

# WOUND CARE IN THE REHAB SETTING

The Future of an Interdisciplinary  
Team Approach Across All Levels of  
Care

Melanie Sullivan, PT, DPT  
&  
Jessica Cool, LPTA

# OBJECTIVES

1. Describe all team members involved in wound prevention and management
2. Define the role of PT as part of the wound care team and explore best practices with integrating rehab into wound care management
3. Describe the current appropriate practice methods in wound care management

# Why This Topic?

- Incidence of non-healing wounds is increasing<sup>11</sup>
- Lack of “team approach” across disciplines is a challenge
  - Patient frustration
  - Costs
- Patient safety

# Who is The Wound Care Team?

- Wound care is a “team sport”
  - Effective communication is vital to “play calling”
    - Ongoing communication with provider AND patient
- Key Players
  - Patient
  - Physicians/NP/PA
  - Nursing
  - Dietician
  - Rehab
- Setting
  - All settings!

# Key Players

- Patient
  - Is the center of all decision making
  - Must agree with the plan of care and be an ACTIVE participant in decision making process
    - What are the patient's goals?

# Key Players

- MD/NP/PA
  - “Coach”
  - Without an order for wound care, **NOTHING** can move forward



# Key Players



- Nursing
  - Consistent daily wellness and direct care provider
  - Critical for wound prevention and monitoring
  - Wound credentialing
    - WOCN, WCC, CWS

# Key Players

- Dietician

- Nutrition is very important in wound healing and utilizing their expertise is critical in proper wound management<sup>9</sup>
- If protein is missing in a patient's diet, significant impacts in wound healing may be noted





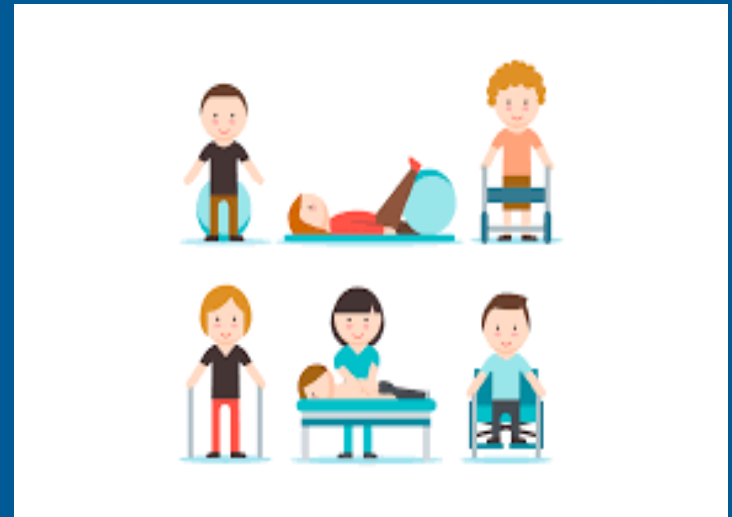
# Wound Care in the Rehab Setting

- How many people here know wound care is part of a rehab's scope of practice?
- When you think of PT, how many think of wound care?



# Key Players

- Rehab
  - Can serve as primary wound care provider or adjunct to direct care in a variety of settings
  - Wound care is also function based



# Key Players

- Rehab
  - Can be wound care certified (CWS/CWCA or NAWCO)
  - Wound care treatments:
    - Debridement
    - Modalities
    - Dressing selection
    - Edema management
    - Positioning/pressure relief/orthotics
    - Mobility assessment

# Other Team Members

- Podiatry
- Orthotist
- Dermatology
- Surgeon
  - Plastic, Vascular

# Other Team Members

Anyone involved in direct or indirect patient care:

- Housekeeping
- Dietary Staff
- Case Management
- Risk Management
- Infection Control
- Administration



# Defining The Team Approach

- Multidisciplinary
  - Team members who work in different disciplines and stay within their own “lane” and provide specific services to the patient → each member individually treats the patient<sup>1</sup>
- Interdisciplinary
  - Clinicians of varying disciplines who share ideas and treat together → a collective group<sup>1</sup>
- Transdisciplinary
  - Adding scientists and non-scientists to the above team → most advanced<sup>1</sup>



# Studies on Interdisciplinary Team Approach

## – Diabetic foot ulcers

- Total amputation rate per 10,000 dropped 70% (from 53.2% to 16%)
- Major amputations dropped 82% (from 36.4% to 6.7%)
- Increased healing rate of 74-90% when team approached utilized<sup>1</sup>



# Costly Pressure Ulcers

- Cost to treat a Pressure Ulcer in the US grew from:

\$1.3 **BILLION** in 1992 to

\$17.2 **BILLION** in 2003

Average cost = **\$21,675** per treatment<sup>2</sup>

# Studies on Interdisciplinary Team Approach

- Pressure Ulcers
  - Reduction of pressure ulcers up to 41% when utilizing an Interdisciplinary Team approach<sup>1</sup>
  - Significant reduction in overall treatment cost



# Studies on Interdisciplinary Team Approach

- Secondary Outcomes
  - Improved self care behaviors
  - Patient satisfaction
  - Quality of life<sup>1</sup>

# Removing the Barriers

- How do we improve?
  - Wound Care Book
  - In-services
  - Inter-professional education
  - Improved communication → rounding
  - Access to SAME medical record
  - Respect for all team members
  - Further research

# Documentation & Communication

- All members of the team should be utilizing same documentation and terminology
- Wound care rounding
- Don't be afraid to speak up
- CUS Tool



# If you remember anything...

- IT TAKES A TEAM TO HEAL A WOUND
- Communication is KEY
- Always ask...how can we help each other?
  - Share our knowledge across all disciplines and all levels of care
  - What are barriers or limitations to providing the BEST patient care?<sup>2</sup>

# Know Your Rehab Wound Care Team

- Most locations have staff who provide wound care services to include nursing and rehab team members
  - Get to know your local team members!

# Valley Health

## Wound Care Teams

- WMC Wound Care Clinic: Eric McBride, NP, (Clinical Manager of W.O.C), Charissa Carfrey, Austin Jones, Ashlyn Brown, Cassie Kaczmarzewski:  
540-536-6547
- WMC IP: Barbara McWhinney, Meredith Baker
- SMH IP/OP: Kathryn Turner, PT: 540-459-1164
- WMH OP: Meighan Zoller, PT: 540-635-0730
- PMH IP/OP: Melanie Sullivan, PT, Jessica Cool, PTA:  
540-743-8240
- HMH: Jen Pollock, Renee Adams, Jackie Streets, Keasha Largent, Eric McBride, NP, Dr. Polk (Podiatrist), Dr. Posadas (Surgeon): 304-822-2115



# Interdisciplinary Team Approach “Positive” Example

- R foot crush injury 10 days prior to referral to PT
- Effective interdisciplinary respect and communication:
  - Referred first day he was at PCP office
  - Email/photo with each visit
  - Frequent phone conversations
  - Active patient participation

# Time Lapse Photos

10-17-18



10-31-18



# Interdisciplinary Team Approach “Needs Improvement” Example

- Burn injury of L ring finger 1/3/19
  - Instructed to keep uncovered and apply silvadene daily
  - No follow-up/referrals made
    - Instructed to return to ER with signs of compartment syndrome
- Referred to OT for L shoulder 1/8/19
  - Wound care addendum sent to PCP 1/15/19
- PT wound care eval 1/16/19

# Time Lapse Photos



1-16-19



1-18-19



# Time Lapse Photos



1-25-19



1-29-19 Discharge

# Interdisciplinary Team Approach Improvement Example

- Missed opportunities
  - Could have referred to wound care
  - Wound care education
- What did work?
  - Team approach within rehab

# WOUND CARE TIPS



# Wounds Are Not Scary

- Keep it simple
  - Moisture balance
    - If it's dry → add moisture
    - If it's wet → add absorptive dressings
  - Keep it covered
  - Frequency of dressing change often depends on drainage
    - Many dressings can last up to 7 days
  - Change plan if no improvement in 2 weeks<sup>13</sup>

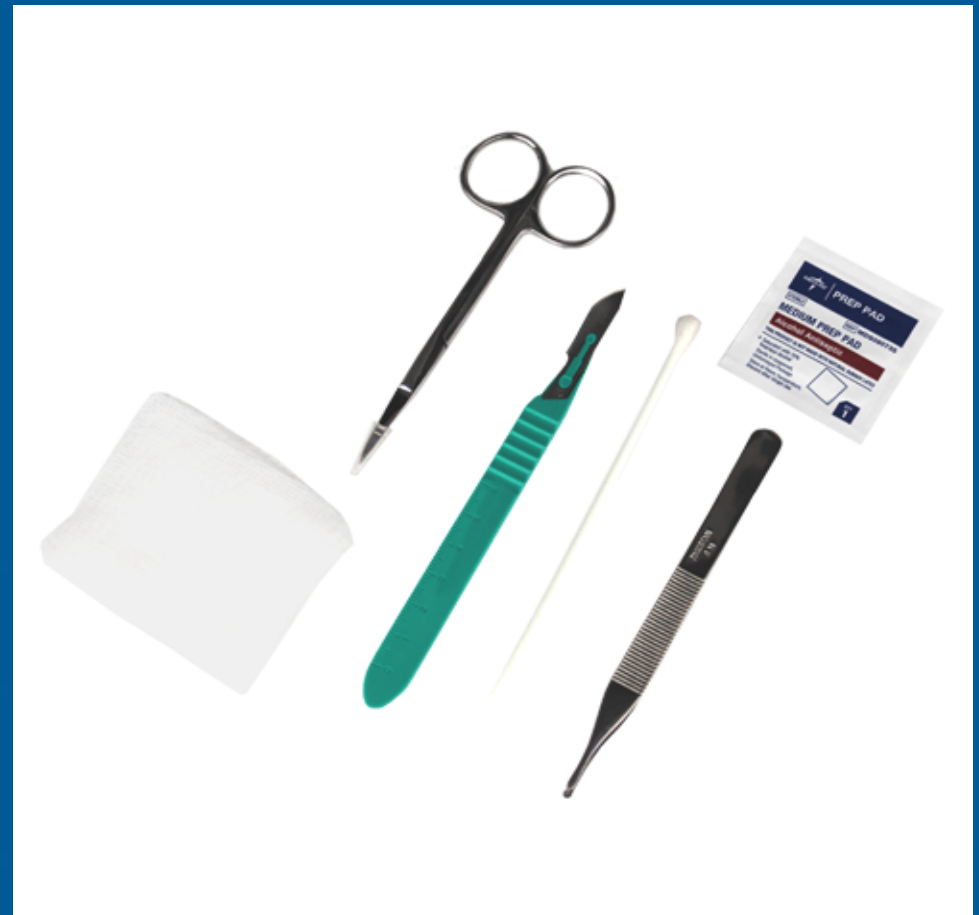


# Wound Care Key Points

- Most wounds heal in 2-4 weeks
- Have ABI performed prior to sending to wound care if compression may be warranted
- **TREAT THE WHOLE PATIENT** and not just the wound
- Wound healing does not stop after it is closed<sup>10</sup>

# Debride or Not Debride?

- Who can debride?
- Sharp versus non-sharp?
- What types?
- When to avoid?



# Wound Coverage

- Wound needs to be kept moist and not dry
  - “Boat in Water”
  - “Airing out” = loss of moisture and heat
  - Scab forms
    - Wounds heal from inside out and scab acts like a roof
  - Exception is arterial wounds<sup>3</sup>

# Dressing Change Frequency

- Varies pending drainage and type of dressing/ointment used → goal is as infrequently as possible
- Wound temperature
  - When temperature drops → healing stops
    - Can take up to 4 hours to return to normal healing temperature
    - Thus TID dressing changes result in lack of wound healing 50% of the time!<sup>7</sup>

# Wound Temps and Dressing Change Frequency

- Air exposed tissue temperature: 69 degrees
- Gauze covered: 78.8 degrees
- Film covered: 87.8 degrees
- Foam covered: 93.2 degrees<sup>7</sup>

# Wound Care Tips:



## PLEASE NO!

- Hydrogen Peroxide
- Prolonged use of Neosporin
- Wet to dry dressings

# Hydrogen Peroxide

- Kills bacteria but also healthy cells
- Causes wound to become “stuck” in inflammatory phase → chronic wound
- Use wound wash/saline instead with a sterile gauze<sup>3</sup>

# Neosporin



- Lack of evidence to support healing
- Bacterial resistance
- Can kill off “good” bacteria, microorganisms
- Irritation of skin/allergy<sup>4</sup>



# Change with Neosporin



# After Stopping Neosporin

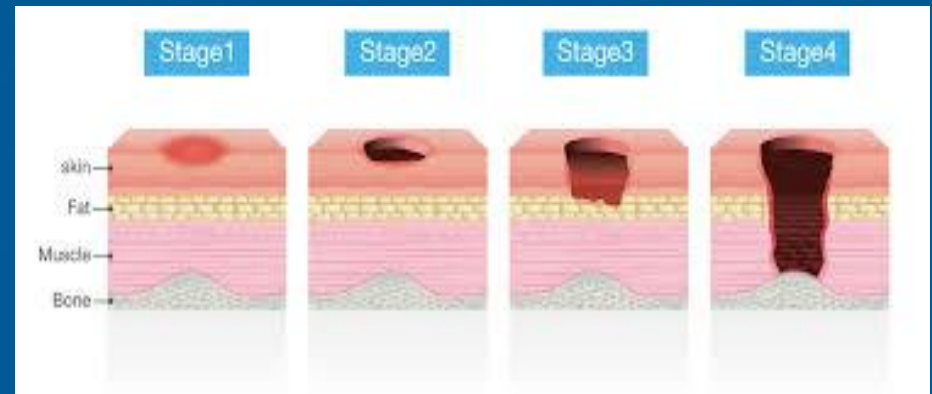


# Wet to Dry Dressing

- Dries and adheres to wound bed → non-selective debridement
- Can remove non-vital tissue however harms healthy tissue in the process
- Increases risk of bacteria<sup>12</sup>
- **CAN BE PAINFUL!**

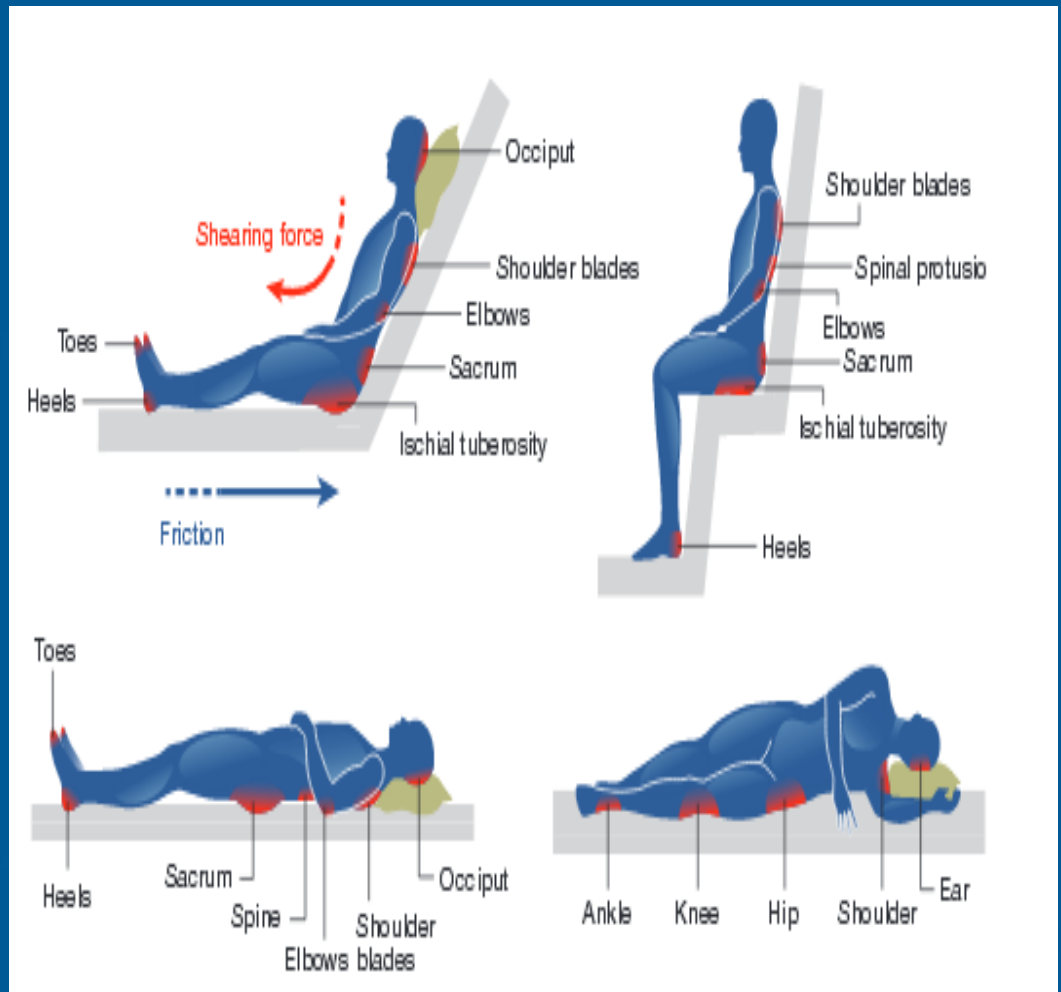
# Pressure Ulcers

- PREVENTION IS KEY!
- Nurses refer to provider staging
- Palpate bone
  - Always a stage 4
- Staging never changes
- Wound site is:
  - Circular = most likely pressure only
  - Irregular = may include a shearing force



# Pressure Relief

- Turn schedule should be patient specific
- Adjust for:
  - Tissue tolerance
  - Activity level
  - Medical hx
  - Nutrition
  - Comfort level



# Pressure Ulcer Stage 1

- Non-blanchable erythema or intact skin





# Pressure Ulcer Stage 2

Partial thickness  
skin loss with  
exposed dermis  
(abrasion or  
blister)



# Pressure Ulcer Stage 3

- Full thickness skin loss with exposed adipose tissue





# Pressure Ulcer Stage 4

Full thickness  
skin and tissue  
loss and/or  
palpation of bone



# Pressure Ulcer Unstageable

- Obscured full thickness skin and tissue loss and/or slough or eschar covering the wound bed



# Pressure Ulcer DTI (Deep Tissue Injury)

Persistent non-blanchable deep red, maroon or purple discoloration





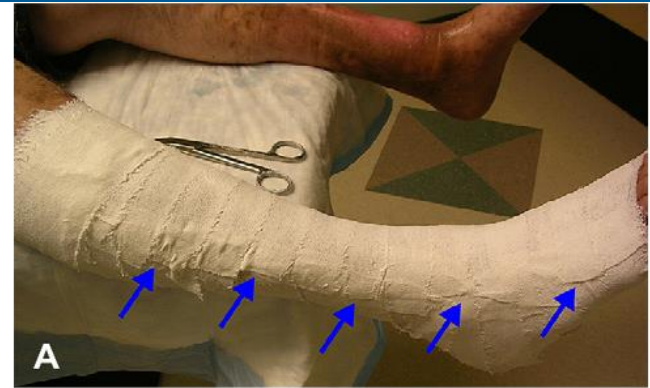
# Venous Ulcers

- Characteristics:  
Irregular and shallow  
on distal LE, significant  
drainage
- Treatment:  
Compression/elevation  
is gold standard. ABI or  
pedal pulses need to  
be checked prior to  
application
- Unna Boot versus  
Profore



# Compression Wraps

- Unna Boots
  - 20-30 mmHg
  - 3 layer system
  - Zinc Oxide initial layer
  - Utilizes calf pump → only use with ambulatory patients
  - Last up to 7 days
  - Avoid use if patient has significant drainage



14. Unna boot application. A. Zinc oxide-impregna

# Compression Wraps

- Profore
  - 30-40 mmHg (Profore Lite 20-30 mmHg)
  - 4 Layer system with 3<sup>rd</sup> layer not utilized for Lite
  - Absorbs higher levels of exudate
  - Use with sedentary patients
  - Lasts up to 7 days



# Arterial Wounds

- Characteristics:
  - Pale, dry, punched out
  - Necrosis/eschar are common
  - Shiny cool skin
  - Lack of hair
- Treatment:
  - Keep wound dry
    - Betadine paint
  - Preservation of healthy tissue
  - Vascular consult?



# Diabetic Wounds

- Characteristics:
  - Calloused periwound
  - Common on pressure areas of plantar foot
  - Neuropathy
  - Deformity
- Treatment:
  - OFFLOAD
  - Remove callous
  - Maintain moist environment
  - Monitor for infection
  - PATIENT EDUCATION





# Periwound

- Periwound is 4 cm outside the wounds edge
- **JUST** as important as wound bed



# In Summary

- Why do we do what we do?
  - Standards of Care
  - Evidence Based Practice
  - Cost Effectiveness
  - Positive patient outcomes and patient satisfaction
- We should strive for interdisciplinary team approach to wound care

# Let's Ponder

- Do we change our practice or continue with “how we have always done it”?
- Should we evolve with wound care or are wounds still scary to you?
- How do you break down barriers/limitations?
- Do you know your wound care team?

# Contact Us with Questions/Concerns

- [msulliv4@valleyhealthlink.com](mailto:msulliv4@valleyhealthlink.com)
- [jcool@valleyhealthlink.com](mailto:jcool@valleyhealthlink.com)



# References

1. Moore, Z et al. Exploring the Concept of a Team Approach to Wound Care: Managing Wounds as a Team. A Joint Position Document. Journal of Wound Care, AWMA Inc, AAWC, EWMA. 2014.
2. Wound Care in 60 min: power point Black, J. Girolami, Woodberry MG, Hill, M, Conteras-Ruiz J., Whitney JA, and Bolton L.
3. Understanding pressure ulcer research and education needs. A comparison of the associated for the advancement of wound care pressure ulcer guideline evidence levels and content validity scores. Ostomy Wound Management. 2011; 57 (11): 22-23.
3. <https://dianeatwood.com/hydrogen-peroxide-cut/2019/>
4. <https://www.seasidemedicaltech.com/blogs/news/is-it-time-to-ditch-the-Neosporin>
5. [http://www.shieldhealthcare.com/community/popular/2015/11/18/move-every-two-repositioning-patients-to-prevent-ulcers/#\\_ftn5](http://www.shieldhealthcare.com/community/popular/2015/11/18/move-every-two-repositioning-patients-to-prevent-ulcers/#_ftn5)
6. Nancy Morgan: Wound Care Education Institute (Ed.). (2017). *Chronic Wound Healing: Wipeout Wounds* 2017. National Conference Tours. Plainfield, IL: WCEI.
7. <http://blog.wcei.net/2018/02/wound-temperature-and-healing>
8. Understanding pressure ulcer research and education needs. A comparison of the associated for the advancement of wound care pressure ulcer guideline evidence levels and content validity scores. Ostomy Wound Management. 2011; 57 (11): 22-23.
9. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2903966/>
10. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4845765/>
11. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2810192/>
12. <https://woundcareadvisor.com/wet-to-dry/>
13. <https://woundcareadvisor.com/role-of-rehab-in-wound-care/>

# The End!

