Palliative Care Symptom Guide

Pain Scale

1	2	3	4	5	6	7	8	9	10

No Pain **Worst Pain Imaginable**

None = 0; Mild = 2.5; Moderate = 5; Severe = 7.5; Excruciating = 10

General Principles of Pain Management

a) **Assess pain using a standardized pain scale.** Pain is a subjective feeling: ask the patient. If the patient is unable to communicate, assess pain based on behavioral cues. Frequency of assessment: at the time of the initial interview, every eight hours, and PRN (at least every two hours when pain is severe).

b) Short-acting opioids (morphine, hydromorphone, and oxycodone) should be used to control acute, moderate, or severe pain. Long-acting preparations (MS Contin, Oxycontin, Avinza, Kadian, transdermal Fentanyl-Duragesic) should be started after the pain is controlled by short-acting opioids.

Never use long-acting opioids to control acute pain.

c) Titrate the opioid dose at least every 24 hours when the pain is moderate and as often as every two hours when the pain is severe. Increase the dose by **25–50%** for moderate pain and **50–100%** for severe pain. For equivalent dose purposes: rectal = oral; SQ = IM = IV route.

d) Manage breakthrough pain (acute pain in patients with otherwise controlled pain) with short-acting opioids using **1/3** of the single dose amount (e.g., patient on long-acting morphine 90 mg q 12h, breakthrough morphine dose = 30 mg q3hr prn) or **5–15%** of the total daily dose. **Use around-the-clock** pain medicine for ongoing pain not prn. Use the KISS principle—Keep It Same and Simple (e.g., use the same opioid for short- and long-term pain control).

e) Manage opioid side effects. Constipation must be treated prophylactically (see bowel protocol).

PHARMACISTS WILL NOT MAKE SUBSTITUTIONS OR CORRECTIONS FOR OPIATES. IF SCRIPTS ARE NOT WRITTEN EXACTLY (e.g., CORRECT DRUG, DOSE, AND SCHEDULE), THEY WILL NOT BE FILLED.

SELECT OPIOID AGENTS/PRODUCTS

Drug	Short-Acting (mg)	Long-Acting (mg)
Morphine	**Tabs** (10, 15, 30 mg) **Caps** (15, 30 mg) **Oral Solution** (10 mg/5 mL, 20 mg/5 mL) **Roxanol Oral Concentrate** (20 mg/mL) **(1)** **Supp** (5, 10, 20, 30 mg)	MS Contin **Tabs** (q12hr) (15, 30, 60, 100, 200 mg) Oramorph SR **Tabs** (q12hr) (15, 30, 60, 100 mg) Kadian **Caps** (q12hr or q24hr) (20, 30, 50, 60, 100 mg) (2) Avinza **Caps** (q24hr) (30, 60, 90, 120 mg) **(2)**
Oxycodone	**Tabs** (5, 15, 30 mg) **Caps** (5 mg) **Oral Solution** (5 mg/5 mL) OxyFAST/Oxydose **Oral Concentrate** (20 mg/mL)	OxyContin **Tabs** (q12hr) (10, 20, 40, 80 mg)
Hydromorphone (Dilaudid)	**Tabs** (1, 2, 3, 4, 8 mg) (8 mg brand-name scored) **Oral Solution** (5 mg/5 mL) **Supp** (3 mg)	
Codeine	**Tabs** (15, 30, 60 mg) **Elixir** (15 mg/5 mL)	
Fentanyl	Actiq **Lozenge** (200, 400, 600, 800, 1200, 1600 mcg)	**Transdermal Patch** (12.5, 25, 50, 75, 100 mcg/hr)

SELECT COMBINATION OPIOID PRODUCTS

Drug (3)	Formulation/Strength (mg/mg)
Lorcet (hydrocodone/acetaminophen) **(4)**	**Tabs** 5/500, 7.5/650, 10/650 **Caps** 5/500
Lortab (hydrocodone/acetaminophen) **(4)**	**Tabs** (scored) 2.5/500, 5/500, 7.5/500, 10/500 **Elixir** 7.5/500 per 15 mL
Percocet (oxycodone/acetaminophen) **(5)**	**Tabs** 2.5/325, 5/325, 7.5/325, 7.5/500, 10/325, 10/650
Percodan (oxycodone/ASA) **(6)**	**Tabs** 5/325
Roxicet (oxycodone/acetaminophen)	**Tabs** 5/325 **Caps** 5/500 **Oral Solution** 5/325 per 5 mL
Tylenol with Codeine (codeine/acetaminophen)	**Tabs** 15/300 (#2), 30/300 (#3), 60/300 (#4) **Oral Solution** 12/120 per 5 mL
Vicodin (hydrocodone/acetaminophen) **(4)**	**Tabs** 5/500, 7.5/750 (ES), 10/660 (HP)
Vicoprofen (hydrocodone/ibuprofen)	**Tabs** 7.5/200

(1) Orders for Roxanol concentrated oral morphine solution must include drug name and strength (20 mg/mL) to avoid confusion with morphine oral solution.
(2) Data supporting safe use with enteral feeding tubes (must be size 16 French or larger). **See Kadian prescribing information and UPMC PUH SHY online formulary (Avinza) for product-specific instructions.**
(3) Maximum daily dose of acetaminophen is 4 grams.
(4) Many other brand-name products contain hydrocodone/acetaminophen, including Anexsia, Norco, and Zydone.
(5) Other brand names containing oxycodone/acetaminophen include Endocet, Roxilox, and Tylox.
(6) Another brand-name product containing oxycodone/aspirin is Roxiprin.

Oral and Parenteral Opioid Analgesic Equivalencies and Relative Potency of Opioids as Compared with Morphine*

When converting from one opioid to another, you may use 50–75% of the equivalent dose. Allow for incomplete cross-tolerance between different opioids (may need to titrate up rapidly and use PRN dose to ensure effective analgesia for the first 24 hours). Avoid IM injections because of inconsistent absorption and patient discomfort.

Opioid Agonists	Parenteral mg (2)	Oral mg (3)	Duration of Effect
Morphine	10	30	3–4 hours
Oxycodone		20–30	3–4 hours
Hydromorphone	1.5	7.5	3–4 hours
Meperidine (1) (not recommended)	75	300	3 hours
Fentanyl (4)	0.1		1–2 hours
Codeine	130	200	3–4 hours
Hydrocodone		25–30	

*These are rough approximations; individual patients may vary.

1) Meperidine is not a first-line opioid. Avoid in patients with renal dysfunction. Contraindicated with MAOIs. Please see *UPMC Meperidine Guidelines* before prescribing.

2) Parenteral opioid: onset of action, 5 minutes; peak, 15 min.

3) Oral opioid: onset of action, 15–30 minutes; peak, 45–60 min.

4) Much shorter acting when short-term IV; comes as transmucosal; potency when long-term parenteral is 100 mg = 4 mg morphine.

Please refer to *APS Principles of Analgesic Use in the Treatment of Acute Pain and Cancer Pain* (2003); *American Pain Society (APS) Guideline for the Management of Cancer Pain in Adults and Children (2005).*

Patient Controlled Analgesia (PCA)

The following are suggestions for the PCA order for adults. Like all opioid orders, doses must be individualized.

Use the preprinted PCA order form for all new PCA orders and dose changes. EDUCATE FAMILIES NOT TO PRESS THE PCA BUTTON!

	Loading dose(s) (1)	Starting Patient Administered Dose* (2)	Lockout Interval (3)	One-hour Dose Limit (optional) (4)	Continuous infusion rate in mg/hr (5)
Morphine (6)	Opioid naïve: 2-4 mg q 15 min	1 mg	8–20 min.	7–10 mg	When indicated, calculate based on intermittent PCA use or previous opioid requirement.
	Elderly (>70 yrs.) 2mg q 20 min. titrated to pain relief	0.5 mg	8–20 min.	4–6 mg	
Hydromorphone (Dilaudid)	Opioid naïve: 0.2–0.3 mg q 15 min	0.2 mg	8–20 min.	0.7–1.4 mg	
	Elderly (>70 yrs.) 0.2mg q 20 min titrated to pain relief	Elderly: 0.1 mg	8–20 min.	0.4–0.6 mg	

*Opioid tolerant and chronic/cancer pain patients may require higher doses and continuous infusions.

1 PCA alone is a maintenance technique. Patients should receive loading doses (delivered through the infuser) that are titrated to achieve an adequate level of analgesia (pain score less than or equal to 4/10).

2 Quantity delivered when button is pressed. Reduce doses by 30-50% in elderly and patients with liver disease. Do not increase dose based on increased body weight; this is especially important in patients with Obstructive Sleep Apnea. Dosing depends on the patient—young vs. elderly/naïve vs. tolerant.

3 How frequently demand dose can be activated. Patient must be able to press the button and be able to comprehend instructions on when to press the button. In the elderly, consider a longer lockout interval.

4 **The hour limit should not be less than the available total hourly patient administered dose.** Bolus doses and the continuous infusion are included in the one-hour dose limit count.

5 Not recommended for patients who are opioid naïve, the elderly, patients with altered mentation, or with Obstructive Sleep Apnea, COPD, or asthma.

6 Morphine is generally the opioid of choice. Hydromorphone is preferred in patients with impaired renal function.

If pain unrelieved following administration of loading dose(s), increase loading dose by 50% and titrate to pain score less than or equal to 4/10.

TO CONVERT TO TRANSDERMAL FENTANYL—NOT USED FOR ACUTE PAIN OR INITIAL OPIOID THERAPY. USE FOR PATIENTS WHO ARE UNABLE TO TAKE PO OR HAVE CHRONIC CANCER PAIN. Determine the 24-hr parenteral morphine equivalent. Dose patch at 50–75% of the previous 24-hr opioid use. Prescribe a short-acting opioid for breakthrough pain (5–15% of 24hr dose q 3 hours). Patch duration = 72hrs. Increase the patch dose based on the average amount of additional short-acting opioid required in the previous 72 hrs. Allow patch at least 48hrs before adjusting the dose. For dosages of transdermal fentanyl over 100 mcg/hr multiple patches can be used.

Parenteral Morphine Equivalent (mg/24 hours)	Transdermal Fentanyl Equivalent (mcg/hr)
8 to 22	25
23–37	50
38–52	75
53–67	100
68–82	125
83–97	150

TWENTY-FOUR HOUR ORAL MORPHINE EQUIVALENT DIVIDED BY 2 IS EQUAL TO FENTANYL PATCH DOSE IN MCG.

NOTE: PATCH TAKES 12–24 HRS TO ACHIEVE FULL EFFECT. WHEN REMOVING A PATCH, REMEMBER THE ANALGESIC EFFECT CAN STILL LAST 24 HRS.

BOWEL REGIMEN: With few exceptions, **all patients on opioid therapy need an individualized bowel regimen.** Start with the step 1 regimen. When an effective regimen is found it must be continued for the duration of the opioid therapy.

Step 1—Begin with a stool softener and laxative. The following are some suggestions:
a. Docusate 100 mg po bid (or 200 mg po qd) +/- MOM 30cc po qd
b. Docusate 100 mg po bid (or 200 mg po qd) +/- Senna 1 tab po qd

Step 2—Docusate 100 mg bid (or 200 mg po qd) + Senna 2 tabs bid

Step 3—Docusate 100 mg bid (or 200 mg po qd) + Senna 3 tabs bid

Step 4—Docusate 100 mg bid (or 200 mg po qd) + Senna 4 tabs bid + Lactulose 15cc po bid

Step 5—Docusate 100 mg bid (or 200 mg po qd) + Senna 4 tabs bid + Lactulose 30 cc po bid

Step 6—Docusate 100 mg bid (or 200 mg po qd) + Senna 4 tabs bid + Lactulose 30 cc po qid

If a patient has not been on a bowel regimen, the step 1 regimen should be started. If there is no response in 24 hours, move to the next step. At any given time, if there has been no bowel movement in four or more days, a sodium phosphate or mineral oil enema should be administered. If this is not effective, a high colonic tap water enema should be administered. Be aware of the possibility of bowel obstruction or fecal impaction. A digital rectal exam should be performed prior to starting a bowel regimen and if no BM for four days.

Guidelines for Naloxone Administration and Patient Monitoring

1. **Patients should meet all of the following criteria before naloxone (Narcan) is administered:**
   (a) Sedation Scale = 3 (Somnolent; Difficult to arouse), (b) RR < 8 **OR** Oxygen Saturation < 92% and RR < 12, (c) Pinpoint pupils
2. **If the criteria listed above are met, stop the administration of the opioid** (including fentanyl patches) and benzodiazepines.
3. **Provide oxygen via face mask STAT.**
4. **Method for naloxone administration: Naloxone 0.04 mg IV q 1 minute until a change in alertness is observed.** Dilute 0.4mg naloxone (one ampule) with NSS to a total volume of 10ml (1 ml = 0.04 mg) in a 10 ml syringe
5. **Notify the primary physician and/or house staff of the need to immediately evaluate the patient.** If the house staff does not arrive within five minutes or if the nurse assesses the need, a **"Condition C"** should be called.
6. **Titrate the prescribed naloxone until the patient is responsive.** The **half-life of naloxone (ONE HOUR)** is shorter than the half-life of opioid agonists. **Naloxone administration should not cause pain to return or precipitate opioid withdrawal. If a response is not obtained after one ampule of naloxone** (10 cc of diluted solution) **is administered, examine the patient for alternate causes of sedation and respiratory depression.** For assistance with further naloxone dosing, please contact the UPCI Pain Program (412-644-1724) or the Toxicology Treatment Program (412-647-7000).
7. **Re-evaluate the events leading to the need for naloxone administration.** In cases where the prescribed opioid dosing was too high, reassess the therapeutic plan for pain management. **Consider decreasing the opioid dose by 50%.** Resume opioid administration when the patient is easily aroused, is beginning to experience pain, and after the RR increases to > 9.

Delirium: Guidelines for Diagnosis

DSM-IV criteria for delirium include four components:

A. **A**cute onset, over hours to days.

B. **B**ehavioral disturbance, marked by a reduced clarity in the patient's awareness of the environment, with impaired ability to focus, sustain, or shift attention. The patient may be agitated, irritable, and emotionally labile, OR drowsy, quiet, and withdrawn.

C. **C**onsciousness level fluctuates over the course of the day.

D. **D**ifferent from dementia, delirium cannot be accounted for by a patient's preexisting, established, or evolving dementia.

Delirium is conceptualized as a reversible illness, except in the last 24–48 hours of life.

1. Delirium occurs in at least 25–50% of hospitalized cancer patients, and in a higher percentage of patients who are terminally ill. Delirium increases the risk of in-hospital and six-month mortality.
2. Differential diagnosis: **D**: Drugs (opioids, anticholinergics, sedatives, benzodiazepines, steroids, chemo- and immunotherapies, some antibiotics); **E**: Eyes and Ears (poor vision and hearing, isolation); **L**: Low flow states (hypoxia, MI, CHF, COPD, shock); **I**: Infections; **R**: Retention (urine/stool), Restraints; **I**: Intracranial (CNS metastases, seizures, subdural, CVA, hypertensive encephalopathy); **U**: Under-hydration, Under-nutrition, Under-sleep; **M**: Metabolic disorders (sodium, glucose, thyroid, hepatic, deficiencies of vitamin B12, folate, niacin, and thiamine) and Toxic (lead, manganese, mercury, alcohol).
3. Routinely screen for delirium, and monitor delirious patients frequently.

Confusion Assessment Method (CAM) ICU for the Diagnosis of Delirium
Diagnosis positive with 1 and 2, plus 3 or 4

Feature	Assessment
1. Acute onset and fluctuating course	Ask family or friends of patient
AND	
2. Inattention	Patient is easily distracted. **Abnormal Digit Span:** Inability to repeat a series of five digits (start with reading aloud a string of two random digits, then increase) and **Vigilance A:** At least two errors (read aloud in neutral normal tone a list of 10 letters with four A's. Patient taps when A is read).
PLUS	
3. Disorganized thinking >2 errors	Rambling or irrelevant conversation, unclear or illogical flow of ideas, or topic switching, or ask patient's family. Ask: 1) Can a rock float? 2) Are there fish in the sea? 3) Is one pound more than two pounds? 4) Do you use a hammer to pound a nail? 5) Command say to patient, "Hold up this many fingers." (Examiner holds two fingers in front of patient.) Next, do the same thing with the other hand (not repeating the number of fingers).
OR	
4. Altered level of consciousness	Hyper-alert, drowsy, stuporous, or unarousable

Delirium: Guidelines for Treatment

Rule out other medical causes of delirium. Review medications, and discontinue or decrease anticholinergic and/or benzodiazepine doses. Check for drug-drug interactions. Rotate opioids, reduce doses by 25% if possible, and avoid meperidine.

Benzodiazepines are NOT effective in treating delirium, may worsen delirium, and should be used cautiously only as adjunct therapy with neuroleptics when relief of agitation is required.

Neuroleptics are used for treatment of delirium. Haloperidol is the standard neuroleptic for treatment of delirium. Risperidone, olanzapine, and quetiapine are atypical neuroleptics, generally with fewer side effects. All neuroleptics can cause Q-Tc prolongation.

Drug	Starting Dose	Route	Interval	Cautions/Comments
Haloperidol (Haldol)	0.5 mg–1 mg	IV (preferred route), IM	30 minutes–one hour for urgent symptom control. Usually every eight hours.	IV has less EPS compared to PO and is preferred. In ICU dose is higher—2–5 mg.
Risperidone (Risperdal)	0.5–1 mg	PO, available as liquid	12–24 hours	Some EPS, but less than haloperidol. Less sedating than other atypical neuroleptics. Motor effects. Caution with renal failure.
Olanzapine (Zyprexa)	2.5–5 mg	PO, available as wafer (Zydis)	24 hours	Sedating, some anticholinergic efforts. Little to no EPS. Available as oral disintegrating tablet (wafer). Patients > 70 yo, with hypoactive delirium or CNS malignancy, may not respond well.
Quetiapine (Seroquel)	25 mg	PO	24 hours	Low incidence EPS. Sedating at lower doses.

The atypical antipsychotic drugs risperidone, olanzapine, and quetiapine are not FDA-approved for the treatment of delirium.

Supportive care to prevent and reduce delirium includes frequent orientation (well-lit rooms, caregivers, calendars, clocks, communication), therapeutic activities (patient mobilization 3x/day when possible), non-pharmacologic sleep aids (warm milk, decreased noise, few interruptions), treatment of hearing and vision problems, treatment of incontinence, and volume repletion. Confusion increases the risk of falls. Pay attention to patient safety. Constant supervision (sitter) may be more beneficial than restraints or sedation.

Nausea and Vomiting Drug Information

General Principles:

- Treat reversible causes of nausea and vomiting first (medication induced, anxiety, constipation, hypercalcemia, oral thrush, increased intracranial pressure, GERD, and pain)
- Choose antiemetics based on the mechanism of action in relation to the likely cause of nausea
- Avoid use of promethazine, as it has been associated with adverse events such as excessive sedation.
- For persistent nausea, dose antiemetics around the clock, not PRN
- For nausea with associated vomiting, always give medications via IV route
- Evaluate for clinical signs of bowel obstruction (persistent nausea briefly relieved by vomiting, abdominal pain, or distended abdomen)

Treatment of complete bowel obstruction (other than nasogastric tube or surgery):

1. Anticholinergic agent (scopolamine or Levsin) to promote bowel rest
2. Serotonin antagonist (ondansetron every eight hours PRN) or/and dopaminergic anti-emetics
3. Steroids (dexamethasone) to reduce gut wall edema and pain
4. Analgesis to treat pain (typically opioid)
5. H2-Blocker to reduce gastric secretions
6. If #1 through #5 fail, consider octreotide injections or infusion (0.2–0.9 mg/d via continuous parenteral infusion or tid dosage)

Frequently Used Antiemetic Drug Table

Drug (Generic Name) *Drug Class*	Starting PO Dose (mg)	Dosing Interval	Maximum q 24 h Dose	Onset to peak	PO	SL	PR	SC	IV	IM*	LQ	PO	Oral Liquid	Parenteral	Cost Per Day	Comments/ Side Effects
*Dexamethasone *Steroid*	4–8 mg	qam or bid	1 mg/kg	1–2 h	✓	✓		✓	✓	✓	✓	0.5, 2, 4 mg	1 mg/ml	4 mg/ml	$$	Agitation, Insomnia _BS[s]
*Haloperidol *Dopamine Antagonist*	0.5 mg	q 4 h pm; bid	15 mg	3–6 h	✓	✓	✓	✓	✓	✓	✓	0.5, 1, 2.5 mg	2 mg/ml	5 mg/ml	$	EPS hypotension
Granisetron *Serotonin Antagonist*	1 mg	Q day, bid	2 mg		✓				✓		✓	1 mg	1 mg/ml		$$$$	N/V, headache
**Metoclopramide *Prokinetic Dopamine Antagonist*	5–10 mg	tid or qid	120 mg	½–2 h	✓			✓	✓	✓	✓	5, 10 mg	5 mg/ml	5 mg/ml	$	Diarrhea, EPS reaction

*Avoid IM injections if other routes are available.

** First-line antiemetics.
Avoid promethazine secondary to sedation when using opioids.

Frequently Used Antiemetic Drug Table (continued)

Drug (Generic Name) *Drug Class*	Starting PO Dose (mg)	Dosing Interval	Maximum q 24 h Dose	Onset to peak	PO	SL	PR	SC	IV	IM*	LQ	PO	Oral Liquid	Parenteral	Cost Per Day	Comments/ Side Effects
**Ondansetron *Serotonin Antagonist*	4 mg	tid	32 mg	1.7 h	✓				✓			4, 8 mg			$$$	Headache, malaise
**Prochlorperazine *Dopamine*	5–10 mg	q 6–8 h	40 mg	10–40 min	✓		✓		✓	✓	✓	5, 10 mg	5 mg/ml	5 mg/ml	$	EPS, sedation reaction, avoid in elderly

**First-line antiemetics.
Avoid promethazine secondary to sedation when using opioids.

Indications for Palliative Care Referral:

- Pain in patients with life-limiting illness
- Management of other symptoms such as nausea, vomiting, shortness of breath, delirium
- Negotiating goals of treatment or end-of-life decision making
- Family support for a life-limiting illness
- Psychological or spiritual counseling for patients and their families
- Discharge planning and interface with local hospices
- Bereavement services in the event of death
- Outpatient palliative care follow-up

Oral Secretions at the End of Life

As the level of consciousness decreases in the dying process, patients lose their ability to swallow and clear oral secretions. As air moves over the secretions, the resulting turbulence produces noisy ventilation with each breath, described as gurgling or rattling noises. Death rattle is a good predictor of near death; one study indicated the median time from the onset of death rattle to death was 16 hours.

Non-pharmacological treatments: Position the patient on their side or in a semi-prone position to facilitate postural drainage

While there are no evidence-based guidelines, the standard of care is to use muscarinic receptor blockers (anti-cholinergic drugs).

Drug	(Trade Name)	Route	Starting Dose	Onset
hyoscyamine hydrochloride	Scopolamine	Transdermal	1 (~1 mg/3 days)	12 hrs.
hyoscyamine sulfate	Levsin	Drops, Tabs (oral)	0.125 mg	30 min.
glycopyrrolate	Robinul	Pills (oral)	1 mg	30 min.
glycopyrrolate	Robinul	Injection (SC, IV)	0.2 mg	1 min.
atropine	Atropine	Injection	0.1 mg	1 min.
atropine	multiple	Eye drops	1 gtt (1%)	30 min

Atropine ophthalmic drops can be used sublingually.

Tertiary amines which cross the blood-brain barrier (scopolamine, atropine) cause CNS toxicity (sedation, delirium).

Opioids in Actively Dying Patient

1. The following guidelines are for "**comfort measures**" patients **ONLY**.
2. **Opioid naive patient (all doses are for morphine)**:
   - Loading dose: 2–5 mg IV push and start the continuous infusion at the same dose per hour
   - If distress not relieved in 15 minutes after initial loading dose, give bolus equal the loading dose increased by 50 percent. If severe distress persists repeat the dose every 15 minutes until comfortable.
   - For increased pain/distress give extra bolus dose/s equal to the last given bolus dose every 30 min. as needed.
   - If using more than two bolus doses over six-hour period, determine new continuous infusion rate by recalculating total dose given over last six hours and dividing it by six.
3. **Non-naive patients**:
   - For patients who have been taking opioid pain medications within last 24 hours calculate the equianalgesic parenteral dose of Morphine for the last 24 hrs. It will be converted to hourly infusion rate.
   - Convert the current total oral dose to a total 24-hour IV Morphine dose; divide by 24 to determine initial hourly infusion rate (mg/hour, IV). Start continuous infusion at this rate.
   - If patient in pain/distress use loading dose = hourly infusion rate.
   - If distress not relieved in 15 min after initial loading dose or the patient in increased pain/distress, administer the loading dose increased by 50 percent and repeat every 15 minutes until comfortable.
   - If using more than two bolus doses over six-hour period, determine new continuous infusion rate by recalculating total dose given over last six hours and dividing it by six.

UPMC Pain Resources (all 412 numbers)

PUH/MUH Palliative Care Service/Cancer Pain	647-7243, beeper: 8511
Shadyside Dept. of Medical Ethics and Palliative Care	623-3008, beeper: 263-8347
Magee-Womens Hospital Palliative Care/malignant pain	641-2108, beeper 917-9276
UPCI Hillman Cancer Pain, Rehabilitation and Supportive Care (outpatient)	623-3395

Questions or comments regarding this information, contact Bob Arnold, MD (rabob@pitt.edu), 692-4834, beeper 2322; www.upmc.edu/palliativecare. Author: Ray Paronish, NP with feedback from Peg Verrico, RPh; Susan Skledarr, RPh, MPH; Justin Engleka, NP; Colleen Dunwoody, RN; Rowena Schwatz, PharmD; Linda King, MD; Paul Han, MD; Susan Hunt, MD; and Bob Arnold, MD. This pain card was made possible with generous support of the **Ladies Hospital Aid Society of Western Pennsylvania.** Produced in cooperation with the University of Pittsburgh. The University of Pittsburgh is an affirmative action, equal opportunity institution. UMC21757-0506 VERSION 6.0 PAIN CARD