WOUND MANAGEMENT IN THE ELDERLY

Evelyn Cook, RN, CIC
Associate Director
OBJECTIVES

▶ Discuss skin changes in elderly
▶ Discuss wound care management program
▶ Discuss infection prevention implications
SKIN CHANGES RELATED TO AGING

- Thinner, more fragile
- Reduced dermal vascularity
- Decreased collagen production
- Less adhesion between skin layers
- Redistribution of fat
- Decrease in sensation
- Decrease in sweat production

Nursing2003:January 2003-Volume 33-Issue 1-84 Wound and skin care; Zulkowski, Karen RN, CWs, DNS
BASICS FOR MAINTAINING SKIN INTEGRITY

- Assessment
- Movement
- Skin Care
- Pressure Relief
- Nutrition and Hydration
- Education
- Communication

“Aging skin and the importance of skin integrity assessment”; Article by Bonnie Fraser HealthTimes
PREDISPOSING FACTORS TO WOUND INFECTIONS

- Immobility
- Pressure
- Friction
- Shear
- Moisture
- Incontinence
- Steroids
- Malnutrition
- Infection at other sites
- Reduced nursing time
WOUND MANAGEMENT PROGRAM

▶ Multidisciplinary approach

▶ **Medical Director:** Provides oversight and support from prevention to treatment

▶ **Facility Administrator:** Ensures availability of guideline treatments, provision of therapeutic surfaces, oversees PI activities and audits and collaborates with the Medical Director

▶ **Director of Nursing (DON):** Consistency in wound rounds, turning regimens,

▶ **Certified wound specialist:** Collaborates with all members of the wound team, provides wound prevention and management education to all clinicians, residents and families

▶ **Other Members:**

▶ Educator, Unit manager, all nursing staff, dietitians, nursing assistants and social services

*Wound Care Management: Jeanine Maguire; Today’s Geriatric Medicine; Vol. 7 No. 2 P.14*
ASSESSING RISK FOR SKIN BREAKDOWN

- Risk Assessment Tools
  - Braden Scale Score (*score 18 or less = at risk*)
  - Norton Score (*score 14 or less = at risk*)
- Policy to define when risk assessment is repeated
- Interventions/Protocol to address risk elements

Add up residents' scores, and evaluate their risk according to this table:
DOCUMENTATION

Document all aspects:

- Assessment
  - Patient
  - Wound specifics (pain, slough)
  - Identify modifiable risk factors for poor healing
- Objectives
  - Short- and long-term management/prevention
- Treatment
  - Underlying wound etiology
  - Modifiable factors
  - Education of resident/family
- Evaluation
  - Objectives/assess outcomes
  - Prevention Strategies
SKIN AND SOFT-TISSUE INFECTIONS

- Pressure Ulcers (decubitus ulcers) occur in up to 25% of residents in LTCFs
- Associated with increased mortality
- Often are deep soft-tissue infections and may have underlying osteomyelitis
- Require costly and aggressive medical and surgical therapy
## SKIN, SOFT TISSUE AND MUCOSAL INFECTIONS

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Comments</th>
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<tbody>
<tr>
<td>A. <strong>Cellulitis/soft tissue/wound infection</strong></td>
<td>More than one resident with streptococcal skin infection from the same serogroup (e.g., A, B, C, G) in a LTCF may suggest an outbreak</td>
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<td>At least one of the following criteria is present</td>
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<td>1. Pus present at a wound, skin, or soft tissue site</td>
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<td>2. New or increasing presence of at least <strong>four</strong> of the following sign/symptom sub-criteria</td>
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<tr>
<td>a) Heat at affected site</td>
<td>For wound infections related to surgical procedures: LTCF should use the CDC’s NHSN surgical site infection criteria and report these infections back to the institution performing the original surgery</td>
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<td>b) Redness at affected site</td>
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<td>c) Swelling at affected site</td>
<td>Presence of organisms cultured from the surface (e.g., superficial swab culture) of a wound is not sufficient evidence that the wound is infected</td>
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<tr>
<td>d) Tenderness or pain at affected site</td>
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<td>e) Serous drainage at affected site</td>
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<td>f) One constitutional criteria</td>
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SKIN INFECTIONS IN NURSING HOMES

- 100 cases skin infections:

<table>
<thead>
<tr>
<th>Type of infection</th>
<th>Number of cases</th>
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<tbody>
<tr>
<td>Non-purulent cellulitis</td>
<td>55</td>
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<tr>
<td>Wound infection</td>
<td>27</td>
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<tr>
<td>Infected ulcer</td>
<td>8</td>
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<tr>
<td>Cutaneous</td>
<td>7</td>
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</table>

- 95% treated with oral antibiotics only
- 26 cases did not meet Loeb criteria for antibiotic therapy
- Most initiated via phone order

*Clinical Characteristics, Diagnostic Evaluation, and Antibiotic Prescribing Patterns for Skin Infections in Nursing Homes; Frontiers in Medicine; July 2016*
ORGANISMS OF CONCERN

► Group A *Streptococci*
  ▶ Cellulitis, wound infection, conjunctivitis, impetigo and necrotizing fasciitis
  ▶ Pharyngitis, bronchitis and pneumonia
  ▶ Bacteremia

► *Sarcoptes scabiei var. hominis*
  ▶ Skin infestation scabies

► *Methicillin-resistant S. aureus*
  ▶ Wound, respiratory, blood

► *Multidrug-resistant gram-negative bacilli*
  ▶ Wound, urinary, respiratory, blood
BACTERIAL LEVELS IN THE WOUND

Contamination
*bacteria present on surface but no issues*

Colonization
*bacteria attach to tissue and multiply*

Infection
*bacteria invade healthy tissue and overwhelm immune defenses*
Local-healing stalls and tissue damage
*Spreading-problems close to wound*
Systemic-systemic illness
The mnemonics “NERDS” and “STONES” used to differentiate between wounds which may respond to topical antimicrobials, and those requiring systemic antimicrobials


<table>
<thead>
<tr>
<th>Superficial Infection</th>
<th>Deep Infection</th>
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<tbody>
<tr>
<td>N: Non-healing wounds</td>
<td>S: Size - bigger</td>
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<tr>
<td>E: Exudating wounds</td>
<td>T: Temperature - increased</td>
</tr>
<tr>
<td>R: Red and bleeding granulation tissue</td>
<td>O: Os (probe to or exposed bone)</td>
</tr>
<tr>
<td>D: Debris on wound surface</td>
<td>N: New or satellite areas of breakdown</td>
</tr>
<tr>
<td>S: Smell</td>
<td>E: Exudate, edema, erythema</td>
</tr>
<tr>
<td></td>
<td>S: Smell</td>
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</table>

Identifying Infection in Chronic Wounds: Young L
Because all pressure ulcers, like the skin, are colonized with bacteria, antibiotic therapy is not appropriate for a positive surface swab culture without signs and symptoms of infection.

Non-intact skin is more likely to be colonized with pathogens.

True infection of a pressure ulcer (cellulitis, osteomyelitis, sepsis) is a serious condition, generally requiring broad spectrum parenteral antibiotics and surgical debridement in an acute care facility.
SWAB CULTURE TECHNIQUES

(Best Practice)

› Levine technique
  › Clean wound prior to culture
  › Moisten swab with saline
  › Rotate swab over a 1 cm square area with sufficient pressure to express fluid from wound tissue
  › Has been correlated to tissue biopsy results

(Levine, 1976)

Slide acknowledgment: Stephanie Yates
WHAT ABOUT WOUND CLEANSING?
WHICH WOUNDS NEED CLEANSING?

- “Dirty” wounds – wounds caused by bites, trauma with foreign objects or debris
- Infected wounds
- Debate over clean granulating wounds – post surgical wounds, leg ulcers, other chronic wounds
AVOID ANTISEPTICS

- Povidone Iodine – (Betadine) – Use solution only – 1% or 10% is acceptable
- Hydrogen peroxide – damages healing wounds, do NOT use in deep wounds – no safe dilution
- Sodium hypochlorite – Dakin’s solution – safe dilution is .025% (not .25% usually ordered)
- Acetic Acid – no safe dilution

Slide acknowledgment: Stephanie Yates
CHARACTERISTICS OF “SAFE” WOUND CLEANSERS

- pH balanced
- Non-cytotoxic
- Long shelf life
CHARACTERISTICS OF IDEAL DRESSING

- Absorbs excessive wound fluid while maintaining a moist environment
- Protects the wound from further mechanical or caustic damage
- Prevents bacterial invasion or proliferation
- Conforms to the wound shape and eliminates dead space
- Debrides necrotic tissue
- Does not macerate the surrounding viable tissue

UpToDate: Basic Principles of Wound Management; Armstrong; Meyr
CHARACTERISTICS OF IDEAL DRESSING CONT’D

- Achieves hemostasis and minimizes edema through compression
- Does not shed fibers or compounds that could cause a foreign body or hypersensitivity reaction
- Eliminates pain during and between dressing changes
- Minimizes dressing changes
- Is inexpensive, readily available, and has a long shelf life
- Is transparent in order to monitor wound appearance without disrupting dressing

UpToDate: Basic Principles of Wound Management; Armstrong; Meyr
DOES **ALL** WOUND CARE NEED TO BE DONE WITH STERILE TECHNIQUE?
WOUND CARE ISSUES

- Present literature suggests that pressure ulcer dressing protocols may use clean technique rather than sterile, but that appropriate sterile technique may be needed for those wounds that recently have been surgically debrided or repaired.

© National Pressure Ulcer Advisory Panel March 2014
Sterile technique

- Sterile is generally defined as meaning free from microorganisms.
- Involves strategies used in patient care to reduce exposure to microorganisms and maintain objects and areas as free from microorganisms as possible.
- Sterile technique involves meticulous hand washing, use of a sterile field, use of sterile gloves for application of a sterile dressing, and use of sterile instruments.
- Sterile technique is considered most appropriate in acute care hospital settings, for patients at high risk for infection, and for certain procedures such as sharp instrumental wound debridement.
Clean Technique

- Clean means free of dirt, marks, or stains.
- Clean technique involves strategies used in patient care to reduce the overall number of microorganisms or to prevent or reduce the risk of transmission of microorganisms from one person to another or from one place to another.
- Clean technique involves meticulous handwashing, maintaining a clean environment by preparing a clean field, using clean gloves and sterile instruments, and preventing direct contamination of materials and supplies.
- No “sterile to sterile” rules apply.
- This technique may also be referred to as non-sterile.
- Clean technique is considered most appropriate for long-term care, home care, and some clinic settings; for patients who are not at high risk for infection; and for patients receiving routine dressings for chronic wounds such as venous ulcers, or wounds healing by secondary intention with granulation tissue.
GENERAL RULES FOR CHANGING DRESSINGS

- Disinfect area around bedside where supplies are going to be placed (over bed table etc.,)
- Place trash bag near by
- Perform hand hygiene
- Gather all necessary supplies, equipment
- Don clean disposable gloves
- Remove tape and outer dressings and dispose of in trash container
- Assess the wound for color, edema, exudate, odor etc.,
- Remove soiled gloves, dispose of and perform hand hygiene
- Put on clean gloves
- Apply dressing and secure
- Dispose of all supplies
- Remove gloves and perform hand hygiene
<table>
<thead>
<tr>
<th>Procedure Intervention</th>
<th>HH Indicated</th>
<th>PPE to be Used</th>
<th>Supplies Indicated</th>
<th>Instrumentation</th>
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<tbody>
<tr>
<td>Wound Cleaning</td>
<td>Yes</td>
<td>Clean exam gloves and PPE as appropriate</td>
<td>Normal saline or prepared sterile wound cleanser. Sterile supplies such as 4x4 or cotton applicators</td>
<td>Irrigation performed with sterile device while maintaining clean technique</td>
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<tr>
<td>Routine dressing changes; NO debridement</td>
<td>Yes</td>
<td>Clean exam gloves and PPE as appropriate</td>
<td>Sterile supplies using clean technique</td>
<td>Sterile supplies using clean technique</td>
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<tr>
<td>Dressing change with mechanical, chemical or enzymatic debridement</td>
<td>Yes</td>
<td>Clean exam gloves and PPE as appropriate</td>
<td>Sterile supplies using clean technique</td>
<td>Sterile supplies using clean technique</td>
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<tr>
<td>Dressing change with sharp, conservative bedside debridement</td>
<td>Yes</td>
<td>Sterile gloves and PPE as appropriate</td>
<td>Sterile supplies and sterile technique due to the potential for entering new, unaffected tissues</td>
<td>Sterile supplies and sterile technique</td>
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APIC Text of Infection Control and Epidemiology; 4th edition 2014
POINTS TO REMEMBER

- Contamination of the wound is minimized by not touching it. Blotting excess fluid that pools in the wound and cleaning the periwound skin with moist gauze is acceptable.

- Contamination of the wound from supplies is avoided by opening and preparing all that is needed before removing the dressing and putting on fresh clean gloves.

- Contamination of the local environment and supplies is avoided by organizing the procedure to ensure that anything coming into contact with the wound does not contact jars, bottles, tubes, bedside table or supplies to be kept for use at a later date.
WOUND DRESSING CHANGE SUMMARY

- Dedicated wound dressing change supplies and equipment gathered/accessible prior to starting procedure
- Additional PPE worn to prevent body fluid exposure
- Multi-dose wound care medications (i.e., ointments, creams) should be dedicated to single resident whenever possible or a small amount of medication should be aliquotted into clean container for single-resident use
- Meds should be stored properly in centralized location and never enter a resident treatment area
Gloves should be changed and HH performed when moving from dirty to clean wound care activities.

Debridement or irrigation should be performed in a way to minimize cross-contamination of surrounding surfaces.

Any surface (including reusable medical equipment) in the resident’s immediate care area contaminated during a dressing change should be cleaned and disinfected.

Wound care is documented.

Wound care supply cart should never enter the resident’s immediate care area nor be accessed while wearing gloves or without performing HH first.
## Wound Dressing Change Observations

<table>
<thead>
<tr>
<th>All supplies are gathered before dressing change</th>
<th>HH performed before dressing change</th>
<th>Clean gloves donned before dressing change</th>
<th>Multi-dose wound care meds are used appropriately</th>
<th>Dressing change performed in manner to prevent cross-contamination</th>
<th>Gloves removed after dressing change completed</th>
<th>HH performed after dressing change completed</th>
<th>Reusable equipment cleaned and/or disinfected appropriately</th>
<th>Clean, unused supplies discarded or dedicated to one resident</th>
<th>Wound care performed/assessed regularly</th>
<th>Wound care supply cart is clean</th>
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*NA = Not assessed

1 Dedicated wound dressing change supplies and equipment should be gathered and accessible on a clean surface at resident’s bedside before starting procedure

2 Additional PPE (e.g., face mask/face shield, gown) should be worn to prevent body fluids exposure per facility policy

3 Multi-dose wound care medications (e.g., ointments, creams) should be dedicated to a single resident whenever possible or a small amount of medication should be aliquoted into clean container for single-resident use; Meds should be stored properly in centralized location and never enter a resident treatment area

4 Gloves should be changed and HH performed when moving from dirty to clean wound care activities (e.g., after removal of soiled dressings, before handling clean supplies); Debridement or irrigation should be performed in a way to minimize cross-contamination of surrounding surfaces from aerosolized irrigation solution; All soiled dressing supplies should be discarded immediately

5 In addition to reusable medical equipment, any surface in the resident’s immediate care area contaminated during a dressing change should be cleaned and disinfected; Any visible blood or body fluid should be removed first with a wet, soapy cloth then disinfected with an EPA-registered disinfectant per manufacturer instructions and facility policy; Surfaces/equipment should be visibly saturated with solution and allowed to dry for proper disinfection before reuse

6 Wound care documentation should include wound characteristics (e.g., size, stage), dressing assessment (e.g., clean, dry), and date and frequency of dressing changes; Wound care is documented in medical records per facility policy

7 Wound care supply cart should never enter the resident’s immediate care area nor be accessed while wearing gloves or without performing HH first. These are important to preventing cross-contamination of clean supplies and reiterates the importance of collecting all supplies prior to beginning wound care.

Comments: Click here to enter text.
GUIDELINES FOR CARE

- AHRQ (formerly AHCPR) guidelines are outdated and archived
- WOCN Society has guidelines for pressure ulcers and lower extremity ulcers
- AMDA published in 2008 and reaffirmed in 2013
- 2014 NPUAP/EPUAP/PPPIA guideline
REFERENCES


RESOURCES

• www.npuap.org – National Pressure Ulcer Advisory Panel website
• www.bradenscale.com - Information about using the Braden Scale for risk assessment.
• www.wocn.org - Website for the WOCN Society; resource for guidelines
• www.amda.com - Website for the American Medical Directors Association, resource for
• https://www.cdc.gov/infectioncontrol/pdf/icar/ltcf.pdf
• Infection Prevention and Control Assessment Tool for Long-term Care Facilities AMDA guidelines and online journal.