Developed by the British Columbia Provincial Nursing Skin & Wound Committee in collaboration with NSWOCs/Wound Clinicians from:	
Title	**NPWT Dressing Application for VACUlta4 & ActiVAC: Procedure**
Endorsement **British Columbia** **Yukon**	Endorsed for use in: FHA and VCH/PHC. Reference document for FNHA. Endorsement Pending: NHA, IHA, Island Health, PHSA & Yukon; until endorsement has been granted by your HA please follow your HA's current document.
Document Indications for Use	This Negative Pressure Wound Therapy (NPWT) dressing procedure is used with the following **multi-use** machines VACUlta4 and ActiVAC and in conjunction with the Negative Pressure Wound Therapy: Guideline For NPWT Instill-Dwell - Veraflo dressing application, see specific procedure. This procedure **does not** provide direction for NPWT management of open abdomen, abdominal compartment syndrome or fistulas.
British Columbia Practice Level	• In order to carry out NPWT, Registered Nurses (RNs), Registered Psychiatric Nurses (RPNs), and Licenced Practical Nurses (LPNs), in accordance with the British Columbia College of Nurses and Midwifes' scope of practice for their specific designation, must: o Have Health Authority (HA) and/or agency policy in place to support their designation in providing NPWT care. o Have a HA approved NPWT decision support guideline. o Successfully complete the additional education for monitoring/managing the NPWT system. o Successfully complete additional education for NPWT dressing application. o Have client specific NPWT orders from a Physician/NP/NSWOC/Wound Clinician. o For LPNs, follow an established NPWT wound treatment plan. • Clients (see definition) undergoing NPWT require an interprofessional approach to provide comprehensive, evidence-based assessment and treatment.
Background	• Multi-use NPWT devices, 3M VACUlta4 or 3M ActiVAC, are rented or owned by the site or agency and are used for the management of open wounds and for bolstering skin graft sites. They are also used for splinting closed incisions if commercial NPWT incisional dressings are not available. The following applies to both multi-use NPWT machines: o Pressure Setting: ranges from 25 to 200 mmHg; 125 mmHg is the most commonly recommended pressure setting for adults. o Therapy Setting: can be Continuous (C), Intermittent (I) or Dynamic Pressure Control (DPC) and are adjusted incrementally by 25 mmHg. DPC is unique as it maintains a low pressure of 25 mmHg to reduce pain at the wound bed. o Requires a disposable canister to collect exudate. • A meshed non-adherent interface should be used to protect fragile blood vessels, fragile wound beds, exposed tendons, muscle, bone, and surgical hardware from the negative pressure. • NPWT wound fillers include specifically designed black, white, silver foam and woven PHMB gauze or ribbon packing. Black or silver foam can also be used as a 'splinting' or 'bolster' dressings for incisions and skin grafts. The foams and gauze packing are not radiopaque (cannot be seen with radiology imaging). • A count of all interface layers and wound fillers removed from/inserted into the wound is done with each dressing change and is documented on approved paper or e-documentation tools. **General Safety Considerations for NPWT Medical Device** • Defibrillation: when defibrillation is required in the area of the NPWT dressing, remove the dressing or place the paddles in an alternate position; ensure that the NPWT machine itself is at least 2 meters away from the paddles. • Electrodes or Conductive Gel: do not place EKG or other electrodes/conductive gels in contact with the NPWT dressing/machine. • Magnetic Resonance Imaging (MRI) environment: o The NPWT machine itself **cannot** go into the MRI environment. If a canister is present, disconnect it from the machine and ensure that all tubing clamps are open to allow any exudate to flow into the canister. o If the NPWT dressing (interface and/or foam) does not contain silver, then the dressing may remain in place. If the MRI is to be done in the area of the wound, consult Radiology Department regarding the need to remove the dressing. o If the NPWT dressing is comprised of a silver-based interface or Granufoam Silver foam or

	is a Prevena dressing, consult with the MRI Radiology Department; depending upon the MRI magnetic field environment, the silver-based dressing may need to be removed. • Diagnostic Imaging: Silver-based interfaces, Granufoam Silver foam or Prevena dressings may impair visualization with certain imaging modalities; consult with the Radiology Department regarding the need to remove the dressing. • Cell phones or similar products could affect the NPWT machine; move the NPWT machine away 2 meters (6.5 feet) away from the machine if interference is suspected. • Do not connect NPWT dressings to wall suction.
Bookmarks	Equipment and Supplies Procedure: Applying / Reapplying VACUlta4/ActiVAC Dressing Procedure: Removing a VACUlta4/ActiVAC Dressing Procedure: Changing the Canister Managing ActiVAC Alerts/Alarms Procedure: Bridging - Offloading the TRAC Pad Procedure: Bridging - Connecting Two or More Wounds Procedure: Using a 'Y' connector for Two Wounds Client Showering Transition/Discharge Planning Client/Family Education and Resources Documentation Bibliography/References Date of Creation
Related Documents	Guideline: Negative Pressure Wound Therapy Procedure: NPWT Dressing Application – Veraflo Guideline: Wound Management Procedure: Wound Cleansing Procedure: Wound Packing Documentation Tool: NPWT Safety/Monitoring Check Flow Sheet Additional Education Requirements/Competencies: NPWT Monitoring/Managing E-Learning Module: Monitoring Managing NPWT Additional Education Requirements/Competencies: NPWT Dressing Application (under development) E-Learning Module: NPWT Dressing Application (under development) Client Health Education Resource: NPWT ActiVAC Procedure: NPWT Disposable Dressing Application - VACVia Procedure: NPWT Disposable Dressing Application - SNAP Procedure: NPWT Disposable Dressing Application - Prevena Peel & Place Procedure: NPWT Disposable Dressing Application - Prevena Customizable Procedure: NPWT Disposable Dressing Application – PICO7/PICO14

Equipment and Supplies

NPWT Supplies

- VACUlta4 or ActiVAC NPWT machine - site owned or rented
- NPWT canister; for the VACUlta4 machine chose size (500ml, 1000ml) appropriate for the expected amount of exudate. The ActiVAC uses a 300ml canister and, if needed, can be used with VACUlta4.
- NPWT Dressing Kit (small, medium, large, X-large) including foam (black or silver), TRAC Pad, polyurethane transparent film drape, paper ruler, documentation sticker and tubing cap.
- Note: if there is a concern with skin sensitivity due to the NPWT polyurethane film drape or the wound location may make the positioning of the polyurethane film difficult, Dermatac, a silicone-acrylic transparent film drape which can be repositioned, is available either in a Dressing Kit or drape only.

Dressing Supplies

- Personal protective equipment (PPE) including safety glasses, gloves, gown, and mask, as required.
- Dressing tray - depending upon the type of tray (Complex or Major) some of the following supplies may be included in tray. More than one tray may be needed given the size/complexity of the wound.
- 30 mL syringe and irrigation tip catheter or an 18 - 19 irrigation Machine, if needed
- Sterile normal saline (NS) - 100 mL or more and should be at least room temperature
- Sterile scissors
- Sterile gloves - 1 pair
- Clean gloves - 2 pairs, if taking photos, then 3 pairs

- Foam tipped measuring probe, metal probe or sterile cotton tip applicator
- Ruler, measurement guide, and paper
- Alcohol swab(s)
- Sterile 2x2 gauze if needed for protecting the ends of the tubing(s)
- Procedure pad(s)
- Skin film barrier wipe
- A camera, if required
- Pen/marker

Additional Supplies as needed per the Pre-Printed Order (PPO) or the written care plan

- Roll of 10 cm sterile PHMB woven gauze or packing
- Meshed non-adherent contact layer
- Sterile hydrocolloid or extra transparent film drape for peri-skin protection
- Ostomy strips, rings, or paste for filling in folds and creases
- Adhesive remover
- Y-connector

Pre-Soak Supplies as needed

- 50-60 mL syringe; Leur-Lok for Pre-Soak Method #1 or Toomey/Catheter Tip for Pre-Soak Method #2
- Sterile normal saline (0.9%); should be at least room temperature
- Clean gloves - 1 pair
- 1 sterile 4 x 4 dressing to keep the NPWT canister tubing end sterile if cap are not available
- Sterile scissors
- Alcohol swabs
- Procedure pad(s)
- Lidocaine 1% (without epinephrine), if ordered

Procedure: Applying and Reapplying VACUlta4 or ActiVAC Dressings **Click here for the Procedure: Removing the VACUlta4/ActiVAC Dressing**	
Steps	**Key Points**
1. Review the orders: • Read the NPWT order and overall care plan. • Review allergies and sensitivities to products.	
Prepare the client: • Assess client's pain/anxiety for appropriate medication(s) and allow time for the medication(s) to take effect. • Position the client for the procedure.	The client undergoing NPWT may experience pain and anxiety; provide pain management strategies, medications, education, reassurance and position for comfort.
2. Set-up for the procedure: • Gather the supplies. • Perform hand hygiene; put on clean gloves. • Set up sterile dressing tray and sterile field. • Add the supplies needed for peri-skin protection, e.g., hydrocolloid, skin prep • Ensure a permanent marker is available and placed outside the sterile field. • Take down and remove the current dressing. • Remove gloves, perform hand hygiene and don clean gloves.	Add all sterile supplies to the sterile field. If using ostomy rings, note these are not sterile and are only added to the perimeter or edge of the sterile field.
3. Clip hair, if needed: • Using scissors, clip the hair in the area where the dressing is going to be applied. Clip as close to the skin surface as possible. • Avoid shaving whenever possible.	Hair can make it difficult to achieve an airtight seal and may cause pain during drape removal. Shaving can cause skin irritation and may lead to folliculitis and/or a skin infection.

Steps	Key Points
4. Assess and cleanse the wound: • Use a 15 cm foam tipped applicator, metal probe or sterile cotton tip applicator to explore the depth & direction of undermining/ sinus tracts/tunnels. • Cleanse the wound and peri-skin with at least 100 mL of NS. Use moistened gauze and forceps to remove loose slough and debris. • Complete a full wound assessment. If taking photos, remove gloves, perform hand hygiene, take photos & put on clean gloves. • If NPWT is to be reapplied, determine the appropriateness of ongoing NPWT. If the wound has closed, or has deteriorated, apply alternate dressing and notify the ordering Physician/NP/NSWOC/Wound Clinician. <u>Assess the incision/skin graft area</u> • Cleanse with Normal Saline or as per Surgeon's orders. • Complete a full assessment. • If taking photos for documentation, remove gloves, perform hand hygiene, take photos & then put on clean gloves. • If NPWT is being re-applied, determine the appropriateness of ongoing NPWT. If the incision or graft is closed, or has deteriorated, notify the ordering Physician/NP/NSWOC/ Wound Clinician.	If the undermining, sinus tract/tunnel end cannot be probed (is beyond 15cm), do not irrigate or pack these areas. Cleansing the wound/incision/graft aids in removal of exudate and promotes visualization of wound bed tissues. Assessing wound length, width, and depth, and the depth of the undermining, sinus, or tunnel helps to determine the size, type and number of wound filler(s) needed. Measurements taken provide an objective assessment of wound healing. Measurements must be consistently compared to previous measurements to ensure that wound healing is occurring, if this is the goal. For incisions and skin grafts, there may be specific physician or surgeon orders regarding cleansing the site.
5. Prepare the peri-skin and surrounding skin: • Use sterile forceps to apply skin film barrier to the peri-skin and surrounding skin, let dry. Note: if there is a concern with skin sensitivity due to the NPWT polyurethane film drape or the wound location may make the positioning of the polyurethane drape difficult, consider using Dermatac, a silicone-acrylic transparent drape. • For uneven peri-skin and surrounding skin, apply ostomy rings, paste or strips to level the affected area. If 'picture-framing' is needed, the following step can be done without sterile gloves unless the client or wound situation require complete sterile technique: • Apply a 3-5cm width strip of hydrocolloid or polyurethane or silicone-acrylic drape at the wound edge to ensure periwound skin/ surrounding skin is covered. • For incisions/grafts, picture-frame 5 cm around the incision line/graft.	Skin barrier film protect the skin from adhesives, help maintain an airtight seal, and may extend the dressing wear time. The skin barrier film may also provide protection if black foam / TRAC pad should inadvertently come in contact with the skin. If using a silicone-acrylic film drape, <u>do not use</u> a barrier film wipe(s) on the area where the drape will be applied. Silicone-acrylic drape can be repositioned. Ostomy rings, paste, or strips help achieve a level surface and an airtight seal. **Note:** If the client or wound situation require sterile technique for all aspects of the dressing, sterile gloves are put on before preparing the peri-skin. Otherwise, this can be done with clean gloves once the wound and surrounding area are cleansed. Do not cover staples or sutures when picture-framing incision or grafts
6. Transition to sterile technique: • Remove clean gloves; perform hand hygiene. • Open second dressing tray, if needed. • Open NPWT dressing kit; place the contents on the sterile field, if not done already.	Instruments used to clean the wound are no longer sterile and therefore cannot be used to complete the dressing change. A second sterile tray must be used to complete the dressing.

Steps	Key Points
• Add sterile scissors and interface layer. • Perform hand hygiene. Apply sterile gloves for the remainder of the procedure. • Designate one side of the sterile field for cutting wound fillers.	
7. Prepare the peri-skin and surrounding skin, if not already prepared (Step 5).	This may be completed earlier in the procedure.
8. Prepare the interface layer(s): • Wound - Cut the interface layer or white foam to fit the area needing protection, if required. • Incision – Should be at least 7.5cm in width and needs to cover 2.5cm beyond both ends of the incision. • Graft – should extend 2.5cm beyond graft edges.	A meshed non-adherent interface should be used to protect fragile blood vessels, fragile wound beds, and exposed tendons, muscle, bone, surgical hardware. The interface may be either antimicrobial, i.e., silver, or non-antimicrobial, i.e., silicone or a petrolatum impregnated layer. White foam may be used for painful wounds.
9. Prepare the wound filler(s) and foam dressing(s): Cut the foam pieces over the sterile drape area, not over the wound/incision/graft. Rub off any loose particles from the cut foam pieces. Wound • White foam: Cut the foam piece(s) to fit the size of deep undermining/sinus track/ tunnels with an additional 1-2 cm in length so the foam is visible and extends into the wound cavity. Shape the foam so one end is wider. • PHMB woven gauze/packing: Cut the PHMB to fit the undermined area and/or cavity. • Black or silver foam: Cut the foam piece(s) to fit the shallow undermining and/or cavity. Incision • Prepare the dressing; determine the length of the incision and add 2.5cm to both ends. Cut the black foam 6 - 8cm wide and to the length needed. Skin Graft • Prepare the dressing; cut the black foam to cover the graft area.	Avoids small cut pieces of foam from falling the wound. Ensure all foam pieces are cut narrower at the end that is placed in the undermining/sinus tract/tunnel. Do not cut any foam piece smaller than 1 cm, in any dimension, as this causes it to lose its tensile strength. White foam is recommended for use in deep under-mining/sinus tracts/tunnel(s) as it is denser and will not break when removed. Where possible, place the manufactured edge of the foam face-down on the wound bed. If a NPWT incisional kit is not available, the black/silver foam may be cut to create an incisional dressing. Depending upon the length of the incision, may need more that one piece of foam.
10. Apply interface, wound filler(s) & cover dressing: Wound • Start with the deep undermining/sinus tract/ or tunnel and use one the following: o PHMB woven gauze - Use the gauze to fill/pack the space. Leave a 1 - 2 cm tail. o White foam - Lightly pack the narrow end of the foam in the space until it reaches the end of the sinus tract or tunnel. Pull back by 1 to 2 cm to ensure that the ends of the pieces are visible. • If using an interface layer, line the wound bed, where needed, with the prepared interface. • Fill/pack the wound cavity and shallow	The white foam/gauze must be visible in the wound bed and to ensure it is removed when the dressing is changed. Where possible, place the manufactured edge of the foam face-down on the wound bed. White foam must always be covered with black foam

Steps	Key Points
undermining using one or a combination of the following: o PHMB woven gauze: Fold all the gauze edges inward to keep the raw edges off the wound bed. o Black/silver foam: Ensure the foam size is cut larger than the TRAC pad. • Count the numbers of interface layers and wound filler(s) used. <u>Incision/Skin Graft</u>: • Lay down the interface layer, ensuring all sutures or staples are covered. • Lay down foam dressing pieces to cover the incision or graft.	to support proper removal of exudate. Ensure the top layer black/silver foam is cut larger than the TRAC pad to prevent Medical Device-Related Pressure Injuries.
11. Ensure the fill/pack, splint or bolster is compete: • If more than one piece of foam or gauze is used, ensure that all foam and gauze edges are in contact with each other. Wound fillers may need to be overlapped. • Ensure that foam is not in contact with unprotected peri-wound skin. • Ensure that the final layer is black foam as the TRAC pad must rest on this: o Ensure that the black foam is 2.5 cm higher than the peri-skin level. o If the wound is smaller than the TRAC pad, ensure the top layer of black foam is cut larger than the TRAC pad and the peri-skin is protected.	The entire wound surface must be covered with wound filler(s) and all pieces must be in contact with each other to maintain suction and the flow of exudate. Foam touching the peri- skin will cause skin irritation, maceration or ulceration. The TRAC pad must sit on the black foam to ensure proper removal of exudate. Filling to this height ensures the TRAC pad is resting at skin level when vacuum is applied and not below the skin surface.
12. Apply NPWT transparent film drape. • Polyurethane drape: o The drape may be cut into strips to make it easier to handle. Cut the drape before removing the backing layer. o Once cut, remove backing piece #1 and lay the drape over the foam and at least 3-5 cm of prepped and/or window-paned peri-skin area. o Gently press the edges of the drape onto the skin to achieve an airtight seal. o Remove layer #2 of the transparent drape. o Remove the blue strips/tabs of the transparent drape at the perforation line. o Repeat this process if each piece of drape as needed. o If using more than one piece of film drape, ensure that all the edges overlap to prevent air leakage. • Silicone-acrylic drape: o Cut drape, from handle/tab to handle/tab, to a size that will cover wound with a 5 cm border, where possible. o Apply drape loosely over the wound area –	Ensure that each strip has a blue tab on it as the tab will assist with removal of backing pieces. Applying stretched film drape can lead to blistering over the peri-skin area. Adding a small border of additional drape may extend the dressing wear time. Remaining transparent drape pieces are used to patch any air leaks, if necessary. Ensure the transparent drape does not cover body orifices, stomas, or drain openings. Avoid applying the transparent file drape in a complete ring around a limb, e.g., hand, leg or foot, as this leads to compromised circulation. As drape is silicone-based it can easier to use (e.g., unsticks from itself and gloves) therefore no need to cut the drape into small strips. Placement and repositioning of the drape is easier

Steps	Key Points
○ do not stretch. If applying drape to a curved area, cut slits into the drape to fold drape onto itself. ○ Smooth out wrinkles and reposition drape if necessary. ○ Remove handles/tabs by pulling off the perforated edges. Support the applied drape with one hand as tabs are pulled off	with the handles/tabs in place. An adequate seal may be obtained with a smaller border in those areas that do not allow for a 5cm border (e.g., coccyx wound). Drape can be repositioned, without losing its adhesion, several times within the first 15-20 minutes after the initial application.
13. Apply the TRAC pad: • With sterile gloves, determine the position of the TRAC pad and drainage tubing; do in consultation with the client, if possible. • Cut at least a 2.5 cm round opening in the film drape over the foam. • Remove TRAC pad layers #1 and #2 and centrally place it over the 2.5 cm opening. • Apply gentle pressure to ensure the TRAC pad rests fully on the foam and is not touching any of the peri-skin. Then gently pull the blue stabilization tab to remove the top layer of the TRAC pad • Secure the TRAC pad tubing to the dressing with an additional strip of transparent drape.	The position of the TRAC pad and draining tube must avoid boney prominences and skin folds. Positioning should allow for client comfort and ease of performing ADLs and safe mobility. Wound exudate passes from the wound through the foam into the TRAC pad and tubing. If the drape opening is cut is too small, e.g., with a 'X' or a 'slit', the drape opening will close causing a blockage alarm. If the TRAC pad is in contact with peri-skin instead of the wound filler, it causes suction on the skin and may result in a pressure injury. To reduce tension on the TRAC pad and dressing, secure the tubing to the dressing.
14. Prepare the NPWT machine: Remove sterile gloves; for pediatrics, pre-fill canister as per orders. Insert canister into machine if not already in place. Ensure canister is fully engaged. • Connect TRAC pad tubing to canister tubing. When reusing the canister, cleanse the tubing ends with an alcohol swab and let dry for at least 30 seconds before re-connecting.	For neonates and infants, pre-filling the canister reduces the potential for excessive fluid volume loss. Canister needs to fully engaged (pushed firmly into place if needed) and latched otherwise an alarm will sound. An audible click should be heard, indicating that the canister is properly installed.
15. Start the therapy: • Plug in NPWT machine, if not done already. • Ensure that the tubing clamps are open. <u>VACUlta4</u> • Press the **light blue** Therapy button. • Set the Pressure Setting (mmHg); use the -/+ to change the setting. • For Therapy Setting (continuous or dynamic pressure control) use the Advanced Settings button; press Exit to return to main screen. • Press the OK button to start the therapy. <u>ActiVAC</u> • Press the Power button. • Press the Therapy button and then press the appropriate button to set the Pressure Setting and Therapy Setting as per order; use the up/down arrow to change the value. • Click Exit to go to Confirm screen; click OK. • Press On/OFF button to start the therapy.	**Never connect the NPWT tubing to wall suction.** When using a VACUlta4 machine, ensure the power cord's green indicator lights up when the cord is plugged into the electrical outlet; if not, plug the machine into a different outlet. The most common setting in adults is 125 mmHg. Pressure settings range from 25 to 200 mmHg. Neonates, infants and young children may require lower pressures and a continuous therapy setting. If the client experiences pain, start the therapy at a lower pressure (mmHg) setting then slowly increase to the ordered level, if possible.

Steps	Key Points

16. Assess for an airtight seal: • When the wound filler collapses it has a wrinkled appearance, is firm to the touch, and is devoid of hissing sounds. • If an airtight seal if not obtained, ensure that all tubing clamps are open and gently press all areas of the dressing and transparent film drape to achieve a seal. If needed, apply additional drape to the dressing. • If the TRAC pad needs to be repositioned on the dressing, perform hand hygiene apply sterile gloves, and: o Remove the existing TRAC pad. o Seal the initial hole with film drape. o Assess and choose a new location for the TRAC pad. Wipe the drape with alcohol swab and let dry for 30+ seconds. o Trim out a 2.5 cm round hole in the drape. o Reapply the TRAC pad and secure it in place using strips of film drape.	Both VACUlta4 and ActiVAC have a Seal Check feature to assist with determining the extent of the vacuum seal. If the dressing does not collapse in less than 1 minute, there may be a dressing leak, tubing blockage, or canister issue. An alarm will sound for any of these issues. See Managing VACUlta4 Alerts/Alarms See Managing ActiVAC Alerts/Alarms The TRAC pad must be repositioned if the: • TRAC pad is touching the peri-skin increasing the risk of developing a pressure injury. Location of the dressing or TRAC pad may interfere with client activities and completion of activities of daily living.
16. Determine the machine is working correctly: • VACUlta4: the top of screen shows 'ON' and Therapy icon is rotating; then lock the screen. At the Home Screen, press and hold the Screen Guard/Setting Lock for more than 5 seconds to lock the screen. • ActiVAC: ON/OFF therapy button displays a green crescent shaped light and the Therapy icon is rotating; then lock the screen.	Locking the VACUlta4 screen prevents inadvertent changes to the settings. For ActiVAC, the machine should be left in Clinician Mode to ensure that patient cannot change the settings.
17. Clean up workspace: • Dispose of the dressing tray and disposable scissors. • Remove gloves and perform hand hygiene.	Waste contaminated with blood and body fluids is disposed of in biohazard or sharps containers, as per the setting requirements and current policies.
18. Document: • Apply the documentation sticker to the transparent drape. • Document the number of interface(s) and the number of wound filler(s). The following coding system may be used, if helpful: o I for Interfaces o G for Gauze o W for White Foam o B for Black Foam o S for Silver Foam • Write the date on the canister.	If documentation sticker not available, then write the count on the dressing itself or on a piece of tape and apply to the dressing. Document the number of interfaces and foam/gauze pieces after each dressing change. This is critical to ensure that all pieces are removed at the next dressing change. Date the canister and change at least every 7 days.
19. Conduct Initial Safety/Monitoring Check: • Check the system from the dressing to the power source. • Assess colour, warmth, movement, sensation distal to the dressing, if NPWT is on a limb. • If tubing is a falls risk, secure accordingly.	It is recommended that machine remained plugged in at all times, if possible. • VACUlta4 has 6 hours of battery life. • ActiVAC has 8 hours of battery life.

Procedure: Removing a VACUlta4 or ActiVAC Dressing	
Steps	**Key Points**
1. Review the client's chart: • Read NPWT orders and overall care plan. • Review the documented packing count.	
2. Prepare the client: • Assess client's pain for appropriate medication(s) and allow time for the medication(s) to take effect.	The client undergoing NPWT may experience pain and anxiety. Provide pain management strategies, medications, and reassurance.
3. Set-up for dressing removal - Open Wounds only: • Turn off the NPWT machine and clamp the dressing tubing for at least 30 minutes prior to dressing removal. • If needed, do a NS pre-soak **or** a pre-soak with Lidocaine 1% (without epinephrine) with, or followed by, the same amount of NS using one of the following pre-soak methods: <u>Pre-soak Method #1:</u> ○ Prepare a 50-60 mL Leur-lock syringe with the solution. ○ Disconnect the dressing and canister tubing, keeping ends sterile with 4x4 gauze. ○ Cleanse the connection with an alcohol swab and let dry 30+ seconds. ○ Connect the syringe to the dressing tubing. ○ Slowly instill the solution into the dressing; the dressing should budge slightly. If this does not occur, add more NS. ○ Remove the syringe and reconnect the dressing tubing to the canister tubing. ○ Let the solution rest in the dressing for at least 20 to 30 minutes. <u>Pre-soak Method #2:</u> ○ Prepare a 50-60mL catheter tip or Toomey syringe with the solution. ○ Cleanse tubing 5 cm away from the dressing. Use an alcohol swab and let dry for 30+ seconds. ○ Cut the cleansed TRAC pad tubing and connect the syringe to the dressing tubing. ○ Slowly instill the solution into the dressing; the dressing should bulge slightly. If this does not occur, add more plain NS. ○ Remove the syringe from the tubing. Cover open end of tubing with a gauze/ABD pad. ○ Let the solution rest in the dressing for at least 20 to 30 minutes.	Black or silver foams are more likely to adhere to the wound bed than white foam. Turning the NPWT machine off releases the suction, allowing wound exudate to collect on the wound bed which helps to release the foam. Incision and Skin Graft sites do not need the 30-minute rest period or a pre-soak. The dressing can be removed <u>immediately</u> after the machine is turned off. Use of Lidocaine 1% without epinephrine requires a Physician/NP order. See the document bookmark <u>Lidocaine: Physician/NP Prescribing</u> in the Guideline: Negative Pressure Wound Therapy for dosage. Through consultation with Physician/NP/NSWOC/ Wound Clinician, the pre-soak method; either #1, #2, or another method, is to be determined.
4. Check packing count on dressing: Check the NPWT dressing for the number of interface layers and wound filler(s) used with the previous dressing change; ensure this count matched the packing count documented in the client's chart.	Counts of the interface layer(s) and wound filler(s) should match.

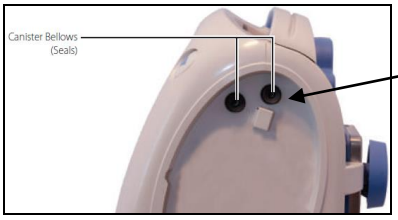
Steps	Key Points
5. Prepare for the procedure: • Gather supplies to reapply the NPWT dressing or to apply an alternative dressing. • Position the client for the procedure. • Clamp the canister tubing, and disconnect and protect the dressing tubing end using the protective cap, if available. If not available, use a sterile 4 x 4 gauze dressing. • Perform hand hygiene & put on clean gloves. • Set up a sterile dressing tray with NS.	
6. Release the transparent film drape: • Select an edge of the drape; with one hand gently stretch it horizontally away from the wound; with the other hand slowly push the skin down to release the skin from the drape. Repeat these steps to release the entire edge of the drape. • If edges do not release easily, use an adhesive remover.	A peeling motion can cause epidermal stripping, irritating the peri-skin and surrounding skin.
7. Remove the wound filler(s): • Using forceps and additional NS, start at the wound edge and gently remove the wound fillers from the wound bed. • Remove the interface layer(s), if present. • Remove all the foam and gauze from any undermining, sinuses, or tunnels and any loose specks of foam or gauze from the wound bed. • Count all interface layer(s) and wound filler(s) to ensure they are removed. If the count does not match documentation, inform the Physician/NP.	If the wound filler(s) is still adhering to the wound bed, add more NS. Consider use of a non-adherent interface dressing when the dressing is reapplied. Retained wound filler(s) pieces and dressings can increase the risk of wound infection. Report any interface or wound filler miscounts in the Patient Safety Reporting system.
8. Remove gloves and perform hand hygiene.	
9. If reapplying another dressing, use the Procedure: Applying/Reapplying VACUlta4/ActiVAC Dressing or apply an alternative dressing as per orders.	

\

Procedure: Changing the Canister for a VACUlta4 or an ActiVAC Device	
Change the canister when full or at least every 7 days as indicated by the date.	
Steps	**Key Points**
1. Assemble equipment and supplies: ○ Sterile replacement NPWT canister ○ Alcohol swab x 1 ○ Appropriate PPE	
2. Set up for the procedure: • Perform hand hygiene and put on PPE. • Stop the therapy by pressing Start/Stop or On/OFF button. Close all the tubing clamps. • Open the sterile canister package and leave the canister resting on the sterile packaging	Do not power off the machine.
3. Prepare the tubing connector site: • Scrub the canister and dressing tubing connection site with the alcohol swab for 30 seconds, and let it dry for 30+seconds. • Disconnect dressing tubing from used canister tubing.	Alcohol must be allowed to dry for 30+ seconds for it to be effective.
4. Change the canister: • Keeping the new tubing tip sterile, attach the canister tubing to the dressing tubing. • Press the ejection button on the used canister to release it from the machine. • Click the new canister into place. • Unclamp both tubing clamps. Restart the therapy by pressing the Start or ON button. • Write the date on the canister	  The alarm will sound if not fully clicked into place.
5. Clean up work space: • Discard the old canister and used supplies appropriately. • Perform hand hygiene.	

Procedure: Managing VACUlta4 Alerts/Alarms **Page 1 of 2**	
To unlock the machine: At the Home Screen, press and hold the Screen Guard/Setting Lock for more than 5 seconds to unlock the screen. 	
Alerts and Alarms	**How to Correct the Situation**
Low Battery Alert / Battery Exhausted Alarm: • Solid **yellow** symbol appears when there is 2 hours left before the battery power level is too low to support therapy. This alarm is accompanied by a repeating audible tone.	• Plug the machine in. Ensure the power cord's **green** indicator lights up when the cord is plugged into the electrical outlet; if not, plug the machine into a different outlet. It takes 8 hours to fully recharge the battery.

Canister Full Alarm:
• **Yellow** symbol will appear when the canister is full. This alarm is accompanied by a repeating audible tone. Therapy is stopped.
• The canister release button will flash.
	• Check the graduated marks on the canister to determine if canister is full.
	  ○ If the canister is not full, press RESET and return to the home screen.
	  ○ If the canister full, press RESET and return to the home screen. Change the canister. Press the Stop / Start button to resume therapy.

Canister not Engaged Alarm: • Solid **yellow** symbol will appear when the canister is not fully engaged. This alarm is accompanied by a repeating audible tone. • The canister release button will flash. 	• Remove the canister by pressing on the Canister Release Button. • Inspect the canister to ensure no foreign bodies/ debris are interfering with the canister and device mating surfaces. • Ensure both canister seals are present and sitting correctly. • Re-attach the canister to the device, ensuring that the canister is **fully** engaged (push firmly into place if needed) and latched. An audible click should be heard, indicating that the canister is properly installed. • Press the Reset button to return to the Home screen. • Press Pause/Postpone button to restart therapy.

Leak Alarm:
• Solid **yellow** symbol appears when a leak has been detected; accompanied by a repeating audible tone.
• If not resolved within 3 minutes, therapy is stopped.
• The Seal Check Leak Detector screen has an audible tone and a bar graph which uses height and colour to reflects the leak:
  ○ **Yellow** bar graph indicates a leak.
  ○ **Green** bar graph indicates the system is operating properly.
	• Press Reset and then the Seal Check button to access the leak detector section.
	• Check for any small lifts on the dressing edge, seal with strips of adhesive drape. The Seal Check audible tone will slow down and the bar graph height will decrease as the leak is found.
	• Also ensure tubing connector is properly locked and that the canister is correctly engaged.
	• Press the ON/OFF button to restart the therapy. If the air leak is resolved, the **green** light will stay on. If not, the alarm will sound. Try again to seal the air leak.

Blockage Low Alert/ Medium Alarm: • **Yellow** symbol will appear indicating a possible blockage and is accompanied by a repeating audible tone.	• Ensure the tubing is not kinked or blocked. • Ensure the canister is fully engaged. • Try lowering the tubing and the machine below the wound level. • If the above does not work, press RESET and return to the HOME screen. If the machine is not ON, press Start / Stop button to restart therapy.

Procedure: Managing VACUlta4 Alerts/Alarms **Page 2 of 2**	
Alerts and Alarms	**How to Correct the Situation**
Therapy Inactive Alarm: • Solid **yellow** symbol will appear when the therapy has been paused for more than 15 minutes with the machine powered on. • This alarm occurs with a repeating audible tone.	• Press RESET to return to the HOME screen. • Press Stop / Start to restart therapy. • To shut OFF therapy, press the POWER button.

Low Pressure Alarm:
• Solid **yellow** symbol appears when the machine has not reached its targeted Therapy Pressure. This alarm is accompanied by a repeating audible tone.
	• Ensure canister is engaged.
	• Ensure clamps are open.
	• Ensure tubing are not bent or blocked.
	• If the above does not clear the blockage:
	  ○ Lowering the tubing and machine below the wound level may correct the therapy pressure.
	  ○ Consider that the TRAC pad itself may be blocked.

Therapy Pressure Deviation Alarm: • Solid **yellow** symbol appears when the wound site positive pressure has exceeded its allowable limits. This alarm is accompanied by a repeating audible tone.	• Ensure the clamps are open. • Ensure tubing is not kinked or blocked in any way. • Reposition the client to ensure no pressure on the dressing. • If client has limb compression device in situ over the NPWT; remove the device or decrease pressure on the device. • Press Reset and ensure that therapy is ON.
Therapy Internal Temperature Alert: • Solid **yellow** symbol appears when the internal temperature of the VACUlta4 therapy machine is outside of specified limits. This alert is accompanied by a repeating audible tone.	• Move the NPWT machine to an environment where there is air flow. It may take 2 hours for the therapy machine to return to the operating temperatures.
System Error (Machine Failure) Alarm: • Solid **yellow** symbol appears when there is a system fault with the VACUlta4 therapy machine after it has been powered ON. This alarm is accompanied by a repeating audible tone.	• Power machine OFF, if not already, and then restart to see machine will work. • If not, record error number and replace machine. • If unable to restart therapy in 2 hours, remove the NPWT dressing and apply an alternative dressing. Notify prescriber of the situation.
3M/KCI Customer Service: Phone: 1-800-668-5403	

Procedure: Managing ActiVAC Alerts/Alarms	
Alerts and Alarms	**How to Correct the Situation**
ActiVAC is not operating if: the ON/OFF therapy button does not display its **green** light and/or the Therapy icon is not rotating.	• Press the ON/OFF therapy button for 2 seconds to restart the machine.
Battery Level Indicator • **Yellow**: low battery life remaining. • **Red**: critically low level of battery life.	• **Green** battery indicator: 50% - 100% full battery. • **Yellow** battery indicator: plug in immediately. • **Red** battery indicator: plug in immediately. • Keep machine plugged into a power source, if possible, to maximize the battery life. It takes 6 hours to completely recharge the battery.
Canister Full Alarm A single audible alarm sounds when the canister is full. Therapy will be stopped during this alarm.	• Change the canister. • Press the Audio Pause button to silence the alert for 60 seconds.
Canister Not Engaged Alarm A single audible alarm sounds when the canister is not fully seated or latched into place. Therapy will be stopped during this alarm.	• Remove canister; press the Canister Release Button. Inspect canister for debris e.g., lint. • Re-attach canister to the machine, ensuring that the canister is **fully** engaged (push firmly into place if needed) and latched. When audible click is heard, the canister is properly installed. Press On/OFF to restart therapy.

Leak Alarm
• An audible repeating alarm sounds and if not resolved within 3 minutes, therapy will be stopped.
• The Seal Check Leak Detector screen has an audible tone and a bar graph which uses height and colour to reflects the leak:
  ○ **Orange** bar graph indicates a leak.
  ○ **Green** bar graph indicates the system is operating properly.
	• Press the Therapy button to view the Seal Check Leak Detector screen to assess for leaks.
	• Check for any small lifts on the dressing edge, seal with strips of adhesive drape. The Seal Check audible tone will slow down and the bar graph height will decrease as the leak is found.
	• Also ensure tubing connector is properly locked and that the canister is correctly engaged.
	• Press ON/OFF button to restart the therapy. If leak is resolved, the **green** light will stay on. If not, the alarm will sound. Try again to seal the leak.

Blockage Alarm A single audible alarm sounds when tubing may be blocked. Therapy will continue during this alarm but may not be at the correct Therapy Pressure.	• Ensure that the tubing clamps are open. • Ensure that the tubing is not kinked. • Try clearing the blockage by positioning tubing and the machine below the level of the wound.
Low Pressure Alert A single audible alert tone progressing to a repeating audible alert indicating that the machine has not reached its targeted Therapy Pressure.	• Ensure that the tubing clamps are open. • Ensure that the tubing is not kinked. • Try clearing the blockage by positioning tubing and the machine below the level of the wound. • Consider that the TRAC pad may be blocked.
Therapy Inactive Alarm Repeating audible alarm occurs when therapy **OFF** for 15 minutes but machine powered ON.	• Restart the therapy by pressing ON/OFF button.
System Error (machine failure) Alarm • A repeating audible tone with a 'tool' icon appearing on the bottom right of the screen. • All lights OFF indicates the pump has failed and a new pump is needed.	• Power machine OFF, if not already, and then restart to see machine will work. • If not, record error number and replace machine. • If unable to restart therapy in 2 hours, remove the NPWT dressing and apply an alternative dressing. Notify prescriber of the situation.
3M/KCI Customer Service: Phone: 1-800-668-5403	

Procedure: Bridging - Offloading the TRAC Pad	
This procedure is used to offload the TRAC pad from the wound site when placing the pad directly over a wound site would hinder the client from safely positioning, mobilizing, or wearing therapeutic shoes/boots, or, if it creates pain, pressure, or skin damage, e.g., on the dorsal trunk, trochanter or hip.	
Steps	**Key Points**
1. Complete dressing to the point of applying the transparent drape (dressing procedure Steps 1-11.	May need to hold wound black foam in place using small strips of transparent film drape.
2. Identify an alternate location for the TRAC pad and location for the bridge.	Consider positioning, bony prominences and footwear; collaborate with Chiropodist, Podiatrist, OT or PT as needed.
3. Ensure skin barrier film wipes, a transparent film drape, either polyurethane or silicone-acrylic, or hydrocolloid is added to dressing tray.	These are used to protect the skin under the bridge from the NPWT suction.
4. Prepare skin for the bridge if using polyurethane drape: • Wearing sterile gloves, apply the skin barrier film to the skin the bridge and TRAC pad will cover.	If using silicone-acrylic drape, barrier film protection is not needed as bridge will sit on the silicone-based drape.
5. Prepare the offloading bridge & TRAC pad foam: • Cut the transparent film drape or hydrocolloid in at least 5 cm wide strips; these strips will be the 'base' of the bridge. • Cut an 8 cm round piece of drape or hydro-colloid; this is for the TRAC pad. • Cut black foam piece(s) at least 2 cm wide and 2 cm longer than the distance between the wound dressing and alternate TRAC pad site. • Cut a foam piece into a 6-7 cm circle for the TRAC pad to rest upon. • Cut the film drape into 2.5 cm strips; these will be used to 'tack' the bridge pieces in place.	
6. Create the offloading bridge & TRAC pad site: • Lay down the 5cm wide transparent film drape or hydro-colloid pieces from the edge of the wound to the location of the TRAC pad. Lay down the TRAC pad circle. • Lay down foam bridge pieces(s) and then the TRAC pad foam. Ensure ends of bridge over-lap by 1 cm on the dressing and TRAC pad foam. • Apply several 2.5 cm wide film drape strips to 'tack' the bridge and TRAC pad foam pieces in place until the final drape is applied. • Cover the entire bridge and TRAC pad foam with a layer of transparent film drape.	All foam pieces must overlap by a least 1 cm on each end in order to be in direct contact with the wound dressings. This ensures that the NPWT suction is applied to all pieces. Ensure foam does not touch unprotected skin. If using more than one piece of transparent film drape, ensure they overlap by at least 1-2 cm. If using silicone-acrylic drape, it can be repositioned, without losing its adhesion, several times within the first 15-20 minutes after the initial application.
7. Complete dressing: go to Step 12 of Procedure: Applying/ Reapplying VACUlta4/ActiVAC Dressing.	
To Remove the Offloading Bridge • Release a small edge of the film drape; with one hand gently stretch the film drape horizontally away from the wound; with the other hand slowly push the skin down to release it from the drape. Repeat these steps to remove all of the drape. • Remove any remaining hydrocolloid strips.	A peeling motion can cause epidermal stripping and irritates the peri-skin and surrounding skin

Procedure: Bridging - Connecting Two or More Wounds	
This procedure is used to connect two or more wounds to one NPWT machine. It is appropriate for wounds that are 25 cm (10 inches) or less apart. Do not connect wounds requiring different pressure settings. Do not connect an infected wound with a non-infected wound. Do not connect wounds with different etiologies (e.g., diabetic foot and surgical incision). Do not use the NPWT instill-dwell feature, (e.g., Veraflo).	
Steps	**Key Points**
1. Complete both dressings to the point of applying the transparent drape (dressing procedure Steps 1-11).	May need to hold wound black foam in place using small strips of transparent film drape.
2. Ensure a skin barrier wipe, transparent film drape or sterile hydrocolloid is added to the dressing field set-up.	These are used to protect the skin under the foam bridge from the NPWT suction.
3. Prepare skin for the bridge if using polyurethane drape: • Wearing sterile gloves, apply the film barrier to the skin that the bridge(s) will rest upon.	If using silicone-acrylic drape, barrier film protection is not needed as bridge will sit on the silicone-based drape.
4. Prepare the bridge: • Cut the transparent film drape or hydrocolloid in at least 5 cm wide strips; these strips will be the 'base' of the bridge. • Cut the black foam piece(s) at least 2 cm wide and 2 cm longer than the distance between the wound dressings. Repeat if connecting a 3rd wound. • Cut the transparent film drape into 2.5 cm strips to be used to "tack' the bridge foam pieces in place.	
5. Build the bridge: • Apply the 5 cm wide transparent film drape or hydrocolloid strips from the edge of wound #1 to the edge of the wound #2. • Lay foam bridges on the protected skin and overlap by 1 cm on wound #1, all pieces of the bridge and wound #2. • Apply the 2.5 cm wide transparent film drape strips to 'tack' the bridge foam pieces in place until the final drape is applied. • Repeat the process for wound #3 if needed. • Cover the entire bridge with a layer of trans-parent film drape.	All foam pieces (wound pieces and bridge pieces) must overlap by a least 1 cm to ensures the NPWT suction is applied to all the pieces. Ensure foam does not touch unprotected skin. If using more than one strip of transparent film drape, ensure the strips overlap by at least 1-2 cm. If using silicone-acrylic drape, it can be repositioned, without losing its adhesion, several times within the first 15-20 minutes after the initial application.
6. Complete the dressing: go to Step 12 of Procedure: Applying /Reapplying the VACUlta4/ActiVAC Dressing	
To Remove the Bridge Connecting Two or More Wounds • Release a small edge of the film drape; with one hand gently stretch the film drape horizontally away from the wound; with the other hand slowly push the skin down to release it from the drape. Repeat these steps to remove all of the drape. • Remove any remaining hydrocolloid strips.	A peeling motion can cause epidermal stripping and irritate the peri-skin and surrounding skin.

Procedure: Using a Y-Connector for Two Wounds	
This procedure is used for managing two wounds with one NPWT machine. This is appropriate for two wounds that are greater than 25 cm (10 inches) apart. Do not connect wounds requiring different pressure settings. Do not connect an infected wound with a non-infected wound. Do not connect wounds with different etiologies (e.g., diabetic foot and surgical incision). Do not use more than one Y-connector. Do not use the NPWT instill-dwell feature, (e.g., Veraflo).	
Steps	**Key Points**
1. Complete both dressings prior to adding the Y-connector.	
2. Ensure the Y-connector is added to the sterile field at the time the dressing tray is set-up.	Perform hand hygiene to avoid contamination.
3. Set up the Y-connector: • Attach the TRAC pad tubing from each of the dressings to one of the smaller branches of the Y-connector, twisting together until they lock. o Ensure male end of the Y-connector is connected to the wound of most concern. • Attach the larger end of the Y to the canister tubing, twisting together until they are locked. • Secure the dressing connector sites with tape.	If there any leaks at the Y-connector, the NPWT alarm will sound. The male end provides a higher level of negative pressure to the wound. The weight of the Y tubing and client movement can cause the dressing connector sites to disconnect.
4. Sterile gloves are now considered 'clean'. Open the tubing clamps.	Ensure that care plan states to change the Y-connector every 7 days.
5. Complete dressing: go to Procedure: Applying/ Reapplying the VACUlta4/ActiVAC Dressing	

Client Showering
For clients with a closed incision or a skin graft, showering/tub bathing should wait until the ActiVAC dressing has been discontinued to avoid disturbing the dressing. Clients may have a sponge bath. For clients with a wound, clients can shower but not have a tub bath. The shower needs to be taken immediately prior to a scheduled dressing change and the shower time should be kept short. Set up for the shower: • Gather the supplies: alcohol swab, (2) 2x2 gauze dressings and tape. • Turn the machine "Off". • Wash hands. Don gloves. • Close the tubing clamps. • Using the alcohol swab, cleanse the connection point of the dressing tubing and canister tubing for 30+seconds and allow to dry for 30+seconds. • Disconnect the dressing tubing from canister tubing. • Cover the ends of the tubing with a 2x2 gauze/tape to keep them clean. • Place the machine where it will not get wet. • To avoid water getting into the tubing; ensure that the dressing tubing is positioned downward during the shower. • The dressing is waterproof but should not be exposed to direct shower spray. If necessary, cover with a plastic sheet/tape. • After showering: o Gently pat dry the dressing and tubing. o Reconnect the tubing. o Open the tubing clamps.

Transition/Discharge Planning see Guideline: Negative Pressure Wound Therapy for Adults & Children

- For transition from one acute site to another acute care site.
- For transition from acute care to community care.
- For transition from acute care to long term care.
- For transition from community care or long-term care to acute care.

Client/Family Education and Resources

1. Acute Care:
    a. When NPWT is started, teach patient/family the rationale for and the underlying principles of NPWT, as well as general information regarding the VACUlta4 or ActiVAC machine being used.
    b. Prior to transition of care to Community (home/Ambulatory Care Clinic):
        - Review the Client Health Education Resource: NPWT ActiVAC which outlines the frequently asked NPWT-related questions and specific ActiVAC machine details e.g. the management of alerts/alarms, changing the canister.
        - Identify which dressing method the patient is to use should there be an irreparable dressing leak or machine failure and put together the client's Troubleshooting Supplies bag.

2. Community Care:
    a. When the client is transitioned from Acute Care with NPWT in place or when the NPWT is started at home/ambulatory clinic, teach/reinforce with client/family the rationale and underlying principles of NPWT, as well as, review the frequently asked NPWT-related questions and specific information regarding the ActiVAC machine being used, e.g. the management of alerts/alarms, changing the canister; see the Client Health Education Resource: NPWT ActiVAC.
        - Review/identify the dressing method that the client is to use to should there be an irreparable dressing leak or machine failure. Ensure the client has a Troubleshooting Supplies bag.

3. Long Term Care:
    a. When the resident is received back from Acute Care with NPWT in place or when NPWT is started within the long-term care site, teach/reinforce with client/family the rationale for and the underlying principles of NPWT, as well as general information regarding the ActiVAC Machine being used.

Documentation

1. With each VACUlta4 or ActiVAC NPWT dressing change, document on the appropriate paper or electronic documentation tool, as per agency policy, the following:
    a. The full wound assessment
    b. The numbers (#) of interface and wound filler packing pieces removed and replaced
    c. Document the client's response to the dressing change.

2. Document NPWT clinical outcomes and care plan revisions as they occur.

3. For Acute Care & Long Term Care, document safety/monitoring checks on the NPWT Safety/Monitoring Check Flow Sheet.

4. For Acute Care & Long Term Care, document canister fluid volume; use the Fluid Balance (In/Out) flow sheets as per unit policy.

5. Document client/family teaching provided and the troubleshooting supplies given to client/family on transition to the community setting.

6. When a VACUlta4 or ActiVAC NPWT dressing is applied/changed in the Operating Room (OR), the following is documented in the OR record:
    - NPWT type: Open Wound, Closed Incision or Skin Graft
    - Type(s) of pieces (black foam, white foam, interfaces) placed in or removed from the wound cavity by the surgical team
    - Number of pieces placed in/removed from the wound cavity by the surgical team

7. Report NPWT adverse events in the Patient Safely Learning System, or report the safety event according to Health Authority or agency guidelines.

Bibliography/References

1. Refer to the Negative Pressure Wound Therapy for Adults & Children Guideline for the master list of references.
2. KCI. (2017). V.A.C. Ulta therapy systems: User manual for clinicians. Retrieved from https://www.veraflo.com/wp-content/uploads/2017/01/VAC-Ulta-4-Therapy-System-User-Manual.pdf

Date of Creation

This guideline is based on the best evidence-based information available at the time it was published and avoids opinion-based statements, where possible. It was developed by the Provincial Nursing Skin & Wound Committee and has undergone provincial stakeholder review.

Created By	British Columbia Provincial Nursing Skin and Wound Committee in collaboration with NSWOCs and Wound Clinicians from across all Health Authorities.
Publication Date	April 2019
Revision Date(s)	August 2019, January 2020, May 2020, January 2021, August 2021, March 2022, September 2023
Review Date(s)	