



“Stay Calm and Blood Bank On!”

Tips for Emergency Preparedness

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Blood Bank Emergency Preparedness

Transfusion support is key for trauma management.

1. Level I Traumas
2. Level II Traumas
3. Massive Transfusion Protocol Activations

Blood Bank Emergency Preparedness

Multiple MTP Activations can prove challenging

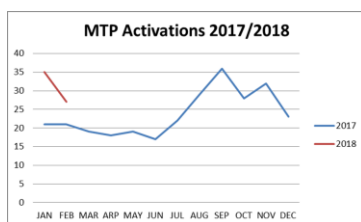
- Balancing supply and demand

Blood Bank Emergency Preparedness

Goal: Get Blood Products to Patient Safely but as quickly as possible.

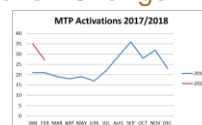
1. Adequate Blood Inventory
 - Group O packed cells
 - Group A plasma
2. Adequate Staff
3. Adequate Supplies

MTP Activations



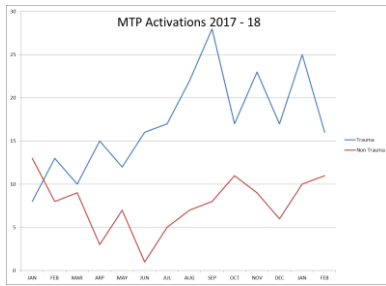
MTP Trauma Activations - Change

- Heart rate >110
- Systolic BP <90
- Penetrating mechanism



Positive FAST (Focused Assessment with Sonography for Trauma)- Bleeding from any organ in the chest, abdomen and pelvis including the heart itself

MTP Activations



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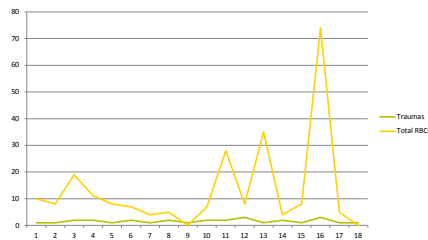
“Ideal” World

- Currently about 30 MTP activations per month
- Ideally one per day
- Eight red cell units per MTP
- Inventory management simple

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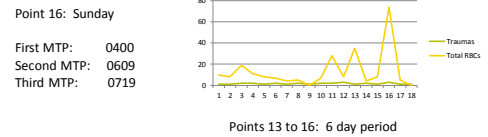
Sample Month of Traumas



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Sample Month of Traumas



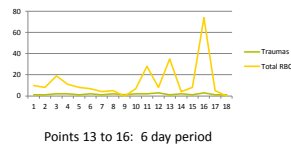
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Sunday Morning: MTP Activations

Point 16: Sunday
 First MTP: 0400
 Group: O
 Actively taking blood 9 hours

Blood Product	Number
RBC	78
Plasma	73
Cryo –pools (5)	7
Plateletpheresis	10



Second MTP: 0609
 Third MTP: 0719

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Sunday Morning: MTP Activations

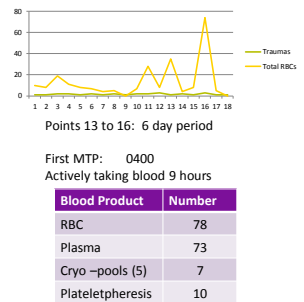
Point 16: Occurred on Sunday
 Second MTP: 0609

- Sent out first round of 6:6:1
 - Sample received: Group A
 - Switched RBCs for Group A
 - Only used 2 RBCs

Third MTP: 0719

- Group O
- Sent out 4 Rounds of 6:6

Blood Product	Number
RBC	16
Plasma	13
Plateletpheresis	1



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Inventory Management Response

- Red Cell Inventory Increases (±500)
 - O neg: 40
 - O pos: 60
 - A pos: 15
- Plasma Inventory Increases (±300)
 - A: 60
 - Liquid Plasma

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Trauma Management Before Arrival

- Helicopters (3 bases)
 - 2 Group O negative red cell units
- EMS (2)



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Trauma Arrival to ADULT ED

ED Emerge Fridges

- Adults
 - 8 Group O pos RBCs
 - 6 Group O neg RBCs
 - 4 Group A plasma



Safety of the use of Thawed group A plasma in Trauma- The STAT Study, Nancy M. Dunbar, Mark H. Yazer

- Adding Group O Whole Blood (low titer)

Fresh whole blood use by forward surgical teams in Afghanistan is associated with improved survival compared to component therapy without platelets. Transfusion 2013

Low Titer Group O Whole Blood in Emergency Situations, Shock 2014

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Trauma Arrival to PEDS ED

Pediatrics ED Fridge

- 2 Group O neg RBCs
- 1 Group AB plasma



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Trauma Arrival to Operating Room

Connected to Power Supply

Rees probes

RFID tagged

Stocked with:

4 Group O RBCs:

4 Liquid A Plasma

Add 1 platelet pheresis at issue.

Paper work ready

Units labeled with:

Uncrossmatched Blood Stickers



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Inventory Management – Demand Exceeds Supply

- Pull units already allocated to patients
- Medical Director/Path Resident – Triage
- STAT blood orders – order early

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Inventory Management

- Maintain inventory levels for traumas due to distance from blood supplier
 - Inventory Based on Distance from Supplier
- Group A plasma
 - Decrease the need for AB Plasma
 - Liquid Group A plasma
- Other Blood Suppliers
 - Blood Buy
- O neg frozen inventory

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Stay Calm and Blood Bank On!

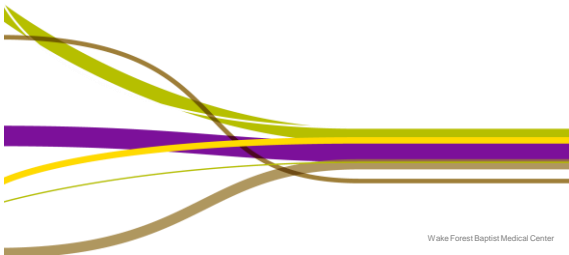
- Plan for the worst case scenario.
- Have protocols in place so that staff can function quickly and safely.
- Listen to staff concerns.



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The End



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