

Clinical Process Instruction Manual

Multi-Tissue Donor Prepping and Draping Process Instruction

Policy:

Cleansing, prepping, and draping for the purposes of allograft tissue donation shall be accomplished with the same diligence as used for routine operative procedures. The scrub preparation of the deceased donor is critical to the success of allograft recovery and future transplant for a patient in need of tissue. Bacterial growth in cultures taken pre- and/or post-processing of the tissue may require that the tissue be discarded. Sterile technique should be used at all times to minimize the risk of contamination. All areas that are to be recovered must be devoid of hair and shall be shaved if necessary, using non-sterile disposable razors prior to sterile prep of the donor. Once shaved, a pre-surgical scrub of the donor is done under non-sterile conditions to remove visible debris and bodily fluid contamination. The remaining scrub steps to further reduce the bioburden are done under sterile conditions.

The prep procedure is carried out by the Multi Tissue Recovery Coordinator(s) (MTRC), after physical examination of the donor accounting for all personal belongings, clothing, jewelry, medical paraphernalia (lines, catheters etc.) or any other items that may compromise aseptic technique or could lead to cross contamination have been removed or safeguarded against contamination.

For this procedure team members should wear surgical scrubs, an operating room (OR) gown, surgical gloves, bouffant, shoe covers and surgical mask with shield or protective eye wear. Refer to *Routine Practices and Personal Protective Equipment Process Instruction, CPI-9-1504*.

Process:

General:

1. Compliance with the following principles shall apply:
 - 1.1. The areas of excision shall be cleansed with an antimicrobial agent(s);
 - 1.2. Agents used shall be antimicrobial skin preparation products, as specified in the Clinical Process Instructions, and shall be used in accordance with manufacturers' guidelines/instructions;
 - 1.3. Only approved antimicrobial agents shall be used;
 - 1.4. The donor shall be prepped and draped from clean to dirty areas;
 - 1.5. Isolation draping shall be used to segregate areas adversely affected by trauma;
 - 1.6. Recovery mapping, a technique to identify viable recovery regions may be utilised to ensure the draping perimeters are large enough to avoid incision contamination through inadvertent movement of drapes during the procedure;

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- 1.7. Drapes shall be minimally handled;
- 1.8. When placing drapes they should be cuffed over gloves.
- 1.9. For further guidance, refer to Operating Room Nurses Association of Canada (ORNAC) Standards (current edition).

Materials

2. The following preparatory materials should be available for prepping and draping the donor:
 - Custom Tissue Recovery Pack
 - Chlorhexidine Gluconate: 2% and 4% Solution
 - Chlorhexidine Gluconate infused surgical scrub brushes
 - Sponges
 - Betadine solution
 - Normal Saline
 - Isopropyl 70% Alcohol
 - Sterile gauze
 - Sterile towels
 - Disposable razors
 - Spray bottle
 - Incise drapes
3. If an open fracture, laceration, or abrasion exists prep that area last, isolate, and safeguard the open area against potential contaminants.
4. All expiration dates on sterile supplies/packs shall be checked prior to opening.
5. Lot numbers, the manufacturer, and the expiration dates, where required, shall be documented appropriately in the electronic DMS or on the manual recovery form.

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Non-Sterile Donor Preparation of the Anterior and Posterior Aspect

6. If appropriate, an absorbent table covering can be utilised for the non-sterile donor preparation and then to be discarded appropriately after.
7. Position the donor in a respectful manner that allows for complete exposure of the surgical area. Create a barrier between the donor's face and hair to prevent any leaking contaminants.
8. The OR surgical bed shall be covered with an impervious surgical table cover or drape to prevent pooled contamination on the table with the scrub solutions and blood/body fluids.
9. The non-sterile preparation process outlined below adheres to the principle of cleanest to dirtiest areas of the body. Ensure that gloves are changed between each wash.
10. An initial visible bioburden decontamination wash is to occur with sterile saline and chlorhexidine gluconate 4% solution and scrub brushes. Utilise this as lubricant and lather the parts of the body and shave any/all applicable regions that hair may pose risk for cross contamination.
11. Remove any visible hair debris from the body with sterile gauze and/or rinse with sterile saline. Re-apply chlorhexidine gluconate 4% and disperse using infused scrub brushes. Note solution to be left applied on body for 5 minutes (minimum). Again, remove any visible hair debris from the body with sterile gauze and/or rinse with sterile saline. (**For bones and heart valves only cases, the rinses may be completed with 70% alcohol**)
12. Step number 10 may be repeated at the discretion of the MTRC's if any bodily fluid re-contamination noted or bioburden visible.
13. The MTRC shall remove all contaminated gowns, gloves, or other personal protective equipment worn during the pre-surgical wash to prevent transferability of microorganisms.
14. This non-sterile donor preparation will be repeated for the opposite aspect (i.e. anterior or posterior) of the donor.
15. The MTRC shall refer to the step 32 in the *Multi-Tissue Recovery Environment and Preparation Process Instruction, CPI-9-542* to set up the sterile kits, instruments and equipment.

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Sterile Donor Scrub Preparation of the Posterior Aspect

16. The MTRC will scrub-in and gown for the procedure, adhering to ORNAC and using aseptic technique. The circulator will don appropriate personal protective gear and will perform all supporting activities required outside of the sterile field.
17. The circulator pours the two bottles of betadine solution and chlorhexidine 2% aseptically into a sterile basin(s) or bag(s), which will either be held by the MTRC or will be placed close to the edge of the sterile back table.
18. The scrubbed MTRC(s) shall aseptically apply betadine soaked gauze to the recovery area. The used sterile gauze/ sponge is discarded after each use, and this process continues until the application is completely covering the body. To prevent cross contamination do not use one piece of gauze/sponge for more than one region and do not dip into the solution more than once.
19. Also, note the lower extremities maybe elevated during this step.
20. The following areas of the body must be covered by the surgical scrub preparation:
 - 20.1. Back - start at the midline and scrub from the top to bottom moving from medial to peripheral.
 - 20.2. Legs - start each leg at the central aspect of the thigh and progress laterally in a similar fashion. Apply the clean to dirty technique to the lower leg. If necessary, the lower extremities can be elevated/propped for the scrubbed TRC to gain access for circumferential prepping.
 - 20.3. High risk contamination areas such as armpits, genitalia, feet, inner thighs, and buttocks are to be prepared last with betadine infused gauze/sponge and discarded after use.
21. The betadine solution shall sit for 5 minutes (minimum) before proceeding. This allows the germicidal agents to take effect.
22. After 5 minutes has elapsed, apply chlorhexidine 2% (CHG) solution. This is applied to clear the betadine from the skin surface to allow further visualization of the field. (**Note CHG to remain on the body for a minimum of 5 minutes **). Also, note the lower extremities maybe elevated during this step.
23. The circulator administers the 70% alcohol from a spray bottle covering the area of surgically prepped body. Allow to air dry.

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24. The scrubbed MTRC(s) are to place a water resistant sterile drape beneath the lower legs and feet of the donor's elevated lower extremities in order to create a barrier for the surgically prepped skin. When lowering the legs back onto the sterile drape an additional measure to apply iodine incise drapes shall be used to cover the feet (heel to toes).
25. The scrubbed MTRCs will continue to drape the body with the use of sterile drapes to leave exposed only recovery regions. Done in accordance with asepsis to purposefully minimize transference of contaminants from other zones or regions. Any gaps in draping can be supplemented with blue OR towels or utility drapes in order to minimize exposure of skin in direct contact with the surgical bed.
26. Scrub personnel shall change outer sterile gloves after draping procedure is completed.
27. Once the alcohol is completely dry, proceed to skin recovery.

Preparation of the Anterior Aspect

28. After recovering skin from the posterior aspect, the donor shall be positioned supinely and the anterior is prepped and draped for recovery within the same principles as above (step 16 – 27). Also, note the lower extremities maybe elevated during this step.
29. Adhering to ORNAC standards, the MTRC will perform an anterior surgical prep in the same sequence of the surgical posterior prep in steps 16, 17, 18, 20, 21 and 22. The same order of scrub solutions will apply: betadine, chlorohexidine gluconate 2%, and then 70% alcohol sprayed.
30. The following areas of the body must be covered:
 - 30.1. Chest/Torso/Abdomen - start at the upper midline and scrub from the top to bottom moving from medial to peripheral.
 - 30.2. If chest/torso/abdomen is not a surgical recovery area, prioritize the first cleansed area to be over the upper arm and shoulder to decrease spread of possible contaminants from chest to arms. Apply the surgical prep to the length of the forearm for radius and ulna extraction (if applicable) working from proximal to distal.
 - 30.3. Legs - start each leg at the medial thigh and work distally and outwards. Do the same for the lower leg, prepping the feet last. If necessary, the lower extremities can be elevated/propped for the scrubbed TRC to gain access for circumferential prepping. Also, note that depending on the tissue graft being recovered a circumferential surgical prep maybe required when preparing the anterior aspect of the donor.

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- 30.4. High risk contamination areas such as hands, armpits, genitalia, feet and inner thighs are to be prepared last with betadine infused gauze/sponge and discarded after use.
31. A sterile U-drape/split drape will be applied to the field exposing recovery regions with use of supplemental drapes such as utility drapes or antimicrobial incise drapes affixed as necessary. Isolate the perineum by covering it with a sterile towel.
32. Upon completion of the sequence of surgical prepping, the donor is ready for anterior skin/bone

Sterile Prep of the Anterior Aspect – Cardiac Recoveries Only

33. The MTRC will don appropriate PPE for this procedure. The MTRC shall prep the middle of the chest first, proximal to the xiphoid process, using circular continuous strokes outwardly to the circumferential perimeter, prepping to just superior of the umbilicus last.
34. Adhering to ORNAC standards, the MTRC will perform an anterior prep in the same sequence of surgical posterior prep (steps 16, 17, 18, 20, 21 and 22). Upon completion of the sequence of surgical prepping, the donor is ready for cardiac recovery.

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Records:

Record Name	Form No. (if applicable)	Record Holder	Record Location	Record Retention Time (as a minimum)
Donor Chart	-----	PRC	PRC	16 Years

References:

- Standards for Tissue Banking, American Association of Tissue Banks, United States, 14th edition, 2017. D5.520
- ORNAC Standards for Perioperative Registered Nursing Practice
- Universal Precautions and Personal Protective Equipment Process Instruction, CPI-9-1504
- Multi-Tissue Recovery Environment and Preparation Process Instruction, CPI-9-542.
- “A 14 Year Audit and Analysis of Human Skin Allograft Discards”, Journal of Burn Care & Research, (Spradrow et al, 2016), doi: 10.1097/BCR.0000000000000485
- “Disinfection of human skin allografts in tissue banking: a systemic review report”, Cell Tissue Bank, (Johnston et al, 2016), doi: 10.1007/s10561-016-9569-2
- “Tissue Recovery Practices and Bioburden: a systematic review”, Cell Tissue Bank, (Brubaker et al, 2016), doi:10.1007/s10561-016-9590-5
- Guidance Document for Cell, Tissue, and Organ Establishments – Safety of Human Cells, Tissues, and Organs for Transplant, Health Canada, 2016. Retrieved from http://www.hc-sc.gc.ca/dhp-mps/brgtherap/reg-init/cell/cto_gd_ld-eng.php