PURPOSE:
To provide guidelines for use of Negative Pressure Wound Therapy (NPWT).

CONSIDERATIONS:
1. NPWT uses controlled negative pressure to assist and accelerate wound healing by evacuating wound fluids, stimulating granulation tissue formation, reducing bacterial burden and maintaining moist wound environment.
2. In order for NPWT to be effective, the patient must have the overall physiologic capacity to heal. The normal albumin range is 3.5 g/dl-5.5 g/dl. A recent albumin level is recommended. Nutritional intervention should be initiated for albumin levels below 3.5 g/dl as a low albumin impairs wound healing.
3. NPWT treatment can be used on acute and chronic wounds to include stage III, stage IV pressure ulcers, vascular and neuropathic ulcers. It can also be used for treatment of dehisced surgical wounds, full thickness and partial thickness wounds, burns, skin grafts, muscle flaps and explored fistulas.
4. Precautions should be taken for patients with active bleeding, anticoagulants and difficult wound hemostasis.
5. NPWT may be used when vital organs are exposed. However, special precautions such as the placement of petroleum based or silicone non-adherent mesh products over the organs to protect underlying tissue.
6. Physician orders are required for the dressing change regimen and should include the type of NPWT dressing desired, the frequency of dressing changes, the target pressure for therapy, and the subsequent cycle (continuous/intermittent).
7. The periwound site, which is visible around the dressing, must be monitored for changes in character such as erythema or warmth everyday by patient/caregiver.
8. NPWT is contraindicated in wounds that contain nonviable necrotic tissue, untreated osteomyelitis and malignancy in the wound.
9. NPWT is also contraindicated when treatment would place the dressing material directly over arteries and veins that are exposed in the wound.
10. NPWT is also contraindicated for non-enteric and unexposed fistulas.
11. Since there are many different NPWT systems available on the market, it is important to follow manufacture’s recommendations when applying the NPWT dressing.
12. NPWT dressing change frequency is generally every 48 hours or 3 times a week; however, you should follow the manufacturer’s recommendation for dressing change frequency.

EQUIPMENT:
The NPWT pump
Appropriate canister and tubing
Sponge dressing, antimicrobial gauze dressing, or cellulose dressing (dependent on the NPWT system)
Skin barrier prep
Transparent drape
Normal Saline or wound cleanser
Non-sterile 4x4 gauze
Non-sterile transparent dressing (if necessary)
Non-adherent petroleum-based gauze or silicone contact layer.
Personal protective equipment (PPE) as needed

PROCEDURE:
1. Adhere to Standard Precautions.
2. Explain procedure to patient.
3. Verify the physician’s orders.
4. Position and drape the patient for privacy.
5. Apply appropriate PPE.
6. Decontaminate hands.
7. Don non-sterile gloves.
8. Insert wound drainage canister into the pump or attach the canister to the pump as per manufacturer’s directions. Use care not to contaminate the distal end.
9. Cleanse wound per orders.
10. Cut dressing to fit wound. Avoid cutting the dressing material directly over the wound bed as this may result in particles being inadvertently left in wound bed.
11. Apply skin sealant to adjacent intact skin (optional) or drape periwound area.
12. Cut packing pieces from dressing to fill only shallow undermined space (so they are retrievable). Dressing/packing material should loosely fill wound cavity. Avoid tightly packing the wound cavity.
13. Cut prepackaged transparent film drape dressing to conform to body contours; allow for liberal amount of intact periwound skin for dressing to adhere to.
14. While holding dressing material (foam/gauze/cellulose) in place in wound, apply transparent drape over wound as wrinkle free as possible.
15. Remove top plastic liner and perforated edges from transparent film dressing.
16. Cut a 2 cm hole in the drape, large enough to allow fluid to pass through the dressing. Apply the Suction tubing/Therapeutic Regulated Accurate Care (TRAC) pad as per manufacturer’s instructions.
17. Lift tube to pinch transparent film under tube to obtain airtight seal.
18. If needed, place thin hydrocolloid, gauze or other types of dressing between tube and the skin interface to prevent pressure damage from the tube.
Position tube away from bony structures or creases in the tissue.
19. Connect distal end of tube to canister.
20. Open clamps.
21. Turn pump on at desired settings. Transparent dressing should visibly contract down over wound dressing if an airtight seal has been achieved.

**Acute/Chronic Enteric Fistula Management**

**General Guidelines**
1. See recommended manufacturer’s guidelines for NPWT therapy and acute enteric fistula.
2. Cover the mouth of the fistula with several layers of petroleum-based gauze.
3. Aggressively irrigate and clean the abdominal wound as directed by physician.
4. Remove layers of petroleum-based gauze from the mouth of the fistula.
5. Cover the mouth of the fistula with a single layer of a wide meshed non-adherent dressing.
6. Cover all areas of exposed bowel or other organs with a silicone or a petroleum-based or fine meshed non-adherent dressing.
7. Cut and apply a strip of foam or drain tubing material (dependent on manufacturer) directly over wide meshed non-adherent dressing on the mouth of the fistula. The foam or tubing should extend 1-2 cm beyond the mouth of the fistula.
8. If needed, attach drain tubing to appropriate canister/drainage bag.
9. Apply NPWT dressing as per procedure Steps 1-21 as listed above.

**AFTER CARE:**
1. Document procedure in patient record, including how patient tolerated the procedure.
2. If more than one piece of foam is used, label the outer dressing with the count (cover the label with drape) and document the count in the patient record.
3. If meshed non-adherent dressing is placed in the wound bed, label the outer dressing indicating the use of meshed dressing (cover the label with drape) and document the use of the meshed dressing in the patient record.
4. Observe and document tissue fluid characteristics, odor and periwound site after each dressing change.
5. Measure wound at a minimum once a week and document.
6. Teach patient/caregiver to how to assess character and amount of drainage daily.
7. Instruct the patient and/or caregiver about how to use the system, potential complications and their signs/symptoms, and what to do if complications occur.
8. Teach patient what signs and symptoms (acute changes) should be reported to physician.

**Removing the NPWT Dressing:**
1. Adhere to Standard Precautions.
2. Explain procedure to patient.
3. Verify the physician’s orders.
4. Position and drape the patient for privacy.
5. Apply appropriate PPE.
6. Decontaminate hands.
7. Don non-sterile gloves.
8. Clamp the tubing at the dressing site and disconnect the tubing using care not to spill any of the fluid in the tubing. Holding the tube above the level of the pump allows for any residual fluid in the tube to flow into the canister.
9. Turn off the pump.
10. Once the dressing has relaxed, gently stretch the transparent occlusive drape horizontally and slowly pull from skin. DO NOT PEEL. Gently remove foam from wound.
11. If dressing material adheres to the wound bed, apply normal saline into the wound dressing and let it set for 15 to 30 minutes before gently removing.
12. If dressing material consistently adheres to the wound bed, consider applying non-adherent contact layer under the dressing to protect wound bed.
13. Discard the dressing material, transparent occlusive tape, tubing and gloves as per standard precautions.

**REFERENCES:**


Integumentary – Application of Negative Pressure Wound Therapy Dressing  
SECTION: 4.06  
Strength of Evidence Level: 3  


