North Carolina SPICE
Statewide Program for Infection Control & Epidemiology

WOUND MANAGEMENT IN THE ELDERLY

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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

PREDISPOSING FACTORS TO WOUND INFECTIONS

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

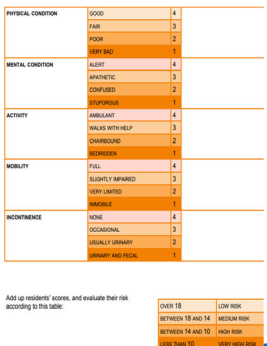
WOUND MANAGEMENT PROGRAM

- 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



PHYSICAL CONDITION	GOOD	4	
	FAIR	3	
	POOR	2	
	VERY BAD	1	
MENTAL CONDITION	ALERT	4	
	APATHETIC	3	
	CONFUSED	2	
	STUPOROUS	1	
ACTIVITY	AMBULANT	4	
	WALKS WITH HELP	3	
	CHAIRBOUND	2	
	BEDRIDDEN	1	
MOBILITY	FULL	4	
	SLIGHTLY IMPAIRED	3	
	VERY LIMITED	2	
	IMMOBILE	1	
INCONTINENCE	NONE	4	
	OCCASIONAL	3	
	USUALLY URINARY	2	
	URINARY AND FECAL	1	

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

OVER 18	LOW RISK
BETWEEN 18 AND 14	MEDIUM RISK
BETWEEN 14 AND 10	HIGH RISK
LESS THAN 10	VERY HIGH RISK

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

Criteria	Comments
A. Cellulitis/soft tissue/wound infection At least **one** of the following criteria is present 1. Pus present at a wound, skin, or soft tissue site 2. New or increasing presence of at least **four** of the following sign/symptom sub-criteria a) Heat at affected site b) Redness at affected site c) Swelling at affected site d) Tenderness or pain at affected site e) Serous drainage at affected site **f) One** constitutional criteria	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 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 Presence of organisms cultured from the surface (e.g., superficial swab culture) of a wound is not sufficient evidence that the wound is infected

SKIN INFECTIONS IN NURSING HOMES

- 100 cases skin infections:

Type of infection	Number of cases
Non-purulent cellulitis	55
Wound infection	27
Infected ulcer	8
Cutaneous	7

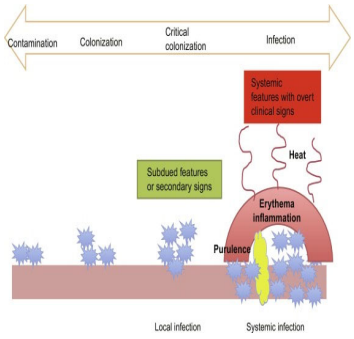
- 95% treated with oral antibiotics only
- 26 cases did not meet Loeb criteria for antibiotic therapy
- Most initiated via phone order

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

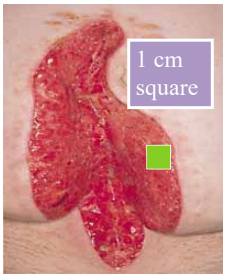
Local-healing stalls and tissue damage

Spreading-problems close to wound

Systemic-systemic illness

SWAB CULTURE TECHNIQUES

- 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

WOUND CARE - *ROLE OF ANTIBIOTICS*

- All wounds are colonized with microbes; however, not all wounds are infected.
- Antibiotic therapy is not indicated for all wounds and should be reserved for wounds that appear clinically infected.
- There is no published evidence to support antibiotic therapy as "prophylaxis" in noninfected chronic wounds.
- Clinical signs of wound infection that warrant antibiotic therapy include local (cellulitis, lymphangitic streaking, purulence, malodor, wet gangrene, osteomyelitis) and systemic (fever, chills, nausea, hypotension, hyperglycemia, leukocytosis, confusion) symptoms

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WOUND CARE -

ANTISEPTICS/ANTIMICROBIAL AGENTS

- Iodine-based — Cadexomer iodine (eg, Iodosorb):
- Silver-based
- Honey — Honey has been used since ancient times for the management of wounds.
- Beta blockers

DRESSINGS

- Hydrogels for the debridement stage
- Low-adherent dressings that maintain moisture balance for the granulation stage
- Low-adherent dressing for the epithelialization stage

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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

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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

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Wound management dressing guide

Type of tissue in the wound	Therapeutic goal	Role of dressing	Treatment options		
			Wound bed preparation	Primary dressing	Secondary dressing
• Necrotic, black, dry	• Remove devitalized tissue • Do not attempt debridement if vascular insufficiency suspected • Keep dry and refer for vascular assessment	• Hydration of wound bed • Promote autolytic debridement	• Surgical or mechanical debridement	• Hydrogel • Honey	• Polyurethane film dressing
• Sloughy, yellow, brown, black or grey • Dry to low exudate	• Remove slough • Provide clean wound bed for granulation tissue	• Rehydrate wound bed • Control moisture balance • Promote autolytic debridement	• Surgical or mechanical debridement if appropriate • Wound cleansing (consider antiseptic wound cleansing solution)	• Hydrogel • Honey	• Polyurethane film dressing • Low adherent (silicone) dressing
• Sloughy, yellow, brown, black or grey • Moderate to high exudate	• Remove slough • Provide clean wound bed for granulation tissue • Exudate management	• Absorb excess fluid • Protect periwound skin to prevent maceration • Promote autolytic debridement	• Surgical or mechanical debridement if appropriate • Wound cleansing (consider antiseptic wound cleansing solution) • Consider barrier products	• Absorbent dressing (alginate/CMC/foam) • For deep wounds, use cavity strips, rope or ribbon versions	• Retention bandage or polyurethane film dressing
• Granulating, clean, red • Dry to low exudate	• Promote granulation • Provide healthy wound bed for epithelialization	• Maintain moisture balance • Protect new tissue growth	• Wound cleansing	• Hydrogel • Low adherent (silicone) dressing • For deep wounds use cavity strips, rope or ribbon versions	• Pad and/or retention bandage • Avoid bandages that may cause occlusion and maceration • Tapes should be used with caution due to allergy potential and secondary complications
• Granulating, clean, red • Moderate to high exudate	• Exudate management • Provide healthy wound bed for epithelialization	• Maintain moisture balance • Protect new tissue growth	• Wound cleansing • Consider barrier products	• Absorbent dressing (alginate/CMC/foam) • Low adherent (silicone) dressing • For deep wounds, use cavity strips, rope or ribbon versions	
• Epithelializing, red, pink • No to low exudate	• Promote epithelialization and wound maturation (contraction)	• Protect new tissue growth		• Hydrocolloid (thin) • Polyurethane film dressing • Low adherent (silicone) dressing	
• Infected • Low to high exudate	• Reduce bacterial load • Exudate management • Odor control	• Antimicrobial action • Moist wound healing • Odor absorption	• Wound cleansing (consider antiseptic wound cleansing solution)	• Antimicrobial dressing	

The purpose of this table is to provide guidance about appropriate dressings and should be used in conjunction with clinical judgement and local protocols. Where wounds contain mixed tissue types, it is important to consider the predominant factors affecting healing and address accordingly. Where infection is suspected, it is important to regularly inspect the wound and to change the dressing frequently. Wound dressings should be used in combination with appropriate wound bed preparation, systemic antibiotic therapy, pressure offloading, and diabetic control.

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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.
- Reduce exposure to microorganisms and maintain objects and areas as free from microorganisms as possible.
- Meticulous hand washing, use of a sterile field, use of sterile gloves for application of a sterile dressing, and use of sterile instruments.
- 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.
- 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.
- 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.
- Most appropriate for:
  - Long-term care, home care, and some clinic settings;
  - Patients who are not at high risk for infection;
  - 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

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 aliquoted into clean container for single-resident use
- Meds should be stored properly in centralized location and never enter a resident treatment area

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WOUND DRESSING CHANGE SUMMARY

- 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

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Wound Dressing Change Observations

All supplies are gathered before dressing change [1]	HH performed before dressing change	Clean gloves donned before dressing change [2]	Multi-dose wound care meds are used appropriately [3]	Dressing change performed in manner to prevent cross-contamination [4]	Gloves removed after dressing change completed	HH performed after dressing change completed	Reusable equipment cleaned and/or disinfected appropriately [5]	Clean, unused supplies discarded or dedicated to one resident	Wound care performed /assessed regularly [6]	Wound care supply cart is clean [7]
○ Yes ○ No ○ NA*	○ Yes ○ No ○ NA	○ Yes ○ No ○ NA	○ Yes ○ No ○ NA	○ Yes ○ No ○ NA	○ Yes ○ No ○ NA	○ Yes ○ No ○ NA	○ Yes ○ No ○ NA	○ Yes ○ No ○ NA	○ Yes ○ No ○ NA	○ Yes ○ No ○ NA
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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.

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