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SELECTION OF OPPORTUNITIES FOR IMPROVEMENT

Massive Transfusion Protocol (MTP) for Hospital Tengku Ampuan Rahimah, was first developed in 2013. From year 2018 to 2022, a total of 198 cases resulted in 70% of patients survival rate after 24 hours. However, several issues have arisen including:



Figure 1: Issues arisen from previous MTP

KEY MEASURES FOR IMPROVEMENT

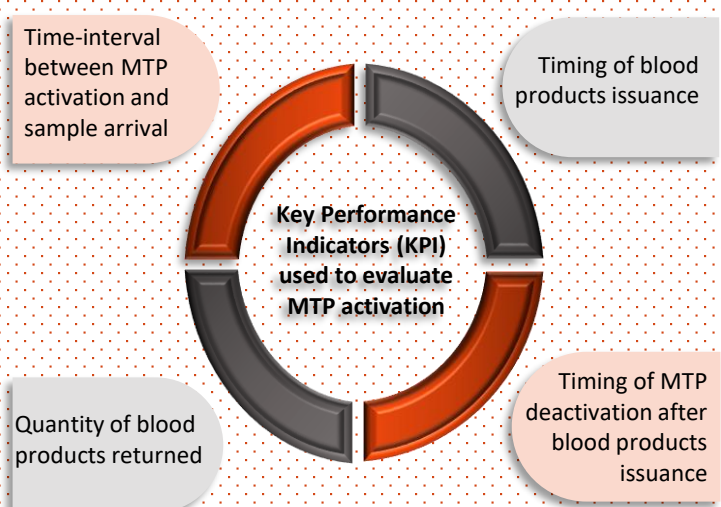


Figure 2: KPI used for each MTP cases

PROCESS OF GATHERING INFORMATION

- Manually written data from year 2018, 2020, 2021 until May 2022.
- From June 2022 onwards data was retrieved from digital Blood Bank Information System records.
- Feedback from physician during Annual Hospital Transfusion Committee meeting.

ANALYSIS AND INTERPRETATION

From year 2018 -2022 the return rate according to type of blood products ranged from the lowest 3.5% to the highest 25.4%. The average implicated cost for returned blood products was highest in 2019 reaching to RM5580.

Year	Supplied				Returned (% Returned Rate)					Average	Implicated cost
	PC	FFP	Cryoprecipitate	Platelet	PC	FFP	Cryoprecipitate	Platelet			
2018	408	408	191	408	72 (17.6%)	23 (5.63%)	22 (11.5%)	14 (3.5%)	9.80%	RM 4170	
2019	504	504	443	504	111 (22%)	25 (22.00%)	25 (4.96%)	25 (5.64%)	10.00%	RM 5580	
2020	295	288	164	287	52 (17.62%)	26 (9.03%)	28 (17.07%)	18 (6.27%)	11.90%	RM 3720	
2021	192	114	108	192	35 (18.23%)	16 (14.03%)	16 (14.80%)	16 (8.33%)	41.00%	RM 2490	
2022	114	114	52	114	29 (25.4%)	20 (17.54%)	12 (23%)	14 (12.28%)	20.50%	RM 2250	

PC: Packed Cell, FFP: Fresh Frozen Plasma

Table 1: Comparison of blood products returned, supplied, returned rate and implicated cost involved between year 2018 to 2022

STRATEGIES FOR CHANGE

Discussions among transfusion service and other clinicians to strengthen the workflow, resulted in a new version of the protocol in 2023 with several changes such as:

- Reduction of number of blood products supplied from previous protocol
- Additional cryoprecipitate product for obstetrics cases (1st package)
- Introduction of MTP Kit
- Patient's progress update in 60 minutes for judicious use of blood component

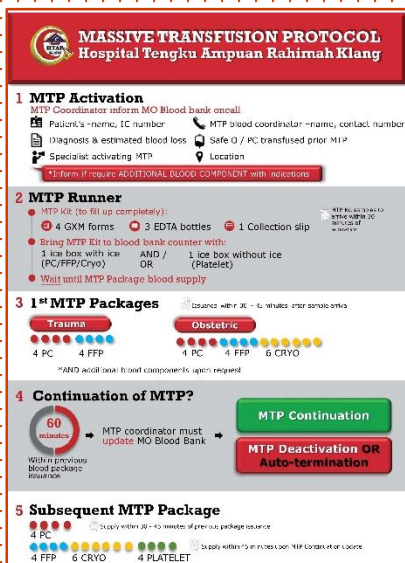
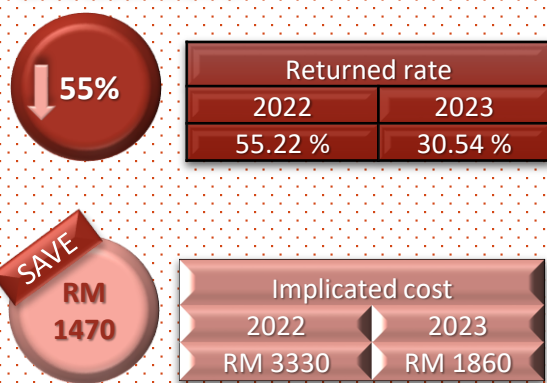


Figure 3: New MTP published in 2023

EFFECT OF CHANGE

After 6 months of implementation, the blood products returned and wastage had decreased by 50% compared to previous year and successfully saved about RM1470.



THE NEXT STEP

Yearly clinical review shall be conducted to monitor and ensure judicious use of blood products and to identify the protocol's weakness for continuous improvement.