A Hemovac drain is placed into a vascular cavity where blood drainage is expected after surgery, such as with abdominal and orthopedic surgery. The drain consists of perforated tubing connected to a portable vacuum unit. Suction is maintained by compressing a spring-like device in the collection unit. After a surgical procedure, the surgeon places one end of the drain in or near the area to be drained. The other end passes through the skin via a separate incision. These drains are usually sutured in place. The site may be treated as an additional surgical wound, but often these sites are left open to air the first 24 hours after surgery.
As the drainage accumulates in the collection unit, it expands and suction is lost, requiring recompression. Typically, the drain is emptied every 4 or 8 hours and when it is half full of drainage or air. However, based on the medical orders and nursing assessment and judgment, it could be emptied and recompressed more frequently.

**EQUIPMENT**
- Graduated container for measuring drainage
- Clean disposable gloves
- Additional PPE, as indicated
- Cleansing solution, usually sterile normal saline
- Sterile gauze pads
- Skin-protectant wipes
- Dressing materials for site dressing, if used

**ASSESSMENT GUIDELINES**
- Confirm any medical orders relevant to drain care and any drain care included in the nursing plan of care.
- Assess the situation to determine the need for wound cleaning, a dressing change, or emptying of the drain.
- Assess the patient’s level of comfort and the need for analgesics before wound care. Assess if the patient experienced any pain related to prior dressing changes and the effectiveness of interventions used to minimize the patient’s pain.
- Assess the current dressing. Assess for the presence of excess drainage or bleeding or saturation of the dressing.
- Assess the patency of the drain and the drain site. Note the characteristics of the drainage in the collection bag.
- Inspect the wound and the surrounding tissue. Assess the appearance of the incision for the approximation of wound edges, the color of the wound and surrounding area, and signs of dehiscence. Note the stage of the healing process and characteristics of any drainage.
- Assess the surrounding skin for color, temperature, and edema, ecchymosis, or maceration.

**NURSING DIAGNOSES**
- Anxiety
- Acute Pain
- Disturbed Body Image
- Impaired Skin Integrity
- Deficient Knowledge
- Delayed Surgical Recovery
- Impaired Tissue Integrity

**OUTCOME IDENTIFICATION AND PLANNING**
Expected outcomes may include:
- Hemovac drain is patent and intact.
- Care is accomplished without contaminating the wound area, and without causing trauma to the wound or the patient to experience pain or discomfort.
Caring for a Hemovac Drain

- Patient’s wound continues to show signs of healing progression.
- Drainage amounts are measured accurately at the frequency required by facility policy and recorded as part of the intake and output record.
- Patient demonstrates understanding about drain care.

### IMPLEMENTATION

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<td>2. Gather the necessary supplies and bring to the bedside stand or overbed table.</td>
<td>Preparation promotes efficient time management and an organized approach to the task. Bringing everything to the bedside conserves time and energy. Arranging items nearby is convenient, saves time, and avoids unnecessary stretching and twisting of muscles on the part of the nurse.</td>
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<td>3. Perform hand hygiene and put on PPE, if indicated.</td>
<td>Hand hygiene and PPE prevent the spread of microorganisms. PPE is required based on transmission precautions.</td>
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<tr>
<td>4. Identify the patient.</td>
<td>Identifying the patient ensures the right patient receives the intervention and helps prevent errors.</td>
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<td>5. Close curtains around bed and close the door to the room, if possible. Explain what you are going to do and why you are going to do it to the patient.</td>
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<td>6. Assess the patient for possible need for nonpharmacologic pain-reducing interventions or analgesic medication before wound care dressing change.</td>
<td>Pain is a subjective experience influenced by past experience. Wound care and dressing changes may cause pain for some patients.</td>
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Administer appropriate prescribed analgesic. Allow sufficient time for the analgesic to achieve its effectiveness before beginning the procedure.

7. Place a waste receptacle at a convenient location for use during the procedure.

Having a waste container handy means that the soiled dressing may be discarded easily, without the spread of microorganisms.

8. Adjust bed to comfortable working height, usually elbow height of the caregiver (VISN 8 Patient Safety Center, 2009).

Having the bed at the proper height prevents back and muscle strain.

Patient positioning and use of a bath blanket provide for comfort and warmth. Waterproof pad protects underlying surfaces.

9. Assist the patient to a comfortable position that provides easy access to the drain and/or wound area. Use a bath blanket to cover any exposed area other than the wound. Place a waterproof pad under the wound site.

10. Put on clean gloves; put on mask or face shield, if indicated.

Gloves prevent the spread of microorganisms; mask reduces the risk of transmission should splashing occur.

11. Place the graduated collection container under the outlet of the drain. Without contaminating the outlet, pull the cap off. The chamber will expand completely as it draws in air. **Empty the chamber’s contents completely into the container. Use the gauze pad to clean the outlet. Fully compress the chamber by pushing the top and bottom together with your hands. Keep the device tightly compressed while you apply the cap (FIGURE 1).**

Emptying the drainage allows for accurate measurement. Cleaning the outlet reduces the risk of contamination and helps prevent the spread of microorganisms. Compressing the chamber reestablishes the suction.
12. Check the patency of the equipment. Make sure the tubing is free from twists and kinks.

13. Secure the Hemovac drain to the patient’s gown below the wound with a safety pin, making sure that there is no tension on the tubing.

14. Carefully measure and record the character, color, and amount of the drainage. Discard the drainage according to facility policy.

15. Put on clean gloves. If the drain site has a dressing, re-dress the site as outlined in Skill 55. Also clean the sutures with the gauze pad moistened with normal saline. Dry sutures with gauze before applying new dressing.

16. If the drain site is open to air, observe the sutures that secure the drain to the skin. Look for signs of pulling, tearing, swelling, or infection of the surrounding skin. Gently clean the sutures with the gauze pad moistened with normal saline. Dry with a

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**FIGURE 1** Compressing the Hemovac and securing the cap.

**ACTION**

- Patent, untwisted, or unkinked tubing promotes appropriate drainage from wound.
- Securing the drain prevents injury to the patient and accidental removal of the drain.
- Documentation promotes continuity of care and communication. Appropriate disposal of biohazard material reduces the risk for microorganism transmission.
- Dressing protects the site. Cleaning and drying sutures deters the growth of microorganisms.
- Early detection of problems leads to prompt intervention and prevents complications. Gentle cleaning and drying prevent the growth of microorganisms. Skin protectant prevents skin irritation and breakdown.
new gauze pad. Apply skin protectant to the surrounding skin, if needed.

17. Remove and discard gloves. Remove all remaining equipment; place the patient in a comfortable position, with side rails up and bed in the lowest position.

18. Remove additional PPE, if used. Perform hand hygiene.

19. Check drain status at least every 4 hours. Check all wound dressings every shift. More frequent checks may be needed if the wound is more complex or dressings become saturated quickly.

**Rationale**
- Proper removal of gloves prevents spread of microorganisms. Proper patient and bed positioning promotes safety and comfort.
- Removing PPE properly reduces the risk for infection transmission and contamination of other items. Hand hygiene prevents the spread of microorganisms.
- Checking the drain ensures proper functioning and early detection of problems. Checking dressings ensures the assessment of changes in patient condition and timely intervention to prevent complications.

**Evaluation**
- Patient exhibits a patent and intact Hemovac drain with a wound area that is free of contamination and trauma.
- Patient verbalizes minimal to no pain or discomfort.
- Patient exhibits signs and symptoms of progressive wound healing, with drainage being measured accurately at the frequency required by facility policy, and amounts recorded as part of the intake and output record.
- Patient verbalizes an understanding of the rationale for and/or the technique for drain care.

**Documentation**
- Document the location of the wound and drain, the assessment of the wound and drain site, and patency of the drain. Note if sutures are intact. Document the presence of drainage and characteristics on the old dressing upon removal. Include the appearance of the surrounding skin. Document cleansing of the drain site. Record any skin care and the dressing applied. Note that the drain was emptied and recompressed. Note pertinent patient and family education and any patient...
reaction to this procedure, including patient’s pain level and the effectiveness of nonpharmacologic interventions or analgesia, if administered. Document the amount and characteristics of drainage obtained on the appropriate intake and output record.

GENERAL CONSIDERATIONS

- When the patient with a drain is ready to ambulate, empty and compress the drain before activity. Secure the drain to the patient’s gown below the wound, making sure there is no tension on the drainage tubing. This removes excess drainage, maintains maximal suction, and avoids strain on the drain’s suture line.

A Jackson-Pratt (J-P) or grenade drain collects wound drainage in a bulblike device that is compressed to create gentle suction. It consists of perforated tubing connected to a portable vacuum unit. After a surgical procedure, the surgeon places one end of the drain in or near the area to be drained. The other end passes through the skin via a separate incision. These drains are usually sutured in place. The site may be treated as an additional surgical wound, but often these sites are left open to air after the first 24 hours after surgery. They are typically used with breast and abdominal surgery.

As the drainage accumulates in the bulb, the bulb expands and suction is lost, requiring recompression. Typically, these drains are emptied every 4 to 8 hours, and when they are half full of drainage or air. However, based on nursing assessment and judgment, the drain could be emptied and recompressed more frequently.

EQUIPMENT

- Graduated container for measuring drainage
- Clean disposable gloves
- Additional PPE, as indicated
- Cleansing solution, usually sterile normal saline
- Sterile gauze pads
- Skin-protectant wipes
- Dressing materials for site dressing, if used

ASSESSMENT GUIDELINES

- Confirm any medical orders relevant to drain care and any drain care included in the nursing plan of care.
- Assess the situation to determine the need for wound cleaning, a dressing change, or emptying of the drain.
Caring for a Jackson-Pratt Drain

- Assess the patient’s level of comfort and the need for analgesics before wound care. Assess if the patient experienced any pain related to prior dressing changes and the effectiveness of interventions used to minimize the patient’s pain.
- Assess the current dressing. Assess for the presence of excess drainage or bleeding or saturation of the dressing.
- Assess the patency of the drain and the drain site. Note the characteristics of the drainage in the collection bag. Inspect the wound and the surrounding tissue.
- Assess the appearance of the incision for the approximation of wound edges, the color of the wound and surrounding area, and signs of dehiscence. Note the stage of the healing process and characteristics of any drainage.
- Assess the surrounding skin for color, temperature, and edema, ecchymosis, or maceration.

NURSING DIAGNOSES

- Anxiety
- Acute Pain
- Disturbed Body Image
- Impaired Skin Integrity
- Deficient Knowledge
- Delayed Surgical Recovery
- Impaired Tissue Integrity

OUTCOME IDENTIFICATION AND PLANNING

Expected outcomes may include:
- Jackson-Pratt drain is patent and intact.
- Care is accomplished without contaminating the wound area, without causing trauma to the wound or causing the patient to experience pain or discomfort.
- Patient’s wound continues to show signs of healing progression.
- Drainage amounts are measured accurately at the frequency required by facility policy and recorded as part of the intake and output record.
- Patient demonstrates understanding about drain care.

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3. Perform hand hygiene and put on PPE, if indicated.

**Rationale:**
Bringing everything to the bedside conserves time and energy. Arranging items nearby is convenient, saves time, and avoids unnecessary stretching and twisting of muscles on the part of the nurse.

Hand hygiene and PPE prevent the spread of microorganisms. PPE is required based on transmission precautions.

4. Identify the patient.

**Rationale:**
Identifying the patient ensures the right patient receives the intervention and helps prevent errors.

5. Close curtains around bed and close the door to the room, if possible. Explain what you are going to do and why you are going to do it to the patient.

**Rationale:**
This ensures the patient’s privacy. Explanation relieves anxiety and facilitates cooperation.

6. Assess the patient for possible need for nonpharmacologic pain-reducing interventions or analgesic medication before wound care dressing change. Administer appropriate prescribed analgesic. Allow sufficient time for the analgesic to achieve its effectiveness before beginning the procedure.

**Rationale:**
Pain is a subjective experience influenced by past experience. Wound care and dressing changes may cause pain for some patients.

7. Place a waste receptacle at a convenient location for use during the procedure.

**Rationale:**
Having a waste container handy means that the soiled dressing may be discarded easily, without the spread of microorganisms.

8. Adjust bed to comfortable working height, usually elbow height of the caregiver (VISN 8 Patient Safety Center, 2009).

**Rationale:**
Having the bed at the proper height prevents back and muscle strain.
9. Assist the patient to a comfortable position that provides easy access to the drain and/or wound area. Use a bath blanket to cover any exposed area other than the wound. Place a waterproof pad under the wound site.

10. Put on clean gloves; put on mask or face shield, if indicated.

11. Place the graduated collection container under the outlet of the drain. Without contaminating the outlet valve, pull off the cap. The chamber will expand completely as it draws in air. Empty the chamber’s contents completely into the container. Use the gauze pad to clean the outlet. Fully compress the chamber with one hand and replace the cap with your other hand (Figure 1).

12. Check the patency of the equipment. Make sure the tubing is free from twists and kinks.

**Rationale**

Patient positioning and use of a bath blanket provide for comfort and warmth. Waterproof pad protects underlying surfaces.

Gloves prevent the spread of microorganisms; mask reduces the risk of transmission should splashing occur.

Emptying the drainage allows for accurate measurement. Cleaning the outlet reduces the risk of contamination and helps prevent the spread of microorganisms. Compressing the chamber reestablishes the suction.

Patent, untwisted, or unkinked tubing promotes appropriate drainage from the wound.
13. Secure the Jackson-Pratt drain to the patient’s gown below the wound with a safety pin, making sure that there is no tension on the tubing.

14. Carefully measure and record the character, color, and amount of the drainage. Discard the drainage according to facility policy. Remove gloves.

15. Put on clean gloves. If the drain site has a dressing, redress the site as outlined in Skill 55. Also clean the sutures with the gauze pad moistened with normal saline. Dry sutures with gauze before applying a new dressing.

16. If the drain site is open to air, observe the sutures that secure the drain to the skin. Look for signs of pulling, tearing, swelling, or infection of the surrounding skin. Gently clean the sutures with the gauze pad moistened with normal saline. Dry with a new gauze pad. Apply skin protectant to the surrounding skin, if needed.

17. Remove and discard gloves. Remove all remaining equipment; place the patient in a comfortable position, with side rails up and bed in the lowest position.

18. Remove additional PPE, if used. Perform hand hygiene.

**ACTION**

Securing the drain prevents injury to the patient and accidental removal of the drain.

Documentation promotes continuity of care and communication. Appropriate disposal of biohazard material reduces the risk for microorganism transmission. Proper disposal of gloves deters transmission of microorganisms.

Dressing protects the site. Cleaning and drying sutures deters growth of microorganisms.

Early detection of problems leads to prompt intervention and prevents complications. Gentle cleaning and drying prevent the growth of microorganisms. Skin protectant prevents skin irritation and breakdown.

Proper removal and disposal of gloves prevent the spread of microorganisms. Proper patient and bed positioning promotes safety and comfort.

Removing PPE properly reduces the risk for infection transmission and contamination of other items. Hand hygiene prevents the spread of microorganisms.

**RATIONALE**
19. Check drain status at least every 4 hours. Check all wound dressings every shift. More frequent checks may be needed if the wound is more complex or dressings become saturated quickly.

**ACTION**

**RATIONALE**

Checking the drain ensures proper functioning and early detection of problems. Checking dressings ensures the assessment of changes in patient condition and timely intervention to prevent complications.

**EVALUATION**

- Patient exhibits a patent and intact Jackson-Pratt drain with a wound area that is free of contamination and trauma.
- Patient verbalizes minimal to no pain or discomfort.
- Patient exhibits signs and symptoms of progressive wound healing, with drainage being measured accurately at the frequency required by facility policy, and amounts recorded as part of the intake and output record.
- Patient verbalizes an understanding of the rationale for and/or the technique for drain care.

**DOCUMENTATION**

- Document the location of the wound and drain, the assessment of the wound and drain site, and patency of the drain. Note if sutures are intact. Document the presence of drainage and characteristics of the old dressing upon removal. Include the appearance of the surrounding skin. Document cleansing of the drain site. Record any skin care and the dressing applied. Note that the drain was emptied and recompressed. Note pertinent patient and family education and any patient reaction to this procedure, including patient’s pain level and effectiveness of nonpharmacologic interventions or analgesia, if administered. Document the amount and characteristics of drainage obtained on the appropriate intake and output record.

**GENERAL CONSIDERATIONS**

- Often patients have more than one Jackson-Pratt drain. Number or letter the drains for easy identification. Record the drainage from each drain separately, identified by the number or letter, on the intake and output record.
- When the patient with a drain is ready to ambulate, empty and compress the drain before activity. Secure the drain to the patient’s gown below the wound, making sure there is no tension on the drainage tubing. This removes excess drainage, maintains maximal suction, and avoids strain on the drain’s suture line.
Drains are inserted into or near a wound when it is anticipated that a collection of fluid in a closed area would delay healing. A Penrose drain is a hollow, open-ended rubber tube. It allows fluid to drain via capillary action into absorbent dressings. Penrose drains are commonly used after a surgical procedure or for drainage of an abscess. After a surgical procedure, the surgeon places one end of the drain in or near the area to be drained. The other end passes through the skin, directly through the incision or through a separate opening referred to as a stab wound. A Penrose drain is not sutured. A large safety pin is usually placed in the part outside the wound to prevent the drain from slipping back into the incised area. This type of drain can be advanced or shortened to drain different areas. The patency and placement of the drain are included in the wound assessment.

EQUIPMENT

- Sterile gloves
- Gauze dressings
- Sterile cotton-tipped applicators, if appropriate
- Sterile drain sponges
- Surgical or abdominal pads
- Sterile dressing set or suture set (for the sterile scissors and forceps)
- Sterile cleaning solution, as ordered (commonly 0.9% normal saline solution)
- Sterile container to hold cleaning solution
- Clean safety pin
- Clean disposable gloves
- Plastic bag or other appropriate waste container for soiled dressings
- Waterproof pad and bath blanket
- Tape or ties
- Skin-protectant wipes, if needed
- Additional dressings and supplies needed or as required for ordered wound care

ASSESSMENT GUIDELINES

- Assess the situation to determine the necessity for wound cleaning and a dressing change. Confirm any medical orders relevant to drain care and any drain care included in the nursing plan of care.
- Assess the patient’s level of comfort and the need for analgesics before wound care. Assess if the patient experienced any pain related to prior dressing changes and the effectiveness of interventions used to minimize the patient’s pain.
- Assess the current dressing to determine if it is intact, and assess for the presence of excess drainage, bleeding, or saturation of the dressing.
- Assess the patency of the Penrose drain.
Inspect the wound and the surrounding tissue. Assess the appearance of the wound for the approximation of wound edges, the color of the wound and surrounding area, and signs of dehiscence. Note the stage of the healing process and the characteristics of any drainage.

Assess the surrounding skin for color, temperature, and the presence of edema, ecchymosis, or maceration.

NURSING DIAGNOSES

• Anxiety
• Acute Pain
• Disturbed Body Image
• Impaired Skin Integrity
• Deficient Knowledge
• Delayed Surgical Recovery
• Impaired Tissue Integrity

OUTCOME IDENTIFICATION AND PLANNING

Expected outcomes may include:

• Penrose drain remains patent and intact; the care is accomplished without contaminating the wound area, or causing trauma to the wound, and without causing the patient to experience pain or discomfort.
• Patient’s wound shows signs of progressive healing without evidence of complications.
• Patient demonstrates understanding about drain care.

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4. Identify the patient.

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6. Assess the patient for possible need for nonpharmacologic pain-reducing interventions or analgesic medication before wound care dressing change. Administer appropriate prescribed analgesic. Allow sufficient time for the analgesic to achieve its effectiveness before beginning the procedure.

7. Place a waste receptacle at a convenient location for use during the procedure.

8. Adjust bed to comfortable working height, usually elbow height of the caregiver (VISN 8 Patient Safety Center, 2009).

9. Assist the patient to a comfortable position that provides easy access to the drain and/or wound area. Use a bath blanket to cover any exposed area other than the wound. Place a waterproof pad under the wound site.

Hand hygiene and PPE prevent the spread of microorganisms. PPE is required based on transmission precautions.

Identifying the patient ensures the right patient receives the intervention and helps prevent errors.

This ensures the patient’s privacy. Explanation relieves anxiety and facilitates cooperation.

Pain is a subjective experience influenced by past experience. Wound care and dressing changes may cause pain for some patients.

Having a waste container handy means that the soiled dressing may be discarded easily, without the spread of microorganisms.

Having the bed at the proper height prevents back and muscle strain.

Patient positioning and use of a bath blanket provide for comfort and warmth. Waterproof pad protects underlying surfaces.
10. Put on clean gloves. Check the position of the drain or drains before removing the dressing. Carefully and gently remove the soiled dressings. If there is resistance, use a silicone-based adhesive remover to help remove the tape. If any part of the dressing sticks to the underlying skin, use small amounts of sterile saline to help loosen and remove it.

11. After removing the dressing, note the presence, amount, type, color, and odor of any drainage on the dressings. Place soiled dressings in the appropriate waste receptacle.

12. Inspect the drain site for appearance and drainage. Assess if any pain is present.

13. Using sterile technique, prepare a sterile work area and open the needed supplies.

14. Open the sterile cleansing solution. Pour the cleansing solution into the basin. Add the gauze sponges.

15. Put on sterile gloves.

16. Cleanse the drain site with the cleansing solution. Use the forceps and the moistened gauze or cotton-tipped applicators. **Start at the drain insertion site, moving**

**Rationale:**

Gloves protect the nurse from handling contaminated dressings. Checking the position ensures that a drain is not removed accidentally if one is present. Cautious removal of the dressing is more comfortable for the patient and ensures that any drain present is not removed. A silicone-based adhesive remover allows for the easy, rapid, and painless removal without the associated problems of skin stripping (Rudoni, 2008; Stephen-Haynes, 2008). Sterile saline moistens the dressing for easier removal and minimizes damage and pain. The presence of drainage should be documented. Discarding dressings appropriately prevents the spread of microorganisms. The wound healing process and/or the presence of irritation or infection must be documented. Supplies are within easy reach and sterility is maintained. Sterility of dressings and solution is maintained. Sterile gloves help to maintain surgical asepsis and sterile technique and prevent the spread of microorganisms. Using a circular motion ensures that cleaning occurs from the least to most contaminated area and a previously cleaned area is not contaminated again.
ACTION

in a circular motion toward the periphery. Use each gauze sponge or applicator only once. Discard and use new gauze if additional cleansing is needed.

17. Dry the skin with a new gauze pad in the same manner. Apply skin protectant to the skin around the drain; extend out to include the area of skin that will be taped. Place a presplit drain sponge under the drain (FIGURE 1). Closely observe the safety pin in the drain. If the pin or drain is crusted, replace the pin with a new sterile pin. Take care not to dislodge the drain.

RATIONALE

Drying prevents skin irritation. Skin protectant prevents skin irritation and breakdown. The gauze absorbs drainage and prevents the drainage from accumulating on the patient’s skin. Microorganisms grow more easily in a soiled environment. The safety pin ensures proper placement because the drain is not sutured in place.

18. Apply gauze pads over the drain. Apply ABD pads over the gauze.

19. Remove and discard gloves. Apply tape, Montgomery straps, or roller gauze to secure the dressings.

20. After securing the dressing, label it with date and time. Remove all remaining equipment; place the patient in a comfortable position, with side rails up and bed in the lowest position.

The gauze absorbs drainage. Pads provide extra absorption for excess drainage and a moisture barrier. Proper disposal of gloves prevents the spread of microorganisms. Tape or other securing products are easier to apply after gloves have been removed. Recording date and time provides communication and demonstrates adherence to plan of care. Proper patient and bed positioning promotes safety and comfort.
21. Remove additional PPE, if used. Perform hand hygiene.

22. Check all wound dressings every shift. More frequent checks may be needed if the wound is more complex or dressings become saturated quickly.

Removing PPE properly reduces the risk for infection transmission and contamination of other items. Hand hygiene prevents the spread of microorganisms. Checking dressings ensures the assessment of changes in patient condition and timely intervention to prevent complications.

**EVALUATION**

- Patient exhibits a wound that is clean, dry, and intact, with a patent, intact Penrose drain.
- Patient remains free of wound contamination and trauma.
- Patient reports minimal to no pain or discomfort.
- Patient exhibits signs and symptoms of progressive wound healing.
- Patient verbalizes an understanding of the rationale for and/or the technique for drain care.

**DOCUMENTATION**

- Document the location of the wound and drain, the assessment of the wound and drain site, and status of the Penrose drain. Document the presence of drainage and characteristics of the old dressing upon removal. Include the appearance of the surrounding skin. Document cleansing of the drain site. Record any skin care and the dressing applied. Note pertinent patient and family education and any patient reaction to this procedure, including patient’s pain level and effectiveness of nonpharmacologic interventions or analgesia, if administered.

**GENERAL CONSIDERATIONS**

- Evaluate a sudden increase in the amount of drainage or bright red drainage and notify the primary care provider of these findings.
- Wound care is often uncomfortable, and patients may experience significant pain. Assess the patient’s comfort level and past experiences with wound care. Offer analgesics, as ordered, to maintain the patient’s level of comfort.
A biliary drain or T-tube is sometimes placed in the common bile duct after removal of the gallbladder (cholecystectomy) or a portion of the bile duct (choledochostomy). The tube drains bile while the surgical site is healing. A portion of the tube is inserted into the common bile duct and the remaining portion is anchored to the abdominal wall, passed through the skin, and connected to a closed drainage system. Often, a three-way valve is inserted between the drain tube and the drainage system to allow for clamping and flushing of the tube, if necessary. The drainage amount is measured every shift, recorded, and included in output totals.

**EQUIPMENT**
- Sterile gloves
- Clean disposable gloves
- Additional PPE, as indicated
- Sterile gauze pads
- Sterile drain sponges
- Cleansing solution, usually sterile normal saline
- Sterile cotton-tipped applicators (if appropriate)
- Transparent dressing
- Graduated collection container
- Waste receptacle
- Sterile basin
- Sterile forceps
- Tape
- Skin-protectant wipes
- Waterproof pad and bath blanket, if needed

**ASSESSMENT GUIDELINES**
- Assess the situation to determine the need for wound cleaning, a dressing change, or emptying of the drain.
- Confirm any medical orders relevant to drain care and any drain care included in the nursing plan of care.
- Assess the patient’s level of comfort and the need for analgesics before wound care. Assess if the patient experienced any pain related to prior dressing changes and the effectiveness of interventions used to minimize the patient’s pain.
- Assess the current dressing to determine if it is intact, and assess for evidence of excessive drainage or bleeding or saturation of the dressing.
- Assess the patency of the T-tube and the drain site. Note the characteristics of the drainage in the collection bag.
- Inspect the wound and the surrounding tissue. Assess the appearance of the incision for the approximation of wound edges, the color of the wound and surrounding area, and signs of dehiscence. Note the stage of the healing process and characteristics of any drainage.
- Assess the surrounding skin for color, temperature, and edema, ecchymosis, or maceration.
NURSING DIAGNOSES

• Acute Pain
• Disturbed Body Image
• Anxiety
• Impaired Skin Integrity
• Deficient Knowledge
• Delayed Surgical Recovery
• Impaired Tissue Integrity

OUTCOME IDENTIFICATION AND PLANNING

Expected outcomes may include:

• Patient’s T-tube drain remains patent and intact.
• Drain care is accomplished without contaminating the wound area and/or without causing trauma to the wound; and the patient does not experience pain or discomfort.
• Patient’s wound continues to show signs of healing progression.
• Drainage amounts are measured accurately at the frequency required by facility policy and recorded as part of the intake and output record.
• Patient demonstrates understanding about drain care.

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<td>2. Gather the necessary supplies and bring to the bedside stand or overbed table.</td>
<td>Preparation promotes efficient time management and an organized approach to the task. Bringing everything to the bedside conserves time and energy. Arranging items nearby is convenient, saves time, and avoids unnecessary stretching and twisting of muscles on the part of the nurse.</td>
</tr>
<tr>
<td>3. Perform hand hygiene and put on PPE, if indicated.</td>
<td>Hand hygiene and PPE prevent the spread of microorganisms. PPE is required based on transmission precautions.</td>
</tr>
</tbody>
</table>
### ACTION

4. Identify the patient.

5. Close curtains around bed and close the door to the room, if possible. Explain what you are going to do and why you are going to do it to the patient.

6. Assess the patient for possible need for nonpharmacologic pain-reducing interventions or analgesic medication before wound care dressing change. Administer appropriate prescribed analgesic. Allow sufficient time for the analgesic to achieve its effectiveness before beginning the procedure.

7. Place a waste receptacle at a convenient location for use during the procedure.

8. Adjust bed to comfortable working height, usually elbow height of the caregiver (VISN 8 Patient Safety Center, 2009).

9. Assist the patient to a comfortable position that provides easy access to the drain and/or wound area. Use a bath blanket to cover any exposed area other than the wound. Place a waterproof pad under the wound site.

### RATIONALE

Identifying the patient ensures the right patient receives the intervention and helps prevent errors.

This ensures the patient’s privacy. Explanation relieved anxiety and facilitates cooperation.

Pain is a subjective experience influenced by past experience. Wound care and dressing changes may cause pain for some patients.

Having a waste container handy means that the soiled dressing may be discarded easily, without the spread of microorganisms.

Having the bed at the proper height prevents back and muscle strain.

Patient positioning and use of a bath blanket provide for comfort and warmth. Waterproof pad protects underlying surfaces.

Gloves prevent the spread of microorganisms; mask reduces the risk of transmission should splashing occur.

### Emptying Drainage

10. Put on clean gloves; put on mask or face shield, if indicated.
Caring for a T-Tube Drain

ACTION

11. Using sterile technique, open a gauze pad, making a sterile field with the outer wrapper.

12. Place the graduated collection container under the outlet valve of the drainage bag. **Without touching the outlet, pull off the cap and empty the bag’s contents completely into the container. Use the gauze to wipe the outlet, and replace the cap.**

13. Carefully measure and note the characteristics of the drainage. Discard the drainage according to facility policy.

14. Remove gloves and perform hand hygiene.

Cleaning the Drain Site

15. Put on clean gloves. Check the position of the drain or drains before removing the dressing. Carefully and gently remove the soiled dressings. If there is resistance, use a silicone-based adhesive remover to help remove the tape. If any part of the dressing sticks to the underlying skin, use small amounts of sterile saline to help loosen and remove it. Do not reach over the drain site.

RATIONALE

Using sterile technique deters the spread of microorganisms.

Draining contents into a container allows for accurate measurement of the drainage. Touching the outlet with gloves or other surface contaminates the valve, potentially introducing pathogens. Wiping the outlet with gauze prevents contamination of the valve. Recapping prevents the spread of microorganisms.

Documentation promotes continuity of care and communication. Appropriate disposal of biohazard material reduces the risk for microorganism transmission.

Proper glove removal and performing hand hygiene prevent spread of microorganisms.

Gloves protect the nurse from handling contaminated dressings. Checking the position ensures that a drain is not removed accidentally if one is present. Cautious removal of the dressing is more comfortable for the patient and ensures that any drain present is not removed. A silicone-based adhesive remover allows for the easy, rapid, and painless removal without the associated problems of skin stripping (Rudoni, 2008; Stephen-Haynes, 2008). Sterile saline moistens the dressing for easier removal and minimizes damage and pain.