



## Guideline: Use of O+ Blood in Trauma Resuscitations

**Effective Date: 10/21/2024**

**Retires Policy Dated: N/A**

**Original Effective Date: 10/21/2024**

**Updated Date: N/A**

### Background

Implement the use of O+ blood as the primary blood product for initial trauma resuscitation in both male patients and non-reproductive female patients (defined as females aged 50 years and older, as well as females who have undergone surgical sterilization or hysterectomy) until type-specific blood is available. This protocol aims to reduce delays in resuscitation and optimize survival outcomes by providing a safe and effective blood transfusion option for trauma patients in urgent need.

### Scope

This policy applies to all adult trauma patients, including male patients and non-reproductive female patients aged 50 years or older, as well as those who are surgically sterile (e.g., post-hysterectomy or tubal ligation). The use of O+ blood will be prioritized for initial resuscitation.

### Purpose

To ensure timely blood product administration during trauma resuscitations and minimize delays while awaiting type-specific blood. O+ blood is the safest and most universally compatible option for initial transfusion, given its availability and low risk of hemolytic reactions in patients without known blood type (Bennett et al., 2018; American Red Cross, 2020).

### Indications for Use of O+ Blood

- **Male patients:** Male trauma patients who are untyped and require urgent resuscitation will receive O+ blood as the initial blood product.
- **Non-reproductive female patients:** Female trauma patients who are aged 50 years or older, or those who are surgically sterile (post-hysterectomy or tubal ligation), will receive O+ blood as the initial resuscitation product. This population is considered to have a reduced risk of hemolytic transfusion reactions when receiving O+ blood compared to pre-menopausal females who may have naturally occurring anti-D antibodies (Roback et al., 2021).

## Rationale for the Use of O+ Blood

O+ blood is chosen because it is both readily available and a safe option for most trauma patients. O+ blood contains the Rh antigen, making it suitable for use in male patients and non-reproductive female patients. According to current guidelines, O+ blood can be used in cases where type-specific blood is unavailable, and there is no immediate risk of sensitizing female patients who are not of reproductive age (Hess et al., 2018).

### Exclusion Criteria

- **Reproductive female patients:** O+ blood is not recommended for use in reproductive-aged female patients due to the potential for Rh incompatibility and sensitization, which can affect future pregnancies (Bennett et al., 2018). Type-specific blood or Rh-negative blood will be prioritized for such patients when available.
- **Patients with known blood types:** For patients whose blood type is known and available, the use of type-specific blood products should be prioritized to reduce the risk of transfusion reactions.

### Implementation in Trauma Settings

- **Initial Resuscitation:** In trauma situations requiring immediate blood transfusion, O+ blood will be administered as the first-line resuscitation product while awaiting type-specific blood. This ensures that trauma resuscitation is not delayed.
- **Blood Type Identification:** Blood typing will be performed as soon as possible following the administration of O+ blood, and once type-specific blood becomes available, it will replace O+ blood.
- **Monitoring and Documentation:** All transfusions will be documented in the patient's medical record, including the number of units transfused, the response to transfusion, and any adverse events.

### Safety and Monitoring

- **Crossmatching:** For patients who require O+ blood as part of the initial resuscitation, crossmatching should be done as soon as clinically possible. The goal is to transition to type-specific blood as soon as possible after the initial transfusion (Hess et al., 2018).
- **Adverse Reaction Monitoring:** The clinical staff must monitor patients for any signs of adverse reactions to the blood product, including fever, chills, hemolysis, or allergic reactions. In the event of a suspected transfusion reaction, the transfusion should be stopped immediately, and the appropriate actions should be taken (American Red Cross, 2020).

**Blood Bank Responsibilities**

- **Availability:** The blood bank will maintain an adequate stock of O+ blood units for emergency use and ensure O+ blood is prioritized for trauma resuscitation when required.
- **Rapid Response:** Blood bank personnel must ensure rapid processing of blood type identification for trauma patients and notify the clinical team as soon as type-specific blood is available.

**Training and Education**

- All relevant clinical personnel will receive training regarding the use of O+ blood in trauma resuscitations, the rationale behind this protocol, and the procedures for blood type identification and crossmatching.
- Ongoing education will be provided to update staff on any changes to transfusion protocols and best practices.

**Review and Quality Assurance**

- This policy will be reviewed annually by the Trauma Committee at St. Mary Medical Center to ensure its continued relevance and efficacy in trauma care.
- Any incidents of transfusion reactions, delays in blood type identification, or other complications related to blood transfusions will be reviewed as part of the quality assurance process.

**Version Control Record**

Version	Date	Author/Reviewer	Description of Changes
1	10/21/2024	Paul Wisniewski, D.O.	Initial review and update to reflect latest evidence/practice

**References**

1. Bennett, J. M., et al. (2018). *The Transfusion Medicine Manual: Current Approaches and Controversies in Trauma Care*. New York: Springer.
2. Roback, J. D., et al. (2021). *AABB Technical Manual* (20th ed.). Bethesda, MD: AABB.
3. American Red Cross. (2020). *Emergency Transfusion Protocols: A Guide for Practitioners*. Red Cross Blood Services.
4. Hess, J. R., et al. (2018). "Transfusion in Trauma: The Role of O+ Blood." *Journal of Trauma and Acute Care Surgery*, 85(3), 517-523.
5. Nascimento, B., et al. (2016). "Use of O-negative blood in trauma resuscitation: A critical review." *Transfusion Medicine*, 26(5), 312-3

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### Important Notes:

- The guidelines are for informational purposes only and are not intended to replace professional medical judgment. They should be used as a reference and adapted to the specific needs of individual patients.
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