

Aim

Project Aim: To explore possibilities of formulating a **safe and achievable standardized timeframe** on receiving loaner instrumentation for a more efficient supply chain; safer and seamless surgical experience for patients with our industrial partners' support.

Background

In June 2023, at the Asia Safe Surgical Implant Consortium in Tokyo, Japan, the Asia Central Sterile Supplies (CSS) Leader Group held discussions on the **variations** in the management of loaner implantation instruments.

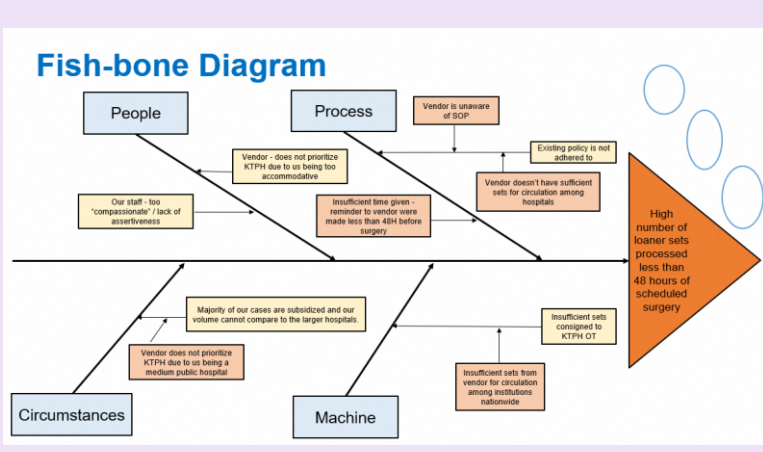
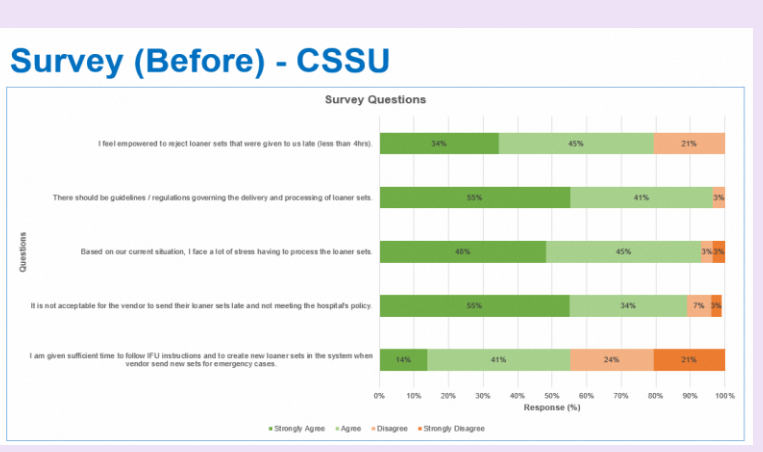
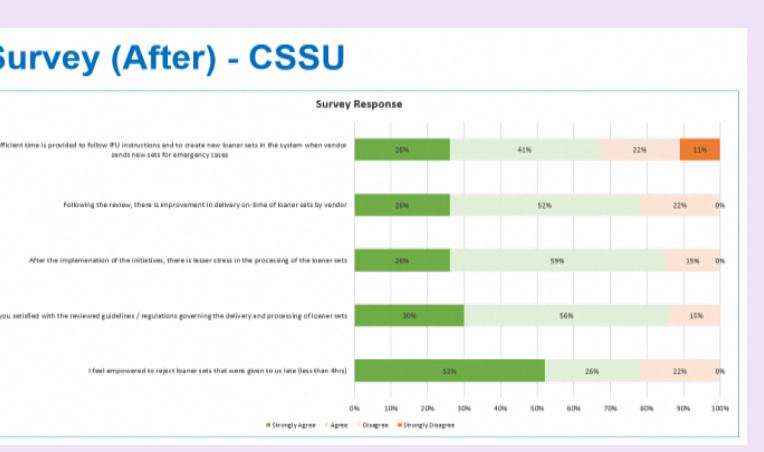
The **discovery of variations** in the **time requirements** on receiving loaner implantation instrumentation and **policies** across medical facilities in governing handling of loaner implantation instruments raised **serious sterility concerns** and **patient safety**.

Team Members

Name	Designation	Department
Alice Leong Foong Wah	DD, Nursing	Nursing Administration
Mohd Iszam Bin AR	Senior Staff Nurse	CSSU
Iskandar Jauhari Bin AH	Senior Staff Nurse	MOT
Clarence Chew Qi Wen	Senior Exec	Operations
Nurul Aqilah Bte Z	Senior Exec Assistant	Operations
Tan Siok Hwee	Nurse Manager	CSSU
Fauziah Bte Saban	Nurse Clinician	MOT
Timothy Teo Wei Wen	HOD, Senior Consultant	Orthopaedics

Interventions / Implementation

Repeated PDCA cycles were employed with **numerous discussions and studies** to improve continuously.

Plan	Do	Check	Act
<ul style="list-style-type: none"> Carry out a ground survey to understand ground perspectives on management of loaner implantation instrumentation at both CSS unit and Operating Theatre Identify gaps in processes and brainstorm solutions Set reasonable timeframe for loaner items for safer surgery Monitor the time implantation instrumentation were received prior surgery Collaborate with industrial partners on improving the timeframe that is achievable and sustainable 	<ul style="list-style-type: none"> Did Fishbone Chart to understand cause and effect    <ul style="list-style-type: none"> Ground surveys were carried out with structured questions via digital FormSG before and after implementation of solutions Track time loaner instruments were received prior surgery Conduct meetings with industrial partners and all stakeholders to discuss solutions for time lapses and process gaps 	<ul style="list-style-type: none"> Constant checks were carried out on the time taken for implantation instrumentation to arrive prior surgery from various companies and improved processes monitored 	<ul style="list-style-type: none"> A 'Vendor Progress Chart' was set up to display findings and progression of the improvement project All industrial reps were encouraged to consign instrumentation at hospital to eliminate hassle, improve efficiency and ensure patient safety with sufficient sterilization preparation time Reports disseminated to all stakeholders for improvements

Onward 2026

1. Quality & Patient Safety

- The project achieves proper management of loaner implantation instrumentation. The timeframe achieved for instrumentation delivery impacted on timely sterilization processes and ensures patient safety.

2. Operational Resilience

- Repeated PDCA cycles conducted and meetings carried out with industrial partners and stakeholders to monitor progress and strategies for improvement planned. More instruments consigned.
- A Vendor Progress Chart was designed to monitor progress, and promote sustainability.
- Operational resilience achieved as processes in delivery were streamlined, resulting in happier industrial partners; more instrumentation sets consigned resulted in more timely processes and happier, satisfied staff.

3. Staff Well-being


- Surveys were conducted before and after implementation of revised Standard Work Instructions. Staff were rotated between MOT & CSSU for better understanding of processes and frustrations.
- The project resulted in a significant increase of about 34% in staff satisfaction at both departments, reduced number of staff feeling stressed by about 19%, and an increased rapport among the teams.

Results & Outcomes

CSSU

There was a reduction of 78% respondents that felt highly stressed due to the loaner instrumentation management situation. This reduction corresponds to the 78% of respondents who agreed there was much improvement in on-time delivery of loaner sets by vendors.


There was a further increase by 12% (from 55% to 67%) by respondents in agreement on the sufficient time provided to follow IFU instructions. Overall, there was a general sense of agreement of the initiatives introduced, and that it has achieved a positive impact and significant improvement.



MOT

72% indicated they were satisfied with the reviewed timing for elective sets. This was an increase from 38% previously. Generally, 73% of respondents felt less stress in having to follow up loaner sets as compared to previously whereby 92% of respondents felt highly stressed.

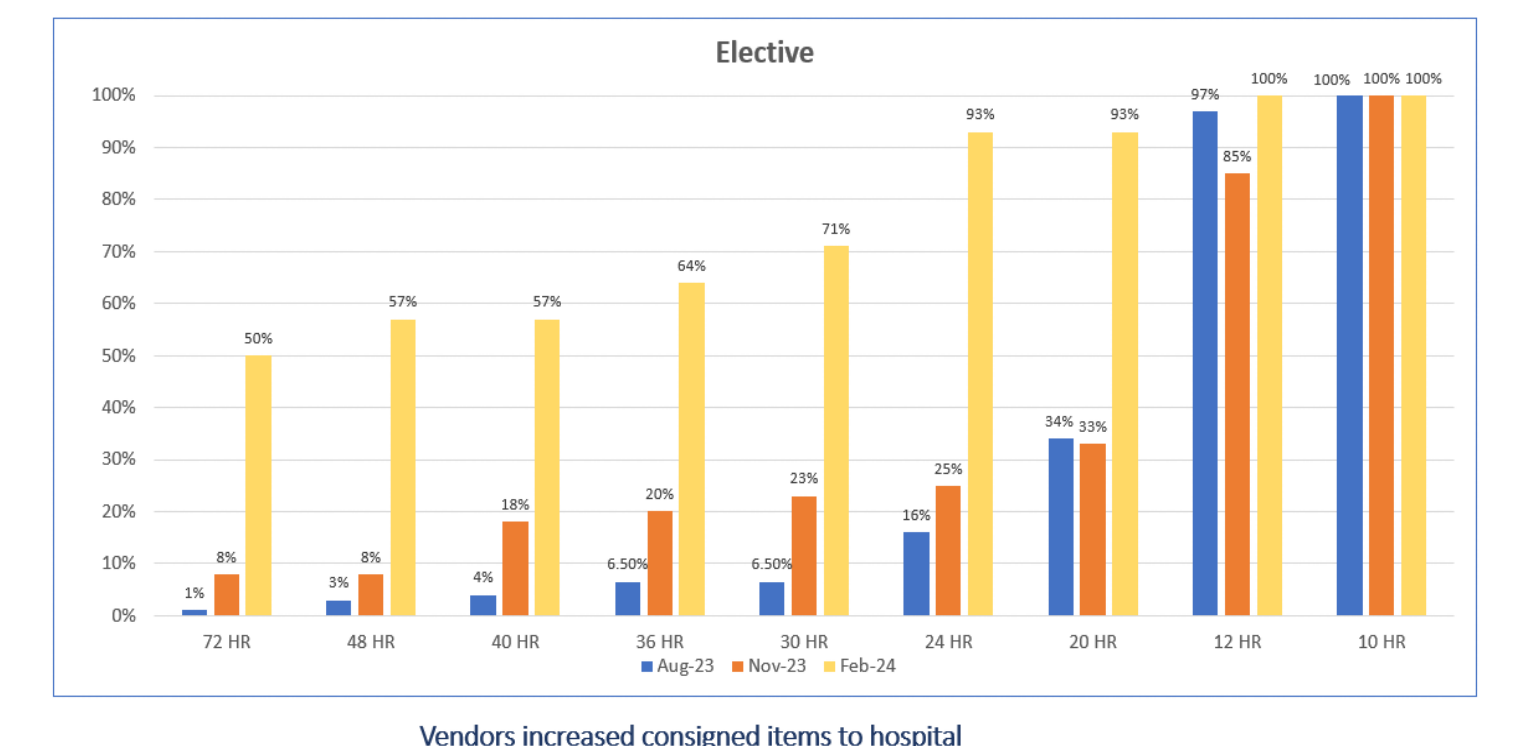
91% of respondents felt the timing provided to follow up with vendor sets is adequate as compared to 43% of respondents previously.



Vendor Progress Chart (Repeat PDSA) Data Analysis Results (Aug 2023 to Feb 2024)

Company	Avg. Time Before	Avg. Time 1 st Attempt After	Avg. Time 2 nd Attempt After
Transmedic	17 HR	27 HR	No Cases
Arthro	21 HR	15 HR	No Cases
Gen-Y	16 HR	26 HR	No Cases
Medtronic	26 HR	41 HR	45 HR
Synthes	20 HR	13 HR	48 HR
Smith-Nephew	21 HR	15 HR	48 HR
Zimmer	19 HR	24 HR	48 HR
Stryker	15 HR	18 HR	24 HR

1st Attempt: >60% of vendors have improved
2nd Attempt: 100% vendors improved



- There has been a **significant improvement** in vendor delivery timing (**from 3% to 57% at 48H, and from 16% to 100% at 24H**), with **more consigned instrumentation** achieved, resulting in **heightened satisfaction levels** among CSSU and MOT staff.
- Identified **process** gaps are being **streamlined** to optimize outcomes (eg: transitioning to a 72hr call to vendors for delivery instead of 7 days before, and eliminating the need to make a second call day before surgery).
- Enhanced rapport** and mutual appreciation between OT and CSSU staff have led to **reduced stress** levels in processing the implantation instrument sets.
- Fostered **win-win situations** for both entities, creating **better partnership** by acknowledging the challenges faced by industrial partners, **viable solutions** were being devised and sustained.

Conclusion

In summary, these efforts benefit **patient safety** by improving **reprocessing quality** through the **timely delivery** of vendor instrument sets. This also promotes an **optimal work environment** for staff. This project won an unexpected **Distinction Award** at **WHO QIP 2024** that added much encouragement to the teams.