

GOING GREEN: SPECIALIST OUTPATIENT CLINIC SUSTAINABILITY INITIATIVES

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- WORKPLACE / PATIENT SAFETY
- PATIENT EXPERIENCE

- INNOVATION AND PRODUCTIVITY
- GREEN & SUSTAINABILITY

Define Problem, Set Aim

Problem Statement

NTFGH hospital operates around the clock, 24/7, year-round, consuming substantial amount of energy to provide essential healthcare services. This continuous energy usage significantly contributes to our environmental footprint, particularly in CO2 emissions, which can negatively impact health and the ecosystem. However, Specialist Outpatient Clinic (SOC) operates only during office hours and is closed on weekends and public holidays. Hence, SOC has identified the following issues as there are notable opportunities for improvement to our sustainability goals :

- computers and medical equipment were often left charging overnight, including weekends, leading to unnecessary energy consumption.
- lights are frequently left switch on in unoccupied rooms, such as toilets, locker rooms, and there were too much lights along back corridors, further contributing to wasted energy and higher operational costs
- there was significant paper usage from printing service brochures and weekly roll call minutes contributing to environmental impact.

Our aim is to increase staff awareness to reduce energy consumption and cut paper usage by 20% within next year (2024), supporting the hospital's Green Plan for a sustainable environment.

Establish Measures

Before interventions

1. **Energy consumption: 10,000kWh/ month before implementation???**
 - 24 hours by 365 days - computers, laptops and equipment (i.e. weighing machine, etc.) in the clinic were on to charge overnight including weekends and Public Holidays.
 - Lights not switch off when not in use (i.e. staff locker room, toilets, etc.) and the back corridor have too many lights switch on.
2. **Paper usage:**
 - Expenses on printing service brochures - \$41,206 per year (2022) and
 - Expenses on A4 copier paper - \$3,070 per year (2023).

Analyse Problem

Probable root causes:

Problem statement #1: Medical equipment and computers left in 'on' mode to charge after clinic hours results in unnecessary electricity use.

- Why? Staff believe the equipment & computers need to be fully charged for next day use.
- Why? There is a perception that charging during clinic hours is inconvenient and may interrupt use.
- Why? There are no specific time or protocols for charging equipment during operating hours.
- Why? There has been no formal process or guidelines established for efficient and scheduled charging.
- Why? There has been a lack of awareness and focus on energy conservation practices within SOC

Take action!!

5 Whys

Problem statement #2: Lights are left on in unoccupied rooms such as toilets, locker room and there is excessive lighting along back corridors.

- Why? Staff often forget to turn off lights when leaving the room.
- Why? There is no automatic system in place to switch off lights in unoccupied areas.
- Why? The motion sensors or timers haven't been installed.
- Why? There are no visual cue to remind staff to switch lights off when leaving the room.
- Why? There is a lack of awareness or enforcement regarding energy conservation practices.

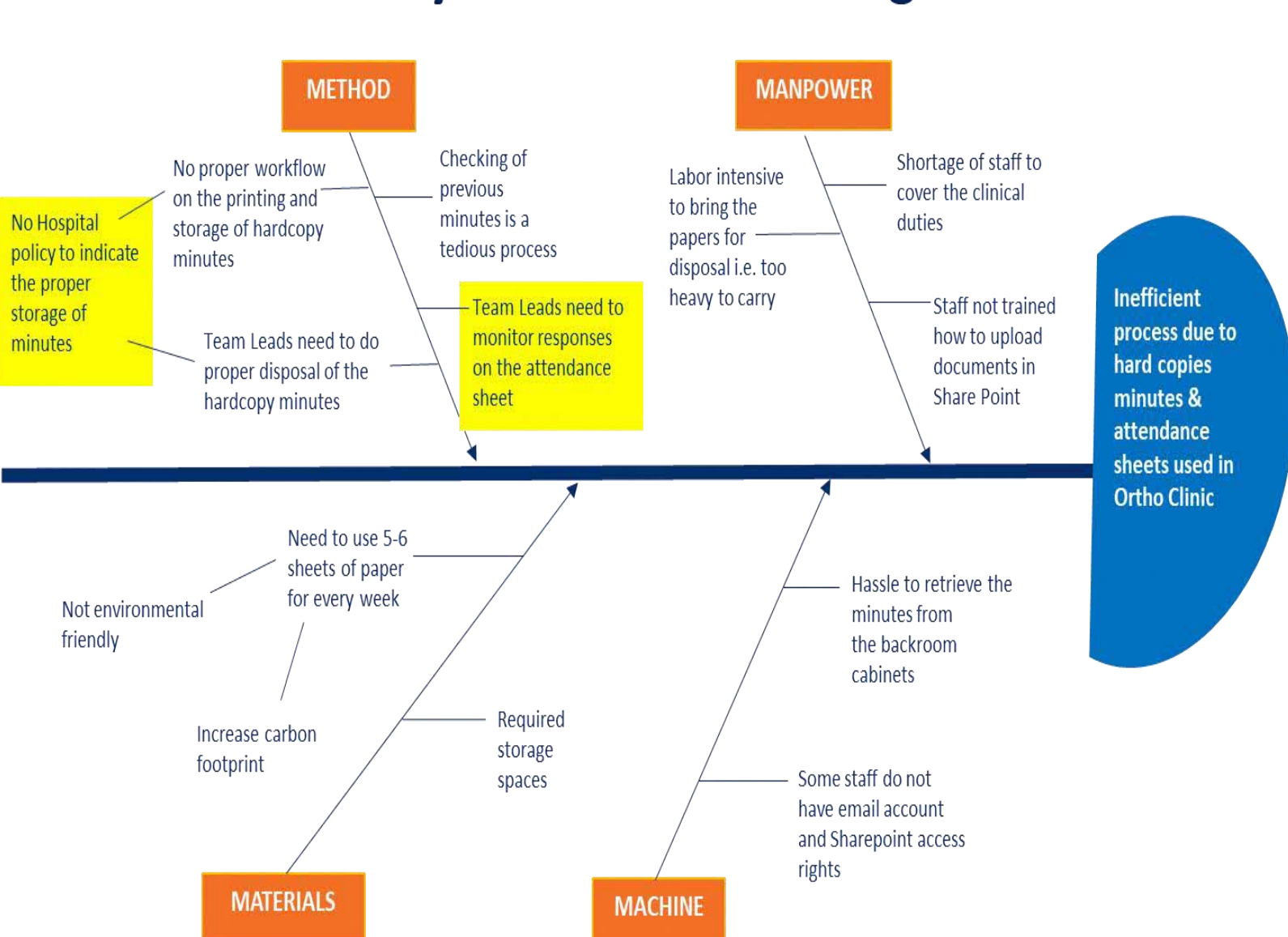
Take action!!

Problem statement #3: There is excessive paper use for printing service brochures and weekly roll call minutes contributing to environmental impact.

- Why? Physical copies of service brochures are given to patient and minutes printed by staff.
- Why? Physical copies are more accessible and convenient for everyone.
- Why? There is an assumption that not all patients and staff are comfortable with or have access to digital formats.
- Why? There has been no effort to promote and facilitate the use of digital copies.
- Why? There has been a lack of awareness and resources dedicated to promote digital copies.

Take action!!

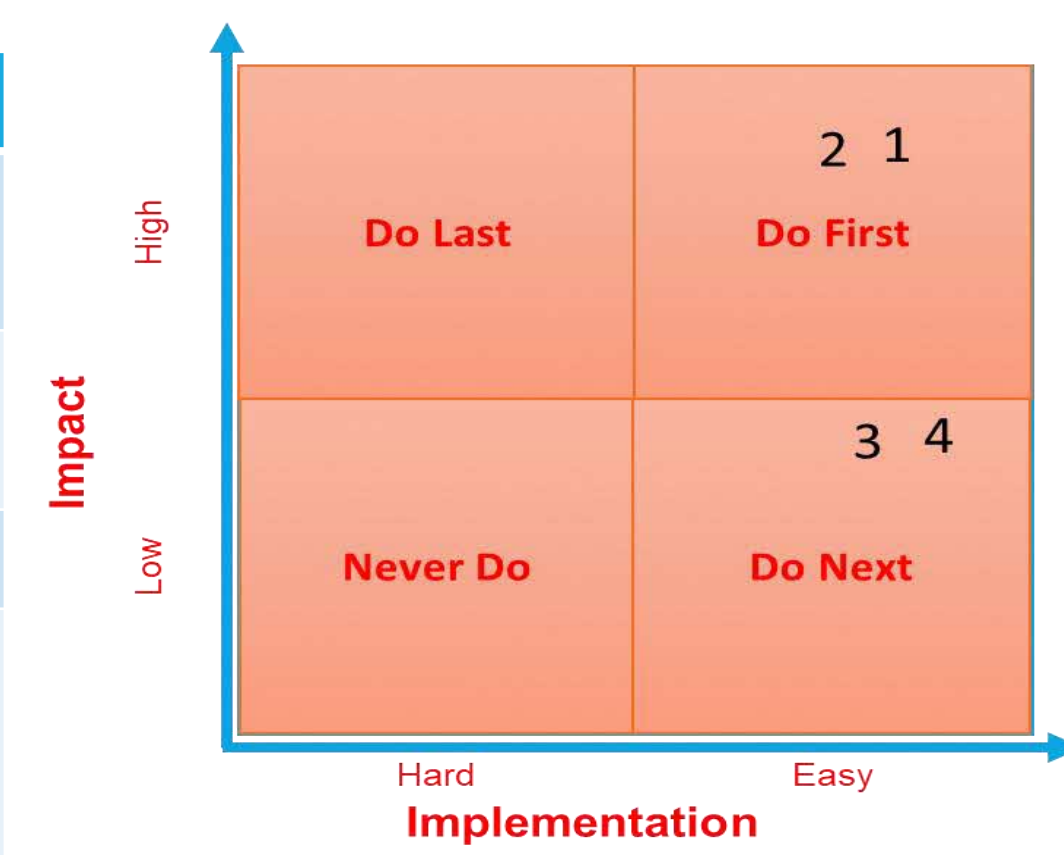
Root Cause Analysis – Fishbone Diagram



Select Changes

Probable solutions

Root cause	Probable solution
lack of awareness and focus on energy conservation practices within SOC	1 Power off computers & equipment during the night, weekend & PHs.
	2 Use pictorial signs to encourage staff to switch off lights when not in use.
	3 QR codes for service brochures.
	4 Implement use of Microsoft Teams for sharing of roll call minutes, staff roster, attendance & time claim records.



Test & Implement Changes

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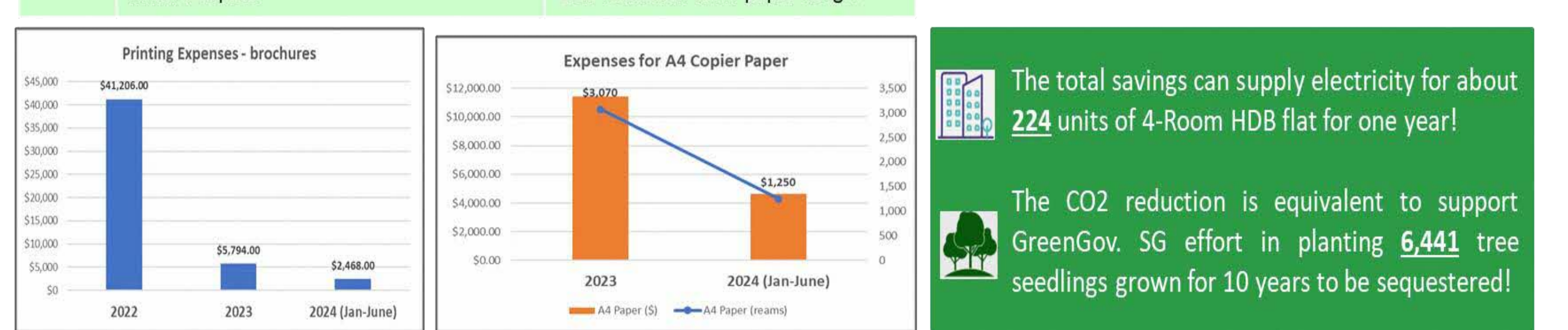
Cycle	Plan	Do	Study	Act
1 (1st Mar to 15th Apr 2022)	Power off or put equipment to sleep mode for unused computers, laptops, monitors and non critical equipment i.e. weighing scale that were left to charge overnight as clinics were not operating after clinic hours, weekend and public holidays. Lights off – turn off lights when not in use and those excess lights along back corridors.	1. Identify equipment to switch off during the night, weekend & PHs. 2. Communicate to all staff (PSA, Nurses & AHP) at roll call and at Ops meetings to re-enforced good practices. 3. Use pictorial signs to encourage staff to switch off lights when not in use. 4. Use pictorial signs to inform staff to switch off the excess lights. 5. Send daily SMS to chatgroups to remind all to switch off their computer and equipment at the end of the shift.	1. Observations from site walk: 2. Consult room light was switched off at the of clinic session. 3. Pantry light switched off after lunch. 4. Toilet lights switched off after use. 5. Nurses also ensure that lights are switched off at the end of the day. 6. Housekeeping colleagues do their part too!	Adopt

Cycle	Plan	Do	Study	Act
2 (Dec 2022 to June 2023)	QR codes for Brochures	1. Coordinated with Comms team on the QR code project. 2. For Waiting Area: Created individual laminated QR codes at the respective brochure at racks. 3. For Consult Rooms: Created consolidated brochure list with QR codes. 4. Doctors, Allied Health and PSAs encourage patient to scan the QR codes for brochures.	We monitor the usage of digital brochures. Noted that majority of patients especially the IT savvy ones would prefer the digital copy.	Adopt. To share with other SOC and implemented to all SOC by Dec 2023.

Cycle	Plan	Do	Study	Act
3 (Aug 2023)	1. Team Leads to upload the roll call minutes into Microsoft Teams 2. Staff to retrieve to read and e-acknowledge on the e-attendance sheet 3. Team Lead monitor the attendance electronically	1. To cease printing of hardcopies minutes and switch to e-document. 2. Team Leader to upload to Microsoft Teams for sharing. 3. To educate the staff on the following: ✓ Access the minutes via Microsoft Teams ✓ Mark/ record staff attendance / acknowledge after reading the minutes on the e-document.	1. Staff can retrieve the minutes conveniently via Microsoft Teams 2. Staff can read minutes anytime and any where.	Adopt.

Results and Benefits

S/no	Before	After	Achievements!
1	Equipment such as Computer on Wheels, desktop computers, laptops, weighing machines, etc in the clinics were on 24/7/365.	Equipment are switched off at night and on weekends including Public Holidays	\$191,000 saved per Year
2	Service brochures printed in hard copies	85% of staff/patients use e-brochure	954,707 kWh saved per Year
3	Roll call checklist, minutes & roster printed in hard copies.	100% use digital copies resulting in 19% reduction in A4 paper usage.	389,520 kg CO ₂ reduction per Year



The total savings can supply electricity for about 224 units of 4-Room HDB flat for one year!
The CO2 reduction is equivalent to support GreenGov. SG effort in planting 6,441 tree seedlings grown for 10 years to be sequestered!

Spread Changes, Learning Points

Strategies to spread change after implementation

- All staff need to have an email account to access Microsoft Teams to enable the change to digitalize roll call minutes.
- Daily sms send via chatgroups helps to remind all to switch off their computer and equipment at the end of the shift.

Key learnings from this project

Everyone can play a part for a Green sustainable environment by doing minor behavior change in their daily activities.

Scan to VOTE!

