Wound Symptom Management for the Interdisciplinary Team

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Learning Outcomes

- Upon completing this session, participants will be able to:
  1. Identify factors contributing to the development of wound symptoms.
  2. Describe strategies to resolve wound symptoms and improve quality of life.

Wound Symptoms and Subsequent Consequences

Physical Symptoms

- Pain
- Excessive exudate
- Malodor
- Bleeding

Psychological Symptoms

- Anger
- Anxiety
- Depression
- Disgust
- Shame
- Social isolation

Bergstrom, 2011; Alexander, 2009

Pain

Pain Caused by Wound Infection

Signs of Local Infection	Signs of Spreading or Systemic Infection
• Pocketing, bleeding, or friable granulation tissue • Hypergranulation tissue • Epithelial bridging • Delayed healing, deterioration • New pain; change in pain type/intensity • Malodor • Purulent exudate • Localized erythema, warmth, or swelling	• Erythema, extending induration • Lymphangitis • Crepitus • Dehiscence, wound breakdown, satellite lesions • Malaise, lethargy, loss of appetite, general decline • Evidence of necrotizing infection, sepsis, septic shock, organ failure, or death
Management: Topical antimicrobial dressing (NOT a topical antibiotic)	**Management:** Topical antimicrobial dressing (NOT a topical antibiotic) ***plus*** a systemic antibiotic

Mudge et al, 2010; International Wound Infection Institute (IWII), 2016

Pain Associated with Wound Care

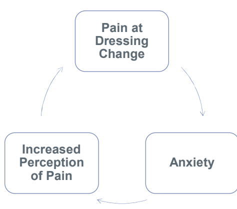
Pain with adhesive removal
- Use a silicone adhesive
- Apply liquid skin protectant
- Remove adhesive slowly in direction of hair growth
- If wound is located on an extremity, secure with rolled gauze instead of tape

Pain with primary dressing removal
- Avoid wet-to-dry dressings; maintain a moist wound bed to ensure atraumatic removal and reduce risk for cell death and subsequent pain

Pain with cleansing
- Avoid swabbing the wound bed with gauze; use irrigation to cleanse the wound
- Reduce irrigation pressure – pour the cleanser
- Ensure solution is close to body temperature – not too hot or too cold
- Trial a different type of cleanser

Brinker et al, 2018; Ilenghoven et al, 2017; Daunton et al, 2012; Ovington, 2002; Winter, 1962; Alvarez et al, 1983

Anxiety as a Source of Wound Pain



Non-Pharmacologic Interventions
- Explain all procedures
- Allow patient participation
- Provide gentle wound care
- Offer alternative therapies, e.g., distraction, relaxation, humor, music, or aromatherapy

Pharmacologic
- Administer anxiolytic at least 60 minutes prior to the start of wound care
- Anesthetize the wound bed prior to intensive wound care procedures

Upton et al, 2014; Protus et al, 2015; Fleck, 2007; Brinker et al, 2018

Underlying Pathology as a Source of Pain

Wound Type & Pain Origin	Interventions
Arterial Ulcer • Lower extremity arterial disease (LEAD): ischemic pain precipitated by exercise or at rest	• Maintain lower extremities in a neutral or dependent position; avoid elevating
Diabetic Foot Ulcer (DFU) • Ischemic pain or neuropathy	• If related to ischemia, maintain lower extremities in a neutral or dependent position
Pressure Injury • Ischemia from unrelieved pressure • Shear and friction	• Initiate pressure injury prevention practices • Avoid dragging patient up in bed
Venous Leg Ulcer • Lower extremity venous disease (LEVD): inflammation and edema secondary to venous hypertension	• Improve venous return • Avoid prolonged standing, crossing legs, restrictive clothing

Brinker et al, 2018; EPUAP, NPIAP, PPPIA, 2019

Systemic Analgesics and Adjuvants

Pain Type and Description	Analgesics and Adjuvants to Consider
Nociceptive Pain • Dull, aching, throbbing, sharp	• Usually responds well to non-opioid and opioid analgesics
Neuropathic Pain • Tingling, stinging, burning, shooting	• Consider initiating a tricyclic antidepressant (TCA) or an antiepileptic drug (AED) if patient can not tolerate a TCA • Consider initiating a serotonin-norepinephrine reuptake inhibitor (SNRI) if patient is unable to tolerate TCA or AED
Mixed Pain Etiology • Characteristics of nociceptive and neuropathic pain	• Combination therapies • Methadone

Agra et al, 2017; Young, 2017; Fleck, 2007; Krasner, 1995; Protus et al, 2015

Topical Analgesics and Anesthetics

Benzocaine
- 20% benzocaine spray

Lidocaine
- Available formulations: lidocaine 2% solution (viscous lidocaine), wound gels with 2% lidocaine, wound cleansers
  - Applied 1 – 3 times daily
  - Potential for systemic absorption, especially if used on large wounds

Compounded Topical Morphine
- Gel [morphine for injection (10 mg) in amorphous hydrogel (8 g)]: apply 5-10 mL to wound bed one to three times daily
- Solution [morphine for injection 20 mg (2 mL) in 8 mL normal saline]: creates 0.2% morphine solution spray

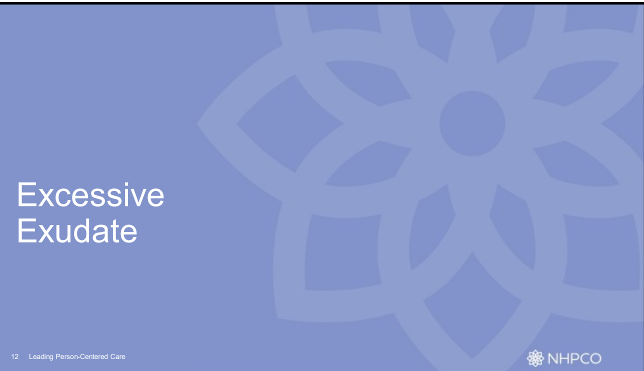
Other Compounded Topical Agents
- Little evidence to support use: ketamine, antidepressants (amitriptyline), aspirin, baclofen, gabapentin, and clonidine 0.1%

Brinker et al, 2018; Steele, 2016

Wound Pain Frequency

Pain Frequency and Description	Interventions to Consider
Noncyclic Acute Pain • Caused by infrequent wound care practices, such as debridement	• Address anxiety • Offer a short-acting PRN analgesic • Provide a topical anesthetic (e.g., topical lidocaine)
Cyclic Acute Pain • Caused by routine wound care procedures, such as dressing changes	• Address anxiety • Address wound care related causes of pain • Rule out wound infection • Offer a short-acting PRN analgesic
Persistent Pain • Pain present despite the absence of any stimuli	• Rule out wound infection and non-physical causes of pain • Schedule long-acting, offer short-acting PRN analgesic • Consider the addition of an adjuvant • Consider offering a topical analgesic or anesthetic if systemic analgesics/adjuvants are not tolerated or minimally effective

Agra et al, 2017; Young, 2017; Fleck, 2007; Krasner, 1995; Brinker et al, 2018



Excessive Exudate

Common Causes of Excessive Exudate

Local	Systemic
• Inflammatory stage of healing • Infection or biofilm • Malignancy • Sinus or fistula • Lymphedema or venous insufficiency • Dependent positioning of wound, e.g., sacrum, lower extremity • Patient-specific compliance factors	• Malnutrition • Low serum albumin levels • Obesity • Elevated C-reactive protein • Infection • Endocrine disease • Congestive heart, renal, or liver failure • Medications (e.g., calcium channel blockers, NSAIDs, corticosteroids, pioglitazone, IV fluids)

Wiegand et al, 2015; World Union of Wound Healing Societies (WUWHS) Consensus Document, 2019

Managing Exudate: Absorptive Dressings

Available Forms	Maximum Wear Time	Comments
Calcium Alginate		
• Rope or sheet	• 7 days	• Horizontal wicking
Gelling Fiber Dressing		
• Ribbon or sheet	• 7 days	• Vertical wicking
Foam		
• Bordered or non-bordered	• 5 (sacrum) – 7 days	• Similar efficacy between brands
Super Absorbent Dressing		
• Many forms	• 1 – 7 days	• Avoid use if bleeding is present

International Wound Infection Institute (IWII), 2016; Brinker et al, 2018; Wiegand, 2015; Jones et al, 2013; Browning et al, 2016

Alternatives to Absorptive Dressings

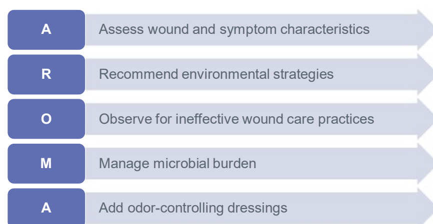
Pouching Systems
- Offer an extended wear time
- Use with or without a drainage collector
- Access window available
- Added benefit of trapping odors

Negative Pressure Wound Therapy (NPWT)
- Use traditional NPWT to manage high volumes of wound exudate
- Change dressing three times weekly

Brinker et al, 2018; Hurd et al, 2021; Banasiewicz et al, 2019

Malodor

Managing Wound AROMA™

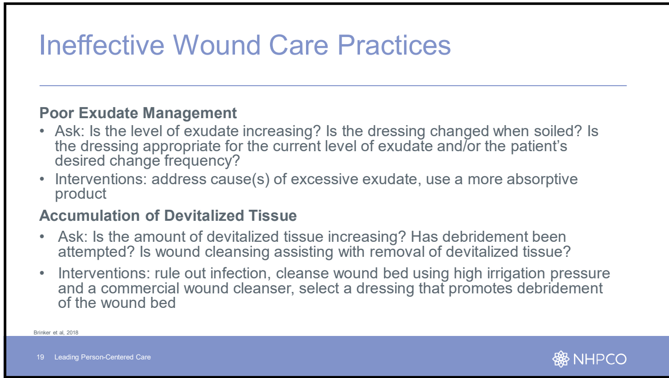


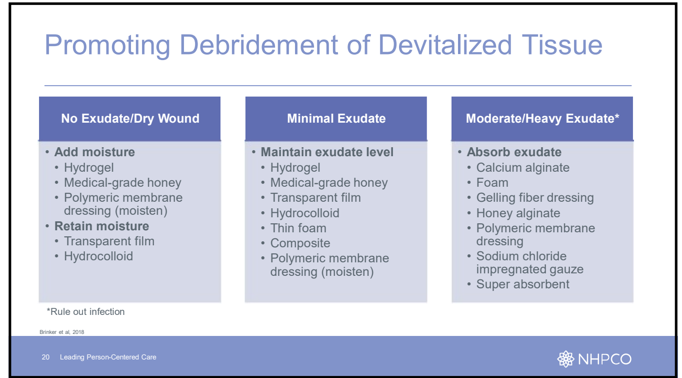
Brinker et al, 2018

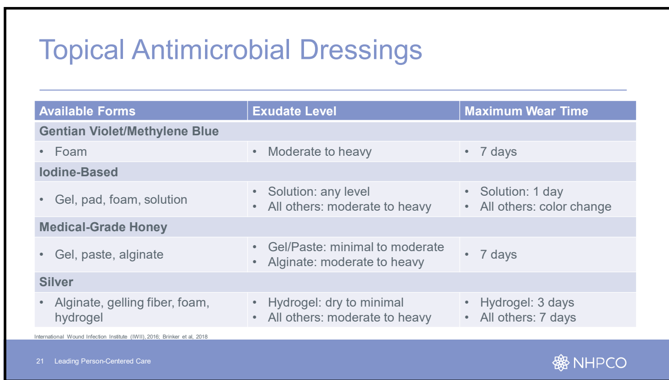
Environmental Strategies

- Consider placing air fresheners, essential oils, dryer sheets, candles, coffee grounds, cat litter, or baking soda in the room
- Provide a commercial odor-neutralizing product
- Address poor hygiene or dirty linens that may contribute to environmental odors; remove soiled linens and dressings from the environment immediately
- Increase room ventilation, but only if screens are in place to prevent introducing flies into the environment

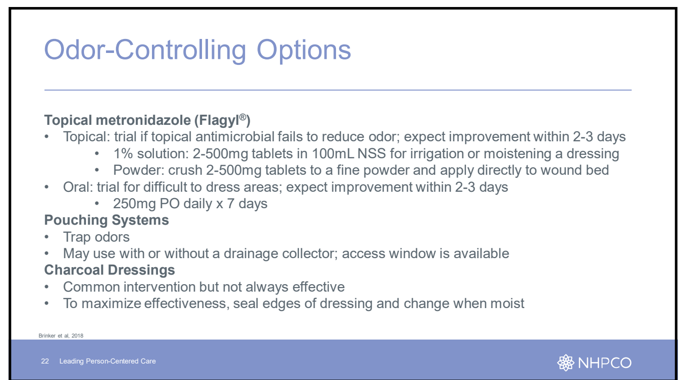
Brinker et al, 2018

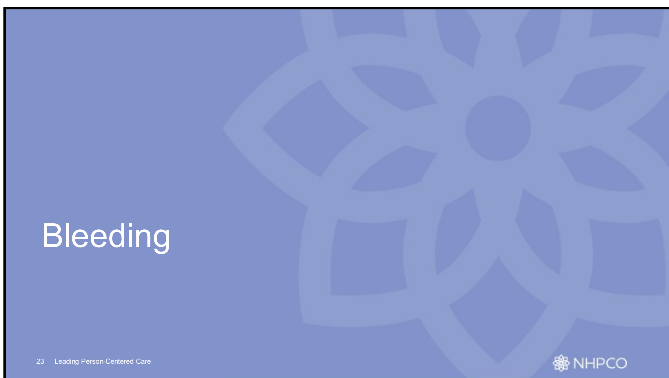


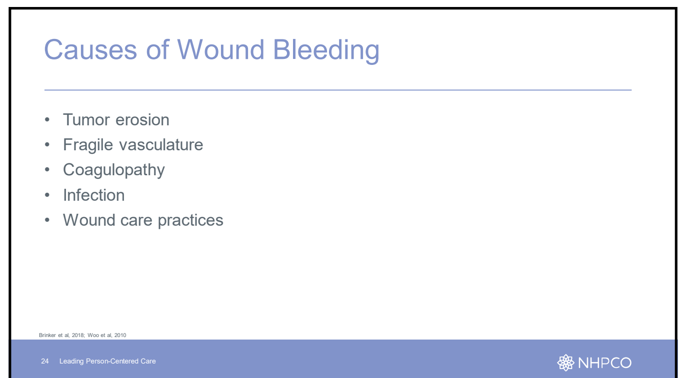



Topical Antimicrobial Dressings

Available Forms	Exudate Level	Maximum Wear Time
Gentian Violet/Methylene Blue		
• Foam	• Moderate to heavy	• 7 days
Iodine-Based		
• Gel, pad, foam, solution	• Solution: any level • All others: moderate to heavy	• Solution: 1 day • All others: color change
Medical-Grade Honey		
• Gel, paste, alginate	• Gel/Paste: minimal to moderate • Alginate: moderate to heavy	• 7 days
Silver		
• Alginate, gelling fiber, foam, hydrogel	• Hydrogel: dry to minimal • All others: moderate to heavy	• Hydrogel: 3 days • All others: 7 days







Prevention of Wound Bleeding

- Gently cleanse the wound bed
  - Pour the wound cleanser
  - Avoid irrigation and swabbing the wound bed with gauze
- Ensure atraumatic dressing removal
  - Apply a non-adherent dressing to prevent trauma during dressing removal
    - Use a dressing that matches the current level of exudate
    - Add a contact layer or impregnated gauze as the primary dressing
    - Remove adherent dressings by soaking until softened
- Reduce the frequency of wound care if patient is at high risk for wound bleeding
- Discontinue medications that may increase bleeding risk

Brinker et al, 2018

Achieving Hemostasis: Slow Bleeding

- First-line
  - Apply firm and consistent pressure for 10 – 15 minutes
- If bleeding remains problematic, consider trialing one of the following
  - Apply pressure using gauze moistened with phenylephrine or oxymetazoline spray
  - Apply a hemostatic dressing, e.g., calcium alginate or a chitosan gelling fiber dressing
  - Apply an OTC hemostatic gel or powder
  - If bleeding is pinpoint, may consider cauterizing with silver nitrate
- May apply an ice pack as an adjuvant

Brinker et al, 2018; Keast et al, 2021; Zhong Y et al, 2021; Kratz A, 2004

Achieving Hemostasis: Moderate to Heavy Bleeding

- Apply firm and consistent pressure to the site of bleeding while obtaining one of the following options
  - Combat gauze: Using firm and consistent pressure, apply to the source of bleeding for 3 minutes or until bleeding stops. Replace with a moisture-balanced dressing.
  - Topical epinephrine-soaked gauze: Using firm and consistent pressure, apply to the source of bleeding for 3 – 5 minutes and then remove. After removing, apply a hemostatic dressing and secure in place. Monitor for rebound bleeding.
- Some bleeding events can be terminal
  - Use dark towels and sheets to hide the appearance of blood
  - Medicate for pain and anxiety

Brinker et al, 2018; Bergstrom, 2011; Delmore et al 2009

Key Points

- Address the underlying cause of the symptom to improve management strategies
- Reassess at every opportunity – what worked today may not be appropriate tomorrow
- Require input of entire interdisciplinary team to address not only the physical wound symptoms but also the subsequent psychological symptoms that may arise

Brinker et al, 2018; Bergstrom, 2011; Delmore et al 2009

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Q & A

Thank You!

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Team Discussion Questions

- What can be added to our organization's current wound assessment practices to improve identification of symptom cause(s)?
- How do our current interventions for wound symptom management compare to those presented today?
- What can we replicate in our organization? What barriers may impact implementation of the symptom management strategies discussed today? How can we overcome these barriers?