

**NEW YORK STATE DEPARTMENT OF HEALTH  
COUNCIL ON HUMAN BLOOD AND TRANSFUSION SERVICES**

**Guidelines for Physician Options for Blood Conservation**

**Encourage Blood Donation**

- ◆ Request that patients recruit family or friends as donors to replenish the community blood supply.
- ◆ Consider pre-operative autologous blood donation<sup>1</sup> when surgery has the potential for significant blood loss.

**Pre- and Intraoperative Strategies**

- ◆ Consider using recombinant erythropoietin (EPO) along with iron therapy<sup>1,2</sup> if blood loss of 2-5 units is anticipated. Allow a 2-4 week hiatus between scheduling and performing elective surgery.
- ◆ Discontinue anticoagulants and aspirin prior to surgery whenever possible to reduce blood loss.
- ◆ Consider using intraoperative blood recovery<sup>3,4</sup> or acute normovolemic hemodilution<sup>1,5</sup> when blood loss is expected to exceed 20% of blood volume.
- ◆ During surgery, use oximetry to monitor oxygenation to determine the need for blood when appropriate.<sup>1</sup>
- ◆ Enhance hemostasis systemically with pharmacologic agents, such as vitamin K, tranexamic acid, epsilon-aminocaproic acid, desmopressin, and aprotinin, when appropriate.<sup>6</sup>
- ◆ During surgery, enhance local hemostasis with topical agents such as “fibrin glue”, topical thrombin, collagen hemostat, oxidized cellulose, gelatin foam/sponges, and tissue adhesives.
- ◆ During surgery, and in bleeding patients and patients with risk factors for bleeding, when possible, avoid systemic administration of substances which may cause coagulopathy, as for example hydroxyethyl starch solutions.<sup>7</sup>

**General Measures**

- ◆ Transfuse only when medically indicated after careful consideration.<sup>8</sup> Supervise orders by housestaff closely.<sup>1</sup> Consider a red cell transfusion trigger of 7.0 g/dL in asymptomatic non-acute patients.<sup>9</sup>
- ◆ Consider lowering the dose transfused. For stable patients, evaluate the patient's response following the transfusion of each unit.
- ◆ Restrict diagnostic phlebotomy to the minimum necessary, in order to reduce iatrogenic blood loss.<sup>10,11</sup>

- ◆ At times of blood shortage, Surgery and Anesthesiology should work together with the Transfusion Service to assure availability of blood for pending surgical cases anticipated to be at risk for large blood loss.

## References

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