Clinical Process Instruction Manual

Perfusion & Packaging: Heart – Eastern Ontario Process Instruction

Policy:

For cases where Trillium Gift of Life Network (TGLN) provides surgical recovery support, TGLN's Surgical Recovery Coordinator (SRC) or designate will facilitate perfusion and packaging of organs, using aseptic technique and in accordance otherwise with the *Health Canada Safety of Human Cells, Tissues and Organs for Transplantation Regulations*. For recovery procedures performed by the transplant programs, the designate undertakes surgical recovery activities including perfusion and packaging.

The SRC or designate refers to the *Clinical Services Coordinator to Surgical Recovery Coordinator Communication Process Instruction, CPI-9-406* prior to departing for recovery.

Eastern Ontario Process Instruction outlines processes for when the Ottawa Heart Institute performs the Heart Recovery. Alternate transplant programs often recover hearts on behalf of the Ottawa Heart Institute, in these instances the Clinical Process Instruction Manual: *Perfusion & Packaging: Heart Process Instruction, CPI-9-408* should be referenced where appropriate.

Process:

Prior to Departing UOHI

1. The SRC obtains the appropriate documentation required for recovery. Forms include:
    - *Organ Donor Surgery Information*
    - *Heart Retrieval Operative Note.*
    - *Heart Recipient Transplant Operating Room Data* (with attached ABO and Serology).
    - *HLA Lab Requisition Form*
    - *Laboratory Services Requisition: STAT Infectious Disease Testing of Organ Donors* (if required)
    - *Public Health Requisition* from Public Health (if required)
    - Interior Organ Label
    - Exterior Organ Label
    - Specimen Labels
    - Surgical supply list (if needed)

2. The SRC or designate prepares the heart surgical recovery bag See Exhibit 2 for bag checklist. The SRC reviews the contents of the bag to ensure that all required supplies and documents are present:
    - 6 CardioMed Organ Bags
    - 3 Aortic Root stabbers, 12 GA
    - 2 Paediatric aortic root cannulas 18GA

- 3 Tourniquet kits
- 2 Sterile IV tubing
- 3 Pour spouts
- 3 Portal Tubing
- 3 Pour Spouts
- 2 1000ml jars
- Pressure bags
- Sterile chest retractor (if not provided at the recovery facility)
- Sterile sternal saw (if not provided at the recovery facility)
- Red Styrofoam cooler

The SRC ensures that all required blood tubes for donor blood work are included in the briefcase (See Exhibit 1):

- 4 Red stopper tubes for archival, CMV, EBV, and Toxo testing as required
- 4 Large lavender stopper tubes for West Nile and virtual cross match testing as required
- 10 Yellow ACD tubes for virtual cross match testing

3. The SRC confirms that all sealed items have not been tampered with, equipment is sterile, and all supplies are within their expiration dates. The SRC replaces supplies and/or equipment if there is any uncertainty regarding its integrity and places these supplies in a designated area.

4. The SRC obtains a red Styrofoam cooler and fills it with ice and places 5 liters of Servator H in the cooler.

5. The SRC confirms with PRC the departing FBO and the time the team is required to be at the airport (if traveling outside Ottawa region). The SRC also confirms the OR time if the recovery is driving distance. Subsequently, the SRC contacts the recovery physician to confirm the departing time. The SRC will arrange transportation to the airport if required. The exceptional distribution should be discussed and accepted, before departure since the recipient can refuse. In that case, the recovery team needs to know before departure to avoid the cost.

Upon Arrival at Recovery Hospital

6. The SRC notifies the PRC of his/her arrival time.

7. The SRC introduces the recovery team to the OR staff.

8. The SRC records the names of the OR staff (if time permits) and the civic address of the donor hospital with contact information (phone number) on the *Organ Donor Surgery Information.*

9. The SRC reviews the patient's chart with the recovery team and confirms ABO, serology results, death certificate, declarations, consent and Coroner involvement (if required). If required, the SRC discusses positive serology results with the Organ and Tissue Donation Coordinator (OTDC) or Clinical Services Coordinator (CSC). The SRC informs the surgeon if it's an exceptional distribution case.

10. For blood samples, the SRC ensures 8 yellow (ACD) and 2 large lavender stopper (EDTA) tubes for virtual cross-match, and 1 red stopper (Non-additive) tube for archival have been drawn and correctly labelled with TGLN identification number, donor date of birth, as well as date and time of collection. The samples are to be placed into specimen bags containing the appropriate requisitions.

11. For non-Ontario donors, the SRC will ensure that the blood tubes have been drawn for WNV (1 large lavender), EBV (1 red stopper tube) and Toxoplasmosis (1 red stopper tube) and correctly labelled with TGLN identification number, donor date of birth, as well as date and time of collection. The SRC ensures blood samples are placed in specimen bags containing the appropriate requisitions.

12. Upon return at the UOHI, the SRC ensures the virtual cross-match and archival blood samples are securely wrapped in specimen bags containing the appropriate requisitions before sending through the regular blood system tube (using the yellow container). For non-Ontario donors where WNV, EBV and Toxo testing are required, the SRC delivers the blood samples to the microbiology lab at the Ottawa Hospital General Campus. If the SRC is unable to deliver the blood samples, the SRC will arrange for a medical courier to deliver the blood samples to the Ottawa Hospital General Campus microbiology lab.

Surgical Recovery

13. Upon commencement of surgical recovery, the SRC records the "skin cut time" on the *Organ Donor Surgery Information*, and notifies the CSC.

14. After the surgeon has assessed the donor heart, the SRC notifies the CSC and provides an estimated time for aortic cross-clamp and organ suitability.

15. The SRC records the time of heparin administration and the number of units administered on

the *Organ Donor Surgery Information*.

16. If the surgeon is satisfied that the case will proceed, the SRC opens the following sterile supplies for the scrub nurse using aseptic technique:
    - 2 CardioMed Organ Bags
    - 1 1000 ml Jar
    - 1 Aortic Root stabber
    - 1 Tourniquet kits
    - 1 Sterile IV tubing
    - 1 Portal Tubing

17. The SRC asks the OR staff for:
    - 1 Surgical back table
    - 1 Sterile large basin for rinsing the heart
    - 1 1L Saline solution

18. The SRC scrubs in and prepares the back table with the assistance of the circulating nurse. The SRC places a 1000ml jar and 2 CardioMed organ bags on the back table.

19. When cross-clamp is imminent, the SRC hangs 3 liters of Servator H on IV pole near the head of the OR table. The surgeon will pass the sterile IV drip chamber end from the sterile field to the SRC who will then connect in to the Servator H bags. The IV control clamp will remain in the sterile field. The SRC arranges transportation to avoid delay.

20. The SRC uses the pressure cuffs to cover the bag of Servator H. The SRC adjusts the pressure at 300mmHg based on the surgeon's recommendation. The SRC ensures the line is cleared of all air and bubbles.

21. At cross-clamp, the SRC records the time and begins to perfuse the Servator H maintaining the pressure cuff at 300 mmHg. The SRC notifies the surgical team when flush is done.

22. The SRC notifies the CSC and provides cross-clamp time, organ suitability and the estimated time of departure.

23. While the surgeon is completing cardiectomy procedures, the SRC fills one of the basins on the back table with cold saline solution (this basin will be used by the surgeon for rinsing the heart).

24. The SRC fills the heart container (1000 ml Jar) on the back table with Servator H using a pour spout. The recovered heart will be inserted into the large jar and lid tightly secured by the surgeon.

25. The jar is then placed into a CardioMed organ bag by the surgeon, with the top of the bag tied off and secured with umbilical tape.

26. The bagged jar is then placed into a 2nd CardioMed bag by the surgeon with the top of the bag tied off and secured with umbilical tape.

27. The organ bag is placed into the red cooler and covered with ice.

Prior to Departing Recovery Hospital

28. A copy of the *Heart Retrieval Operative Note* is completed, signed by the surgeon and left in the hospital donor chart.

29. Surgical staff may document any abnormalities or other comments on the backside of the *Organ Donor Surgery Information*, if necessary.

30. The SRC ensures all three labels are completed appropriately.

31. The SRC ensures all lot numbers and expiry dates of all solutions and supplies used are recorded on the surgical supply list in iTransplant.

32. The SRC notifies the CSC and provides a report of any abnormalities or comments previously reported, as well as their time of departure.

Post Recovery

33. The SRC ensures that required donor blood, sputum, spleen, etc. samples are dropped off at the appropriate locations as per *Infectious Disease Testing – STAT Process Instruction, CPI-9-211*, *Infectious Disease Testing – Non-STAT Process Instruction, CPI-9-213* and *Microbiology Testing Process Instruction, CPI-9-214.*

34. The SRC brings the surgical recovery kit back to the office or to the OR (to be restocked). The SRC disinfects and cleans the cooler with Virox disinfectant and wipes after the transplant team and leaves it in the designated place in the OR.

35. The SRC informs the CSC that everything is complete, all samples have been dropped off, and they are leaving the transplant site.

36. If the heart is deemed to be unsuitable for transplant post recovery, UOHI quarantines the heart in their designated area in the OR and immediately contacts the PRC for further direction.

Records:

Record Name	Form No. (if applicable)	Record Holder	Record Location	Record Retention Time (as a minimum)
Organ Donor Surgery Information	CSF-9-57	PRC OHI	PRC OHI Office	16 years
Surgical Supply List	CSF-9-58	PRC	PRC	16 years
Heart Retrieval Operative Note	CSF-9-38	Donor Hospital	Donor Hospital	16 years
Heart Transplant Operating Room Data	CSF-9-37	PRC OHI	PRC OHI Office Recipient Chart	16 years
HLA Lab Requisition Form	CSF-9-23	PRC OHI	PRC OHI Office	16 years

References

- *Infectious Disease Testing – STAT Process Instruction, CPI-9-211*
- *Infectious Disease Testing – Non-STAT Process Instruction, CPI-9-213*
- *Microbiology Testing Process Instruction, CPI-9-214*
- *Clinical Services Coordinator to Surgical Recovery Coordinator Communication Process Instruction, CPI-9-406*
- *Tissue Recovery Process Instruction, CPI-9-507*
- *Sterilization of Equipment – Organ Process Instruction, CPI-9-708*
- Safety of Human Cells, Tissues and Organs for Transplantation Regulations, Health Canada, SOR/2007-118
- Donor Selection and Preparation: Retrieval, labelling, processing, preservation and storage, Standard Operating Procedure-Transplantation, UOHI, January 2014
- Donor Selection and Preparation – Donor Blood Work, Standard Operating Procedure-Transplantation, UOHI, January 2014.

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Exhibit 1: Donor Blood Work Chart with Tube Colours

Donor Blood Work	Required When?	Requisition Type	Number and color of Blood Tubes	Temperature of Specimen	Mode of Transport & Special Instructions
Archival	**Always** required for each transplant	Trillium Requisition	One 	Room Temperature	**Send routine** to the OGH Blood Bank via the Civic Lab
CMV	Only if **not** completed at the donor retrieval site	Trillium Requisitions	One 	Room Temperature	**Send routine** to the OGH Blood Bank via the Civic Lab
EBV and TOXO	Only if **not** completed at the donor retrieval site	Public Health Requisition	One 	Room Temperature	**Send routine** to CHEO via the Civic Lab
West Nile Virus	Only if **not** completed at the donor retrieval site	Trillium Requisition	One 	Room Temperature	**Send STAT** to the OGH biochemistry Lab. Notify the West Nile technician. Send via courier during off hours
Virtual CrossMatch	**Only required** if the patient needs one. This is indicated on the waitlist	Ottawa Hospital Tissue Typing Requisition	Two  Eight 	Room Temperature	**Send STAT** to the OGH Tissue Typing Lab Notify the tissue typing technician during off hours Send via courier

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Exhibit 2: Sample eSRC Heart Recovery Briefcase Checklist – Eastern Region

Pressure Infusers	2
CardioMed Organ Bags	6
1000 ml Sterile Organ Containers	2
Organ Perfusion Line - 4 spike	2
Pour Spouts	3
Portal Tubing	3
12 G Adult Aortic Root Cannula	3
18 G Paediatric Aortic Root Cannula	2
Tourniquet Kit	3
Yellow ACD blood tubes	10
Red stopper blood tubes	4
Lavender stopper blood tubes	4