

# Wound Care 101 (Wound Care in 35 mins)

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## Learning Objectives

- Become comfortable with an algorithm to manage most wounds
- Be able to select a dressing to manage drainage, odor, bioburden
- Recognize other situations where a wound care center could be helpful (i.e. when to refer)

## Overview

- Epidemiology
- Wound treatment in general
- Other situations where a wound care center could help
- Case studies

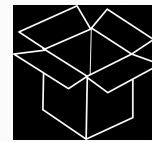
## Epidemiology

- 1-2% of the population in developed countries will experience a chronic wound (3 months)
- In the US alone, 6.5 million patients are treated each year at a cost of \$25 billion

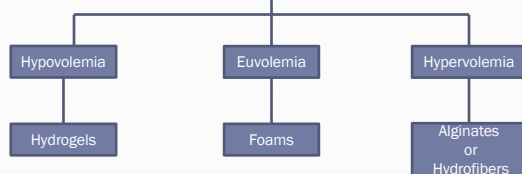
## Physician Education

- Medical School
  - Study in 2008: 9.2 hours
  - Case study 1998 (n=1):0!!!
  - Survey by Yim in 2014 published in Wound Repair Regeneration: Wound healing in US medical school curricula.
    - 134 medical schools surveyed. 55 replied. **Seven** with wound healing **elective**
- Internal Medicine Residency
  - No requirement

Wound care does  
not need to be a  
mystery!!



## Wound Care



## Wound Types

- Pressure
- Arterial
- Venous
- Trauma
- Other

## Pressure Injuries/Ulcers

- Have been referred to by a variety of names
  - Bed sores
  - Decubitus Ulcers
    - Decubitus—Latin—lying down
    - -cubitus—the elbow



## Pressure Ulcers/Injuries

- The only category of wounds that uses Stage I-IV
- Important for a variety of reasons
  - Accuracy, wound product coverage, legally
- Staging has ramifications for reimbursement/penalties
  - Can be quite difficult in certain locations—
    - Nose, occiput
    - Need to see the base—unstageable if not visible
- Unavoidable??

## Staging of Pressure Injuries

### Stage I

- Erythematous, non-blanchable



### Stage II

- Partial thickness involving epidermis, dermis, or both. Abrasion, blister or shallow crater.



## Staging of Pressure Injuries

### Stage III

- Fat may be seen, no bone, muscle or tendon



### Stage IV

- Bone, muscle or tendon exposed



## Staging of Pressure Injuries

### Unstageable

- Base of the wound obscured by slough, eschar or necrotic material



### Deep Tissue Injury

- Appearance of a deep bruise.
- Intact epithelium



## NPUAP

- With the exception of the recommendation for frequent repositioning and using appropriate dressings for drainage control, all of the recommendations are rated a "C" meaning that the recommendation is supported by expert opinion or indirect evidence.
- Frequent repositioning is a "B"
  - Supported by direct clinical evidence
- Foam or absorbent dressings: "B"

## Arterial Wounds

- Lower extremities (can be other areas)
- Physical exam
  - Unreliable at best
- Non-invasive testing
  - Duplex
  - Physiologic Testing
- Referral—quickly!

## Arterial Wounds

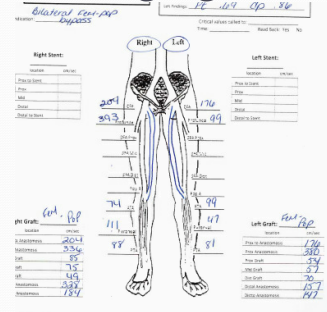




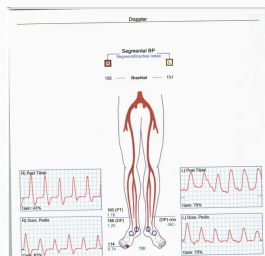
## Arterial Testing

- Arterial Duplex
  - Duplex
    - B-Mode
    - Doppler
  - Useful in patients with arterial trauma, prior stents, bypass
- Physiologic
  - ABI (and more)
  - Usually provides more information

## Duplex Imaging



## Physiologic Testing



## Arterial Wounds

- Less is more!
- Dry is better!
- Combination wounds will fool you!



- Refer quickly!

[illegible]

- Hematomas
- Skin Tears

## Trauma

- Hematomas



## Trauma

- Hematomas
  - Compression
  - Direct Ultrasound
  - Histiotripsy

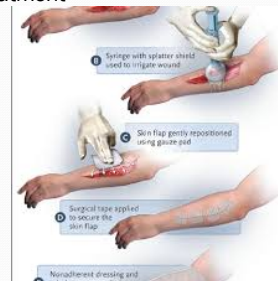
## Trauma

- Skin Tears



## Trauma

- Skin Tear Treatment



# Case Studies

## Case 1

- 99 year old female with multiple medical problems
  - 2015
- Extensive history of peripheral arterial disease
  - Bypass, stents, PTA, no further options for revascularization (9/2016)
- Living with her daughter
- Hospitalized for urosepsis and experienced significant decline in mental status
- Severe bilateral foot wounds





## Arterial Wounds

- Pain control!!
- Betadine or skin prep
- One of the few times wounds should be kept dry (exception to the algorithm)
- DO NOT SOAK!
- Pressure relief

## Case 2

- 58 yo female hairdresser
- Swelling for years, skin breakdown 9/2016
- ER in November, admitted, severe pain
- “Found” her in the vascular lab
- Severe bilateral swelling, circumferential wounds affecting both calves, very heavy drainage





## Treatment

- Daily dressings
  - ABD pads, non-adherent layer
  - elevation
- Compression
- Pain control

## Case 3

- 85 year old lady who first presented to us in 2015 with edema and superficial skin breakdown
- PMHx minimal
  - Hypertension
  - Pseudogout
  - Venous insufficiency
- Despite age, very active
  - Volunteers at symphony
  - Travels regularly to California

## Case 3





## Case 3

- 35 wounds!
- Non-adherent dressings
- Compression (preventative and therapeutic)
- NO adhesive ever!!

## When and how quickly to refer?

- When?
  - A wound that has not healed in 2-4 weeks
  - If you are uncomfortable/concerned with the situation
  - If the patient is uncomfortable/concerned
- How quickly?
  - How long has the wound been present?
  - Type of wound
    - Arterial vs venous

## Who to refer to?

- Wound center?
- Plastics?
- Dermatology?
- ER?
- Rheumatology?

## Allegheny General Advanced Wound Healing and Lymphedema Center

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