PAIN IN PAEDIATRIC PATIENTS

INTRODUCTION

Pain is not just a sensation but an emotion which has long been under-recognised and untreated in the paediatric population. In the past, it was assumed that neonates and young infants were unable to recognize pain as their nervous system was not fully developed; and hence did not suffer. However, with the advancement of scientific knowledge, we know today that even premature babies have the capacity to feel and respond to pain. Infants and young children also tend to have a more robust inflammatory response and coupled with the lack of central inhibitory influence, they are likely to experience more pain than adults do.

In view of this, paediatric pain needs to be assessed and managed appropriately. However, pain management in the paediatric population has long been recognized to be inadequate. The main reason is because paediatric patients often lack the ability to communicate the source and severity of their pain. Therefore, children are often given minimal or no analgesia for procedures that would routinely be treated aggressively in adults. In addition, one is also often faced with multiple challenges when managing pain in children due to the wide range of physiological, pharmacological, cognitive and developmental differences between the various age groups. Health care professionals need to be aware of these differences and also the limitations in any method used.

These challenges should not however dissuade us from measuring pain in the paediatric population because evidence has shown that untreated pain has a negative impact on the child. For example, painful experiences in early life can lead to lowering of pain thresholds for months after a procedure. Unrecognised acute pain can become established, severe and difficult to control (McQuay 1989; Wall 1998; Woolf & Wall, 1986). Unrelieved pain can have negative physical and psychological consequences (Taddio et al, 1997) which may lead to extended lengths of hospital stay with resultant service and cost implications.

Therefore, we hope that as pain becomes recognized as the 5th vital sign, pain recognition and management in the paediatric age group will progressively improve. Health care professionals who care for children should become more sensitive and aware of the possible existence of pain in this age group (even when the patients are unable to verbalise pain) and take efforts to institute more effective procedures and processes to minimise pain, and offer a more holistic medical management.

APPROACH TO ASSESSING PAIN IN CHILDREN

We need to be able to perform ongoing assessment of the presence and severity of pain, as well as the child's response to any treatment instituted if we wanted to treat pain effectively. There are various ways to approach a child in pain and this is a suggested approach using the acronym 'QUESTT'.

Q	**Question the child**
U	**Use pain rating scales**
E	**Evaluate behavioural and physiological changes**
S	**Secure the parents' involvement**
T	**Take the cause of pain into account**
T	**Take action and evaluate results**

1. Question the child

- Every child is different and the first step in assessing pain in children is to take a pain history. Discussions should be made directly with the child when possible but in cases where a child is not able or unwilling; an attempt should be made to obtain the caregiver's opinion.

- It is important to remember that the way in which a child expresses pain is not only affected by their chronological age or cognitive development; but also by individual differences and cultural factors.

- Also remember that children need opportunities and time to talk about their pain. This might be difficult in a busy ward and some children might not like to disturb staff and hence children should be encouraged.

- Health care professionals are advised to listen and believe a child's description of pain as it has been shown that children can accurately identify the location and severity of pain when they are encouraged to do so. (Atkinson, 1996; Carter, 1994; Craft and Denehy, 1990).

- Doctors can take a pain history by asking *"Does anything hurt"* and then using the following acronym PAIN:
    - **P** : Place or site of pain
      "Where does it hurt?"
    - **A** : Aggravating factors
      "What makes the pain worse?"
    - **I** : Intensity
      "How bad is the pain?"
    - **N** : Nature and neutralizing factors
      "What does it feel like" (a body chart might help children describe their pain)
      "What makes the pain better?"

- Some children may have difficulty communicating and this group needs particular attention. Examples of this group are preverbal children, children on ventilators or those who are cognitively impaired, psychotic or severely emotionally disturbed children, those who do not speak the same language or have significantly different family/cultural background from those of the health care provider.

2. Use pain rating scales

- Children have been shown to be able to reliably report their pain using 'Self report tools' from as young as the age of 4 years (McGrath 1996).

- However, the tool/rating scale that is used must be individualized and appropriate for the child's developmental level, personality and condition.

- It is important to remember that these tools should never be interpreted singly but used in conjunction with the child's self report, with parents' assessment as well as health professionals' assessment of a child's pain.

3. Evaluate behavioural and physiological changes

- Changes in behavioural and physiological measures have been shown to be important proxy measures for pain especially in younger children, infants and neonates who are either unable to or refuse to communicate with health care professionals.

- Behavioural measures include assessment of facial expression, crying, body posture, response to questions, activity and appearance. Changes in behaviour may indicate changes in pain intensity. Beware that some children might not exhibit pain by crying but rather by being unduly quiet or being restless.

- Physiological changes are also thought to be associated with pain and therefore suggested as indicators of pain. Examples of physiological measures include heart rate, respiratory rate, blood pressure and presence of palmar sweating and oxygen saturation. However note that these physiological changes should not be used as an isolated assessment of children's pain but rather as part of a more comprehensive approach.

4. Secure the parents' involvement

- Parents should be involved in pain management of their child.

- Parents can often accurately judge their children's pain and thus their involvement can lead to early recognition and more accurate assessment. However, parents' assessment should not override the child's self report.

- Although it is true that children may verbalise or display more distress in the presence of their parents, there is evidence (Craft 1990) that children find their parents' presence , particularly the main carer a helpful contribution to pain management (Thyer 1992)

- Similarly, one study has shown that if parents are kept well informed and assist in the management, children suffer less pain. (Kristensson-Hallstrom, 1997)

5. Take the cause of pain into account

- It is important to search for any possible simple reversible causes of pain before starting any treatment for e.g. a tissued iv line whereby simple removal may alleviate the pain. Another example is a post op child with abdominal pain might not actually be having pain from the wound but rather discomfort from a distended bladder due to urinary retention.

- Also consider if anxiety is the source of the complaint e.g. anxiety being in a new environment or separation anxiety when parents leave the child in the hospital whilst they go to work.

6. Take action and evaluate the results

- Do not ignore any complaints and every complaint should be assessed. If the child has pain, discuss with the child/caregiver if any intervention is required.
  For e.g. *Do you want me to do something to help?*
  Do you think we need to do something to relieve the pain? (parents)

- Interventions do not necessarily mean analgesics as sometimes simple measures like massaging or touching might be adequate for mild pain. On other occasions, just simple reassurance that the pain is accounted for and does not signify anything else serious might be adequate.

- After an intervention, always reassess the child to check the response.

WHEN SHOULD PAIN BE ASSESSED?

It is recommended that pain should be assessed under the following situations:

1. At regular intervals – as the 5th vital sign
   - Done when undertaking other routine assessments (other vital signs like BP, heart rate, respiratory rate and temperature). This is to avoid unnecessary distress or disturbance to the child.

2. At other times apart from scheduled observations if:
   - Unexpected intense pain occurs, especially if associated with altered vital signs
   - When indicators of pain are present in an otherwise previously pain-free child
   - After procedures

WHO SHOULD BE ASSESSED?

Pain should be assessed in ALL paediatric patients in the following groups:

1. All inpatients both medical and surgical wards (including various surgical disciplines like orthopedics, ophthalmology etc)

2. All daycare patients

* Assessments in the neonatal age group will be commenced at a later date.

TOOLS FOR ASSESSING PAIN IN CHILDREN

- There are various tools/pain rating scales for children. A tool which is selected to assess pain in children must be appropriate not only for the chronological age but also developmental age.

- As pain is a subjective experience, individual self report is often favoured. Self report tools are appropriate for most children aged 4 years and older and provide the most accurate measure of the child's pain.

- It is important to be sure that children, especially those between the ages of 3 to 7 years are competent to provide all the information regarding pain.

- Children over the age of 7 or 8 years who understand the concept of order and number, can use a numerical rating scale.

- When communication is difficult, behavioural observation can be utilized but health professionals must be careful when interpreting pain behaviour. This is because pain expression can be affected by the physical state (e.g. cognitive impairment), emotional state (e.g. depressed), coping style as well as family and cultural expectations.

- Always ensure that enough time is provided for the children to complete their pain assessments accurately.

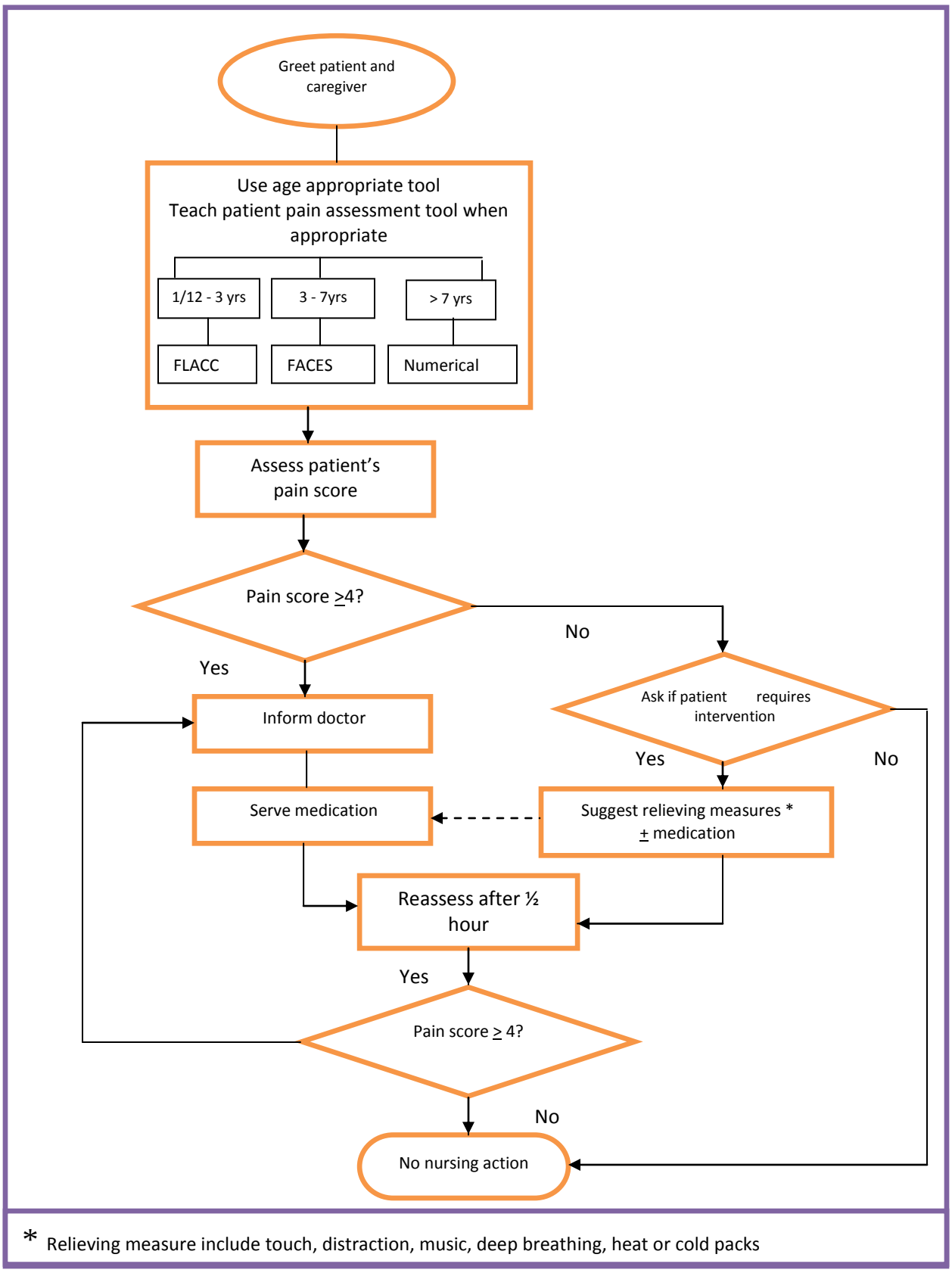
- The suggested tools to be used for the various age groups are as below :
    - **1 month – 3 years : FLACC.**
      - this is a observational behavioural assessment and can be done by observing the child for 2-5 minutes.

    - **> 3 - 7 years : Wong-Baker FACES Pain Rating Scale**
      - this is a self report tool whereby a child is asked to choose a face which best describes his pain. This is a simple and quick measure but children can sometimes get confused with happiness measure.

    - **> 7 years : numerical scale**
      - this is a self report tool whereby the child is asked to rate his pain based on a numerical scale whereby '0' is no pain, '10' is the worst pain experience.

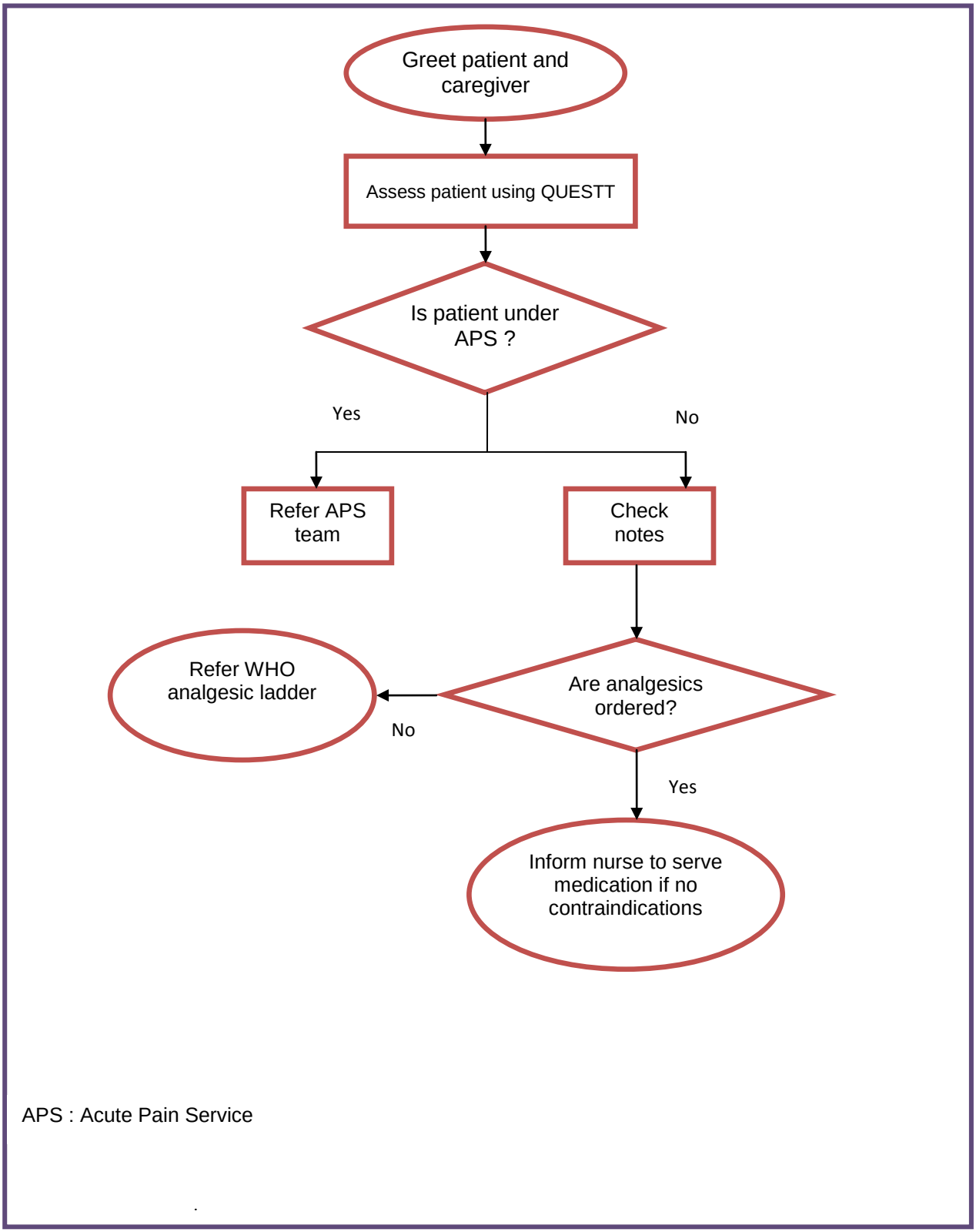
  (Refer Appendix 1,2,3,4 for pain assessment tools)

FLOWSHEET FOR INITIAL ASSESSMENT OF PAIN IN CHILDREN >1/12



* Relieving measure include touch, distraction, music, deep breathing, heat or cold packs

FLOWSHEET FOR MANAGING PAIN IN CHILDREN > 1/12



APS : Acute Pain Service

GUIDELINES IN PAEDIATRIC PAIN MANAGEMENT

As healthcare professionals looking after children, one of our main responsibilities is to eliminate or assuage pain and suffering whenever possible. It has been well documented that in this regard, a substantial percentage of children have been under treated (Schechter, Berde, Yaster 1993). One of the main reasons is that many have fears of adverse effects of analgesic medications which include respiratory depression and addiction whilst some just feel that addressing pain in children simply takes too much time and effort.

Key concepts in pain management [1]

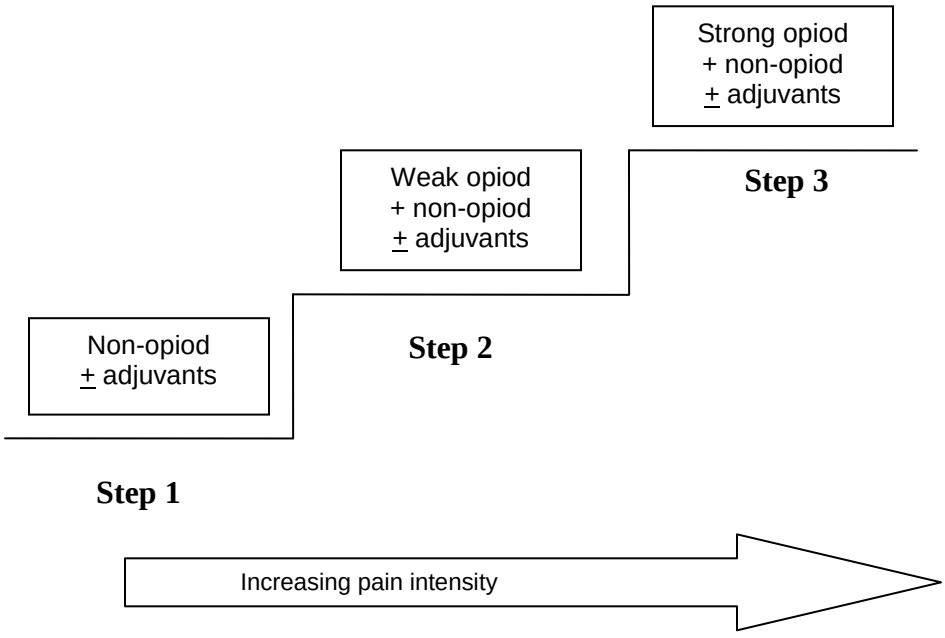
1. **"By the ladder"**
   Enabling a stepwise approach to treatment commencing with non-opiods and increasing to strong opioids (Refer WHO Analgesic ladder). The level at which a child enters the ladder is determined by the child's needs, the intensity of pain and response to previous treatment

2. **"By the clock"**
   Regular scheduling ensures a steady blood concentration, reducing the peaks and troughs of *pro re nata* (prn) dosing

3. **"By the appropriate route"**
   Use the least invasive route of administration. The oral route is convenient, non invasive and cost effective.

4. **"By the child"**
   Individualise treatment according to the child's pain and response to treatment.

WHO Analgesic Ladder [2]



METHODS OF PAIN RELIEF

1) Medications

- The non-opiod drugs like paracetamol and ibuprofen (and other NSAIDs) are more suitable for pain in musculoskeletal conditions, whereas the opiod analgesics are more suitable for moderate to severe pain, particularly of visceral origin.

- Paracetamol is the most commonly used analgesic with an excellent safety profile and lack of significant side effects. It is the mainstay for mild to moderate pain and is often combined with an opiod analgesic for more severe pain. Absorption of rectal paracetamol is slow, somewhat variable and comparatively inefficient.

- NSAIDs like Ibuprofen are indicated for mild to moderate pain. Children appear to have a lower incidence of renal and gastrointestinal side effects when compared to adults even with chronic administration.

- For a vast majority of children, opiods provide excellent analgesia with a wide margin of safety. With few exceptions, opiods should be administered to children via the oral or iv route. Intramuscular injections should be avoided unless absolutely necessary as children will deny they are in pain to avoid a shot.

Non-opiod analgesics
Paracetamol
Non steroidal anti-inflammatory drugs
Ibuprofen
Naproxen
Diclofenac
Meloxicam
Opiod analgesics
Weak opiod
Tramadol
Strong opiod
Pethidine
Morphine

(refer Appendix 5 & 6 for drug dosages)

2) Non Pharmacological interventions

a) Environmental factors

- Create a child friendly environment which ensures privacy and comfort. Avoid bright lights or loud noisy places.

b) Other methods

Distractive techniques

- Use age appropriate distraction strategies. This teaches the child to focus on something other than his pain. Children who worry too much about their pain will

often feel more pain than what is really there. Examples of distraction techniques include:

- Holding a familiar object (comforter) , such as pillow or soft cuddly toy
- Singing; concentrating on nice things; telling jokes; games and puzzles
- Blowing out air or bubbles
- Reading pop-up books
- Playing with a kaleidoscope or a 3D viewer
- Breathing out (but not hyperventilating, which may increase anxiety and induce venoconstriction)
- Watching television or a video; playing interactive computer games
- Listening to stories or music (through headphones)

Guided imagery

- Teach the child to imagine that he is in his favourite place and doing his favourite things. By imagining he is in his favourite place will make him feel safe and relaxed and his pain may be decreased.

Information

- Explain to the child what is going to happen during a procedure or surgery, this might decrease his nervousness and understand the pain that he might feel. This can decrease the fear of the unknown and pain can be decreased when the child believes that he can control and handle the pain

Music and Dance

- Listening to music and dancing can ease the child's pain and take the child's mind off his pain or illness.

Heat and cold packs

- Some types of pain are decreased by using heat whilst others might improve with cold

Massage and physical therapy

- Massage, caress or stroking a child might make them more relaxed and soothe their pain.

References:

1. Cancer pain relief and palliative care in children. WHO 1998
2. Prevention and control of pain in children. Royal college of paediatrics and child health. 1997.
3. Clinical practice guidelines. The recognition and assessment of acute pain in children. http://www.rcn.org.uk
4. Guidelines for Good Clinical Practice; Recognition and assessment of acute pain in children. RCPCH, UK.
5. Medicines for children 2003, RCPCH
6. BNF for Children 2006
7. American Medical Association , Module 6 Pain Management: Pediatric Pain Management, September 2007
8. Tanne. BMJ 327; 22 Nov 2003: 1185 . Children are often under treated for pain.
9. American Pain Society – APS: The assessment and management of acute pain in infants. http://www.ampainsoc.org
10. Non pharmacological Pain Management Therapies for Children. http://www.healthtouch.com.bin

PAIN ASSESSMENT TOOL FOR UNDER 3 YEARS AND THOSE WHO CANNOT SELF REPORT

FLACC Scale: Rating scale is to be used for children less than 3 years of age or other patients who cannot self-report

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

Each of the five categories (F)face, (L)legs, (A)activity, (C) cry and (C) consolability is scored from 0-2, resulting in total range of 0-10

TRANSLATION OF FLACC SCALE IN BAHASA MALAYSIA

This is for reference only and not to be used in pain measurement as it is not a validated version.

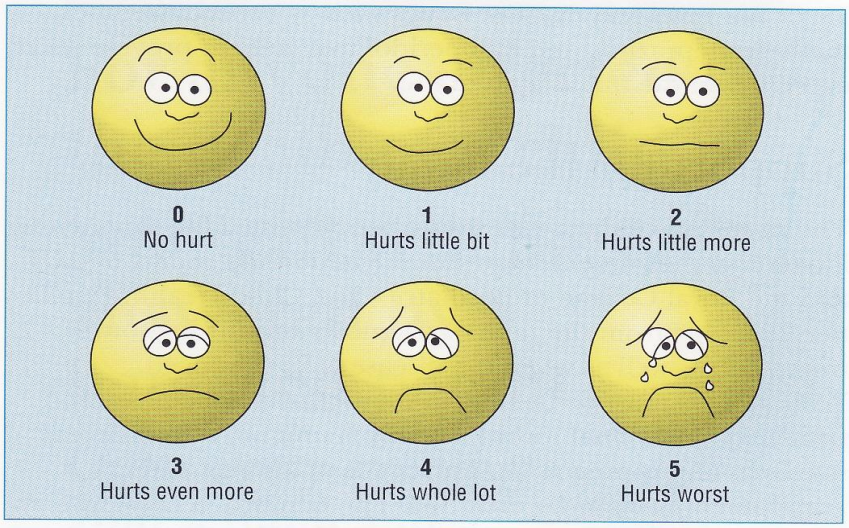
Skala FLACC : Skala permarkahan ini adalah untuk diaplikasikan terhadap kanak-kanak kurang dari 3 tahun atau pesakit lain yang tidak mampu megadu.

Kategori	**Permarkahan**		
	0	**1**	**2**
Wajah	Tiada ekspresi tertentu di wajah atau dalam keadaan tersenyum	Kadang terlihat muka berkerut, murung, tidak bermaya atau tidak bersemangat	Rahang terkancing, dagu berketar (pada kadar kerap hingga berterusan)
Kaki	Kedudukan biasa atau selesa	Keadaan tidak nyaman, resah atau tegang	Menendang – nendang atau membengkokkan kaki
Aktiviti	Berbaring tenang, berkedudukan biasa, bergerak dengan nyaman	Berguling, berganjak depan dan belakang, tegang	Meringkuk, kaku atau menggelupur
Tangis	Tidak menangis (keadaan tidur atau terjaga)	Merengek dan kadang mengeluh	Menangis berterusan, berteriak dan teresak-esak, sering mengeluh
Kebolehpujukan	Tenang	Masih dapat dipujuk dengan sesekali sentuhan, pelukan atau kata-kata sehingga mudah terganggu	Sukar dipujuk

Setiap kategori diberi markah 0-2 dengan jumlah keseluruhan 0-10

PAIN ASSESSMENT TOOL FOR AGES 3-7 YEARS

Wong-Baker FACES Pain Rating Scale



The Wong-Baker faces scale (adapted from Wong DL *et al.*, eds. *Whaley and Wong's essentials of pediatric nursing*. 5th ed. St Louis, MO: Mosby, 2001)

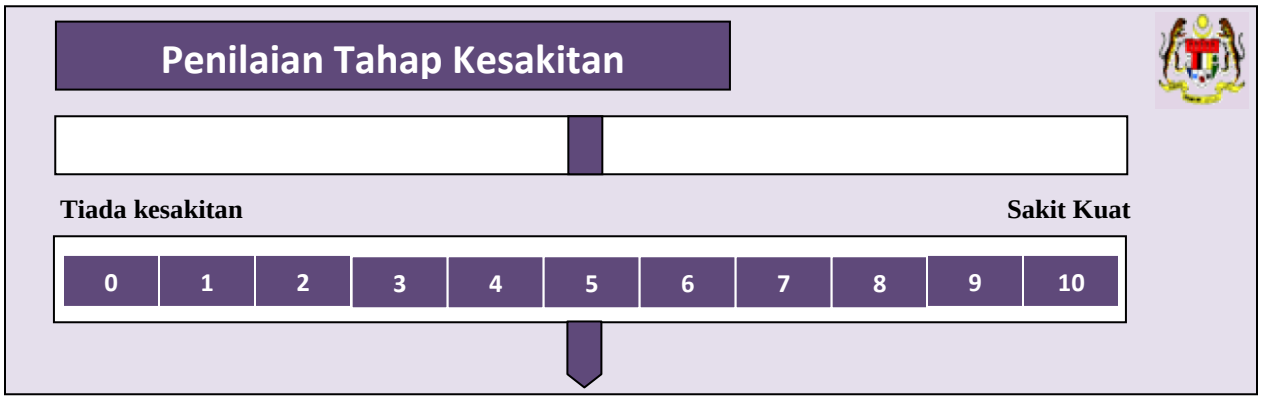
Explain to the child that each face is for a person who feels happy because he has no pain (hurt) or sad because he has some or a lot of pain.
- Face 0 is very happy because he doesn't hurt at all.
- Face 1 hurts just a little.
- Face 2 hurts a little more.
- Face 3 hurts even more.
- Face 4 hurts a whole lot.
- Face 5 hurts as much as you can imagine, although you don't have to be crying to feel this bad.

Ask your child to choose the face that best describes how he is feeling.
Mulitply the score obtained by a factor of 2 to make a total score out of 10.

Appendix 4

PAIN ASSESSMENT TOOL FOR MORE THAN 7 YEARS OF AGE

Numerical Scale



Explain to the child that he can rate the pain he is feeling on a scale from 0 to 10, '0' being no pain and '10' being the worst pain that can be imagined.

DRUG DOSAGES IN PAEDIATRIC PAIN MANAGEMENT

Drug	Route	1 month – 2 years	2- 12 years	12- 18 years	Frequency	Comments
		Dose				
Paracetamol	Oral loading	20 mg/kg	20 mg/kg	-	Single dose	
	Oral maintenance	1-3 months 20 mg/kg > 3 months 15 mg/kg	15 mg/kg	500 mg – 1 g	8 hourly 4-6 hourly	Max total dose in 24 hours < 3 mths : 60 mg/kg > 3 mths – 12 years : 90 mg/kg > 12 years : 4 grams
	Rectal loading	1-3 months 30 mg/kg > 3months 40 mg/kg	-	-		
	Rectal maintenance	20 mg /kg	20 mg/kg	500 mg- 1 gram	1-3 mths: 8 hourly > 3 mths : 4-6 hourly	Max total dose in 24 hours < 3 mths : 60 mg/kg > 3 mths – 12 years : 90 mg/kg > 12 years : 4 grams
Ibuprofen	Oral	5 mg/kg			6 -8 hourly	Max total dose 20mg/kg/day, up to 2.4g/day
Indomethacin	Oral	500 mcg – 1 mg/kg			12 hourly	Max dose 50 mg
Naproxen	Oral	5-10 mg/kg			12 hourly	Max total dose 1 g/day. In severe disease, doses > 10mg/kg should be used only for a few weeks
Meloxicam	Oral	-	-	< 50 kg : 7.5 mg >50 kg : 15 mg	24 hourly 24 hourly	Patients at increased risk should start at 7.5 mg. Terminal renal failure : 7.5 mg
Diclofenac	Oral	< 6 mths : Not recommended > 6 mths : 300mcg-1mg/kg	300mcg-1mg/kg		8 hourly	Up to a max of 150 mg/day
	Im/ iv infusion	Same as above	300mcg-1mg/kg		12-24 hourly	Up to max of 150mg/day & for max of 2 days

DRUG DOSAGES IN PAEDIATRIC PAIN MANAGEMENT

Drug	Route	1 month – 2 years	2- 12 years	12- 18 years	Frequency	Comments
		Dose				
Tramadol	Oral	-	-	50-100 mg	4 hourly	
	IV	-	-	1 mg/kg/dose	4 -6 hourly	
Pethidine	iv	500 mcg-1mg/kg		25-50 mg	Single dose	Neonates and infants < 1 year show increased susceptibility to respiratory depression
	sc/im	500 mcg-2mg/kg		25-100 mg	Single dose	<2 months : repeat every 10-12 hourly >2 months : repeat every 4-6 hourly
Morphine	Iv bolus	100-200 mcg/kg		2.5 mg-10 mg	< 6 mths: up to 4x/24 hrs > 6 mths: up to 6x/24 hrs	Give iv injection at least 5-10 minutes. Respiratory monitoring mandatory.
	Im/sc	100-200 mcg/kg	200 mcg/kg	5-20 mg		
	Iv Infusion	10-30 mcg/kg/hour <6 mths : initial rate 10 mcg/kg/hr >6 mths : initial rate 20 mcg/kg/hr			Continuous	Use iv bolus as a loading dose first
	Sc infusion	1-3 mths: 10 mcg/kg/hr >3 mths : 20 mcg/kg/hr	20 mcg/kg/hour		Continuous	Use a 24G cannula over deltoid or abdominal area. Change rate and change sites every 24-48 hours.
	Oral	< 1yr: 80 mcg/kg > 1yr: 200-400 mcg/kg	200-500 mcg/kg	10-15 mg	Up to 6x in 24 hrs	

Patient information leaflet in English

PAIN AS THE FIFTH VITAL SIGN

Welcome to Hospital_____ ! We understand that every admission to the hospital is often a traumatic experience not only for the child but also for you as parents or caregivers. For the child, it often means being in a different environment and having a whole new range of experiences. There is often a lot of anticipation and fears of possible painful experiences and the commonest include frequent procedures like blood taking and line setting, or even an operation. You might worry if your child would be able to sleep or be comfortable at all during their stay in hospital.

In the past, children especially small babies and infants were believed to be unable to feel pain. However today we recognize that this is certainly not true and babies who are even premature have been proven to have the capacity to feel pain. As such, we want to recognize any pain in your child and to help them.

In order to ensure that your child obtains the best possible pain free hospital stay, we will be 'measuring' to see if your child is suffering from any pain at regular intervals. This will be done when the nurses are taking other observations like the measuring heart rate or blood pressure. We might also need to assess pain in your child under other circumstances for example soon after an operation or if your child complains of pain. We will assess if your child is in pain using several methods depending on your child's age. We will need your help to get a response from your child and your opinion on your child's status.

After getting a pain score, we can then decide with you and/or your child whether any further interventions or medications are required to make your child more comfortable. If you have any questions or concerns about procedures or medications, please feel free to speak to any of us. Help us to make your child's stay a pleasant and pain free one.

Patient Information Leaflet in Bahasa Malaysia

KESAKITAN SEBAGAI TANDA VITAL KELIMA

Selamat datang ke Hospital _____ ! Kami memahami bahawa pengalaman tinggal di hospital mungkin merupakan satu pengalaman yang kurang menyenangkan untuk anak anda dan juga anda sekeluarga. Anak anda mungkin berasa resah-gelisah kerana dia berada di dalam satu suasana yang amat berlainan daripada apa yang dia biasa alami. Seringkali terdapat perasaan ketakutan ataupun kegelisahan kerana dia mungkin mengalami prosedur-prosedur yang boleh mendatangkan kesakitan seperti pengambilan darah mahupun memasukkan jarum ke dalam vena, ataupun mungkin satu pembedahan. Anda mungkin berasa bimbang sama ada anak anda akan dapat tidur dengan lena ataupun berasa selesa semasa dia berada di hospital.

Pada masa yang lalu, ramai pakar perubatan berpendapat bahawa kanak-kanak kecil terutama bayi tidak berupaya untuk merasa kesakitan.Walaubagaimanapun, melalui kemajuan di dalam bidang sains perubatan, kini terdapat bukti bahawa bayi termasuk yang pramatang pun boleh merasai kesakitan. Oleh yang demikian, kami ingin mengenalpasti sama ada anak anda mengalami sebarang kesakitan dan sekiranya ya, kami akan cuba menolong anak anda menangani masalah ini.

Untuk memastikan supaya anak anda sentiasa selesa dan tidak mengalami sebarang kesakitan semasa di hospital, kami akan ‘mengukur’ tahap kesakitan anak anda dari masa ke semasa. Pengukuran tahap kesakitan ini akan dilakukan pada masa-masa yang tertentu apabila jururawat mengambil tanda-tanda vital yang lain seperti tekanan darah dan tahap nadi. Kami juga mungkin perlu mengukur tahap kesakitan pada masa yang lain umpamanya selepas prosedur dijalankan, selepas pembedahan ataupun bila anak anda mengadu kesakitan. Kami akan mengukur tahap kesakitan dengan menggunakan beberapa kaedah yang berlainan yang selaras dengan umur anak anda. Bantuan anda akan diperlukan di dalam proses ini seperti menolong dalam mendapatkan respons dari anak anda ataupun memberi pendapat anda tentang tahap kesakitan anak anda.

Selepas mendapat tahap kesakitan (pain score), kami akan membuat keputusan bersama anda dan/ataupun anak anda sama ada sebarang ubat-ubatan ataupun kaedah lain yang diperlukan untuk meningkatkan keselesaan anak anda. Sekiranya anda mempunyai sebarang kemusykilan ataupun pertanyaan mengenai sebarang prosedur ataupun ubat-ubatan anak anda, sila hubungi kami. Bantulah kami untuk memastikan anak anda sentiasa selesa dan tidak mengalami sebarang kesakitan semasa di hospital

Scenarios for Paediatric Pain Management

Scenario 1

1. A 9 year old schoolboy is brought to the Accident & Emergency department at 3pm in the afternoon, having fallen in school after some rough playing with his schoolmates. He was unable move or get up after having fallen down; says he heard a crack from his right femur as he fell, and refuses to allow anyone touch his right femur, which appears swollen and tender at the lower 1/3.
   His BP is 130/90mm Hg, heart rate 110 beats/min, respiratory rate 30/min.

a) How will you assess the patient and what questions would you ask with regards to his pain?
b) What measures will you take to relieve the pain?

Scenario 2

2. A 2 year old toddler has just been admitted to your ward, with 2 days history of fever, poor appetite and reluctance to move his lower limbs especially the left. You observe he has a swelling around the left calf, which is red and tender.

a) How will you assess the toddler's pain status?
b) What measures will you take to relieve the pain?

Scenario 3

3. A 5 year old Chinese girl has been admitted into the ward earlier today for 3 day history of fever and 2 day history of abdominal pain. Since admission, she has been quiet and not crying , lying crouched in her bed.

a) How will you assess the toddler's pain status?
c) What measures will you take to relieve the pain?

2 hours later, she starts crying, is restless and uneasy, squirming and moaning with occasional fits of crying inconsolably.

c) What further measures will you take now?