1. **Principle**

Patients undergoing elective surgery should be informed of alternatives to allogeneic blood transfusion. Preoperative autologous blood donation is one such program. The blood supplier and some hospitals provide access to these programs for patients. See Procedural Notes 8.1 for Hospital Program information. Canadian Blood Services (CBS) offers a program whereby patients about to undergo elective surgery may, at the request of their physician, pre-deposit their own blood for use during the surgery. Patients should donate a unit of blood at weekly intervals for a maximum of four units with the last unit collected at least 72 hours prior to surgery. All the autologous blood donations will be fully tested by the routine Canadian Blood Services procedures.9.1

1. **Scope and Related Policies**
   1. Autologous Packages: The blood supplier will send an “autologous package” consisting of a Request Form, a Patient Information Sheet, and Physician information sheet to each hospital transfusion medicine. Physicians requesting the autologous transfusion program for their patients may then obtain the necessary documentation either from the hospital transfusion medicine or from the Autologous Office of the blood supplier.
   2. The hospital will have a procedure to ensure that all autologous units are used prior to issuing allogeneic units.9.2
2. **Specimens – N/A**
3. **Materials**

**Supplies:** CBS Form F020721

Blood/Component and Plasma Protein Product

Discard/Final Disposition Record (IM.005F)

Blood Product Issuer Transfusion Record (IM.004F2)

1. **Quality Control – N/A**
2. **Procedure:** **Canadian Blood Service (CBS) Program**

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| 1. Receiving Autologous donated blood products | 1. The whole blood unit will be labeled with the usual CBS blood group number. In addition, a green autologous tag will be attached. |
| 1. This tag will have the following information on it:  * Patient name * birth date * name of surgeon * hospital * date of surgery * number of units collected * blood group number * patient identifying number (such as Social Insurance Number, Driver’s License, Ontario Health Card number) * patient’s signature * “For Autologous Use Only” |
| 1. No confirmed HIV, HCV, HTLV1 antibody positive or HBsAg positive units will be issued from the manufacturer unless written consent is obtained from the receiving hospital to accept these units. |
| 1. Any units that test repeat reactive or positive for syphilis will be labeled with a biohazard label. |
| 1. Storage | 1. The Autologous LR red cell unit(s) will be stored at 1-6°C. The units will be sent to the Hospital for storage as soon as they are tested. The section of the request form bearing all the patient information will accompany the first unit. The hospital should store the autologous units segregated from their standard inventory. |
| 1. Autologous plasma will be available only on special request prior to surgery. |
| 1. Autologous whole blood will not be available. |
| 1. Admission | 1. When a patient is admitted, they will bring one section from each of the autologous blood tags (one for each unit donated) which can be matched up with those in the transfusion medicine refrigerator. A blood sample from the patient and a segment from the autologous units should be tested for ABO and Rh type. It is not a requirement that the units be crossmatched. |
| 1. Additional Transfusion Requirements | 1. Unless the patient has stated otherwise on their Hospital Consent Form any additional blood requirements, for that patient, should be met with allogeneic units from the routine blood inventory |
| 1. Unused Autologous Units | 1. Keep autologous units not used during surgery. Do not return them to the CBS Center. When outdated, the autologous units will be disposed of by the hospital and CBS will be provided written confirmation of the final disposition |

1. **Reporting**
   1. The Canadian Blood Services will require the following information on each patient:

* The number and type of autologous units received
* The number and type of autologous units transfused
* Any additional homologous blood products used
* The number of units not used by the patient.
  1. An Autologous Reporting Form will accompany the 1st autologous unit to the hospital.

1. **Procedural Notes**
   1. **Hospital Autologous Transfusion: Program Information**
      1. The Autologous Program is a completely voluntary program.
      2. The patient/donor blood will be tested for Hemoglobin, ABO and Rh type and for viral markers by CBS which include; HIV, Hepatitis B, Hepatitis C, HTLV, and Syphilis.
      3. If accepted into the program the patient/donor blood will be required to sign a Consent Form indicating:

* That they have been informed of the advantages and potential risks of autologous transfusion.
* That they agree to accept other donor’s blood if necessary.
* That testing has been explained and not referred without consent.
  + 1. Iron therapy may be prescribed, to be taken during the period that the units are donated. The requesting physician should prescribe iron when entering the patient into the program. Recommended dose: ferrous sulphate 300mg, taken two to three times daily for up to eight weeks postoperatively as guided by the physician monitoring the hemoglobin.
    2. Donations will be made by appointment only and the patient/donor will be advised of the specific location where their blood will be collected.
    3. The blood will be collected and tested in the same manner as regular CBS donors and then sent to the Hospital’s Transfusion Medicine Laboratory for storage until use during surgery or if not used until the unit is outdated and then discarded.
    4. The autologous “green card” must be given to the Admission’s clerk when the patient/donor is admitted to hospital.
    5. A sample of blood for verification of the autologous unit will be drawn from the patient/donor before surgery to verify that the blood stored in Transfusion Medicine is compatible.
  1. **Physician Involvement:**
     1. Patients must meet certain general donor criteria for repeated phlebotomy to be safe. Any questions about the patient’s suitability should be discussed with the Information Nurse at CBS. If the patient is ineligible this fact should be explained to them in the physician’s office.
* Age between 17 and 71 years (exceptions can be considered after discussion with the Medical Director of the Blood Centre)
* Minimum weight 110lbs (exceptions can be considered after discussion with the Medical Director of the Blood Center)
* Good general health
* Hematocrit at or above 33% first donation and 32% at subsequent donation.
* Must have a minimum hemoglobin of 110g/L for the first donation and 105g/L on subsequent donations
* No history of severe cardiac disease
* Blood pressure
  + systolic maximum 180, minimum 90
  + diastolic maximum 100, minimum 50

**Note:** Effects of any anti-hypertensive drugs on the patient’s ability to compensate for the loss of 450 mL of blood must be evaluated carefully.

* + 1. No history of epilepsy or adult convulsions.
  1. **Patient Involvement**
     1. Patients can donate up to 4 units, one per week, with the last unit being donated not less than 7 days prior to surgery; under special circumstances an absolute minimum of 72 hours prior to surgery is possible.
     2. The patient will take an iron supplement, as prescribed by their physician, during this time.
     3. After each donation, the patient signs a green tag that fully identifies the patient and the blood. The whole blood is labeled with this tag and a section of the tag is given to the patient who must bring the tags to the hospital when they come in to have their pre-op blood work done or upon admission.
  2. **TML Involvement**
     1. The units are placed in the designated area in the TML refrigerator (segregated from allogeneic inventory).
     2. With the first unit of autologous donated blood, the CBS sends a blue “Autologous Utilization Report” (F020079) form and a white “Donation Record” form. File these forms until all autologous units are given and/or expired and then archive.
* The TML advises that the pre-admission CBC should be drawn AT LEAST 24 HOURS AFTER the last unit of autologous blood has been donated for proper validity of the hemoglobin results.
* Patients arriving in the Admitting Department will give all of their green tags to the Admitting clerk (if not previously given in pre-admission) these should be sent to TML
  1. When a patient sample arrives in the TML with a request for transfusion, use the following protocol:
     1. Perform a routine group, Rh and antibody screen.
     2. Or, perform an Immediate Spin Crossmatch on each autologous unit.
     3. Record all donor unit numbers on the patient’s transfusion record and identify them as autologous LR red blood cells, and/or enter them into the computer.
     4. Record donor numbers on the TML requisition/record indicating that units are autologous.
     5. If non-autologous units of blood have also been requested, they are crossmatched following crossmatch procedures.
     6. The patient's green cards must be sent to the TML, prior to the issue of autologous units, for comparison with the signature on the green tags to confirm patient/donor identity. If the green cards are not available a copy of the patient's signature on the hospital consent form may be used.
     7. The Autologous Utilization Report (F020079) form is placed with the patient’s record, which is then stored in the appropriate place as defined by the TML.
     8. Once testing has been performed, the patient’s blood is stored in the TML refrigerator separated from the allogeneic inventory.
     9. Autologous units are issued by the standard process.
     10. Units are documented on the Blood Product Issue-Transfusion Record (IM.004F2) or computer record.
     11. Following surgery one of the following scenarios will be realized:
         1. All autologous units were transfused on or after the date of surgery.
* File the white “Donation Record” form in the patient’s file
* Complete the final disposition on the Blood Product Issue-Transfusion Record
* Complete the blue “Autologous Utilization Report (F020079)” form and send to the CBS, attention autologous program.
  + - 1. There are unused autologous units still available.
* After the blood outdates, record the unit number(s) and donor name on the Discard record (IM.005F) or computer record
* Discard the unused units in the pathological waste bag
* Complete the blue “Autologous Utilization Report (F020079)” form and send to the CBS, attention “autologous program”
* File the white “Donation Record” form in the patient’s file.

1. **References**
   1. Clinical Guide to Transfusion (On-line edition at www.transfusionmedicine.ca) **Chapter 16** (Updated June 2013)
   2. CAN/CSA Z902-10 A National Standard of Canada Blood and Blood Components. Standards Council of Canada; 2010: 12.1-12.4
2. **Revision History**

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| **Revision Date** | **Summary of Revision** |
| August 10, 2015 | * Revised name of manual * Revised sections 1.0 and 8.0 * Added section 2.2 * Revised and renumbered sections 6.0 & 7.0 * Updated list of references to include most recent versions |