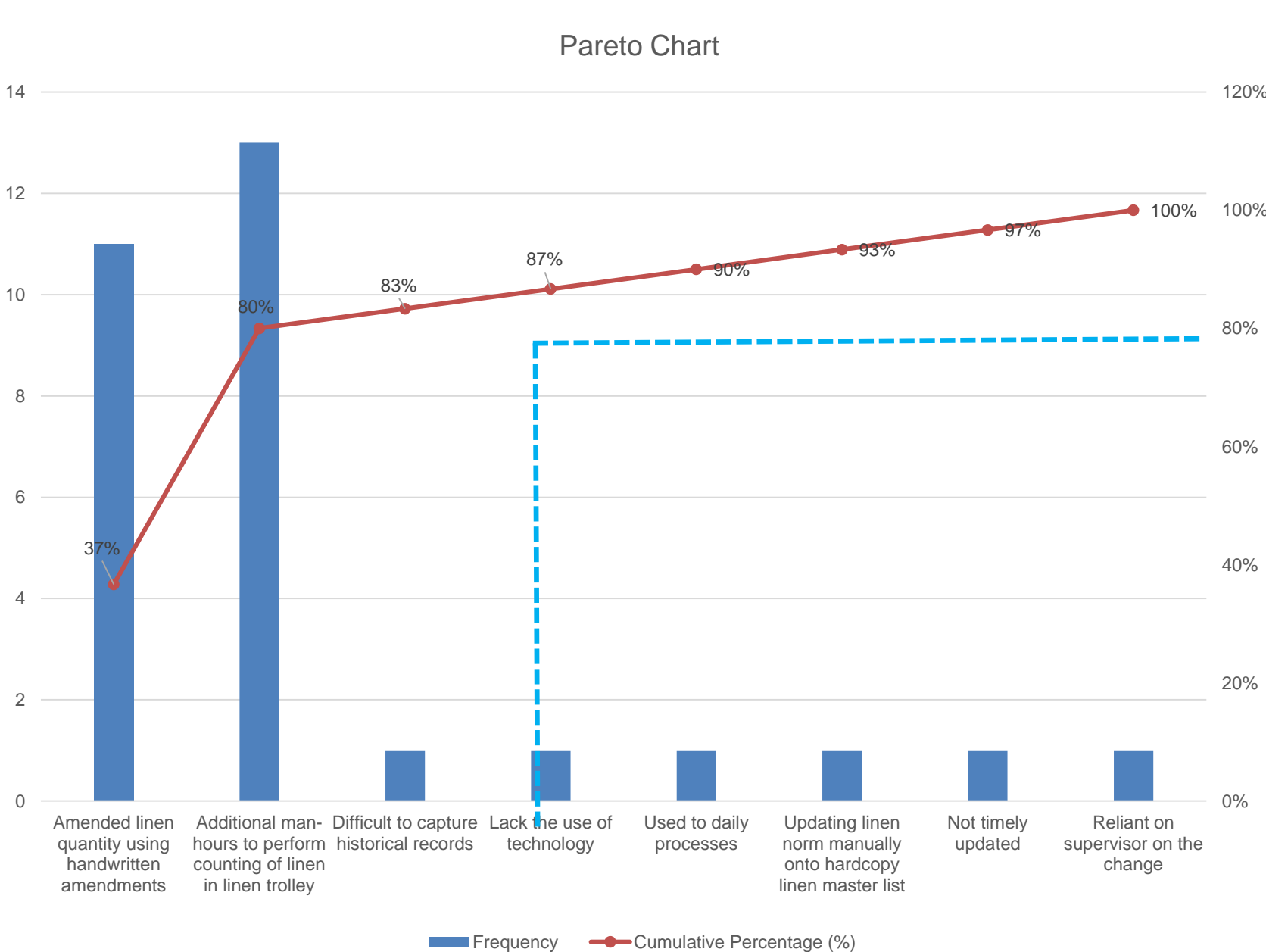


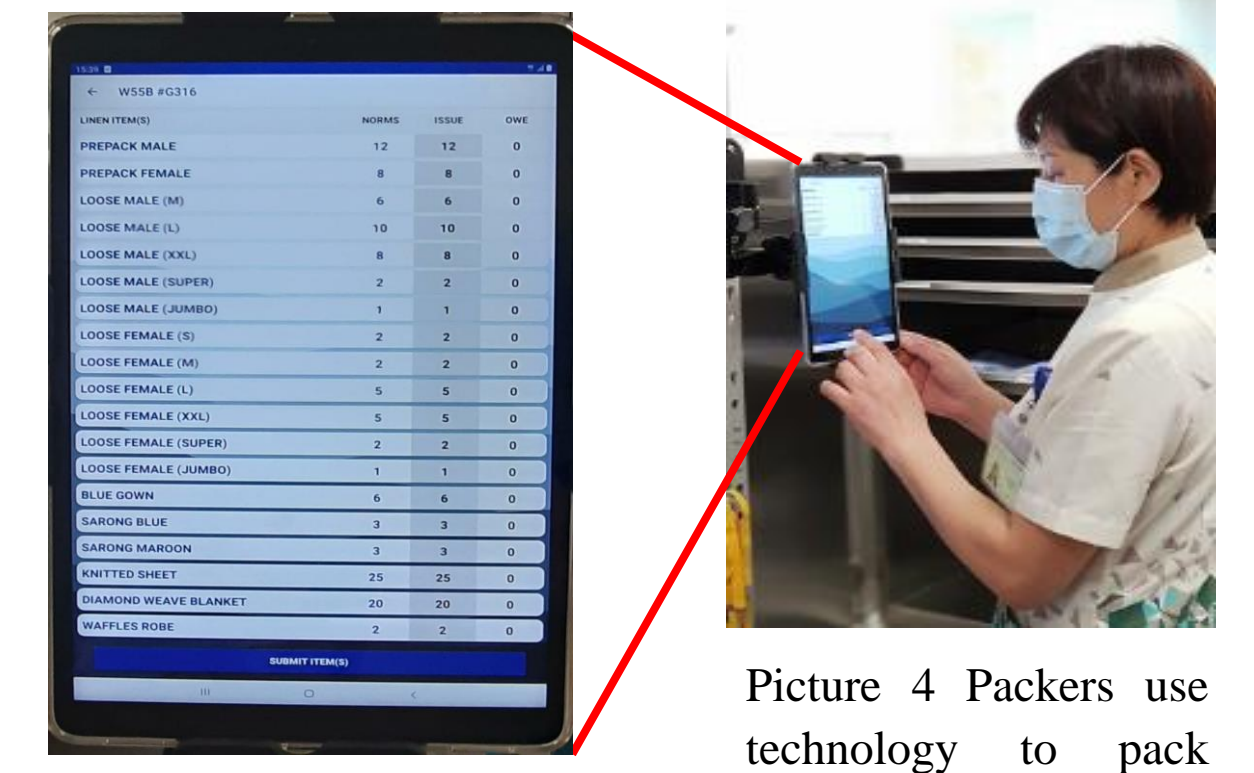
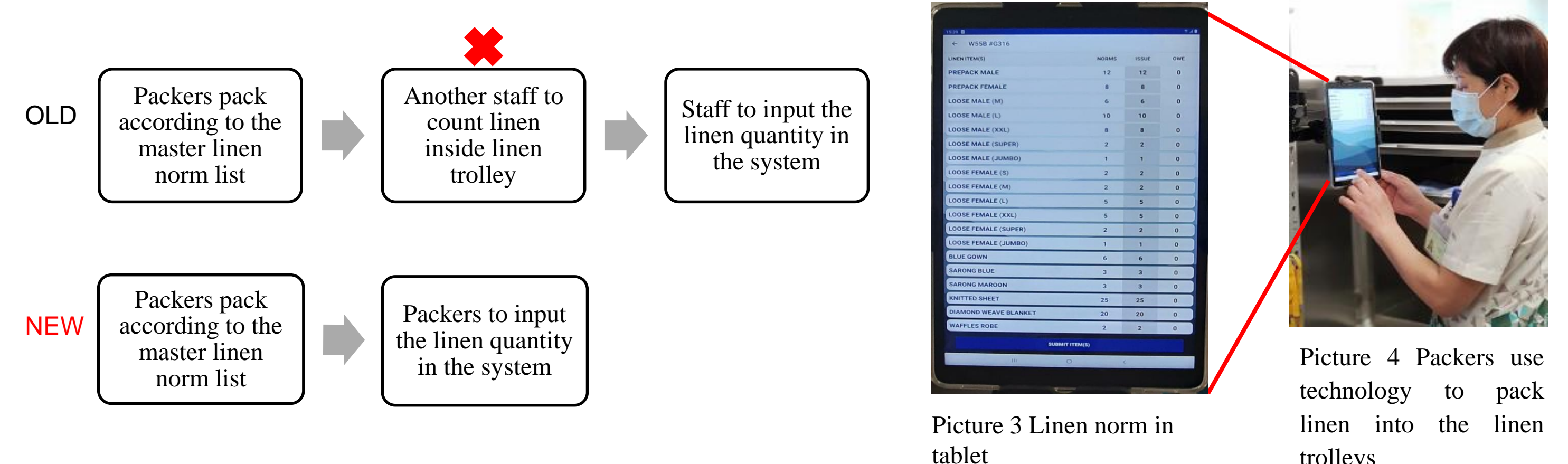
Figure 2 Pareto Chart

The team went through a voting process, Pareto Chart (Figure 2) was created to rank the different root causes. The Pareto Chart shows that 2 root causes that the team needs to address:

1. Amended linen quantity using handwritten amendments
2. Additional man-hours to perform counting of linen in linen trolley

Interventions/Initiatives

- Environmental Services Operations Executives and Linen Room Staff identified the main root cause in Pareto Chart. PDSA approach was adopted in implementing the enhanced system.
- Procured units of new 10" screen tablets for each of the 6 packers.



Picture 3 Linen norm in tablet

Picture 4 Packers use technology to pack linen into the linen trolleys

- This was addressed by creating a user-friendly system platform (in Picture 3), and linen norm are neatly displayed on the tablets.
- Eliminate additional staff to count the linen inside linen trolley. Packers will input the linen quantity in the system (in Picture 4)

Results

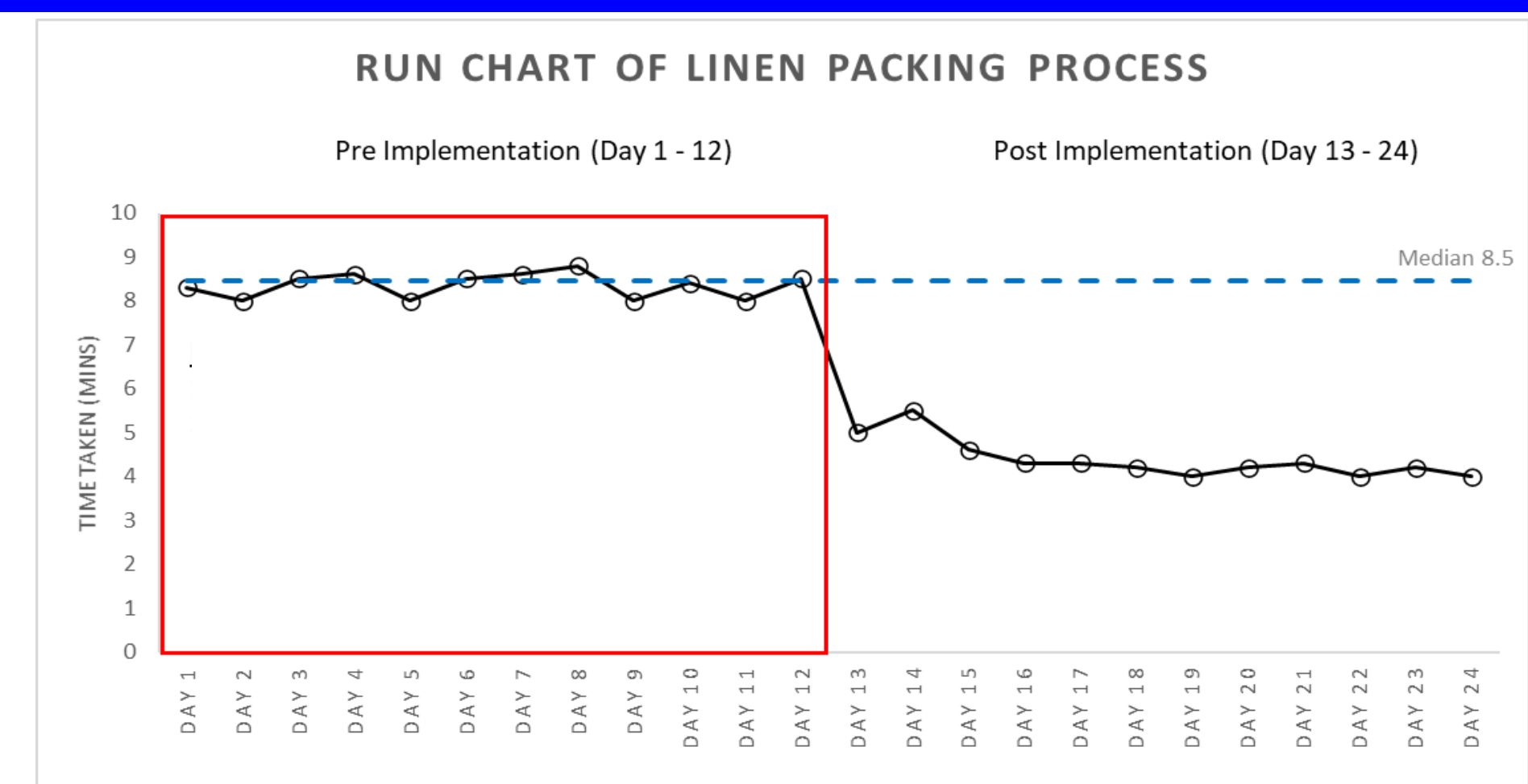


Figure 3 Run Chart

Based on the above calculation for time-saving for packing of linen into linen trolleys, manpower cost saving is tabulated below:

	Before implementation	After implementation	Time saved	Cost saved
1 day	595 min (8.5 min x 70 trolleys)	350 min (5 min x 70 trolleys)	245 min (3.5 min x 70 trolleys)	\$ 44.20
1 year (365 days)	219,175 min (595 min x 365)	127,750 min (350 min x 365)	89,425 min (245 min x 365)	\$ 4,471.25

Tangible benefits

- Man-hour cost saving estimated to be \$4,471.25 after removing the duplication of work.

Intangible benefits

- Boost staff confidence and upskill by using technology eliminating unclear handwritings.
- Time saving was better utilized in linen quality checks. The number of linen was increased from 250pcs to 300pcs daily.

Sustainability Plans

- Enhanced linen management system provides a systematic solution to capture data and provide information of different types of linen utilization. The data can be translated into a meaningful information to determine linen usage, over or under linen supplies.
- Moving forward, other manual processes within the Linen Supplies Unit ecosystem are being review to further enrich the utilization of electronic solutions to maximize the process efficiency.
- Change initiatives have perceived its intended outcome, adopted to create staff upskill to maximize work efficiency.