Regina Qu'Appelle
HEALTH REGION

PAIN MANAGEMENT

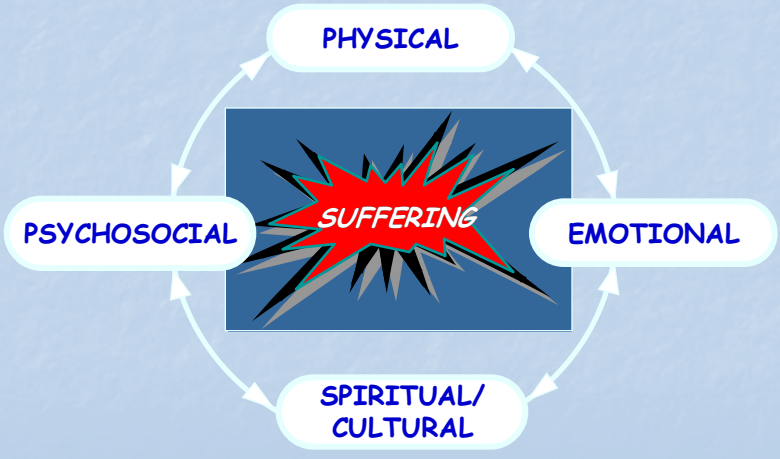
Region Orientation

October 2010

DEFINITION OF PAIN

"Pain is whatever the experiencing person says it is, existing when and where it is and not what others think it ought to be".

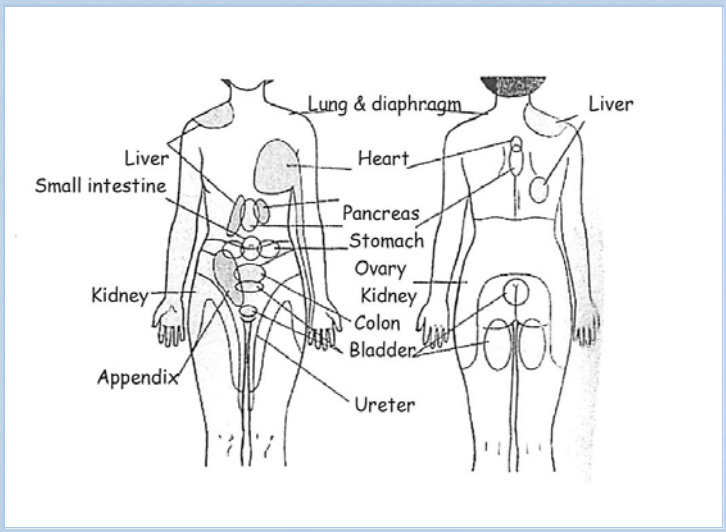
Total Pain



Types of Physical Pain

- Nociceptive Pain = Tissue Pain
  - Somatic – pain in bone, joint, muscle, skin, or connective tissue
    - Dull, aching pain that is easily localized
  - Visceral – pain from any organ
    - Referred to different distant sites from the source
- Neuropathic Pain = Nerve Pain
  - Usually sharp, burning, or shooting sensation traveling down a nerve with other symptoms such as numbness or tingling in the affected area

Sites of Referred Pain



PAIN

THE 5TH VITAL SIGN

PATIENT ASSESSMENT & TEACHING

- Pain history
- Importance of reporting pain:
  - Unrelieved pain
  - Changes in their pain
  - New sources or types of pain
  - Side effects from analgesics
- Pain relief options

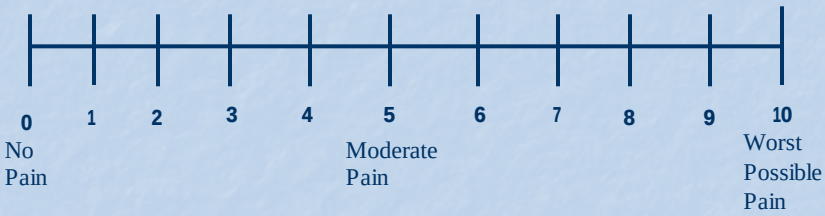
How do we assess pain?

Self Report

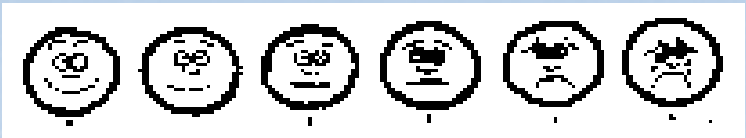
- Most effective measurement of pain
- Ask open ended questions
- Utilize pain scales

Pain Rating Scales

0 - 10 Numeric Pain Intensity Scale



Wong/Baker Faces Rating Scale



0 - "very happy because he doesn't hurt at all".
1 - "hurts just a little bit".
2 - "hurts a little more".
3 - "hurts a little more".
4 - "hurts a whole lot".
5 - "hurts as much as you can imagine, although you don't' have to be crying to feel this bad".

FLACC

FACE	0 No particular expression or smile	1 Occasional grimace/frown withdrawn, disinterest	2 Frequent to constant frown, Clenched jaw, Quivering chin
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/forth, tense	2 Arched, Rigid, OR jerking
CRY	0 No cry, (awake Or asleep)	1 Moans or whimpers occasional complaint	2 Crying steadily, screams or sobs, Frequent complaints
CONSOLABLITY	0 Content Relaxed	1 Reassured by occasional touching, hugging, or talking to distractible	2 Difficult to console or comfort

Pain Assessment in Advanced Dementia PAINAD Behaviour Scale

Items	0	1	2	Score
Breathing independent of vocalization	Normal	Occasional laboured breathing. Short period of hyperventilation	Noisy laboured breathing. Long period of hyperventilation. Cheyne-Stokes respirations.	
Negative Vocalization	None	**Occasional moan or groan. Low-level speech with a negative or 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.	

PAINAD Scale cont..

Directions:

1. Observe for 5 minutes.
2. Score each item out of 2.
3. Add total score:
   - along with physiological assessment
   - higher score indicating more severe pain
   - document, and treat appropriately
4. Observe for subtle behaviours not picked up by PAINAD; document and treat appropriately.

Why do patients under-report pain?

- Fear of needles
- Stoic attitude
- Reluctance to disturb the nurse
- Fear of addiction
- Fear it may delay discharge
- Concern about side effects
- Altered cognitive function

Perception of pain may be affected by:

- Previous pain experiences
- Anxiety/Emotional state
- Perception of illness or painful event
- Length of painful experience
- Cultural norms
- Effectiveness of pain management techniques
- Response of others (caregivers/family)
- Age/life experiences

Behavioral Responses

- Must be interpreted cautiously
- Responses may include:
  - moaning, crying
  - facial grimacing
  - splinting
  - insomnia
  - distorted posture
  - depressions/withdrawal
  - irritable, agitated

Behavioral Responses :

in dementia or cognitively-impaired patients

- Fidgeting
- Increased rest periods
- Verbally abusive
- Wandering, pacing, rocking
- Chanting
- Combativeness
  - Care activities

Physiological Response

Least reliable assessment of pain

Acute pain may cause
- Tachycardia
- Hypertension
- Diaphoresis
- Dilated pupils

Prolonged pain may cause a parasympathetic response
- Bradycardia
- Hypotension
- Constipation

Physiological Effects of Pain

Pain may cause Sympathetic stimulation (fight or flight) which may cause:

- increase in cardiac workload
- hypo motility of urethra & bladder =patient producing urine but may not be able to void
- decreased gastric motility = increased nausea & vomiting, abdominal distension
- decreased blood flow to tissues = decreased wound healing
- increased metabolism & 02 consumption
  decreased secretion of insulin

Therefore, give analgesics to decrease sympathetic stimulation

Elderly Population

The world's population aged 60 and over will more than triple in the next forty years.

World Health Association, 2010

Causes of Pain in Elderly

Arthritis	Spinal Stenosis
Osteoporosis	Stroke
Post herpetic neuralgia	Wounds/Ulcers
Fractures	Vascular Disease
Contractures	Diabetes
Angina	Cancer
Degenerative Disc Disease	

Differences in assessment and treatment

- Polypharmacy
- Age-related physical changes
- Multiple co-morbidities
- Altered pharmacodynamics and pharmacokintetics
- Adverse drug reactions manifest differently

Rule of thumb: starting narcotics in elderly populations

"Start low and go slow"

Pain at the End-of-Life

- Unable to swallow oral opioids consider switch to
  - sub-q route (morphine or hydromorphone)
    - Usually scheduled around the clock (ATC) every 4 hours
  - Rectal route
  - Buccal/Sublingual admin

Breakthrough Pain (BTP)

- Pain occurring between regular scheduled ATC medication
  - Breakthrough usually ordered q1h prn
  - 3 or more BT doses /24 hrs consider adjusting the ATC dose
  - BT dose should increase when regular ATC dose is increased

RNAO BPG Assessment & Management of Pain (2007)

Steps to Convert from Oral to sub-q Opioid

1. Calculate Total Daily Dose (TDD) of oral opioid (this includes total mgs of scheduled and prn medications)
2. Divide TDD by one-half (**for opioids sub-q dose is one-half oral dose)**
3. Divide by 6 to get q4hr dose (**intermittent sub-q dosing is usually q4 hrs ATC**)
4. Calculate Breakthrough dose (PRN dose) **(Breakthrough dose is 10% of total daily opioid dose)**

Pain at the End-of-Life

- Sub-q butterfly can also deliver medications for dyspnea, increased secretions & restlessness at the end-of-life
  - Palliative Care Symptom Management Guidelines can be accessed on the Intranet under departments - Palliative Care
- Separate sub-q line is used for each medication
  - See nursing procedure S.5 Subcuatneous Needleless Medication Administration (BD Saf-T-Intima™) & link to video for insertion

Advocate for the Patient in Complex Pain Situations when:

- Pain unresponsive to standardized treatment
- Multiple sources of pain
- Mix of neuropathic & nociceptive pain
- History of substance abuse
- Cognitive Impairment

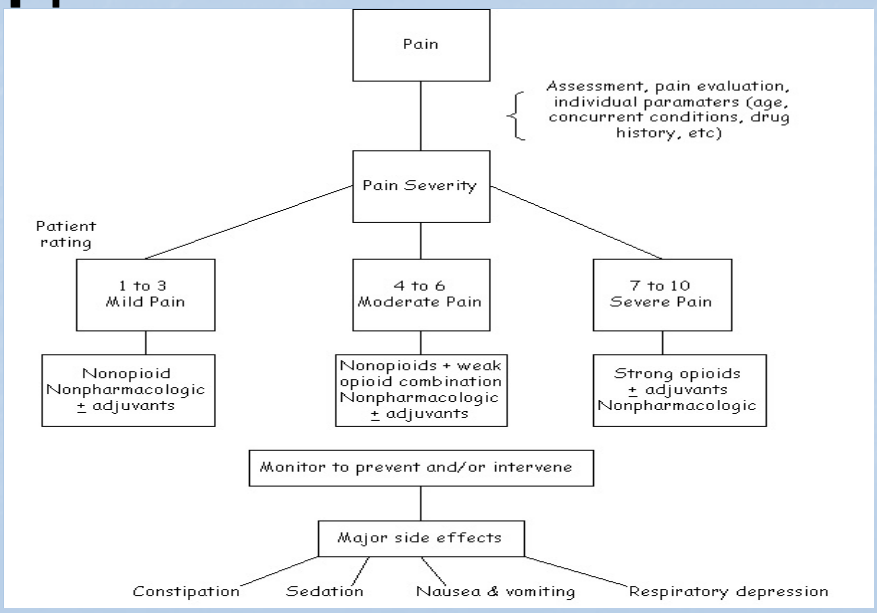
ACUTE PAIN MANAGEMENT

PHARMACOLOGICAL MANAGMENT

EFFECTIVE ANALGESIC ADMINISTRATION

- By the ladder 
- By the clock 
- By the appropriate route 

Step-wise Approach:



STEP 1 - MILD PAIN (1-3)

- Acetaminophen
- NSAIDS

Medications: Acetaminophen

- Underused in the post-op settings
- Does not have the side effects seen with NSAIDS
- Excellent for mild pain and as an adjunct with opioids
- Has a ceiling effect of 1000mg/dose
- Maximum daily dose 4 grams/day

Medications: NSAIDS

- Works well as an adjunct
- Decreases inflammatory response
  - Ibuprofen, Indomethacin, Naproxen,
  - Ketorolac (Toradol) use is restricted

STEP 2 - MODERATE PAIN (4-6)

- Codeine PO
- Combination drugs
  - Tylenol #3

Medications: Codeine

- Works well for bone pain
- 10% of population does not metabolize codeine but side effects may still be present
- High risk of constipation
- Morphine is 10x stronger than Codeine

STEP 3 - SEVERE PAIN (7-10)

- Morphine - gold standard
- Hydromorphone
- Fentanyl
- Oxycodone

Medications: Opioids

- Effective for moderate to severe pain
- Improve patient satisfaction in regards to pain relief
- Reduce spontaneous pain (rest pain) but do not control dynamic pain (pain with movement)
- Opioids should be used in combination with adjuncts

CAUTION: Some forms of opioids are available in:

- immediate release (IR)
- sustained/controlled/extended release (SR or CR or XR) which are not interchangeable
- DO NOT crush or chew long acting preparations

Medications: Morphine

- Gold standard
  - Well researched
  - No ceiling effect
  - Multi-route delivery
  - Universally recommended as a first line drug for post-op pain management

MORPHINE

Route	Maximum Analgesia	Max Resp Depression
Oral	60 min	
Rectal	20 - 60 min	
SC injection	30 - 60 min	90 min
IM injection	30-60 min	30 min
IV Syringe pump	16 - 20 min	15 -30 min

Medications:
Hydromorphone

DO NOT CONFUSE WITH MORPHINE

- Derivative of morphine
- Approximately 5 times stronger than morphine
- Fewer side effects than morphine when given long-term

Medications:
Fentanyl

- **IV form** is short acting
  - Used for procedural sedation
  - Used as anaesthetic in ICU
- **Transdermal Patch** for chronic pain
  - ARE LONG ACTING!!!
  - Fentanyl 25mcg patch ≈ 100mg of oral morphine/day
  - Patient should be given other opiods (IV or PO) before patch is considered
  - Discard in sharps container with witness and co-sign on narcotic sheet

Medications: Oxycodone

DO NOT CONFUSE WITH CODEINE!

- Approximately 2 times stronger than morphine

Anticipate & Prevent Common Side Effects of Opioids

- Nausea
- Vomiting
- Drowsiness
- Constipation
- Affects sleep patterns

Side Effects of Opioids

Sedation

- Pain is an antidote to sedation & respiratory depression
- Level of consciousness scores to be done - see RQHR pain management flow sheet
- Over sedation corrected by decrease in dose
- Usually see sedation prior to resp. depression

Side Effects of Opioids

Respiratory Depression

- Breathing can slow or stop in patients using opioids:
  - if they are not in pain
  - in doses larger than necessary
  - with renal impairment
  - with rapid dose escalation
- Occurs with IM or IV but timing is different
- Usually preceded by sedation
- Children < 12 months should have SaO_2 monitoring continuously

SCHEDULING MEDICATIONS

- Use a **preventative** approach
  - Established pain is more difficult to treat
- **Assess** the level of pain
  - Give analgesics on a scheduled basis for the first 24 - 48 hours post procedure, then prn
- **Individualize** treatment
  - Do what works for that patient and for that pain situation

Routes of Administration

- Oral
- Rectal
- Intramuscular (IM)
- Intermittent or Continuous IV
- Patient Controlled Analgesia (PCA)
- Subcutaneous
- Transdermal
- Epidural/Spinal
- Regional Anaesthesia

Avoid IM Injections

- Painful and may deter patients from reporting pain
- Varying and delayed absorption so not necessarily safer, timing of adverse effects unpredictable
- Patients have to be physically moved to give IM when they have the most pain
- Fear of Needles
- Blood/body fluid risk

What other medications have you seen used for pain management?

Medications: Gabapentin

- Can be used as an adjuvant for the treatment of neuropathic pain
- Anti-epileptic medication … mechanism of action for pain management not understood

Medications: Glucocorticoids

- Reduces the inflammatory response
- Pre-op Decadron has been shown to have analgesic properties in addition to reducing post-op nausea and vomiting

Non-pharmacological Interventions for Pain

Physical	Psychological	Spiritual
Therapeutic Touch	Life review	Pastoral care Counseling
Cold/Ice	**Relaxation**	Prayer
Heat	**Imagery**	Reflection
Massage	Biofeedback	Faith reaffirmation
Exercise	Distraction	Meditation
Physical Therapy	**Music**	Life Review
TENS	Hypnosis	Spiritual readings
Acupuncture	Education	

Charting Descriptors of Pain "OPQRSTA"

Onset
Perception
Quality
Radiating
Severity
Timing
Aggravates/**A**lleviates

Charting Pain in the RQHR

- Any time a prn medication is given, a written note is mandatory
- For IM, parenteral, PCA or epidural administration of narcotics, documentation on the Pain Management Flow Sheet is mandatory

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Pain Management

Level of Arousal Scale

1	2	3	4	5	N
Alert Awake	Drowsy Awake	Arouses to verbal stimulation	Arouses to painful stimulation	No response	Normal sleep; easy to arouse

Baseline Vital Signs BP _____ P _____ R _____ SaO_2 _____

Pain Scale __________ Key: Y - Yes N - No

Motor Response (legs): 0 - No weakness 1 - Flex knees, but weak 2 - Flex ankles, cannot flex knees 3 - Cannot move ankles or knees

Sensory Level: F - Foot A - Ankle K - Knee T - Thigh U - Umbilicus X - Xiphoid N - Nipple Line

□ **PCA**

□ Morphine 1mg/ml □ Other _______________
Loading Dose __________ at __________ hours
PCA Dose (mg) __________ Continuous Rate (mg/h) __________
Lockout Interval (min) __________ Maximum 4 Hour Limit (mg) __________
Pump Programmed - Initials __________ / __________

□ **Epidural** □ **Spinal**

□ Epimorph 100mcg/ml in 250ml bag
□ □ Bupivicaine 0.1% with Fentanyl 2mcg/ml in 250ml bag
□ Bupivicaine 0.08% with Fentanyl 1mcg/ml - ped dose in 250ml bag
□ Other: _______________
Time Infusion Started __________

Date (MMM/DD/YYYY)	Time	Pain Rating	Blood Pressure	Pulse	Respiration	O_2 Saturation / Temp	Level of Arousal	Motor Response	Sensory Level	Catheter Site Check	Nausea / Vomiting (Y/N)	Itching (Y/N)	Continuous Rate (ml/h)	Intermittent / Other Medications	P.C.A. Dose (mg)	Lockout Interval (min.)	Continuous Rate (mg/h)	4 Hour Limit	Total mg	P.C.A. Demands	Initial

Documentation

Parenteral

Intermittent/Breakthrough (IV) - Monitor R.R., level of arousal and pain rating q15 min x 2
Intramuscular - Monitor R.R., level of arousal and pain rating q30 min x 2
P.C.A./Continous - Monitor R.R., level of arousal and pain rating q1hx 8 hours initially and after any change, then q2h
P.C.A. Demands - q8 - 12h
P.C.A. Total mg - q8 - 12h

Epidural / Spinal

Bolus (epimorph) - R.R., level of arousal q15 min x 1 h, then q1h x 24 h
Note: For spinal morphine there will be no catheter left in place - continue monitoring as per bolus (epimorph)
Bolus (fentanyl) - R.R., level of arousal q5 min x 20 min, then q1h x 4 h
Bolus (local anaesthetic) - B.P., level of block q5 min x 20 min
Continuous (opioid) - Monitor R.R., level of arousal q1h x 24 (epimorph) and q1h x 4h (fentanyl), then q2h
Continuous (local anaesthetic) - Monitor B.P., level of block q4h

Continue monitoring as above and maintain a patent IV or saline lock for:
- 24 hrs. Following D/C epimorph infusion, or
- 4 hrs. following D/C of fentanyl / local anaesthetic

Alert:

* If R.R. < 40% of baseline (min. 8) or patient excessively drowsy:
1) discontinue infusion
2) rouse patient, encourage breathing
3) give O_2
4) call physician

* If patient unarousable or profound respiratory depression administer naloxone as ordered.

* Epidural - If unable to bend knees call Anaesthetist. If level of block above nipple line call Anaesthetist.

< 12 Months - SaO_2 Continuous

**** Based on Regina Qu'Appelle Health Region protocols for pain management and epidural / spinal analgesia.***

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EPIDURAL and SPINAL ANALGESIA

Certifications

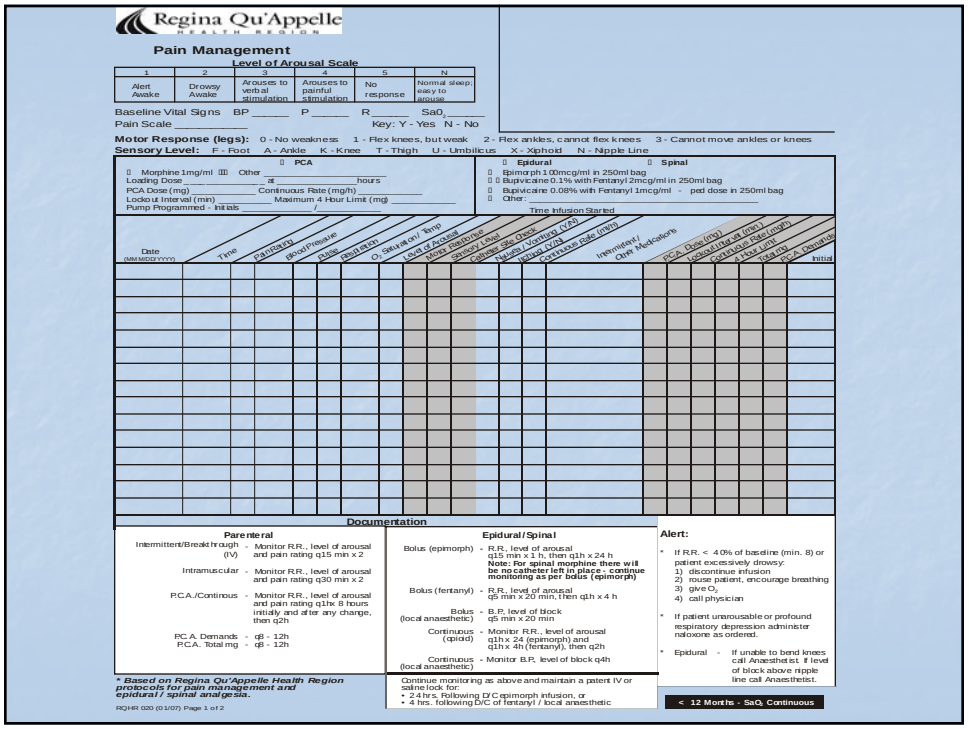
- Caring for patients with epidurals requires certification
  - Special Nursing Procedure for RN's
  - Advanced Practice for LPN's
- Refer to Epidural Analgesia E.2.2 in the nursing procedure manual
- Physicians Pre-Printed Orders
- Removal of Epidurals is a Transfer of Medical Function for RN's on designated units

PCA
(Patient Controlled Analgesia)

What is PCA?

- A method of allowing the patient to administer their own analgesia (usually narcotic)
  - The patient pushes a button to deliver a dose
- Uses a special PCA infusion pump that is programmed with specific doses and times as ordered by a physician
- Used more specifically on surgical units
- Refer to Patient Controlled Analgesia - Guideline P.8.2 in the nursing procedure manual
- Monitoring schedule on Pain Management flow sheet

REMEMBER...the patient must be willing and able to use the PCA effectively



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PCA
Morphine 1mg/ml Other _____
Loading Dose _____ at _____ hours
PCA Dose (mg) _____ Continuous Rate (mg/h) _____
Lockout Interval (min) _____ Maximum 4 Hour Limit (mg) _____
Pump Programmed - Initials _____ / _____

Epidural **Spinal**
Epimorph 100mcg/ml in 250ml bag
Bupivicaine 0.1% with Fentanyl 2mcg/ml in 250ml bag
Bupivicaine 0.08% with Fentanyl 1mcg/ml - ped dose in 250ml bag
Other: _____
Time Infusion Started _____

Date (MM/DD/YYYY)	Time	Pain/Rate	Blood Pressure	Pulse	Respiration	O_2 Saturation / Temp	Level of Arousal	Motor response	Sensory Level	Bladder sts. Diuresis	Nausea / Vomiting (Y/N)	Retching (Y/N)	Constipation (Y/N)	Interventions / Other Medications	PCA Dose (mg)	Total Hourly (mg)	Continuous Rate (mg/h)	4 Hour Limit	Total (mg)	PCA Demands	Initial

Documentation

Parenteral
- Intermittent/Breakthrough (IV) - Monitor R.R., level of arousal and pain rating q15 min x 2
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- P.C.A./Continous - Monitor R.R., level of arousal and pain rating q1hr. 8 hours initially and after any change, then q2h
- P.C.A. Demands - q8 - 12h
- P.C.A. Total mg - q8 - 12h

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- Continuous (opioid) - Monitor R.R., level of arousal q1h x 24 (epimorph) and q1h x 4h (fentanyl), then q2h
- Continuous (local anaesthetic) - Monitor B.P. level of block q4h

Continue monitoring as above and maintain a patent IV or saline lock for:
- 24 hrs. Following D/C epimorph infusion, or
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Alert:
- If R.R. < 4.0% of baseline (min. 8) or patient excessively drowsy:
  1) discontinue infusion
  2) rouse patient, encourage breathing
  3) give O_2
  4) call physician
- If patient unarousable or profound respiratory depression administer naloxone as ordered.
- Epidural - If unable to bend knees call Anaesthetist. If level of block above nipple line call Anaesthetist.

< 12 Months - SaO_2 Continuous

Based on Regina Qu'Appelle Health Region protocols for pain management and epidural / spinal analgesia.

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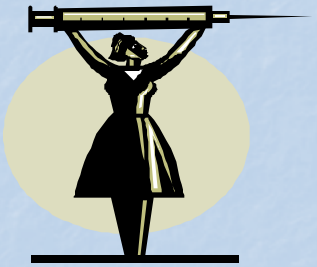
Narcan Certification



•Only RN's may be certified.

•LPN's may leave if you like, but feel free to stay.

NALOXONE HCL (Narcan)

- Is an opioid antagonist
- Works within 30 sec - 2 minutes
- Should be given IV push in syringe ≥ 10mLs
- Has a shorter duration than opioids
  - Therefore must watch for rebound effects of the opioid
- Consider the side effects
- May need to adjust analgesic orders

How to give Naloxone

- See Nursing procedure N.1
  - Stop opioid infusion (if running)
  - Administer 100% oxygen & encourage breathing
  - Notify physician
  - Begin resuscitation if necessary
  - Ensure patent IV line (flush with NS)
  - For naloxone 0.4 mg/mL – **using a ≥ 10 mL syringe, dilute 1 mL naloxone with 3 mL normal saline (0.1mg/1mL). You will have a total of 4 mL in the syringe.**
  - Administer 0.1 mg (1 mL) to the patient
    - Use the port closest to the patient
    - Clamp tubing above the port
    - Give medication
    - Flush or let IV run rapidly for 2-3 minutes
  - Observe patient
  - Repeat dose every 2-3 minutes prn
  - If patient not responding by total of 0.4 mg administered, consider an alternate source

Narcan Post-test

1. Naloxone HCL (Narcan) is classified as an:

Opioid antagonist

2. The onset of Narcan when given I.V. push is:

30 sec to 2 min

and the duration is

30 min to 2 hours

3. When administering an I.V. push medication, which I.V. port should be used?

The one closest to the patient

4. What must be done if the drug is incompatible with the I.V. solution?

Flush the line with Normal Saline

5. List two possible side effects of Narcan?

Nausea
Vomiting
Tachycardia
Increase B.P.

6. When a patient is excessively drowsy or their respiratory rate <40% of baseline (minimum 8), what three actions should be taken?:

Stop the infusion

Apply oxygen

Stimulate breathing

7. If you are unable to arouse the patient, a Narcan dose of

0.1mg (1 ml of 0.4mg/ml strength diluted with 3mls of normal saline) should be given.

Repeated doses may be given every:

2-3 mins

8. After the administration of Narcan, at what rate should the I.V. be run?:

Rapidly

9. If repeated doses of Narcan are ineffective, what must be considered?:

Respiratory depression is not the cause

10. Due to the short half life of Narcan compared to opioids, the patient may require increased monitoring following Narcan administration for the return of:

Respiratory depression

Sedation

11. Explain why caution should be taken when administering Narcan to a patient with opioid dependence or severe pain:

Return of severe pain

Withdrawal

Hands-on Certification