

Reducing Blood Waste by Optimizing Massive Transfusions

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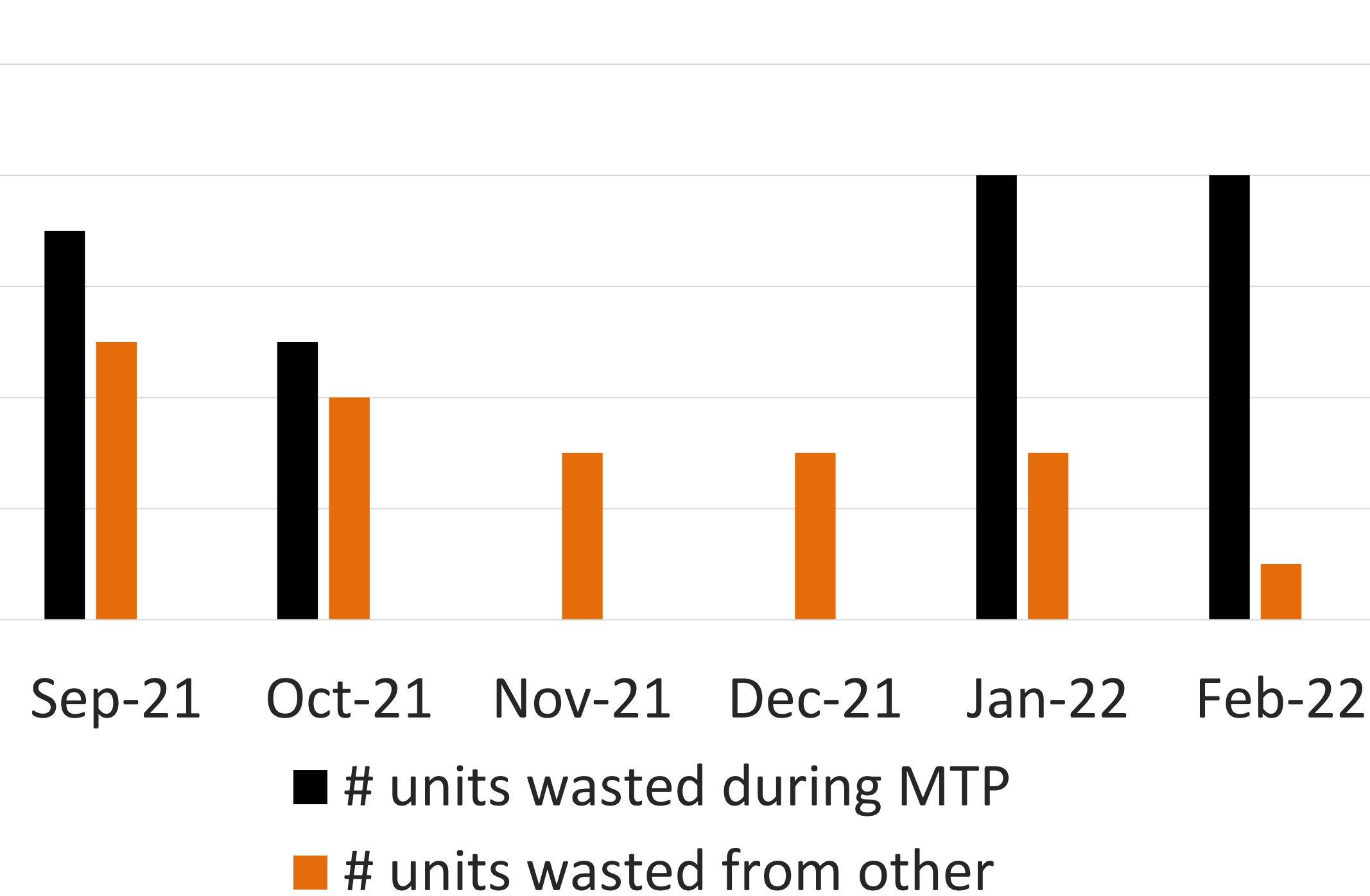
OBJECTIVES

- Improve blood stewardship at OSU-MC by optimizing massive transfusions (a major contributor to blood waste)
- Standardizing massive transfusion protocol (MTP)
- Improve documentation of MTP
- Improving patient outcomes by minimizing adverse effects that can be associated with massive transfusions
 - Hypothermia
 - Electrolyte abnormalities
 - Hemolysis

INTRODUCTION

Massive Transfusion Protocols (MTPs) facilitate the transfusion of multiple blood products in a short amount of time. By triggering the protocol, blood bank begins thawing and packaging blood product into coolers to be delivered to the patient in need. During this process, significant amounts of blood product can be wasted. **60% of the blood product wasted at OSUMC is during an MTP.**

Blood Waste from MTPs vs All other blood waste



The Transfusion Committee took this as a call to action to optimize MTPs through education and documentation with the following goal:

Reduce the total amount of blood wasted during MTPs by 50% over a twelve month period.

METHODS

MTP Education

A **hospital-wide Grand Rounds presentation** reviewing the Massive Transfusion Protocol and blood stewardship was presented in July 2021. This presentation included a multi-disciplinary panel of members from the OSU Transfusion Committee to answer any questions and provide early education for incoming residents. This committee consists of OSU attending physicians, resident physicians, Blood Bank staff, and nursing staff.

In March 2022, resident physician members of the OSU Transfusion Committee provided an **additional educational presentation to their respective specialties** – Emergency Medicine, Family Medicine, General Surgery, Internal Medicine, and OB/GYN.

This follow-up presentation covered how to effectively use the Massive Transfusion Protocol (MTP) and discuss the implementation of a new EPIC dot phrase, **.MTPSUMMARY**, to improve documentation when the MTP is implemented. The presentations were held for 10 to 15 minutes during each resident specialties' respective didactics.

The educational presentation included:

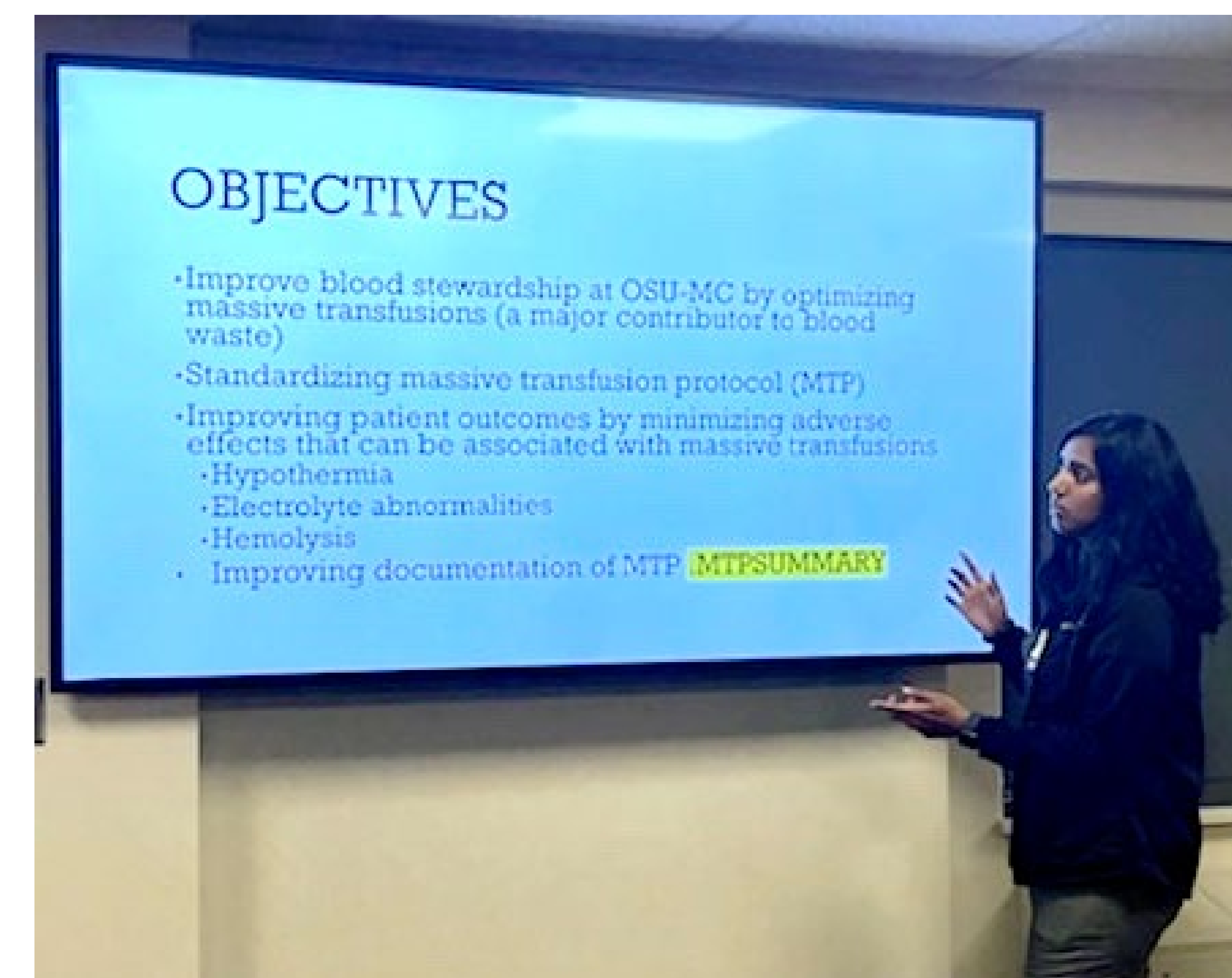
- When to call an MTP?
- What happens when an MTP is called?
- What needs to be done while an MTP is running?
- Importance of stopping an MTP.
- Documenting the MTP with the new dot phrase.

Following the educational intervention and introduction of the new dot phrase, the MTPs will be reviewed monthly by the Transfusion Committee for one year. The committee will assess the appropriateness and if the protocol was optimally followed for every MTP that is initiated.

July 2021 Grand Rounds Panel Discussion



March 2022 MTP Education Presentation



Improving Documentation

.MTPSUMMARY dot phrase for documentation

Massive Transfusion Protocol Summary

1. Ordered By: ***
2. Attending Physician: ***
3. MTP activation:
 - a. Date ***
 - b. Time ***
4. MTP stopped:
 - a. Date ***
 - b. Time ***
5. Reason MTP activated {MTP Reason:27423}
6. Patient location: {MTP Location:27422}
7. Vitals at the time of MTP:
 - a. Blood pressure ***
 - b. Heart Rate ***
8. Blood count at the time of MTP:
 - a. Hemoglobin ***
 - b. Hematocrit ***
9. Post transfusion blood count:
 - a. Hemoglobin ***
 - b. Hematocrit ***
10. Was early baseline pathology performed? (CBC, CMP, PT/INR, PTT, fibrinogen, Blood gas within 15 minutes of MTP activation) {Yes/no:27424}
11. Was ongoing pathology performed? (CBC, CMP, PT/INR, PTT, fibrinogen, Blood gas after every 5 units PRBC) {Yes/no:27424}
12. Was a blood warmer used? {Yes/no:27424}
13. Was the patient's temperature monitored throughout the MTP? (Recorded within 15 minutes of activation and after every 5 units PRBC?) {Yes/no:27424}
14. Total blood products transfused during MTP:
 - a. Units of Packed Red Blood Cells: ***
 - b. Units of Fresh Frozen Plasma: ***
 - c. Units of Platelets: ***
 - d. Units of Cryoprecipitate: ***
 - e. Other Blood Products: ***
15. Other comments pertaining to MTP activation: ***

RESULTS

- The observation period following intervention will conclude in March 2023
- Primary endpoints include:
 - Blood products wasted during MTPs
 - Time MTPs are active
 - MTP documentation through .MTPSUMMARY dot phrase
- Adverse effects attributed to MTs including: hemolysis, hypothermia, and electrolyte abnormalities

CONCLUSION

MTPs are a source of a significant amount of blood product waste. Through education, documentation, and optimization across all departments, we hope to reduce the total amount of blood wasted during MTPs by 50% over a twelve month period. This project will take place over the next year and track the duration of MTPs and the blood product wasted from MTPs.

REFERENCES

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