

**Cancer Pain Role Model Program Case  
Studies and Faculty Guides**

**Wisconsin Cancer Pain Initiative  
Madison, Wisconsin**

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**WISCONSIN CANCER PAIN INITIATIVE  
CANCER PAIN ROLE MODEL PROGRAM**

Case Studies and Faculty Guide  
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## Case 1

A 25-year old man has been hospitalized for 2 weeks with newly diagnosed lymphoblastic lymphoma. He is being treated with combination chemotherapy with curative intent. Ten days after the start of chemotherapy he develops severe pain on swallowing – upper GI endoscopy reveals herpes simplex esophagitis. He is unable to eat solid foods due to the pain although he can swallow some liquids. The pain is described as 10/10 and is not relieved by acetaminophen with codeine oral solution ordered q6h prn.

The patient repeatedly asks for something for pain prior to the 6 hour dosing and is often heard moaning. The physician is concerned about using an opioid of greater efficacy or administering opioids more frequently because the patient has a history of poly-drug abuse including opioids, although none in the last two years. The nurses are angry at the patient because of the repeated requests for medication and have written in the chart that the patient is drug seeking, possibly an addict.

You are asked to see the patient as a "pain consultant". After your assessment you recommend a change to MSIR oral solution 15mg q-24 around-the-clock or morphine by continuous IV infusion. The attending physician calls you after reading your consult note and says: "I appreciate your consult but I really think this patient is drug seeking and I don't feel comfortable with your recommendations – let me think it over."

The next day you check the chart and find your suggestion has not been taken but the acetaminophen with codeine was discontinued in place of oxycodone/acetaminophen oral solution q4h prn (equivalent to one Percocet q4h). Over the next several days the patient is still complaining of pain but there are no new analgesic orders. On the fifth hospital day, you note that there is an order for a psychiatry consult with the comment: "patient with history of drug abuse, now with drug seeking behavior, please evaluate for addiction treatment."

### Questions:

1. Is this patient a drug addict? List criteria you would use to decide if the patient was seeking drugs for illicit or euphoric purposes rather than for relief of pain?
2. Put yourself in the position of the attending physician or staff nurse – what would be your major concerns about providing stronger analgesics to this patient? List at least three fears/concerns.
3. As the pain consultant what would you do? What arguments or educational techniques could you use to help convince the physician/nurse to follow your recommendations?

## Case 2

Mr. Jones is taking 2 Percocet tablets every 4 hours for bone pain related to metastatic lung cancer.

Calculate the equianalgesic dose and schedule for the following opioids:

- a) oral MS-immediate release
- b) oral MS Contin
- c) oral hydromorphone (Dilaudid)
- d) fentanyl patch (Duragesic)
- e) IV morphine infusion
- f) Oral methadone
- g) Subcutaneous morphine infusion

### Case 3

A 76 y/o man in a home hospice program has end stage metastatic prostate and severe COPD. He complains of back pain secondary to multiple bone metastases. The pain, which he rates at 9/10, severely limits his movement. The pain is poorly relieved by 120mg of MS Contin q8h and ibuprofen 600mg q6h. The patient understands his condition is "terminal" and wants maximal pain relief. He does not wish to return to the hospital for any further tests since he has already had maximal doses of radiation, strontium-89, and hormonal therapy.

The home hospice nurse contacts the primary physician and asks to have the dose of opioid increased; the physician agrees and the new order is for MS Contin 150mg q8h with MSIR 15mg q4yh for breakthrough pain. Two days later the nurse calls the physician saying that the increased dose of MS Contin has not reduced the severity of pain and the dose of breakthrough MS is not effective either. The nurse suggests increasing the MS Contin dose to 300mg q8h. The physician explains to the nurse that due to the COPD the patient is at great risk for opioid-induced respiratory depression and that other, non-opioid, analgesic modalities should be tried rather than increasing the dose of MS Contin.

#### Questions:

1. If you were the nurse how would you deal with this reluctant physician – what strategies would you use short of calling the hospice medical director?
2. What are the patient and drug risk factors for respiratory depression?
3. If the patient's respiratory rate dropped to 4-6 breaths/min while he was asleep what would you do?
4. What would be your legal liability if this patient died soon after a dose of morphine? Do you think you could be accused of euthanasia?

## Case 4

A 50 y/o patient with metastatic breast cancer is admitted to the hospital at 1 am because of severe neck pain. She is unable to move her head due to pain which has gradually worsened over two weeks. She has been taking an increasing amount of Percocet with little effect, most recently two Percocet q4h. She is seen by the on-call physician and the following orders are written: Morphine 10-15 mg PO q4-6h prn severe pain, Tylenol #3 1-2 tablet PO q6h prn mild-moderate pain. Diagnostic X-rays have been ordered to evaluate for possible spinal cord compression.

The next morning (8 hours after admission) the patient is still in severe pain, no better than she was before admission and none of the diagnostics have been done because she was in too much pain. You check the chart and find there have been several one-time verbal orders for IV morphine 2mg.

### Questions:

1. List at least 4 problems with the analgesic orders as written.
2. What would have been a better way to write the admission analgesic orders? List two sets of admitting orders, one for oral opioids, the other for parenteral opioids.
3. What is a reasonable time frame in which to expect improved analgesia?

## Case 5

A 50 y/o man with non-small cell lung cancer develops slowly progressive right-sided pelvic pain in the region of known pelvic metastases. He describes dull-aching pain rated 8/10 in the lateral pelvis and sharp shooting pain that radiates down the left leg. The pain limits mobility and awakens the patient from sleep. He has no focal motor or sensory deficits. An X-ray shows a large lytic metastasis in the lateral pelvis. He is referred to a radiation oncologist who recommends a course of palliative XRT at 300 cGY per day for 10 days (total dose 3000 cGY).

The patient has been taking MS-immediate release, 45mg every 4 hours, which worked until the past week. Now this dose only decreases his pain from 8/10 to 6/10 for 1-2 hours at best.

### Questions:

1. Classify this patient's pain type.
2. How soon should analgesia begin from the XRT? When would you expect the maximal benefit from the XRT?
3. How would you change his opioid prescription to provide better analgesia? List three alternative strategies: drug, dose and dosing intervals.
4. If you decide to use an antidepressant as an adjuvant, what drug and dose would you start with? How fast would you increase the dose and what endpoint would you use to decide if the drug was not effective and should be stopped?
5. If you decide to use an anticonvulsant as an adjuvant, what drug and dose would you start with? How fast would you increase the dose and what endpoint would you use to decide if the drug was effective and should be stopped?
6. What other adjuvant drugs might you consider? In what dose and schedule?
7. How would you integrate behavioral treatments into the pain management strategy?
8. If oral drug therapy and radiation therapy fail to control his pain what other strategies could you use? List three in order of preference.

## Case 6

A 75 y/o woman with a history of post-herpetic neuralgia. She describes the pain as burning with a shooting component around her chest. The pain is present 80% of the day but varies in intensity from 3-7/10. It does keep her awake on occasion. She has been taking ibuprofen 600mg q6h Tylenol #3, one tablet q4h, with little relief.

### Questions:

1. Classify this patient's pain type.
2. Would you continue the NSAID at the present dose, change to a different NSAID or discontinue?
3. What would you recommend regarding the use of the Tylenol #3; stop it, increase to 2 tabs q4h, or change to a different opioid? If so, what drug, dose and schedule?
4. If you decide to use an antidepressant as an adjuvant, what drug and dose would you start with? How fast would you increase the dose and what endpoint would you use to decide if the drug was not effective and should be stopped?
5. If you decide to use an anticonvulsant as an adjuvant what drug and dose would you start with? How fast would you increase the dose and what endpoint would you use to decide if the drug was not effective and should be stopped?
6. What other adjuvant drugs might you consider? In what dose and schedule?
7. How would you integrate behavioral treatments into the pain management strategy?
8. If oral drug therapy and behavioral treatments fail to control her pain what other strategies could you use?

## Case 7

A 38 y/o male has a progressive brain tumor and headaches. The patient has been on increasing doses of opioids to control the headaches, most recently taking Dilaudid 4 mg q4h. A home care nurse calls to tell you that the patient is near death and can no longer take PO medication. The family is very concerned about his pain and wants to continue analgesic therapy.

Question:

What are your options for continued opioid therapy?

Faculty Guide-General comments

Remember that the goals of these sessions are to:

1. Have each participant express his/her own feelings about the issues raised by the various cases.
2. Ensure that the knowledge base of the participants is accurate
3. Ensure that the participants leave with a sense of how they can transfer their knowledge to their colleagues.
4. Ensure that the participants can work more effectively with other health care professionals as well as patients and families.
5. Ensure that participants are aware of patients/family barriers that arise when an opioid is recommended for pain control
6. Elicit/determine participant attitudes towards the role of patients and families in the management of pain.

Your challenge is to facilitate rather than lecture, and try to engage as many individuals in the discussion as possible. Break the group into teams of 2-3 persons, preferably matched by work setting. Each team should be given 10 minutes to work cooperatively on each case. Then, you should begin the discussion by asking the group how they responded. Next, proceed to institute a dialog with the group during the next 15-20 minutes to cover as many of the points listed in the faculty guide as possible.

Remember, the participants represent a wide range of practice experiences, from fairly sophisticated to very naïve. By allowing the participants to work together, and to discuss the cases among themselves, there will be an element of peer pressure to help change attitudes.

## Case 1 – Faculty Guide

The primary goals of this case are to get the participants to discuss their own feelings about psychological dependence as a barrier to the prescribing of opioids.

First, it will be important to determine that the participants know the meaning of the terms tolerance, physical and psychological dependence (addiction) and then to determine how their concerns about these phenomena affect prescribing, dispensing, or administering.

Your job is to:

- a) ensure that everyone understands that definitions and differences between tolerance, physical and psychological dependence (addiction).
- b) let the participants discuss what is wrong with the approach to treatment, but just in a general way at this stage. The goal of treatment is to provide sufficient drug at an appropriate time interval so as to provide relief of pain. Psychiatry consultation is not indicated although it might be helpful to the staff.

Discuss techniques for dealing with reluctant clinicians:

Assessment – improve the assessment process so that patients are participating more in their care; review in greater depth the history of drug abuse; any history of drug treatment; patient concerns re: drug use.

Role-playing – have one member play the patient and ask his/her response (what would you do) to prevent inadequate or severe pain.

Provide positive information to clinicians – make sure they understand what addiction is and is not; make sure they understand the consequences of untreated pain – provide resource material.

Cognitive therapy – have clinicians discuss the worst possible consequences of giving more or stronger analgesics – malpractice, respiratory depression, negative sanctions by colleagues or state regulatory authorities – and allow them to understand that their fears are generally not based in reality (however, in some states the threat of regulatory scrutiny is so strong-and real-this issue should not be dismissed lightly).

Patient involvement – make sure everyone understands that the patient should be included when making decisions about the plan of care, especially a patient who might have gone through a drug rehabilitation program.

If significant concerns about diversion are expressed, you could discuss strategies for dealing with patient or family members who may be selling drugs (check blood levels, have a lock box in the home, a written contract).

## Case 2—Faculty Guide

2 Percocet q4h = 10 mg oxycodone q4h = 60 mg oxycodone/24 hours

a and b) Look up the equivalent analgesic doses of oral oxycodone and oral morphine in the table:

30 mg oral oxycodone is equivalent to 30 mg oral morphine.

Therefore, 60 mg oral oxycodone/24 hours = 60mg of oral MS/24 hours.

Divide the 24 hour dose (60 mg) by the duration of action of the specific opioid to determine the appropriate dose to administer.

= 10 mg MSIR q4h

= 30 mg MS Contin q12h

Look up the equivalent analgesic doses of oral oxycodone and hydromorphone:

30 mg oral oxycodone is equivalent to 7.5 mg oral hydromorphone

30 mg PO oxycodone = 7.5 mg PO hydromorphone

60 mg PO oxycodone X mg IV morphine

X = 15 mg PO hydromorphone/24 hours

= 2.5 mg Dilaudid q4h

c) Manufacturer suggests that 25 ug/h transdermal fentanyl is equivalent to 45-134 mg oral MS/24 hours. Therefore, the calculated morphine dose of 60 mg/24 hours would suggest an equianalgesic dose of fentanyl of 25 ug/h. However, most clinicians would double this dose and use a 50 ug patch. Common "rule of thumb":

Mg morphine or equivalent opioid/24 hr = ug fentanyl/h

d) Look up the equivalent analgesic doses of oral oxycodone and parenteral morphine in the equianalgesic table:

30 mg PO oxycodone is equivalent to 10 mg parenteral morphine.

30 mg PO oxycodone = 10 mg IV morphine

60 mg PO oxycodone X mg IV morphine

X = 20 mg IV morphine/24 hours

Or approximately 1 mg IV morphine/h

e) Look up the equivalent analgesic doses of oral oxycodone and oral methadone in the equianalgesic table:

30 mg PO oxycodone is equivalent to 20mg PO methadone.

30 mg PO oxycodone = 20 mg PO methadone

60 mg PO oxycodone X mg methadone

X = 40 mg PO methadone/24 hrs.

Or 10 mg PO methadone q6h

f) Doses of subcutaneous and intravenous morphine are the same

## Case 3 – Faculty Guide

### Goals:

Discuss the medical and ethical aspects of opioid – induced respiratory depression.

Confront fears about accidental overdose.

Your job is to:

1. allow discussion of the management of the patient's pain
2. ensure the following points are discussed:
  - a. Tolerance develops rapidly to the CNS depressant effects of opioids.
  - b. The risk factors for respiratory depression include: rapid dose escalation, particularly of methadone or levorphanol; rapid IV bolus dosing or new liver or renal dysfunction.
  - c. Naloxone (Narcan) can be administered by IV bolus or by slow IV infusion. The latter can reverse opioid effects in a step-wise fashion: coma – sleep – awake with analgesia – awake with pain/opioid withdrawal syndrome.
  - d. After a bolus dose as long as the primary purpose was to relieve pain. In reality, discuss concerns about a patient dying while receiving morphine: there is nothing ethically inappropriate about a patient dying on a morphine infusion or death due to opioid-induced respiratory depression occurs very rarely.

## Case 4 – Faculty Guide

### Goals:

This case emphasizes that physicians and nurses have a responsibility to provide timely pain relief. Discuss 1) the treatment of severe pain with escalating doses of oral morphine or other opioids, 2) how to choose an equianalgesic starting dose and calculate an appropriate dose for breakthrough pain, 3) the time frame in which to expect relief of pain.

Your job is to:

- a) allow the participants to express their ideas about better admitting orders; discuss when to use prn vs. non-prn dosing; discuss the problems associated with the use of dosing ranges. The problems with the orders as written include 1) range of doses, 2) range of dosing intervals, 3) prn dosing for continuous pain, 4) descriptors-mild, moderate, severe.
- b) discuss a reasonable set of admitting orders (there is no "right" answer), e.g., calculate appropriate starting doses of oral and parenteral morphine:

Oral dosing:

MS 20 mg PO q4h with MS 10-20 mg q1h prn breakthrough pain

Call the MD within 1 hour to report on patient's condition

IV dosing:

MS drip at 2 mg/hr after a bolus dose of 5 mg IV with 5 mg q1h prn breakthrough pain

Call MD within 1 hour to report on patient's condition

To calculate the oral dose, begin by noting that:

2 Percocet q4h = 12 tabs/24 hrs = 60mg oxycodone/24 hrs

Look up the approximate equivalent dosages of oxycodone and morphine in an equianalgesic table.

30 mg oxycodone = 30 mg morphine

60 mg oxycodone X mg morphine

solve for X which obviously = 60 mg MS/24 hrs

= 10 mg MS q4h

Since the patient had pain unrelieved by an equianalgesic dose of Percocet, it is appropriate to start at double this dose which is 20 mg MS q4h.

As a general rule, for moderate-severe pain, increase the dose by 50-100%; for mild pain increase by 25-50% (fine tuning). Always increase the dose by a percentage of the prior dose.

To calculate the parenteral dose, again refer to an equianalgesic table:

With chronic dosing, the ratio of oral to parenteral morphine is 30:10

Therefore, 20 mg oral MS q4h or 120 mg oral MS/24 hrs

= 40 mg parenteral MS/24 hr

= ~ 2 mg/hr

- c) Discuss a reasonable time frame in which to expect better analgesia: certainly within the first four hours, a patient in severe pain should be at least 50% improved and have improvement in ADLs. The important point is that the dose of opioid can and should be adjusted frequently within the first few hours if pain is not quickly relieved. If rapid dose adjustments fail to make any impact then other measures will be needed.

## Case 5 – Faculty Guide

1. Pain type-mixed, both somatic and neuropathic.
2. (and 3) Analgesia typically begins within a few days, maximal analgesia is obtained 2-4 weeks after the completion of XRT.
4. Multiple options: current dose of 270 mg/24 hr should be increased by 50%.
  - a) increase 45 mg q4h dose to 70 q4h.
  - b) start MS-Contin or Oramorph SR at 200mg q12h plus breakthrough MSIR at 60mg q4h.
  - c) start fentanyl patch- dose conversion is not precise; start at 200 mg plus MSIR 60 mg q4h for breakthrough.
5. Start at 25 mg of Elavil, increase by 25 mg every three days to target dose of 100-125 mg, if no response in 7 days at that dose then discontinue.
6. Start Tegretol at 100 mg bid, increase by 200 mg (in divided doses) every week up to a maximum of 400-800 mg/day until pain is controlled or intolerable side effects develop. Follow blood levels, use them as a rough guide to predict side effects.
7. Alternative antidepressants or anticonvulsants; steroids, mexiletine; NSAID's.
8. Start training in relaxation techniques or imagery ASAP if patient is interested.
9. Depends on which of the pains is still a problem: the dull aching somatic pain or shooting neuropathic pain.
  - For somatic pain, options include:
    - Strontium 89
    - Epidural infusion of opioid and local anesthetic
    - Spinal neurolytic block
  - For neuropathic pain options include:
    - Epidural infusion of opioids and local anesthetics
    - Spinal neurolytic block
    - Cordotomy

## Case 6 – Faculty Guide

Neuropathic pain.

Stop the ibuprofen; although NSAID could be tried, it is unlikely to be of benefit for neuropathic pain.

Stop the Tylenol #3, try a more effective opioid such as Percocet, plain oxycodone or MSIR. Increase the dose until analgesia or unwanted side effects develop.

(and 5) See case 5.

6. Steroids, oral local anesthetics (Mexiletine) or IV

lidocaine.

7. Start training in relaxation techniques or imagery.

8. Other options: none works well.

a) TENS

b) steroid injection into brachial plexus

c) epidural catheter with opioid infusion

d) brachial plexus neurolytic procedure or rhizotomy (cutting peripheral nerves as they exit the spinal cord)

e) cordotomy

## Case 7 – Faculty Guide

### Goals:

This case is designed to discuss alternatives to oral opioid therapy in a patient who responds to opioids, but can no longer take them by mouth. Encourage the participants to discuss their own experiences in handling this problem; you may hear some novel solutions. The important points to be covered include:

rectal dosing is equivalent to oral dosing. Rectal preparations include MS suppositories or MS Conitin/Oramorph SR (inserted as is or in gelatin capsules), Dilaudid suppositories or the rarely used oxymorphone suppository.

the small immediate release tabs of MS or MS solution can be given sublingually/bucally. Fentanyl patches are a good non-invasive, although expensive, alternative.

Parenteral infusions should be needed rarely; if there is no existing indwelling central venous catheter (Hickman), then a subcutaneous infusion can be used. Remember, the dose for SQ infusion is similar to that for IV infusion but the drug concentration needs to be adjusted so that the infusion rate is  $<2.0$  ml/hr.