



ADULT AND PEDIATRIC BLOOD AND MARROW TRANSPLANT PROGRAM

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Optia Blood Prime Procedure

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APBMT-COLL-001 OPTIA BLOOD PRIME PROCEDURE

1 PURPOSE

- 1.1 To describe how the Adult and Pediatric Blood and Marrow Transplant (APBMT) apheresis nurse performs a custom blood prime during a peripheral blood progenitor cell collection, when the cell separator's extracorporeal blood volume (ECV) exceeds 15 percent of the donor/patient's total blood volume (TBV).

2 INTRODUCTION

- 2.1 The collection of peripheral blood progenitor cells requires the collection of blood through the Spectra Optia cell separator (Optia). A custom blood prime is necessary for those patients when their ECV is large and not well tolerated before connecting the patient to the machine. A custom blood prime is a method for displacing the prime saline in the disposable tubing set with donor red blood cells (RBCs).

3 SCOPE AND RESPONSIBILITIES

- 3.1 When indicated, the APBMT apheresis nurse performs the custom blood prime before the apheresis lines are connected to the patient/donor.
- 3.2 The APBMT apheresis nurse, apheresis nurse coordinator, Adult Blood and Marrow Transplant (ABMT) and the Pediatric Blood and Marrow Transplant (PBMT) medical director, and the ABMT and PBMT apheresis physician(s) are responsible for ensuring that the requirements of this procedure are safely and successfully met.

4 DEFINITIONS/ACRONYMS

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|------|-------|---|
| 4.1 | ABMT | Adult Blood and Marrow Transplant |
| 4.2 | APBMT | Adult and Pediatric Blood and Marrow Transplant |
| 4.3 | EMR | Electronic Medical Record |
| 4.4 | ECV | Extracorporeal Blood Volume |
| 4.5 | HCT | Hematocrit |
| 4.6 | Optia | Spectra Optia Cell Separator |
| 4.7 | PBMT | Pediatric Blood and Marrow Transplant |
| 4.8 | PPE | Personal Protection Equipment |
| 4.9 | RBCs | Red Blood Cell |
| 4.10 | TBV | Total blood volume |

5 MATERIALS

- 5.1 Optia IDL apheresis kit and supplies

- 5.2 Unit of irradiated RBCs
- 5.3 Transfer pack with luer lock end
- 5.4 Filtered blood administration set

6 EQUIPMENT

- 6.1 Optia

7 SAFETY

- 7.1 Wear all appropriate personal protective equipment (PPE) when handling any/all potentially hazardous blood and body fluids to include, but not limited to, gloves, lab coat, goggles, face shield, and/or barrier gown.

8 PROCEDURE

- 8.1 The Optia uses the patient's height, weight, and sex to determine the TBV.

Note: The system will not calculate the TBV for weight less than (<) 25 kg. See PBMT-COLL-0016 *Spectra Optia Apheresis System Continuous Mononuclear Cell (CMNC) Collection Procedure*.

- 8.2 Once the patient data is confirmed, the custom blood prime recommendation screen will appear. Read the information carefully and determine if a custom blood prime is appropriate for your patient. To accept the recommendation, touch **Yes**. To decline the recommendation, touch **No**.

Note: If you choose the custom blood prime recommendation, the system does not perform a rinseback to prevent fluid overload.

- 8.3 If you have selected to perform the custom blood prime, you are prompted by the system to "Enter data for the custom prime." Perform the following steps:

- 8.3.1 Choose one of the following fluid types to use for the custom prime by touching the corresponding button on the screen:

- 8.3.1.1 RBC, Plasma, and Albumin

Note: The ABMT and PBMT use RBCs for custom primes.

- 8.3.2 Enter the fluid data by touching the corresponding buttons on the screen:

- 8.3.2.1 RBC unit HCT %

Note: The RBC with Adenine-Saline has HCT of 60%.

- 8.3.3 Enter the Maximum Inlet Flow Rate (mL/min)

- 8.3.3.1 Note: The inlet/return flow rate pressures determine the blood filter's flow rate limit. Typically, the maximum inlet flow rate is 25 mL/min.

- 8.3.4 Enter the Volume of the prime (in mLs)

- 8.3.4.1 Note: Process 300 mL of RBCs for custom blood prime to ensure the set has been adequately primed with RBC. This will allow approximately 95% of the saline in the tubing set to be

removed. If RBC is less than ($<$) 300 mL, follow end custom blood prime located in section 8.4.5.

8.4 Custom Blood Prime

- 8.4.1 Obtain one unit of patient-compatible, Irradiated Packed RBCs, as ordered.
- 8.4.2 Check the unit against the patient's identification with another nurse to ensure unit/patient identity and record in the electronic medical record (EMR).
- 8.4.3 On the Run Sheet, document if the patient is blood primed.
- 8.4.4 Prime filtered blood administration set with unit of irradiated RBCs per Duke University Hospital's Blood Product Administration Policy.
- 8.4.5 Set up and prime the Optia per Standard of Practice.
 - 8.4.5.1 Connect the filtered blood administration set to the inlet line using the Y site.
 - 8.4.5.2 Connect the empty Transfer pack to the return line using the Y site.
 - 8.4.5.3 Unclamp the inlet line.
 - 8.4.5.4 Touch **Start** custom blood prime.

Note: The status of the custom blood prime appears on the screen. Monitor the progress of the prime and avoid allowing air to enter the tubing set. If air enters the tubing set, follow the instructions on air removal in Appendix E- Spectra Optia Apheresis System- Troubleshooting Basics in the Spectra Optia Apheresis System Essentials Training manual.

8.4.6 Ending the Custom Blood Prime

- 8.4.6.1 Touch **End Custom Prime**. A screen appears to confirm your decision.

Note: If you end the custom blood prime before the system has processed the recommended volume, an alarm occurs reminding you that the patient will not receive the full benefit of the custom prime. Notify the ABMT and/or the PBMT apheresis physician.

8.5 Completion of Custom Blood Prime

- 8.5.1 When the custom blood prime is complete, the screen appears instructing you to connect the patient.
- 8.5.2 Clamp the inlet line.
- 8.5.3 Disconnect the blood filtration set from the inlet Y site and dispose in biohazard container.
- 8.5.4 Disconnect the Transfer pack from the return Y site and dispose in biohazard container.

- 8.5.5 Connect the patient using the command prompts located on the screen. See ABMT-COLL-019 *Optia Continuous Mononuclear Cell Collection (CMNC)* or PBMT-COLL-016 *Spectra Optia Apheresis System Continuous Mononuclear Cell (CMNC) Collection Procedure*.

9 RELATED DOCUMENTS/FORMS

9.1 NA

10 REFERENCES

- 10.1 Optia operator's manual
- 10.2 Spectra Optia Apheresis System Essentials Training manual
- 10.3 Duke University Hospital Blood Product Administration Policy
- 10.4 ABMT-COLL-019 Optia Continuous Mononuclear Cell Collection (CMNC)
- 10.5 PBMT-COLL-0016 Spectra Optia Apheresis System Continuous Mononuclear Cell (CMNC) Collection Procedure

11 REVISION HISTORY

Revision No.	Author	Description of Change(s)
01	Mary Beth Christen	New procedure

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