

 Advocate Health Care	Title: ACH Pediatric Patient Controlled Analgesia (PCA)
	<input checked="" type="checkbox"/> Policy <input type="checkbox"/> Procedure <input type="checkbox"/> Guideline <input type="checkbox"/> Other:
	Scope: <input checked="" type="checkbox"/> System <input type="checkbox"/> Site: ACH Department: Pediatric

I. PURPOSE

The purpose of this policy is to establish guidelines for the care of the pediatric patient receiving Patient Controlled Analgesia (PCA) and to provide patients with a mechanism to control their own pain medication administration.

This policy applies to pediatric patients under the care of Advocate Children's Hospital (ACH) receiving Patient Controlled Analgesia.

II. POLICY

It is the policy at ACH that patients receiving Patient Controlled Analgesia (PCA) will be cared for by ACH staff nurses knowledgeable in patient-controlled analgesia and the PCA pump.

III. DEFINITIONS/ABBREVIATIONS

Patient Controlled Analgesia (PCA) is a method of providing analgesic medications intravenously to patients using a portable infusion pump that allows the patient to self-administer analgesic medication by pushing a button on the hand-held control device. The modes of administration are:

PCA only – the patient self-administers a prescribed analgesic medication by pushing the button on the hand-held control device.

Authorized Agent-Controlled Analgesia (PCA by authorized proxy)– An individual who is educated and authorized to activate PRN doses by utilizing the PCA button via a PCA pump. A registered nurse (RN) may be designated as the primary pain manager for the patient. Only the RN or other person designated can administer, for the patient, the prescribed dose of analgesia by pushing the button on the hand-held control device. Please refer to Authorized Agent-Controlled Analgesia (PCA by authorized proxy) Policy

Basal Rate (Continuous Infusion) plus PCA – the patient receives a continuous infusion of analgesic medication at a pre-set rate plus the option to receive a self-administered specified dose of analgesia using the hand-held control device.

Basal Rate (Continuous Infusion) only – the patient receives a steady infusion of analgesia medication at a prescribed rate. This modality for non-intubated patients should be limited to ICUs OR may occur on the general floor in the case of end of life or advance palliative care disease under the discretion of the palliative care and/or pain services.

Bolus Dose - an amount of IV medication administered rapidly to decrease the response time or to be used as a loading dose prior to an infusion.

IV. **PROCEDURE**

A. **Prerequisite Conditions**

For all the community sites including but not limited to: BroMenn, Condell, Eureka, Good Samaritan, Good Shepard, Illinois Masonic, Sherman, South Suburban and Trinity, the following criteria are required for a pediatric patient to be placed on a PCA: 1) Minimum of 45 kg AND 2) 14 years of age or older. For patients meeting the fore mentioned criteria the System Adult PCA policy should be implemented. For patients that do not meet the above criteria but warrant PCA therapy, strongly consider transfer to tertiary care center either ACH-OL or PR for escalation in pain management.

NOTE Only patients being cared for at the ACH-OL or ACH-PR campuses may utilize the Alaris Pediatric PCA drug library.

B. **Nursing Units caring for patients receiving a PCA pump infusion will have a crash cart and naloxone readily accessible.**

Physician or Advance Practice Clinician will complete the PCA Power order set on EMR.

a. Guidelines for prescribers:

1. Consider the following factors before initiating a PCA:

- a. Age
- b. Body Weight; i.e. Obesity or Low body weight
- c. Preexisting conditions such as asthma or sleep apnea
- d. Concomitant medications that potentiate the sedating effects of opioids
- e. Patient tolerance to opioids
- f. Developmental Delay

2. Consider Authorized Agent-Controlled Analgesia for the following patient groups:
 - a. Patients developmentally or cognitively unable to activate their own PCA
 - b. Patients unable to understand a relationship between pain relief with button presses.
 - c. The patient Does Not have a preexisting condition such as sleep apnea, or have an increased level of sedation that could increase or potentiate risks.

C. Initiation of Infusion

- a. PCAs must be run with continuous intravenous fluids, NOT with bolus fluids or by itself. Fluids should ideally be at 10 mL/hour but may be ordered at the discretion of the ordering physician based on individual patient's fluid requirements.
- b. A RN proficient with PCA Pump operations will:
 - i. Select the appropriate library.
 - ii. Recognize when entering an opioid tolerant or palliative library. All orders for initiation and titration of PCAs in either the opioid tolerant or palliative library will be done by either the Pediatric Pain Service, Palliative Care Service or PICU intensivists for patients residing in the PICU. Upon discharge from the PICU either the Pediatric Pain Service or Palliative Care Service will be notified as appropriate by PICU attending physician.
 - iii. Select the appropriate weight category
 - iv. Initiate infusion in accordance to the provider's orders
 - v. Connect patient to the infusion pump
- c. For access to the opioid tolerant library a Pediatric Pain Service or Palliative Care Service consultation is required OR patient resides in PICU.
 - I. Attending physician or advance practice clinician will place orders in EMR
 - II. All titration orders will be prescribed by attending physician or advance practice clinician on the Pediatric Pain or Palliative Team or PICU intensivists for patients residing within that unit
 - III. Upon discharge from the PICU either Pediatric Pain Service or Palliative Care Service will be notified as appropriate by PICU attending physician.

- d. For access to the palliative care library, either a Pediatric Pain Service or Pediatric Palliative Care Service consultation is required OR patient resides in the PICU.
 - I. Attending physician or advance practice clinician will place orders in EMR
 - II. All titration orders will be prescribed by attending physician or advance practice clinician on the Pediatric Pain or Palliative Team or PICU for patients residing within that unit
 - III. Upon discharge from the PICU either Pediatric Pain Service or Palliative Care Service will be notified as appropriate by PICU attending physician.
- e. Pump settings and tubing set-up independently verified by a second RN prior to initiating the infusion and with any program change.
- f. For all PCA's with Capnography ordered, RN to notify RT to set up Capnography module.

D. Infusion Adjustment Guidelines

- 1. An RN may:
 - a. Adjust the rate of the PCA infusion according to the order. Rate adjustment must be done in accordance to 2 RN check and independent verification process.
 - b. Decrease or stop a PCA infusion prior to notifying a physician if patient exhibits any of the following:
 - i. Sedation (rating equal to 4)
 - ii. Respiratory Depression
 - 1. A rate less than prescribed on the PCA order
 - iii. Oxygen desaturations
 - iv. Apneic events
 - v. Capnography alarms
 - vi. Disorientation
 - vii. Blood pressure or Heart Rate falls below set parameters as outlined in order.
 - c. Bolus dosing is permitted per physician or advance practice clinician's order

E. Monitoring

- 1. An RN will:
 - a. Obtain and document a respiratory rate, blood pressure, heart rate, sedation, pain scale, & side effects on initiation of PCA, then Q 1 hour x 4 hrs, then Q 4 hrs. Resume Q 1 hour vital sign x 4 hours after every change in PCA setting.

- b. Continuous pulse oximetry will be initiated at this time and remain in place for the duration of PCA therapy.
- c. Consider Capnography if:
 - i. Authorized Agent Controlled Analgesia (AACA)
 - ii. Patient is receiving 2 L or more of oxygen
 - iii. Morbid obesity (BMI > 30 kg/m²)
 - iv. Sleep Apnea – suspected or known
 - v. Surgical incisions that may impair breathing (thoracic, upper abdomen)
 - vi. Concomitant administration of other sedating medications or muscle relaxants
 - vii. High dose opioid administration
- d. Verify PCA pump settings on admission to room from PACU or initiation of therapy and every four hours thereafter.
- e. Assess pain level using an age and developmentally appropriate scale every four hours and whenever patient expresses pain.
- f. Assess level of sedation, every four hours, and PRN.
- g. Assess presence of side effects (nausea, vomiting, pruritus, and urinary retention) every four hours and whenever patient complains of a side effect.
- h. Assess IV site every hour for redness, soreness, drainage, and edema.
- i. Visually assess security and patency of PCA system every hour.

F. Authorized Agent-Controlled Analgesia

- 1. Only permitted with patients at the ACH-OL and ACH-PR campuses who are managed by the Pediatric Pain Service, the Palliative Care Service or reside in PICU who meet the criteria for Authorized Agent-Controlled Analgesia as established by the Pediatric Acute Pain Service. Please refer to the Pediatric Authorized Agent-Controlled Analgesia (AACA) policy for further information.

G. Notification of Pain Service or Palliative Service when applicable

- 1. PCA pump problems
- 2. For nursing assistance regarding acute pain management
- 3. Before initiating Authorized Agent-Controlled Analgesia (AACA) please refer to AACA Policy
- 4. Before entrance in a narcotic tolerant or palliative library on patients not residing in the PICU

H. Notification of Physician or Advance Practice Clinician

- 1. Excessive or increasing level of sedation

2. Respiratory rate less than 10 breaths/minute for adolescent patients; and less than 12 breaths/minute in children, changes in respiratory pattern, or evidence of airway obstruction.
3. Oxygen desaturations
4. Apneic events
5. Capnography alarms
6. Altered mental status: confusion, disorientation, or hallucinations
7. Unrelieved pain
8. Unrelieved side effects
9. Blood pressure or Heart Rate falls below set parameters as outlined in order.

I. Documentation

1. Physician or Advance Practice Clinician will order a pediatric PCA.
2. An RN will document at minimum on PCA Flowsheet (refer to section D,1-A):
 - a. Initial setup
 1. Two signatures required by RNs
 - b. At minimum, every shift:
 1. Pump settings
 2. pain rating using developmental and age appropriate scale
 3. level of sedation (see appendix B)
 4. respiratory rate
 5. side effects
 6. non-pharmacological interventions
 7. Total dosage infused including number of completed doses, partial doses, and doses denied.
 - c. As appropriate:
 1. bolus administration
 2. vial change
 3. Opioid infusion wastage including:
 - a. date
 - b. time
 - c. amount
 - d. two signatures required
 4. Change in therapy
 - a. Two signatures required by RNs

V. CROSS REFERENCE

Not Applicable

VI. REFERENCES

Not Applicable

VII. RELATED DOCUMENTS/RECORDS

Not Applicable