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Preparing for a Blood Shortage

6th Transfusion Committee Forum
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Outline

- Rationale for Blood Shortage Contingency Plan
- Resources
- Definitions
- Essential elements of a plan



Rationale for the Plan

- Rationale
 - To provide direction in the event of a major blood shortage – transfusion medicine and beyond
 - To provide best possible care to our patients during a major blood shortage
 - To maximize effectiveness of response to a major blood shortage

Shortage Happens



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Shortage Happens...



Shortage Exercises Happen

- Ontario Exercises
 - March 2010
 - February 2014
- National Exercises
 - November 2013 (Emergency Framework)



CSA Z902-04 National Standards on Blood & Blood Components

- **4.2.1.5** Each facility shall have an emergency plan that provides specific procedures to be followed in response to incidents that could endanger the safety, quality, efficacy or level of supply of blood or blood components, or the safety of donors or recipients

Ontario Laboratory Accreditation (OLA) Requirements: ver. 6 Dec 2013

- **I.C.12** Laboratory management shall be responsible for emergency and disaster planning.
- **Guidance: TM188** *The emergency and disaster plans shall address the safety, quality, efficacy and level of supply of blood components / products during an emergency or disaster and shall include a process for the management of blood shortages.*

Resources

- *National Plan for Management of Shortages of Labile Blood Products (2012)*
 - *Emergency Framework for rationing of blood for massively bleeding patients during a red phase of a blood shortage*
- *Ontario Contingency Plan for the Management of Blood Shortages (2012)*

Definitions: **Product**

- Blood shortage occurs when the supplier (Canadian Blood Services) is unable to provide a blood product to hospitals at a desired level
- Shortage may affect
 - one group of blood products (ex. O Rh Neg RBC)
 - multiple groups of the same type (all red blood cells)
 - multiple types of products (red blood cells and platelets)

Scale: Regional vs. provincial vs. national shortage



Anticipated Duration of shortage

- Short-term Regional Shortage:
 - Event affecting a single regional blood centre
- Short-term Provincial/National Shortage:
 - Event affecting more than one regional blood centre or a large regional centre
- Long-term National Shortage:
 - Event affecting multiple regional blood centres



Phases of a Blood Shortage



Inventory levels are insufficient to ensure that patients with non-elective indications for transfusion will receive the required transfusion

Inventory is insufficient to continue with routine transfusion practices

Inventory level ranges from optimal to minor short-term shortage

Blood Shortage Contingency Plan: Essential Elements

- Definition of phases and list of phase-specific activities
- Communication plan
- Transfusion guidelines
- Plan for the hospital vs. Plan for Transfusion Medicine (TM)
- EBMC
- Triage committee



Phases of a Blood Shortage Plan

Phase	Inventory Level	Hospital Action
Green	Normal	<ul style="list-style-type: none"> • Practice good blood management, develop plan
Amber	Reduction of inventory by up to 50%	<ul style="list-style-type: none"> • Reduce inventory held by 50% • Initiate internal communication • Convene Emergency blood management committee (EBMC) • Screen blood requests • Consider deferring elective ORs/procedures
Red	Shortage is severe and anticipated to be prolonged	<ul style="list-style-type: none"> • Reduce inventory to critical levels • Initiate heightened internal communication • EBMC activates triage committee • Screen requests and issue only for life threatening bleeding, defer all non-urgent ORs/procedures/transfusions
Recovery	Supplier inventory improves	<ul style="list-style-type: none"> • Ensure return to normal operations occurs at a gradual and controlled pace

Green Phase Activities

- Tasks for the Transfusion Committee
 - Develop and implement transfusion guidelines
 - Develop and implement Maximum Surgical Blood Ordering Schedule (MSBOS)
 - Develop criteria for delay of elective surgery/procedures/transfusions
 - Develop and implement patient blood management protocols
 - Monitor and review blood product utilization

Green Phase Activities

- Tasks for Transfusion Committee
 - Develop and implement Blood Shortage Contingency Plan
 - Stand alone or part of the general contingency plan (Code Orange)
 - Establish Emergency Blood Management Committee and Triage Committee
 - Membership
 - Terms of reference

Green Phase Activities

- Tasks for Transfusion Medicine Service
 - Develop process for redistribution of products between hospitals
 - Establish inventory levels for each labile product for each phase of the shortage
 - Take into account average daily use plus emergency buffer

Green Phase Activities

- Tasks for Transfusion Medicine Service
 - Develop a process for prospective review of all orders for a scarce blood product and its documentation during shortage
 - For severe shortages, develop policies and procedures to allow for use of expired products, split products, eliminating out-of-lab storage of blood products, tracking scarce product post issue, etc.

Emergency Blood Management Committee (EBMC)

- Multidisciplinary committee that
 - **Recommends or makes decisions** related to hospital operations during the shortage
 - Decide a priori: Is this an **executive or advisory** committee?
 - Assists with communication internally and externally
- Membership should include representatives from Anaesthesia, Surgery, Hematology, Transfusion Medicine, nursing, management
- To be activated during Amber Phase: TM Medical Director contacts the Chair.

EBMC decisions: Example

- We recommend to delay all elective on pump surgeries until resolution of the platelet shortage. Urgent cases will be allowed to proceed until further notice.

Triage Committee

- Multidisciplinary committee tasked with rationing of a scarce blood product
- Usually activated by EBMC during the Red Phase
- Membership should include representatives from Anaesthesia, Hematology, Nursing, Ethics
- During green phase,
 - Develops **triage criteria** (ethical, defensible and fair)
 - Develops process for re-evaluation and appeal of cases
 - Develops “stopping rules” for resuscitation of a massive hemorrhage

Triage Committee

- During shortage,
 - Reviews blood product requests on a case by case basis vs. established criteria, makes a decision to provide/withhold the scarce resource and documents its decisions and rationale
 - Assists with conveying the decision to the patient or family
 - Re-evaluates request in case of appeal

Triage Committee Decisions: Example

- We have two adult doses of platelets. No more doses are expected for another 24 hrs.
- We have received 4 requests:
 - 35 yo female with PPH, PLT 25
 - 73 yo male bleeding post CABG plus AVR, PLT 100
 - 21 yo male massively bleeding due to GSW to abdomen, PLT 75
 - 45 yo female with AML, PLT 9, not bleeding

Amber Phase

- Inventory of affected product is down to 50%
- TM starts screening all requests for a scarce product against hospital transfusion guidelines with aim to reduce its utilization and to defer requests outside of the guidelines
- EBMC convenes and considers delaying elective transfusions and surgeries and altering transfusion guidelines to restrict the use of a scarce product
- TM works with nearby hospitals to enable transfer of a scarce blood product between sites to avoid expiring product and to support the sickest patients

Red Phase

- Inventory of affected product down to 25%
- TM reviews all requests for a scarce product and defer all non-urgent or prophylactic transfusions
 - During severe shortage with insufficient products to meet needs of the bleeding patients, TM to refer all requests to the triage committee for guidance
- EBMC convenes and delays all but urgent transfusions and surgeries, further alters transfusion guidelines, and considers measures like allowing use of outdated products, splitting the products, or enacting “stopping rules”, etc.
- EBMC activates the triage committee to assist with rationing of the affected product

Blood Shortage Contingency Plan: Communication & Guidelines

- Communication plan
 - Identify key individuals, prepare phase-specific instructions, establish communication means (build in contingency)
- Transfusion guidelines
 - Appropriate indications and doses
 - Develop, implement and audit compliance
 - As shortage worsens, progressively restrict transfusions (lower transfusion triggers)

Finally, friendly advice...

- Developing the Plan is only half of the battle; do not forget to implement and disseminate the Plan
 - Are key individuals aware of the plan, its contents and are they clear on their responsibilities as outlined by the Plan?
 - Consider providing training and regular competency assessments
 - Create job aids
- Appoint members of EBMC and triage committee
 - Develop and maintain contact list for members and designates
- Prepare templates for memos beforehand

Good Luck!

