

SURGICAL PROGRAM PROCEDURE

CATEGORY: System-Level Clinical

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TITLE: **WOUND EXUDATE MANAGEMENT – POUCHES AND DRAINS**

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PURPOSE

To outline the procedure for management of wound exudate using pouches and drains.

PROCEDURE

Equipment

- PPE (gloves, gown, mask, and eye protection or face shield)
- Gauze pads
- Scissors; forceps, if appropriate
- Wound management drainage system or ostomy pouch and wafer
- Moist cloth or adhesive remover wipes
- Paper tape or gentle silicone tape
- Skin barriers: rings, liquid, wafers, paste, powder and sealant, or hydrocolloid dressings
- Absorptive dressings: alginate, hydrofiber, foam
- Sterile gloves and sterile dressing change kit (if needed)
- Sterile water or normal saline for cleansing

Special Instructions

- Perform irrigation only when ordered.

Method

Patient and Family Education

1. Provide an explanation of the procedure, including the reason for changing the wound dressing.
2. Explain the reason for the odour during the procedure.
3. Discuss the patient's role during the dressing change procedure and when maintaining the wound pouch or drain.
4. Instruct regarding increased protein needs to promote wound healing.

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Assessment

1. Perform hand hygiene before patient contact and don gloves.
2. Verify the correct patient using two identifiers.
3. Review the patient's laboratory profile for evidence of infection, such as an elevated white blood cell count.
4. Assess the patient's vital signs for evidence of infection, such as an elevated temperature.
5. Perform hand hygiene and don gloves.
6. Assess the wound site for signs of infection.
 - Erythema at the site
 - Edema or induration around the site
 - Increased pain or tenderness at the site
 - Changes in the amount, colour, and odour of wound exudate
 - Periwound skin breakdown
7. Assess the patency of the wound drainage system to determine whether irrigation may be needed.
8. Remove gloves and perform hand hygiene.

Preparation

1. Consult with the practitioner regarding the need for analgesia or sedation, particularly if the patient is experiencing pain, agitation, or is unable to cooperate with the procedure. Administer medications as prescribed.
 - If sedation is needed for the procedure, perform moderate sedation monitoring per the organization's practice and ensure that emergency response equipment is available.
 - If sedation or analgesia is administered, reassess the patient's pain or sedation status, allowing for sufficient onset of action per medication, route, and the patient's condition.
2. Ensure that all supplies are available before removing the old pouching system.
3. Place the patient in a position of optimal comfort.
4. Notify the practitioner, who may need to assess the wound or perform debridement.
5. Have a second nurse or technician available to assist.

Pouching a Wound with Excessive Exudate or High Output Fistula Drainage

1. Perform hand hygiene and don gloves, gown, mask, and eye protection or face shield.
2. Verify the correct patient using two identifiers.
3. Explain the procedure to the patient and ensure that he/she agrees to treatment.
4. Empty the contents of the drainage pouch, measure the amount, and discard the contents. This provides information regarding fluid, electrolyte, and other nutrient loss.
5. Support the underlying skin with your fingertips to minimize tissue trauma and gently remove the old drainage pouch. Dispose of the pouch. **Apply a moist cloth or use adhesive remover wipes to loosen the edges of the drainage pouch.**
6. Using gauze pads moistened with normal saline solution or sterile water, gently clean the wound bed. Clean and dry the intact periwound and surrounding skin. **Inspect the periwound skin for signs of maceration. If necrotic tissue is present, the practitioner may need to debride the wound.**
7. Ensure that active fistula output is contained by suction or an absorptive dressing. Containment reduces disruption during the dressing and pouch change.
8. Create a template by tracing the edges of the wound onto the wrapper from the wound drainage pouch or ostomy wafer. Then cut out the area inside the tracing, making the opening 0.3 cm larger than the tracing. Tracing the wound onto the wrapper provides a better fit with less potential for leaking on intact surrounding skin.
9. Apply a skin barrier (wafer, rings, powder, paste, or sealants) to the periwound edges as ordered. More than one skin barrier may be indicated. Skin barriers help protect the intact periwound skin and provide a flat surface for adherence of the drainage pouch. A good seal prevents



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moisture and wound exudate from undermining the dressing and creating skin maceration or denudation. **Avoid wrinkles in the pouch barrier during pouch application. Wrinkles create a leak, and fluid will not be contained in the drainage pouch.**

Table 2 Guide to Use of Skin Barriers in Fistula Management		
Type of Skin Barrier	Characteristics	Indications
Solid wafers (4 × 4 in [10.2 × 10.2-cm] or 8 × 8 in [20.4 × 20.4 cm])	<ul style="list-style-type: none"> • Pectin-based wafers with adhesive surface • Available as wafers or rings • Have moist tack • Have varied flexibility • May be cut into wedges, rings, or strips • Have varied durability to effluent • Changed only when they loosen from peristomal edges or once every 7 days 	<ul style="list-style-type: none"> • Provide skin protection, referred to as laying down a protective platform • Level irregular skin surfaces • Protect peristomal skin from effluent when dressings are used or skin is exposed • Gauze dressings are applied over the skin barrier wafer and taped to wafer rather than to skin
Skin barrier rings	<ul style="list-style-type: none"> • Available in hydrocolloid and karaya formulations • Have moist tack • Have varied flexibility • Have varied durability to effluent • Hydrocolloid formulations • Recommended for fistula management 	<ul style="list-style-type: none"> • Level irregular skin surfaces • Protect peristomal skin from effluent when dressings are used or skin is exposed
Paste (tube or strip)	<ul style="list-style-type: none"> • Commercial preparations contain alcohol, which can create burning sensation if skin is denuded • Extremely tacky; should be applied as thin bead and smoothed into place with damp gloved finger or tongue blade • Contains solvents; allow to dry briefly so that solvents can escape before other products are applied 	<ul style="list-style-type: none"> • Level irregular skin surfaces • Protect exposed skin from effluent (i.e., with pouching) • Extend duration of solid-wafer barrier when pouching
Powder	<ul style="list-style-type: none"> • Must be used lightly; can be used in combination with sealants to create artificial scab • Residual powder alters adhesion 	<ul style="list-style-type: none"> • Absorb moisture from superficial denudement before applying ointments or adhesives
Skin protectant	<ul style="list-style-type: none"> • Liquid, nonalcohol, and alcohol preparations • Nonalcohol skin protectants are indicated for use on denuded skin • Must be allowed to dry to permit solvents to dissipate • Available in various forms (wipes, gel, wands, roll-ons, pump spray) 	<ul style="list-style-type: none"> • Can be used under adhesives to protect fragile skin during adhesive removal (i.e., skin stripping) • Improve adherence of adhesives to skin (particularly oily skin) • Protect peristomal and periwound skin from effluent or maceration when dressings are used • Used in combination with skin barrier powders; creates artificial scab

10. Remove the backing from the drainage pouch, exposing the adhesive side, and apply the skin barrier. Use gentle, even pressure to secure the pouch edges to the skin barrier.
 - A. Ensure that the pouch is positioned to maximize the movement of exudate away from the wound.
 - B. Monitor the dressing and pouching system for leaks. If a leak that compromises the skin integrity develops, replace the dressing and pouching system.
11. Close the drainage pouch. Allow wound exudate to collect in the pouch. **Depending on the amount of exudate, anticipate additional orders that may include attaching the pouch to a larger gravity drainage bag or to low wall suction. If suction is not used, the pouch must be emptied regularly. Excessive exudate may create tension in the pouch, causing it to loosen and leak.**
12. Label the pouch per the organization’s practice.
13. Discard supplies, remove PPE, and perform hand hygiene.
14. Document the procedure in the patient’s record.

Dressing Wounds with Surgically-Placed Drains

1. Perform hand hygiene and don gloves, gown, and eye protection.
2. Verify the correct patient using two identifiers.
3. Explain the procedure to the patient and ensure that he/she agrees to treatment.
4. Remove the old dressing, taking care not to dislodge the drain. **Ensure that no dressing fragments remain in the wound.**

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5. Assess the periwound skin for evidence of moisture-associated dermatitis or skin breakdown.
6. Remove gloves and perform hand hygiene.
7. Establish a sterile field if indicated or ordered by the practitioner. Otherwise, use clean technique. Use of aseptic technique for wound dressing changes is indicated only in the first 48 hours after surgery.
8. Don clean or sterile gloves, as indicated.
9. Clean the wound and periwound skin using gauze moistened with normal saline or sterile water. Use gentle pressure to minimize wound trauma. **If necrotic tissue is present, the practitioner may debride the wound.**
10. Remove gloves, perform hand hygiene, and don a new pair of clean or sterile gloves as indicated.
11. Apply the dressing as ordered by the practitioner or wound care nurse.
 - If the wound incision remains closed and intact, apply a dry gauze dressing over the wound and secure a split gauze dressing around the drain.
 - If the wound incision is open and the drain is in the wound bed, place the ordered absorptive dressing in the exposed wound bed. Avoid wrapping around or occluding the drain. The dressing should be capable of absorbing wound drainage and preventing moisture accumulation on the surrounding intact periwound skin.
12. Apply a skin barrier film to the intact periwound skin and allow the skin to dry.
13. Apply a secondary absorptive dressing. **Wound exudate that leaks from the edges or outer layer of the dressing (strike-through) may be distressing to the patient, and it creates a portal for bacteria to enter the wound. Change dressings when they are saturated or when strike-through is present.**
14. Secure the dressing as needed with paper tape or gentle silicone tape.
15. Label the dressing per the organization's practice.
16. Discard supplies, remove PPE, and perform hand hygiene.
17. Document the procedure in the patient's record.

Monitoring and Care

1. Observe the patient for signs of wound infection. **Reportable conditions: Erythema; edema; induration; increased tenderness or pain; fever and elevated white blood cell count; changes in the amount, colour, or odour of wound drainage; periwound skin breakdown.**
2. Monitor the wound drainage system for patency and the pouching system for an effective seal. **Reportable conditions: Change in wound drainage characteristics, sudden increase or decrease in drainage, cessation of drainage, periwound skin breakdown.**
3. Monitor the amount of wound drainage relative to the patient's intake and output. **Reportable conditions: Signs of hypovolemia, including tachycardia, hypotension, oliguria, increasing amounts of drainage.**
4. Monitor caloric and protein intake in a patient with heavily draining wounds. Initiate a nutritional consult as needed. Protein intake may need to be increased 2 to 2.5 times the baseline protein requirement to promote wound healing. **Reportable condition: Laboratory analysis suggesting hypoalbuminemia.**
5. Assess, treat, and reassess pain.

Expected Outcomes

- The pouching system effectively collects and directs exudate away from the wound bed
- Excessive exudate is removed from the wound bed; drains remain intact and patent
- The surrounding skin is dry and free of excessive wound drainage moisture and maceration
- Wound drainage exit sites are clean and dry without signs of infection or irritation
- Wound healing is enhanced because of effective wound drainage removal
- Wound drainage decreases over time and has no foul odour or undesirable colour

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Unexpected Outcomes

- Wound drain becomes dislodged, blocked, or kinked
- Skin erosion or maceration occurs around the wound edges
- Wound drain is dislodged during the dressing or pouching procedure
- Wound healing is delayed because of sub-optimal management of excess wound exudate
- Wound infection occurs

Documentation

- Description of wound bed, pouch, drains, suction (if applied), periwound and surrounding skin, and characteristics of wound exudate (colour, amount, odour)
- Type of dressing
- Patient and family education
- Patient's tolerance of the procedure and response to pain medication
- Date and time of dressing change
- Unexpected outcomes and related nursing interventions
- Pain assessment and management
- Sedation assessment and management (if sedation is used)

EDUCATION AND TRAINING**Education/Training Related Information**

Wound exudate is a normal by-product of wound healing, but excess amounts may result in an array of problems. Fluid accumulation in a wound increases pressure, decreases tissue perfusion, and impairs the normal wound healing cascade, which may lead to infection. Maintaining wound moisture balance by managing excess wound exudate is critical to optimizing wound healing. Containment of wound drainage also reduces the risk of moisture-associated dermatitis and decreases the frequency of dressing changes, thereby improving a patient's quality of life and reducing costs.

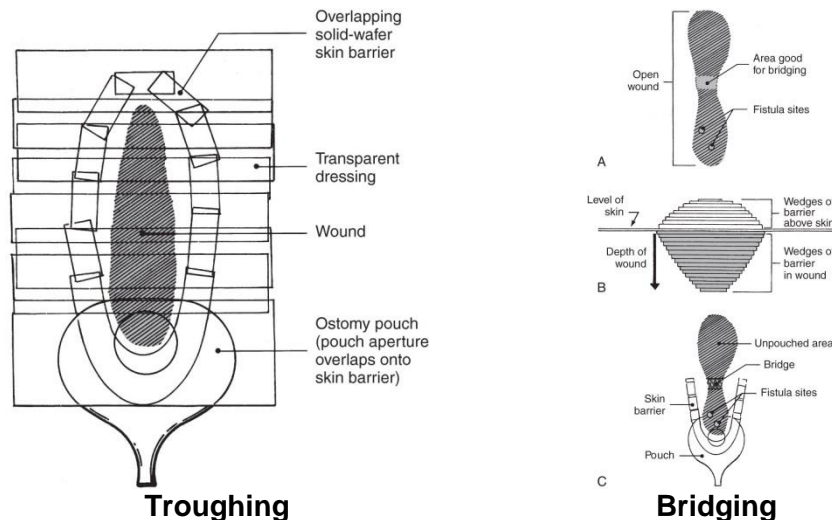
Assessment of wound exudate should be performed with each dressing change and should focus on quantity, colour, consistency, and odour. Drainage is expected to decrease in quantity, change from sanguineous (red) to serosanguineous (pink) to serous (clear yellow), become less viscous, and have minimal malodor as a wound heals. Deviation from these expected changes in drainage characteristics may indicate a bacterial overgrowth, infection, or other complications, such as the development of a fistula.

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Table 1 Color, Consistency, and Odor of Exudate	
Characteristic	Possible Causes
Significance of Exudate Color	
Clear, amber	Serous exudate, often considered normal but may be associated with infection
Cloudy, milky, or creamy	May indicate the presence of fibrin strands or infection
Pink or red	Presence of red blood cells, indicating capillary damage
Green	May indicate bacterial infection
Yellow or brown	May result from the presence of slough or material from a fistula
Gray or blue	May be related to the use of silver-containing dressings
Significance of Exudate Consistency	
High viscosity	<ul style="list-style-type: none"> • High protein content caused by infection or inflammation • Necrotic material • Enteric fistula • Residue from dressings or topical preparations
Low viscosity	<ul style="list-style-type: none"> • Low protein content caused by venous or congestive cardiac disease or malnutrition • Urinary, lymphatic, or joint space fistula
Significance of Exudate Odor	
Unpleasant	<ul style="list-style-type: none"> • Bacterial growth or infection • Necrotic tissue • Sinus, enteric, or urinary fistula

Several options are available to manage exudate from a wound, including absorptive dressings, surgical drains, ostomy pouches, fistula wound management systems, and negative pressure wound therapy (NPWT) devices. Modern absorptive dressings include alginates, hydrofibers, foams, and hydrocolloids. Gauze is often used in post-surgical care and is best used in wounds with minimal or no exudation. The ideal dressing absorbs exudate without desiccating the wound bed, serves as an infection barrier, may be removed without causing trauma or leaving dressing fragments in the wound, is semi-permeable to gases, and prevents skin maceration around the wound.

Fluid collection devices, such as ostomy pouches, are useful for managing excess wound exudate. There are several advanced techniques to promote effective fluid containment, such as troughing and bridging. These techniques may be used separately or with NPWT to remove excess wound exudate, stimulate tissue growth, and promote wound healing.



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Drains are placed in or next to surgical wounds to promote healing by creating an outlet for excessive fluid accumulating in or near the wound bed. Penrose drains are often placed in the wound; vacuum and suction drains are frequently placed just outside the wound bed. Incisional wounds healing by primary intention (surgical closure) that remain closed and without drainage do not require a dressing after 48-72 hours.

Energy and protein malnutrition contribute to poor wound healing. Depleted protein from excess wound exudate must be replaced along with fluids and calories to support optimal nutrition.

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