

NURSING POLICY, PROCEDURE, PROTOCOL MANUAL

Pain (Acute): Intravenous Patient Controlled Analgesia (IV PCA)

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APPROVED BY:	(Chief of Nursing)		

POLICY STATEMENT:

Acute Pain Service (APS) patients are admitted to units where the frequency of exposure to Intravenous (IV) Patient Controlled Analgesia (PCA) support the skill and competence of the Registered Nurse (RN), and where there may be more predictable outcomes for the APS patients. The RN must demonstrate competency in knowledge and skills required for care of a patient on the Acute Pain Service. The RN must complete the initial education program.

The APS Intravenous Patient Controlled Analgesia order form will be used to prescribe the medication name, route, concentration, infusion (optional), dose, lockout and hourly limit. A new APS order form (either IV PCA, Epidural or Regional Analgesia) will be initiated for each new drug or route change. A medical order is required for any changes to the initial parameters.

The patient is not to receive additional opioids, sedatives, antiemetics, non-steroid anti-inflammatory (NSAID) or central nervous system depressants (CNS) ordered by the attending service (with exception to medications used for weaning), until discharged from the APS, unless discussed and approved by APS. The exception to this is the Intensive Care Unit (ICU), Post Anesthetic Care Unit (PACU).

Follow the APS guideline for weaning IV PCA.

The registered nurse (RN) will ensure safe infusion of medication for pain management as per policy NSG-2-100.

Medications must not be added or co-administered with blood or blood components.

Patients receiving Intravenous Patient Controlled Analgesia will be assessed as outlined in the APS Assessment Guideline.

If level of sedation (LOS) > 2 and respiratory rate (RR) < 8, stop infusion and call APS stat. Implement the APS guideline for Naloxone Administration. Ensure APS is notified of Naloxone administration.

Notify APS of persistent pain, nausea, pruritis unrelieved by interventions.

In the event of a critical event and/or malfunction of the pump, secure the pump on the clinical unit and notify the APS. Leave pump plugged in, do not clear information on the pump.



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DEFINITIONS:

APS

The acute pain service (APS) consists of Anesthesiologists, an Advanced Practice Nurse (APN) and Nurse Specialist (s) to support quality, safe and ethical patient care for perioperative analgesia in the obstetrical, surgical and trauma population.

PCA Pump

This is a drug delivery pump that delivers a dose of medication as an infusion and/or allows patients to self-administer a dose of medication at specific time intervals.

PCA

Patient Controlled Analgesia (PCA) is administration of medication by the patient using a handset to deliver prescribed doses of medication as required by the patient.

NCB

Nurse Controlled Bolus (NCB) is administration of medication by the registered nurse and indicated when the patient is cognitively or physically unable to use the handset. The physician orders the dose.

Infusion

Medication is delivered at a continuous prescribed rate. Also referred to as basal or continuous rate.

Dose

The prescribed amount of medication the patient will receive.

Delay

The time interval (minutes) between doses administered.

Injections

The number of times the patient presses the handset and receives medication.

Attempts

The total number of times the patient presses the handset.

Y connector tubing

The anti-reflux (back-check valve) prevents the pain medication from flowing upstream into the primary infusion should the IV access device become occluded. It is used to ensure that the pain medication is flowing from the pump to the patient.

The anti-siphon valve protects the patient from inadvertent free-flow of drug caused by an upstream leak or disconnection and also prevents any backflow caused by a downstream

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occlusion. The valve also protects against back flow of blood when cap is removed during the initial connect of PCA tubing to valve.

Respiratory Depression

Respiratory depression is defined as reduced respiratory rate and/or a decrease in depth of inspiration, from baseline accompanied by mental clouding and somnolence.

The guideline for Naloxone administration is a clinical guideline for the initial management of opioid induced respiratory depression in the postoperative setting. It also serves to emphasize the need to consider differential diagnosis of decreased SpO₂ and increased sedation in patients receiving acute pain management. It provides clear indications for naloxone and guidelines for nurses to administer naloxone in the event a physician is not available.

Adequate Analgesia

Pain score of $\leq 3/10$ rest; $\leq 5/10$ activity. The patient is able to rest comfortably, progress with their activity and achieve their pain management goal.

NURSING ALERTS:

1. Ensure the availability of Naloxone (Narcan) 0.4 mg/ml ampoules on all clinical units.
2. Ensure the availability of resuscitation equipment in the clinical area.
3. Refer to reverse side of APS order form for the usual dosage of opioids, anti-emetic and anti-pruritic protocols.
4. Ensure the integrity of the IV tubing and site at all times.
5. Change the IV site and tubing q 72 hours.
6. Ensure patient understands rationale and use of PCA. Assess cognitive and physical function. If patient demonstrates difficulty, ascertain need for continuous infusion and/or nurse - controlled bolus and obtain order from APS. NCB requires a delay of 30 minutes. Remove handset from patient.
7. Assess pain intensity; using 0 to 10 verbal analogue scale (VAS), in the patients preferred language. Refer to the Pain Resource manual located on each clinical unit.
8. Consider using the patient self - assessment Brief Pain Inventory (BPI) with patients screened for pre-existing pain, when information about patient's pain over past 24 hours is required and/or to evaluate effect of interventions. Refer to the Pain Resource manual.

EQUIPMENT:

IV PCA pump (available from Logistical Services or PACU) Refer to written instructions for set-up.

50 ml syringe with opioid (prepared by pharmacy)

IV continu- flo tubing # 120685

60" Minibore Extension set # 120495

Y connector tubing with antireflux and antisiphon valve # 120565

IV solution (ordered by surgical service)

PROCEDURE:

1. Assemble IV tubing and Y connector tubing. Ensure anti-reflux valve (long limb) is connected to IV tubing. Prime with prescribed IV solution. Initiate IV as ordered.



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2. Connect syringe to minibore extension set and manually prime tubing.
3. Connect minibore extension set to anti-siphon valve (short limb).
4. Establish pump parameters as ordered. Place syringe in pump. Refer to written information to program pump as necessary.
5. Two RN's must independently verify patient's name on the armband, medication (type, concentration and dose), and the pump settings against the physician's order or documentation record as applicable:
 - i. Prior to initiating the infusion
 - ii. Prior to discharge from ICU and PACU
 - iii. At beginning of shift (exception: 1 RN required)
 - iv. If there is a change in medication type, concentration of medication, dose settings, or infusion settings (exception: 1 RN required for dose and infusion adjustments in PACU, ICU)
 - v. Obtaining a new syringe
6. Follow the APS assessment guideline.
7. Discontinue IV PCA as per the APS weaning guideline for IV PCA. When discontinued, write "D/C APS as per guideline" on the physician order form.
8. Resume orders written by attending service for opioids, sedatives, antiemetics, NSAID's and/or CNS depressants when IV PCA discontinued.
9. Record medication solution obtained and wasted on Narcotic and Controlled Drug record to TOH procedure.
10. Store the pump in the soiled utility room for transport back to Logistical Services. Plug pump into electric outlet.

PROTOCOL:

Clinical Guidelines:

Naloxone Administration - Appendix 1

IV PCA Weaning - Appendix 2

APS Assessment Guideline - IV PCA

PAIN	Verbal Analogue Scale (VAS) 0 – No Pain 10 – Worst pain Assess Rest and Activity Is pain preventing movement? Yes No Are you satisfied with pain control? Yes No	Frequency VAS q1h x 4hours; then q4h while awake q4h while awake
LOS & RR	Level of Sedation 0 None: Fully awake, alert 1 Mild: occasionally drowsy, easily aroused 2 Moderate: frequently drowsy; easily aroused, drifts off to sleep during conversation 3 Severe: Somnolent; difficult to arouse, minimal or no response to stimuli S Sleep: Normal sleep; easily aroused, RR> 10 and even, not shallow Respiratory rate, rhythm, depth	Frequency Q1h x 4 hours; q2h x 20 hours; then q 4h After 24 hours, may omit RR if LOS =0 If LOS ≥2, assess LOS & RR q1h
Utilization	Dose amount, Injections, Attempts	Frequency Q4h



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DOCUMENTATION:

Document on the Pain Assessment and Medication Administration Record (MAR).

- medication route (concentration and dose), dosage adjustment (s), and syringe change.
- verification check, date, time and signature of the second RN.
- assessments relative to the modality, interventions and side effects.

PATIENT TEACHING:

1. Ensure patient has written patient information.
2. Instruct the patient on the use of the handset if PCA is ordered. Inform the patient not to press the handset if pain is well controlled and/or if patient experiences increased sedation. Ensure the patient understands that no one else is to use the handset. Inform the patient that the pump will be programmed to “lock out” for a period of time after the dose is delivered. Do not inform the patient that they cannot overdose themselves.
3. Advise the patient of the frequency of assessments including the pain intensity scale of 0 (no pain) to 10 (worst possible pain).
4. Review with the patient the goal of the pain management therapy relative to their progressive recovery.
5. Instruct patient to notify nurse if experiencing side effects including, increased difficulty with breathing or increased sedation, itching, rash, nausea, and/or increased pain.

REFERENCES:

Canadian Society of Transfusion Medicine Standards

Canadian Standards Association- National Standards for Blood and Blood Components

Hagle M.E., Lehr, V., et al, Respiratory Depression in Adult Patients With Intravenous Patient – Controlled Analgesia, Orthopedic Nursing, January/February, 2004 (23) 1

Health Canada (Health Canada Endorsed Important Safety Information on Infusions Pumps) April 2004

Institute of Safe Medication Practice

Registered Nurses Association Ontario Best Practice Guidelines - Pain Management 2002