Ministry of Health

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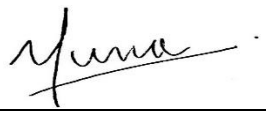
Signature:		**Signature:**	
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Acknowledgements:

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Acronyms:

DFU	Diabetic foot ulcer
HBOT	Hyper Baric Oxygen Therapy
MDFC	Multidisciplinary Diabetic Foot Care
MDT	Multidisciplinary Team
NDEC	National Diabetic Endocrine Centre
NHMC	The National Hyperbaric Medicine Center
NPWT	Negative Pressure Wound Therapy
OWCS	Oman Wound Care Society
PHC	Primary Health Care
SHC	Secondary Health Care
VLU	Venous leg ulcer
WMT	Wound management Team

1. Definitions:

Wound:	is an injury to the body (as from violence, accident, or surgery) that typically involves laceration or breaking of a membrane (such as the skin) and usually damage to underlying tissues (Merriam-Webster dictionary).
3.2.1. Classification according to the level of contamination:	
Class I Clean:	An uninfected operative wound in which no inflammation is encountered, and the respiratory, alimentary, genital, or uninfected urinary tract is not entered. In addition, clean wounds are primarily closed and, if necessary, drained with closed drainage. Operative incisional wounds that follow no penetrating (blunt) trauma should be included in this category if they meet the criteria.
Class II/Clean-Contaminated:	An operative wound in which the respiratory, alimentary, genital, or urinary tracts are entered under controlled conditions and without unusual contamination. Specifically, operations involving the biliary tract, appendix, vagina, and oropharynx are included in this category, provided no evidence of infection or major break in a sterile technique is encountered.
Class III/Contaminated:	Open, fresh, accidental wounds. In addition, operations with major breaks in a sterile technique (e.g., open cardiac massage) or gross spillage from the gastrointestinal tract, and incisions in which acute or no purulent inflammation is encountered are included in this category.
Class IV/Dirty-Infected:	Old traumatic wounds with retained devitalized tissue and those that involve existing clinical infection or perforated viscera. This definition suggests that the organisms causing postoperative infection were present in the operative field before the operation. (See appendix 1)
3.2.2. Classification According to Wound Etiology:	
Vascular Wounds:	are classified into two types: • Venous wounds are typically seen on the lower extremities, from the knees down. Venous Leg Ulcers (VLUs) relate to the veins, as the name suggests, and are often exacerbated by insufficient return of blood to the heart. • Arterial wounds are ischemic ulcers, caused by a lack of blood flow to the extremity (poor tissue perfusion). Arterial ulcers are typically dry ulcers, small, usually round with regular borders.
Different type of wound:	• Diabetic Ulcers are seen in patients with diabetes. Diabetic foot ulcers (DFUs) are mostly located on the plantar aspect (bottom or sole) of the foot. **(**Refer to diabetic foot policy). • Surgical Wounds are caused during surgery. Surgical wounds are often closed with sutures, staples, or skin glue. Surgical wounds can sometimes be left open to heal by secondary intention if they are not closed during surgery. • Wounds Resulting from Autoimmune Disease are wounds caused by autoimmune diseases are sometimes initially difficult to identify. E.G Scleroderma, pemphigoid, psoriasis or psoriatic arthritis, lupus, arthritis, and pyoderma gangrenosum are several autoimmune diseases that are often linked to chronic wounds. • Malignant Wounds are chronic in appearance and non-healing, and they often contain friable or necrotic tissue. Malignant wounds can have an odor and moderate to heavy exudate as well. These wounds may bleed easily during cleansing or dressing changes and can be very painful. There may be induration

	and erythema, along with the "orange peel" appearance of skin secondary to tumor invasion and oedema. Malignant wounds require a multidisciplinary approach and may be difficult to heal without systemic treatment or treatment of the cause. • Traumatic Wounds are mostly caused by an injury. Most frequently seen are skin tears and abrasions, especially in older adults. Traumatic wounds can also be caused by injury from a foreign body (e.g., stepping on a nail or cutting your finger with a knife). The appearance of traumatic wounds varies greatly by the cause. The etiology of these wounds is often discovered by patient interview. • Pressure Injuries are caused by unrelieved pressure, often over a bony prominence. Moisture, friction, shear, and use of medical devices can also contribute to development or delayed healing of a pressure injury. (See appendix 3 for the stages)
Burn Wound	Burns occur when heat, chemicals, sunlight, electricity, or radiation damages skin tissue. Most burns happen accidentally. ▪ Causes: Thermal sources, including fire, hot liquids, steam and contact with hot surfaces, are the most common causes of burns. ▪ Other causes include exposure to: Chemicals, such as cement, acids or drain cleaners. Radiation. Electricity. Sun (ultraviolet or UV light). ▪ Burns are classified as first-, second-, or third-degree, depending on how deep and severe they penetrate the skin's surface. (Refer to National Burn policy)
3.2.3. Classification according to healing ability:	
Healable Wound:	is anticipated to occur according to a predictable trajectory. Wound healing is anticipated when: ➢ The wound's underlying cause, such as pressure, can be treated. ➢ There is adequate arterial blood flow to perfuse the wound area. ➢ The client's risk factors for healing ability can be optimized or managed. ➢ The client and/or client's caregivers are willing and able to participate in the care plan.
Maintenance Wound:	are not healing or are slow to heal may be designated as maintenance wounds.
Wound debridement:	is 'removal of necrotic tissue, exudate, bacteria, and metabolic waste from a wound to improve or facilitate the healing process.
Pounds per Square Inch (PSI):	is a unit of pressure or of stress resulting from a force of one pound-force applied to an area of one square inch.
Hyperbaric oxygen therapy	is a treatment used for specific conditions in which the patient intermittently breathe 100% of oxygen in a chamber pressurized to a pressure greater than 1 ambient pressure.

2. Purpose:

- To provide a standardized approach to the delivery of wound management and dressings, using the aseptic technique, within the framework of holistic care.
- To ensure appropriate management of acute and chronic wounds.
- To ensure the most appropriate product is utilized for optimum wound healing, patient outcome, and cost effectiveness.
- To provide the appropriate wound management strategy for patients, optimise any healing potential, and enhance patient comfort and dignity.
- To prevent contamination of wound and other susceptible sites by ensuring that only sterile objects and fluids encountered with these sites, thus minimizing the risk of infection.
- To aid clinician in identifying, assessing, and managing wounds.

3. Scope:

This Standard Operating Procedure for Wound Management is to provide general and standardized guidelines on the prevention, assessment, and management of wounds for health care professionals. It pertains to patients who require wound prevention and management provided as an inpatient, outpatient or within the community. It further provides workflow as a framework to understand the processes under wound care management.

4. Procedures:

5.1. Wound assessment:

- **Holistic assessment of patient:** assess factor that impacting on healing process such as: Comorbidities, medication, systemic or local infections, reduced oxygenation and tissue perfusion, age, pain, poor nutrition and hydration, smoking, alcohol intake and obesity, lifestyle Psycho/social concerns.

- **Holistic assessment of wound:**

1. Use TIME principle:	
T (Tissue Type):	▪ (Red) granulation ▪ (Pink) epithelising ▪ (Red overlapping) hyper granulation
I (Present of Infection):	▪ Local: malodour, redness, oedema, localised pain, localised heat, purulent increase exudate. ▪ Systemic: / pyrexia, general malaise, induration & redness more than 2cm, wound breakdown
M= Moisture Imbalance	▪ Exudate: level (low, moderate, high). ▪ Exudate Types: 1. (Clear) serous, 2. (Pink) Serosanguinous,

	3. (Red) Sanguineous, 4. (Creamy yellow) Purulent
E= Edge	Pink/ slough/erythema/ contraction/ rolled/ raised edges.
2. Assess the Location, duration &wound types:	
Location:	Allocate and named the site of body with wound
Duration:	Acute wound: onset less than 4 weeks Chronic wound: onset more than 4 weeks
Wound type:	Venus/arterial ulcers, post operative wounds, Diabetic foot ulcers, pressure injury, traumatic wounds, burn wounds, others/ specify.
3. Classification according to skin integrity (Open & Closed):	
Open wound:	There will be break down in the outer layers like: ➢ Penetrating wounds ▪ Puncture wounds ▪ Surgical wounds and incisions ▪ Thermal, chemical or electric burns ▪ Bites and stings ▪ Gunshot wounds, or other high velocity projectiles that can penetrate the body ➢ Blunt force trauma ▪ Abrasions ▪ Lacerations ▪ Skin tears
Close wound:	often caused by blunt trauma, and though the injured tissue is not exposed, there can be bleeding and damage to underlying muscle, internal organs and bones. Major types of closed wounds include: ▪ Contusions – blunt trauma causing pressure damage to the skin and/or underlying tissues ▪ Blisters ▪ Seroma – a fluid-filled area that develops under the skin or tissue ▪ Hematoma – a blood-filled area that develops under the skin or tissue (occurring when there is internal blood vessel damage to an artery or vein) Crush injuries
4. Measurement & dimension:(using face of the clock)	
Length	12 to 6 directions
Width	3 to 9 directions
Depth	placing a gloved finger or cotton - tipped applicator into the deepest portion

Tunneling or undermining	▪ A fistula is an abnormal connection between an organ, vessel, or intestine and another structure. ▪ Sinus: Discharging, blind-ended track that extends from the surface of the skin to an underlying abscess/cavity. May be caused by infection, liquefaction, or a foreign body. **Measurement:** Gently probing the wound bed and edges with a sterile cotton – tipped applicator.
Tissue loss	▪ Superficial: Only the epidermis is affected, and wound does not bleed and heals within a few days. ▪ Partial wound: the epidermis and part of the dermis is affected. ▪ Full thickness wound: A full-thickness wound involves the epidermis and the dermis. The underlying fatty tissue, bones, muscles, or tendons may also be damaged
Pain:	▪ Pain assessed before, during and after dressing time.
Dressing type:	▪ Include previous treatment and the current management
Special recommendation for wound assessment	▪ The photographic wound assessment is an old practice but useful in hospitals. The main idea is to integrate the wound pictures into the Alshifa system and automatically linked the patient file.

5.2 Aseptic technique for wound dressing (Lippincott Manual)**:**

5.2.1 <u>Equipment required:</u>

- Dressing trolley washed with soap & water & wiped with 70% spirit
- Detergent wipes or any other disinfectant for cleaning surfaces trolley
- Sterile dressing set
- Antiseptic wound cleaning solution, or fluid for irrigation as per doctor order or wound management staff (0.9% Sodium Chloride, as indicated)
- Securing dressing as required.
- Adhesive tape
- Disposable plastic apron
- Sterile and non-sterile gloves
- Supplementary sterile gauze pack
- Incontinent sheet
- Sterile drape as required
- Surgical mask, as indicated
- Syringe as indicated 10 mL, or 20ml, or 50ml
- Needle or cannula, as required 22G, or 18G

- Sharp container
- Scissors-
- Bactericidal hand-rub solution
- Disposable bag

5.2.2 Pre-dressing Procedure:

- Perform hand hygiene.
- Check physician's written order for frequency of dressing and type of product to be used.
- Greet, identify and explain the procedure to the patient.
- Allow the patient to express any concerns about the procedure.
- Assess pain level using pain scale found in Al-Shifa system and administer analgesics as ordered.
- Reassess level of pain using pain scale.
- Collect and prepare the equipment's/items
- Check that all equipment's/items are available, and sterile packaging is undamaged, not expired, intact and dry.
- Place all the equipment in the bottom shelf of the clean dressing trolley.
- Clean top of the trolley with detergent wipes or any other available disinfectant.
- Perform hand hygiene.

5.2.3 Aseptic dressing procedure:

- Provide privacy to the patient
- Place disposable bag nearby to dispose solid dressings
- Perform hand hygiene.
- Put on a disposable plastic apron and disposable gloves.
- Keep the patient in a comfortable position for dressing so that the area to be dealt with is easily accessible.
- Expose only the dressing area or the part need to be dressed.
- Place incontinent sheet or sterile drape under the wound.
- Loosen the adhesive tape on the existing dressing. If bandage used cut appropriately away from patient skin.
- Remove gloves and discard appropriately.
- Perform hand hygiene.
- Assemble the sterile field on the top of the clean trolley.
- Open the outer cover of the sterile pack or dressings set and slide the content without touching them onto the top shelf of the trolley.
- Open the sterile field using only the corners of the paper.
- Open any other packs, tipping their contents gently onto the center of the sterile field.
- Arrange the sterile field; pour cleaning solution into galipots which is found in the dressing set.
- Assess and inspect the outer dressing for color and oozing.
- Put on non-sterile gloves.
- Remove the outer dressing and dispose appropriately. If the dressing is sticking to patient skin moisturize it with 0.9% Normal Saline before completely removing it.

- Assess wound healing.
- Remove gloves and dispose appropriately.
- Perform hand hygiene.
- Put on sterile gloves
- Remove inner dressing using forceps, which is found in the dressing set, as required.
- Irrigate gently the wound by flushing with 0.9% Sodium chloride as indicated:

    - A 10mL syringe and 22G needle may be used to create the recommended hydraulic pressure of 13 psi to remove dirt and debris.
    - Irrigate with 50mL for grossly contaminated wounds.
    - If wound looks infected or show clinical signs of infection, take swab for culture.

- Dispose sharps immediately after use.
- Dispose clinical waste (previous dressing) immediately as per infection prevention and control guidelines.
- If necessary, gently clean the wound using forceps with sterile gauze using 0.9% Sodium Chloride, unless another solution is ordered as follows:

    - Gently clean the open wounds using circular pattern from inner/center of the wound to outer.
    - Gently clean the linear or incision wounds from top to bottom (proximal to distal) in one motion.
    - Discard the used gauze appropriately.
    - Clean each side of the wound separately.
    - Use new moistened gauze with the prescribed solution to repeat gentle cleaning each time until the wound looks clean.

- If wound starts to bleed apply steady and direct pressure using sterile gauze to stop bleeding.
- If needed dry the surrounding area of the wound by the same technique of cleaning using dry sterile gauze.
- Fasten the dressing and secure it as follows:

    - First layer is the contact layer; put the prescribed type of dressing. As required
    - Second layer is the absorbent layer. As required
    - Third layer is the outer wrap; wrap the dressing with bandage or adhesive dressing (Mepore) according to the type of wound and secure with adhesive tape.

- Ensure that the patient is comfortable, and the dressing is properly secured.

5.2.4 Post dressing procedure:

- Dispose used items according to Health Care Waste Management Policy and Procedure.
- Check all sharps are disposed appropriately
- Dispose clinical waste appropriately.
- Remove apron and gloves and dispose appropriately.
- Perform hand hygiene.
- Ensure the patient is comfortable and free from pain.
- Clean the used trolley with detergent wipes or suitable surface cleaning

- Perform hand hygiene.
- Record wound assessment in Wound Assessment Chart in Alshifa system
- Document the procedure clearly in Nursing kardex with consideration to who carried it out, date, time, site of dressing, solution used, type of dressing, healing process, condition of the wound, and patient tolerance to the procedure.
- Notify the doctor or wound management nurse of any abnormal findings:
    - Wound (signs of Infection, non-granulating, Slough, Necrosis).
    - Surrounding skin (edema, induration, inflammation, callous, discoloration, maceration, cellulitis).

5.3 Debridement:

Wound debridement recommendation: (NPUAP/EPUAP/PPPIA Pressure Ulcer Clinical Practice Guideline)

5.3.1 Debride devitalized tissue within the wound bed or edge of pressure ulcers when appropriate to the individual's condition and consistent with overall goals of care. CAUTION: Debridement should only be performed when there is adequate perfusion to the wound.

5.3.2 Debride the wound bed when the presence of biofilm is suspected or confirmed.

5.3.3 Select the debridement method(s) most appropriate to the individual, the wound bed, and the clinical setting.

5.3.4 Use mechanical, autolytic, enzymatic, and/or biological methods of debridement when there is no urgent clinical need for drainage or removal of devitalized tissue.

5.3.5 Surgical/sharp debridement is recommended in the presence of extensive necrosis, advancing cellulitis, crepitus, fluctuance, and/or sepsis secondary to ulcer-related infection.

5.3.6 Use sterile instruments for conservative sharp and surgically/sharp debridement.

5.3.7 Use conservative sharp debridement with caution in the presence of immune incompetence, compromised vascular supply, or lack of antibacterial coverage in systemic sepsis. CAUTION: Relative contraindications include anticoagulant therapy and bleeding disorders.

5.3.8 Refer individuals with category/stage III or IV pressure ulcers with undermining, tunneling/sinus tracts, and/ or extensive necrotic tissue that cannot be easily removed by the other debridement methods for surgical evaluation as appropriate to the individual's condition and goals of care.

5.3.9 Manage pain associated with debridement.

5.3.10 Perform a through vascular assessment prior to debridement of lower extremity pressure ulcer to determine whether arterial status/supply is sufficient to support healing of the debrided wound.

5.3.11 Do not debride stable, hard dry eschar in ischemic limbs.

5.3.12 Assess stable, hard, dry eschar at each dressing change and as clinically indicated. Assessment of an ulcer covered with dry, stable eschar should be performed at each dressing change and as clinically indicated to detect the first signs of any developing infection.

Clinical indications that the dry, stable eschar requires assessment and intervention include signs of erythema, tenderness, edema, purulence, fluctuance, crepitus, and/or malodor (i.e., signs of infection) in the area around the dressing.

5.3.13 Consult a medical practitioner/vascular surgeon urgently in the presence of the above symptoms.

5.3.14 Debride the pressure ulcer urgently in the presence of the above symptoms (i.e., erythema, tenderness, edema, purulence, fluctuance, crepitus, and/or malodor)

5.3.15 Perform maintenance debridement on a pressure ulcer until the wound bed is free of devitalized tissue and covered with granulation tissue.

5.3.16 The common methods of debridement are (see appendix 9):

- Mechanical debridement
- Surgical debridement
- Enzymatic debridement
- Autolytic debridement
- Maggot Therapy
- Ultrasonic debridement

5.4 Documentation of wounds:

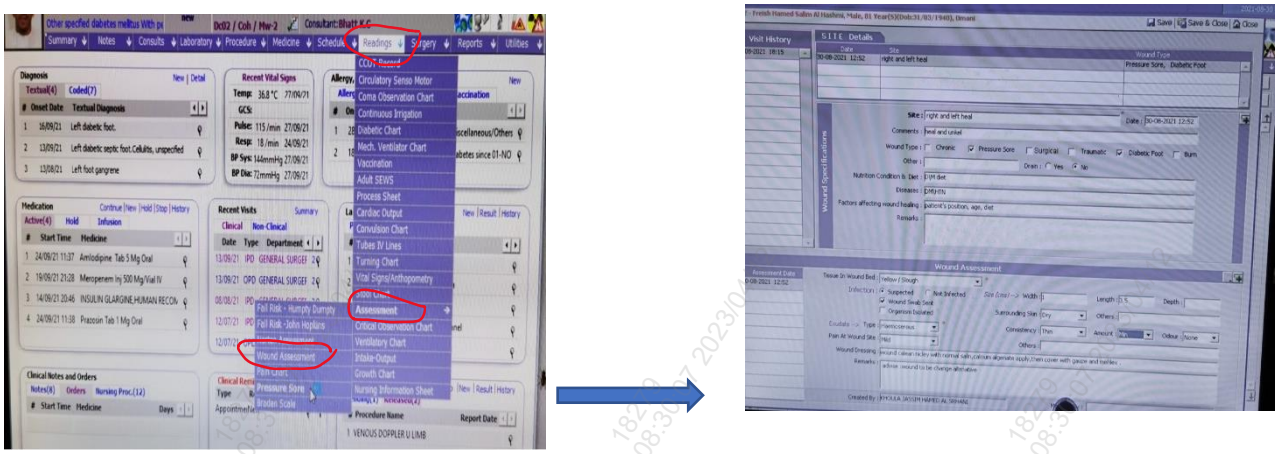
All wounds must be assessed, measured, and effectively documented. In terms of how to document a wound assessment, more details are always better. Some of the key elements to document in the nursing kardex/ patient's file are:

- **Location:** Use the correct anatomical terms to clearly document the wound's location.
- **Type of Wound:** Many types of wounds can be assessed and documented, including surgical wounds, burns, and pressure injuries. Wounds can also be acute or chronic.
- **Measurement:** The size of the wound should be measured in centimeters and listed in the wound care treatment chart as length times width times depth. Nurses must also document the location and depth of any tunneling or undermining.
- **Wound Bed:** It's important to document tissue type (slough, eschar, epithelial, granulation, etc.), coloring, and level of adherence using percentages. For example, "40% of the wound is covered in non-adherent tan slough while 60% is covered with red granulation tissue."
- **Wound Edges:** Indicate whether a wound's edges are defined or undefined, attached, or unattached, rolled under, macerated, fibrotic, or callused.
- **Drainage:** The amount and type of drainage must be documented in a wound care assessment. Common types of draining include serous, sanguineous, serosanguineous, and purulent. Words like "none," "scant," "small," "moderate," and "large/copious" are often used to describe the amount of drainage assessed.
- **Surrounding Tissue:** Describe the color, firmness, and pallor of the surrounding skin. Note any signs of edema or induration, as well as any lesions, scarring, rashes, staining, moisture, or variations in texture.
- **Infection:** Wounds are often prone to infection, which can significantly disrupt the healing process. A wound assessment should cite any signs of infection
- **Pain:** A comprehensive wound assessment describes a patient's pain in detail, noting its location and intensity as well as any patterns and variations in pain type. The assessment should also address possible causative and alleviating factors, including any interventions that were taken.
- **Response to Care/Treatment Plan:** It's important to document whether the wound has improved and to list any evidence of healing. Nurses will also need to document any pain the patient experiences when the wound dressing is changed as well as any examples of an

adverse reaction. If the patient has not been adhering to treatment plans, that should be noted in the assessment.

5.4.1 Wound documentation in Alshifa system

- Reading, assessment, wound assessment



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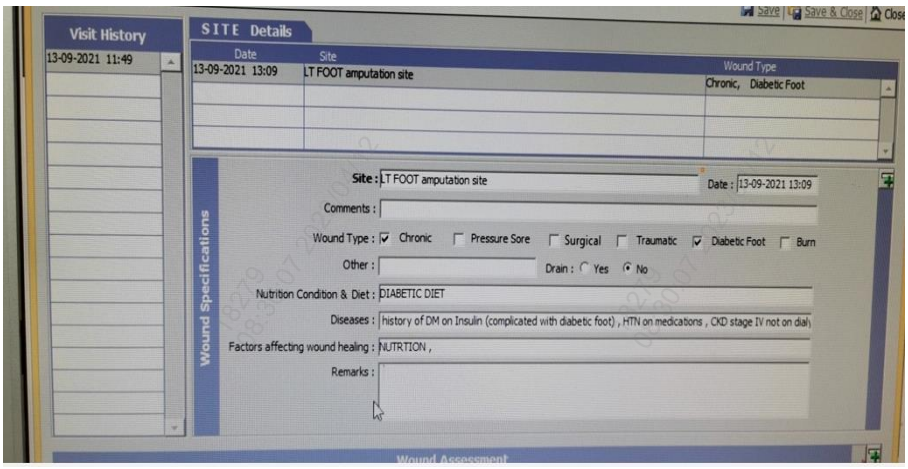
- The upper part of the page has: **Location (site)**, **Type of Wound**, **patient history** and ***factors affecting wound healing.** This part is fixed no need to re-document every day.



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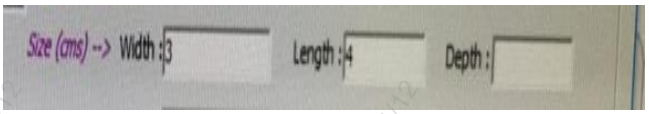
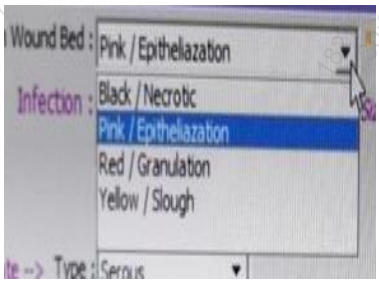
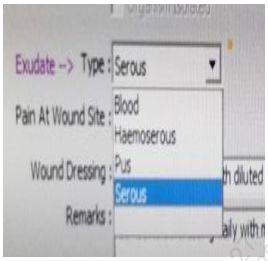
1-Measurement

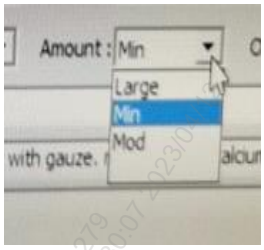


2- Wound Bed

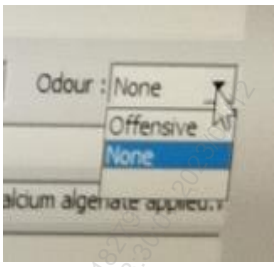


3- Drainage

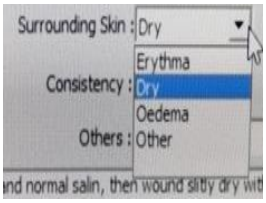




4- Odor

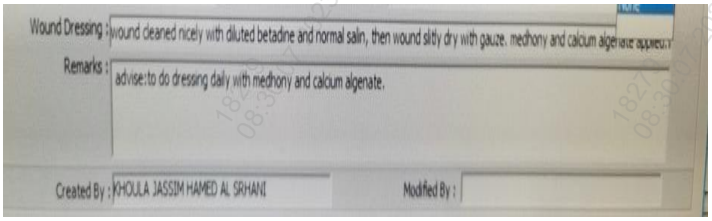


5- Surrounding Tissue



6- Pain

7-Response to Care/Treatment Plan



5.5 Discharge process:

- Discharge planning is the development of an individualized plan to ensure continuity and smooth transition of wound care between health care institutions.
- Good discharge planning would optimize healing opportunity; reduce the readmission rate, and lessening morbidity and mortality rate.

- Therefore, healthcare providers should ensure providing continuity of care, clear and easy access to the service.
- Planning for discharge should begin as soon as possible during the hospitalization period, which should contain ongoing bedside education and training.
- The wound management team is expected to assess wound readiness for discharge and provide the instruction and dressing materials as needed.
- The discharge plan must also provide a clear referral pathway so the patient will have clear access to wound care services in the primary setting.

5.6 Referral process of patients with a wound:

5.6.1 Referral from PHC to SHC:

- Chronic wounds that fail to improve after 4 weeks of conventional treatment.
- D.F.U inpatients with history of previous amputations.
- Pressure injury wounds with exposed bone/ underlying infection, swelling, purulent drainage or necrotic tissue that will require surgical debridement.
- Non healing wounds with an underlying etiology of vascular compromise that may require further additional studies to uncover other contributing factors or means of correction.
- Wounds with unrecoverable tissue loss that may require a skin graft as means of skin.
- Wounds will need evaluation for the initiation (and ongoing dressing changes) of the VAC wound closure system with ongoing surgical debridement.
- Wounds requiring surgical incision and drainage to uncover source of abscess with surgical debridement and wound treatment as appropriate for continued closure.
- Non-healing surgical wounds.
- Ostomy skin issues.

5.6.3 Referral pathway for patients with wounds in PHC, SHC and Community nursing service:

- If the patient complaints of diabetic foot ulcer patient should refer to diabetic foot clinic and follow up the national guideline for diabetic foot management (Diabetic foot assessment and management in primary health care guideline.
- If patient complains of an acute wound and he is mobile, the patient can go directly to the local health center for wound management.
- The patient will be referred from local PHC to community nursing if the patient meeting the criteria of community nursing service (wound status, patient stability and availability of care giver).
- If wound become infected or deteriorates the nurse in PHC or community nurse must refer the patient back to SHC or MDT for expert management and second opinion.
- Pressure Ulcers and Diabetic Foot Wounds that require advanced wound dressing materials in PHC and community settings should meet the following criteria:
    - ✓ Sloughy or Necrotic wounds that needs autolytic debridement (hydrating dry wound beds and softening and loosening slough and necrotic wound debris).

- Pressure ulcers in stage III or IV.
- Dry or desiccated wounds that needs hydration.
- Excessive exudates wounds (moderate-to-heavy exudates).
- Granulating wound beds needs to be closed.
- Tunneling wounds with foul discharge.
- Partial and full-thickness wounds with low-moderate exudates, granular and necrotic.
- Wounds with capillary, venous, and small arterial bleeding in various settings
- Wounds with abnormal wound healing.
- Wounds that are most associated with odor production (gases released by bacteria.)
- Wounds that need protection.
- Chronic and stalled wounds.
- Difficult-to-treat wounds.

6 Responsibilities:

6.1 Directorate General of Nursing Affairs, MOH HQ:

- The Director General is accountable for this policy and ensuring that it is carried out effectively.
- Facilitate communication related to policy implementation and evaluation with key stakeholders.
- Monitor and evaluate policy implementation focusing on patient-centered care and safe and effective practice.

6.2 Director of Nursing Services (DNS):

- The Director/Head of Nursing will be responsible for embedding this policy throughout the institution.
- Will be responsible for the selection of nurses to perform this procedure.
- Will be responsible for implementing and monitoring the implementation of policy within the Institution/Governorate.

6.3 Unit Nurses and Nursing In-Charges in Health Care Institutions:

- A nomination list will be submitted to the Head of Staff Training & Development by the Unit Nurses/In-Charges.
- Unit Nurses/In-Charges must provide written support for nurses to be nominated for training.
- Ensure the nurses are trained and competent to perform wound management following this SOP.

6.4 Head of Staff Training & Development:

- Provides competency-based training for nurses that enable them to wound management safely and effectively in clinical practice.
- Ensures training is provided for nominated nurses by members of the wound management team.
- Evaluates the quality of training programs and makes the required changes to improve the training curriculum.

6.5 Medical Stores:

- To ensure the wound care products are stored correctly according to manufacturer's guidelines and transported to the clinical areas for safe wound management.
- To inform the clinical staff of any changes to new products, packaging or recommendations which can affect wound management.
- To ensure consistent and appropriate wound care products are available for inpatients, out-patients, and the community.

6.6 Quality:

- To audit the compliance of assessments and documentation especially wound assessment charts.

- Check the right patient/client gets the right treatment at the right time as per the doctors/wound nurse orders, who demonstrates safe and effective practice within a framework of patient safety and patient-centered care.

6.7 Registered Nurses:

- Comply with this policy or disciplinary action will result.
- Must attend the wound management course and complete the assessment, to be signed off as safe and effective.
- Must be competent to use perform wound management.

6.8 Wound management Nurse:

- Assess the wounds, create and implement individualized treatment plan**.**
- Demonstrate competence in selecting dressing material and connecting different devices used for wound care based on patient's requirements.
- Observed for the symptoms that required surgical drains or surgical debridement.
- Maintained minor conservative sharp debridement.
- Demonstrate adhere to an aseptic technique by following the infection control protocols and guidelines.
- Collaborate with multidisciplinary team in the enhancing care of patient with wounds.
- Providing a proper management for early patient recovery and discharge and provide care plan for continuity of wound care in PHC.
- Educates and raise awareness on the principles of wound care management to all hospital personnel.
- Generate audit, reports and statistics in order to evaluate the effectiveness and the required improvements in service.
- Recommend the required best practice and material in wound care and contribute to evaluation of different types wound materials.
- Conduct training programs for health care workers and participate in training and developing skills of the attachments in wound care practices.
- Participate in reviewing all policies and procedure in relation to wound management, pressure injury management and prevention.
- Acknowledges any limitation of competence and seeks advice and support as appropriate.
- Foster and maintain good work ethics and relationships by communicating effectively with members of the multi- disciplinary team, other healthcare professionals and users of service to ensure the delivery of high standards of effective healthcare.

6.9. Nursing role in primary health care:

The role of primary healthcare nurse in wound management is crucial to ensure providing the necessary care to maintain healing process and prevent any complication in wound condition. In PHC the nurse should assess the patient and wound while receiving the patient after discharge from hospital or direct from community by the community nurse - if trained; certified community health

nurse in wound management and diabetic foot care is available in the PHC institution and do the needful accordingly.

- Perform a holistic patient assessment to identify the local and general factors affecting wound healing.
- Conduct accurate wound assessment by using wound assessment tool in the computer system as available in health care institution.
- Wound cleaning using aseptic technique.
- To maintain the required competency in wound dressing selection based on the assessment.
- Documentation of wound assessment and management procedure using computerized wound assessment chart.
- In case that wound is healthy, the nurse must continue regular wound care in the primary healthcare setting or community care service for continuation of care, if the patient meeting the criteria of community nursing service (wound status, patient stability and availability of care giver) and authorized to use limited advance dressing material (appendix 9).
- Once the wound shows any signs of concern such as infection, the primary care nurse or community health nurse shall refer the patient to the doctor to take second opinion.
- The treating doctor along with the nurse has the responsibility to assess wound' status and choose the management plan accordingly.
- In case wound condition requires an expert care, the treating team shall refer the patient to expert professional either to a specialized clinic (diabetic foot clinic) or to be referred to the secondary or tertiary hospital for multidisciplinary care.

6.10. Focal wound /link nurses:

- Has the capacity to prescribe the best care for the individual, formulating the plan of care, the goals of treatment, and the appropriate care centered on the individual and the preparation of discharge.
- Acts in reducing risks and costs, by acting in preventive, diagnostic and therapeutic decision-making in clients with acute, chronic, complex and/or difficult to heal wounds and in advanced therapies.
- Improving healing rates by integrating the holistic approach to meeting the needs of clients with wounds.
- Assumes the role of trainer to clients with wounds, caregivers, community and peers, in a formal or integrated environment, which implies in a dynamic and interactive process.
- To share and disseminate knowledge and developing personal and professional growth.
- To train staff, by assessing training requirements, developing a training plan and establishing measurable results for nursing practice.
- To consult, implement and disseminate the necessary changes and leading the team accordingly.
- Coordinating inter-disciplinary patient care ensuring that the patient receives continuous systemic wound care from physicians, nurses, dietitians, physiotherapists etc.
- To manage resources effectively.

6.10 Doctors:

- To work within the multidisciplinary team to ensure high quality wound management to clients in community, outpatient and inpatient environments.
- To perform high quality wound care following aseptic techniques and recommended products for the wound.
- To deliver clear orders for the wound nurse/registered nurse regarding the wound treatment requirements and treatment plan.
- To prescribe the necessary medications and dressing required for the effective wound management.
- To refer the patients to the necessary specialties as required optimizing the wound treatment plan.

6.11 Oman Wound Care Society (OWCS):

- A link between different health care professionals to share evidence-based practices, research and education.
- To increase awareness among public communities.
- To promote wound prevention and treatment.

7 Document History and Version Control:

Version	Description	Review Date
1	Initial Release	**February 2026**

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9 Annexes:

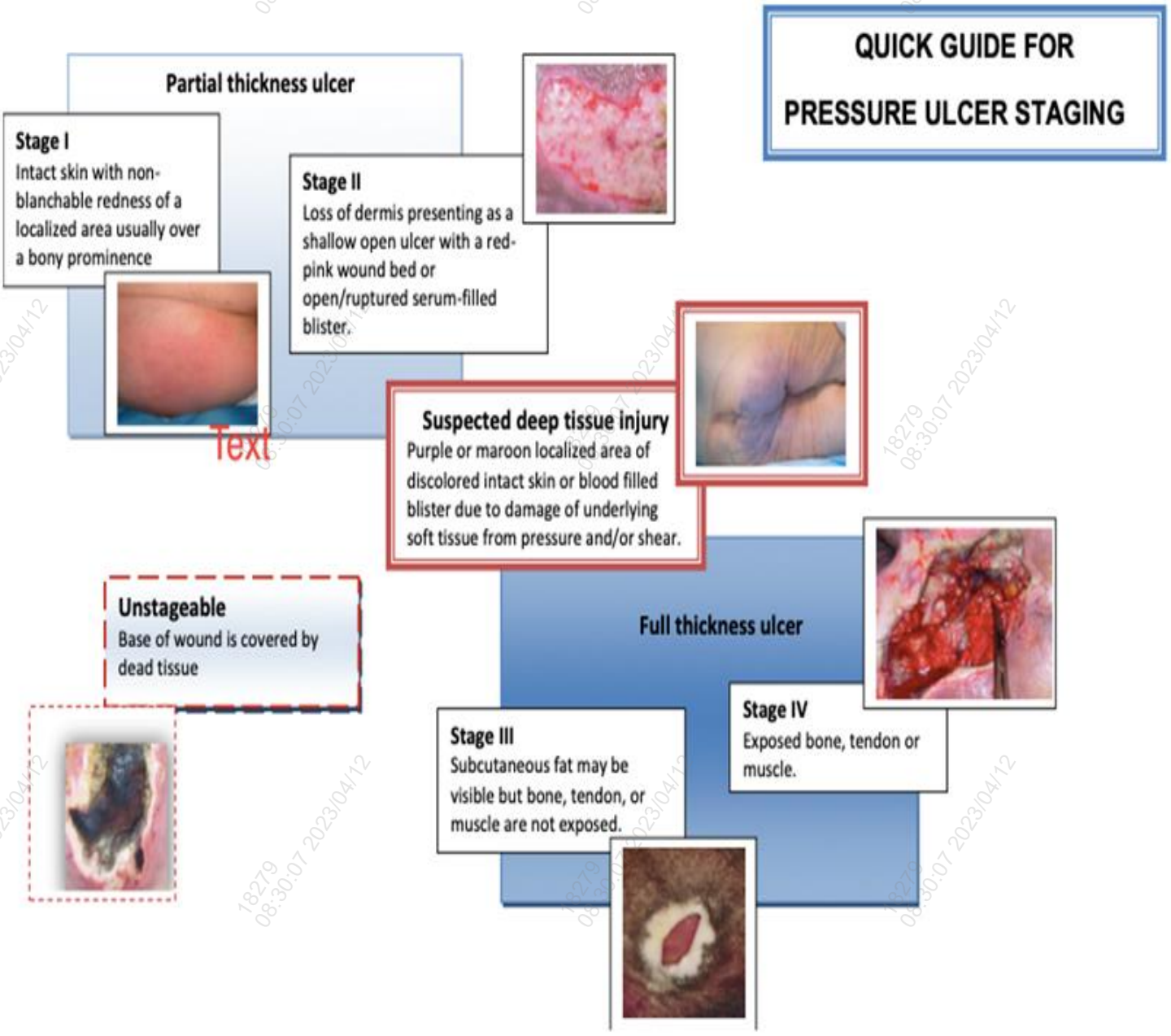
Appendix 1:

Acute & chronic wounds

	Acute Wound	Chronic Wound
Definition	Occurred in last 4-6 weeks.	Present for longer than 6 weeks. Caused by endogenous mechanisms related to a predisposing condition or risk factors (diabetes, obesity, smoking, AIDS, chemotherapy) which eventually compromises dermal and epidermal tissue structures.
Examples	Surgical wounds, bites, burns, abrasions, traumatic wounds.	Leg/foot ulcers and pressure sores – likely from vascular insufficiency or neuropathy.
Treatment	Expected to heal within a predictable time frame. Clean and minor: minimal intervention. Severe and contaminated: 1. Surgical debridement 2. Antimicrobial therapy 3. Wound lavage	1. Wound dressing 2. Antimicrobial agents 3. Footwear 4. Physical therapy 5. Educational strategies 6. Optimise treatment for co-morbidities Pressure sores: pressure relieving mattresses and cushions Venous leg ulcer: compression therapy

Appendix 2:

Pressure Ulcer Stage



Appendix 3

TIME acronym assessment

TIME – Principles of wound bed preparation

Clinical observations	Proposed pathophysiology	WBP clinical actions	Effect of WBP actions	Clinical outcome
Tissue non-viable or deficient	Defective matrix and cell debris impair healing	Debridement (episodic or continuous): » Autolytic, sharp surgical, enzymatic, mechanical or biological » Biological agents	Restoration of wound base and functional extracellular matrix proteins	Viable wound base
Infection or Inflammation	*High bacterial counts or prolonged inflammation* ↑ Inflammatory cytokines ↑ Protease activity ↓ Growth factor activity	Remove infected foci *Topical/systemic:* » Antimicrobials » Anti-inflammatories » Protease inhibition	*Low bacterial counts or controlled inflammation:* ↓ Inflammatory cytokines ↓ Protease activity ↑ Growth factor activity	Bacterial balance and reduced inflammation
Moisture imbalance	Desiccation slows epithelial cell migration	Apply moisture-balancing dressings	Restored epithelial cell migration, desiccation avoided	Moisture balance
	Excessive fluid causes maceration of wound margin	Compression, negative pressure or other methods of removing fluid	Oedema, excessive fluid controlled, maceration avoided	
Edge of wound — non-advancing or undermining	Non-migrating keratinocytes Non-responsive wound cells and abnormalities in extra-cellular matrix or abnormal protease activity	Re-assess cause or consider corrective therapies: » Debridement » Skin grafts » Biological agents » Adjunctive therapies	Migrating keratinocytes and responsive wound cells. Restoration of appropriate protease profile	Advancing edge of wound

Appendix 4:

SSKIN Acronym assessment

Support during sitting –
HEAD… It's heavy; supporting the elbows and forearms helps take the weight. If someone is struggling to support their head this will encourage a kyphotic posture (c shape spine); it may cause long term deformity if not assessed and managed correctly.
SHOULDERS… Allow shoulders to roll back, arm rests should be high enough to support but not obviously raise shoulders up to ears. People shouldn't have to lean to reach an armrest KNEES… Not higher than hips when sitting. Two fingers should fit behind back of knee and front of seat. &
TOES … Keep feet on the floor or supported on a stable/safe surface.
If in doubt shout… If you have supported the individual but are concerned that you haven't been able to improve things for them, please ask for help. They may well need a postural assessment to establish the pelvis position and level of flexibility /fixing of spine. Physiotherapists, Occupational Therapists and staff with rehab skills should be able to support/advise on supported sitting

What to look and feel for in skin assessment/inspection?
• Redness/erythema – non-blanching when finger pressure applied
• Pain, soreness
• Warmer or cooler area over bony prominence
• Boggy feeling
• Hardened area
• Discolouration – dark red, purple, black
• Broken skin/ulcer
N.B. Document any changes & continue to monitor closely!!

Appendix 5:
Wound healing

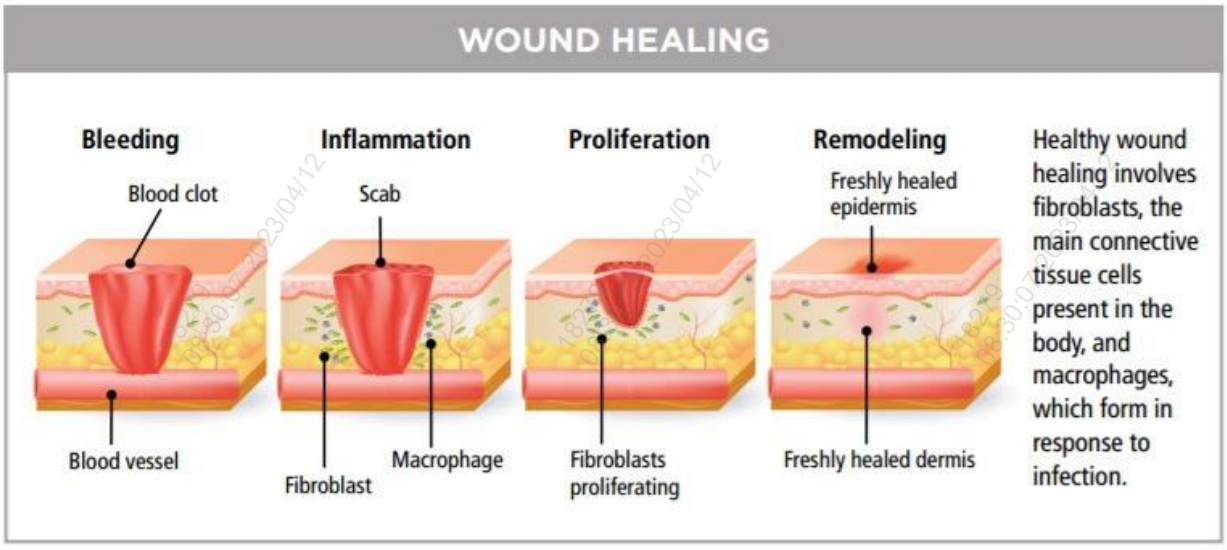
Wound healing- is complex series of reaction and interaction among cell and mediators

A5.1 Types of wound healing –

- **Primary intention:** These are clean, simple wounds that have minimal tissue loss edges that can bring closely together and held by sutures, clips, glue etc.
- **Secondary intention:** When there is extensive tissue loss with inability to oppose edges, the wounds are open and take much longer time to heal.

A5.2 Phases of wound healing -The stages of wound healing proceed in an organized way and follow four processes: hemostasis, inflammation, proliferation and maturation. Although the stages of wound healing are linear, wounds can progress backward or forward depending on internal and external patient conditions. The four stages of wound healing are:

- **Hemostasis phase:** Contraction occurs at the end of damage blood vessels to minimize blood loos; the clotting process begins to temporarily close the wound.
- **The inflammatory phase**: This phase is detected by the presence of localized heat swelling, erythematic and discomfort this should not be confused with infection, exudates are produced to facilitate healing, and it has anti –microbial properties.
- **Proliferative phase:** During this phase as the wound granulates connective tissue fills in the wound, the wound will begin to contract bringing the edges together to allow the re-growth of epithelial cells across the surface of the wound forming a continuous layer.
- **The maturation phase:** This stage begins approximately 20days after injury; this phase can last for significant period of time. Scar tissue becomes flatter, paler and smoother over time as the blood supply decreased scar tissue is not as strong as normal skin.



Wound healing center at Inova London www.inovanewsroom.com

A5.3 Factors inhibit wound healing:

Many factors controlling the efficacy, speed, and manner of wound healing fall under two types: local and systemic factors.

A5.3.1 Systematic factors –

- Advanced age: Delayed wound healing in the aged is associated with an altered inflammatory response, such as delayed T-cell infiltration into the wound area with alterations in chemokine production and reduced macrophage phagocytic capacity (Swift et al., 2001). Delayed re-epithelialization, collagen synthesis, and angiogenesis.
- Stress: psychological stress impairs normal cell-mediated immunity at the wound site, causing a significant delay in the healing process.
- Medication: Many medications, such as those which interfere with clot formation or platelet function, or inflammatory responses and cell proliferation have the capacity to affect wound healing ex glucocorticoid steroids, non-steroidal anti-inflammatory drugs, and chemotherapeutic drugs.
- Obesity: Being overweight places more pressure on the wound itself, effectively decreasing the amount of nutrients and oxygen it receives to fuel the healing process. Wounds that occur within skin folds also tend to heal more slowly due to continuous friction and tissue breakdown.
- Alcohol consumption: Alcohol use impairs wound healing due to reduced angiogenesis, a higher incidence of infections, and an increased risk of bleeding.
- Nutritional status: Ongoing nutritional assessment is necessary because the visual appearance of the patient or the wound is not a reliable indicator of whether the patient is receiving the proper amount of nutrients. Albumin and prealbumin levels, total lymphocyte count, and transferrin levels are markers for malnutrition and must be assessed and monitored regularly, as protein is needed for cell growth.
- Vascular insufficiency: Various wounds or ulcers-such as arterial, diabetic, pressure, and venous ulcers-can affect the lower extremities. Decreased blood supply is a common cause of these ulcers. The clinician must identify the type of ulcer to ensure appropriate topical and supportive therapies.
- Immunosuppression and radiation therapy: Suppression of the immune system by disease, medication, or age can delay wound healing. Radiation therapy can cause ulceration or change in the skin; either immediately after a treatment or after all treatment has ended.
- Diabetics: Diabetic patients have a higher risk of developing chronic, non-healing diabetic foot ulcers (DFUs) in the lower extremities, a leading cause of limb amputations. One of the underlying causes of delayed healing in DFUs is hypoxia, which limits fibroblast proliferation, angiogenesis, and collagen synthesis
- Smoking: Smoking of substances contain thousands of toxic compounds. For example, nicotine usage can delay wound healing by lowering wound tensile strength and increasing the likelihood of wound infection.

A5.3.2 Local factors –

- Oxygenation: Oxygen help in formation of collagen and the growth of new capillaries, low tissue oxygenation (hypoxia) can result in a decreased vascular flow, which impairs wound healing.
- Infection: causing inflammation and tissue damage as well as slowing the healing process
- Foreign body: prolong the inflammatory response and increase risk of infection
- Venous insufficiency: leads to hemosiderin deposition, which result in chronic inflammation and skin damage
- Pressure: when pressure at the wound site is excessive or sustained, the blood supply to the capillary network may be disrupted. This impedes blood flow to the surrounding tissue and delays healing.

- Trauma and oedema: wounds heal slowly and may heal at all in an environment in which they are repeatedly traumatized or deprived of local blood supply by oedema.

Appendix 6:

Chronic wound management

Chronic wounds are those that do not progress through a normal, orderly and sequence of repair. They are common and are often incorrectly treated. The morbidity and associated costs of chronic wounds highlight the need to implement wound prevention and treatment guidelines. Based on the location and appearance most chronic wounds can be categorized by etiology.

Common chronic wounds		
Pressure injuries	Non-healing surgical wounds.	Lower Extremity ulcers: diabetic foot ulcer (D.F.U), arterial & venous ulcers

When patients present with chronic wound assessment start with:

- Putting the patient at centre of care.
- Maintain wound history (onset, prior treatment/ diagnostic work- up).
- Wound assessment (location, dimension, wound bed, exudate, peri wound skin, vascularity, current pain).

However, chronic wounds are often complex, recalcitrant to healing, and may persist for months or years due to underlying diseases process or complication. Although complete healing may appear to be the logical goal for most patients, some wounds do not have the potential to heal due to several factors.
By determining the potential for healing, wounds can be categorised into:

Wound categorises	***Can the cause be treated***
healable	Yes, the cause has been corrected or compensated with treatment
maintenance	No, poor treatment adherence or lack of appropriate resources
non-healable	No, a cause that is not treatable.

To achieve successful closure of a chronic wound, a systematic framework of wound bed preparation is recognized as the best practice for wound healing. Initially all chronic wounds should be treated according to the TIME principle (appendix 3).

Appendix 7:
Mnemonics for wound management

Check the persons most at risk areas:
B – Buttocks (ischial tuberosities)
E – Elbows/Ears
S – Sacrum (bottom)
T – Trochanters (hips)
S – Spine/ Shoulders
H – Heels
O – Occipital Area (back of the head)
T – Toes

Principles of Care: The Measures Acronym

Minimize trauma to wound bed
Eliminate dead space (tunnels, tracts, undermining)
Assess and manage the amount of exudates
Support the body's tissue defence system
Use nontoxic wound cleaners
Remove infection, debris, and necrotic tissue
Environment maintenance, include thermal insulation and a moist wound bed
Surrounding tissue, protect from injury and bacterial invasion

Two mnemonics are used to identify **chronic wounds** with infection:

NERDS (colonization): Clinicians often need to look for three or more of the signs and symptoms of NERDS before making a diagnosis of increased superficial bacterial burden and you need to treat topically.

STONEES (infection): If you get three or more of the signs and symptoms of STONEES systemic therapy to be considered

Clinical signs and symptoms of wound infection		
Superficial increase bacterial burden (critically colonized)	Deep wound infection	Systemic infection
▪ No healing	▪ Size increase	▪ Fever
▪ Exudate wound	▪ Temperature increase	▪ Rigours
▪ Red and bleeding wound	▪ Oedema	▪ Chills
▪ Debris in the wound	▪ New are of breakdown	▪ Hypotension
▪ Smell from the wound	▪ Exudate, erythema, oedema, smell	▪ Multiple organ failure

Appendix 8:

Wound cleansing

Agent	Effects
Sodium hypochlorite solution	Has high PH that can cause skin irritation. Examples are: Dakins and Eusol solutions. They are effective against gram negative microorganisms.
Hydrogen peroxide	Is a de-sloughing agent. It can harm healthy granulation tissue and may form air emboli if packed in deep sinuses.
Cetrimide	Good detergent, active against gram negative and gram-positive organisms, but with high toxicity to tissue.
Chlorhexidine	Active against gram negative and gram-positive organisms, with small effect on tissue.
Povidone iodine	Broad spectrum activity, although decreased in the presence of pus or exudates. Toxic with prolonged use or over large areas.

Appendix 9:
Wound Dressings

Characteristics of an ideal dressing

- The ideal dressing should:
- Maintain a moist environment
- Facilitate autolytic debridement
- Be comfortable for the range of use needed (such as to fill tunneling, undermining or sinus tract to eliminate dead spaces)
- Come in numerous shapes and sizes
- Be absorbent
- Provide thermal insulation
- Act as bacterial barrier
- Reduce or eliminate pain at the wound site, pain free removal

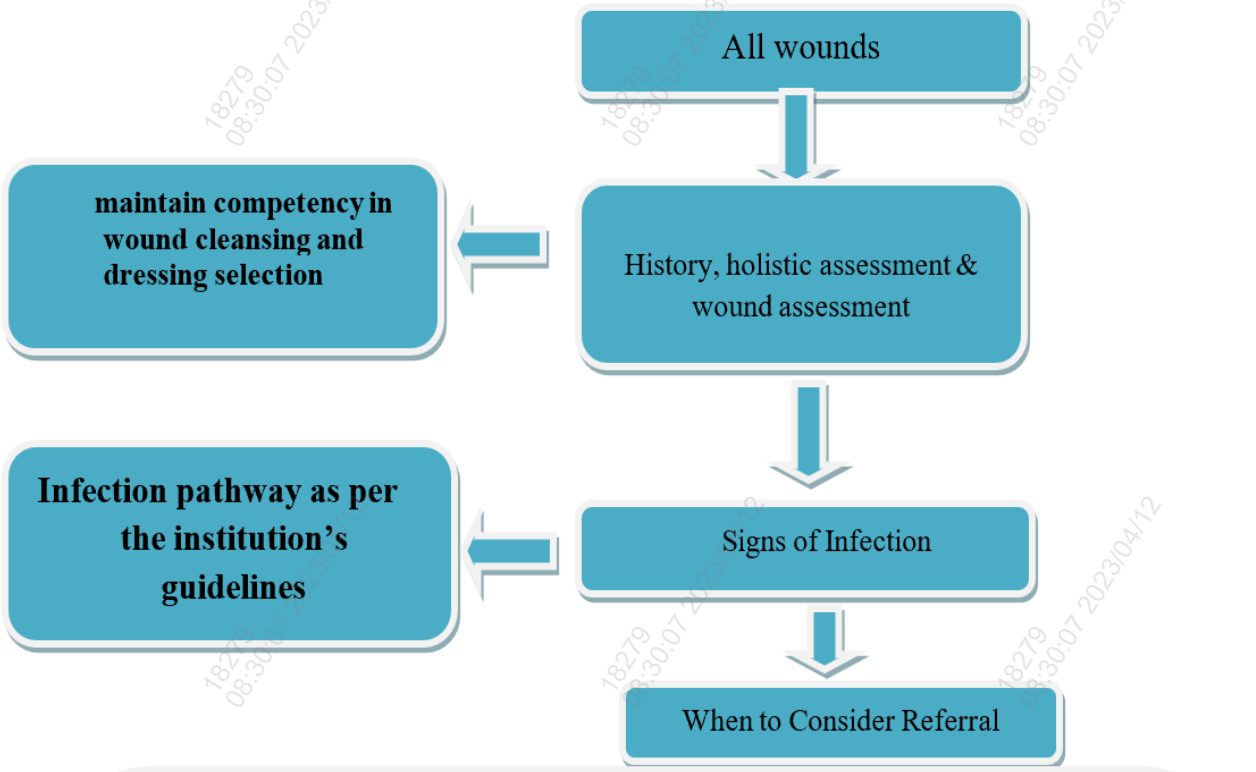
Type of dressing (Scientific name)	**Description**	**Indication**	**Advantage**	**Disadvantages**
Anti-microbial	Antimicrobial dressing is a sheet or gel contain agents such as silver, iodine or PHMB to manage infection and protect wounds from bacterial contamination.	Indicated for use as either a primary or secondary dressing in the treatment of draining, exuding, infected, and non-healing wounds where protection from bacterial contamination is desired. The amount of exudate that can be properly managed depends on the specific properties of the dressing. Certain dressings can be used under compression.	Provide bacterial barrier Reduce wound odor Broad-spectrum Act on biofilm	Antimicrobial dressings are contraindicated for use on patients with known sensitivities to any of the product components. Silver dressings cannot be worn during magnetic resonance imaging (MRI) procedures.
Alginate	Alginate dressings are highly absorptive, non-occlusive dressings made of soft, non-woven calcium alginate fibers derived from brown seaweed or kelp. Alginate dressings are available as a primary dressing in pad or rope form. These dressings gel on contact with wound exudate, thus allowing for a moist wound environment	For moderate to highly exudate wound Wound with slough &necrotic tissue For wound with minor bleeding	They promote autolytic debridement. Dressing changes are painless Maintain moist wound environment	• May dehydrate wound bed. • Not appropriate for dry wounds. • Because of low tensile strength, avoid packing in narrow, deep sinuses. • May require secondary dressing to secure.

	and promoting autolytic debridement.			• May be malodorous during dressing change. • May leave fibers in wound bed if drainage is insufficient to gel the product fully
Hydrogel	Hydrogels are glycerin- and water-based products primarily manufactured for the purpose of wound hydration.	They are ideal for dry wound as they hydrate the wound and help in autolysis, saving costs by avoiding surgical wound debridement.in addition; they have a soothing and cooling effect on diabetic foot ulcers and other painful ulcers.	They provide a moist environment because of their high water, content (96%). They are non-adherent, which is useful when changing dressing. They promote autolytic debridement of dry slough wound.	As absorption of exudate is poor. They can cause maceration.
Collagen	Collagen dressings are sheets, pads, particles, powders, and gels derived from bovine, equine, porcine, or avian sources. These dressings encourage the deposition and organization of newly formed collagen fibers and granulation tissue in the wound bed.	For wound with granulation tissue Moderate to heavily exudate wound	Absorb minimal to large amounts of drainage. Promote deposition &organization of collagen fibers and healthy granulation tissue. Conform to base of wound bed. May be hydrated for dry or minimally draining wounds.	Requires a secondary dressing. Can be expensive. Unusual odor might be unpleasant for patients.
Foam	Foam dressings are sheets and other shapes of foamed polymer solutions (most commonly polyurethane) with small, open cells capable of holding fluids. They may be impregnated or layered in combination with other materials. The absorption capability depends on the thickness and composition of the specific dressing. The area	Medium to high exuding wounds Can be used as secondary dressing	Non-adherent Does not damage surrounding healthy tissue Repel contaminants Highly conforming	Cannot be used on non-exudating or minimally exudating wounds

	in contact with the wound surface is non-adherent for easy, atraumatic removal. Foam dressings are available in pad, sheet, strip, and cavity dressing form, as well as with an adhesive border and/or a transparent film coating that acts as a bacterial barrier.			
Hydro-colloid	Hydrocolloid wound dressings are occlusive or semi-occlusive dressings made of gelatin, pectin, polysaccharides, or sodium carboxymethyl-cellulose (CMC). Hydrocolloid dressings are available in paste, powder, gel, or sheet/wafer forms with a polyurethane or film outer layer (pastes and gels require secondary dressing). These dressings gel on contact with wound exudate, thus providing a moist wound healing environment and promoting autolytic debridement.	Hydrocolloids are indicated for use as either a primary or secondary dressing in the treatment of lightly to moderately exuding partial- and full-thickness wounds such as dermal ulcers, skin tears, lacerations, pressure injuries, or wounds with necrotic tissue or slough.	Facilitates autolytic debridement Self-adhesive Can be kept from 3-7 days	Hydrocolloid dressings are generally contraindicated for burns or dry wounds, wounds with heavy exudate, tunneling wounds or sinus tracts, infection wounds with exposed tendon or bone, or wounds with fragile peri- wound skin. Some hydrocolloid dressings are contraindicated for use on full-thickness wounds.
Contact Layer	Contact Layer are manufactured as single layers of a woven (polyamide) net that acts as a low adherence material when placed in contact with base of the wound. These materials allow wound exudate to pass of the secondary dressing. They may be used with topical medication.	Used as primary dressing for partial and full thickness *Wound with minimal moderate and heavy exudate donor site and split –thickness skin grafting	Can protect wound base from trauma during dressing changes * May be applied with topical medication, wound fillers, or gauze dressing	Are not recommended for stage 1, pressure ulcers, wound that are shallow, dehydrated or covered with Escher *Wound that are draining a viscous exudate. Require secondary dressing.
Negative pressure wound therapy	Therapeutic technique using a vacuum dressing to promote healing in acute or chronic wounds through a special sealed dressing	*Full thickness pressure ulcer * Diabetic /neuropathic ulcer	maintenance of moist *Removal of excess interstitial fluid	May adhere to wound bed which cause pain while removing it Not recommended for non-draining wounds or wounds with

		*Burns wound *Venous leg ulcers *Post–surgical wounds *Traumatic wound *Pre& post op flaps & grafts	*Increased local vascularity * Decreased bacterial colonization *Quantification of wound drainage *Increased rate of granulation *Increased rate of contraction	slough and necrotic tissue Contraindicated for wound with malignancy and untreated osteomyelitis

Appendix 10:
Wound Care Algorithm



- Chronic wounds that fail to improve after 4 weeks of conventional treatment.
- D.F.Uin patients with history of previous amputations.
- Pressure injury wounds with exposed bone/ underlying infection, swelling, purulent drainage or necrotic tissue that will require surgical debridement.
- Non healing wounds with an underlying etiology of vascular compromise that may require further additional studies to uncover other contributing factors or means of correction.
- Wounds with unrecoverable tissue loss that may require a skin graft as means of skin.
- Wounds will need evaluation for the initiation (and ongoing dressing changes) of the VAC wound closure system with ongoing surgical debridement.
- Wounds requiring surgical incision and drainage to uncover source of abscess with surgical debridement and wound treatment as appropriate for continued closure.
- Non-healing surgical wounds.
- Ostomy skin issues.

Appendix 11:

Hyperbaric Oxygen therapy

The NHMC must treat patients based on the clinical indication as recognized internationally. Consensus agreement which has been published by the European Consensus Conference (ECHM, 2016)		
Indications	**Grades**	
Type 1: strong recommendation	Grade A: High level of evidence	▪ At least two concordant, large, double-blind RCTs with no or little methodological bias
Type 2: recommended	Grade B: Moderate level of evidence	▪ Double-blind RCTs but with methodological flaws, studies with only small samples or one study only
Type 3: optional	Grade C: Low level of evidence	▪ Consensus opinion of experts
	Grade D: Very low level of evidence	▪ Only uncontrolled studies with no consensus opinion of experts;

The following tables show the indication for hyperbaric oxygen therapy based on ECHM, 2016

Condition	Level of evidence		Agreement level
Type 1 recommendation	B	C	
CO poisoning	*		Strong agreement
Open fractures with crush injury	*		Strong agreement
Prevention of osteoradionecrosis after dental extraction	*		Strong agreement
Osteoradionecrosis (mandible)	*		Strong agreement
Soft tissue radio necrosis (cystitis, proctitis)	*		Strong agreement
Decompression illness		*	Strong agreement
Gas embolism		*	Strong agreement
Anaerobic or mixed bacterial infections		*	Strong agreement
Sudden deafness	*		Strong agreement
Type 2			
Diabetic foot lesions	*		Strong agreement
Femoral head necrosis	*		Strong agreement
Compromised skin grafts and musculocutaneous flaps		*	Strong agreement
Central retinal artery occlusion (CRAO)		*	Strong agreement
Crush Injury without fracture		*	Agreement
Osteoradionecrosis (bones other than mandible)		*	Agreement
Radio-induced lesions of soft tissues (Other than cystitis and proctitis)		*	Agreement

Surgery and implant in irradiated tissue (preventive treatment)		*	Agreement
Ischaemic ulcers		*	Agreement
Refractory chronic osteomyelitis		*	Agreement
Burns, 2nd degree more than 20% BSA		*	Agreement
Neuroblastoma, stage IV		*	Agreement
Type 3			
Brain injury (acute and chronic TBI, chronic stroke, post anoxic encephalopathy) in highly selected patients		*	Agreement
Radio-induced lesions of larynx		*	Agreement
Radio-induced lesions of the CNS		*	Agreement
Post-vascular procedure reperfusion syndrome		*	Agreement
Limb replantation		*	Agreement
Selected non-healing wounds secondary to systemic processes		*	Agreement
Sickle cell disease		*	Agreement
Interstitial cystitis		*	Agreement

The following investigations if indicated should be included in the referral (Reference: Royal Hospital / Hyperbaric Oxygen Therapy Policy): -

- CBC for all patient other blood test when indicated i.e UE (eGFR), RBS, HbA1c,ACR..ect
- chest x-ray
- Spirometry
- Electrocardiogram/ (Ecg)
- Audiogram / Ent Assessment
- Ophthalmology Assessment (Including Retina)
- Vascular assessment/ intervention
- Tissue C/S
- MRSA and MDRA/CRE screening
- MRI/gallium scan for staging the disease

Appendix 12:

Types of debridement

No	Type	Description
1	Mechanical debridement	• Mechanical debridement is placing a moist saline gauze dressing on the wound surface and removing it when it's dry. • Mechanical method may be painful and harmful to health granulation tissues on the surface of the wound and lead to bleeding and trauma of the granulation tissue. • Wet to dry dressing should not be used in clean, granulating wound. Instead use moist wound therapy dressing.
2	Surgical sharp and conservative sharp debridement	• Is performed by a skilled practitioner using surgical instrument such as scalpel, curette, scissors, and forceps, to remove dead necrotic tissue. • The clinician must be able to differentiate where and what to cut; for example, being able to identify a tendon versus slough because both are yellow in color. • Surgical debridement is the most aggressive type of debridement and is performed in surgical operating room. • Conservative sharp debridement can be performed in a clinic or at the bed side with sterile instruments.
3	Enzymatic Debridement	Enzymatic debridement is considered safe effective, and easy to perform. Enzymes are effective wound surface cleaning agents that accelerate necrotic debridement.
4	Autolytic debridement	• Autolytic debridement uses the body's endogenous enzymes to slowly remove necrotic tissue from the wound bed. • Autolytic debridement may take more than longer than other methods; however, it represents a less stressful method to the patient and wound than mechanical and surgical debridement. • In autolytic debridement, apply a moisture topical dressing such as hydrogel. Wound fluid accumulates with the dressing aiding in the lysis of necrotic and slough tissue. • Autolytic debridement is not the treat of choice in severely infected wounds; in fact, it may lead to more severe infection.
5	Maggot Therapy	• In this type of debridement several applications of sterilized maggot from green bottle fly are placed in the wound bed every 2 to 3 days. • Maggots encourage healing by the enzymes they secrete. These substances degrade the necrotic tissue and slough. • Maggots also encourage healing by stimulating granulation tissue.
6	Ultrasonic wound debridement	• Selective debridement of necrotic tissue and preservation of healthy tissue • Advantage of using ultrasonic assisted wound treatment • Reduce the number of simple debridement's that are undertaken in theater • Reduce waiting time for the patients with both simple and complex debridement issues • Reduce length of inpatient stays for patients recovering from pressure injury • Increase the number of wounds suitable for grafting by providing a cleaner wound bed • Less pain than in surgical procedures.

Appendix 13:

Wound prevention & management

Patient safety is at the center of all health-care interventions, meaning that health care providers have to demonstrate an evidence-based, cost-effective and efficient rationale for the choice of specific care pathways for individual patient groups. The WHO argues that professionals who actively bring the skills of different individuals together, with the aim of clearly addressing the healthcare needs of patients and the community, will strengthen the health system and lead to enhance clinical and health related outcomes. Formulation of a multidisciplinary team is essential to implement, regulate and maintain a plan to fulfill the desired goals. The wound management team should conation related health care workers and other care providers including the patient and/or his family.

A13.1 The objectives of the team are to:

- Comprehensive assessment.
- Setting of goals
- Bring together the team members
- Design and Implement a Plan of Care.
- Evaluate Outcomes.

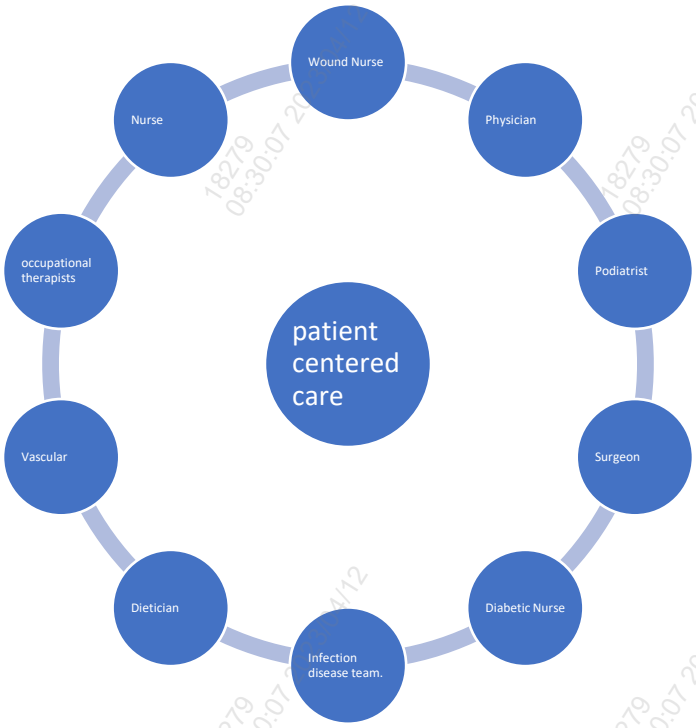
A13.2 Multidisciplinary team should but into consideration:

- The prevention and management of the wound and enhance the patient outcome.
- Collaboration among team member is vital to come up with an individualized, achievable plan designed to avoid any complications and support the healing process.
- Although most of the time, not all the team members including the patient himself can be available at the same facility at the same time, it's recommended to use the "team without walls" approach to ensure the highest outcome most of the time.
- Well, a structured communication strategy between the team members will enhance the performance of the team which will result in the level of care provided to the patient even if the team members are not working at the same facility.
- Competent and well-practiced team members with enough experience in wound prevention and management are the best care indicator for the quality of care which will be provided for the patient with a wound or at risk to develop wound complications.
- Team formulation will be based on the needs of the patient after careful analysis of the assessment and the patient's individual needs.
- Team members should exhibit unconditional support to the designated patient in terms for him to achieve his optimal goal of care according to the area of practice for each team member.

A13.3 Organizational and system support:

- Organization and system support is essential to make sure that patients receive effective and efficient care through community and healthcare providers, as well as the development of a focused, well-informed, integrated team.
- Continuing knowledge improvement of the latest evidence through education, policy development, and availability of appropriate resources requires system support.

A13.4 Potential team members:



1. Physician
2. Physiotherapist
3. occupational therapists
4. Surgeon
5. Orthotists
6. dermatologists
7. Staff Nurse
8. Podiatrist
9. Diabetic Nurse
10. WMT /wound Focal Point
11. Nurse educator
12. Nutritionist –Dietician
13. Plastic surgeon.
14. Social worker
15. Infection disease team.
16. Vascular
17. Hyperbaric therapy team

A13.5 Enrolling the patient and their family and caregivers as part of the team:

- All the team members including the patients and their families should be present and available to address the needs of the patient in line with the designed plan.
- A proper explanation should be provided to the patients and their families about their role in the team considering the patient's age, level of education, language barriers, and any impairment that may affect the ability to make any required desiccations.
- Minimizing the usage of medical terminologies which can be difficult for the patient to understand.
- Giving the patients and their families the chance to ask questions and summarize the points to ensure their understanding of the discussion.

A13.6 Team communication:

The ability for multidisciplinary teams to communicate with each other is paramount. While this can be facilitated by electronic options (e.g. email, text, voice). Regular multidisciplinary team meetings enable differing treatment opinions to be discussed, outcomes to be assessed from multiple perspectives and the production of any future plans, of care. The advantages of including the client and their family and friends in the meetings includes their ability to add additional information to the discussion, to indicate an acceptance or not to proposed treatment strategies and to correct erroneous opinions, in addition to being able to provide insight for the client on how the team works.

A13.7 Accessing the medical record:

In association with regular meetings, it is recommended that access to the same medical record for each client by the team is essential. Electronic medical records (Alshifa) are recommended as they facilitate an "enter once-view-by-many". When the multidisciplinary team is in a single institution, access to Alshifa is often possible, but if team members are located in different institutions data transmission issues surrounding privacy and security may complicate access. If multidisciplinary care is to be facilitated, methods for ensuring access to a single medical record will need to be found. The development of secure 'cloud' or web-based data repositories may provide a solution.