PURPOSE:
To provide accurate and safe administration of parenteral therapy.

CONSIDERATIONS:
1. Parenteral administration of opioid analgesic medications can be useful in optimizing pain control with reduced systemic side effects.
2. Parenteral administration may be indicated for severe or intractable pain when:
   a. Oral, transdermal or rectal analgesic medications can be useful in optimizing pain control with reduced systemic side effects.
   b. Patients experience nausea and vomiting or cannot swallow oral medications.
   c. Contraindication to rectal medication.
   d. Large oral doses cause unacceptable systemic complications.
3. Parenteral administration of analgesics may be:
   a. Intermittent or bolus.
   b. Continuous infusion (infusion control device required).
   c. Continuous infusion with supplemental bolus for breakthrough pain (infusion control device required).
4. Infusion devices include:
   a. External Ambulatory PCA Pump.
   b. Implanted Devices-Infusaid, SynchroMed (Medtronic).
5. Drug therapy alternatives include:
   a. Morphine may be administered via IV, IM, SC or intraspinal route. Morphine has a short half-life and no toxic or active metabolites.
   b. Hydromorphone is useful when Morphine is poorly tolerated or ineffective.
   c. Meperidine is short acting, and is not recommended for use in chronic, severe pain since it has a CNS toxic metabolite (normeperidine) that accumulates with repeated dosing.
   d. Fentanyl and Sufentil are very potent opiate agonists with a rapid onset of action and shorter duration of action than morphine. They are generally used epidurally in an attempt to lower narcotic requirements and improve analgesia or avoid nausea and epidural side effects of other narcotics.
   e. Clonidine (Duraclon), a centrally-acting analgesic can be used in combination with an opiate agonist for the treatment of severe pain that is not controlled by the use of an opiate agonist for the treatment of severe pain that is not controlled by the use of an opioid alone.
6. Routine use of Naloxone in the home is not recommended because administration can precipitate acute withdrawal and lack of pain control. Proper administration requires continual monitoring by a healthcare professional.

a. On a case-by-case basis, a physician may elect to have Naloxone in the home.
b. A specific physician order is required if Naloxone is in the home.
7. Central Venous access is recommended for continuous administration to maintain uninterrupted level of analgesic in the home.

Dosage:
1. Dosage should be titrated to optimize individual pain control while minimizing adverse effects of medication.
2. Convert intermittent SQ, IV or PO dosage to comparative parenteral dosage utilizing the Equianalgesic Chart (See Attachment A.) For initiation of continuous parenteral therapy determine the total daily usage of patient’s current intermittent therapy and convert using the Equianalgesic Chart as follows:
   a. Calculate total daily oral dose that patient received during the previous 24 hours.
   b. Multiply total daily oral dose by the conversion factor for the specific narcotic analgesic for the total daily subcutaneous dose.
   c. To determine the subcutaneous dose per hour, divide the total daily subcutaneous dose by 24.
3. The dose and/or rate of infusion can usually be safely increased in increments of 10-20% of current dose or rate of infusion of by increasing the basal rate by 50% of the total daily bolus requirement for PCA patients. The patient should be observed and monitored for 1 to 2 hours after increasing dosage for untoward effects.

Adverse Reactions/Side Effects:
1. In the case of respiratory depression, reduce the rate of infusion or stop the infusion for a short period of time to reverse respiratory depression. Consult physician for instruction. Severe respiratory depression may necessitate the use of a narcotic antagonist (i.e., Naloxone). Obtain specific physician order prior to administering Naloxone.
2. Gastrointestinal:
   a. Nausea and vomiting, motion may aggravate these symptoms. Antiemetics may be helpful in treating nausea and vomiting but may be additive to other unwanted side effects of the analgesic.
   b. Constipation is caused by the anticholinergic action of most of the opioid analgesics used. Patients receiving pain management therapy should be placed on a high fiber diet and take laxatives or a stool softener on a regular basis. Adequate hydration may also be helpful in reducing symptoms.
3. Analgesics may cause drowsiness, seizures, agitation, restlessness, confusion, tremors and somnolence. Changing to an alternative medication may alleviate these symptoms. Patients may benefit...
from dose reduction or adjunctive medication treatment.

4. Vasodilation, hypotension, pruritus, flushing, sweating and allergic reaction. Antihistamines are sometimes useful in treating these symptoms of adverse effects. If antihistamines are not effective or contraindicated then an alternative analgesic medication should be employed.

**Monitoring:**
1. Vital signs (including respiratory rate) should be monitored periodically during the course of therapy and according to the needs of the individual patient.
2. Assess the patient response to therapy by determining the level of comfort using an appropriate pain scale (0 - 10 intensity scale where 0 = no pain, 10 = worse pain) and report changes to physician.
3. Evaluate the patient for any other adverse effects that might be caused by the medication and report to physician as appropriate.

**Drug Interactions:**
1. CNS depressants (i.e., alcohol, benzodizepines, phenothiazines) cause additive sedative effects.
2. Cimetidine and phenytoin delay hepatic metabolism of opioids that will likely enhance the effect of the opioid.
3. Aminophylline and sodium bicarbonate solutions cause precipitation with morphine solution and are not compatible.

**EQUIPMENT**
None

**PROCEDURE- Prior to Administration**
1. The patient shall meet the admission criteria and have an appropriate indication for pain management therapy.
2. Physician orders shall include:
   a. Name of drug, concentration dosage in mg/hour, dosage and frequency of bolus dose as appropriate, route and type of pump to be used.
   b. Limits or range of continuous infusion and bolus dose to be set in programming the ambulatory infusion pump.
   c. Subcutaneous, intravenous (peripheral or central) or intraspinal (epidural or intrathecal) route.
   d. Site care.
3. Assessments shall utilize a pain intensity tool and should address location, duration, onset, characteristics of pain, patient's goals for pain relief and alleviation or causative factors.
4. All patient-controlled analgesics should be infused via infusion pump or autoinfusion.
5. Programmable pumps that deliver analgesic medication should be verified for correct programming prior to initiation of therapy.

**PROCEDURE- Administration**
1. Adhere to Standard Precautions.
2. Explain procedure to patient.
3. Verify orders with physician:
   a. Route, dosage, method of administration, duration of therapy.
   b. Adjunctive medication for constipation, nausea, vomiting or CNS side effects.
4. Review patient’s medical history and assessment, including current pain assessment and vital signs.
5. During therapy, the patient should be closely monitored for response to therapy and side effects that necessitate immediate physician contact. Those side effects include:
   a. Nausea and vomiting.
   b. Respiratory depression.
   c. Hypotension.
   d. Confusion or lethargy.
   e. Allergic reaction to medication.
7. Assess level of comfort and patient’s reaction to pain therapy.
8. Provide psychosocial support.
10. Discuss care plan and reassess goal of therapy and document on the plan of care.

**Patient/Caregiver Education:**
1. Use of infusion device including troubleshooting.  
   [Note: Only the patient should self-administer a bolus dose to avoid accidental oversedation, respiratory depression and even death.]
2. Storage and disposal of controlled substances.
3. Side effect recognition and management related to narcotics:
   a. Respiratory depression.
   b. Nausea, vomiting.
   c. Constipation.
   d. Changes in sensorium.
   e. Side effects associated with intraspinal administration of narcotics such as pruritus, urinary retention, tolerance, catheter migration or meningitis.
4. Care and management of central venous access devices.
5. Care and observation of subcutaneous needle site and management of problems (as appropriate) or:
   a. Needle irritation.
   b. Leakage.
   c. Dislocation.
   d. Rotation/dislodgement.
6. Care and observation of the intraspinal catheter if it exists via the skin on the abdomen or is attached to a port that is accessed through the abdomen.

**AFTER CARE:**

1. Document in patient’s record:
   a. Procedure and observations.
   b. Instructions given to patient/caregiver.
   c. Patient’s response to procedure.
   d. Communication with physician.