



DR. PABLO O. TORRE
MEMORIAL HOSPITAL

RIVERSIDE MEDICAL CENTER, INC.



METRO PACIFIC HEALTH
THE HEART OF FILIPINO HEALTHCARE

DEPARTMENT: Nursing Services Division		POLICY NUMBER: DPOTMH-MPP-SURGSTE-P001-(01)	
TITLE/DESCRIPTION: SKULL FLAPS – RETRIEVAL, STORAGE, RE-IMPLANTATION, DISCARDING			
EFFECTIVE DATE: September 13, 2024	REVISION DUE: September 12, 2027	REPLACES NUMBER: N/A	NO. OF PAGES: 1 of 9
APPLIES TO: Surgical Suites Staff Nurses, Resident Doctors, Neurosurgery Consultants		POLICY TYPE: Multi Disciplinary	

PURPOSE:

Provide clear guidance for RMCI Surgical Suites staff to follow to ensure safe storage, accurate recording and monitoring of skull flaps.

DEFINITIONS:

Craniotomy / Craniectomy – the surgical removal of part of the bone from the skull to expose the brain.

Skull Flap – the section of the bone from the skull which was removed during craniotomy/craniectomy

Cryopreservation – is a process where biological material – cells, tissues, or organs – are frozen to preserve the material for an extended period of time.

RESPONSIBILITY:

Surgical Suites Staff Nurses, Neurosurgeons, Resident Doctors

POLICY:

1. Skull flap is to be collected and prepared aseptically.
2. Skull flap container (sterile zip-lock bag) shall be properly labeled.
3. Skull flaps shall be stored in a bone freezer through the process of cryopreservation (temperature is at -23 to -80 degrees celsius). A log folder shall be filled up upon storage and retrieval.
4. Storage of skull flaps shall not exceed more than 6 months (recommendation of Neurosurgeons)
5. Retrieval of skull flap for re-implantation shall be communicated to the charge nurse at least 24 hours prior to scheduled re-implantation procedure.
6. Strict daily monitoring of freezer temperature shall be done by the 6am-2pm shift charge nurse.
7. Weekly monitoring and outdating of flaps shall be strictly observed.
8. Expired skull flaps shall be communicated to the neurosurgeon prior to discarding.
9. Expired skull flaps shall be treated as infectious waste.
10. Skull flaps of deceased patients may be discarded automatically upon confirmation with the neurosurgeon.



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PROCEDURE (SOP):

RETRIEVAL

1. Circulating nurse confirms the need for storage.
2. Skull flap is handled aseptically.
3. Scrub personnel dries the skull flap using sterile gauze.
4. Scrub personnel places the skull flap in a sterile zip-lock bag which is then placed in a second sterile bag.
5. Scrub personnel hands in the bag to the circulating nurse for labeling.
6. Circulating nurse properly labels the zip-lock bag using the Skull Flap Card (see Form A) with the following data:
 - a. Patient's Complete Name (Last Name, First Name, Middle Name)
 - b. Patient's Date of Birth (as an additional identifier)
 - c. Name of Neurosurgeon
 - d. Date of collection
 - e. Name and Initial of Nurse in charge
7. Circulating nurse places the card in an unsterile zip-lock bag (to prevent it getting wet) and securely tapes it to the second zip-lock bag.
8. Circulating nurse immediately places the specimen in the freezer and fills up the log folder.

RE-IMPLANTATION

1. Neurosurgeon calls Surgical Suites Charge Nurse to schedule the procedure.
2. Once confirmed, the charge nurse retrieves the record of skull flap and assesses the specimen to confirm information.
3. On the day of surgery, the circulating nurse removes the skull flap from the freezer and thaws at room temperature for at least an hour pre-operatively. (Can also be thawed on a sterile setup in warm Ringers Solution if required by the neurosurgeon)
4. Circulating nurse records the date of removal from the freezer and puts the initial in the log folder.
5. Circulating nurse opens and peels the two outer zip-lock bags and serves the skull flap to the scrub personnel aseptically.



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DISCARDING OF EXPIRED SKULL FLAPS

1. Once confirmed beyond 6 months, the charge nurse informs the neurosurgeon to notify of expiration.
2. Once with approval, the charge nurse removes the expired skull flap from the freezer and places it in a yellow plastic bag. If the surgeon disagrees with the disposal, he/she should write a signed justification note.
3. Charge nurse labels the yellow bag with "bone tissue" and disposes it in an infectious waste bin.
4. Charge nurse fills in the log folder, signs initial, and indicates reason for removal (beyond storage period).



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WORK INSTRUCTION:

KEY TASK	PERSON RESPONSIBLE
1. Confirms the need for storage of skull flap.	Circulating Nurse
2. Secures, labels, and seals the zip-lock bag with the skull flap.	
3. Places the specimen bag into the freezer.	
4. Logs the storage and/or removal from the freezer.	
5. Thaws frozen flap at room temperature.	
6. Handles skull flap aseptically	
7. Receives schedule for re-implantation	Charge Nurse
8. Retrieves and secures skull flap a day prior to the procedure.	
9. Monitors freezer temperature daily	
10. Updates expired skull flaps weekly	
11. Informs neurosurgeon of the storage status of the skull flap	
12. Discards expired skull flaps as infectious waste.	
13. Handles skull flap aseptically.	Scrub Personnel
14. Dries skull flap prior to storage.	
15. Secures skull flap in a sterile zip-lock bag.	
16. Confirms storage of skull flap.	Neurosurgeon
17. Calls charge nurse to schedule reimplantation procedure.	
18. Confirms disposal of expired skull flap.	
19. Submits signed justification note in case of expiration extension.	



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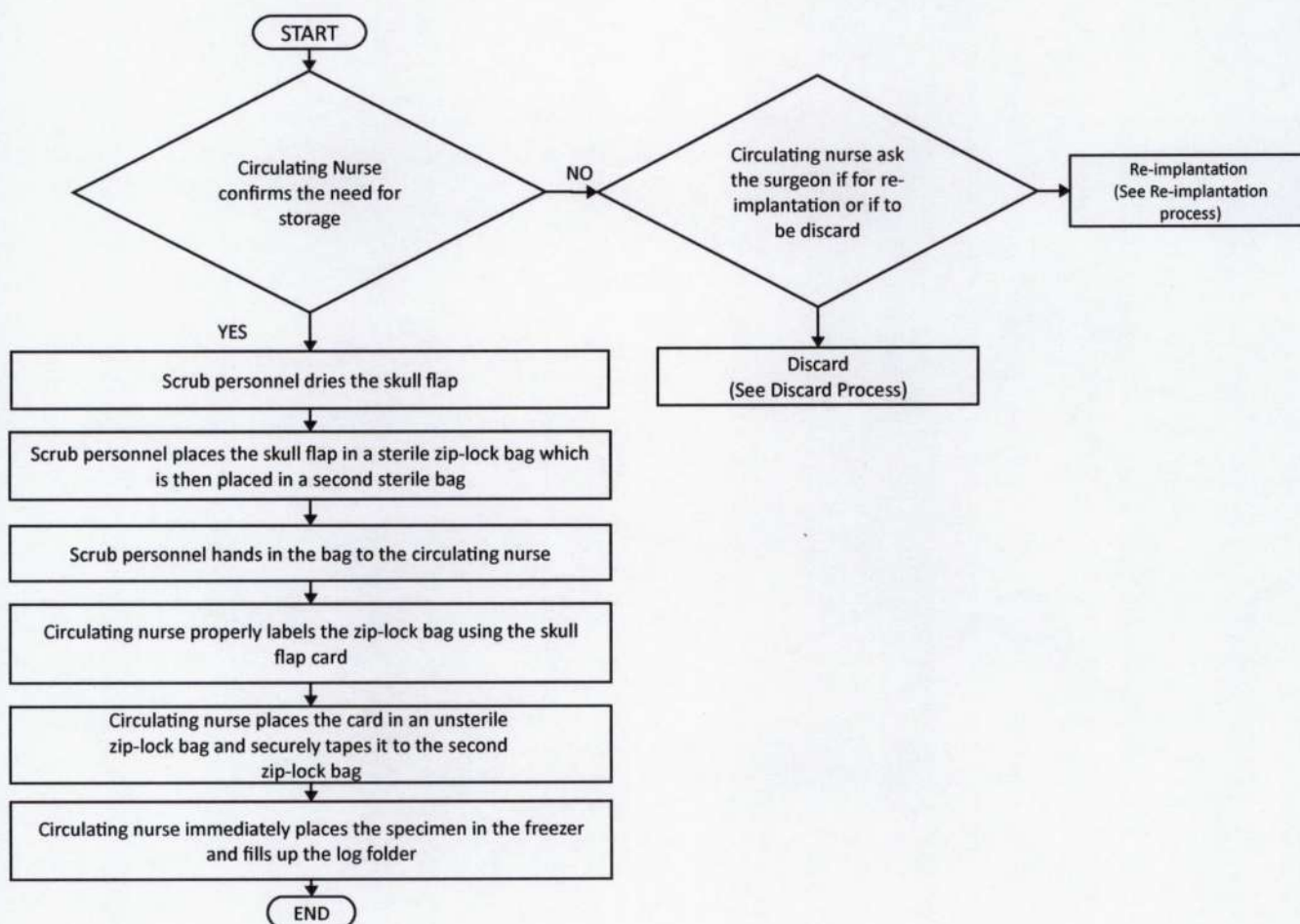


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WORK FLOW:

RETRIEVAL





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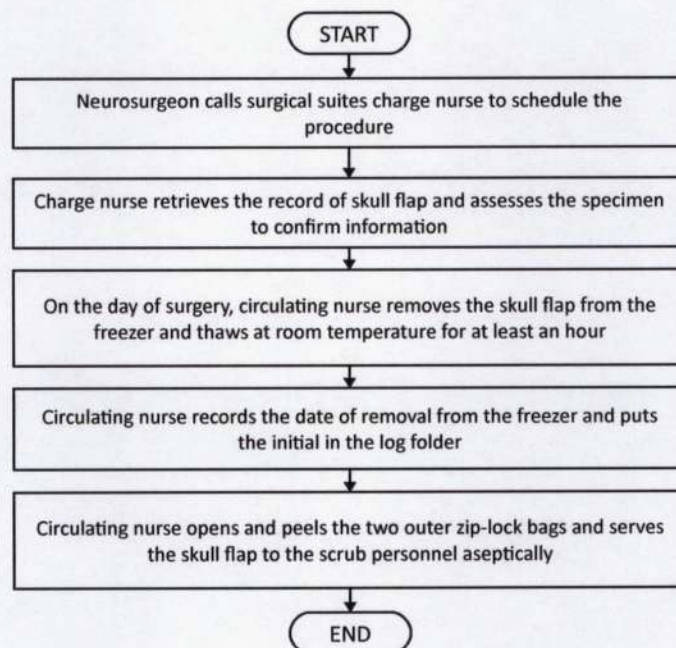
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RE-IMPLANTATION





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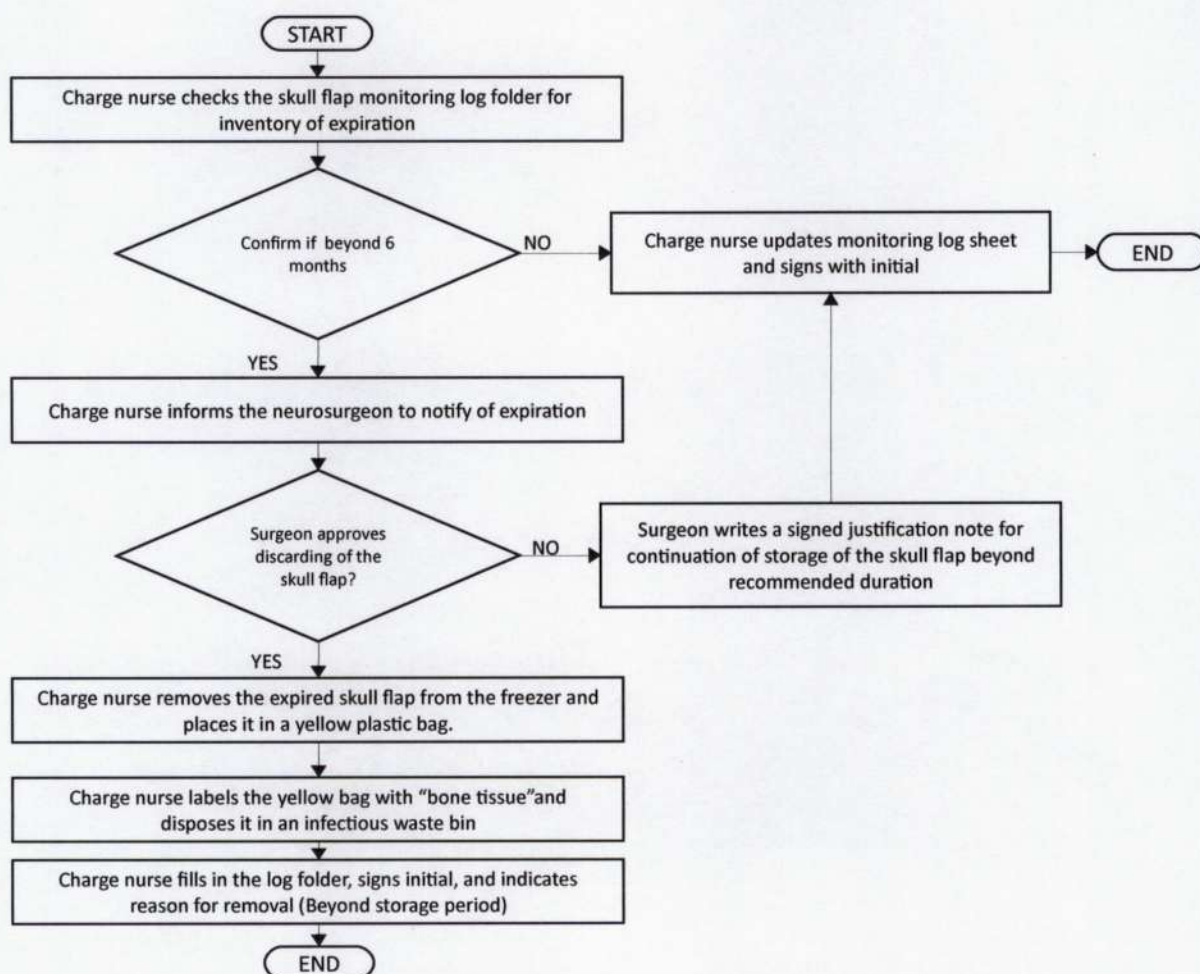
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DISCARDING OF EXPIRED SKULL FLAPS





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FORMS: 1. DPOTMH-SURGCOM-SS-F001(01)-Skull Flap Card
EQUIPMENT: Bone Freezer
REFERENCES: <ol style="list-style-type: none">1. Donnelly, B. M., Smolar, D. E., Baig, A. A., Soliman, M. A., Monteiro, A., Gibbons, K. J., Levy, E. I., & Snyder, K. V. (2023). <i>Analysis of craniectomy bone flaps stored in a neurosurgical cryopreservation freezer: microorganism culture results and reimplantation rates</i>. <i>Acta Neurochirurgica</i>, 165(11), 3187–3195. From https://doi.org/10.1007/s00701-023-05764-72. Canberra Hospital and Health Services Clinical Procedure (2018) . <i>Storage of Skull Flaps</i>. From https://www.health.act.gov.au/sites/default/files/2019-02/Storage%20of%20Skull%20Flaps.docx3. Agrawal, R., Rompf, C., Pranada, A. B., Vollmar, P., De Lorenzo, A., Hoyer, A., & Gousias, K. (2022). <i>Microbiological profile and infection potential of different cryopreserved skull flaps after decompressive hemicraniectomy. Is cryopreservation at – 80 °C better?</i> <i>BMC Research Notes</i>, 15(1). From https://doi.org/10.1186/s13104-022-06042-y



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APPROVAL:				
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