UCD HOSPICE MEDICATION FORMULARY / REFERENCE GUIDE

FOR MANAGEMENT OF ADULT PAIN AND SYMPTOMS AT THE END OF LIFE

References: American Pain Society Clinical Practice Guideline 2005, Principles of Analgesic Use in Treatment of Acute and Cancer Pain 5th Edition; Pereira, MB et al J Pain Symp Management; Mercandante S, et al. J Clin Oncol 2001; Palladone PI Purdue Pharma 11/04

PAIN CONTROL REGIMEN FOR CHRONIC PAIN

1. The simplest dosage with the least invasive pain management modalities should be used.
2. Medications should be prescribed around the clock to prevent the recurrence of pain; use additional "as needed" doses for breakthrough pain.
3. Consider a long acting opioid if patients are taking around the clock (ATC) analgesia to prevent sleep/wake cycle interruptions.
4. If pain persists or increases, the medication dose should be increased (titrated) within the range ordered (no more than 4 times the minimum dose).
5. If the long acting medication if not lasting the time frame ordered **(end dose failure)**, change dosage frequency (frequency ranges are not allowed).
6. Opioid tolerance and physical dependence are expected with long-term opioid treatment and should not be confused with addiction.
7. The oral route of administration is the most convenient and cost effective.
8. Constipation is a common problem associated with opioid administration and should be anticipated and treated prophylactically.

GUIDELINES FOR ORAL OPIOID TITRATION

1. Utilize a scale of 0-10 to rate level of discomfort: 1-3 = mild discomfort; 4-6 = moderate discomfort; > 7 = severe discomfort.
2. Titrate by 25% of the current long acting dose for mild discomfort.
3. Titrate by 50% of the current long acting dose for moderate discomfort.
4. Titrate by 100% of the current long acting dose for severe discomfort.
5. Breakthrough pain dose should be 15-20% of the total daily long acting dose.
6. Titration of the long acting medications should be no more frequent than every 24 hours and every 72 hours for methadone and fentanyl.

CLINICAL ASSESSMENT, PATIENT GOALS AND RESPONSE TO CARE MAY VARY FROM THESE RECOMMENDATIONS. ANY VARIATIONS FROM THESE GUIDELINES SHOULD BE DISCUSSED WITH THE PMD, IDG AND DOCUMENTED WITH A PHYSICIAN'S ORDER.

MILD PAIN: NON-OPIOID	MODERATE PAIN: COMBINATION OPIOID
acetaminophen (Tylenol) 325-650mg PO/PR Q 4hr	hydrocodone/acetaminiphen 5/500mg (Vicodin) 1-2 tabs PO Q 4hr
ibuprofen (Motrin) 400-800mg PO Q 6hr (NTE 2400mg/day)	oxycodone/acetaminiphen 5/325mg (Percocet) 1-2 tabs PO Q 4hr

BONE PAIN

Naproxen (Naprosyn) 250-500mg PO BID (NTE 1000mg/day) or ibuprofen (Motrin) 400-800mg PO Q 6hr (NTE 2400mg/day)
dexamethasone (Decadron) 2-8mg PO BID for moderate to severe bone pain (NTE 32mg/day)

SEVERE PAIN: LONG ACTING	SEVERE PAIN: SHORT ACTING (breakthrough pain)
controlled release morphine (Oramorph SR, MS Contin) PO Q 8-12hr	morphine tabs PO Q 1hr (NTE Q 1hr x 6) (20mg/ml liquid available)
methadone (Dolophine) PO/PR Q 8hr (liquid available 10 mg/ml)	hydromorphone (Dilaudid) tabs PO Q 1hr (NTE Q 1hr x 6)
	oxycodone tabs PO Q 1hr (NTE Q 1hr x 6) (20mg/ml liquid available)
fentanyl and Oxycontin need approval	

FDA BLACK BOX WARNINGS: methadone – cardiac toxicities: QT prolongation and Torsades de Pointes; fentanyl patch (Duragesic) - only indicated for use in opioid-tolerant patients. Avoid exposing the patch to heat - promotes the release and increases the absorption of fentanyl.

ADJUVANT MEDICATIONS FOR PAIN CONTROL

NEUROPATHIC PAIN

□ for dysesthesias (burning, shooting pain) consider anticonvulsants	□ Special considerations requiring Medical Director approval:
gabapentin (Neurontin) 100-300mg PO BID-TID **(see titration guide)**	venlafaxine (Effexor IR) 37.5mg BID (max 225mg/day)
clonazepam (Klonopin) 0.5mg daily -TID (max 20mg/day)	duloxetine (Cymbalta) 60-120mg daily (peripheral neuropathy; depression)

Dexamethasone should be considered as an adjuvant for severe neuropathic pain – when not appropriate, consider starting gabapentin at TID dosing instead of daily for 70kg and normal renal function. Increase fall risk precautions.

EQUIANALGESIC REFERENCE TABLE

MEDICATION	ORAL	PARENTERAL	HALF-LIFE
morphine	30 mg	10 mg	2-3.5 hrs
hydromorphone (Dilaudid)	4 mg	1.5 mg	2-3 hrs
meperidine (Demerol)	Not recommended	Not recommended	
oxycodone	20 mg	N/A	2-3 hrs
hydrocodone (Vicodin)	20 mg	N/A	

GABAPENTIN TITRATION (ADULTS)

DOSING PHASE:	TIME:	DOSE:
Initiation	Day 1	300mg daily single dose
↓	Day 2	600mg/day divide BID
↓	Day 3	900mg/day divide TID
Titration	Day 4-14	900-1800mg/day divide TID
Maintenance	Day 14 - on	1800-3600mg/day divide TID

ADJUSTMENTS REQUIRED FOR RENAL INSUFFICIENCY AND GERIATRIC PATIENTS

TRANSDERMAL FENTANYL (DURAGESIC)

Half-life: IV = 3-4 hr; Transdermal = 17 hr

Fentanyl 25µg/hr = morphine 1mg/hr IV

GUIDELINES FOR IV AND SUBQ OPIOID TITRATION

FOLLOW ORAL TITRATION GUIDELINES

- Bolus dose should be 50-150% of the hourly rate
- Bolus dosing interval should be every 10-20 minutes
- Assess desired effect vs. side effect every 10-15 minutes
- May adjust bolus dose every 30 minutes until desired effect
- Adjust basal rate no more frequently than every 6 hours
- Use # of bolus doses as guide to increase basal rate
- Never increase by more than 100% at one time

MORPHINE TO METHADONE EQUIANALGESIC DOSE RATIO

Methadone half-life 24-36 hrs

Total PO Morphine Dose	Conversion Ratio
< 90 mg/day	4 : 1
90 - 300 mg/day	10 : 1
300 - 900 mg/day	15 : 1

DUE TO INCOMPLETE CROSS TOLERANCE, THE INITIAL METHADONE DOSE SHOULD BE 50-75% OF EQUIANALGESIC DOSE

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*NOTE: ranges in frequency is meant as a reference ONLY, orders must specify frequency or time interval, ranges are not acceptable.

SYMPTOM MANAGEMENT

CONSTIPATION:

senna 1-4 tabs PO daily-BID (motility)
docusate (Colace) 100-400mg daily-BID (lubricant)
magnesium (MOM) 30-60ml PO QHS PRN
lactulose (10g/15ml) 15-30ml daily - QID PRN (lack of water content)
bisacodyl (Dulcolax) tabs 2-8 PO daily PRN
magnesium citrate 1/2-1 bottle PO PRN
glycerin suppository PR daily PRN no results from lax
bisacodyl (Dulcolax) suppos PR Q 3days PRN no results from lax
mineral oil (Fleet) enema PR Q 3days PRN no results from suppository

NAUSEA AND VOMITING

Establish cause: V.O.M.I.T. (vestibular, obstruction, motility, inflammation, toxins)
BDR suppos 1 PR BID-QID x 3-5days change to PO when stable (intractable)
Dosage: *(Benadryl 25mg/Decadron 4mg/Reglan 10mg)*
diazepam (Valium) 2.5-10mg PO Q 6hr (vestibular)
dexamethasone (Decadron) 2-8mg PO daily (CA associated, opioid induced)
haloperidol (Haldol) 0.5-2mg PO/SL/IM Q 8hr (opioid induced/toxins)
metoclopramide (Reglan) 10-20mg PO AC & HS (gastroparesis/motility)
scopolamine (Transderm-Scop) 1.5mg (1-2 patches) topically Q 72hr (motion)
promethazine (Phenergan) 12.5-25mg PO/PR Q 6 hr (inflammation)
prochlorperazine (Compazine) 10mg tab/25mg suppos Q 6hr (opioid induced)

ANXIETY

lorazepam (Ativan) 0.5-2mg PO/SL Q 4hr
diazepam (Valium) 2.5-10mg PO/SL Q 6hr
haloperidol (Haldol) 0.5-2mg PO daily or BID
risperidone (Risperidol) 0.5-2mg PO daily or BID

INSOMNIA

Sleep Initiation:
diphenhydramine (Benadryl) 25-50mg PO QHS
zolpidem (Ambien) 5-10mg PO QHS
Insomnia with depression and anorexia:
Mirtazapine (Remeron) 15mg PO QHS

Sleep Mainanence:
trazadone (Desyrel) 50-150mg PO QHS
temazepam (Restoril) 15-30mg PO QHS

DELIRIUM

haloperidol (Haldol) 0.5-2mg PO daily or BID
quetiapine (Seroquel) 25-50mg PO daily or BID

TERMINAL AGITATION

phenobarbital 200-800mg daily or in divided doses PO/PR
clonazepam (Klonopin) 0.5mg daily up to TID (max 20mg/day)

DEPRESSION (determine if pre-existing)

Prognosis weeks to months:
Methylphenidate (Ritalin) 2.5-10 mg daily
Dextroamphetamine 2.5-10 mg daily to BID
Prognosis several months or for severe depression transition to:
Sertraline hydrochloride (Zoloft) 25mg QHS
Paroxetine hydrochloride (Paxil) 10-40 mg daily

With anxiety
Citalopram hydrobromide (Celexa) 10-20 mg QHS
With pain:
Mirtazapine (Remeron) 15-30mg PO QHS
Venlafaxine (Effexor) 37.5-75mg PO daily

CACHEXIA/ANOREXIA

dexamethasone (Decadron) 2-8mg PO daily
prednisone 5-20mg PO daily
megastrol (Megace) discuss with Medical Director

SEDATION/ASTHENIA

dextroamphetamine (Dexadrine) 5mg PO daily
methylphenidate (Ritalin) 10-30mg PO daily-BID

DYSPEPSIA/GI HYPERSECRETION (often pre-existing)

Mylanta (aluminum hydroxide, magnesium hydroxide simethicone, sorbitol) 30cc PO up to QID
esomeprazole magnesium (Nexium) 40mg PO daily
omeprizole (Prilosec) 20mg PO daily
famotidine (Pepcid) 20-40mg PO daily
misoprostol (Cytotec) 200µg BID or QID

DYSPNEA

lorazepam (Ativan) 0.5-2mg PO/SL Q 4hr
morphine 5-10 mg PO/SL Q 2hr (opioid naïve paitents)
albuterol inhaler 2 puffs Q 4hr prn wheezing
prednisone 10-20mg PO daily -TID PRN severe SOB
O2 @ 2-4L/min via N/C PRN

COUGH

NON-PRODUCTIVE (or unable to cough)

guaifenesin/dextromethorphan (Robitussin DM) tsp 1-2 PO Q 4hr
benzonatate (Tessalon perles) 100-200mg PO TID
diphenhydramine (Benadryl) 25mg Q 4hr (NTE 150mg in 24hr)

PRODUCTIVE (coughing effectively)

guaifenesin (Robitussin) tsp 1-2 PO Q 4hr
diphenhydramine (Benadryl) 25mg Q 4hr (NTE 150mg in 24hr)
Inhaled lidocaine 2% 5-10 ml (100-200mg) Q 4hr via nebulizer (NPO x 30

	min)

Encourage fluids, may use humidifier @ bedside, percussion and postural drainage (productive)

DIARRHEA	SECRETION CONTROL
loperamide (Imodium) 2-4mg PO QID PRN up to 16mg/day Lomotil (diphenoxylate 2.5mg/atropine 0.025mg) 1-2 tabs PO QID PRN tincture of opium 10% solution 0.6-0.8ml PO daily-QID PRN	atropine opthalmic solution 1% gtts 1-2 SL Q 2hr PRN glycopyrrolate (Robinul) 1-2mg PO BID-TID; 0.2-0.4 mg SQ BID-TID scopolamine 1.5mg patch topically every 72 hours (up to 3 patches)
HICCUPS	**FEVER/RIGORS**
baclofen 5-10 mg PO Q 8hr metoclopramide (Reglan) 10-20mg PO TID-QID haldol 2-5 mg PO loading dose; 1-4 mg PO TID chlorpromazine (Thorazine) 25mg PO/PR Q 12hr PRN	acetaminophen (Tylenol) 650mg PO/PR Q 4hr PRN Temp >101E prednisone 5-20mg PO daily indomethacin (Indocin) 50mg suppository 1 PR BID-TID (NTE *200mg/day)*
SEIZURES/MYOCLONUS	**PRURITUS**
diazepam (Valium) PO/SL Q 4hr phenobarbitol 30-100mg PO/PR dialy - BID PRN lorazepam (Ativan) 0.5-2mg PO/SL Q 4hr	diphenhydramine (Benadryl) 25-50mg PO QID until resolves hydroxyzine (Atarax) 25-50mg PO Q 6hr until resolves doxepin 10mg PO QHS
URINARY TRACT INFECTIONS	**RESPIRATORY INFECTIONS**
Covered in patients with <u>new</u> caths; otherwise not related (chronic)	Covered in patients with Lung CA and COPD; otherwise not related
Frequency: x 3 days for non-cath; x 7days for catheter patients co-trimoxazole:TMP/SMZ (Bactrim DS) 1 PO BID doxycycline 100mg PO BID; Ciprofloxacin (Cipro) 250-500mg PO BID	levofloxacin (Levoquin) 500mg 1 PO QD x 7 days azithromycin (Zithromax- ZPack) 500mg x 1 day; 250mg x 4 days

ORAL CARE

XEROSTOMIA/DRY MUCOUS MEMBRANES	STOMATITIS/MUCOSITIS	CANDIDIASIS/THRUSH
artificial saliva apply to oral mucosa PRN pilocarpine (Solagen) 5-10mg TID sugarless candy (citrus)	NACL rinse Q 1hr PRN viscous lidocaine 2% 5ml PO Q 2hr PRN sucralfate (Carafate) slurry S&S PRN	UCD mouth wash # 1 S&S 1 tsp AC & HS □ *contains: equal parts nystatin, lidocaine, mylanta* clotrimazole (Mycelex) Troches 1 PO 5 x daily x 5 days fluconazole 100mg daily if unresponsive or recurrence