African Palliative Care Association

Beating Pain

2nd Edition

African Palliative Care Association

APCA

Relieving Pain and Suffering

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APCA does not warrant that the information contained in this publication is complete and correct and shall not be liable for any damages incurred as a result of its use. This pocket guide contains information relating to general principles of pain management within Africa, which should not be construed as specific instructions for individual patients. Some of the information may cite the use of a particular medicine in a dosage, for an indication, or in a manner other than recommended. Therefore the manufacturer's literature should be consulted for complete prescribing information. Clinical judgement should be exercised at all times.

PREFACE

Palliative care is distinguished from supportive care in progressive disease by its clinical dimensions, specifically pain and symptom control. As defined by the World Health Organization (WHO), palliative care is concerned with the assessment and management of pain and symptoms among patient with life limiting illnesses and it embraces physical, emotional and spiritual pain. PEPFAR supports the WHO definition of palliative care and has included it as a key component for all PEPFAR supported HIV care, treatment, and support programs for persons and families with HIV disease in low resource settings. With the huge burden of cancer and HIV disease among other life limiting illnesses across Africa, there is a clear public health argument for the availability of pain and symptom-relieving drugs to enhance quality of life for the millions of people affected, to maximise clinical benefit from available treatments, and to ensure freedom from unnecessary suffering. The majority of problems can be controlled with adequate clinical knowledge and drug availability. To address this gap in knowledge, the PEPFAR Care and Support Technical Working Group funded the African Palliative Care Association in collaboration with AIDSTAR-One to has develop a pocket guide for clinicians and prescribers. The purpose of this guide, Beating Pain: A Pocketguide of Pain Management, is to strengthen the knowledge of providers in areas of pain assessment, treatment, and management. The guide provides common and HIV-related conditions and approaches to addressing pain for pediatric and adult clients.

Beating Pain: A Pocket guide of Pain Management in Africa has been developed for prescribers and dispensers at all levels of care provision working in Africa, but with a main focus towards intermediary and specialist palliative care providers. This second edition, was revised in 2012 to include important updates that reflect current best practice. It is part of a series of pocketbooks developed by the African Palliative Care Association (APCA) and can be used independently or in conjunction with other books in the series, such as A Handbook for Palliative Care in Africa. It is underpinned by the philosophy of palliative care and aims to provide useful quick-reference tips to assist practitioners to 'beat pain'. The pocket guide is used in conjunction with self-directed learning accessed through the APCA website www.africanpalliativecare.org

This pocket guide addresses the concept of 'total pain' and demonstrates an integrated, multi-disciplinary approach to care covering psychological, social, spiritual and physical pain. In taking this approach, however, PEPFAR and APCA are aware that not all of the medications used for pain management are available in all countries across Africa and that the names and formulations may vary from country to country. For example, although strong opioids may not be available, they have been included as they are essential medicines for the management of pain. Pain in children is also an important issue and so children's needs are highlighted in separate section of this pocket, but its worth noting that some of the general principles of pain management apply across all ages and this will not be repeated.

It is worth mentioning that this pocket guide is not intended to cover everything related to the assessment and management of pain. It contains only essential information for the clinician, and further information about pain assessment and management can be found in other more detailed texts, which have been used as resources in compiling this pocket guide (see reference list).

Beating Pain is a vital part of caring for people with a life-threatening illness and relief of pain is a human right. PEPFAR and APCA therefore hopes that this pocket guide will provide prescribers and dispensers at all levels of care provision working in Africa with useful tips that will help them beat pain for patients across the region.

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CHAPTER 1:
CLASSIFICATION OF PAIN

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.

(IASP, 1994)

A. Principles

- Pain, although unpleasant, is essential for survival as it tells us when something is wrong.
- Pain is an important physiologic response to stimuli that have the potential to cause damage.
- Understanding the physiology and classification of pain will help in the assessment and management of pain, i.e. determining the type of pain helps to determine its treatment.
- Stimuli that activate the nociceptors (i.e. receptors preferentially sensitive to a noxious stimulus or to a stimulus which would become noxious if prolonged) is perceived as pain.
- Pain is influenced by many different factors and therefore **total pain** encompasses physical, psychological, cultural, social and spiritual factors.
- Psychological factors are as important in dealing with pain as the physical cause of the pain.
- Pain can be caused by a disease (e.g. cancer), its consequences (e.g. opportunistic infections), treatment (e.g. chemotherapy) or concurrent disorders (e.g. arthritis).

- Children (including newborns) suffer pain as much as adults. Younger children experience higher levels. Fear of treatment may prevent them expressing pain.
- Repeated painful procedures may cause children increased anxiety and pain perception.

B. Physiology of pain

- Pain pathways involve the peripheral nervous system and central nervous system.
- The sensation of pain is made up of an initial fast, sharp pain and a later slow, dull, long-lasting pain and this is due to the difference in the speed of the nerve impulses in the different nerve-fibre types.
- When cellular damage occurs, a number of chemical substances are produced or released which influence the degree of nerve activity and therefore the intensity of the pain sensation.
- Pain from internal organs is perceived at a location that is not the source of the pain i.e. referred pain.
- Chronic pain can result in an altered perception to pain, leading to increased sensitivity or abnormal sensations such as burning or numbness.

C. Types of pain

- Pain can be classified according to:
    - Duration
    - Underlying mechanism
    - Situation.
- Different types of pain respond differently to different types of analgesia; hence the importance for clinicians to determine the type of pain that a patient is experiencing in order to prescribe the most appropriate analgesia.
- Patients with life-threatening illnesses will often have both nociceptive (i.e. transmitted by an undamaged nervous system and is usually opioid-responsive) and neuropathic pain (i.e. transmitted by a damaged nervous system, and which is usually only partially opioid-sensitive), and many will also have more than one cause of pain
- A definition of pain terms can be found in Table 1.

Table 1: Definition of pain terms

Acute pain	Pain that begins suddenly and is usually sharp in quality and serves as a warning of disease or a threat to the body
Allodynia	Pain caused by a stimulus which does not normally provoke pain
Analgesia	Absence of pain in response to stimulation which would normally be painful
Breakthrough pain	A transitory exacerbation of pain that occurs on a background of otherwise stable and controlled pain
Causalgia	A syndrome of sustained burning pain, allodynia and hyperpathia after a traumatic nerve lesion, often combined with vasomotor dysfunction and later trophic changes. Preferred terminology is Complex Regional Pain Syndrome type II.
Central pain	Pain associated with a lesion in the central nervous system (brain and spinal cord)
Chronic pain	Pain that persists despite the fact that the injury has healed. Pain signals remain active in the nervous system for weeks, months, or years. Chronic pain results from a chronic pathologic process
Dysaesthesia	An unpleasant abnormal sensation which can be either spontaneous or provoked
Hyperaesthesia	An increased sensitivity to stimulation
Hyperalgesia	An increased response to a stimulus that is normally painful
Hyperpathia	A painful syndrome characterized by an increased reaction to a stimulus, especially a repetitive stimulus, and an increased threshold
Incident pain	Occurs only in certain circumstances, such as after a particular movement or on standing: it should be regarded as chronic pain but, as it is intermittent, it is better managed with local measures where possible

Neuralgia	Pain in the distribution of a nerve
Neuropathy	A disturbance of function or pathological change in a nerve
Neuropathic pain	Pain which is transmitted by a damaged nervous system, and which is usually only partially opioid-sensitive
Nociceptor	A receptor preferentially sensitive to a noxious stimulus or to a stimulus which would become noxious if prolonged
Nociceptive pain	Pain which is transmitted by an undamaged nervous system and is usually opioid-responsive
Pain	An unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage
Pain threshold	The least experience of pain which a subject can recognize
Pain tolerance level	The greatest level of pain which a subject is prepared to tolerate
Procedural pain	Pain related to procedures /interventions: this is especially important in children with chronic illnesses (HIV and malignancies) and is an important cause of anxiety in children that can be prevented
Sympathetically mediated pain	Caused by damage to sympathetic nerves – a part of the autonomic nervous system that serves to accelerate the heart rate, constrict blood vessels, and raise blood pressure.
Total Pain	Encompasses physical, psychological, cultural, social and spiritual pain

1.Classification according to Duration

Acute pain

- Is usually due to a definable acute injury or illness
- Has a definite onset and its duration is limited and predictable
- Is accompanied by anxiety and clinical signs of sympathetic over-activity
- It is almost invariably the first step in the development of chronic pain.

Treatment is directed at the acute illness or injury causing pain, with the short-term use of analgesics.

Chronic pain

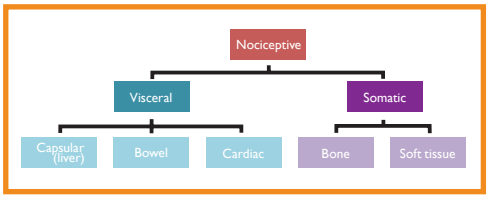
- Results from a chronic pathological process;
- Has a gradual or ill-defined onset, continues unabated and may become progressively more severe; persists longer than the expected healing time for the injury or illness in question;
- Often leads to the patient appearing depressed or withdrawn and possibly being labelled as 'not looking like somebody in pain';
- Offers no protective benefits, serves no purpose and has detrimental effects causing changes at the level of the nervous system as well as psychological burden.

Treatment is directed at the underlying disease where possible, along with regular use of analgesics to relieve pain and prevent recurrence as well as psychological supportive care.

2. According to underlying mechanism

Nociceptive

Nociceptive pain is produced by stimulation of specific sensory receptors in the viscera and somatic structures (although the nerves are intact). Its characteristics are:



Source: Watson et al, 2009, p226.
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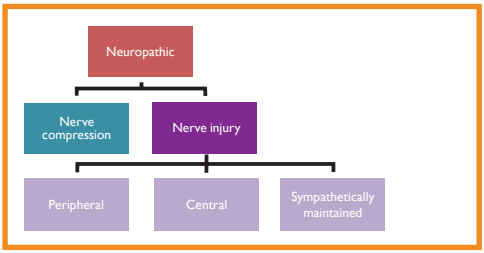
- Somatic pain: superficial (cutaneous) in skin, subcutaneous tissue or mucous membranes: sharp and well localised pain, deep muscles, tendons, joints: more diffuse and dull;
- Visceral pain from organs: dull and poorly localised - the sensation of pain may be referred to a cutaneous site, often associated with autonomic responses (e.g. sweating, nausea).

Neuropathic

Produced by damage to the central or peripheral nervous system. (the nerves are abnormal). Characteristics:



Source: Watson et al, 2009, p227.
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- Burning pain (dysaesthesia)
- Shooting pain (lancinating);
- Aching sensation relieved by pressure applied to the affected area
- Increased sensitivity to a pain stimulus (hyperalgesia) or to a stimulus that is not normally painful (allodynia)
- Neuropathic pain is a clinical description (not a diagnosis), which requires a demonstrable lesion, or a disease that satisfies established neurological diagnostic criteria.

3. According to situation

- ***Breakthrough pain*** – a transitory exacerbation of pain that occurs on a background of otherwise controlled pain.
- ***Incident pain*** – occurs only in certain circumstances (e.g. after a particular movement).
- ***Procedural pain*** – related to procedures or interventions.

D. Other factors

- Pain is influenced by psychological factors as well as spiritual issues and social circumstance; these factors can increase or decrease pain sensation.
- The concept of total pain reminds us we need to holistically assess and manage chronic pain.
- The IASP definition of pain draws attention to the emotional component of the pain experience.
- Pain is often expressed in emotional terms such as 'agonising', 'cruel', 'terrible' etc.
- Integrated multi-disciplinary teams need to be involved in the management of chronic pain. This should include collecting information about traditional medicines and over the counter medicines, as well as other medicines used to treat specific conditions, such as HIV.
- Holistic support for a patient with chronic pain can have a profound effect on the patient's quality of life and may focus on addressing feelings of helplessness and on building resilience.
- Women experience pain differently from men as a result of biological, psychological and social factors; men and women also respond differently to pharmacological and non-pharmacological pain management.
- Women in Africa are more likely to suffer pain than men and this may be because:
    - They are more likely to be under-treated for their pain.
    - They have higher levels of anxiety than men and this exacerbates pain.
    - If they have HIV, they have unique pain syndromes of a gynaecological nature that are specifically related to opportunistic infections.
    - Moreover, HIV-positive women are often young with babies and young children and the children may also have HIV, and this adds emotional, social and spiritual suffering to their pain.

1.Psychological factors

- Pain is influenced by psychological factors as it affects the human consciousness.
- Psychological factors are just as important in managing pain as the physical cause of the pain.
- Psychological pain related to chronic pain often shows itself as depression or anxiety.
- Distress associated with chronic pain may present as anger, frustration, hopelessness, denial, grief, sadness or withdrawal.
- Avoiding activities and social contact affects the patient themselves and leads to less activity, more social isolation and a focus on the pain – leading to a vicious circle of pain – lack of activity – fear – depression – more pain.
- It has been shown that negative feelings, such as rejection or loss, create neuronal stimulation patterns similar to those created by noxious stimuli.

2.Spiritual factors

- Spiritual and existential distress may manifest themselves in physical problems and are an important source of clinical suffering that can aggravate and even cause pain.
- Spiritual pain may or may not have a religious component and often reflects the patient's questioning of the meaning of life generally, and that of their own lives in particular.
- Hopelessness and despair make pain difficult to bear, and a sense of peace and strength from faith will help to make pain easier to live with.
- Spiritual pain may:
    - prompt in the patient a re-evaluation of their life
    - lead to the recovery of values and beliefs
    - be a transition point along their journey towards greater self-understanding.
- Recognition and support for spiritual issues is an integral part of pain assessment and management.

3.Cultural factors

- Cultural factors play a major role in how we view health and illness and therefore pain.
- A sensitive approach to culture, ethnicity and language will prevent the aggravation of pain and help reduce emotional distress.
- Many cultures believe in 'supernatural' powers that can cause pain, hence pain may not be managed.
- Different cultures respond differently to pain and it is important to recognise the different behaviours such as shouting and crying, or being stoical.
- How we see the family and community respond to pain will affect how we as individuals respond to pain.
- Language may also be a challenge, with the patient being unable to communicate effectively with the health professional and visa versa.

4.Social factors

- Unresolved social factors can aggravate pain, and management of such issues can facilitate pain control.
- Factors influencing pain may include the lack of aids for daily living, the lack of accessibility to community and local resources and services, along with financial and legal issues.

E. Management of pain

- The management of pain is based on the type and cause of the pain; the approach needs to be holistic. It is important to treat the underlying cause of the pain if it is treatable (e.g. an opportunistic infection).
- The aims of pain management are:
  - Prompt relief of pain
  - Prevention of recurrence.
- In the management of pain, the goals are for the patient to be pain free at night, at rest during the day, and then pain free during movement. It is important to discourage the acceptance of pain by health care workers as well as the patient and their family.
- Both pharmacological and non-pharmacological methods should be used to manage pain.
- Pain can be managed across a range of settings, including the home. It is only in severe cases where an individual may need to be hospitalised in order to get their pain under control.

F. Be aware …

- Each person is different and will experience pain in a different way.
- The concept of 'total' pain is important but is often neglected, with emphasis only being put on physical pain.
- The experience of pain is a complex one and it is important to believe the patient – just because you may not find a physical cause for the pain does not mean that the patient is not experiencing pain.
- Pain not reported does not mean pain not experienced – you need to ask the patient.
- Psychological interventions are an integral component of the management of pain.

References:

- International Association for the Study of Pain (IASP) Task Force on Taxonomy (1994). Classification of Chronic Pain, 2nd Edition. Seattle: IASP Press. Available at www.iasp-pain.org.
- Mersky H and Bogduk N (1994). Classification of Chronic Pain, 2nd edition. Seattle: ASP Press.

CHAPTER 2:
PAIN ASSESSMENT

I think that the simplest and probably the best definition of pain is what the patient says hurts. I think that they may be expressing a very multi-faceted thing. They may have physical, psychological, family, social and spiritual things all wound up in this one whole experience. But I think we should believe people and once you believe somebody you can begin to understand, and perhaps tease out the various elements that are making up the pain.

(Dame Cicely Saunders)

A. Principles

Assessment

- Pain can be both a disease and a symptom, and should be carefully assessed.
- Pain can develop and change rapidly in a person therefore the importance of initial and routine assessments which can be compared with subsequent assessments.
- The assessment and management of pain is best considered as an essential component of the broad therapeutic approach known as palliative care. Proper pain assessment using appropriate measurement tools, and subsequent treatment can keep the pain experience to a minimum.

Measurement

- Pain intensity should be carefully measured based on a thorough assessment.
- It is impossible to measure pure pain! What is measured in the name of pain is a composite of pain, anxiety, fear and discomfort from the perspective and experience of that particular individual.
- Initial measurements are necessary to compare subsequent pain scores against which to evaluate treatment efficacy.

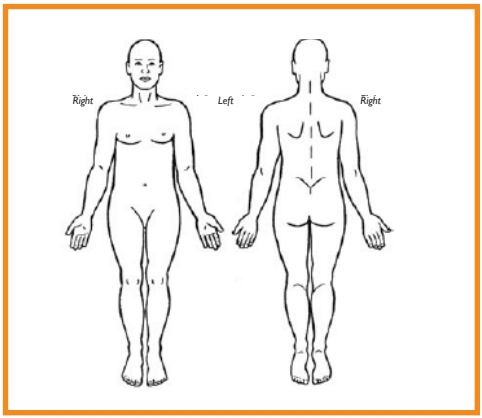
Management

- Pain should be carefully managed based on thorough assessment and measurement.
- Pain management depends largely on a comprehensive assessment of the patient, the disease, and the pain experience. Included in pain assessment are all factors that could influence the pain experience.
- Pain is not only treatable, but may also be preventable. It is always better to prevent pain than to treat pain once it has occurred.
- The treatment of pain rests on three pillars: pain assessment, pain measurement and pain management (see Appendix 1).

- *Remember the golden rule with children:* don't wait for the child to indicate pain – they might not be able to do so (being either too sick or too sore, or not having the energy).
- The basic principles of pain control are the same for everyone.
- There are some unique features about the very young that need to be considered.
- Children feel pain and there is no evidence to suggest that it is less intense than in adults.
- No child should be withheld from accessing adequate and safe analgesia because of insufficient understanding of pain control in children.Use non-pharmacological methods regularly in children.

B. Goals of assessing and measuring pain

- ***Goals of pain assessment(Portenoy, 2011)***
  - To understand the experience of the patient and the underlying holistic factors and pathophysiology contributing to the pain
  - To prevent the onset of detrimental effects (both psychological and physical) as a result of untreated pain.
- ***To characterize the multiple dimensions of the pain***
  - Intensity
  - Temporal features: onset, course, daily fluctuation, and breakthrough pains
  - Location and radiation
  - Quality
  - Provocative or relieving factors
  - To characterise the effect of pain on quality-of-life domains – effect on physical functional well being; effect on mood and related aspects of psychological wellbeing; effect on sleep, mood, and sexual function
- ***Goals of measuring pain***
  - To determine the presence, intensity and duration of pain
  - To determine the location of pain
  - To determine treatment efficacy.



- Assessment should not be confused with measurement, where a score is indicative of pain intensity and treatment efficacy.
- All findings or relevant information should be clearly documented. Of particular interest would be information obtained during initial assessment, pain scores, intervention and intervention efficacy.
- Clear and precise notes should be kept in a place easily accessible to other health professionals involved in caring for the patient.
- Several pain assessment and measurement tools are available, e.g. body diagrams to document the site of pain; and pain rating scales to follow the patient's pain and the effect of treatment (useful in managing difficult pain).

C. Barriers to pain assessment and measurement

- A number of barriers exist, not only for pain management but also for pain assessment and measurement.
- An awareness of existing barriers in a setting could eliminate the impact on the assessment and measurement process.
- The most important barriers are:
    - Lack of age-appropriate and validated pain-measurement tools
    - Lack of training on the use and implementation of pain measurement tools
    - Lack of knowledge on how to interpret a pain score once obtained
    - Lack of knowledge on how to differentiate between pain, anxiety, and emotional issues such as fear, depression and discomfort
    - Lack of skill in applying information obtained during assessment to the process of measurement and management
    - Lack of an open attitude where the patient is listened to and their experience is validated.

D. Pain assessment

Principles:

- Pain is subjective; therefore encourage the patient to report about their pain.
- An impeccable assessment is a principle of the WHO definition of palliative care.
- Undertaking a comprehensive clinical assessment is vital for effective pain management.

Standard assessment guideline:

- A standard assessment guideline for pain is important in order to be able to see change over time.

Pain assessment through:

- Data collection and interviews should be conducted in a relaxed, comfortable atmosphere.
- Collect information on medical and previous pain-management history:
    - Information on previous medical history should include: type of drug and dosage used, effectiveness of previous drug regime, time to onset, duration of relief and return to pain, and current medication used, including all any medicines used to treat specific conditions (such as ART).
    - Review all medical records to evaluate previous pain episodes and management attempts.
    - Ensure that information is collected about traditional medicines and other over-the-counter medicines, as well as those prescribed.
    - Include a review on the previous pharmacological approach as well as the efficacy of, reaction to and possible adverse reaction to, drugs previously used in the treatment of pain.
- Determine and evaluate all factors that exacerbate or alleviate pain is done by careful questioning of the patient. This information is particularly key to the treatment success of the particular individual

- The **PQRST** pneumonic offers valuable guidelines for questions to help assess and measure pain:
    - **P**recipitating and relieving factors: What makes your pain better/worse?
    - **Q**uality of pain (e.g. burning, stabbing, throbbing, aching, stinging): How would you describe your pain? What does it feel like? Ask (where possible) the patient to describe their pain for you. The choice of words in this description is important – for example, words such as 'shooting', 'burning', 'dull' or 'aching' could refer to neuropathic pain, which will require a specific type of drug intervention.
    - **R**adiation of pain: Is the pain in one place or does it move around your body?
    - **S**ite and severity of pain: Where is your pain? (use a body chart) How bad is it? (use a Visual Analogue Scale).
    - **T**iming and previous treatment for pain: How often do you get the pain? Are you pain free at night or on movement? Are you on any pain treatment or have you been in the past? Does it help?
- Determine the location of pain or the body area involved by looking out for signs of 'guarding'. (Any attempt that prevents you from touching a specific body area can be considered as 'guarding'.)
- It is important to correctly classify pain as neuropathic or nociceptive, as this will partly determine the drugs needed for treatment.
- Ask (where possible) the patient to describe their pain for you. The choice of words in this description is important – for example, words such as 'shooting', 'burning', 'dull' or 'aching' could refer to neuropathic pain, which will require a specific type of drug intervention.
- Ask too what the pain means to that person.
- Be sensitive to the secondary effects of pain:
    - Inability to sleep, changes in appetite, lost of interest in the environment, fear, anxiety or increased agitation.
    - Parameters such as activities, social interaction and work/school attendance, which should be considered when assessing chronic pain.
- Include behavioural factors associated with pain and anxiety: crying, facial display of anxiety, fear, tenseness, and withdrawal.
- Pain assessment may also involve relevant investigations such as x-rays but these should be used sparingly after taking a careful history from the patient and their family.

Pain assessment in children

- The body position often reflects pain: Observe the way in which the patient walks, holds their body or moves, and the way the body is positioned when lying down. This is particularly important in young children and those unable to verbalise their pain.
- **Note:** a sleeping child, a very quiet child, even a child that is playing is not necessarily pain free – movement might be painful, or the child might be too sick or too tired to move.
- It is important to include, where possible, parents or caregivers in the assessment of pain in children.
- Children may not report pain for several reasons, including their being:
    - Frightened of talking to doctors
    - Frightened of finding out they are sick
    - Unwilling to disappoint or bother their carers
    - Unwilling to receive an injection
    - Unwilling to return to or delay discharge from hospital
    - Unwilling the side effects of medication for pain.
- Health professionals should always ask parents/carers whether they have observed that their child is in pain.
- Therefore it is useful to:
    - Question the child and their parent
    - Use a pain rating scale (see fold-in on page)
    - Evaluate behaviour and physiological changes.

E: Pain measurement

- Pain measurement is complicated and requires:
  - Use of tested, verified and validated tools for pain management
  - Knowledge on the correct use of the measurement tool
  - Understanding of the scoring process
  - The ability to correctly interpret a score
- Obtaining an initial score is vitally important:
  - For comparison with other scores after intervention
  - To determine treatment efficacy
- Ideally, carry out pain measurements at regular intervals – either six or four measurements per week.
- Remember that most measurement instruments do not acknowledge the presence of anxiety and can therefore produce false high or false low scores. The behavioural indicators of anxiety are more or less the same as for pain, and it is possible to measure anxiety instead of pain.
- There are a number of different measurement tools available both for adults and children, and a sample list of recommended tools for adults and children is given in the next pages.

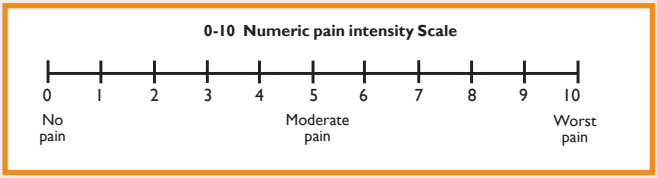
Guidelines for selecting a measurement tool

- Should be age appropriate.
- Should have tested psychometric properties of validity and reliability.
- Should be able to measure different pain levels.
- Should be easy to use – many measurement tools are complicated and time consuming and not recommended in all situations.
- Should be able to produce an easily understandable score.
- Should have clear instruction on application and interpretation.
- **Note:** Many pain measurement tools are available but few are tested and validated for use in Africa.

Suggested tools for pain measurement in adults

Numerical rating scale

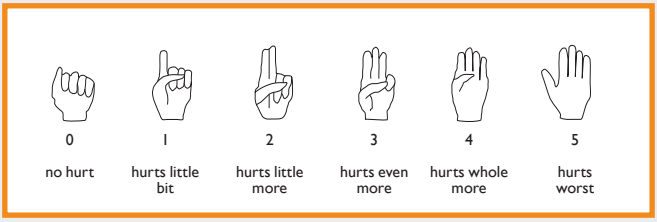
- The health worker asks the patient to rate their pain intensity on a numerical scale that usually ranges from 0 (indicating 'No pain') to 10 (indicating the 'Worst pain imaginable').**(it is easier from 0-5)**



- A variation of this scale is a verbal-descriptor scale, which includes descriptors of pain such as 'Mild pain', 'Mild-to-Moderate pain'. 'Moderate pain' etc.

The hand scale

- The hand scale ranges from a clenched hand (which represents 'No hurt') to five extended digits (which represents 'Hurts worst'), with each extended digit indicating increasing levels of pain. **Note:** it is important to explain this to the patient as a closed fist could be interpreted as worst possible pain in some cultures.



How to use a pain measurement instrument

1. Select the right instrument.
2. Learn the basics of the instrument: how to use it, how to score and how to translate the score.
3. Decide on the interval of measurement.
4. Document all relevant information obtained during the process of assessment.
5. Do the first measurement as soon as possible after admission or after referral.
6. Based on the numerical score, decide on the severity of pain. A lower score normally indicates less pain or the presence of anxiety. This needs to be documented. It is sometimes useful to do more than one baseline score. It is, for example, difficult to score pain in a severely ill patient, a patient who is unconscious or one who is not responding. Here, scoring needs to be done more than once. If a patient is restrained and cannot move, and movement is a parameter, exclude movement from the scale and, if necessary, subtract the score total involved with movement from the end score.
7. Use the WHO analgesic ladder to introduce treatment (see Chapter 4).
8. Wait the recommended time for administered medicine to produce analgesia: 30–60 minutes is standard.
9. Score the patient again.
10. Compare the second score against the initial score.
11. If the numerical value is equal to or more than the first, the approach to treatment was unsuccessful. Either go the next step of the WHO analgesic ladder, or decrease the medicine interval, or increase the dose. Ensure that anxiety is ruled out and treated.
12. Introduce the chosen second approach to pain management.
13. Score the patient again. If there is no improvement in the score when compared with the initial score, pain is not being adequately treated so go up one step on the WHO analgesic ladder. If the pain score is less than the initial score, pain is being adequately treated and pain tolerance has been achieved.
14. Document all relevant information.

Suggested tools for pain measurement in infants and children

- Pain measurement in infants and children is more complicated than in adults – there are a variety of tools available.
- Choose instrument to measure pain giving consideration to a child's level of development and introduce instrument prior to painful procedure.
- Numerical Rating scale can be used in older children.In neonates, behaviour is the best way to assess pain – the Neonatal Infant Pain Scale (NIPS) addresses facial expression, crying, behaviour patterns, arms, legs and state of arousal.
- Some suggested tools for Infants and children less than three years of age include NIPS, FLACC and TVP (see below for the last two listed).
- Suggested tools for older children include FLACC, the Faces Scale (see also below) and the Visual Analogue Scale.
- Self-report pain measurement tools can be used in children from the age of four – the higher the score the more pain, anxiety or discomfort is present.

FLACC Scale for use in children less than three years of age or older non-verbal children.

- Use it like an Apgar score, evaluating each item and arriving at a total score out of 10 (see layout below).

DATE/TIME	
Face 0 – No particular expression or smile 1 – Occasional grimace or frown, withdrawn, disinterested 2 – Frequent to constant quivering chin, clenched jaw	
Legs 0 – Normal position or relaxed 1 – Uneasy, restless, tense 2 – Kicking, or legs drawn up	
Activity 0 – Lying quietly, normal position, moves easily 1 – Squirming, shifting back and forth, tense 2 – Arched, rigid, jerking	
Cry 0 – No cry (awake or asleep) 1 – Moans or whimpers, occasional complaint 2 – Crying steadily, screams or sobs, frequent complaints	
Consolability 0 – Content, relaxed 1 – Reassured by occasional touching, hugging or being talked to, distractible 2 – Difficult to console, comfort	
TOTAL SCORE	

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The FLACC is a behavioural scale for scoring pain in young children. Each of the five categories (F) Face; (L) Legs; (A) Activity; (C) Cry; (C) Consolability is scored from 0-2, which results in a total score between zero and ten.

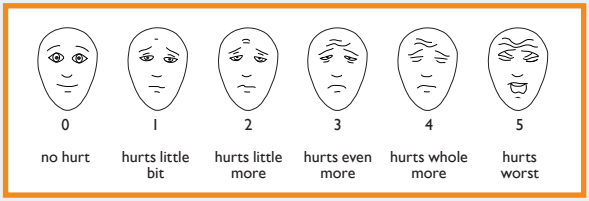
The 10-point Touch Visual Pain (TVP) Scale for assessing pain and symptoms through touch and observation

Tactile and visual score	Present
1. Toes bent down or upwards and tense under soles, ankles tightly crossed	
2. Knees tightly together or tightly crossed	
3. One leg protecting nappy area	
4. Thoracic or and irregular breathing, and / or mouth breathing and / or intercostal muscles and / or nasal flaring and / or crackles	
5. Heart rate increased and / or iregular	
6. Arms tight against body or guarding or crossed over face, chest or stomach	
7. Fists (not or difficult to open with finger)	
8. Neck asymmetrically positioned on shoulders, should pulled up	
9. Head asymmetrical	
10. Facial tension (fearful or painful expression; tense mouth, eyes tense or anxious, distressed look	

(Used with permission. Copyright: Dr Renee Albertyn, School of Child and Adolescent health, University of Cape Town, South Africa)

- The 10-point TVP Scale uses touch and observation to assess not only a child's pain but also any anxiety or discomfort that may be experienced.
- It was developed in Africa.
- It is based on signs of pain and anxiety that can be observed, including an asymmetrical head, verbalisations of pain, facial tension, clenched hands, crossed legs, shallow breathing, and an increased or irregular heartbeat.

The faces scale for pain assessment in children



(Used with permission; Copyright: 2001, International Association for the Study of Pain)

- This scale comprises six cartoon faces, with expressions ranging from a broad smile representing 'no hurt' to a very sad face representing 'hurts worst'.
- Ensure that the child is adequately trained in how to use the tool. In particular, make sure the child is rating their pain and not their emotion.
- Experiences have ranged with regards to the use of the faces scale in Africa, with many children preferring the hand scale.
- The faces scale can also be used by adults if preferred.

F: Be aware …

- Each patient is an individual and will react to pain differently. An individual or personal pain plan for each patient is therefore essential.
- Differentiate between pain and anxiety by eliminating aspects that could have contributed to the onset of pain:
    - Aspects of dosing – for instance, the time of last dose of analgesics given, a particular dose of analgesics, combinations of analgesics, the interval of drug administration (six-, four- or two-hourly)
    - The possible recent subjection to painful procedures – such as venipunctures, physiotherapy or wound dressings – that could have contributed to a lessened pain tolerance
    - Drug tolerance, withdrawal, over-sedation or side effects.
- Pain is an individual experience. Patients might react differently to the same pain stimulus.
- Avoid downloading measurement tools from the internet or journals if they do not have clear instructions on how to implement them. These methods could be methodologically and/or conceptually flawed. Most, if not all of the available instruments were designed in mono/dual cultural or language settings and might therefore not be applicable for use in African countries.
- The pharmacological management of pain is not entirely determined by the numerical value obtained in the pain score. The numerical value serves only to indicate the presence and severity of pain, and to act as an indicator to use when evaluating drug efficacy and as a way to tell if treatment is successful.
- Any management plan must be discussed and explained to the patient and their family.

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CHAPTER 3: PHARMACOLOGICAL METHODS OF PAIN MANAGEMENT

The right dose of an analgesic is the dose that relieves pain without causing unmanageable side-effects. Some individuals may simply require regular paracetamol, while others may need oral morphine.

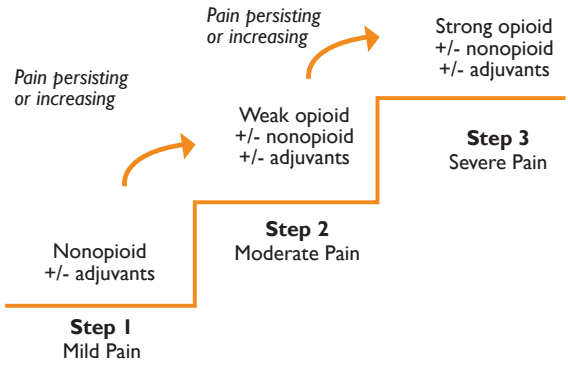
(Watson et al., 2009)

A. Principles

- Relieve pain as fast as possible and prevent its return.
- Control pain while treating the underlying cause(s) (e.g. infection).
- Determine the pathophysiology of the pain to determine the most suitable treatment (e.g. nociceptive vs neuropathic).
- Continually re-evaluate pain and its response to treatment.
- Correct use of analgesic medicines will relieve pain in most patients and should be based on the following principles:
    - By the mouth/appropriate route: use the oral route whenever possible.
    - By the clock: administer analgesics according to a regular schedule rather than according to an as-needed schedule. The interval is determined by the pharmacokinetics of each medicine.
    - By the ladder: use the WHO analgesic ladder (see section B below). If after giving the optimum dose an analgesic does not control pain, move up the ladder; do not move sideways in the same efficacy group.
    - Individualized treatment: the right dose is the one that relieves the pain. Titrate the dose upwards until pain is relieved or undesirable effects prevent further escalation. Check to see that patient and carers understand.
    - Use of adjuvant drugs alongside analgesics.
- The choice of analgesic drugs is based on the severity, type and (sometimes) cause of pain. Possible side effects should be discussed with patients and/or their care givers prior to starting drugs and again during follow-up visits.
- Affordability and accessibility are important factors in the choice of analgesics. First step in determining drug use is if it is on the essential medicines list and if not the cost to patients.
- A key component of safety and efficacy is to ensure that patients and their carers understand the use of the medicines they are taking and that those medicines are reviewed regularly.

- The basic principles of pain control are the same for everyone.
- There are some unique features about the very young that need to be considered.
- Children feel pain and there is no evidence to suggest that it is less intense than in adults.
- No child should be withheld adequate and safe analgesia because of insufficient knowledge.
- Possible side effects should be discussed with care givers (particularly for children) prior to starting drugs and again during follow-up visits.
- Use non-pharmacological methods regularly in children.
- Factors to be considered in planning pain control for children include:
    - Developmental age – children will express their pain differently according to their development stage, and management techniques will also vary (see Table 6 below)
    - The physical status of the child
    - Parents'/ care provider's level of education
    - Availability of resources.
- There are specific pain-related syndromes in HIV and cancer in children and these are discussed later in this chapter.

B. Pain management using the WHO analgesic ladder



The WHO Three-Step Analgesic Ladder

Step 1 Non-opioid (e.g., paracetamol, aspirin) ± adjuvant (e.g., antidepressant). If pain is not controlled by Step 1 analgesics, move to Step 2 by adding a weak opioid.

Step 2 Opioid for mild to moderate pain (e.g. codeine) ± non-opioid ± adjuvant.If an opioid for mild to moderate pain has been used to a maximum dose and the patient still has pain, then move to Step 3 by changing to a strong opioid.

Step 3 Strong opioid (e.g., morphine) ± non-opioid ± adjuvant.

(Source: WHO 1996, reprinted with permission)

- The WHO analgesic ladder provides a framework for the pharmacological management of pain.
- Start patients on Step 1 analgesics for mild pain; if these are ineffective, change to a Step 2 analgesic, then to Step 3 as required.
- If Step 1 or 2 analgesics don't work, don't switch to another analgesic at the same level: move up a step.
- The choice of analgesic depends on the severity, site and type of pain.
- If a patient presents with moderate/severe pain, then they can be given a Step 2 or Step 3 analgesic straight away, depending on the severity of the pain and the availability of analgesics.
- A combination of a non-opioid and an opioid drug is effective (they have different modes of action). Don't combine weak with strong opioids.
- Other medications for managing pain (adjuvants) can be combined with Step 1, 2 and 3 analgesics.
- In most sub-Saharan Africa countries Step 2 analgesics are rather expensive and in this case a low dose of Step 3 analgesics may be used. There should be at least one analgesic for each step of the ladder on the Essential Medicines List for each country.
- If the oral route isn't possible, use alternative methods, including rectal, intravenous, nasogastric tube, transdermal and subcutaneous.
- The majority of patients can have their pain controlled in the home care / outpatient setting using the WHO analgesic ladder as a guide; only in very severe cases may they need to be an inpatient.

Mild pain – Step 1

Paracetamol

- Adult dose: 500mg–1g po 6hrly; max daily dose 4g
- **Note:** Hepatotoxicity can occur if more than the maximum dose is given per day. Paracetamol can be combined with a Non-Steroidal Anti-Inflammatory Drug (NSAID).

Ibuprofen (NSAID)

- Adult dose: 400mg po 6–8 hrly (max dose 1.2g per day);
- Give with food and avoid in asthmatic patients.
- **Caution:** can cause serious side effects, e.g. gastro-intestinal (GI) bleeding or renal toxicity. If GI symptoms occur, stop and give H2 reception antagonist, e.g. Ranitidine.

Diclofenac (NSAID)

- Adult dose: 50mg po 8 hrly (max daily dose 150mg);
- Give with food and avoid in asthmatic patients.

Moderate pain – Step 2 (weak opioids)
(see chapter 4: Morphine and Other Opioids)

Codeine

- The commonest weak opioid, codeine can be combined with a Step 1 analgesic. If pain relief is not achieved on the ceiling dose (max dose 240mg per day), move to strong opioids.
- Adult dose: 30–60mg po 4 hrly (max daily dose 240mg).
- **Note:** codeine is often combined with Step 1 analgesics; give laxatives to avoid constipation unless patient has diarrhoea.

Tramadol

- Adult dose: 50–100mg po 4–6hrly.
- **Note:** start with a regular small dose and increase if no response (dose limit: 400mg/day). Use with caution in epileptic cases, especially if the patient is on other drugs that lower the seizure threshold. Tramadol may be costly.

Severe pain – Step 3 (strong opioids)
(see chapter 4: Morphine and Other Opioids)

Morphine

Starting dose (p.o)

- Morphine is the 'gold standard' against which other opioid analgesics are measured.
- When used correctly, patients don't become dependent, tolerance is uncommon and respiratory depression doesn't usually occur.
- The equianalgesic doses for other opioids can be found in Chapter 4.
- The correct morphine dose is the one that gives pain relief: there is no 'ceiling' or maximum dose – the right dose is the one that controls the patient's pain without side effects; Need to increase the dose gradually.
- Starting dose: 2.5–20mg po 4 hrly depending on age, previous use of opiates, etc. Patients changing from regular administration of a Step 2 opioid should start on morphine 10 mg po 4hrly.
    - Patients changing from regular administration of a Step 2 opioid (e.g. codeine phosphate 30mg q4h) should start on morphine 10 mg po 4hrly.
    - If the patient is cachexic or has not progressed onto Step 2 analgesics, start morphine at 5mg po 4hrly.
    - Start frail/elderly patients on morphine at 2.5mg po 6–8hrly, due to the likelihood of impaired renal function.

Titrating oral Morphine into other formulations

- Titrate the regular dose of morphine over several days until the patient is pain free. Either add the total daily dose and the total breakthrough dose given in 24 hours and divide by six to get the new 4hrly dose, or give 30–50% increments, e.g. 5–10–15mg etc., given as 4hrly doses. Increments of less than 30% are ineffective.
- If the patient cannot swallow, use other routes, e.g. rectal, subcutaneous, buccal, intravenous, or administer via an alternative enteral route such as a gastrostomy tube.
- The ratio of morphine PO:SC is 2:1, e.g. 10mg oral morphine is 5mg SC morphine.
- The ratio of morphine PO:IV is 2–3:1, e.g. 30mg oral morphine is 10mg IV morphine
- Morphine is available in immediate and slow-release oral formulations (see Appendix 4). Use slow-release morphine once pain is controlled, dividing the total 24-hour dose into two to get the twice-daily dosage. There are several options for maintenance, e.g.:
    - Continue with 4hrly immediate-release morphine (syrup morphine)
    - Change to 12hrly modified-release morphine (MST)
    - Change to 24hrly modified-release morphine where available
    - Change to fentanyl patch (72 hours' duration of action) where available
    - Change to other strong opioids where available.
- Fentanyl patches where they exist can be started as soon as pain is under control via morphine and you know the amount of analgesia the patient needs in 24 hours. Don't use fentanyl for acute or uncontrolled pain.

Alternative routes of administration, equivalent dosages

- Buccal
- Rectal
- Subcutaneous
- IV

Maintenance issues

- Dealing with breakthrough pain (defined as a transient flare-up of pain superimposed on an otherwise stable pain pattern in patients treated with opioids)
    - ‘Breakthrough’ or ‘rescue’ doses of morphine can be given as often as required (ideally the same as the 4hrly dose). Keep a record of each rescue dose. The dose of morphine for breakthrough pain is equivalent to the 4hrly morphine dose.
    - Breakthrough pain due to end-of-dose failure may promptly respond to increasing the dose of basal medication or decreasing the interval between doses.
- Pain relief to allow sleep
    - If needed, give a double dose of morphine at night to allow pain-free sleep.

Cautions

- Never use slow-release opioids as rescue medication.
- A patient should never be prescribed more than one modified-release opioid at a time.

Dealing with side effects

- Explain common opioid side effects to patients (e.g. constipation, drowsiness, nausea, etc.) and prevent such complications wherever possible (see Chapter 4). Patients on a stable morphine dose should not be sedated and if sedation occurs reduce the dose and consider adjuvants.
- Patients on modified-release opioids should always have available an immediate-release opioid (usually morphine) for episodes of breakthrough pain.
- If the cause of pain has been treated and morphine needs to be stopped, reduce the dose gradually to avoid withdrawal symptoms (sweating, nausea, agitation).

Mild pain – Step 1

Paracetamol

- Children under 1 year: 10–15mg/kg po 6–8 hrly; 1–5 years: 10–15mg/kg po 6–8 hourly; 5–12 years: 250-500mg po 6–8 hrly; max daily dose 75mg/kg
- Step 1 drug of choice in children.

Ibuprofen (NSAID)

- In children, dose is 5mg/kg po 6–8 hrly (max 30mg/kg/day in 3–4 divided doses);

Diclofenac (NSAID)

- Children 6 months to 12 years: 2–3mg/kg po per 24 hrs in 2 or 3 doses.

Moderate pain – Step 2 (weak opioids)

(see chapter 4: Morphine and Other Opioids)

- There is evidence to emphasize the exceptional role of opioids, against non-opioids, for pain control in children with life-limiting conditions.
- There is still debate on whether weak opioids (such as tramadol and codeine) should be regularly used in children with pain and whether opioid therapy should be initiated with a very low dose of a strong opioid (Zernikow, Michel, Craig, & Anderson, 2009).

Codeine

- Children over 6 months 0.5–1mg/kg po 6 hrly.
- Infants – safety and efficacy is not established.2-6 years – 1-1.5mg/kg/day divided 4-6 hourly intervals; not to exceed 30mg/day).
- 6-12 years old, same as for the 2-6 year old but not to exceed 60mg/day.

Tramadol

- Safety and efficacy in children < 16 years is not established.
- 16 years or older, 50-100mg PO q4-6hr; not to exceed 400mg/day.

Severe pain – Step 3 (strong opioids)

(see chapter 4: Morphine and Other Opioids)

Morphine

1. Starting dose (p.o)
   - For children: opioid-naive infants <6 months, starting dose 0.02mg/kg po 4hrly. Opioid-naive infants >6 months, starting dose 0.04mg/kg po 4hrly.

2. Titrating oral Morphine into other formulations
   - The smallest fentanyl patch, for use in children, is 12mcgm (corresponds to a total daily dose of 45mg of oral morphine).

3. Dealing with side effects
   - Urinary retention and pruritis are side effects that are more common in children than adults.

C. Adjuvant analgesics

- Although their primary purpose is not analgesia, these medications relieve pain through other mechanisms.
- They are particularly useful in pain that is only partially sensitive to opioids – for instance, neuropathic and bone pain, smooth or skeletal muscle spasms, or pain related to anxiety.
- Use adjuvants alone or in conjunction with Step 1, 2 and 3 analgesics.

Antidepressants

- Use for neuropathic pain, presenting primarily as burning or dysaesthesia. For example:
    - Amitriptyline dose: adult 10–75mg at night. Start with a low dose and slowly increase as needed. Can also be given in a dose of 0.5–2mg/kg at night.
- Side-effects include dry mouth and drowsiness.
- Use with caution in the elderly and those with cardiac disease.

Anticonvulsants

- Use for neuropathic pain. For example:
    - Clonazepam. Adults: 0.5mg to 2mg once daily
    - Carbamazepine. Adults: start at 100mg twice a day, and can be increased up to 800mg twice a day.
    - Sodium valporate. Adults: 200mg–1.2g per day.
    - **Note:** Use Phenytoin and Carbemazepine with caution because of the rapid metabolism of other drugs metabolised in the liver and therefore potential drug interactions.
- Side effects: drowsiness, ataxia or blurring of vision.
- It is important to check for drug interactions when anticonvulsants are given alongside other drugs.

Antispasmodics

- Use antispasmodics for muscle spasm, e.g. colicky abdominal pain or renal colic. For instance:
- Hyoscine butylbromide (Buscopan). Adult: start at 10mg three times per day; can be increased to 40mg three times per day.
- **Note:** antispasmodics can cause nausea, dry mouth or constipation.

Muscle relaxants / anxiolytics

- Use these drugs for skeletal muscle spasm and anxiety-related pain – for example:
- Diazepam. Adult: 5mg orally two or three times per day.
- Side effects: can cause drowsiness and ataxia.

Corticosteriods

- Use corticosteroids for bone pain, neuropathic pain, headache due to raised intracranial pressure, and pain associated with oedema and inflammation. For example:
    - Dexamethasone. Adult: 2–4mg per day for most situations apart from raised intracranial pressure, nerve compression and spinal cord compression. For raised intracranial pressure, start at 24mg per day and reduce by 2mg daily to the lowest effective maintenance dose. For pain from nerve compression, 8mg is often used; and for spinal cord compression, 16mg is usually the starting dose.
    - If Dexamethasone is not available, then adults can also be given Prednisolone. A conversion rate of 4mg Dexamethasone to 30mg Prednisolone can be used.
- Note: in advanced disease, a corticosteroid may improve appetite, decrease nausea and malaise, and improve quality of life.
- Side effects include neuropsychiatric syndromes, gastrointestinal disturbances and immunosuppression.

Biphosphonates

- Appear to have a role in managing metastatic bone pain refractory
- to conventional analgesic management and/or where oncological or orthopaedic intervention is delayed or inappropriate (Mannix et al., 2000).
- Commonly used – pamidronate 60-90mg slow iv infusion given every after 4 weeks.
- Serious side effects including osteonecrosis of the jaw, although rare, have been associated with bisphosphonate therapy (Beke & Pecherstorfer, 2008). Use these drugs for intractable metastatic bone pain. For instance, for adults Pamidronate 90mg can be used intravenously every four weeks.
- Side effects are fever and flu-like weakness.

Adjuvant analgesics

Antidepressants

- Use for neuropathic pain, presenting primarily as burning or dysaesthesia. For example:
  - Amitriptyline dose: Children 2–12 years: 0.2–0.5 mg/kg PO at night; children 12–18 years: 10–25mg po at night.

Anticonvulsants

  - Carbamazepine. Children: 2.5–10mg/kg po 12 hrly; Increase gradually to avoid side effects.
  - Sodium valporate. Children: 7.5–20mg/kg po 12 hrly.
  - Gabapentin. Children 2–12 years 10mg/kg on day 1, twice per day on day 2, three times per day on day 3; maintain at 10–20mg/kg 8hrly. Children 12–18 years: 300mg on day 1, 300mg twice a day on day 2, 300mg three times /day on day 3; maintain at 300mg twice or three times.

Note: use Phenytoin in the absence of these drugs: 100mg two or three times per day (2.5–10mg/kg po 12hrly in children).

Antispasmodics

- Use antispasmodics for muscle spasm, e.g. colicky abdominal pain or renal colic. For instance:
- Hyoscine butylbromide (Buscopan). Children 1month to 2 years: 0.5mg/kg po 8hrly. Children 2 – 5 years: 5mg po 8hrly. Children 6 – 12 years: 10mg po 8hrly.

Muscle relaxants / anxiolytics

- Use these drugs for skeletal muscle spasm and anxiety-related pain – for example:
- Diazepam. Children1 – 6 years: 1mg/day in two or three divided doses. Children 6 – 14 years: 2 – 10mg/day in two or three divided doses.

Corticosteriods

- Use corticosteroids for bone pain, neuropathic pain, headache due to raised intracranial pressure, and pain associated with oedema and inflammation. For example:
  - Dexamethasone.
  - Prednisolone can be used for children: 1–2mg/kg po daily.

D. Be aware ...

- Pain is often inadequately treated.
- Failure to assess pain levels and type causes poor pain control.
- A person with longstanding pain may not show the usual signs of pain.
- Never use slow-release opioids as rescue medication.
- It is important to assess the patient for side effects to medication at every clinical interaction.
- Significant percentages of adults and children cannot metabolise codeine, so it may be ineffective.

Specific considerations for pain management in children

- Children tend to receive less analgesia than adults, and the drugs are often discontinued sooner.
- The uncalled for fear by health workers, of possible respiratory depression and addiction to opioids, prevents children from receiving adequate pain control. It should be known that opioids can be safely used in children as it is in adults. Where possible, medications should be given by mouth. The subcutaneous or rectal routes can be an alternative if the child is unable to take medication orally, but Intramuscular medications should be avoided.
- Pain in children with HIV and AIDS is a multi-factorial, biologically complex problem associated with diminished quality of life and increased mortality.
- HIV-infected children with pain are five times more likely to die than children without.
- Children with pain have lower CD4 percentages and more severe immunosuppression than those without.
- It is perceptible that children do not receive adequate pain relief as might be required.
- Children younger than six months are more sensitive to possible opioid-induced respiratory depression, so there is need of a lower starting dose.
- There is a belief that children do not feel pain, and this is based on a lack of understanding and the fear of using narcotics in children.
- Pain is subjective, and the response to pain is individual and modified through social learning and experience; therefore an individual's early experience of pain plays an important part in shaping their response in later life.
- Not all children can ask for analgesia and so it is important to try and anticipate pain in children.
- There are some physiological differences between adults and children, especially in neonates and small infants, that can cause problems.
- The child's parent or carer needs to be trained to give pain medication properly.

- Children may express pain in different ways – for instance:
  - Infants – may exhibit body rigidity or thrashing, may cry intensely, may draw knees to chest, or be irritable.
  - Toddlers – may be verbally aggressive, cry intensely, withdraw, guard painful parts of the body, or be unable to sleep.
  - Young children – may verbalise intensity of pain, see pain as punishment, thrash about with arms and legs, be uncooperative, cling to carer or be unable to sleep.
  - School-age children – may verbalise pain, be influenced by cultural beliefs, experience nightmares, have muscular rigidity or be unable to sleep.
  - Adolescents – may localise and verbalise pain, deny pain in the presence of peers, show changes in sleep patterns, be influenced by cultural beliefs, exhibit muscle tension, regress or be unable to sleep.

Table 2: Pain expressions and management techniques in children

Develop-mental age	Pain expression	Management techniques; pain measurement tools
Infant 0–1 year	• Parent/carer interviews needed to assist with pain assessment • May become restless, cling or whine • May cry, pull sore limb away or protect painful area (guarding) • Grimace on face, may sleep more or increase activity frantically • May become still and stop crying if in severe pain (a sleeping baby or one lying very still is not necessarily pain free)	• Utilise parents and staff to comfort and hold child • Holding, rocking, use of dummy, rattles, soothing music etc • 0–3 months: no procedure in crib • 3–12 months: use treatment room, use breast sucking, use sucrose or a dummy ***Scales: NIPS, FLACC, TVP***
Toddler 1–3 years	• Whining and listlessness may equal discomfort • Tugging, less weight on limb or not using a part of the body may each mean discomfort • Resistance during painful procedures	• Get parents to support, hold child • Holding/rocking , singing songs, distraction, stories, bubbles, toys • Use treatment room for all procedures • Reward after treatment ***Scales: NIPS, FLACC***
Pre-school 3–6 years	• Changes occurring in regular sleeping and eating patterns • Showing fear of pain • Acting according to previously documented pain-coping behaviours • Changes in behaviour and movement	• Get parent to support child • Rehearsal before painful procedure • Squeeze hand, use counting or reciting the ABC, story telling, bubbles, noisy toys, relaxation techniques • Use treatment room for all procedures • Reward after procedure ***Scales: Faces, VAS***

Develop-mental age	Pain expression	Management techniques; pain measurement tools
School age 6–12 years	• Acting according to previously documented pain-coping behaviours • Changes in eating and activity level • Boys are more stoic when asked about pain, whereas girls might require more attention • Can tell the location of pain in terms of body part involved • May answer questions gradually	• Get parents to support child • Distraction with noise or songs • Breathing techniques, muscle relaxation techniques, self-talk • 6–8 years: use treatment room • 8+ years: give child a choice of where they want to have procedure done ***Scales: Faces, VAS***
Adolesc-ents 13+	• May be hesitant to express feelings • May ignore pain signals • May regress • Able to identify site, location, intensity and duration of pain • May talk freely about pain if friends and family are not present • Might ask questions re treatment, outcome and origin of disease	• Give child the choice of whether parent should be present during painful procedure • Teach relaxation techniques • Use music, massage, breathing techniques and blowing • Give choice of treatment room or bed for procedures ***Scales: Faces, VAS, pain diaries***

Pain during medical procedures

- Control of procedural pain is important in children as health workers often have to perform painful procedures on children.
- The principles for managing procedural pain in children include the following:
  - Ask whether the child really needs the procedure.
  - Prepare first.
  - Get the child and family involved, explaining what is going to happen.
  - Encourage the parent/carer present to be helpful and supportive.
  - Carry out the procedure in a child-friendly manner.
  - Use both pharmacological and non-pharmacological interventions to manage pain.
  - After the procedure, compliment the child on how well they have done.
  - If they are available, use topical analgesics, e.g. EMLA cream or local anaesthetic agents.
  - If anxiety rather than pain is the problem, sedate using a benzodiazepine (e.g. midazolam).
  - If pain is a significant problem, use opioid analgesics in advance so that it has time to attain maximum effect.

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CHAPTER 4:
MORPHINE AND OTHER OPIOIDS

We really see the impact of pain relief on people's lives. Around 95 per cent of new patients arrive in severe pain. We give them morphine immediately, then wait 10–15 minutes before examining them. Sometimes you can even see them smile. … Morphine should be available to all patients with terminal illnesses.

(Peter Mikajjo, Hospice Africa Uganda, personal statement)

A. Principles

- One of the common reasons for poor pain control is inadequate administration of opioids.
- Opioid analgesics are safe and effective for managing pain.
- There are many myths about the use of opioids, which need to be dispelled.
- Clinicians need to have a good working knowledge of the pharmacology of opioid medication and an understanding of their use, together with information to debunk surrounding myths. Clinicians should also have a good working knowledge of the side effects of opioids and how to manage them.
- Oral morphine is the gold standard by which other opioids are judged. It is cheap and easy to use.
- Good pain control can be achieved through the use of morphine and adjuvant medication in most cases.
- Often, morphine is associated with 'terminal care' and 'the end of life'. However, it can be used at any stage of an illness to control pain and can be withdrawn if the patient no longer needs it.
- The use of the WHO analgesic ladder (see Chapter 3) guides us to use a non-opioid such as paracetamol (Acetaminophen) and adjuvant for mild pain; a weak opioid with a non-opioid and adjuvant for moderate pain; and a strong opioid with a non-opioid and adjuvant for severe pain.
- Judging which step of the analgesic ladder a patient should be on requires 'impeccable assessment' of pain and the recognition that if a patient on a weak opioid at maximum dose is still experiencing pain, the medication needs to be changed to a strong opioid.

B. Opioid analgesics

Codeine phosphate (methylmorphine)

- It is a weak opioid used for mild to moderate pain.
- There is not sufficient evidence to promote codeine in preference to other opioids.
- It has analgesic, anti-tussive properties; antitussive effect is not mediated via the opioid receptors (Kamei, 1996).
- It is much less potent than morphine and binds relatively weakly to μ receptors.

- The analgesic effect of codeine is due to codeine being converted to morphine in the body.
- Codeine is not usually available on its own but is usually combined with paracetamol for treating pain.
- It is important to check the strength of codeine in combination medications because these preparations often contain 8 or 10mg of codeine per tablet, which is sub-therapeutic in managing pain.
- Approximately 10% of caucasians are unable to convert codeine to morphine. Not many studies have been carried out to ascertain the situation among the negroid race. Younger children have inadequate amounts of enzyme to convert codeine to morphine. The recommended efficacious dose of codeine has been found to be associated with adverse side effects which could be avoided if a low dose of equianalgesic dose of morphine was used. Palliative care experts thus suggest that there is less use for codeine in this population. Low- dose morphine should be used instead.

Tramadol

- Tramadol is a weak opioid used for mild to moderate pain.
- It bridges Step 2 and Step 3 analgesia.
- The majority of cancer patients on Tramadol for pain relief need to change to morphine as their disease progresses.
- Tramadol lowers the seizure threshold and should be used with caution with other drugs that lower seizure threshold and in patients with epilepsy.
- May be preferable to other opioids in the management of pain due to pancreatitis because of its relaxant effect on the sphincter of Oddi (Staritz, 1988).

Morphine

- Morphine is a strong opioid used for moderate to severe pain.
- It is a naturally occurring alkaloid of opium derived from the poppy flower.
- Most of the strong opioids are pharmacologically similar to morphine.
- Morphine is inexpensive. In African countries that include opioids in their Essential Medicine List, morphine is often the only strong (Step 3) opioid available for pain management.

- Morphine elixir (oral liquid morphine) is very easily prepared from morphine sulphate powder into different strengths and proportions as might be required..
- Morphine may also be available in slow-release form and by injection.
- In palliative care, parenteral morphine may be used as a continuous subcutaneous infusion via a syringe driver.
- Morphine is metabolised in the liver.
- Morphine solution has a rapid effect on pain relief, with peak plasma concentrations within 1 hour and an elimination half-life of 2–4 hours. This means that for good control of chronic pain, morphine solution must be administered 4hrly.
- Immediate-release morphine is recommended for titration of the morphine dose in order to achieve pain control regardless of whether slow-release morphine or another opioid (such as Fentanyl) is used when the patient's pain control is established.
- Morphine is the 'gold standard' opioid against which other opioids are measured and is the only strong opioid available in many parts of the developing world.
- The 'potency' of an opioid describes the response to a particular dose of the drug, and the so-called 'equianalgesic' dose of other opioids is defined with reference to 10 mg of morphine (see Table 2 below).

Table 3: equianalgesic doses of opioid compared with 10mg of IM/sc morphine for adults

Drug	Dose equianalgesic to 10mg morphine administered by intramuscular (IM) injection or subcutaneous (sc) infusion	
	IM/sc	**po (by mouth)**
Morphine	10mg	20mg
Bupremorphine	0.4mg	0.8mg
Codeine	130mg	200mg
Fentanyl	100µg/hr = 2–4 mg/hr of IV morphine	
Hydromorphone	1.5mg	7.5mg
Methadone	10mg	20mg
Oxycodone	15mg	30mg
Tramadol	100mg	120mg

Methadone

- It has a complex pharmacology and a wide range of pharmacological effects.
- Methadone has unusual pharmacokinetic properties that contribute to unintentional toxicity.
- Its use in management of pain is still limited to a few specialists.
- No evidence that methadone is superior to morphine as an analgesic.
- Methadone is a synthetic opioid.
- Use of methadone needs to be carefully monitored as it remains in the body for longer and so drug accumulation may occur when methadone is initiated or the dosage is increased.
- It takes approximately a week for a steady state to be achieved.
- Methadone is also useful in the management of neuropathic pain.
- It can be used in renal failure as its metabolism and excretion are unchanged in renal failure.
- Methadone is also used in drug rehabilitation as a substitute for heroin.
- If methadone is available for use as an analgesic, there are guidelines to follow when converting a patient from morphine to methadone.

Fentanyl

- Fentanyl is a strong opioid for chronic pain.
- It is lipophilic and so is taken up by fatty tissue and has a long half-life.
- It is less constipating than morphine.
- Fentanyl is available in transdermal formulations, the most common of which comprises a drug reservoir separated from the skin by a membrane that controls the rate of delivery of the medication to the skin surface.
- When the fentanyl patch is applied to the skin, the serum concentration of fentanyl rises gradually, reaches a steady state after 12–24 hrs and stays constant for some time before reducing.
- The skin patches are changed every 72 hrs to achieve a constant serum concentration of fentanyl.
- Therefore it is not appropriate to use fentanyl for titration of the opioid dose and it is more practical to use morphine solution to establish the required dose of opioid and then to convert to fentanyl patches. The patient should have morphine solution available for breakthrough pain.

- In patients with fever, the absorption of fentanyl is increased because of increased skin permeability, and patients with fever should be monitored for opioid side effects.
- In changing from morphine to fentanyl, it is important to follow the manufacturer's guide to equivalent dose.
- Calculate the dose and opioid of choice based on fentanyl 25mcg patch (equivalent to approximately 100 mg of oral morphine in 24 hours or 20mg oral hydromorphone in 24 hours) and reduce the oral dose by 50% or more. There is incomplete cross-tolerance and caution must be used when switching to oral medication since some of the fentanyl may still be present.
- Initial dose: convert from an oral morphine dose according to Table 3 (simplified to match available preparations).

Table 4: Fentanyl-to-morphine conversion doses in Adults

4hrly oral morphine dose (mg)	24hrly oral morphine dose (mg)	fentanyl patch size (mcg/hr)
5–20	30–130	25
25–35	140–220	50
40–50	230–310	75
55–65	320–400	100

- Doses should always be titrated to the individual patient's requirements.
- **Always** have a breakthrough dose available as dosing may be underestimated.
- Half-life after removal of the patch is 13-25 hours.
- Fentanyl is useful for patients with renal failure as it does not have active metabolites.
- Fentanyl is less constipating than morphine and is suitable for use in patients with swallowing difficulties if they have stable pain.
- If a patient is nearing the terminal phase and is on transdermal fentanyl, keep the patch in place and give breakthrough doses via another route if needed.
- Do not use in patients who need rapid pain control.
- Major side effect is respiratory depression – dose dependent.

Some practicalities with administration of opiods:

Morphine

- Patients converting from 4hrly immediate-release morphine will require continued regular morphine until peak plasma levels of fentanyl are reached, i.e. the first 12 to 24 hours.
- Patients converting from 12hrly modified-release morphine should apply the patch at the same time as taking the final 12hrly tablet.
- Patients converting from 24hrly modified-release morphine should apply the patch 12 hours after taking the final 24hrly morphine capsule.
- An immediate-release opioid preparation (equivalent to a 4hrly morphine dose) should **always** be available for breakthrough pain.
- The patient should be warned that they may experience more breakthrough pain than usual in the first three days.

Fentanyl transdermal (TD) patch

- The dose of fentanyl patch should not be changed within the first two days of the first application or of any change in dose.
- Replace the patches at the same time of day every three days.
- Titrate the dose upwards in 25mcg/hr steps with any required increase.
- Vary the site of application with each change of the patch.
- Apply to a clean, dry, undamaged, non hairy, flat area of skin.

Prophylactic laxatives

- Constipation is a common side effect of opioids; you should always give a laxative when you prescribe oipioids (unless the indication for opioids is to control diarrhoea.
- Laxatives should be reduced up to 50% and then titrated to need.

Pethidine

- Pethidine is not suitable for patients with chronic pain.
- It has a faster onset of action and a shorter duration of action than morphine and needs more frequent dosing: every 2–3hrs.
- Pethidine is metabolised to norpethidine which has side effects inducing central nervous system excitability including mood changes, tremors, myoclonus (sudden jerking of the limbs) and convulsions.

C. The pharmacokinetics and side effects of opioids

Side effects

There are several side effects of morphine and these include:

- ***Constipation*** – therefore always give with a laxative (e.g. bisacodyl 5mg at night, increasing to 15 mg if needed) unless the patient has diarrhoea.
- ***Nausea and vomiting*** – if this occurs, give metoclopromide 10mg 8hrly, or haloperidol 1.5mg once a day.
- ***Drowsiness*** – which may occur in the first few days. If it does not improve after about three days, reduce on the dose of morphine.
- ***Itching*** – less common, but if it occurs give chlorpheniramine.

- ***Hepatic and renal impairment*** is not a contraindication for the use of opioids but care is required in these circumstances because of the risk of accumulation of medication or active metabolites. Increase the interval between doses so that the morphine is given 6- , 8- or even 12-hourly.
- ***Interactions with other medicines:***
  - The sedative effects of morphine may add to those of anxiolytics, neuroleptics and antidepressants.
  - The constipating effects of morphine may be exacerbated by anticholinergic medication.
  - Pethidine should not be used in palliative care but in particular is contraindicated in conjunction with monoamine oxidase inhibitors because of serious adverse reactions of hyperpyrexia, convulsions and death.
  - There may be interactions with some of the medicines used in HIV and AIDS – see Chapter 8 for more information.
- ***Toxicity:***
  - Signs of morphine toxicity include;
    - Drowsiness that does not improve
    - Confusion
    - Hallucinations
    - Myoclonus
    - Respiratory depression (slow breathing-rate) – seldom seen with oral morphine dosing
    - Pinpoint pupils.

- If you are concerned that the patient is becoming toxic, reduce the dose by 50% and consider giving parenteral fluids to increase excretion. In severe cases, stop the morphine and give Naloxone, an opioid antagonist. Haloperidol 1.5–5mg at night may help with any hallucinations or confusion caused by the morphine.

- ***In older patients:***
  - The pharmacokinetics is altered by the ageing process, and older people respond well to lower doses of opioid analgesics.
  - Reducing the dose or lengthening the time between doses minimises the risk of serious adverse effects in older patients.

D. Myths about morphine that may limit its use

- There is much ignorance surrounding the use of morphine and as a result patients suffer unnecessarily.
- ***Physical dependence:***
  - Physical dependence is a normal physiological response to chronic opioid therapy, which causes withdrawal symptoms if the medication is suddenly stopped – it also occurs with many other medications and not just opioids.
  - Physical dependence does not prevent withdrawal of the medication if the pain has been relieved by other means, provided that patients are weaned from the drug slowly.
- ***Respiratory depression:***
  - This is not common if morphine doses are titrated against pain, because pain is a physiological antagonist to respiratory depression.
  - Respiratory depression does not occur if the right drug is given, at the right time, by the right route.
  - In palliative care, low doses can safely be used in patients with end-stage chronic obstructive pulmonary disease (COPD), lung cancer and in patients with sever dyspnoea.
- ***Tolerance:***
  - The need for increasing doses of morphine is uncommon and is related to disease progression. Reassure the patients that there is adequate scope to treat more severe pain if it occurs.
  - Concern about tolerance is not a reason for 'saving up' the use of opioids until the terminal phase.
  - There is no maximum dose of morphine.

- ***Addiction:***
  - There is a need to differentiate addiction from physical dependence, which is a normal physiological response to chronic opioid use and results in withdrawal symptoms if the drugs are suddenly withdrawn.
  - Addiction is a pathological psychological response characterised by abnormal behaviour which includes a craving for the drugs.
  - Addiction is rarely seen in palliative care as the therapeutic use of oral morphine does not lead to addiction.
- ***Morphine hastens death:***
  - Morphine can be used for many months and years and is compatible with a normal lifestyle.
  - If given correctly, it does not hasten death.

E. Be aware …

- Morphine is safe to use for pain management in people with life-threatening illness.
- Many health professionals have not been trained to use opioids and may not feel happy doing it.
- You may experience some resistance from both health professionals and patients in the use of morphine.

The pharmacokinetics and side effects of opioids

In children:

- It is safe to use opioids in children, and clinicians should not withhold analgesia from children in pain.
- Starting doses are calculated according to the weight of the child and management of pain is individualised according to the child's needs for analgesia by titration of the opioid dose.
- Extra cautions should be applied when dealing with neonates. Neonates are more prone to the central nervous adverse effects of morphine because of the presence of a poorly- developed blood- brain- barrier and accumulation of metabolites because of inadequate carrier- protein in the blood. Lower doses should thus be used when dealing with neonates.

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CHAPTER 5:
NON-PHARMACOLOGICAL MANAGEMENT OF PAIN

Pain is inevitable – suffering is optional.

(Anonymous)

A. Principles

- Pain is influenced by psychological, cultural, social and spiritual factors.
- Determining the type of pain helps to determine its treatment.
- Psychological factors are as important in dealing with pain as the physical cause of the pain.
- Non-pharmacological pain management is the management of pain without medications. It utilises ways to alter thoughts and focus concentration, so as to better manage and reduce pain.
- Complementary or alternative therapies are increasingly being used to alleviate pain. These are therapies used together with conventional or orthodox medicine but do not replace this medicine such as biochemical therapies like herbs, dietary supplements, flower essences, aromatherapy oils; biomechanical therapies like massage; lifestyle therapies like environment, diet, exercise and mind-body techniques such as meditation, relaxation and imagery; bioenergetic therapies like acupuncture, therapeutic touch etc.
- Current WHO guidelines recommend a combination of pharmacologic and nonpharmacologic treatment modalities as standard of care for cancer pain (Jadad & Browman, 1995).

- Both adults and children feel less distress when they understand what is happening and are involved in their care.
- Children (including newborns) suffer pain as much as adults; younger children experience higher levels. Fear of treatment may prevent them from expressing pain.

B. Types of non-pharmacological pain management

- There are a whole range of techniques and expertise that exists to complement the pharmacological and interventional approaches for pain management.
- Not all approaches will be appropriate for every patient.
- Complementary therapies work to affect pain perception, assist relaxation, improve sleep or reduce symptoms by:
    - Direct analgesic effect, e.g. acupuncture
    - Anti-inflammatory action, e.g. herbs
    - Distraction, e.g. music therapy.
- Such therapies include: acupuncture, dance therapy, deep breathing, distraction, herbs, hot and cold therapy, massage therapy, music therapy, physical therapy, positioning therapy, relaxation, social support, and spiritual and religious support. Each is described further below.
- Some complementary therapies, such as herbs, are used commonly across Africa.

Acupuncture

- Acupuncture, acupressure, and electroacupuncture are forms of traditional Chinese medicine in which physical manifestations of the meridians e.g. joints are assessed.
- Pressure on meridian points can be applied by insertion of small-gauge needles (eg, acupuncture) or a combination of needles and low-frequency electric current (electroacupuncture), or by manual pressure with a finger (acupressure) (Pujol & Monti, 2007).
- The insertion and manipulation of needles, or the application of pressure at specific points, is offered as a discrete technique for treating symptoms.

Dance therapy

- There are therapeutic benefits of dance therapy, although these results are based on generally poor-quality evidence. Dance therapy should be considered as a potentially relevant add-on therapy for a variety of conditions that do not respond well to conventional medical treatments (Strassel, Cherkin, Steuten, Sherman, & Vrijhoef, 2011).
- Dance therapy uses movement to improve mental and physical well-being.
- Clinical reports suggest that dance therapy helps people accomplish the following:
    - Developing a positive body image
    - Improving their self-image and self-esteem
    - Reducing stress, anxiety, and depression
    - Decreasing isolation, chronic pain, and body tension
    - Increasing communication skills
    - Encouraging a sense of well-being.
- Dance therapy will need to be undertaken within the limits of an individual's ability.

Deep and Slow Breathing (DSB)

- Deep and slow breathing (DSB) techniques are widely used in the relief of a number of palliative care symptoms especially those that encompass somatic disorders.
- DSB decisively influences autonomic and pain processing in concert with relaxation in the modulation of sympathetic arousal and pain perception.

Distraction

- Distraction is used to focus the patient's attention away from the pain.

Herbs

- Herbs are used in traditional African medicine.
- They may produce physiological effects and these can be positive or negative, depending on a patient's situation. However, the physiological effects of herbs have not always been scientifically proven.
- Some herbs can cause unwanted side effects such as allergic reactions or direct toxicity on the skin.

Hot and cold therapy

- Applying either a hot or cold compress can help decrease pain.
- Some types of pain improve best using heat, while other types of pain improve most with cold.

Massage therapy

- Massage includes rubbing and manipulating muscles, which increases blood circulation and enhances relaxation.
- Massage is safe but should be avoided with certain conditions such as joint inflammation or injury, open wounds, skin infections, or phlebitis.
- Massage can enhance a patient's feeling of well-being and comfort.

Music therapy

- Music can reach deep emotional levels, and types of music may hold specific meaning for individuals.
- Music therapy may involve listening to music, creating music, singing, and discussing music. Guided imagery with music can also be beneficial.
- Music can also help accomplish the following:
    - Relieving stress, apprehension, and fear
    - Improving mood
    - Lowering heart rate, blood pressure, and breathing rate
    - Relieving depression
    - Relieving sleeplessness
    - Relieving muscle tension and providing relaxation.
- Music increases blood flow to the brain and helps you take in more air.
- Scientific studies have shown the positive value of music therapy on the body, mind, and spirit of children and adults.

Physical therapy

- Physical therapy involves movement of the body to achieve and maintain a healthy condition and state of physical fitness.
- Breathing exercises, walking, washing, and fetching water are all activities that can help to build strength, maintain energy, and contribute to overall well-being.

- Studies have shown that physical exercise:
  - Reduces anxiety or depression
  - Reduces fatigue
  - Improves blood flow to the legs and reduces the risk of blood clots
  - Reduces pain
  - Reduces the incidence of diarrhoea and constipation
  - Prevents osteoporosis
  - Reduces the risk of heart disease
  - Increases overall physical functioning
  - Reduces dependence on others for the activities of daily living
  - Improves self-esteem.
- Be aware that problems or complications are possible if a patient exercises above a level of exertion that is appropriate for them.
- For those who are bedridden, range-of-motion exercises are helpful in preventing stiffness and maintaining mobility in joints.

Positioning therapy

- When people are bedridden, they can begin to experience pain and stiffness in their muscles and joints.
- Moving bedridden patients and changing their position is an important way to prevent the formation of bed sores and injury in those who require assistance to move.

Relaxation

- Relaxation techniques are the most commonly used techniques in psychological pain management.
- They teach patients to train and intentionally relax, which is a psychophysiological process that reduces stress and pain.
- As patients learn these techniques, they are better able to recognise internal tension and stress.

Social support

- Unresolved social problems can aggravate pain, whereas recognition and management of social issues can greatly facilitate pain control.
- This includes supportive counselling, practical assistance such as the provision of aids for daily living, and accessing community resources and services.

- A sensitive approach to culture, ethnicity and language will prevent the aggravation of pain and will help to reduce emotional distress.

Spiritual and religious support

- Recognition and successful management of spiritual problems is an important part of pain control.
- Depending on a patient's beliefs and faith, prayer and meditation may be of support.
- It is important not to confuse spiritual care with religion.

C. Other non-pharmacological measures

- A wide range of other interventions can alleviate or manage pain.
- If available, consider the following:

  - **Surgery:**

    - Can help to reduce the source of the pain, e.g. de-bulking tumours.
    - Can help for orthopaedic complications and visceral obstructions.

  - **Radiotherapy:**

    - Local pain due to tumour infiltration usually responds to local radiotherapy.
    - The doses used for the palliation of pain in patients with advanced disease are usually much lower than the doses used to treat a cancer and may often be administered in a single dose even in previously treated areas.
    - Radiotherapy is however limited or may not be available in all African countries

  - **Reflexology:**

    - Reflexology is a natural healing art based on the principle that there are reflexes in the hand and feet that correspond to every part of the body.

- Stimulating and applying pressure to the feet or hands in the areas that correspond to the site of pain can bring about pain relief.

- **Aromatherapy:**
  - Aromatherapy is the art and science of using essential oils to balance, relax and stimulate the body, mind and soul.
  - Each oil has a specific effect on an individual – for example, lavender oil can relieve stress and help the patient to relax, thereby reducing their anxiety and their pain.

D. Be aware …

- Not all methods of non-pharmacological pain management will be appropriate for any one individual.
- There are some contra-indications for non-pharmacological methods.
- Non-pharmacological methods of pain management should be used alongside pharmacological methods and not instead of them.
- Just because natural remedies such as herbs have been around for years does not mean that they work or that they are harmless.

- Non-pharmacological approaches can be highly effective in children.
- They are not commonly used in Africa but arguably, in view of the problems of getting hold of strong analgesics in many areas, they should be core learning topics for medical professionals caring for children.
- They are easy to learn and should be used whenever possible to give the child some control in the management of pain.
- Non-pharmacological methods of pain control useful in children include:
    - Emotional support
    - Physical methods, e.g. touching
    - Cognitive methods, e.g. music therapy
    - Prayer – depending on the family's practice.
- Deep breathing:
    - The child is instructed to take a deep breath through the nose and blow it out through the mouth. Making a conscious effort to count the child's respirations focuses attention on the breathing.
    - For school-age children, asking them to hold their breath during a painful procedure transfers their focus to their breathing and away from the procedure.
- Distraction:
    - Simple distraction techniques can be very effective in decreasing pain in children.
    - Simple measures such as looking at books, blowing bubbles, and counting are favourite distraction techniques for children.
    - Touch can be an important distraction technique – stroking, patting and rocking infants and children who are in distress.
- Music therapy:
    - Children across the African region have an inmate understanding of music and respond well to different forms of music therapy.
- Use non-pharmacological methods regularly in children

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CHAPTER 6:
MANAGEMENT OF PSYCHOLOGICAL, SPIRITUAL AND CULTURAL PAIN

The realisation that life is likely to end soon may well … give rise to feelings of … the unfairness of what is happening, and of much of what has gone before, and above all a desolate feeling of meaninglessness. Here lies, I believe, the essence of spiritual pain.

(Dame Cicely Saunders)

A. Principles

- Assessment and management of pain hinges on effective communication.
- Psychological interventions play a well-established role in pain management and should be an integral part of care.
- Psychosocial therapy and counselling are key components of pain management.
- Information-giving and patient education should be an integral part of managing pain.
- Spirituality is an important factor in coping with pain.
- Culture provides a framework in which people can understand their pain.
- Each cultural group has its own views about pain and this will affect how individuals respond to their pain.

B. Psychological therapy/counselling

- Psychological therapy and/or counselling is key to the non-pharmacological management of pain.
- It may involve:
    - Individual counselling
    - Family counselling
    - Group counselling.
- Psychological factors play a crucial role in an individual's ability to manage and cope with their pain.
- Psychological distress related to chronic pain often manifests as depression or anxiety but may also present as anger, frustration, hopelessness, helplessness, denial, grief, sadness or withdrawal.
- Management should facilitate the patient's adaptive and coping mechanisms and decrease their feeling of helplessness.
- Most health professionals can give some psychological support, such as:
    - Good communication
    - Patient education
    - Basic counselling
    - Helping patients to develop realistic expectations for the future.

- Other, more specialist support may be needed for therapies such as:
  - Cognitive restructuring
  - Biofeedback
  - Stress management
  - Relaxation training.

The importance of effective communication in pain management

- Effective communication enables a patient and their family to talk about their pain and their fears and concerns.
- It also fosters a very strong relationship between the care giver and the patient.
- Communication is seen as a therapy, which is used to help a patient to either cope with or solve a problem.

Principles to help care providers communicate effectively

- Communicate with sensitivity, empathy, compassion and support to the patient and family.
- Listen attentively and allow tears and emotions to be expressed without rushing the patient.
- Take into account the family and its ethnic, cultural and religious roots.
- Pay attention to the patient, family members and fellow care providers.
- Be aware of the importance of non-verbal communication such as facial expressions.
- Use clear and suitable language that is understood by the patient); use an interpreter if necessary.
- Ask appropriate questions, and allow the patient and family to ask questions each time you see them.
- By asking questions, paraphrasing, summarising etc., ensure that the patient and family have understood what you are saying, and that you have understood what they are saying.

Basic communication skills

- ***Active listening:*** i.e. hearing with interest, attention and understanding verbal and non-verbal messages that patients and families are communicating. The indicators of attention are summarised as "ROLES":
  - Relax
  - Openness
  - Lean forward
  - Eye contact
  - Sit near (comfortably near).
- ***Check understanding*** through paraphrasing and summarising the patient's story, and identifying and reflecting the person's feelings and emotions from their story.
- ***Ask questions:*** focus on questions that are purposeful to the patient and the care provider. They should aim to:
  - Get information
  - Assess knowledge
  - Direct and focus decisions
  - Get a deeper understanding of the person's problems
  - Prioritise issues
  - Set the pace of the dialogue with the person seeking assistance
  - Show that the care provider is trying to understand the person and the problem better.
- Use mainly ***open-ended questions***, i.e. those that are thought provoking, and invite the person to talk and explain a situation and offer a variety of responses – for example, "What makes you feel bad?", "How did you feel when you were diagnosed with cancer?" "What worries you most?"
- You can use some ***closed-ended questions*** if necessary. These are brief and restricting and are used to obtain facts and not knowledge of feelings – for instance, "Does this part of your body hurt?"
- Avoid ***leading questions*** – these suggest a preferred answer or desired response, for example "I know you must be feeling a lot of pain – isn't that so?"

- When answering questions:
  - Understand that behind every question is a story; therefore be honest and give accurate answers.
  - Give correct information.
  - Provide clear and simple information.
  - Check for understanding or misunderstanding.
  - Respect and reinforce important information.
- Use positive attitudes:
  - Non-judgmental: treat people as they are, with respect and dignity and avoid condemning or criticising them.
  - Confidential: do not reveal any information obtained from the patient unless consent is given. Every patient has a right to confidentiality and should feel secure as they communicate.
  - Empathetic: put yourself 'in the patient's shoes' by understanding and accepting their situation.
  - Caring: give attention or be concerned about someone else's well-being. We show care by being approachable and welcoming, by showing interest, etc. This entails making the patient feel at home and the care professional responding with interest to what they are saying.

C. Patient education

- Explaining to the patient about the cause of their pain and possible management will help to:
  - Build their confidence
  - Gain realistic expectations
  - Build trust and relationship
  - Aid adherence to medication
  - Reduce stress and anxiety.
- Fear and anxiety exacerbate pain.
- Explain to the patient what is happening – involving and informing them helps to ease tension and thereby to reduce anxiety and pain.
- It is important that, when giving medication to manage pain, the health worker explains clearly to the patient how and when to take their medication.

This should include:

- Name and formulation of the medicine
- Why they need to take it
- Dose to be taken and, if a liquid, how to draw up the correct dose
- At what times to take it and whether they need to take it with food etc.
- Possible side effects of the medicines
- How to store the medicine
- When and how to get more medicine
- Who to contact if they are worried, experiencing side effects or their pain is not controlled.

D. Spiritual and cultural care

- An individual's spirituality is shaped by the culture in which they live.
- Spirituality is also shaped by the individual's journey – e.g. being faced with a life-threatening illness.
- Patients may go through a period of doubt, conflict and confusion – all of which are natural in the face of life-threatening illness and through which they need to be supported.
- In Africa, spirituality has a practical, social and material impact on people's daily lives – we cannot address the needs of the patient without addressing their spiritual needs.
- Most health professionals will provide some spiritual support – for instance:
    - Listening to their fears and concerns
    - 'Being with them'
    - Praying with them, as appropriate and as requested.
- Other more specialist support may be needed at times, for example:
    - Specific rituals relating to their religion
    - In-depth spiritual counselling.
- Support may need to be given to the patient in different ways – e.g. if the patient has important things to complete, or if experiencing anticipatory grief or anxiety.

E. Be aware …

- Effective psychological and spiritual care takes time.
- Sometimes people in pain may need pharmacological treatment for their anxiety or depression, alongside psychological counselling and support.
- Do not replace pharmacological management with these therapies but use them in an integrated manner to manage pain effectively.
- It is not always possible to 'make things better' but as a health worker the important thing is to be there with the patient and support them in their spiritual journey.

- When communicating with children, use language and media that children understand according to their age – e.g. drawing, pictures, music, dance and drama, stories etc.
- Explain to a child in an age-appropriate manner.

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CHAPTER 7:
SPECIAL CONSIDERATIONS FOR PEOPLE WITH HIV/AIDS, THE ELDERLY, AND THOSE AT THE END-OF-LIFE

There is nothing I do, because I cannot walk or even crawl. I stay here from morning to day break, I just get my rosary and pray … My biggest challenge is pain – I have a burning pain in the legs. It's eating me up.

(An elderly gentleman in Kenya)

Every child should expect individualised, culturally and age appropriate palliative care as defined by the World Health Organization (WHO). The specific needs of adolescents and young people shall be addressed and planned for.

(ICPCN Charter, 2008)

A. Principles

- The basic principles of pain control are the same for everyone.
- The best approach for treating pain in HIV and AIDS is multimodal.
- There are some unique features about the very elderly that need to be considered.
- For the elderly, the motto is 'start low, go slow' in the use of analgesics.
- Control of pain and other symptoms is paramount in end-of-life care.

B. Specific considerations for pain management in people with HIV/AIDS

- Pain in HIV is highly prevalent, has various syndromal presentations, can result from two or three sources at a time and has the potential of being poorly managed.
- The pain might be directly related to HIV infection, immunosuppression or HIV therapy.
- In South Africa the prevalence of neuropathic pain in AIDS patients was 62% prior to antiretroviral therapy, with men more likely to experience pain than women.
- The most common syndromes reported in HIV-positive adults (see Table 5):
    - Painful peripheral neuropathy
    - Pain caused by extensive Kaposi's sarcoma
    - Headache
    - Oral and pharyngeal pain
    - Abdominal pain
    - Chest pain
    - Arthralgias and myalgias
    - Painful dermatological conditions.

Table 5: Common sources of pain in HIV and AIDS patients

Cutaneous/ Oral	Visceral	Somatic	Neurological/ Headache
• Kaposi's Sarcoma • Oral cavity pain • Herpes zoster • Oral/ oesophageal candidiasis	• Tumours • Gastritis • Pancreatitis • Infection • Biliary tract disorders	• Rheumato-logical disease • Back pain • Myopathies	• HIV-related headaches: encephalitis, meningitis etc. • HIV-unrelated headache: tension, migraine etc. • Iatrogenic (AZT) • Peripheral neuropathy • Herpes neuritis • Neuropathies associated with DDI, D4T toxicities • Alcohol, nutritional deficiencies *Modified from Carr*

- Pharmacological pain management should be as per the WHO analgesic ladder, as discussed in Chapter 4.
- NSAIDs, adjuvants e.g. tricyclic antidepressants, anticonvulsants and nonpharmacological interventions are important in the control of pain in HIV/AIDS. Use NSAIDs with caution in patients with low platelets and those with history of gastrointestinal disease such as peptic ulcer disease.
- Many of the ARVs, especially the protease inhibitors, cause abdominal discomfort, nausea and vomiting.
- Headache and peripheral neuropathies are also common side effects of ART.
- Some antiretroviral medicines interact with analgesics, and so caution needs to be shown when giving analgesics to patients on ART. In particular:
    - The main interactions occur with the adjuvant analgesics such as phenytoin, carbamazepine, dexamethasone and amitriptyline.
    - Possible interactions are set out in Appendix 3.
- Many people with HIV and AIDS will also have cancer and so it is important to be aware of specific pain-related syndromes in both HIV and cancer as well as those related to treatment interventions (see Table 6).

Table 6: Specific pain-related syndromes in HIV and cancer

Pain type	Clinical presentation	Causes	Treatment
DISEASE RELATED – HIV AND AIDS			
Peripheral Neuropathy	Burning pain: hand and feet Pins and needles Allodynia (the experience of pain from a stimulus that would not usually cause pain in a normal individual) Pain relieved by local pressure	HIV itself (distal sensory neuropathy) Post-herpetic neuralgia; HAART: especially D4T and Efavirenz Other treatments: chemotherapy, Isoniazid, Metronidazole	Remove offending agents if possible: change from D4T to Abacavir, or from Efavirenz to Ritonovir/-Lopinavir (Kaletra). Treat Herpes Zoster early with Acyclovir to limit post-herpetic neuralgia. Use WHO analgesic ladder: NSAIDs and opioids Gabapentin (where available) in resistant cases Try topical analgesics Localized neuropathies: nerve block
Abdominal pain in HIV	Abdominal pain Can present as acute or chronic pain	TB abdomen MAC Pancreatitis Peptic ulcer disease (PUD) and gastro-oesophageal reflux disease (GORD) Gall bladder and biliary tract disease Malabsorption syndromes Drug side effects; Neuropathic abdominal pain (diagnosis of exclusion)	Diagnose and treat underlying cause if possible Start HAART if indicated Treat pain according to WHO analgesic ladder Beware of ileus/constipation caused by opioids: can make pain worse Remember morphine causes contraction of sphincter of Oddi, so Pethadine is a better choice in pancreatitis For MAC Immune Reconstitution Inflammatory Syndrome (IRIS), try low dose steroids Beware NSAIDs and gastritis
Muscle spasm in HIV	Muscle spasm	Caused by HIV itself in the form of HIV encephalopathy with increased tone Secondary to cerebral insults from bacterial or tuberculous meningitis	HAART Levodopa (extrapyramidal dysfunction) Analgesics (level two: non-opioid + weak opioid) NSAIDs may help for musculo-skeletal pain Baclofen (for muscle spasm, can cause seizures) Adjuvants, especially Rivotril

Pain type	Clinical presentation	Causes	Treatment
Raised Intracranial pressure	Headache Focal neurological deficits	Cryptococcal meningitis Toxoplasmosis	Treat pain according to WHO analgesic ladder Morphine and Pethadine are contraindicated for raised intracranial pressure
DISEASE RELATED – CANCER			
Bone pain	Aching to sharp severe pain generally more pronounced with movement Point tenderness common	Infiltration of bone Skeletal metastases - irritation and stretching of pain receptors in the periosteum and endosteum Prostaglandins released from bone destruction; Infiltration of nerves (in Haversian canals) neuropathic component	NSAIDs Corticosteroids Opioids (initially) Radiation Adjuvants (Carbamazepine) Bisphosphonates
Neuropathic pain	Abnormal or unpleasant sensations, generally described as tingling, burning, or stabbing Often a delay in onset Brief, shooting pain Increased intensity of pain with receptive stimuli (allodynia)	Nerve injury caused by tumour infiltration; can also be caused by injury from treatment (e.g. vincristine toxicity) Infiltration or compression of peripheral nerves Surgical interruption of nerves (phantom post-amputation pain)	Opioids (initially) Adjuvants (Amitryptaline or Carbamazepine) Gabapantin Nerve blocks for local neuropathies secondary to tumour invasion Radiotherapy
Visceral pain Soft-tissue tumours of the bowel or retroperitoneum	Poorly localised Varies in intensity Pressure, deep or aching	Obstruction - bowel, urinary tract, biliary tract Mucosal ulceration Metabolic alteration Nociceptor activation, generally from distention or inflammation of visceral organs	Give opioids and non-opioids Avoid morphine in bowel obstruction and biliary colic Adjuvants may also be indicated

Pain type	Clinical presentation	Causes	Treatment
TREATMENT-RELATED PROBLEMS WITH BOTH DISEASES			
Mucositis	Difficulty swallowing, pain from lesions in the oropharynx. May extend throughout the entire GI tract	Direct side effects of treatment for cancer Chemotherapy Radiation Surgery	Can be caused by candidiasis, herpes or mucositis Treat the underlying cause. Ensure adequate oral intake Give regular paracetamol 4–6hrly before feeds Use mouthwashes as appropriate Use to gargle with and spit out
Infection	Infection may be localised pain from a focused infection or be generalised (especially neutropaenic sepsis)		Treat the underlying infection
Post-LP headaches	Severe headache following lumbar puncture		Bed rest, simple analgesics, adequate hydration. May require epidural blood patch Caffeine may be beneficial
Radiation dermatitis	Skin inflammation causing redness and breakdown		Topical corticosteroids
Post-surgical	Pain related to tissue trauma secondary to surgery		Appropriate post-operative pain management

Peripheral Neuropathy

- It is more common in adults than children, but does occur in children and often under-diagnosed.
- When treating it, add adjuvant: Carbamazepine for young. children, Amitryptaline for older children. It is best not to use Carbamazepine and Efavirenz together, so if necessary switch Efavirenz to Kaletra.

Muscle spasm in HIV

- Children with basal ganglia disease and abnormal movements may also experience considerable pain from muscle spasm.

Treatment-related problems with HIV and AIDS and cancer

- Mucositis - Use mouthwashes as appropriate, e.g. in children 10 ml lignocaine (1%), 30ml mycostatin suspension and 15–30mg of morphine. Use to gargle with and spit out.

C. Special considerations for pain management in the elderly

- An elderly person is defined as someone with advanced biological age, and they often have multi morbidity.
- The treatment of the elderly is complicated when dementia is present.
- The percentage of people with chronic pain rises in the elderly.
- Pain in old age is often seen as 'part of life' and doctors often think that they cope better with pain than the younger generation.
- In the elderly, pain can be due to multiple causes – e.g. osteoarthritis, polyneuropathy, post-herpetic neuralgia, or cancer.
- Challenges for pain management in the elderly include:
    - Communication problems and misconception of pain
    - Compliance, as the elderly might have practical problems with taking medication – e.g. impaired vision so cant see instructions or medication properly, limited mobility or dexterity in taking medication, or memory problems

- Availability and prescription of opioids
- Co-morbidity
- Pharmacokinetic changes, causing dangerous drug interactions and unpredictable plasma levels.

- One of the major reasons for lack of adequate pain control is poor assessment, particularly in those with dementia.
- Assessment can be made:
  - Using the normal pain assessment tools as appropriate (see Chapter 2)
  - Using an observational tool that assesses pain in patients who are cognitively impaired (e.g. with dementia), such as the Pain Assessment in Advanced Dementia (PAINAD) Scale: this consist of five items assessed using a three-point scale giving an overall score ranging from 0 (meaning no pain) to 10 (meaning severe pain) – see layout below.

Table 7. Pain Assessment in Advanced Dementia (PAINAD) Scale

Items	0	1	2	Score
Breathing independent of vocalization	Normal	Occasional labored breathing. Short period of hyperventilation	Noisy labored breathing. Long periods of hyperventilation. Cheyne–Stokes respiration	
Negative vocalization	None	Occasional moan or groan. Low level speech with a negative of disapproving quality	Repeated troubled calling out. Loud moaning or groaning. Crying	
Facial expression	Smiling or inexpressive	Sad. Frightened. Frown	Facial grimacing	
Body language	Relaxed	Tense. Distressed pacing. Fidgeting	Rigid. Fists clenched. Knees pulled up. Pulling or pushing away. Striking out.	
Consolability	No need to console	Distracted or reassured by voice or touch	Unable to console, distract or reassure.	
			Total:	

Reprinted from Warden et al. (2003), 'Development and Psychometric Evaluation of the Pain Assessment in Advanced Dementia (PAINAD) Scale' in Journal of the American Medical Directors Association (Jan–Feb 2003); with permission from Elsevier.

- Tips for pain management in the elderly:
  - Include relatives in the process.
  - Provide written information as appropriate and in clear writing, enlarged for those with visual impairment.
- Anticipate pain and treat accordingly.
- Use reassurance.
- Titrate doses individually, starting with very low initial doses (e.g. 2.5mg oral morphine 4hrly) – 'start low and go slow'.
  - Use co-analgesics carefully to avoid drug interactions and unwanted side effects.

D. Special considerations for pain management at the end-of-life

- As a disease advances so that the patient moves towards the end of life, there may be an escalation in pain and other symptoms requiring ongoing increases and adjustments to be made in drug therapies.
- If a patient has received good palliative care, then their pain should be controlled before they enter the terminal stage of the illness; however, this will often not be the case.
- The pain assessment and management measures addressed in earlier chapters are still appropriate for the terminal phase of an illness, although several alternative methods of administering analgesics may be required as a result of decreased oral intake and consciousness.
- Alternative methods of providing analgesia include:
  - Rectally
  - Sublingual or bucally
  - Transdermally via pain patches such as fentanyl
  - Subcutaneously – can be done at home
  - Via a nasogastric or gastrostomy tube
  - Intravenously (in hospital).

Rectal analgesia

- Morphine suppositories are sometimes available.
- Long-acting morphine such as MST 12-hourly can be used by the rectal route.

Sublingual or buccal analgesia

- Morphine solution is absorbed from the buccal mucosa – however as absorption is variable, a larger dose may be needed.
- Such analgesia can therefore be given in moribund patients.

Subcutaneous analgesia

- The subcutaneous route is useful if the patient is unable to ingest medication.
- Intermittent dosing via a subcutaneous needle (butterfly) can be given such as 4-hourly morphine.
- This method of applying analgesia is often as effective as infusions and more accessible and affordable in a resource-limited setting.
- Syringe drivers (or syringe pumps), when available, can be used to administer analgesics and other symptom-control drugs subcutaneously in a safe and relatively painless way. This method is often used in a hospice or home care setting. A syringe driver is a small infusion pump used to gradually administer small amounts of medication to a patient. In palliative care, syringe drivers are used to continuously administer analgesics, antiemetics and other drugs.
- There are different types of syringe drivers available – the most frequently used is the Graseby MS26 infusion pump, which delivers a constant amount of analgesia through a butterfly needle inserted into the subcutaneous space over a 24-hour period.
- To deliver analgesia via a syringe driver, you need to:
    - Convert the dose of morphine from the oral dose to a subcutaneous dose – this is done by adding up the total oral dose over 24 hours and dividing it by 2. For instance, 10mg 4-hourly = 60mg/24hrs orally = 30mg/24 hours parenterally.

  - Dilute this amount of parenteral morphine in a luer-lok syringe with normal saline/ sterile water and fill up the syringe to a fluid length of 48mm (around 8–9mls). (Note: normal saline should not be used with cyclizine as it causes crystallisation.)
  - If a Graseby MS26 syringe driver is used, then set it at a rate of 2mm/hr in order to provide 24 hours of continuous morphine.
  - Insert a butterfly needle under the skin over the abdomen, upper arm or thigh.
- Other drugs can also be given via the syringe driver, such as anti-emetics (e.g. cyclizine), metoclopramide, haloperidol, hyoscine or midazolam.
- Care needs to be taken to ensure that, if more than one drug is given via the syringe driver, the drugs can be mixed safely. Note, for example, that dexamethasone should not be mixed with other drugs as then it will precipitate out.
- Challenges to the subcutaneous route include the following:
  - In some places especially in sub-Saharan Africa this route is not a very common practice of delivering pain medicines.You should involve the patient and their family – there is often disquiet about using syringe drivers.
  - Which machine to use is often a challenge, taking into account possibly conflicting characteristics of simplicity, convenience, availability and cost. The 'Springfusor' may be used instead of the Grassby pump as it uses a spring so does not need batteries, and it is simpler and cheaper.
  - Some drugs are too much of an irritant to be given subcutaneously – e.g. diazepam, chlorpromazine and prochlorperazine.
  - Drugs need to be changed every 24 hours and the needle site checked so that the patient needs to be seen by a health professional every 24 hours, which may not be possible in some settings.

E. Be Aware …

- Pain in HIV/AIDS is highly prevalent but unfortunately undertreated;
- Herpes zoster may occur early in HIV disease and may be severe with persisting post-herpetic neuralgia.
- The biggest challenge in managing pain in HIV and AIDS is access to appropriate medications such as oral morphine.
- Stigma associated with HIV disease can cause stress and anxiety and thus impact on pain sensation.
- There is evidence to show that the elderly do not receive adequate pain relief.
- Pain is often undiagnosed and undertreated in the elderly – always ask an elderly patient whether they are in pain.
- End-of-life decisions should respect the wishes of patients.

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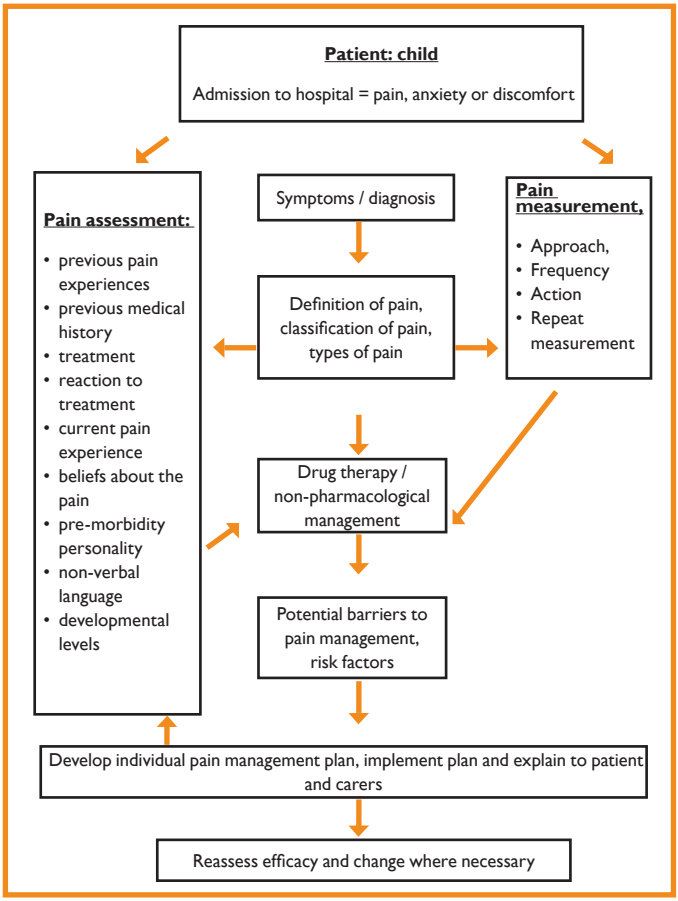
APPENDICES

Appendix 1: The three pillars of pain treatment: management, assessment and measurement



Appendix 2: Possible interactions between ARVs and medicines used in the management of pain

ART	Analgesic	Effect	Time course	Severity	Comments
Zidovudine (AZT)	Paracetamol	May rarely result in granulocytopenia and hepatotoxicity	Delayed	Minor	Intermittent use of paracetamol is considered safe. Adverse effects not consistently reported.
Nevirapine (NVP)	Phenytoin and carbamazepine	May decrease serum levels of NVP and anticonvulsants	Delayed	Moderate	Consider alternative anticonvulsant as an adjuvant analgesic.
Efavirenz (EFV)	Phenytoin and carbamazepine	May decrease serum levels of EFV and anticonvulsants	Delayed	Moderate	Consider alternative anticonvulsant as an adjuvant analgesic.
Indinavir (IDV)	Phenytoin and carbamazepine	May decrease serum levels of IDV; IDV may increase serum levels of anticonvulsants	Delayed	Moderate	Consider alternative anticonvulsant as an adjuvant analgesic.
Saquinavir (SQV)	Dexamethasone	May decrease serum levels of SQV	Delayed	Moderate	Clinical significance unknown.
	Phenytoin and carbamazepine	May decrease serum levels of SQV	Delayed	Moderate	Consider alternative anticonvulsant as an adjuvant analgesic.
	Amitriptyline	May increase serum levels of tricyclics	Immediate	Minor	Monitor closely and adjust medication as needed.

ART	Analgesic	Effect	Time course	Severity	Comments
Ritonavir (RTV)	Benzodiazepines	Prolonged sedation due to accumulation of benzodiazepines	Delayed	Major	Monitor closely and adjust medication as needed.
	Phenytoin and carbamazepine	May decrease serum levels of RTV. RTV may increase serum levels of anticonvulsants	Delayed	Moderate	Consider alternative anticonvulsant as an adjuvant analgesic.
	Antidepressants	Increased serum levels of antidepressants	Immediate	Major	Monitor closely and adjust dose or changed medication as needed.
Nelfinavir (NFV)	Benzodiazepines	Prolonged sedation due to accumulation of benzodiazepines	Delayed	Major	Monitor closely and adjust medication as needed.
	Phenytoin and carbamazepine	May decrease serum levels of NFV. NFV may increase serum levels of anticonvulsants	Delayed	Moderate	Consider alternative anticonvulsant as an adjuvant analgesic.
Amprenavir (APV)	Midazolam	Prolonged sedation	Immediate	Major	Monitor closely and adjust medication as needed.
	Dexamethasone	May decrease APV	Delayed	Moderate	Use with caution.
	Amitriptyline	May increase serum levels of tricyclics	Immediate	Moderate	Monitor closely and adjust medication as needed.
	Phenytoin and carbamazepine	May significantly decrease serum levels of APV.	Delayed	Moderate	Consider alternative anticonvulsant as an adjuvant analgesic.

ART	Analgesic	Effect	Time course	Severity	Comments
Lopinavir/r (LPV/r)	Benzodiazepines	Prolonged sedation due to accumulation of benzodiazepines	Delayed	Major	Monitor closely and adjust medication as needed.
	Antidepressants	Increased serum levels of antidepressants	Immediate	Moderate	May increase toxicities.
	Phenytoin (also carbamazepine)	May significantly decrease serum levels of LPV/r.	Delayed	Major	Consider alternative anticonvulsant as an adjuvant analgesic.
Atazanavir (ATV)	Benzodiazepines	Prolonged sedation due to accumulation of benzodiazepines	Delayed	Major	Monitor closely and adjust medication as needed.
	Phenytoin and carbamazepine	May decrease serum levels of ATV. ATV may increase serum levels of anticonvulsants	Delayed	Moderate	Consider alternative anticonvulsant as an adjuvant analgesic.

Adapted from the Clinical Guide to supportive and palliative care for HIV/AIDS in sub-Saharan Africa (APCA, 2006)

Appendix 3: List of medicines used in the pocketguide (excluding ARVs)

Medicine
Amitriptyline
Buprenorphine
Carbamazepine
Chlorphenamine (Chlorpheniramine)
Chlorpromazine
Clonazepam
Codeine phosphate
Cyclizine
Dexamethasone
Diazepam
Diclofenac
fentanyl (Durogesic)
Gabapentin
Haloperidol
Hydromorphone
Hyoscine butylbromide (Buscopan / Scopolamine)
Ibuprofen
Methadone
Metoclopramide
Midazolam
Morphine
Naloxone
Oxycodone
Pamidronate
Paracetamol (Acetaminophen)
Pethidine (Meperidine)
Phenytoin
Prochlorperazine
Ranitidine
Sodium valporate
Tramadol

LIST OF ACRONYMS

ABC	Abacavir
ACMP	Access to Controlled Medications Programme
AIDS	Acquired Immune Deficiency Syndrome
AIDSTAR	AIDS Support and Technical Resources
APCA	African Palliative Care Association
APV	Amprenavir
ART	antiretroviral therapy
ATV	Atazanavir
AZT	Zidovudine
CD4	Cluster of Differentiation 4
COPD	chronic obstructive pulmonary disease
CPCNO	clinical palliative care nursing officer
D4T	tavudine
DDI	Didanosine
EFV	Efavirenz
FLACC	Faces, Legs, Activity, Cry, Consolability [Scale]
GI	gastro-Intestinal
GORD	gastro-oesophageal reflux disease
HAU	Hospice Africa Uganda
HIV	human immunodeficiency virus
hrs	hours
hrly	hourly
IAHPC	International Association of Hospice and Palliative Care
IASP	International Association for the Study of Pain
ICPCN	International Children's Palliative Care Network
IDV	Indinavir
IM	intramuscular
INCB	International Narcotics Control Board
INCTR	International Network for Cancer Treatment and Research
INH	Isoniazid
IPPF	International Pain Policy Fellowship
IRIS	Immune Reconstitution Inflammatory Syndrome
IQC	Indefinite quantity contract
IV (or iv)	intravenously
kg	kilogram
LP	lumbar puncture
LPV/r	Lopinavir/r

MAC	Mycobacterium Avium Complex
max	maximum
mcg	microgram
mg	milligram
MoH	Ministry of Health
MST	morphine sulphate tablets
NFV	Nelfinavir
NIPS	Neonatal Infant Pain Scale
NSAID	non-steroidal anti-inflammatory drug
NVP	Nevirapine
OI	opportunistic infection
PAINAD	Pain Assessment in Advanced Dementia
PCCO	Palliative Care Clinical Officer
po	by mouth, orally
pr	rectally
POS	Palliative Outcome Scale
PUD	peptic ulcer disease
RTV	Ritonavir
SC (or sc)	subcutaneous
SQV	Saquinavir
TVP	Touch Visual Pain [Scale]
UN	United Nations
UNAIDS	Joint UN Programme for HIV/AIDS
USAID	United States Agency for International Development
USG	United States Government
VAS	Visual Analogue Scale
WPCA	Worldwide Palliative Care Alliance
WHO	World Health Organization

The African Palliative Care Association (APCA)

Acknowledging the genesis of modern palliative care within the United Kingdom, APCA strives to adapt it to African traditions, beliefs, cultures and settings, all of which vary between and within communities and countries on the continent. As such, in collaboration with its members and partners, APCA provides African solutions to African problems, articulating them with what is the recognized regional voice for palliative care.

APCA's vision is to ensure access to palliative care for all in need across Africa, whilst its mission is to ensure palliative care is widely understood, underpinned by evidence, and integrated into all health systems to reduce pain and suffering across Africa. APCA's broad objectives are to:

- Strengthen health systems through the development and implementation of an information strategy to enhance the understanding of palliative care among all stakeholders;
- Provide leadership and coordination of palliative care integration into health policies, education programmes and health services in Africa;
- Develop an evidence base for palliative care in Africa;
- Ensure good governance, efficient management practices and competent human resources to provide institutional sustainability;
- Position palliative care in the wider global health debate in order to access a wider array of stakeholders and to develop strategic collaborative partnerships, and;
- Diversify the financial resources base to meet APCA's current funding requirements and to ensure the organisation's future sustainability.

www.africanpalliativecare.org

AIDSTAR-One

The AIDS Support and Technical Resources (AIDSTAR) mechanism is an indefinite quantity contract (IQC) managed out of the Office of HIV and AIDS in USAID's Bureau for Global Health. AIDSTAR-One is a flexible mechanism available to US Government (USG) country teams, USAID/Washington operating units, missions and other USG agencies to access technical expertise and implementation support across a broad range of HIV- and AIDS-related technical areas. AIDSTAR-One may be used for:

- Long- or short-term technical assistance and programme implementation support in specialised HIV/AIDS technical areas, including behaviour change; clinical and community-based HIV/AIDS services; care for orphans and vulnerable children; monitoring and evaluation; and health systems strengthening specific to HIV/AIDS services
- Long- or short-term in-country support for coordination and scale-up for HIV/AIDS activities in support of US Government country strategies
- Documenting and disseminating successful innovative approaches and sustainable models; evidence-based best practices and lessons learned; and new approaches, tools and methodologies in HIV/AIDS programming.

www.aidstar-one.com

PERSONAL NOTES

Further information about the pocketguide and the African Palliative Care Association can be found at www.africanpalliativecare.org or by emailing info@africanpalliativecare.org.

Further Information about medicines used in pain management for palliative care can be found at www.palliativedrugs.com.

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