Digitalization of Hospital Waste Recording
(E-Waste Management System)

Singapore Healthcare Management 2024

Chua Meifen Jennifer, Environmental Services, SGH
Theng Le Xin Chloe, Environmental Services, SGH
Yamin Yuper Zin, Housekeeping, ISS
Yi Mon Thant Eugenia, Housekeeping, ISS

Singapore General Hospital
SingHealth

INTRODUCTION

Singapore General Hospital (SGH) have over **382 Waste Collection Points**. Each month, an average of **365 Tonnes** of waste are generated.

Manpower are involved for the data recording, transcribing and monitoring of the waste generated at all areas. All weighing and recording are performed manually and transcribe by an administrator to e-Copy for viewing.

382 Collection Points

365 Tons / Month

AIM

To strive and increase efficiency in data collation, monitoring as well as data analysing and at the same time reducing manpower required for data transcribing.

METHODOLOGY: DMAIC

DEFINE:

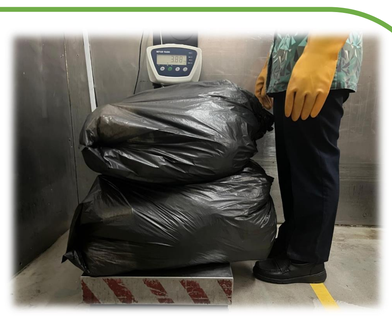
Under the regulatory requirement, hospital is required to report waste data to GreenGov, supporting the national sustainability efforts to reduce waste. Hospital waste records are being performed on hardcopy and transcribed manually to softcopy which is prone to human errors and constant re-checking of data. As our hospital expands, more manhours are required for the transcribing.

MEASURE:

Daily, housekeeping team managed waste disposal for over 382 collection points within SGH. With the introduction of e-System, it targets to reduce transcription and transposition errors from data transcribing.

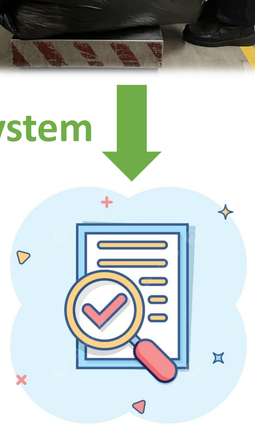
WASTE RECORDING PROCESS

Weighing of Waste Collected



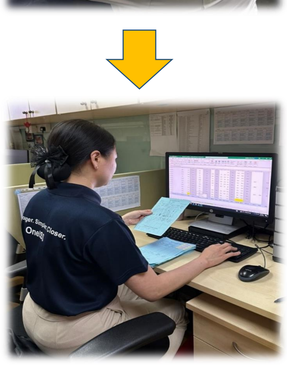
e-System

Waste Monthly Records Generated



Manual Recording on Paper Forms

Manual Compilation of Paper Forms to Computer



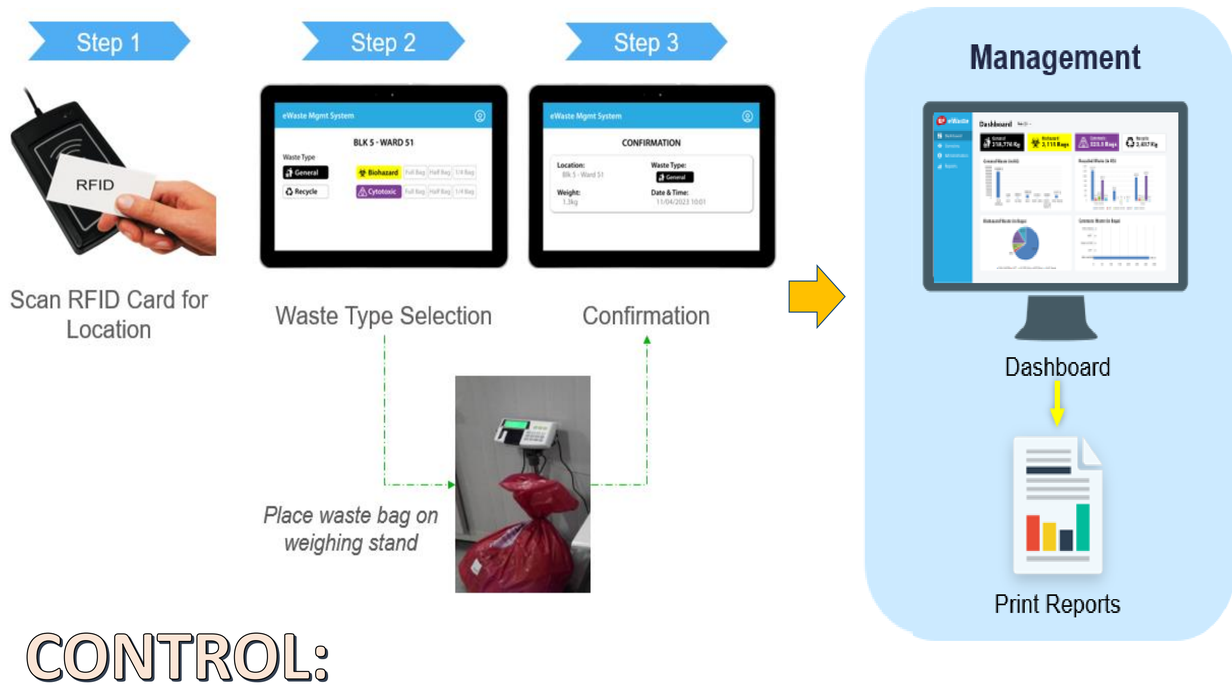
e-System

ANALYSE:

Taking into consideration of how the data can be further enhanced to cater to the expansion of the hospital and data accuracy, there is a need to explored ways to digitalise our operational processes.

IMPROVE:

Weighing machine located at the waste hold rooms was modified. Housekeeper are equipped with RFID Cards configured for their work areas for the recording of waste. With an electronic data management system in place, data can be accessed once housekeeper registered the waste load on the weighing machine. As hospital continues to expand, the system can easily adapt to changing requirements and allowing scalability and flexibility for future needs. Data capture via e-Waste Management System also improves compliances by tracking data revision and maintain audit trails.



CONTROL:

Maintaining data integrity throughout its lifecycle, constant monitoring of the waste records are performed.

5 Days required to generate monthly report, down from previous process of **20 days!**

13,224 Manhours Reduced per year = **5.7 Full-Time Equivalent** Reduced!

EFFICIENCY **ACCURACY** **MANHOURS**

RESULT

Result showed a more efficient process on data recording. Accuracy of data were also improved where human error for transcribing was eliminated. Analysing process can be carried out more efficiently with the digitalising of waste recording system. Manpower required for the recording, transcribing and generation of waste records are removed from the process, which, a total of **13,224** manhours were reduced per year. In addition, the days required for the generation of waste monthly report is reduced from **20 Days to 5 Days**.

CONCLUSION

With the implementation of e-Waste Management System, it supports the real time monitoring of hospital waste and promotes effective process in analysing of data trends. There is also an improved accuracy of the data recorded as the human error for data transcribing are eliminated. Overall, the initiative boost productivity as it reduces time and manpower to perform the same task ✔ .