Pressure Injury Assessment, Prevention, and Management: Best Practices for Hospice

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Session Objectives

- Identify key areas of pressure injury assessment.
- Develop a patient-centered plan of care for the prevention and treatment of pressure injuries.

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Case Study

Margaret is 76-year-old female residing in a facility with a chronic pressure injury of the sacrum.

- **Current Treatment:** Foam dressing scheduled to be changed every 3 days and PRN if soiled; however, daily dressing changes are needed to accommodate the increasing exudate
- **Comorbidities:** Dementia, hypertension, CVA, and malnutrition
- **Activity/Mobility:** Up to Geri chair via Hoyer lift TID for meals
- **Nutrition:** Nutritional status is poor, patient eats less 50% of each meal, pureed diet, sips of nectar thickened liquids
- **Moisture:** Incontinent of bowel and bladder
- **Prevention Strategies:** Specialty mattress in place, facility staff turn and reposition frequently, attempt every 2 hours
- **Goal of Wound Care:** Facility is requesting a dressing with a longer wear time

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Images: Medetec Medical Images

Defining a Pressure Injury

Definition

- Localized area of damage to skin or underlying tissue as a result of pressure or a combination of pressure and shear

Location

- Near or under a bony prominence
- Under a medical device
- Mucous membrane

Terminology

- Decubitus → decubitus ulcer → bedsore → pressure sore → pressure ulcer → pressure injury

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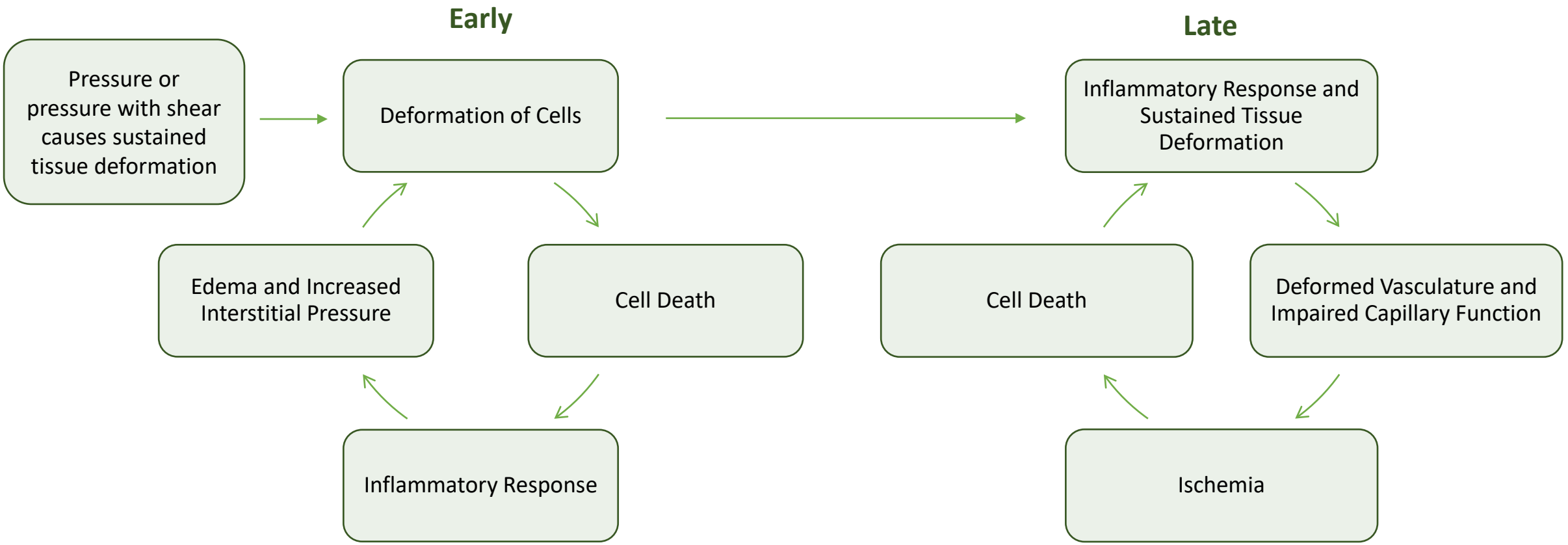
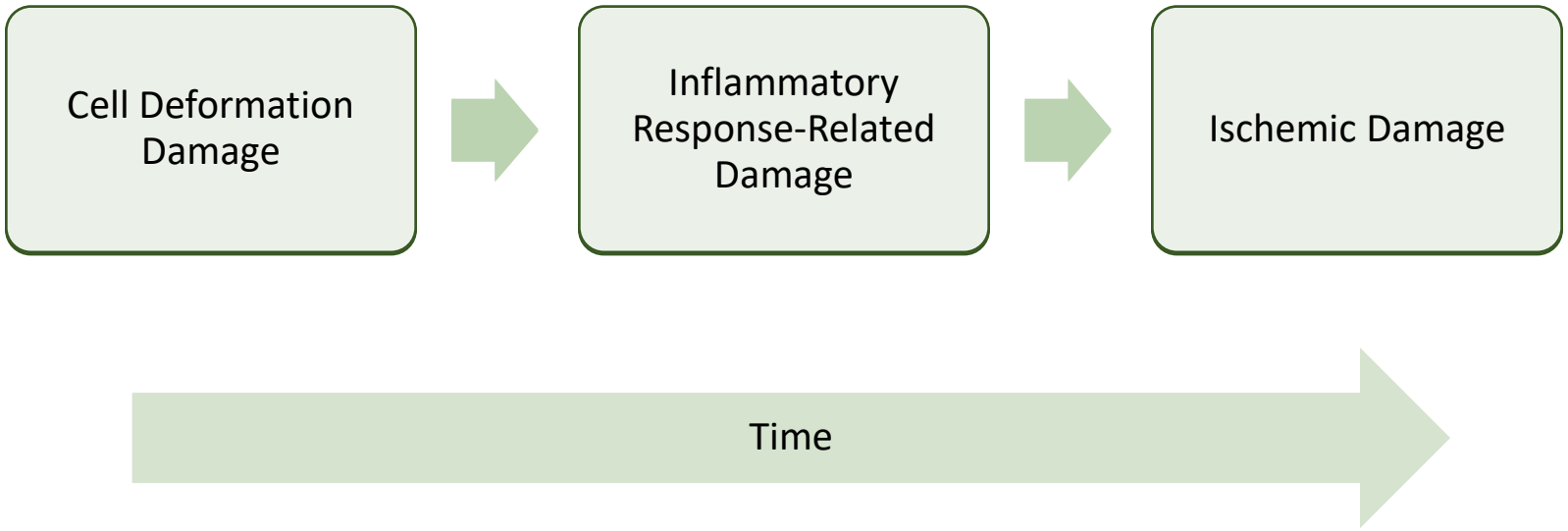
EPUAP, NPIAP, PPPIA. 2019

Pressure Injury Etiology



EPUAP, NPIAP, PPPIA. 2019

Factors Leading to Tissue Damage



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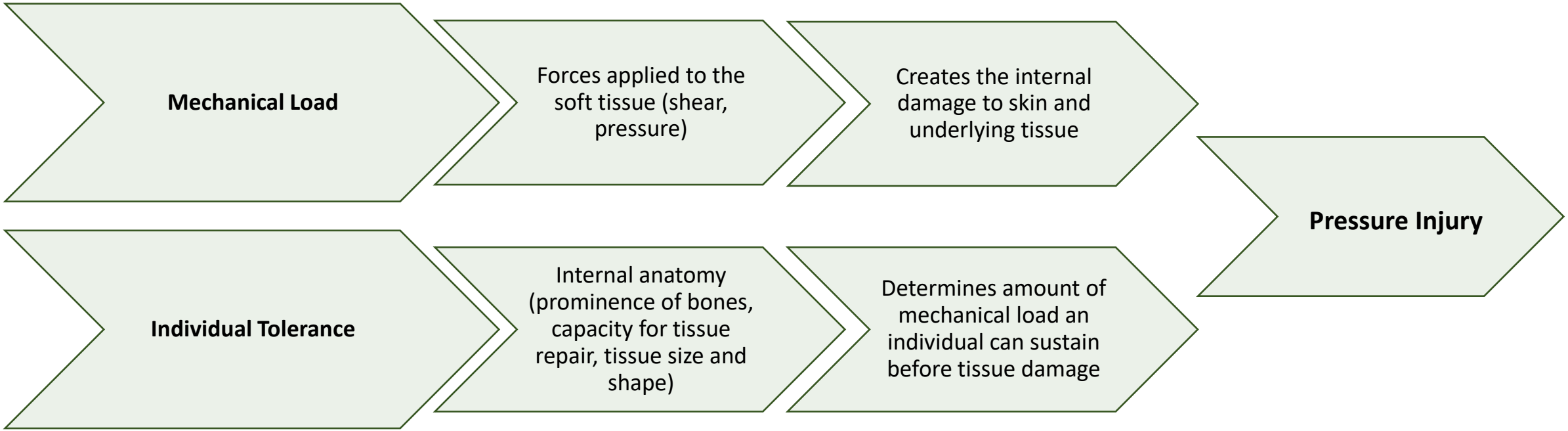
Factors Determining Pressure Injury Susceptibility

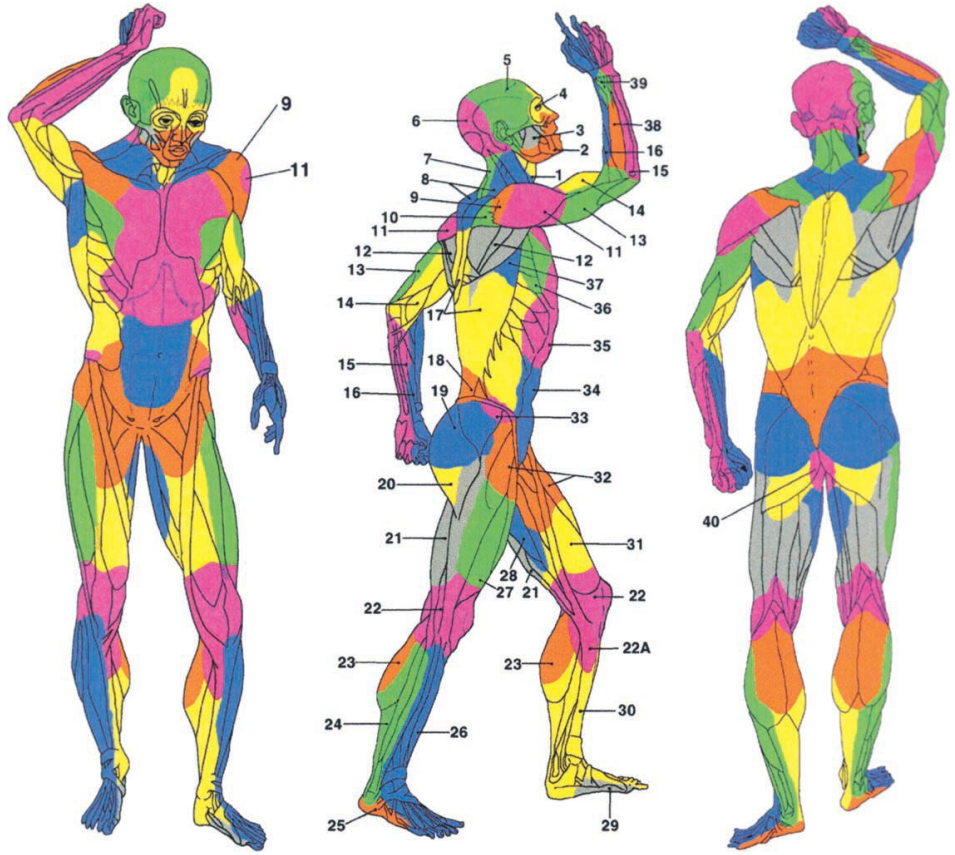


EPUAP, NPIAP, PPPIA. 2019

Alternative Proposed Etiology

Angiosomal Theories

- Angiosome: three-dimensional block of tissue supplied by a main source artery and its accompanying vein(s)



Taylor GI, Palmer JH. 1987; Taylor GI. 2003; Image: Taylor GI. 2003

Alternative Proposed Etiology

Angiosomal Theory of Pressure Injury Formation: Ischemia Reperfusion Injury

- Fife and Gkotsoulias (2019) documented a case of a 22-year-old healthy male patient who underwent a 5-hour maxillofacial surgery
  - As part of a pressure injury prevention program, heels were elevated, and foam dressings were applied during the surgery
  - Upon awakening, patient complained of severe left heel pain; assessment demonstrated a Stage 1 pressure injury to the lateral aspect of the left heel and the right lateral malleolus
  - The following day, the areas were blanchable. Within 48 hours, the redness had almost completely resolved. Pain was present for 3 more weeks, with reduced sensitivity to touch for 6 weeks indicating neuropraxia
  - Proposed that some Stage 1 pressure injuries are not caused by capillary occlusion directly over the bony interface but instead by occluding the arterial blood flow to an angiosome
    - Capillary occlusion indicated by a diffuse wound edge
    - Angiosome occlusion indicated by a demarcated edge

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Fife CE, Gkotsoulias E. 2019

Alternative Proposed Etiology

Angiosomal Vascular Occlusions Theory as Cause of Deep Tissue Pressure Injuries (DTPIs) and Stage 4 Pressure Injuries

- Yap et al (2021) documented a case of a DTPI to bilateral buttocks in a 46-year-old male patient who underwent CABG
  - Because the DTPI location was not associated with a bony prominence, local capillary pressure over a bony prominence does not explain cause
  - Proposed angiosomal vascular occlusions as the pathophysiological cause for Stage 4 and Deep Tissue Pressure Injuries
    - Similar to the case presented by Fife and Gkotsoulias (2019), the arterial blood flow to an angiosome was occluded. However, they proposed that the vascular event leading to angiosomal occlusion was not recoverable and that resulted in the necrosis of the tissues supplied by the affected vessel(s), i.e., the angiosome

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Yap TL, Alderden J, Lewis MA, et al. 2021; Abruzzese R. 1988; Fife CE, Gkotsoulias E. 2019

Risk Assessment

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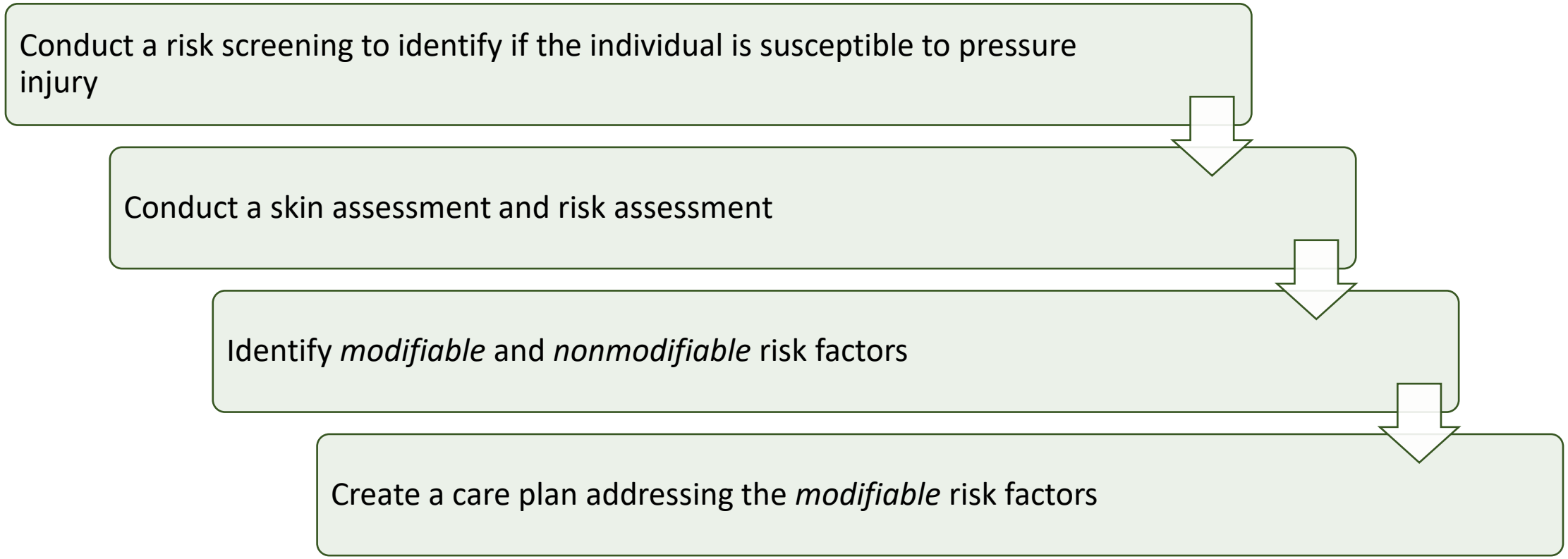
The Risk Assessment Process



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Skin Assessment

Head-to-toe assessment of the skin with special focus on

- Bony prominences, such as the sacrum and heels
- Skin under medical devices and under prophylactic dressings
- Any areas of localized pain

Observe for

- Any areas of erythema (differentiate between blanchable versus non-blanchable erythema) or maceration
  - For patients with darker skin tones, assess for any discoloration
- Changes in temperature and tissue consistency
  - Differences in temperature or tissue consistency may indicate areas of concern, especially in patients with darker skin tones

Timing

- Perform upon admission, repeat routinely
- Increase frequency if patient's condition deteriorates

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EPUAP, NPIAP, PPPIA. 2019

Risk Factor Identification

Perform upon admission; repeat at each nursing visit and with any change in condition

- Use a validated tool
  - Braden Scale for Predicting Pressure Sore Risk©
    - Risk factors are divided into 6 categories
      - Sensory perception
      - Mobility
      - Activity
      - Moisture
      - Nutrition
      - Friction/shear

Scores range from 6 (very high risk) to 23 (no risk)

- Mild risk: 15 – 18
- Moderate risk: 13 – 14
- High risk: 10 – 12
- Very high risk: 9 or less

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Warner-Maron I. 2015; Braden BJ, Maklebust J. 2005

Major Risk Factors

Risk Factor	Clinical Indicators of Risk	Included in Braden
Limitations in Activity and Mobility	• Inability to perform ADLs: dressing, feeding, bathing/showering, personal hygiene, toileting • Impaired functional mobility: inability to get from place to place while performing ADLs • Confined to bed/wheelchair or limited ambulation distance or frequency • Unable to reposition body or extremities • Spinal cord injury or limb fracture	Yes
Moisture	• Urinary and/or fecal incontinence in the presence of impaired mobility/activity • Diaphoresis • Risk assessment subscales indicate moisture is problematic	Yes
Nutritional Status	• Poor PO intake • Malnutrition • Abnormalities in anthropometric data (arm circumference, weight, BMI)	Yes
Increased Body Temperature	• Temperature ≥38.5°C or 101.3°F • Diaphoresis	No
Sensory Perception	• Diagnoses associated with central or local sensory impairment: diabetes/neuropathy, spinal cord injury, traumatic brain injury, peripheral arterial disease, Parkinson's disease, primary tumor or metastasis to brain, CVA, dementia, delirium, coma, sedation	Yes

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Major Risk Factors

Risk Factor	Clinical Indicators of Risk	Included in Braden
Skin Status	• Presence of a Stage 1 pressure injury indicates risk of developing a Stage 2 or greater • Presence of any pressure injury indicates risk of developing additional pressure injuries • Presence of pain, impaired skin integrity, or previous Stage 3 or 4 pressure injury	No
Perfusion, Circulation, and Oxygenation	• Oxygen use and mechanical ventilation • Edema and associated effect on tissue perfusion • Cigarette smoking (vasoconstrictive effects of nicotine) • History of vascular disease (e.g., CVA, cardiac disease, PVD) or respiratory disease • History of diabetes with or without macro- or microvascular disease • Impaired circulatory status (e.g., pulses, ankle or toe brachial pressure index, blood pressure)	No
Age	• Older age; beginning at 60 years in one study	No
Blood Markers	• Low hemoglobin (reduced oxygen carrying capacity) or serum albumin (leads to interstitial edema, reduced tissue perfusion) • Elevated C-reactive protein (indicates inflammation, which may affect tissue health)	No
General and Mental Health Status	• Urinary tract or respiratory infection; chronic wound • Diagnoses (e.g., cardiac arrest, pulmonary disease, malignancy; mental health diagnoses) • Medications (e.g., steroids, vasopressors, sedatives)	No

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EPUAP, NPIAP, PPPIA. 2019; Ooi W, Morris J, Brandeis G, et al. 1999

Case Study

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What major risk factors does Margaret have for pressure injury development?

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Images: Medetec Medical Images

Case Study

What major risk factors does Margaret have for pressure injury development?

Major Risk Factor	Present	Finding
Limitations in Activity and Mobility	✓	Hoyer lift
Moisture	✓	Incontinent
Nutritional Status	✓	Eats < 50%
Increased Body Temperature	x	
Sensory Perception	✓	Dementia, CVA
Skin Status	✓	Pressure injury
Perfusion, Circulation, and Oxygenation	✓	CVA
Age	✓	> 60 years
Blood Markers	x	
General and Mental Health Status	✓	Chronic wound

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Pressure Injury Prevention

Offloading Pressure

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Repositioning in Bed

Regular repositioning is associated with a lower incidence of pressure injuries

- Evidence is conflicting
  - 2, 3, or 4 hourly repositioning frequencies have all been found to be somewhat effective

Implementation

- Consider the current type of support surface, level of activity, and ability to reposition self when creating a schedule
- Re-evaluate the repositioning schedule if the skin or wound condition remains a concern
- If pain is problematic, pre-medicate 20 to 30 minutes prior
- Consider using a reminder system to promote compliance with regimen
- Use techniques that reduce friction and shear
- Do not position onto medical devices or foreign objects
- Avoid repositioning onto compromised areas
- Offer assistive devices to allow the individual to reposition self – sliding boards, bed rails, trapeze bars

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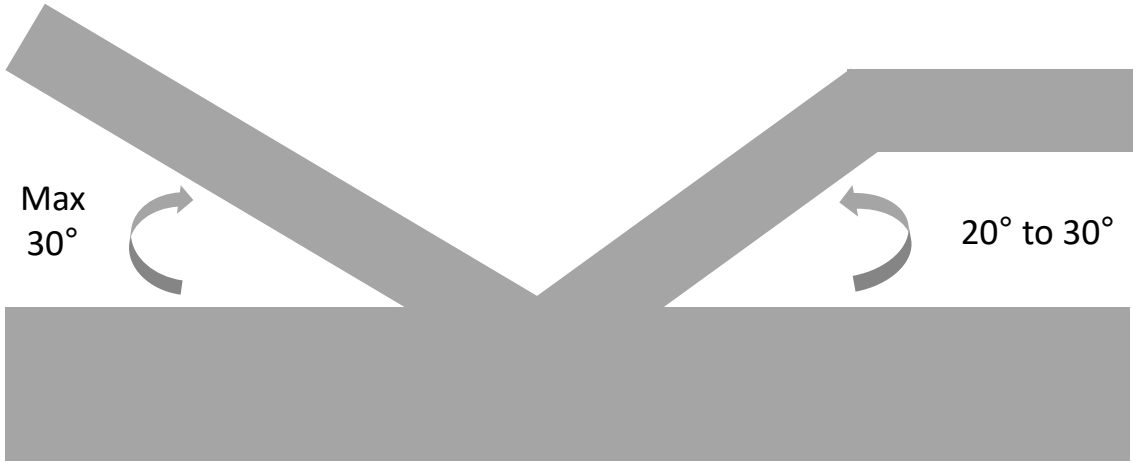
EPUAP, NPIAP, PPPIA. 2019

Supine Positioning in Bed

1. Turn patient to supine position
2. Place pillows between ankles and knees
2. Offload pressure to heels
3. Raise foot of bed 20° to 30°
4. Raise head of bed to 30° or less if able to tolerate. Adjust patient using microshifts

Head of Bed
Elevate 30° or less

Foot of Bed
Elevate 20° to 30°



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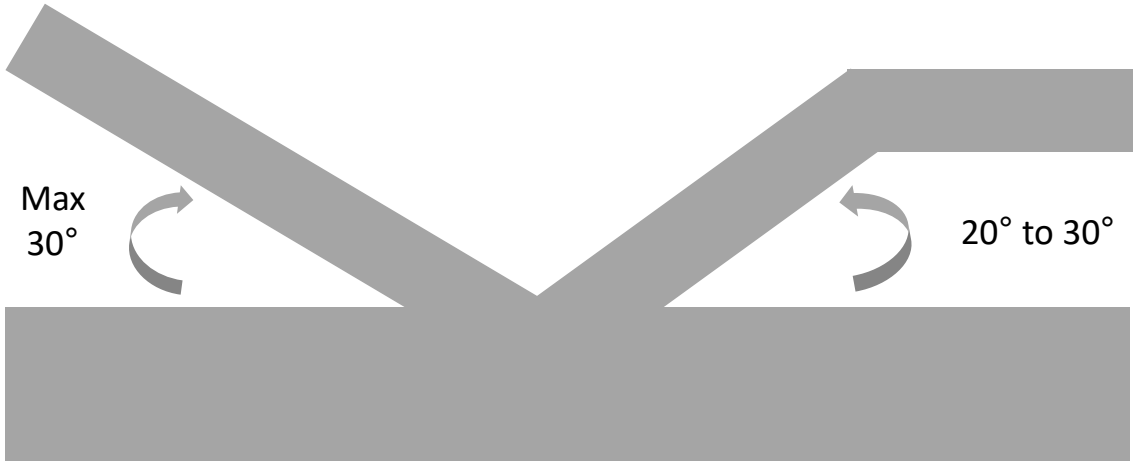
Side Lying Positioning in Bed

1. Turn patient to a 30° side lying position using pillows or a wedge
2. Place pillows between ankles and knees
2. Offload pressure to heels
3. Raise foot of bed 20° to 30°
4. Raise head of bed to 30° or less if able to tolerate. Adjust patient using microshifts

Head of Bed
Elevate 30° or less

Foot of Bed
Elevate 20° to 30°



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EPUAP, NPIAP, PPPIA. 2019

Repositioning Seated Individuals

Allow seating out of bed for limited periods of time

- Consider out of bed for meals
  - Maximum seating duration of two hours at a time if no wounds are present
  - If a pressure injury of the sacrum, coccyx, or ischia is present, seating should be limited to three times daily and no longer than 60 minutes at a time
- Encourage pressure relieving maneuvers: weight shifts while in the seated position
- Do not seat an individual directly on a pressure injury
- Recline and tilt the seat position, elevate lower extremities
  - For individuals with an ischial pressure injury, consider a reclined position/30° tilt
- Provide an appropriate support surface/cushion
  - Do not use ring or donut-shaped devices

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EPUAP, NPIAP, PPPIA. 2019

Offloading Pressure to the Heels

At risk or Stage 1 or 2

- Device used is dependent on patient condition and length of time offloading is necessary
  - *Alert and cooperative; short term intervention needed*
    - Pillow or foam cushion placed under the full length of the calves
    - Heels should be completely free from the bed
  - *Agitation, frequent movement; long term intervention needed*
    - Heel suspension device

Stage 3 or 4, unstageable, deep tissue pressure injury

- Use a heel suspension device

EPUAP, NPIAP, PPPIA. 2019

Support Surface: At-Risk Individuals

Use either

- Single layer high specification foam mattress or overlay
  - Cautious use if microclimate is moist due to the risk of friction injury; consider adding a mattress cover to manage microclimate
- Reactive air mattress or overlay
  - Includes static air mattresses, low-air loss
  - Does NOT include alternating pressure features

Assess benefits of using

- Medical grade sheepskins manufactured to Australian Standard AS4480.1
- Alternating pressure air mattress or overlays – generally reserved for individuals with an existing pressure injury

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Support Surface: Pressure Injury Present

Use a specialty support surface

- Alternating pressure air mattress
- Low-air-loss feature
- Air fluidized bed

"…The support surface on which the pressure injury developed usually does not provide an appropriate environment for healing."

EPUAP, NPIAP, PPPIA. 2019

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Pressure Injury Prevention

Preventive Skin Care

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Implement a Skin Care Regimen

Cleanse

- No-rinse, pH balanced, foam cleanser preferred; avoid alkaline soaps or cleansers
- Individualize cleansing frequency
- Avoid vigorously rubbing; use soft fabrics to reduce friction
- Dry skin thoroughly, pay particular attention to skin folds

Moisturize

- If not already of a component of the cleanser or barrier product

Protect Skin From Excessive Moisture

- Apply a barrier product: liquid barrier film/skin sealants; petrolatum or zinc-based ointment or paste

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EPUAP, NPIAP, PPPIA. 2019

Managing Incontinence

Create an individualized program to manage incontinence

- Cleanse skin as soon as it is soiled with a no-rinse, pH balanced, foam skin cleanser; avoid alkaline soaps or cleansers
- Moisturize the skin to maintain hydration
- Apply a barrier product to protect against moisture damage
- Use a highly absorbent incontinence product to manage urinary incontinence rather than a reusable quilted under pad

Use a diversion device if benefits outweigh risks

- Urinary incontinence: Foley catheter if the risk of a medical device related pressure injury and urinary tract infection does not outweigh the benefits
- Fecal incontinence: Insufficient evidence to support use of fecal diversion devices in the prevention of pressure injuries

Consider the use of a support surface to assist in managing microclimate

- Low-air-loss

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EPUAP, NPIAP, PPPIA. 2019

Prophylactic Dressings

Apply a multi-layered, soft silicone foam dressing to the bony prominences of high-risk individuals

- Initiate as early as possible
- Assess the skin under the dressing at least daily
- Follow the manufacturer's instruction for wear time, usually 5 (sacrum) – 7 (other locations) days
- Replace PRN if dressing becomes dislodged or soiled
- Must continue to turn and reposition/float heels even when a prophylactic dressing is used

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EPUAP, NPIAP, PPPIA. 2019

Pressure Injury Prevention

Nutrition

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Energy, Protein, and Fluid Requirements

	Energy Intake	Protein Intake	Hydration
At Risk of Pressure Injury	• Balanced, nutrient rich diet • Liberalize diet if restrictions reduce food and fluid intake	• Older adults: 1 – 1.5 g/kg body weight/day • Older adults with chronic disease: 1.2 – 1.5 g/kg body weight/day	• 30 mL/kg body weight/day or 1 mL/kcal/day • Requirements increase with high protein intake, current dehydration, elevated body temperature, vomiting, diaphoresis, diarrhea, or heavily exudating wounds
Pressure Injury Present	• At risk of malnourishment or malnourished adults: 30 – 35 kcal/kg body weight/day	• At risk of malnourishment or malnourished adults: 1.25 – 1.5 g/kg body weight/day	

Ensure interventions are compatible with the individual's current health status, goals of care, and wishes. Adequate nutrition is often not realistic at the end of life.

EPUAP, NPIAP, PPPIA. 2019

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Supplementation

Vitamin and mineral supplementation

- Only if deficiency is suspected or confirmed

Oral nutritional supplements (ONS), enhanced foods, and food fortifiers

- Offer when nutritional needs are not met by dietary intake
  - *At risk of pressure injury or pressure injury present:* may offer high calorie, high protein nutritional supplements for those who are at risk of malnutrition or are malnourished if dietary intake cannot achieve nutritional requirements
  - *Stage 2 or greater pressure injury:* may provide high-calorie, high-protein, arginine, zinc and antioxidant ONS or enteral formula
- Provide between meals
- Recommended dose: 2 bottles/day with an energy density of 1.5 – 2.4 kcal/mL
- Trial for at least 4 weeks

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EPUAP, NPIAP, PPPIA. 2019

Enteral and Parenteral Feeding

Pressure injury prevention

- Quality of evidence is poor
- One study found that individuals receiving enteral feeding were at an increased risk of pressure injury

Pressure injury treatment

- Does have a positive impact on healing of pressure injuries

Palliative care and end of life

- Any form of supplemental nutrition is *"very appropriate"* if it
  - Provides comfort
  - Is agreed upon by the patient, caregivers, and clinical providers
- If pressure injury healing is not the goal of care, individuals can consume type and amount of food and fluids they desire

EPUAP, NPIAP, PPPIA. 2019

Case Study

What additional interventions can be initiated to address Margaret's major risk factors for pressure injury development?

- Place prophylactic dressings to bony prominences
- Float heels when in bed
- Support surface for chair
- Weight shifts while in the seated position
- Initiate an individualized program to manage incontinence
- Oral nutritional supplement

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Pressure Injury Management

Comprehensive Assessment and Pressure Injury Staging

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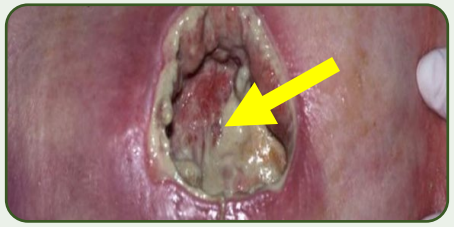
Comprehensive Assessment



Wound Bed

- Wound etiology, size, and location
- Tissue type and amount
- Exudate type and amount

Wound Edge

- Tunneling and undermining
- Maceration

Periwound Skin

- Integrity
- Hydration
- Color and temperature

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Schultz GS, Sibbald RG, Falanga V, et al. 2003; Keast DH, Bowering CK, Evans AW, Mackean GL, et al. 2004; Images: Medetec Medical Images

Comprehensive Assessment

Include a review of the holistic patient

History of Wounds	Comorbidities	Current Health Status
• Prior treatments • Current symptoms – pain, malodor, heavy exudate, bleeding • Length of time present • Preferences for care • Previous wounds with underlying etiology	• Chronic renal failure • Muscle weakness • Congestive heart failure • Hypertension • Atherosclerosis, lower extremity arterial disease • Diabetes • Neuropathy • Anemia • Dementia • Malnutrition	• Prognosis and goals of care • Desire for prevention and management strategies • Vascular assessment • Nutritional status assessment • Quality of life assessment • Level of activity and mobility • Ability to provide self care • Smoking or alcohol use • Medications

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EPUAP, NPIAP, PPPIA. 2019; Brinker J, Protus BM, Kimbrel JM. 2018; Nix DP. 2012; Keast DH, Bowering K, Evans AW, et al. 2004

Pressure Injury Staging

Stage 1

Non-blanchable erythema

Should NOT see dark maroon or purple discoloration

Stage 2

Partial thickness with exposed dermis or *serum-filled* blister

No slough, eschar, or granulation tissue

Stage 3

Full thickness with visible subcutaneous tissue

Slough, eschar, and granulation tissue possible

Stage 4

Full thickness with visible or directly palpable muscle, tendon, bone, or fascia

Slough, eschar, and granulation tissue possible

Unstageable

Full thickness but depth is unknown as wound bed is obscured by slough and/or eschar

DTPI

Intact skin with dark purple or maroon discoloration, a *blood-filled* blister, or nonintact skin with dark wound bed

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EPUAP, NPIAP, PPPIA. 2019; Images: Medetec Medical Images

Case Study

How would you describe Margaret's wound bed, wound edge, and periwound skin?

What stage is this pressure injury?

Wound Bed

- Etiology and location: pressure injury because it is located on the sacrum
  - Unstageable
- Tissue type and amount: 50% red granulation tissue and 50% tan slough
- Exudate type and amount: moderate serous exudate

Wound Edge

- Edge is detached with undermining from 6 to 3 o'clock.

Periwound Skin

- Periwound skin is intact and has evidence of past healing – epithelial tissue 360 degrees around wound, hyperpigmented skin from 9 to 3 o'clock

Images: Medetec Medical Images

Pressure Injury Management

Localized Wound Care

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Management of Stage 1 Pressure Injuries

Sacrum, trunk, buttocks region:

- Cleanse with normal saline or commercial wound cleanser
- Apply either
  - Barrier cream BID and PRN
  - Bordered foam dressing every 5 days and PRN

Lower extremities or feet:

- Cleanse with normal saline or commercial wound cleanser
- Apply either
  - Liquid skin protectant daily and PRN
  - Bordered foam dressing every 5-7 days and PRN

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Brinker J, Protus BM, Kimbrel JM. 2018; Images: Medetec Medical Images

Management of Intact Blisters

Prevent rupture of serum- or blood-filled blisters

- Apply either
  - Liquid barrier film daily and PRN
  - Bordered foam dressing every 5 – 7 days and PRN

Brinker J, Protus BM, Kimbrel JM. 2018; Images: Medetec Medical Images

Management of Non-Intact Skin

Identify the level of wound bed contamination

Clean Wound Bed
- Pink or red
- Less than 25% devitalized tissue (slough and/or eschar)
- No symptoms of infection

Wound Bed Obscured by Devitalized Tissue
- Devitalized tissue (slough and/or eschar) covers more than 25% of the wound bed
- No symptoms of infection

Infected Wound
- Localized infection: non-healing wound with increasing levels of exudate, red and bleeding granulation tissue, devitalized tissue, malodor, pain
- Spreading/systemic infection: increasing wound size, induration/erythema of periwound skin, systemic symptoms (malaise, lethargy, confusion, anorexia)

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Brinker J, Protus BM, Kimbrel JM. 2018; Images: Medetec Medical Images

Wound Cleansing

Wound Bed Condition	Type of Cleanser	Mechanical Force
Clean Wound Bed or Wound Bed Obscured by Slough	• Surfactant wound cleanser (preferred) • Normal saline	Use *low pressure* irrigation (<8 PSI) if pain or bleeding are present • Pour directly from the bottle • Piston syringe
Infected Wound	• Surfactant wound cleanser • Antiseptic	Use *high pressure* irrigation (8-15 PSI) in all other cases • Commercially prepared system • 35-mL syringe with a 19-gauge catheter

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Weir D, Swanson T. 2019

Dressing Selection: Clean Wound

Select dressing based on current level of wound exudate

Dry to Minimal Exudate	Moderate Exudate	Heavy Exudate
Guideline Recommendations: Stage 2 • Hydrocolloid • Hydrogel • Polymeric membrane dressing • Impregnated or moistened gauze **Guideline Recommendations: Stage 3 - 4** • Hydrogel • Impregnated or moistened gauze **Alternative Dressings** • Medical grade honey gel • Transparent film • Barrier cream (Stage 2) or zinc oxide-based hydrophilic paste (shallow full thickness wounds)	**Guideline Recommendations** • Calcium alginate **Alternative Dressings** • Foam • Gelling fiber dressing • Polymeric membrane dressing • Zinc oxide-based hydrophilic paste (shallow full thickness wounds) **Additional Consideration** • Rule out infection	**Guideline Recommendations** • Foam • Super absorbents **Alternative Dressings** • Calcium alginate • Gelling fiber dressing • Polymeric membrane dressing **Additional Consideration** • Rule out infection

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EPUAP, NPIAP, PPPIA. 2019; Images: Medetec Medical Images

Dressing Selection: Debridement

Select dressing to promote debridement based on current level of wound exudate

Dry to Minimal Exudate	Moderate Exudate	Heavy Exudate
Guideline Recommendations • Hydrogel • Hydrocolloid • Transparent film **Alternative Dressings** • Medical grade honey gel • Moistened polymeric membrane dressing	**Guideline Recommendations** • Calcium alginate • Gelling fiber dressing **Alternative Dressings** • Foam • Polymeric membrane dressing • Zinc oxide-based hydrophilic paste (shallow full thickness wounds) **Additional Consideration** • Rule out infection	**Guideline Recommendations** • Calcium alginate • Gelling fiber dressing **Alternative Dressings** • Foam • Super absorbents • Calcium alginate • Polymeric membrane dressing **Additional Consideration** • Rule out infection

EPUAP, NPIAP, PPPIA. 2019; Images: Medetec Medical Images

Dressing Selection: Eschar

Stable eschar

- Dry, firmly attached
- Without exudate or fluctuance
- Serves as protection
- Paint wound bed and immediate periwound skin with povidone-iodine (Betadine®) or liquid skin protectant and allow to dry. Cover with an abdominal pad and secure with rolled gauze. Change daily and PRN

Unstable eschar

- Exudate
- Loosely attached, moist, or softening
- Positive for fluctuance
- Can indicate presence of infection
- Weigh the risks versus benefits of debriding the eschar by applying a moisture-balanced dressing versus drying the wound bed by applying povidone-iodine

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Brinker J, Protus BM, Kimbrel JM. 2018; Images: Medetec Medical Images

Dressing Selection: Infection

Select an antimicrobial dressing based on current level of wound exudate

Dry to Minimal Exudate	Moderate Exudate to Heavy Exudate
Guideline Recommendations • Silver • Hypochlorous acid • Polyhexamethylene biguanide (PHMB) • Medical grade honey **Alternative Dressings** • Gentian violet/methylene blue • Sodium hypochlorite-soaked gauze	**Guideline Recommendations** • Silver • Polyhexamethylene biguanide (PHMB) • Hypochlorous acid • Cadexomer iodine • Medical grade honey **Alternative Dressings** • Gentian violet/methylene blue • Sodium chloride impregnated gauze • Sodium hypochlorite-soaked gauze

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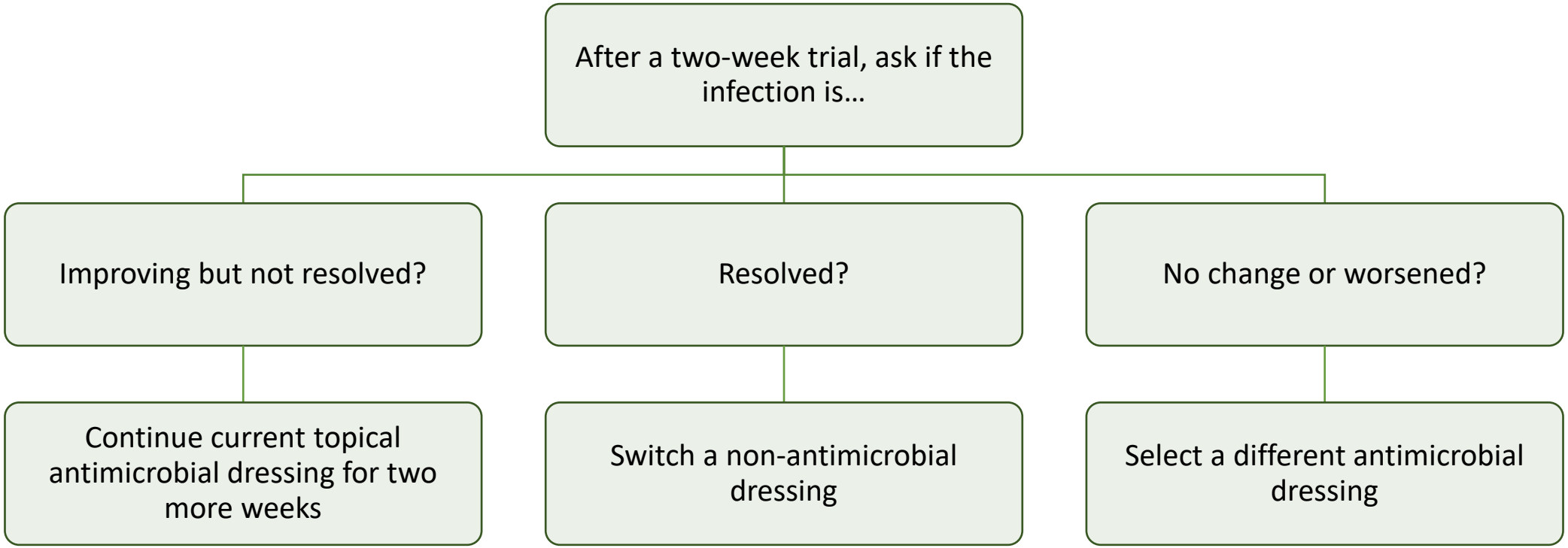
EPUAP, NPIAP, PPPIA. 2019; Images: Medetec Medical Images

Two-Week Trial for Topical Antimicrobials

Trial the topical antimicrobial dressing for two weeks



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Halim AS, Khoo TL, Mat Saad AZ. 2012; Cambell T, Woodard Q, Wu S. 2013

Topical and Systemic Antibiotics

Topical antibiotics (e.g., mupirocin, triple antibiotic ointment)

- Due to the potential for adverse effects and antimicrobial resistance, use of topical antibiotics in wound care should be avoided

Topical metronidazole (Flagyl®)

- Short courses can be useful in some very limited situations
  - Pressure injuries that have been debrided and cleansed yet still have high bacterial burden
  - Presence of beta hemolytic Streptococci

Systemic antibiotics

- Appropriate for spreading or systemic wound infections
- Wound culture may guide selection
  - Use Levine technique
  - Do not culture necrotic tissue
- Goals of care, patient preference, and prognosis guide appropriateness at end of life

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Sibbald RG, Woo K, Ayello E. 2006; EPUAP, NPIAP, PPPIA. 2019

Management of DTPIs

Intact Skin with Purple Discoloration

Epidermal Erosion

Tissue Necrosis

Clean Wound Bed

Latimer S, Walker RM, Ray-Barruel G, et al. 2022; Images: Medetec Medical Images

Management of DTPIs

Intact Skin with Purple Discoloration

Lower extremities/feet:

- Apply either liquid skin protectant or bordered foam

All other locations:

- Apply either barrier cream or bordered foam

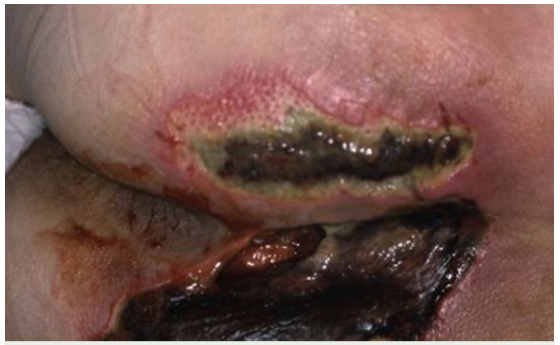
Epidermal Erosion

Lower extremities/feet:

- Apply either liquid skin protectant or bordered foam

All other locations:

- Apply either barrier cream or bordered foam



Tissue Necrosis

Lower extremities/feet:

- Debridement versus drying the wound bed

All other locations:

- Apply a dressing to promote debridement

Clean Wound Bed

Lower extremities/feet:

- Apply a dressing for a clean wound bed

All other locations:

- Apply a dressing for a clean wound bed

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Brinker J, Protus BM, Kimbrel JM. 2018; Images: Medetec Medical Images

Management of DTPIs: Education

If skin is still intact

- Expect deterioration in the coming days: areas with dark red and purple discoloration will become black necrotic tissue regardless of the interventions put into place

If eschar and slough are present

- Expect an increase in depth in the coming days as the slough/eschar debrides out
- Any new areas of intact skin with dark red and purple discoloration will become black necrotic tissue regardless of the interventions put into place

- Continue the use of pressure injury prevention strategies, as appropriate, to minimize risk for the development of other wounds
- Rule out terminal ulceration; reassure family and caregivers that terminal ulcers are not a sign of neglect or abuse to minimize risk for feelings of guilt or anger
  - Discuss palliation of symptoms as the goal of wound care, not healing

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Case Study

What treatment would you apply to offer a longer wear time?

Cleansing

- Cleanse with a surfactant wound cleanser (preferred) or normal saline using high-pressure irrigation.

Periwound Protection

- Apply liquid skin protectant to periwound skin. Allow this to dry completely.

Primary and Secondary Dressing

- Loosely fill dead space with calcium alginate. Secure with a bordered foam or hydrocolloid dressing. Change every 3 days and PRN if soiled.

Images: Medetec Medical Images

Key Points

- Hospice patients are at risk of pressure injury development. Initiate a plan of care to address any modifiable risk factors.
- Dressing selection for a pressure injury is dependent on the current level of wound bed contamination and exudate.

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Questions?

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