Supplement 1. The palliative dyspnea Protocol

NOTE: These guidelines won't cover every clinical situation. Please page the DFCI/BWH Palliative Care service at #42200 with questions – we are happy to help!

Is the patient able to tolerate PO and/or experience **only mild to moderate** dyspnea?

- **Yes** → Order PO opioid PRN
- **No** → Order IV opioid PRN

Helpful Tips / Other Resources

- If uncontrolled dyspnea or pain:
  - Repeat PRN after 15 mins
  - Consider doubling PRN dose after that
- Remember to start a bowel regimen for all patients on opioids!
  - See Constipation section on previous page
- Other resources for pain/symptom management: pinkbook.dfci.org and getfastfacts.org

Choosing Initial Opioid Dose

Oral Medications
Onset: 30-60 mins, Duration: 4 hrs

NORMAL renal function
- **MORPHINE** solution 5-10mg PO q3h PRN
- Older patients: 2.5-5mg PO q4h PRN

ABNORMAL renal function (CrCl<50)
- **HYDROMORPHONE** solution/tablet 1-2mg PO q3h PRN
- Older patients: 0.5-1mg PO q4h PRN

IV Medications
Onset: 10-15 mins, Duration: 3-4 hrs (except Fentanyl)

NORMAL renal function
- **MORPHINE** 2-4mg IV Q2h PRN
- Older patients: 1-2mg IV Q2h PRN

ABNORMAL renal function (CrCl<50)
- **HYDROMORPHONE** 0.2-0.4mg IV Q2h PRN
- Older patients: IV hydromorphone 0.1-0.2mg Q2h PRN

IV FENTANYL: quick onset, short duration
- **FENTANYL** 25-50 mcg IV Q15 min PRN
- Older patients: **IV FENTANYL** 12.5-25 mcg Q15min PRN
- Onset of action = 1-3 minutes
- Duration = 1-2 hours

Converting Long-Acting Opioids to IV Infusions

Opioid Conversion Table

Drug	PO/PR (mg)	IV/SQ (mg)
Morphine	30	10
Oxycodone	20	N/A
Hydromorphone	7.5	1.5
Fentanyl	N/A	0.1 (100mcg)

1. Calculate total long-acting opioid use in 24 hours
2. Convert to IV medication of choice based on conversion chart
3. Reduce dose by 25% if pain/dyspnea controlled, don't reduce if symptoms poorly controlled
4. Divide by 24 to reach hourly rate

E.g. Patient takes OxyContin 60mg BID.
120 mg daily oxycodone = 60mg IV morphine / 24 hours = 2.5mg/hour IV morphine. Can decrease by 25% depending on symptom severity.

Managing Opioid Infusions for Dyspnea or Pain

To determine the starting rate of an INFUSION:
1. Add up the past 12-hour IV opioid requirement
2. Divide by 12 to reach hourly rate

E.g. Patient received 24mg IV morphine in 12 hours. Starting infusion rate would be 2mg/hr.

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ALWAYS USE PRN BOLUSES FOR ACUTE SYMPTOMS

PRN bolus can be increased up to q15min PRN (or q10 min for Fentanyl)

PRN bolus dose = Range from drip rate to 2x the drip rate

E.g. Patient is on Morphine 2mg/hr.
PRN bolus would be 2-4mg Q1H PRN hours PRN

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Increase infusion rate if requiring >3 PRN doses in 6 hours:
1. Add up PRN doses and divide by # hours given
2. Add this to current infusion rate
3. Continue to use boluses PRN

E.g. Patient is on Morphine IV 2mg/hr and receives 12mg in PRN's over 4 hours. This is an additional 3mg/hr; rate should increase from 2 to 5mg/hr.