



Number:	COTS-DIS-1
Title:	BLOOD CONSERVATION
Approved by:	COTS Central Coalition Operations Advisory Board
Initial Approval Date:	2021
Revision Dates:	
Next Review Date:	2024



Blood Shortage Conservation – 06.23.2021

Purpose: During times of blood shortage when allocation of blood products to hospitals is lower than anticipated, conservation efforts may be implemented by the blood vendors and hospitals to be able to meet the needs of patients.

Hospital blood bank leadership, surgeons, Coalition Clinical Advisors, and the Zone 2 lead, American Red Cross, Versiti and Community Blood Centers and COTS have collaborated to create the following Conservation Guidance that includes triggers to move between the 3 levels.

Hospitals are reporting their blood supply inventory of O type blood and platelets daily on the COHDIMS site.

Page the HIL by calling:

855.266.7243 and enter ID 2687441 then enter your contact number:

OR

Email: 26874451@onpage.com

Blood Conservation Levels

Level 1 Conservation- Mid Shortage: Hospital inventory is 20% lower than anticipated

Trigger:

- ❖ Consider Regional/Zone Level 1 with notification by blood vendors that the shortage is expected to be long term.
- Futility policy- in place
- **RBC's/Platelets**
- Ensure restrictive transfusion triggers are followed for RBCs (Hgb 7mg/dl) and platelet transfusions (Platelet count $\leq 10 \times 10^3$ for hypoproliferative thrombocytopenia, 50×10^3 for major surgeries, and 100×10^3 for neurological surgeries), Plasma (INR >2).
- Group O products are the most critical RBC product. Ensure type-specific blood is issued whenever possible for trauma and massive transfusions.
- Communicate with emergency department and operating room staff that type and screens must be sent as quickly as possible for patient without a current type and screen.
- Notify surgical staff and medical leadership that Group O blood might not be available for "emergency release" for elective cases without a current type and screen. Encourage type and screen prior to surgery.
- Notify adult and pediatric oncology leadership that outpatient platelet and RBC transfusions be limited to one unit whenever possible.
- Do not screen Rh negative inventory (especially O negative) for CE negative units.
- Transfuse one unit at a time and re-check lab parameters between transfusions whenever feasible.
- Limit ability for medical staff to order more than one product at a time except for instances of active bleeding.
- Increase flexibility when placing product orders from your blood provider.

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- Accept PAS platelets, Pathogen Reduced (PR) platelets, and large Volume Delayed Sampling (LVDS) platelets interchangeably.
- Remove restriction on issue of ABO/Rh matched platelets for most patients. Particularly for PAS and PR platelets in which ABO isohemagglutinins are significantly reduced.
- Rhlg (Rhogam or Rhophylac) may be administered to non-immunocompromised Rh-negative patients of childbearing potential who receive Rh positive platelet transfusions.
- Reserve ABO compatible platelet transfusions for stem cell transplant recipients and pediatric patients with small blood volume.

Plasma/Cryoprecipitate:

- Reduce plasma use by maximizing the use of albumin as a replacement fluid for therapeutic apheresis procedures except where contraindicated.
- Evaluate a more permissive policy for Prothrombin Complex Concentrates (e.g. Kcentra).
- Consider using tranexamic acid when appropriate.
- Implement off-label use of fibrinogen concentrate (RiaSTAP or other FDA approved similar products) to reduce the use of cryoprecipitate.
- Special considerations may be needed for the pediatric population.

Level 2 Conservation- Moderate Shortage: Hospital Inventory is 40% lower than anticipated

Triggers:

- ❖ Consider Regional/Zone Level 2 if at least 1 trauma center or multiple tertiary hospitals are at **Yellow**.
- ❖ Consider Regional/Zone Level 2 if the above lasts at least 12 hours and supplier is not able to replenish inventory.
- Futility policy is in place.
- Issue blood to the floor only when a transfusion is imminent.
- Implement a prospective review of all blood product ordering before release from the blood bank.
- Specifically, verify that transfusion is expected within the next 8 hours. Cancel orders when the clinical need has changed.

Red Blood Cells:

- Provide antigen negative RBC only to patients who have formed an antibody.
- Postpone prophylactic red cell exchanges unless the hemoglobin S level is close to 30% (to prevent stroke) or 40-50% (to prevent other complications).
- Limit use of CEK negative units to sickle cell patients who are alloimmunized to at least one clinically significant alloantibody or modify current sickle cell protocol.
- Reschedule sickle cell patients based on (actual or anticipated) pre-procedure HbS (<30% for stroke and < 40% for non-stroke).

Alternatively consider:

- Modified exchange procedures in lieu of full exchange procedures or a simple transfusion in lieu of an exchange transfusion.
- Consider use CEK negative prophylactically only for females of childbearing potential.
- Reevaluate CMV negative guidelines to provide CMV safe for most transfusions.

Platelets:

- Remove restrictions on ABO incompatible platelet transfusions for stem cell transplant recipients and pediatric patients with small blood volume. Consider volume reduction, if necessary.

Plasma:

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- Restrict use of Group AB plasma to patients of this blood type; follow hospital procedures/policies in transfusing Group A plasma as an alternative when patient blood type is undetermined.
- Use Group A plasma for emergent transfusions and massive transfusions.
Cryoprecipitate:
- Reduce pool size (from 10 to 8 if hospital is pooling and issue one unit instead of two of pre-pooled cryoprecipitate)
- Evaluate a more permissive policy for Prothrombin Complex Concentrates (e.g. Kcentra).
- Consider using tranexamic acid when appropriate.
- Implement off-label use of fibrinogen concentrate (RiaSTAP or other FDA approved similar products) to reduce the use of cryoprecipitate.
- Special considerations may be needed for the pediatric population.

Level 3 Conservation: Severe Shortage: Hospital Inventory is 60% lower than anticipated

Triggers:

- ❖ Consider Regional/Zone Level 2 if at least 1 trauma center or multiple tertiary hospitals are at **Red**.
- ❖ Consider Regional/Zone Level 2 if the above lasts at least 12 hours and supplier is not able to replenish inventory.
- Futility policy is in place.

RBCs/Platelets

- Continue Level 1 and Level 2 conservation procedures.
- When possible, split platelet units into smaller doses.
- Avoid prophylactic transfusion of thrombocytopenic patients not actively bleeding.
- Consider using platelet counts of 5×10^3 as the trigger for prophylactic platelet transfusions rather than 10×10^3 .
- Avoid prophylactic transfusion of red cells unless the patient is clinically unstable.

Plasma/Cryoprecipitate:

- Evaluate a more permissive policy for Prothrombin Complex Concentrates (e.g. Kcentra).
- Consider using tranexamic acid when appropriate.
- Implement off-label use of fibrinogen concentrate (RiaSTAP or other FDA approved similar products) to reduce the use of cryoprecipitate.
- Special considerations may be needed for the pediatric population.

Notifications

- If a Trauma Center moves to yellow or red after the 10am reporting, the blood bank will page the HIL;
- HIL will reach out to the TC if they are yellow or red at the 10AM report to determine the timeframe for blood shipment and the need to convene the Blood Conservation Alert Call.
- If multiple tertiary hospitals have moved to yellow or red;
- Tertiary hospitals that downgrade to yellow or red after the 10 am report should page the HIL. The HIL will track the number of hospitals at this level;
- COTS will monitor the daily blood inventory reports and share report with Zone Leadership;
- The HIL will convene a conference call with Dr. Thomas, Dr. Bachmann and Dr. McElroy to discuss moving to Level 2 or Level 3 in the conservation plan. Consider adding the affected Trauma Center to the call.
- If the decision to move to a higher level, the HIL will send a TENS alert to all hospital blood banks and trauma group in the Zone, that the Zone should move to the higher level of conservation.

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- Ways to Page the HIL:
Page the HIL by calling:
 - 855.266.7243 and enter ID 2687441 then enter your contact number:
OR
 - Email: 26874451@onpage.com
 - Using the email method allows you to add in the specific information on why the hospital is paging the HIL.
- Info to share to the HIL:
 - Current inventory level;
 - Ability to share within your health system;
 - Expected recovery time;
 - History of the event causing higher use of blood, if applicable
- Hospitals should internally make notifications of conservation level changes.

Information Sharing / Situational Awareness by COTS

Set up a TENS alerts

Send alert to the following groups:

- Blood Bank
- Trauma Group

Scripting for this event TENS:

This is a real-world blood shortage message from COTS. This is not a drill. Due to an impact on the current blood supply, Zone 2 hospitals are asked to move to Level 2 procedures (could be Level 3) for the conservation of blood products until further notice.