

Component III: Clinical

Module A: Exam Room Procedures

Topic 8: Wound Care

Statement of Purpose

To prepare the learner with basic knowledge and skills necessary to assist with the care of minor wounds as well as the application of wound dressings.

Student Learning Outcomes

Upon completion of this topic, the learner will be able to:

1. Spell and define the key terms.
2. Recall the three primary structures of the integument.
3. Identify factors that might affect wound healing.
4. Identify various types of wound dressings.
5. Identify various wound dressings according to specific qualities.
6. Identify several dynamics of wound healing.
7. Describe various postoperative wound complications.
8. Describe types of wounds based on cause.
9. Differentiate between a closed wound and an open wound.
10. List several reasons a Physician might choose to dress a wound.
11. Define the advantages and disadvantages of dressing a wound.
12. State the functions of a bandage and list several guidelines that should be observed when applying a bandage.
13. Assemble the supplies needed to change a non-sterile and sterile dressing.
14. Demonstrate the removal and application of a non-sterile dressing.
15. Obtain a wound culture.
16. Document accurately.

Terminology

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|-----------------|------------------------------|
| 1. Abrasion | 10. Open wound |
| 2. Amputation | 11. Pressure dressing |
| 3. Bandage | 12. Puncture |
| 4. Closed wound | 13. Purulent drainage |
| 5. Crush injury | 14. Sanguineous drainage |
| 6. Debridement | 15. Serosanguineous drainage |
| 7. Dehiscence | 16. Serous drainage |
| 8. Dressing | 17. Wound |
| 9. Laceration | |

References

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Websites

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Content Outline/Theory Objectives	Suggested Learning Activities
<p>Objective 1 Spell and define key terms.</p> <ul style="list-style-type: none"> A. Review the terms listed in the terminology section. B. Spell the listed terms accurately. C. Pronounce the terms correctly. D. Use the terms in their proper context. 	<ul style="list-style-type: none"> A. Games: word searches, crossword puzzles, Family Feud, Jeopardy, bingo, spelling bee, hangman, and concentration. B. Administer vocabulary pre-test and post-test. C. Discuss learning gaps and plan for applying vocabulary.
<p>Objective 2 Recall the three primary structures of the integumentary system.</p> <ul style="list-style-type: none"> A. Epidermis <ul style="list-style-type: none"> 1. Top layer. 2. Composed of tightly packed epithelial cells. 3. Keratin. B. Dermis <ul style="list-style-type: none"> 1. Second layer. 2. Composed mainly of connective tissue. 3. Contains several appendages <ul style="list-style-type: none"> a. Hair. b. Receptors. c. Nails. d. Glands <ul style="list-style-type: none"> 1) Sebaceous (oil.) 2) Sudoriferous (sweat.) C. Subcutaneous <ul style="list-style-type: none"> 1. Third layer. 2. Composed of adipose cells. 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings C. Provide students with pictures of wounds and discuss which tissue layers might be involved, which dressing might be appropriate and what kind of drainage/complications might be expected. D. Give students a variety of bandages and dressings then give them time to practice applying these to mock wounds on each other.
<p>Objective 3 Identify factors that might affect wound healing.</p> <ul style="list-style-type: none"> A. Blood supply B. Presence of infection <ul style="list-style-type: none"> 1. Most common complication in wound healing. 2. Causes an increase in edema, erythema, temperature and pain. 3. Adherence to standard precautions is necessary when handling an infected wound. C. Nutrition, must have adequate supply of the essential nutrients to encourage wound healing and prevent infection <ul style="list-style-type: none"> 1. Protein synthesis requires amino acids, vitamin B complex and magnesium. 2. Collagen synthesis and maturation requires vitamin C and D and the minerals iron and copper. 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings

<ul style="list-style-type: none"> 3. Immune reaction requires vitamin C. 4. Inflammatory response and anti-inflammatory action requires vitamins A and E. 5. Prothrombin synthesis requires vitamin K. D. Size, shape and location of wound can affect: <ul style="list-style-type: none"> 1. Likelihood of bleeding (head and neck wounds bleed more readily.) 2. Extent of swelling is more likely to cause difficulties in the distal extremities than in other areas. 3. Need for compression and/or immobilization; bone or joint injuries. 4. Type and amount of drainage expected; abdominal, thoracic and alimentary tract wounds tend to drain fluid in higher volume and of more varied character. E. Extent and nature of injury or surgical procedure <ul style="list-style-type: none"> 1. Degree to which tissue has been injured or surgically dissected. 2. Clean, approximated and uncomplicated wounds. 3. Contaminated, accidental wounds. F. Age and physical condition <ul style="list-style-type: none"> 1. Wound healing is delayed due to the overall slowing down of body system. 2. Conditions such as atherosclerosis, cardiopulmonary disease, renal pathology and immobility often associated with the aging process will delay wound healing. G. Presence of drainage can introduce possible complications <ul style="list-style-type: none"> 1. Healthy skin surrounding the wound may become over-hydrated, macerated and susceptible to breakdown. 2. May increase the need for additional dressings. 3. Client may experience doubt and apprehension, with a possible impact on convalescence. 4. Sudden profuse drainage of clear, pale pink fluid saturating the dressing on an abdominal wound may indicate wound dehiscence. 5. Sudden bloody drainage is a sign of hemorrhage. 6. Increase in viscosity, a strong and unpleasant odor and a color change may indicate infection. 	
<p>Objective 4 Identify various types of wound dressings.</p> <ul style="list-style-type: none"> A. Primary dressings <ul style="list-style-type: none"> 1. Placed directly on the wound and the adjacent to the skin. 2. Wick away drainage (exudate) from wound. 3. Preserve a moist environment between the wound margins. 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings C. Provide examples of dressing types.

<ul style="list-style-type: none"> B. Secondary dressings <ul style="list-style-type: none"> 1. Placed over primary dressing. 2. Provide compression. 3. Provide protection. 	
<p>Objective 5 Identify various wound dressings according to specific qualities.</p> <ul style="list-style-type: none"> A. Non-occlusive <ul style="list-style-type: none"> 1. Absorbent, ventilated. 2. Woven or non-woven material. B. Occlusive <ul style="list-style-type: none"> 1. Tightly woven gauze material heavily impregnated with a petrolatum emulsion. 2. Does not allow the passage of air or fluid to or from the wound. C. Semi-permeable (semi-occlusive) <ul style="list-style-type: none"> 1. Transparent, waterproof, plastic film. 2. Barrier to external fluids and bacteria. 3. Permeability allows skin to “breathe.” 4. Helps prevent wound dehydration. 5. Allows for inspection of the wound without removing dressing, which may decrease the number of dressing changes. D. Non-adhering <ul style="list-style-type: none"> 1. Designed not to stick to the wound site or skin. 2. Must be used in conjunction with a primary dressing in the presence of drainage. E. Medicated <ul style="list-style-type: none"> 1. Contains medication. 2. Can be applied by the manufacturer or the medical health care provider. 3. Used primarily to treat skin ulceration, burns and some postoperative infections. F. Conforming bandages <ul style="list-style-type: none"> 1. Secondary bandages. 2. Provide compression. 3. Hold primary dressing in place. 4. Increase absorbency. 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings C. Provide examples of dressing types. Ask students to identify.
<p>Objective 6 Identify several dynamics of wound healing.</p> <ul style="list-style-type: none"> A. First 24-72 hours are marked by the inflammatory and repair processes <ul style="list-style-type: none"> 1. Wound begins to seal. 2. Critical phase. B. Sequence of events <ul style="list-style-type: none"> 1. Blood vessels release blood, which fills the wound area. 2. Blood components, called platelets, form a clot which helps create stasis in surrounding small vessels, preventing hemorrhage at site. 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings

<ol style="list-style-type: none"> 3. Scab begins to form on the surface of the wound <ol style="list-style-type: none"> a. Usually begins to form within two hours. b. Composed of dried blood proteins. c. Provides a natural seal to prevent invasion of pathogens. 4. Plasma and white blood cells escape through the walls of the nearby blood vessels and enter the wound site <ol style="list-style-type: none"> a. Plasma contains proteins which are needed for the formation of new cells. b. White blood cells, phagocytosis. 5. Granulated forms to fill the gaps and allow epithelial cells to migrate. 6. Proliferation of cells within the wound closes the surface of the wound under the scab. 7. The scab sloughs off and newly formed skin tissue is exposed. 	
<p>Objective 7 Describe various postoperative wound complications.</p> <p>A. Infection</p> <ol style="list-style-type: none"> 1. Contamination of a wound. 2. Recall signs and symptoms of infection. 3. Prevention <ol style="list-style-type: none"> a. Utilizing medical asepsis. b. Patient education. <p>B. Dehiscence</p> <ol style="list-style-type: none"> 1. Bursting open of the wound. 2. Most frequently seen in surgical abdominal wounds. 3. Prevention <ol style="list-style-type: none"> a. Assessing nutritional status and risk factors such as obesity. b. Support for the wound during coughing and movements that may strain the incision. 	<p>A. Lecture/Discussion B. Assigned Readings</p>
<p>a. Made by a pointed device.</p> <p>b. Example, ice pick, bullet, knife stab, nail.</p> <p>B. Surgical classification</p> <ol style="list-style-type: none"> 1. Clean <ol style="list-style-type: none"> a. Aseptically made wound. b. Blood vessels have been ligated. 2. Contaminated <ol style="list-style-type: none"> a. Exposed to excessive amounts of bacteria. b. Not grossly infected. c. Have a higher risk for infection than other wounds. d. Examples include unprepared colon surgery, dirty laceration. 3. Infected <ol style="list-style-type: none"> a. Contains bacteria. b. Cannot be closed as it may contain 	<p>A. Lecture/Discussion B. Assigned Readings</p>

devitalized material.	
Objective 9 Differentiate between a closed wound and an open wound. <ul style="list-style-type: none"> A. Closed wound <ul style="list-style-type: none"> 1. Integrity of skin remains intact. 2. Reduces risk of infection due to contamination. B. Open wound <ul style="list-style-type: none"> 1. Integrity of skin has been interrupted. 2. Increase in risk of contamination. 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings
Objective 10 List several reasons a Physician might choose to dress a wound. <ul style="list-style-type: none"> A. To protect the wound from mechanical injury B. To absorb drainage and fluid wastes C. To promote hemostasis and minimize accumulation of fluid, as in a pressure dressing D. To prevent contamination from bodily discharges E. To inhibit or kill organisms by using dressings that contain antiseptic medications F. To reduce the risk of contamination from the environment 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings
Objective 11 Define the advantages and disadvantages of dressing a wound. <ul style="list-style-type: none"> A. Advantages <ul style="list-style-type: none"> 1. Reduces the risk of infection. 2. Protects the wound from mechanical injury. 3. Absorbs drainage and fluid wastes. B. Disadvantages <ul style="list-style-type: none"> 1. Provides bacteria with growth requirements. 2. Expense of dressings. 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings

Objective 12

State the functions of a bandage, and list several guidelines that should be observed when applying a bandage.

- A. Functions
 - 1. Applies pressure to control bleeding.
 - 2. Holds a dressing in place.
 - 3. Protects dressings and wounds from contamination.
 - 4. Immobilizes an injured body part.
- B. Application guidelines
 - 1. Maintain medical asepsis to prevent the transfer of pathogens into the wound.
 - 2. Keep area to be bandaged dry and clean
 - a. Moisture encourages the growth of pathogens.
 - b. Moist dressing will be uncomfortable to client.
 - 3. Do not place bandage directly over a wound
 - a. Apply a sterile dressing first.
 - b. Bandage should extend approximately 1-2 inches beyond the edge of the dressing.
 - 4. Do not allow skin surfaces of two body parts to touch each other. During wound healing opposing surfaces may adhere and result in scar tissue.
 - 5. Pad joints and any bony prominence to reduce irritation caused by the bandage rubbing against the skin over a bony area.
 - 6. Bandage the affected part in the normal position (joints should be slightly flexed to avoid muscle strain, discomfort and pain.)
 - 7. Apply bandages beginning at the distal part and extending to the proximal part of the body
 - a. Aids in the return of venous blood to the heart.
 - b. Blood flow and valves in the veins.
 - c. Helps make the bandage more secure.
 - 8. When bandaging hands and feet, leave fingers and toes exposed if possible and check for circulatory impairment
 - a. Coldness.
 - b. Pallor.
 - c. Cyanosis of nail beds.
 - d. Swelling.

- A. Lecture/Discussion
- B. Assigned Readings
- C. Practice sessions of applying bandages to specific assigned wound types.

Objective 13

Assemble the supplies needed to change a non-sterile and sterile dressing.

- A. Sterile gloves or sterile transfer forceps.
- B. Sterile dressings.
- C. Scissors.
- D. Appropriate bandages and tapes.

- A. Lecture/Discussion
- B. Assigned Readings

E. Medication to be applied to the dressing as ordered.	
Objective 14 Demonstrate the removal and application of a non-sterile dressing. <ul style="list-style-type: none"> A. Don non-sterile exam gloves. B. Have appropriate waste receptacle at hand. C. Remove tape, pulling gently towards the center of the dressing. D. If dressing adheres to wound, saturate with sterile normal saline to loosen dressing. 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings C. Demonstration and return demonstration. D. Practice sessions.
Objective 15 Obtain a wound culture. <ul style="list-style-type: none"> A. Written order. B. Assemble the equipment; culture kit with transport media C. Do not clean the wound prior to culturing as this may remove contaminants. 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings C. Demonstration and return demonstration. D. Practice sessions.
Objective 16 Document accurately. <ul style="list-style-type: none"> A. Date and time of procedure. B. Wound and drainage observations <ul style="list-style-type: none"> 1. Approximate size of the wound. 2. Description of the wound and surrounding tissue. 3. Description of drainage if present. C. Patient reaction. 	<ul style="list-style-type: none"> A. Lecture/Discussion B. Assigned Readings C. Provide pictures of various wounds and ask students to document the description.