Title	**Guideline: The Management of People with Open or Closed Surgical Wounds**
Background	See "Guideline: The Assessment of People with Open or Closed Surgical Wounds"
Indications	This guideline is intended to be used by health care providers, to guide their management of individuals admitted/presenting with a surgical wound.
Guideline	**Healable Wounds – Closed Surgical Incisions** 1. Upon completion of a thorough, holistic patient and wound assessment, follow the surgeon's orders. If there are concerns regarding the orders or orders are missing contact he surgeon immediately for direction. Below are some general principles for a closed surgical wound. However these principles do not supersede physician orders. 2. Leave the post-op surgical dressing in place for 48 hours, reinforcing it as needed if breakthrough drainage occurs. 3. Monitor for dehiscence and notify the surgeon **IMMEDIATELY** should it occur. 4. 48 hours post-op, remove the initial surgical dressing and, using **sterile** technique, cleanse the incision line from the proximal to distal aspect (or clean to dirty) to remove any drainage. Air dry or gently pat dry with sterile gauze. 5. Depending on the type of surgery, comfort of the patient with the wound, and organizational policy, you may need to reapply a sterile dry dressing. If there is no policy in place and the incision is approximated, dry, and free of signs of infection/complications, the incision may be left open to air, unless otherwise ordered by the surgeon 6. If you re-apply a **sterile** surgical dressing, choose an appropriate dressing change frequency based on: i. Your wound assessment, including the patient's risk for infection ii. Dressing products used and their ability to manage the drainage anticipated 7. Remove sutures/staples as ordered or direct the patient to the appropriate health care professional for the removal of their sutures/staples as per the surgeon's orders. If you are to remove the sutures: i. Using sterile technique cleanse the incision using an antiseptic swab from proximal to distal or clean to dirty aspect ii. Remove sutures or staples using aseptic technique with sterile tools. ***NOTE: you may choose to remove every other suture/staple initially and then observe the incision line to determine whether or not the incision line will remain intact. If you anticipate that the incision line may dehisce with the removal of the remaining sutures/staples, STOP removing staples/sutures and let the surgeon know*** iii. Gently cleanse the incision line once again with an antiseptic swab, from proximal to distal or clean to dirty aspect. Air dry iv. Apply a sterile non-stick island dressing if needed, otherwise leave the incision open to air **Healable Wounds – Open Surgical Wound or a Closed Surgical Wound that has Dehisced or Eviscerated**

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	8. Upon completion of a thorough, holistic patient and wound assessment cleanse the wound with an appropriate wound cleansing solution using non-touch aseptic technique. Make sure to cleanse away wound surface debris. ***NOTE: follow the manufacturer's instructions when using a wound cleansing solution*** 9. Debridement of loose, non-viable tissue in the wound should be performed by a trained health care provider who has the knowledge, skill, and competency to do so. Please refer to your respective college and employer's policies and procedures before undertaking this task. For further guidance see "Guideline and Procedures: Wound Debridement" and "Guideline and Procedure: Conservative Sharp Wound Debridement" 10. Cleanse the wound again post debridement. Gently <u>pat</u> the wound dry with dry sterile gauze 11. Choose an appropriate conventional moist wound dressing or combination of dressings. Consider choosing a dressing that will: i. Promote an ideal moist wound healing environment ***NOTE: only use a packing or cavity filler dressing that can be removed in one piece, i.e. a product with adequate tensile strength so that it does not fall apart in the wound leaving fragments behind, and do NOT pack tightly.*** ***NOTE: if underlying mesh, implants, or exposed underlying structures are evident in the wound bed, apply a non-adherent dressing over the areas to prevent the primary dressing from sticking*** ii. Minimize contamination iii. Prevent strike through of exudates while wicking moisture away from the wound surface iv. Be cost effective v. Be comfortable to wear, not causing increased pain during wear time or on removal 12. Choose an appropriate dressing change frequency based on: i. Your wound assessment, including the patient's risk for infection ii. Dressing products used and their ability to manage the drainage anticipated iii. The patient's comfort and acceptability **Non-Healing/Non-Healable Wounds – Open Surgical Wound** 13. If it is determined that the wound in question is not-healing or not-healable due to intrinsic and/or extrinsic factors that are impeding healing (based off of the health care providers holistic assessment and clinical judgement) cleanse the wound with an appropriate wound cleansing solution and follow the manufacturer's instructions 14. **DO NOT DEBRIDE** 15. Paint and/or cleanse the wound with antiseptics and allow the antiseptic to air dry 16. Choose an appropriate dry gauze based non-adherent dressing or combination of dressings unless otherwise directed by a physician or nurse practitioner. Choose a dressing that will: i. Promote a dry wound environment and that will minimize bacterial contamination ii. Prevent strike through of exudates while wicking moisture away from the wound surface

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iii. Be cost effective
iv. Be comfortable to wear, not causing increased pain during wear tie or on removal

17. Choose an appropriate dressing change frequency based on:
    i. Your wound assessment, including the patient's risk for infection
    ii. Dressing products used and their ability to manage the drainage anticipated
    iii. The patient's comfort and acceptability

Management Guidelines for ALL Surgical Wounds

Treat the cause:

18. Modify any identified intrinsic, extrinsic, and iatrogenic factors affecting wound healing to promote the healing of the surgical wound and to prevent infection/complications
19. Provide or encourage the use of an offloading device if the patient has a surgical wound on the plantar aspect of their foot and has diabetes and/or has loss of protective sensation. Communicate with the surgeon and member of the SWRWCP if further direction/guidance is needed.
20. In the presence of a surgical wound on the leg of a patient with venous or mixed leg disease, initiate appropriate compression therapy as directed by the surgeon.
21. Patient centered concerns:
22. Manage pain through advocacy and collaboration with the patient and primary health care provider. Considerations may include encouraging the patient to take their pain medication prior to dressing change, non-pharmacological methods such as distraction/guided imagery.
23. Ensure the plan of care is created with input from the patient and/or their caregiver, including their concerns, motivations, abilities and preferences for treatment
24. Infection control:
25. Teach that new onset or worsening pain may be a sign of infection and requires immediate medical attention

    NOTE: Topical antimicrobials can be used to reduce bacterial burden in the presence of superficial wound infection, but <u>never</u> take the place of systemic antibiotics when those are needed for deeper infections

26. If you are not sure of the nature of the infection, choose a non-occlusive dressing as the secondary dressing. Dressing frequency for infected surgical wounds should be increased until the symptoms of the infection are progressively improving
27. Implement strategies to prevent infection, i.e. proper hand washing and infection control measures
28. Drain management:
29. Identify the presence, number, and location of closed wound drainage systems, and inspect to ensure proper functioning (teach the patient to inspect regularly for function if they are assuming the responsibility of managing their drain)
30. Using aseptic technique, empty the contents of the drain at least daily and measure the contents, recording the amount (teach the patient with the drain to do so if they are assuming responsibility for managing their drain)
31. Change drain dressings as needed/ordered using aseptic technique and gauze based products
32. Remove the drain as ordered by the surgeon

	33. Advocate for or request interdisciplinary referrals: 34. Wound Care Specialists for conservative sharp debridement, treatment planning, adjunct therapies 35. Registered Dietician for diet, nutrition, supplementation, weight control 36. Speech Language Pathologist for presence or risk of developing a swallowing impairments 37. Physiotherapy for mobility/exercise plan, mobility/gait/range of motion assessment, adjunctive therapies for wound healing and/or neuropathic pain management 38. Occupational Therapist for assistive devices, modifications to activities of daily living, fall risk assessment and recommendations 39. Orthotist/Pedorthist/Podiatrist for appropriate footwear/offloading device, professional foot care 40. Social Work for psychosocial and economic/community supports 41. Education for the patient and/or support patient(s): 42. Controlling their blood sugars thru exercise, diet, and medication, 43. The effects of acute illness and infection on their blood glucose (if they have diabetes) 44. Quitting or reducing smoking 45. Exercising regularly and eating a well-balanced diet 46. Signs and symptoms of infection/complications and when to seek **IMMEDIATE** help 47. Dressing change instructions, if the patient or their caregiver will be changing the dressings 48. Supporting their incision when changing position, coughing or sneezing, and to avoid heavy lifting for six weeks post-operatively or as directed by the surgeon 49. Monitoring and recognizing signs of dehiscence, including bruising at the wound site, localized pain, wound inflammation and exudate, skin breakdown around the wound, and nausea/vomiting 50. To follow surgeon's instructions regarding bathing and staple, suture removal. 51. Provide resources/links to reinforce health teaching: 52. SWRWCP "My Surgical Wound" available at: https://swrwoundcareprogram.ca/Uploads/ContentDocuments/SWRWCP_SurgicalWOUND.pdf 53. SWRWCP "My Hemovac Drain" available at: https://swrwoundcareprogram.ca/Uploads/ContentDocuments/SWRWCP_HemovacDRAIN.pdf 54. SWRWCP "My Jackson-Pratt (JP) Drain" available at: https://swrwoundcareprogram.ca/Uploads/ContentDocuments/SWRWCP_JacksonPRATT.pdf 55. SWRWCP "My Skin Graft" available at: https://swrwoundcareprogram.ca/Uploads/ContentDocuments/SWRWCP_SkinGRAFT.pdf 56. Re-evaluate

	a) Regularly and consistently measure the wound, weekly at a minimum, using the same method b) Conduct a comprehensive reassessment to determine wound progress and the effectiveness of the treatment plan, i.e. Using the NPUAP PUSH Tool 3.0", weekly at a minimum c) Calculate the % reduction in wound surface area to ensure that the wound is closing at an expected rate, i.e. 20-30% over three-four weeks treatment is predictive of timely wound closure d) If the wound is not healing at an expected rate despite the implementation of best practice interventions, you may need to consider: i. Update the primary care provider and wound care specialist ii. Re-evaluate plan of care and advocate for or request referrals iii. Discuss barriers or challenges with the patient e) Reassess pain at **EVERY** dressing change and more frequently as reported by the patient, using the same pain tool/scale each time. Report pain management issues to the patient's primary care physician or primary care nurse practitioner 57. Notify the primary care physician or primary care nurse practitioner immediately if the following occur: a) Acute onset of pain or increasing pain b) Wound probes to bone (if this is a new finding) c) Gangrene develops or worsens d) Rest pain develops in the foot e) Previously palpable peripheral pulses are diminished or absent f) Signs of localized and/or systemic infection develop g) The patient hemorrhages h) The wound dehisces or eviscerates. If the wound eviscerates: i. Place the patient in a low Fowler's position with knees bent ii. Cover any exposed tissues with dressings moistened with warm, sterile normal saline iii. Do not attempt to push exposed viscera back into the abdomen iv. Depending on the health care setting, call 911 or notify a physician **IMMEDIATELY** v. Remain with the patient to monitor for shock and vital signs until seen by a physician or until the ambulance arrives 58. Documentation: a) Document initial and ongoing assessments as per your organizations guidelines b) Document care plans, implementation strategies, and outcome measurements as per your organizations guidelines
Outcomes	1. Intended: a) Closed surgical wounds: i. Visible inflammatory response post-op x 4 days ii. Well aligned incisional edges with no tension

	iii. Reduction in wound exudate and change in appearance of exudate – trending towards serous iv. Healing ridge should be palpable days 5-9 along the entire length of the incision v. Complete removal of all external suture materials per the surgeons direction vi. Flattening, softening and lightening of the incisional scar days 15 through 1-2 years b. Open surgical wound fills with granulation tissue, re-epithelializes, and drainage ceases, in a timely manner, c. The wound is maintained and infection free if the wound is deemed 'non-healing or not-healable' d. The patient indicates that pain is resolved, improving, or manageable e. The patient does not develop a SSI f. The incision does not hemorrhage or dehisce g. The patient and/or their caregiver understands their role in wound healing and participates in supporting wound healing h. The patient can identify signs and symptoms of infection/complications, and can describe who, how, and when to seek help i. The patient becomes independent in self-management of their wound 2. Unintended: a) Closed surgical wounds: i. Prolonged state of inflammation, i.e. greater than day 4 post-op ii. Absence of a palpable healing ridge days 5-9 iii. Increase in exudate or new drainage from a previously 'healed' incision iv. Incisional hematoma formation v. SSI vi. Wound dehiscence/evisceration vii. Retained sutures/staples viii. Re-injury of the incision line, i.e. herniation ix. Keloid or hypertrophic scarring b) Open surgical wound does not close in a timely manner i. The wound becomes infected ii. The patient develops gangrene iii. The patient expresses concerns about poorly managed pain iv. The patient requires an amputation where one was not anticipated v. The patient does not understand their role or participate in supporting wound healing vi. The patient does not understand the signs and symptoms of infection/complications, and when, how, and whom to seek help from vii. The patient does not become independent in self-management of their wound
References	1. Johnston, D., et al. 2018. Surgical wound care guideline. Available at: http://bestpracticeinsurgery.ca/guidelines/surgical-wound-care/ [Accessed 23 June 2020].

	2. Sandy-Hodgetts, K., et al. 2020. International best practice recommendations for the early identification and prevention of surgical wound complications. *Wounds International.* Available at: www.woundsinternational.com [Accessed 23 June 2020]. 3. Morgan-Jones, R., et al. 2019. Incision care and dressing selection in surgical wounds: findings from an international meeting of surgeons. Available at: www.woundsinternational.com [Accessed 23 June 2020]. 4. Harris, C., et al. 2018. Best practice recommendations for the prevention and management of surgical wound complications. Available at: https://www.woundscanada.ca/docman/public/health-care-professional/bpr-workshop/555-bpr-prevention-and-management-of-surgical-wound-complications-v2/file [Accessed 23 June 2020].