### Wound Pain Management Model©

**Wound Pain**
- Within or around wound
- Referred pain

**Location**

**Duration**
- Days/weeks/months
- Persistent pain
  - With activity
  - At rest
- Temporary pain
  - Dressing change
  - Cleansing
  - Debridement

**Intensity**
- VAS/FRS/VRS/NBS
- Descriptive questionnaires
- Diurnal
- Functional limitation

**Description**
- Nociceptive (throbbing or gnawing pain)
- Neuropathic (shooting or stabbing pain)
- Mixed

**QoL/ADL**
- Sleep disturbances
- Mood/Anxiety/Depression
- Mobility
- Appetite

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**Wound Assessment**

- Venous leg ulcers
  - Consider:
    - Compression stockings
    - Compression therapy
    - Elevation

- Ischaemic ulcers
  - Consider:
    - Bypass grafting
    - Balloon angioplasty

- Pressure ulcers
  - Consider:
    - Risk assessment
    - Pressure distribution/redistribution
    - Repositioning
    - Preventive skin care

- Diabetic foot ulcers
  - Consider:
    - Proper diabetic control
    - Preventive foot care
    - Pressure downloading/offloading
    - Removal of callus and debridement of wound

- Miscellaneous (examples)
  - Consider:
    - Infection (cellulitis, osteomyelitis)
    - Inflammation (vasculitis, pyoderma gangrenosum)
    - Malignancy
    - Rheumatoid arthritis

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**Local Wound Management**

- Devitalized tissue
  - Consider:
    - Cleansing
    - Debridement (surg., autoly., enzyma., mechan., biologi.)

- Critical colonization/clinical infection
  - Consider:
    - Wound cleansing/debridement
    - Exudate management
    - Antimicrobials
    - Antibiotics

- Persistent inflammation
  - Consider:
    - Topical medications (immune modifiers)

- Exudate/Oedema
  - Consider:
    - Dressing selection
    - Compression
    - Elevation
    - Devices

- Peri wound skin
  - Consider:
    - Skin sealants/barriers
    - Creams, ointments
    - Topical medications
    - Allergy

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**Explanations:**
- VAS: Visual Analogue Scale
- FRS: Faces Pain Rating Scale
- VRS: Verbal Rating Scale
- NBS: Numeric Box Scale
- QoL: Quality of Life
- ADL: Activities of Daily Living
Types of wound pain

- Persistent/chronic pain
  - Pain at rest
  - Pain with activity
  - Pain at night

- Temporary/acute pain
  - Pain of dressing removal
  - Pain when cleansing
  - Pain at debridement

Management of wound pain

Local treatment

- Psycho-social
  - Encourage patients to organize their day (socialization, exercising, relaxation)

Pharmacological treatment

- Local Analgesics
  - Use Amide local anesthetics (Xylocaine, Prilocaine)
  - Avoid ester local anesthetics (Benzacaine)

Non-pharmacological treatment

- Pain & Wound Specific
  - Foam dressing with local release of ibuprofen
  - Autolytic debridement
  - Cleanse with luke warm water, saline
  - Compression strategy (oedema control)

- Pain Specific
  - Allow procedural time-outs
  - Avoid excessive irrigation force
  - Avoid adhesive, adherent dressings
  - Minimise wound exposure

- Wound Specific
  - Moisture-balanced dressings
  - Protect surrounding skin

Other therapies

- TENS, Acupuncture

Oral/Systemic treatment

- If predominantly nociceptive pain
  - NSAIDs (Non Steroidal Anti-Inflammatory Drugs)
  - Acetaminophen (para-ace tamol)

- If predominantly neuropathic pain
  - Tricyclic Antidepressants/Anticonvulsants

WHO Clinical Ladder

1. NSAIDs (Non Steroidal Anti-Inflammatory Drugs)
2. Acetaminophen (paracetamol)
3. Strong opiates (e.g. morphine, hydromorphone, transdermal fentanyl)

If mixed nociceptive/neuropathic pain => combination therapy

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1 For all drugs, please refer to individual product monographs
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The Wound Pain Management Model© (WPM) is a practical guide on wound pain assessment and management. The guide consists of four levels that need to be considered simultaneously in order to prevent and treat painful chronic wounds properly. It is therefore recommended to assess and treat both the wound and the pain at the same time.

The dimensions of the model are:

**Wound Assessment**
The underlying cause of chronic wound pain occurrence needs to be addressed when making a diagnosis. Prevention and treatment strategies should be considered for each type of painful chronic wound to relieve the pain. If the wound is, e.g. a painful venous leg ulcer, compression stockings, compression therapy and/or elevation of the leg needs to be considered in relation to pain management.

**Local Wound Management**
Local Wound Management needs to be addressed in order to treat other issues expected to cause or intensify the wound pain such as: critical colonization/clinical infection, peri wound skin problems, oedema/exudate and/or persistent inflammation. Prevention and treatment strategies should be considered irrespective of the type of painful wound in order to relieve the pain, e.g. dressing selection, compression, elevation and devices may control wound pain caused by oedema/exudate.

**Wound Pain Assessment**
During the Pain Assessment consider location, duration and intensity of the wound pain. It is also important to describe whether the pain is predominantly nociceptive or neuropathic in origin, in order to select an appropriate pharmacologic treatment. Determine if the pain is procedurally related for example during dressing changes or debridement. In addition, the impact of the wound pain on the patient’s Quality of Life (QoL) and Activities of Daily Living (ADLs) needs to be taken into account.

**Wound Pain Management**
Appropriate Wound Pain Management can now be provided to the patient. Two types of wound pain co-exist:

- **Temporary/acute wound pain relates to procedures,** such as dressing changes, cleansing, debridement and repositioning of the patient.
- **Persistent/chronic wound pain is experienced by the patient between dressing changes (at night, mobility etc.)** and arises without any kind of manipulation in or around the wound.¹)

If local management of the wound pain is considered, it can either be a non-active or active treatment. Non-active, local management could be the selection of a dressing technology such as moist wound healing or moist wound healing with local release of ibuprofen. An active local pain relieving treatment could be local anaesthetics in order to relieve acute wound pain during e.g. sharp debridement.

Systemic or general treatment with, e.g. an oral painkiller should also be taken into consideration. If the wound pain is described as being predominantly nociceptive, the WHO clinical analgesic ladder can be used. If the wound pain is described as predominantly neuropathic antidepressants or anticonvulsants are used. The pain can also be described as mixed nociceptive/neuropathic and combination therapy is then relevant. The management of chronic wound pain is often facilitated by combining nociceptive and neuropathic management together.

**Explanations:**
Nociceptive pain: The predominant aetiology is stimulation of peripheral or visceral pain receptors (nociceptors) by noxious stimuli.
Neuropathic pain: Pain initiated or caused by a primary lesion or dysfunction in the nervous system²)

**Reference:**

²) International Association for the Study of Pain (IASP) Pain Terminology

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