

## INTRODUCTION

Effective management of emergency room (ER) resources, including medications and disposables, is crucial for patient safety. At Klinik Kesihatan Felda Bersia, manually tracking drug expiry dates and monitoring disposables posed significant challenges, risking the inadvertent use of expired medications and supplies. This project, MEDiTRACK, aims to implement a collaborative system using Google Sheets to monitor both drug expiry dates and the availability of essential disposables in real time, thereby enhancing safety and efficiency

## METHODS

MEDiTRACK, began with the development of a Google Sheet template designed to track drug expiry dates and disposable supplies, including columns for drug names, batch numbers, expiry dates, and status indicators for disposables. ER staff were trained on how to utilize the sheet. Regular audits ensured data accuracy and feedback sessions were held to improve usability. This process fostered a culture of continuous improvement and shared responsibility among the staff.

## RESULTS

The implementation resulted in a significant reduction in the risk of administering expired drugs and ensured the availability of essential disposables in the ER. Real-time tracking allowed staff to promptly identify and remove expired drugs and replenish disposables when needed. Staff reported increased confidence in resource management and improved communication.

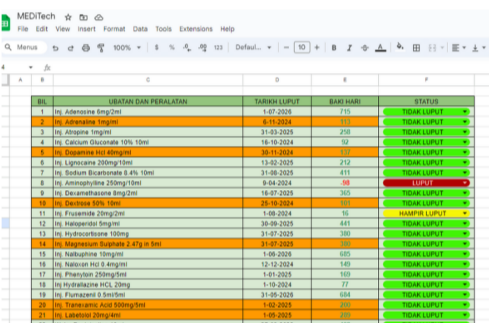


Fig 2: Screenshot of MedITrack

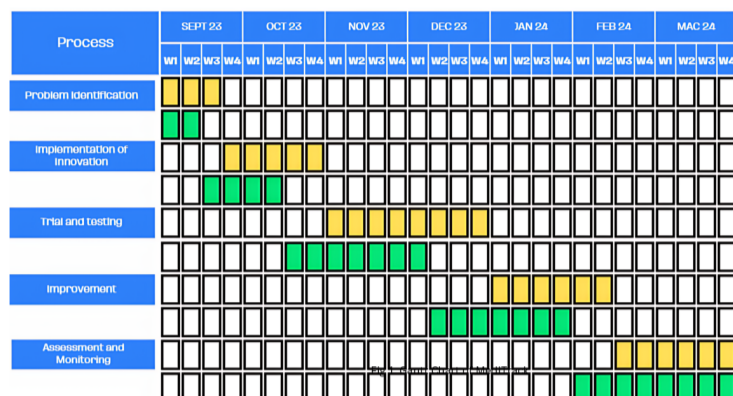


Fig 1: Gantt Chart

High alert medications are marked in orange. For expiry alerts: if remaining days are greater than 30, the status is "Not Expired" in green; if 30 days or fewer, it changes to "Nearly Expired" in yellow; and if less than 0 days, it shows "Expired" in red

UBATAN DAN PERALATAN	KUANTITI	KUANTITI SEBENAR	TARIKH
Ins Adenosine 5mg/2ml	5	5	1-07-2025
Ins Adenosine 5mg/2ml	2	2	8-10-2024
Ins Abasone 1mg/ml	5	5	31-03-2025
Ins Calcium Gluconate 10% 10ml	2	2	18-10-2024
Ins Calcium Gluconate 10% 10ml	2	2	26-10-2024
Ins Lidocaine 200mg/10ml	5	5	13-02-2025
Ins Sodium Bicarbonate 8.4% 10ml	5	5	31-03-2025
Ins Amoxicillin 250mg/5ml	2	2	8-04-2024
Ins Desamethasone 5mg/2ml	5	5	18-07-2025
Ins Desamethasone 5mg/2ml	5	5	26-09-2024
Ins Fentanyl 200mcg/ml	5	5	1-09-2024
Ins Haloperidol 5mg/ml	5	5	30-09-2025
Ins Hydrocortisone 100mg	5	5	31-07-2025
Ins Magnesium Sulphate 2.47G/5ml	5	5	31-07-2025
Ins Naloxone 10mg/ml	5	5	1-09-2025
Ins Naloxone 10mg/ml	5	5	12-12-2024
Ins Phenytoin 200mg/ml	5	5	1-02-2025
Ins Hydrochloric HCL 20mg	5	5	1-10-2024
Ins Fluazepam 50mg/ml	5	5	31-03-2025
Ins Thiopental Acid 500mg/ml	5	5	1-02-2025
Ins Labetalol 200mg/ml	5	5	1-09-2025
Insone Pen Injection 10ml	5	5	27-09-2025

Additionally, quantities will automatically turn red if they do not match the actual stock, helping to prevent under/ overordering.

Fig 3: Screenshot of MedITrack - Inventory



Fig 4: Since the implementation of MEDiTRACK, there have been only 2 near-miss cases in September 2023, and no incidents have occurred since then.

YEAR	MONTH	PROCESS	MEDICATION	QUANTITY	COST (RM)	TOTAL LOSS
2023	JULAI	MANUAL	HYDRALLAZINE HCL	3	21.06	RM 63.18
2023	OGOS	MANUAL	ADENOSINE 5MG/2ML	2	16.18	RM 32.36
2023	SEPTEMBER	MEDITRACK	MAGNESIUM SULPHATE 2.47G/5ML	2	10.13	RM 20.26
2023	OKTOBER	MEDITRACK	FLUMAZENIL 0.5ML/5ML	1	8.00	RM 8.00
2023	NOVEMBER	MEDITRACK	TIADA	0	-	-
2023	DISEMBER	MEDITRACK	TIADA	0	-	-
2024	JANUARI	MEDITRACK	TIADA	0	-	-
2024	FEBUARI	MEDITRACK	TIADA	0	-	-
2024	MAR	MEDITRACK	TIADA	0	-	-

Fig 5: Before using MEDiTRACK, losses due to expired drugs amounted to RM 95.54. After implementation, these losses were reduced to RM 28.26, representing a savings of approximately 70.42%.

Fig 7: The flow chart illustrates the process before and after implementing MEDiTRACK. Before MEDiTRACK, the ordering process took approximately 4 hours, involving multiple manual steps. After MEDiTRACK was introduced, the process was streamlined, reducing the time to 2 hours and enhancing efficiency.

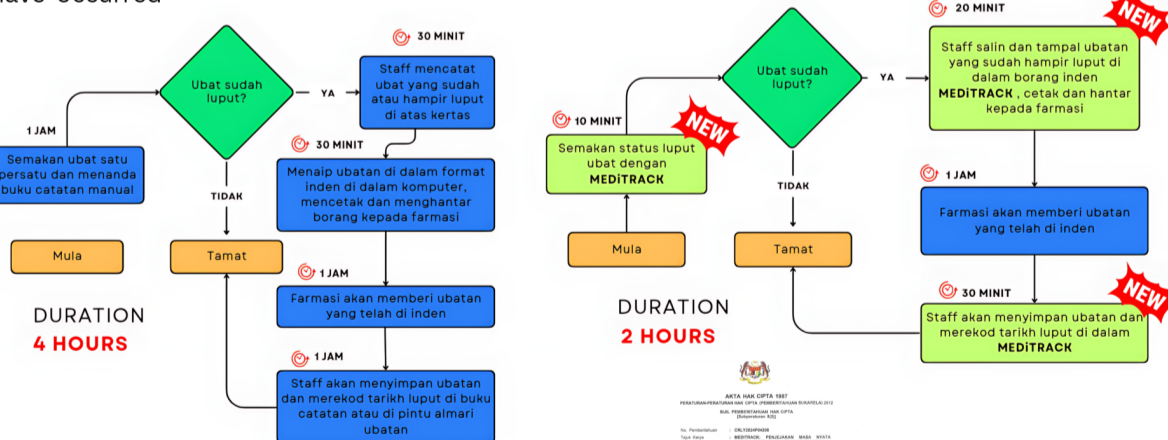


Fig 6: Copyright certification

## DISCUSSION & CONCLUSION

Leveraging simple, readily available technology, MEDiTRACK significantly improved safety and resource management in the ER. It fostered staff engagement and accountability, demonstrating that low-cost solutions can enhance healthcare efficiency. The Google Sheet-based system for tracking drug expiry and disposables boosted patient safety and operations. Future plans include expanding MEDiTRACK to other departments and adding automated alerts for expiries and low stock, further streamlining management.

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