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KINGSTON GENERAL HOSPITAL

NURSING SERVICE

PATIENT CONTROLLED ANALGESIA THERAPY

LEARNING GUIDE

Prepared by:	**Nursing Education**
Date:	**1992 September**
Revised:	**1997 August**
Revised:	**2000 June**
Revised:	**2010 January**

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NOTE: This learning guide contains information current at the time of distribution. Policies and procedures are frequently revised. Please refer to related policies and procedures (P-300) contained in the Nursing Policy and Procedure Manual for ongoing current information.

1.0 INTRODUCTION

Patient Controlled Analgesia (PCA) is a method of pain management that allows for the self-administration of intravenous analgesics, within the limits of safety. This learning guide is designed to provide nurses with information about the principles of pain assessment and management using PCA therapy. It is hoped that this information will facilitate safe and effective usage of the PCA system.

1.1 Learning Objectives

The purpose of this learning guide is to provide the nurse with an understanding of PCA therapy. Upon completion of the manual, the nurse will be able to:

1) Define patient controlled analgesia.

2) Explain the purpose of PCA.

3) Become familiar with the Alaris PCA

4) Describe the principles and practices of narcotic administration.

5) Instruct the patient and family about the purpose, use and possible side effects of PCA therapy.

6) Document patient assessment using the PCA flow sheet.

2.0 CONCEPTS OF PAIN

Nurses play an integral role in the management of pain. Pain is a subjective phenomenon that is complex and often variable. The nursing profession has universally accepted the following definition: "Pain is whatever the experiencing person says it is, existing whenever it does… and not what others think it ought to be…" (McCaffery, 1989, p7).

Many times patients have more fears about the prospect of pain than the risks associated with the procedure itself. Several factors make up a patient's perception of pain and the need for narcotic analgesia, including:

1) The patient's previous experience with pain.
2) The ethnic, cultural and religious background.
3) The myths about narcotic use such as dependence and addiction.
4) The patient's age.
5) The type of surgery.
6) The site of the surgical incision.

Traditional methods of pain control depend upon the intramuscular administration of narcotics on a PRN basis. However, the unpredictable blood concentration of narcotics following injection and the substantial delays between the time pain is perceived and relief is obtained, interfere with adequate analgesia.

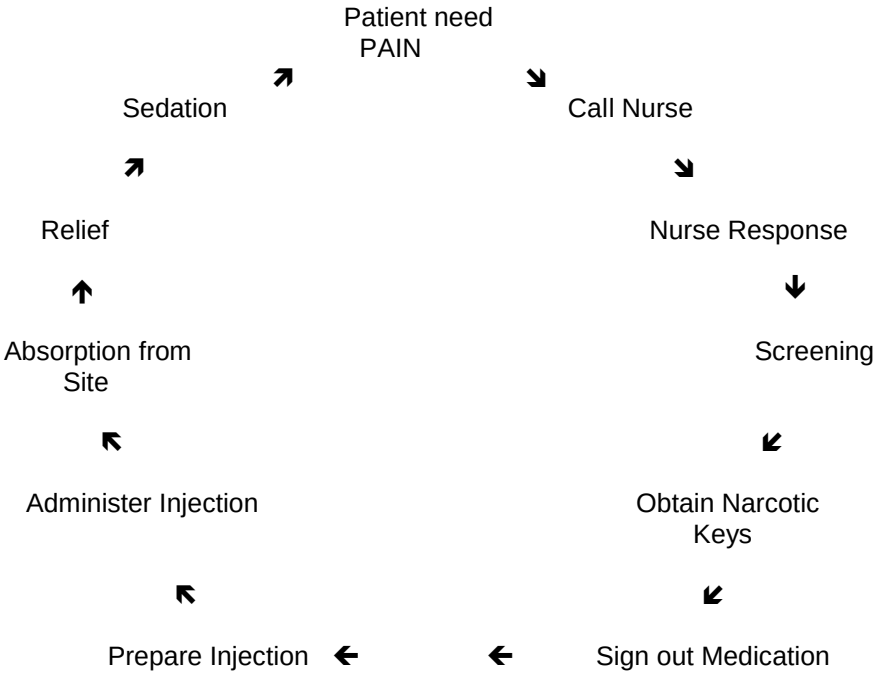


Figure 1: Conventional Analgesic Therapy
(Adapted from Graves, D., Foster, T.S., Batenhorst, R.L.., et al: Patient controlled analgesia, Ann Intern Medicine 99: 361)

To eliminate the peaks and valleys caused by intermittent drug administration, different analgesic therapies have been developed. Patient Controlled Analgesia (PCA) is one method of pain management that allows for self-administration of intravenous analgesics.

3.0 CONCEPTS OF POST-OPERATIVE PAIN

Pain is a common occurrence after nearly every type of surgical procedure. It may be caused by the stimulation of nerve endings by chemical substances released during surgery or from tissue ischemia caused by the interruption of blood supply to a particular body part. Following surgery, other factors can enhance the pain that a patient experiences. They include pressure from issue edema, abdominal distention and muscle spasms surrounding the incision.

Poor management of post-operative pain can interfere with early ambulation, deep breathing and coughing, and other patient activities that promote early recovery. Post-operative complications such as atelectasis and deep vein thrombosis may develop when post-operative pain is poorly controlled.

It is impossible to prevent the occurrence of post-operative pain, but it can be minimized so that the patient is comfortable. PCA therapy provides a consistent pattern of pain relief. In addition, patients have a much greater sense of control over their pain.

4.0 PRINCIPLES OF PATIENT CONTROLLED ANALGESIA

4.1 What is PCA?

Patient Controlled Analgesia (PCA) is a method of pain management that allows for the self-administration of intravenous analgesics. This form of therapy may be used in the management of acute and chronic pain situations such as post-operative pain, trauma, acute or chronic low back pain, migraine headaches and pain in terminal illness. PCA therapy provides the patient with a sense of control over his/her pain within the limits of safety.

PCA can potentially bypass the delays and deficiencies of the traditional methods of pain control. PCA therapy maintains analgesic blood levels within therapeutic range. PCA therapy may be used at any given time and as long as necessary to alleviate pain.

4.2 Who Decides Who Goes on the PCA Pump?

The staff of the Acute Pain Service, which is comprised of anesthesiologists and an APN, decides who is a candidate for the PCA pump. Generally, patients are excluded from patient controlled analgesia in the following situations:

- extremes of age, for example, less than five years;
- drug addiction;

- allergy to analgesia;
- unconscious, confused, or requiring restraint;
- brain injury;
- pulmonary disease with carbon dioxide retention;
- hepatic, renal or cardiac disease;
- absence of nurses or physicians qualified to manage PCA.

The Acute Pain Service is consulted by other services for pain management. The staff of Acute Pain Service are the only physicians who can write programming orders for the PCA pump.

4.3 Can Other Sedatives, Narcotics or Antiemetics be Given While on the PCA Pump?

Because of the potential cumulative effects of combining other medications with the analgesic the patient receives while on PCA, no other narcotics, sedatives, or antiemetics are administered unless ordered by the anesthesiologist from the Acute Pain Services.

When the PCA pump is discontinued all orders written by the Acute Pain Service are also discontinued. Pain management then becomes the responsibility of the attending service.

4.4 How Does the PCA Pump Work?

The Alaris PCA module is attached to an Alaris brain. At the base of the module a handset is connected. When the patient feels pain the handset button can be pressed which triggers the pump to deliver a fixed bolus of drug. Immediately after this a lockout period starts. During this time the pump will ignore any further requests for analgesia. This safety feature allows the drug to exert its maximum effect and prevent an overdose.

Alaris Brain

r

PCA Module

Hand set cord

The patient cord leads to the hand set and should never be removed

PATIENT CORD:

- For patient use only.
- Required for PCA delivery.
- Insert and remove with the red dots aligned and WITHOUT twisting.
- Dose cord profile may be changed through channel options.

PROGRAMMING OF THE ALARIS PCA, BOLUS DOSING OR ANY CHANGE IN PROGRAMING IS COMPLETED BY ANESTHESIOLOGY OR THE ACUTE PAIN SERVICE

4.4.1 Alaris PCA Parameters

PRESS CHANNEL SELECT TO VERIFY SETTINGS

PCA Dose
The amount of drug programmed to be delivered upon patient demand

Lockout Interval
This is the length of time after receiving a PCA dose, when another dose cannot be administered.

Continuous Dose
PCA pump can infuse a small dose of analgesia continuously.
This parameter only appears if a continuous infusion set

Concentration (Conc)
The strength of the analgesic solution programmed in the pump. The Pharmacy Department at the Kingston General Hospital supplies each unit with pre-mixed syringes of morphine 2.5mg/ml; however, HYDROmorphone or fentANYL may be used. **NOTE:** Nurses never mix syringes for the PCA pumps. Only pharmacy or anesthesia may mix the syringes.

Press Channel Select, Options and Patient History

Last Cleared
Time displayed when pump last cleared. **NOTE**: **pump is cleared every 4 hours with vital signs and documentation**

Total Drug
This is the total amount (in milligrams) of analgesia infused since the PCA was initiated and/or cleared.

Total Demands
This is the number of times the patient has demanded a bolus of drug.

Delivered
This is the number of times that the patient received a bolus of the drug

4.5 Priming the Line

4.5.1 Manual Method

Attach the minibore to the narcotic syringe and manually prime with a very small amount of narcotic solution. Connect the luer end of the minibore tubing to one end of the Y-connector and manually prime with a small amount of narcotic solution.

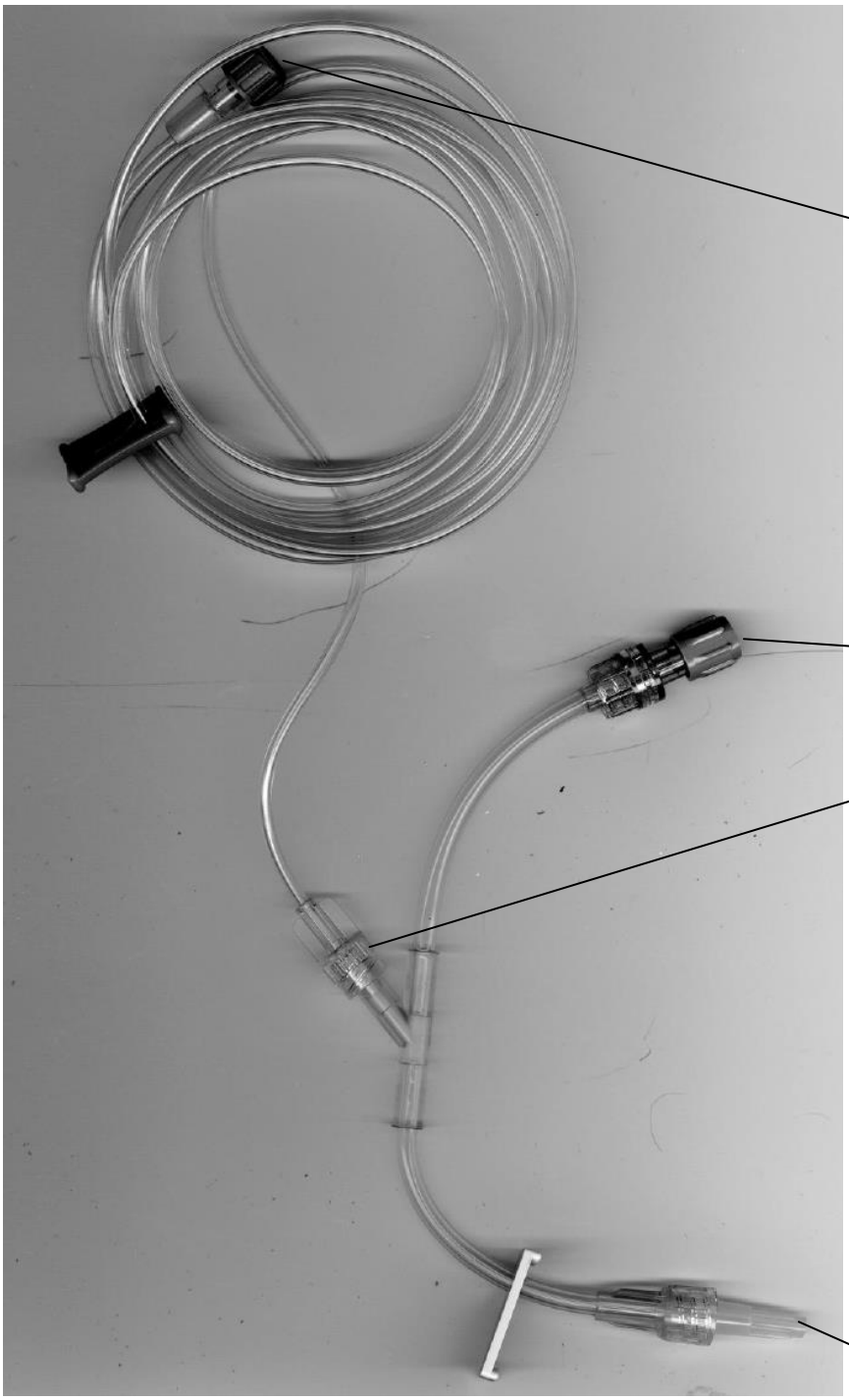
Prime the mainline tubing with the IV solution and attach the adapter to the second end of the Y-connector. Prime the remainder of the tubing with IV solution ensuring that all air is expelled. The PCA system is now ready to be connected to the patient.

A second infusion is attached to the PCA tubing only when using a Y-connector with a non-return valve.

4.5.2 Required Tubing for use with Alaris PCA

- Minibore tubing for PCA Syringe
- PCA-IV anti-reflux Y-connector

To assemble these tubings, see picture below



4.6 Alaris PCA Module

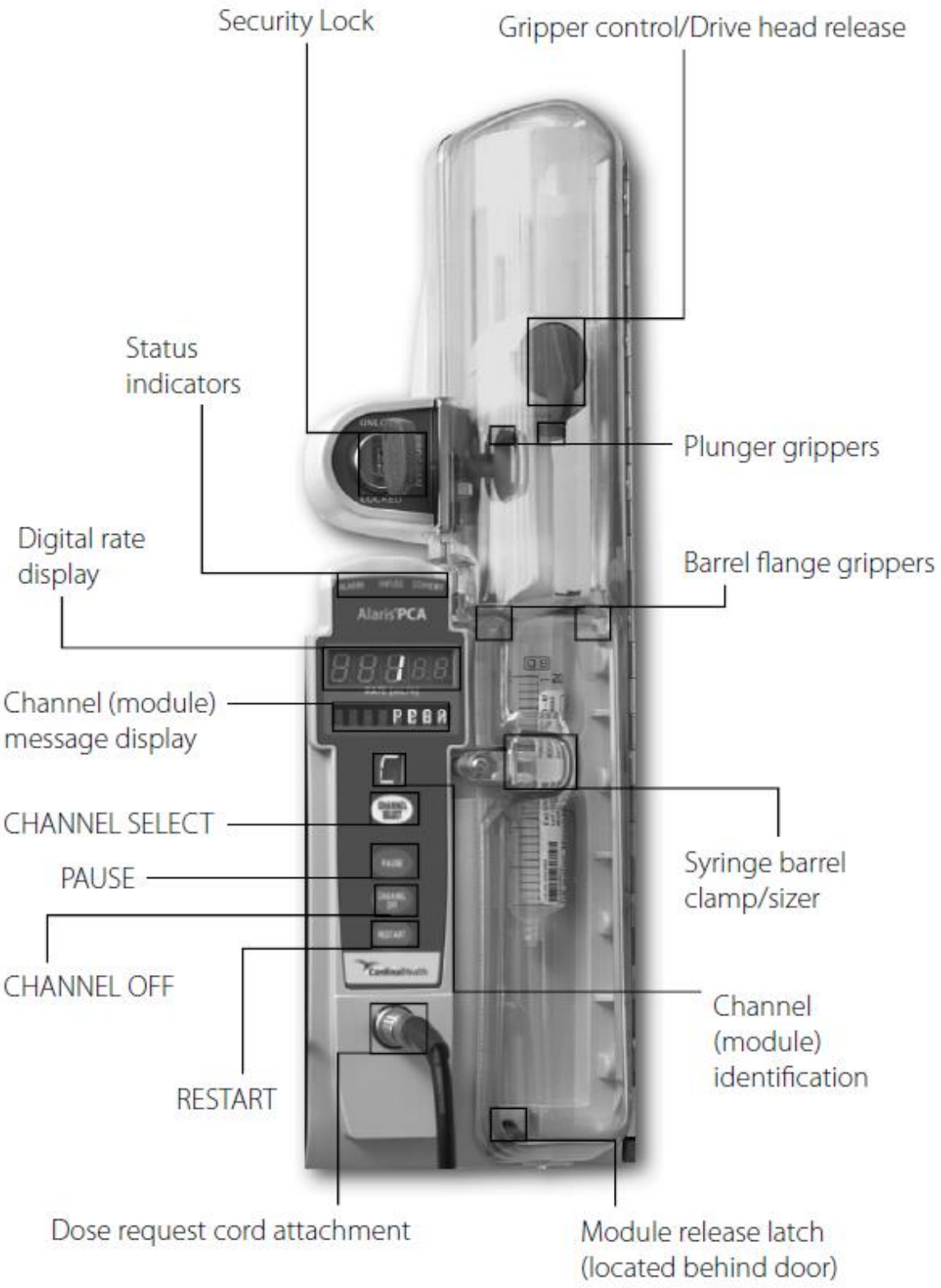
The Alaris PCA module should be attached to the right to maintain a secured locked position
The Security Lock is key operated and has three positions

1. **Unlock** position unlocks the security door to load or change the syringe
2. **Program** allows for changes in the device programming without unlocking the security door or interrupting the current infusion. **This feature would only be used when the syringe is changed for the nurse to restore the infusion.**
3. **Lock** locks the security door**.** The key must turn to this position to start an infusion.

The PCA keys are kept on the narcotic key ring on most of the nursing units. Check with charge nurse or educator as some are kept on a separate ring locked in the narcotic cupboard.

4.7 Inserting / Changing the Alaris PCA Syringe

1. Press pause on the Alaris PCA. Always clamp administration set and disconnect from patient before changing the syringe.
2. Use PCA key and Unlock to remove syringe. Press silence.
3. To remove open door, pull syringe barrel clamp out and hold it, rotate clamp to left until it clears the syringe chamber then gently release.
4. Turn gripper control to the right until in open position then raise the drive head to full extension, release gripper control and remove old syringe.
5. Attach new syringe to tubing and load new syringe into PCA
6. Insert new syringe by sliding flat edge of syringe between the barrel flange grippers
7. Open the gripper control and lower the drive head gently to secure the new syringe
8. Rotate syringe barrel clamp back to the right over the syringe
9. Close door and turn key back to program
10. Reestablish PCA administration set to patient
11. Press channel select and press syringe choice then confirm by pressing the soft key
12. ‘Restore’ will be the next prompt, at the bottom left corner of the Alaris brain press soft key.
13. Next prompt is to confirm PCA bolus and lockout, press soft key
14. Final prompt will be to lock door and press Start.


Security Lock
Gripper control/Drive head release
Status indicators
Plunger grippers
Digital rate display
Barrel flange grippers
Channel (module) message display
CHANNEL SELECT
PAUSE
CHANNEL OFF
RESTART
Syringe barrel clamp/sizer
Channel (module) identification
Dose request cord attachment
Module release latch (located behind door)

4.8 Verifying the PCA Program Settings

The PCA program settings are checked with the physician's orders.

- In PACU with anesthesiologist or against APMS orders
- With changes in nursing responsibility (e.g. at the start of the shift, unit to unit transfer)
- Following a syringe change
- When change in dose or rate has been made by APMS
- See policy P-300 in Nursing policy and procedure manual

Press Channel Select Alaris PCA module and check

- PCA-IV bolus
- Lock out interval
- Continuous infusion if any
- Press start once confirmed

If any discrepancy between patient orders and parameters in the pump call APMS

4.9 Obtaining the Patient History

Every 24 hours the Alaris PCA-IV clears the patient history therefore the pump is cleared every 4 hours with vital signs and documentation to ensure a record of ongoing data

Press channel select then:

- Options soft key
- Patient history soft key
- Document on the PCA-IV analgesia flow sheet the total demands/delivered and the total drug
- Press clear history, pump will ask if you want to clear patient history, press yes
- Press exit at the bottom of the Alaris brain then start

4.10 Making a Demand for Analgesia

A demand for analgesia may be made by the patient by pressing the demand button on the handset once. One of two responses occurs:

1. The PCA pump beeps (indicating that it has received the message), and the patient receives a bolus dose. A green light flashes and the display indicates delivering PCA or

2. The patient does not receive a bolus because the demand was made during the lockout.

4.11 Stopping the PCA Pump

Stop the PCA pump at any time by pressing 'Pause or Channel off '. This can be done without unlocking the syringe cover.

If the pump is discontinued, send pump brain with attached PCA module to central processing.

If an ongoing infusion is required use a new (non-PCA) Alaris pump brain and module

Never detach the hand-set from the PCA-IV module

Once PCA therapy is discontinued, discard the analgesic remaining in the syringe. A second nurse must co-sign this wastage on the narcotic sheet

5.0 PATIENT EDUCATION

The objective of patient education is to instruct the patient to effectively operate the PCA pump in order to decrease the intensity of the pain to a level that is tolerable to the patient.

1. While teaching the patient how to use the PCA pump during the preoperative period is preferable it is not essential. Due to the limited number of PCA pumps, it is not always possible for the anesthesiologist to pre-determine who will receive PCA therapy. Patients who receive PCA therapy but have not received preoperative education in its use require simple, repeated instructions during the postoperative period.

2. Patient education should include:

   - expectations of the quality, location, severity and duration of the pain normally associated with the procedure;
   - use of the PCA device, background infusion, bolus dose, frequency of assessment, duration of PCA therapy;
   - coping strategies to mobilize the patient's defences, decrease anxiety and give the patient a sense of control;
   - realistic expectations of pain, pain relief, narcotic analgesics, and non-pharmacological pain relief measures, e.g., deep breathing, muscle relaxation and distraction;
   - review of concerns related to safety issues and fear of addiction.

3. PCA therapy instruction provided while the patient is receiving PCA may include:

   - reinforcement of instruction previously received;
   - encouragement to use the device frequently to achieve comfort;

6.0 PHARMACOLOGICAL ASPECTS OF MORPHINE

6.1 Classification

Different narcotic analgesics may be administered via the PCA system, such as fentanyl, hydromorphone and morphine. At Kingston General Hospital, the drug of choice is morphine.

6.2 Mode of Action

Narcotics relieve pain at the level of the central nervous system (CNS) by binding to opioid receptor sites at the brain and spinal levels. Narcotics produce an alteration of the pain perception, interfere with pain conduction or CNS response to pain, and/or elevate the pain threshold.

When administered intravenously, morphine has a:

rapid onset	⇨ a few minutes
peak effect	⇨ 6-8 minutes
duration of action	⇨ 2-3 hours

6.3 Side Effects of Morphine

1. Respiratory Depression

All narcotics, including morphine, are capable of having an effect on the respiratory cycle and thus producing respiratory depression.

Naloxone is the narcotic antagonist of choice. It must be **available** at all times. In the event of respiratory depression, the anesthesiologist orders the administration of naloxone (0.1-0.2mg IV doses at 2-3 minute intervals up to 2.0mg). This is an added nursing skill for which the nurse must be authorized.

2. Nausea and Vomiting

Approximately 20-30% of patients feel nauseated while receiving morphine. Prochlorperazine (Stemetil) and dimenhydrinate (Gravol) are the antiemetics of choice. The nurse may administer the antiemetic prescribed by the anesthesiologist on the pre-printed order form.

3. Sedation

The patient receiving morphine may develop somnolence because of the direct depressant effect of narcotics on the CNS. The goal in pain management is that the patient be pain free and be alert enough to perform activities that promote early recovery. The nurse assesses the level of sedation using the scale provided. This is discussed in the patient assessment section of the learning guide.

4. Other

Patients receiving morphine may develop urinary retention, headache, pruritus and dizziness. Narcotics may cause some dilation of blood vessels. This does not present a problem in the well-hydrated patient. However, in the hypovolemic patient, there is an increased risk of hypotension. If this occurs, notify the anesthesiologist.

6.4 Drug Compatibility

With the PCA system, an intravenous infusion is administered concurrently with the morphine solution. All of the medications listed below are compatible with morphine.

ancef	metronidazole
cimetidine	penicillin G
clindamycin	solucortef
cloxacillin	tobramycin
erythromycin	vancomycin
gentamycin	
heparin	

Insulin preparations are **NOT** compatible with morphine. Should questions arise, verify with the pharmacist.

NOTE: If the patient has limited venous access, blood may be administered through the second end of the Y-connector while the patient is receiving PCA therapy.

7.0 PHARMACOLOGICAL ASPECTS OF FENTANYL

7.1 Classification

When a patient has a known allergy to morphine, fentanyl may be substituted. Fentanyl is absorbed into the plastic of the syringe and is therefore only stable for 7 days. An anesthesiologist must prepare the syringe as necessary.

7.2 Mode of Action

Fentanyl is chemically unrelated to morphine. It does have similar pharmacological effects. Fentanyl acts as an analgesic and a sedative agent.

When administered intravenously, Fentanyl has a:

rapid onset	⇨ 3-5 minutes
duration of action	⇨ 30-60 minutes

7.3 Side Effects

The side effects exhibited by Fentanyl are similar to those of morphine. Side effects include: respiratory depression, apnea, muscle rigidity, bradycardia, hypotension, nausea and vomiting and urinary retention.

Naloxone is the narcotic antagonist of choice. It must be kept available at all times. In the event of respiratory depression, the anesthesiologist will order the administration of naloxone (0.1-0.2mg IV doses at 2-3 minute intervals up to 2.0mg). This is an added nursing skill for which the nurse must be authorized.

8.0 PATIENT ASSESSMENT

This section of the learning guide includes guidelines for monitoring the patient receiving PCA therapy. The nurse is responsible for ensuring that the patient is provided adequate analgesia with minimal side effects. The nurse must assess (a minimum of q4h) the level of pain, the level of sedation, the respiratory rate and the PCA therapy administered to the patient.

8.1 Pain Scale

Nursing assessment is a key factor in the success of PCA. A pain rating scale is attached to each PCA pump to assist the nurses when assessing the patient's pain level.

0	1	2	3	4	5	6	7	8	9	10
No pain									Severe pain	

Patients have different ways of expressing pain. Using the slide ruler, the nurse may ask, "How bad is your pain on a scale of 0 to 5, 0 being no pain at all, 5 being the worst pain imaginable?"

Physical signs of pain include:

- facial grimacing;
- increased systolic pressure;
- increased heart rate;
- agitation; and
- muscle spasms.

8.2 Level of Sedation (LOS)

The level of sedation (LOS) provides information about how sensitive the patient is to morphine. The nurse may use the following scale to determine the patient's LOS:

1. **Wide awake:** The patient is alert and oriented.

2. **Drowsy:** The patient falls asleep when you are talking to him/her.

3. **Dozing intermittently:** The patient sleeps but frequently awakens.

4. **Mostly sleeping:** The patient appears to sleep deeply without interruption. He/she is easily aroused at the time of assessment and responds appropriately.

5. **Only awakens when stimulated:** When the sternum is rubbed, the patient only moans and moves his/her limbs weakly.

Notify the anesthesiologist **STAT** if the patient scores a 5 on the LOS scale. Stop the PCA pump immediately.

8.3 Respiratory Status

Narcotic analgesics may cause respiratory depression. It is therefore essential that the nurse assess the respiratory rate and depth for a minimum of 30 seconds if no pulmonary dysfunction is suspected or for a full minute otherwise. If the respiratory rate is less than the rate specified by Anesthesia, stop the pump and notify the anesthesiologist. The anesthesiologist may instruct the nurse (who has been authorized for this added nursing skill) to administer naloxone (Narcan) below the drip chamber.

8.4 PCA Flow Sheet

Note there are now two separate analgesia flow sheets in use at KGH, one PCA-IV and PCA-SC Analgesia Flowsheet and one Regional Analgesia Flowsheet. The flow sheets will provide both the nurse and the anesthesiologist with information about the amount of narcotic the patient is receiving while on PCA therapy.

The PCA orders must be checked with the PCA pump parameters at the beginning of each shift and documented on the PCA-IV and PCA-SC Analgesia Flow Sheet. This includes the current lock out period, bolus dose, drug concentration, analgesic ordered, and continuous infusion rate. This is done by pressing the "Channel select" button. Once confirmed the pump will alarm unless Start is pressed.

Patient assessment must be performed a minimum of q4h. See P-300 nursing policy for details. The pain assessment scale and the level of sedation scale have been included as a quick reference for the nurse when observing the patient. As well, the nurse must clearly indicate the drug name, concentration, and if appropriate, the loading dose at the top of the flow sheet. Each flow sheet must be stamped with the addressograph, as it is a permanent record for the patient.

KINGSTON GENERAL HOSPITAL

PCA-IV and PCA-SC Analgesia Flowsheet

Route: ☐ Intravenous (PCA-IV)
☐ Alaris pump
☐ CADD pump
☐ Subcutaneous (PCA-SC) (CADD pump)

Drug Name and Concentration: _____

Pain Intensity: ☐Numeric Rating Scale (NRS) ☐Visual Analogue Scale (VAS) ☐Present Pain Intensity (PPI) ☐Wong Baker Faces Scale (WBF)

Level of Sedation (LOS): 1 = Wide awake 2 = Drowsy 3 = Dozing intermittently 4 = Mostly sleeping 5 = Only awakens when stimulated

Date (YYYY/MM/DD)	Time (hhmm)	Pain Intensity		Level of Sedation (LOS)	Respiratory Rate	Verified With Orders *(Includes verification of patient identification. See Nursing Policy for details of independent double check)*			Alaris Pump PCA-IV		CADD Pump PCA-IV, PCA-SC			Initials *(sign signature record on reverse)*
		At Rest	With Activity			Lockout Period	Bolus Dose	Continuous Infusion Rate *(if applicable)*	Total Demands/ Delivered *(since last documentation)*	Total Drug (i.e. total dose) *(since last documentation)*	Number Given/ Number of Attempts *(cumulative)*	Total Dose *(cumulative)*	Reservoir Volume	

PCA = Patient Controlled Analgesia IV = Intravenous SC = Subcutaneous

PRINTED NAME	DESIGNATION	SIGNATURE	INITIALS

8.5 Reporting to the Anesthesiologist

The anesthesiologist from the Acute Pain Service should be notified if any of the following occur:

- the patient has many unsuccessful attempts to receive a bolus dose and continues to rate the pain as extreme;
- hypotension after starting PCA;
- nausea and vomiting unresponsive to antiemetics;
- respiratory depression;
- level of somnolence of 5;
- urinary retention; and
- pruritus.

9.0 CASE HISTORY

Mr. Key is a 58 year old who has arrived to the unit from PACU following a right hemicolectomy for colon cancer. At 1500h, the nurse verifies the PCA-IV settings by pressing the channel select and documenting the PCA dose and lockout interval. The nurse verifies that the concentration is the same as what is ordered.

Next, the nurse will perform an assessment including vitals and pain assessment. Channel select will be pressed then options and then patient history soft key: The nurse will document as shown below and then clear history, exit and press start.

At 2000 the nurse reassesses Mr. Key who states his pain is 3/10 at rest and 5/10 with deep breathing. The nurse provides health teaching regarding the use of the PCA-IV hand set especially prior to deep breathing or movement that may increase pain. The nurse presses channel select, options and the patient history soft key. The total demands/delivered and total drug is documented and the pump is cleared.

KGH KINGSTON GENERAL HOSPITAL

PCA-IV and PCA-SC Analgesia Flowsheet

John Brown
CR# 0065843

Route: ☑ Intravenous (PCA-IV)
☑ Alaris pump
☐ CADD pump
☐ Subcutaneous (PCA-SC) (CADD pump)

Drug Name and Concentration: Morphine 2.5mg

Pain Intensity: ☑ Numeric Rating Scale (NRS) ☐ Visual Analogue Scale (VAS) ☐ Present Pain Intensity (PPI) ☐ Wong Baker Faces Scale (WBF)

Level of Sedation (LOS): 1 = Wide awake 2 = Drowsy 3 = Dozing intermittently 4 = Mostly sleeping 5 = Only awakens when stimulated

Date (YYYY/MM/DD)	Time (hh:mm)	Pain Intensity: At Rest	Pain Intensity: With Activity	Level of Sedation (LOS)	Respiratory Rate	Verified With Orders (Includes verification of patient identification. See Nursing Policy for details of independent double check): Lockout Period	Bolus Dose	Continuous Infusion Rate (if applicable)	Alaris Pump PCA-IV: Total Demands/ Delivered (since last documentation)	Alaris Pump PCA-IV: Total Drug (i.e. total dose) (since last documentation)	CADD Pump PCA-IV, PCA-SC: Number Given/ Number of Attempts (cumulative)	CADD Pump PCA-IV, PCA-SC: Total Dose (cumulative)	CADD Pump PCA-IV, PCA-SC: Reservoir Volume	Initials (sign signature record on reverse)
2010/1/10	1500					5mins	1.5mg	0						
2010/1/10	1600	5/10	8/10	2	16	5mins	1.5mg	0	20/10	15mg				
2010/1/10	2000	3/10	5/10	1	16	5mins	1.5mg	0	6/6	12mg				

PCA = Patient Controlled Analgesia IV = Intravenous SC = Subcutaneous

PRINTED NAME	DESIGNATION	SIGNATURE	INITIALS
Don Ho	RN	DHo	DH

10.0 PCA-IV ORDER TRANSCRIPTION

Important Points

The anesthesiologist writes the orders on pre-printed order forms entitled "Acute Pain Service (APMS): Intravenous Patient Controlled Analgesia (PCA-IV) orders (see copy next page).
There are adult and pediatric versions of these pre-printed orders.
These orders come with the patient from the operating room.

When transcribing the orders, the following information **must** be written on the Patient Profile (Kardex):

- patient on PCA pump;
- if respirations fall below _____ (specified by the anesthesiologist) stop pump, notify Anesthesia STAT.

When transcribing the orders, the following information **must** be written on the patient's Medication Administration Record (MAR):

- the analgesic ordered;
- the loading dose (if given);
- the PCA dose;
- the continuous rate, if applicable;
- the lockout interval;
- the antiemetic and co-analgesics prescribed; and
- changes in the continuous rate.

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PATIENT CARE ORDERS

Weight (kg)	Adverse Reactions

Please use black ink ballpoint pen only and press firmly to make copy

ORDER AND SIGNATURE	TRANSCRIPTION

ACUTE PAIN MANAGEMENT SERVICE (APMS)
INTRAVENOUS PATIENT CONTROLLED ANALGESIA (PCA-IV) ORDERS (ADULT)

Page 1 of 1

1. ***Prescribing Restrictions while on APMS:***
Give only those analgesics, anti-emetics, tranquilizers, antihistamines, and sedatives authorized by the APMS.

2. ***Pump Program:*** *(choose one)*

☐ Morphine 2.5 mg/mL ***OR*** ☐ HYDROmorphone 0.5 mg/mL ***OR*** ☐ FentaNYL 50 mcg/mL*
☐ HYDROmorphone 2 mg/mL*

Bolus dose: _____ mg	Bolus dose: ____ mg	Bolus dose: ____ mcg
Lockout: _____minutes	Lockout: ____ minutes	Lockout: ____ minutes
Basal rate: _____mg/h	Basal rate: ____mg/h	Basal rate: ____mcg/h

**APMS prepares first 50 mL syringe*

3. ***Co-analgesics:*** Give only while patient is awake and for the specified number of days from the time of the initial order regardless of route of administration for each medication.
Give **first dose** at _____hours on _____ *(YYYY/MM/DD)*
☐ NO SUPPOSITORIES FOR THIS PATIENT

Non-steroidal anti-inflammatory drugs (NSAIDs) **for 1 day Total:**
☐ Ketoprofen suppository 100 mg PR q12 h while NPO or on clear fluids.
THEN CHANGE TO:
☐ Ketoprofen EC 100 mg PO q12 h when on full fluids.

Acetaminophen **for 1 day Total:**
☐ Acetaminophen suppository 1300 mg PR q8 h while NPO or on clear fluids.
THEN CHANGE TO:
☐ Acetaminophen 650 mg PO q4 h when on full fluids.

4. ***Anti-emetic Therapy:***
☐ Ondansetron 4 mg IV q8 h for 24 hours if nausea present, then reassess.
☐ Prochlorperazine 5 mg IV q6 h prn for nausea.
☐ *Other:* _____

5. ***Anti-pruritic Therapy:***
Naloxone 0.2 mg subcutaneously **OR** 0.04 mg IV q1 h prn for pruritus.
☐ DiphenhydrAMINE 25 - 50 mg PO/IV q6 h prn for pruritus.

6. ***Opioid Reversal:*** *(not applicable to ventilated patients)*
If Ramsey sedation score is 5 **OR** respiratory rate is less than 10 breaths/minute:
- Stop pump and call Anesthesiology STAT.
- Administer oxygen.
- Have naloxone available and prepare to administer (dilute 1 mL of naloxone 0.4 mg/mL with 9 mL sodium chloride 0.9% to yield a concentration of 0.04 mg/mL).

Signature & Designation:	Pharmacy Use Only:
Printed Name:	Reviewed by: ____
Date (YYYY/MM/DD) & Time (HHMM):	Entered by: .....
	Checked by: .....

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12.0 EVALUATION OF LEARNING ACTIVITY

TOPIC: Patient Controlled Analgesia (PCA) Therapy

PRESENTER/TEACHER: _____

LEARNING ACTIVITY/METHOD: Please check (√) one or more of the following:

1. _____ lecture
2. _____ demonstration
3. _____ video
4. _____ other _____

Please evaluate the learning activity in which you participated. Your comments and suggestions are valuable as a basis for improving future educational activities.

Check (√) the most appropriate response for each item below.

		Strongly Disagree			Strongly Agree
		1	**2**	**3**	**4**
1.	I feel that my learning needs were met.				
2.	The overall quality of the learning guide was excellent.				
3.	The content was clear and understandable.				
4.	The method(s) used enhanced my learning.				
5.	This will help me meet the knowledge/skill requirements of my job.				

Comment briefly:
One way that I could use the information in this session is: _____

_____

_____

Please give the completed evaluation to your Clinical Instructor. Thank you.