Objectives

• Understand types of wounds
• Discuss current evidence-based standard of care management guidelines for different types of wounds.
• Discuss Wound management strategies for clients receiving Home Health Care.
Wounds have substantial adverse impact on client’s quality of life and have a predictive risk with mortality. Better understanding of the etiology of the wound and following the evidenced based management protocols can drastically improve client’s health outcomes and lower the cost of the medical care.
Types of Wounds

- PRESSURE ULCERS
- DIABETIC ULCER
- VENOUS STASIS ULCERS
- ARTERIAL ULCERS
- FUNGATING WOUNDS
- SURGICAL WOUNDS
A pressure ulcer is localized injury to the skin or underlying tissue usually over a bony prominence, because of unrelieved pressure and or in combination with shear and/or friction. Pressure causes poor tissue perfusion and tissue damage can occur within 2–6 hours.
**Stage I**  **Non-blanchable erythema**

Intact skin with non-blanchable redness of a localized area usually over a bony prominence. Darkly pigmented skin may not have visible blanching; its color may differ from the surrounding area. The area may be painful, firm, soft, warmer or cooler as compared to adjacent tissue. Category I may be difficult to detect in individuals with dark skin tones.
Pressure Ulcers

Stage I  Non-blanchable erythema
Stage II Partial thickness

Partial thickness loss of dermis presenting as a shallow open ulcer with a red pink wound bed, without slough. May also present as an intact or open/ruptured serum-filled or sero-sanginous filled blister. Presents as a shiny or dry shallow ulcer without slough or bruising*. This category should not be used to describe skin tears, tape burns, incontinence associated dermatitis, maceration or excoriation.
Pressure Ulcers

Stage II Partial thickness
Stage III Full thickness skin loss

Loss of epidermis & dermis with tissue loss extended to the subcutaneous fat. Subcutaneous tissue may be visible but bone, tendon or muscle are not exposed. Slough may be present but does not obscure the depth of tissue loss. In contrast, areas of significant adiposity can develop extremely deep.
Pressure Ulcers

Stage III Full thickness skin loss
Stage-IV  Full thickness tissue loss
Full thickness tissue loss with exposed bone, tendon or muscle. Partial slough or eschar may be present. Often includes undermining and tunneling. The depth of a Stage IV pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have (adipose) subcutaneous tissue and these ulcers can be shallow.
Pressure Ulcers

Stage IV Full thickness tissue loss
Un-Stageable - Full thickness tissue loss - Depth Unknown

Full thickness tissue loss in which actual depth of the ulcer is completely obscured by slough (yellow, tan, gray, green or brown) and/or eschar (tan, brown or black) in the wound bed. Until enough slough and/or eschar are removed to expose the base of the wound, the true depth cannot be determined; but it will be either a Category/Stage III or IV.
Pressure Ulcers

Un-Stageable - Full thickness tissue loss - Depth Unknown
**Suspected Deep Tissue Injury – Depth Unknown**

Purple or maroon localized area of discolored intact skin or blood-filled blister due to damage of underlying soft tissue from pressure and/or shear. The area may be preceded by tissue that is painful, firm, mushy, boggy, warmer or cooler as compared to adjacent tissue. The wound may further evolve and become covered by thin eschar or may be rapid exposing additional layers of tissue even with optimal treatment.
Suspected Deep Tissue Injury – Depth Unknown
Friction & Shear management * Use lift/turn sheets * Maintaining Head of Bed at <30 degrees
- Turn & Reposition frequently
- Pressure reduction & pressure redistribution utilizing low air loss mattress with alternating pressure
- Skin protection dressings over high risk areas. * Pain management
- Optimal Nutrition & Hydration management
- Temperature: keeping skin cool, clean and dry
- Off-loading of pressure areas e.g. heel protectors
- Moisture barrier & skin protectant ointments
A diabetic or Neuropathic ulcer is defined as an injury causing loss of skin or tissue often on the feet due to lack of sensation (neuropathy).
Diabetic/Neuropathic Ulcers
Diabetic/Neuropathic Ulcers

Damage to blood vessels / Decreased circulation (PAD & PVD)
Damage to nerves - Neuropathy
Decreased immune response
Delayed response to tissue injury
Defective Matrix production & deposition
Deformity
Neuropathy associated with Diabetes Mellitus can be classified as:

- Sensory Neuropathy
- Motor Neuropathy
- Autonomic Neuropathy
Sensory Neuropathy

The most common type of diabetic neuropathy, causes pain or loss of feeling in the toes, feet, legs, hands, and arms
Motor Neuropathy

Leads to paralysis of the foot's intrinsic muscles resulting in muscle atrophy that predispose patients with diabetes to plantar ulceration by increasing plantar pressures and shear forces.
Autonomic Neuropathy

Increases the risk of neuropathic ulceration due to disturbances in sweating mechanisms, callus formation, and blood flow. It also effects heart, blood vessels, digestive system, urinary tract, eyes, lungs & sex organs.
Diabetic/Neuropathic Ulcers

Comprehensive Assessment Tool

Health History: Allergies, Smoking, Medications etc.
Duration of Ulceration: Current & Previous treatments
Diabetes Management: Hemoglobin A1c
Foot & Shoe Exam: Deformity, Improper shoes, Circulation / Pedal Pules, Skin Color, Temperature, Neuropathy, Callous
Mobility Status: Ambulatory, Wheelchair, Walker etc.
Nutrition: Pre-Albumin, Vitamin D, Vitamin C
Diabetic/Neuropathic Ulcers

Comprehensive Assessment Tool

Location of wound: Plantar | Lateral or Medial aspect

Duration of Ulceration: When ulcer was first discovered

Grading of Ulcer: Wagner grading scale

Drainage or Odor: Type of drainage and odor; if any

Wound edges: Calloused | Pink & soft | Rolled

Presence of Pain: Assessing sensory loss
Diabetic/Neuropathic Ulcers

Wagner Grading Scale

Grade 1: Superficial Diabetic Ulcer
Grade 2: Ulcer extension Involves ligament, tendon, joint capsule or fascia, No abscess or Osteomyelitis
Grade 3: Deep ulcer with abscess or Osteomyelitis
Grade 4: Gangrene to portion of forefoot
Grade 5: Extensive gangrene of foot
Diabetic/Neuropathic Ulcers

Management Principles

1. Wound Infection prevention: Wound Culture
2. MRI to Rule Out Osteomyelitis
3. Ankle Brachial Index & Toe Pressures
4. Hemoglobin A1c 7% or below
5. Serial debrideements to minimize callous
6. Off-Loading
Venous Stasis Ulcers

Venous Hypertension
Underlying Pathologic Mechanism for Chronic Venous Insufficiency (CVI) and Ulceration Causes:
1. Outflow Obstruction
2. Valvular incompetence
3. Muscle pump failure
Venous Stasis Ulcers
Venous Stasis Ulcers

**Clinical Signs & Symptoms**

- Gaiter Distribution
- Edema | 1+
- Hemosiderin Staining | Discoloration of skin
- Venous Dermatitis | Marked Redness
- Atrophie blanche | Sluggish capillary refill
- Varicose veins | Lack of hairs on the legs
- Atrophy of the skin | Lipodermatosclerosis
Venous Stasis Ulcers

Management Principles

- Diagnostic Testing: Segmental Pressures, Duplex Imaging
- Compression Therapy **
- Diuresis
- Diet Modification: Sodium monitoring & lose weight
- Life style Modification: Daily weights & physical activities
Arterial or ischemic ulcers, are caused by the poor blood circulation to the lower extremities; peripheral artery disease (PAD). Inadequate supply of oxygenated blood leads to tissue ischemia and necrosis.
Arterial / Ischemic Ulcers
Clinical Findings: Ischemic rest pain, pain relief w/dependency, loss of hair, Atrophic, shiny skin, Muscle wasting of calf or thigh, Trophic nail changes, Poor tissue perfusion, Color changes, Coldness of the foot, Gangrene of toes, Absence of palpable pulse, Paraesthesia (numbness) Pulselessness (absence of pulses below the occlusion) Paralysis (sudden weakness in the limb) Extremity cool to touch
Arterial / Ischemic Ulcers

Management Principles

- Pain management
- Vascular Surgery Referral for possible Revascularization
- Hyperbaric Oxygen Therapy (HBOT)
- If patient is not appropriate for surgical intervention

Keep the wounds clean, dry and free from infection
No compression !!! No Elastic or stretchable gauze rolls
Malignant / Fungating Wounds

A Fungating or Malignant wound occur when malignant cells invade the skin, blood and lymph vessels, and penetrate the epidermis. This results in a loss of vascularity and therefore nourishment to the skin, leading to tissue death and necrosis. The lesion might be the result of a primary cancer or a metastasis to the skin. The term “Fungating” is utilized to describe a proliferative process in this types of wounds.
Malignant / Fungating Wounds
Clinical Findings: Malignant wounds are usually polymicrobial, containing both aerobic and anaerobic bacteria causing foul odor and purulent drainage from the tissue necrosis. Anaerobic bacteria emit putrescine and cadaverine, which results in foul odors and some aerobic bacteria such as Proteus and Klebsiella can also produce foul odors.
Malignant / Fungating Wounds

Management Principles:

• Managing malignant wounds is frequently based on expert opinion and the experiences of the clinicians.
• The assessment of a malignant wound requires clinician to gain insight into the patient’s perception of the wound and its consequent impact on his/her life.
• Nursing care requires counseling skills and knowing how to provide care that is based on an awareness of and insight into the patients’ experience
Management Principles:

- Treatment selections should include those that provide minimum side effects and maximum benefit to the client.
- Establish goal of care Healing vs Palliation
- Wound bed preparation will vary based on the goal. If palliation is the goal, tissue debridement and management of bacterial overload is required to minimize odor and decrease risk of infection.
Malignant / Fungating Wounds

Management Principles:

- Negative pressure wound therapy (NPWT) for moderate to high exudating wounds.
- Foul odor management
- Charcoal based dressings to minimize odors.
- Lavender oil soaked gauze for odor control & inflammation.
- Metronidazole powder: Topical treatment to minimize odors
- Pain management
A surgical wound is defined as an incision or wound which is associated with a surgical procedure. This includes surgically dehisced/disrupted wounds which fail to heal after a surgical procedure.
Surgical Wounds
There are (3) three methods of surgical closures to promote surgical wound healing:

1. Heal by Primary Intention
2. Heal by Secondary Intention
3. Heal by Tertiary Intention
Management Principles:

• Keep surgical incision site clean and covered; away from external trauma.
• Change dressings every other day. (QOD)
• If noted, increased inflammation & drainage at the site, collect swab culture and send for DNA based Culture & Sensitivity (C&S) testing.
Management Principles:

• Negative Pressure Wound Therapy (NPWT)
• Xeroform gauze on incision sites.
• Cleansing of incision site with antimicrobial solution with each dressing change.
Management Principles:

- Negative Pressure Wound Therapy (NPWT)
- Xeroform gauze on incision sites.
- Cleansing of incision site with antimicrobial solution with each dressing change.
Management Principles:

- Client & family education about wound & treatment regimen.
- Nurse to reinforce & reeducate client & family each visit.
- Ordering appropriate wound care supplies in an enclosed container.
- Having a copy of the recent Wound care orders available in the patient’s folder.
- Document patient’s response to care regimen and progress.
• Pressure ulcer staging. (2013). www.npuap.org