A Survey of Hospice and Palliative Care
Part 2: Therapeutic Interventions

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The past 40 years have seen the emergence of a systematic approach to the palliative care of the patient with advanced progressive disease. Formalized in the Medicare hospice benefit established in 1983 and now expanding though the development of palliative care consultation services, these models of interdisciplinary palliative care are widespread in the United States. This is the second part in a 2-part series on hospice and palliative care. Part 1, published in the December 2004 issue of *Hospital Physician*,[1] reviewed the history of the palliative care and hospice movement in the United States and addressed the hospice team approach to care, the Medicare hospice benefit and qualifying medical conditions, and ethical issues germane to care of patients with advanced progressive disease. Part 2 considers specific interventions for symptom control. A hypothetical case illustrating these concepts is followed through both parts of the series.

Good symptom management is the bedrock of palliative and hospice care. Most patients can, in fact, be relieved of most discomforting symptoms within days of the application of a stepwise and systematic program of care. What is required is a commitment to the goal of relief as a major therapeutic end point.

TOTAL PAIN AND SUFFERING

Dame Cicely Saunders, a physician and a founder of the modern hospice and palliative care movement, is generally credited with developing the concept of "total pain and suffering," which she divided into 4 domains.[2] Physical pain is the pain most commonly considered in the conventional medical model and is generally responsive to analgesic and opioid medications. Psychological pain is most commonly manifested as depression, anxiety, or agitation. Social pain results from the changing relationships occurring with progressive disease; for example, one's changing ability to interact with family members or friends, the responses of others to illness, or one's ability to provide financial support in the future. Existential or spiritual pain encompasses broader questions, such as the meaning of one's life, the legacy one leaves behind, and the "why"

of dying. To see suffering and then apply only a physical pain model is most likely to miss the other major causes and, thus, miss the opportunity to intervene effectively. When high-dose analgesic therapy is failing, it is often because nonphysical pain is not being identified and addressed. Addressing total pain and suffering calls for an interdisciplinary approach, as is reflected in the staffing model of the Medicare hospice benefit or the emerging palliative care consultation programs discussed in part 1 of this series.[1]
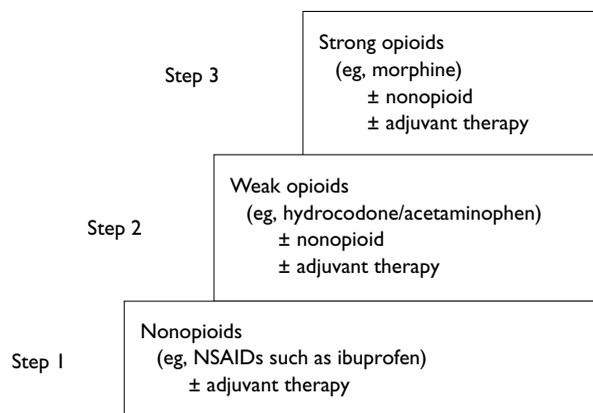
PAIN MANAGEMENT
WHO Pain Ladder

The foundation of pain control is the World Health Organization (WHO) step approach (**Figure 1**).[3] Developed in 1986, the WHO pain ladder represents an attempt to address chronic pain in a logical and progressive fashion, using opioids as the mainstay for moderate and severe pain. Initially developed for cancer pain, it is appropriate for all chronic pain. The opioid drugs are very effective agents, and those caring for patients in pain must assume the obligation to learn to use these agents appropriately.[4] The ladder also mandates the use of adjuvant medications. An excellent series of tables of appropriate drugs in each of the classes identified in the WHO ladder has been published.[5]

Implementation of the ladder begins with an assessment of pain, based largely on the self-report of the patient. Several pain scales are commonly used. The most common is an analogue scale from 0 to 10, with 10 representing the most severe pain the patient can imagine. The FLACC scale, used with noncommunicative patients, calls for observation of five parameters: the patient's **f**ace (relaxed or tense), **l**egs (relaxed or drawn up), **a**gitation, **c**onsolability, and **c**rying.[6]

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Step 3

Strong opioids
(eg, morphine)
± nonopioid
± adjuvant therapy

Step 2

Weak opioids
(eg, hydrocodone/acetaminophen)
± nonopioid
± adjuvant therapy

Step 1

Nonopioids
(eg, NSAIDs such as ibuprofen)
± adjuvant therapy

The 5 basic concepts of the WHO ladder for controlling pain:

1. By the mouth
2. By the clock
3. By the ladder
4. For the individual
5. With attention to detail

Figure 1. The World Health Organization (WHO) steps for controlling cancer pain. NSAID = nonsteroidal anti-inflammatory drug. (Adapted with permission from World Health Organization. Cancer pain relief: with a guide to opioid availability. 2nd ed. Geneva: The Organization; 1996.)

The WHO ladder begins at step 1 with administration of nonopioids such as the nonsteroidal anti-inflammatory drugs (NSAIDs) (eg, ibuprofen). Analgesics for chronic pain should be not be given on an as-needed basis but around the clock—chronic pain mandates chronic medicating. If pain relief is inadequate, prescribing should then progress to the step 2 drugs of the weak opioid class, which include codeine, hydrocodone, and oxycodone in combination with an NSAID or other nonopioid analgesic (usually acetaminophen). If pain relief remains inadequate, step 3 drugs are then used; these drugs comprise the strong opioid class and include morphine, fentanyl, hydromorphone, methadone, levorphanol, and hydrocodone (supplied as a single agent).

Certain opioids are not appropriate for chronic pain management. In particular, a metabolite of meperidine accumulates after several days of administration and can lead to confusion, seizures, and even death. In addition, the agonist/antagonist agents, such as pentazocine, interfere with the action of pure agonists (eg, morphine) and also should be avoided.

Prescribing Opioid Medications

Because they are combination products with acetaminophen or ibuprofen, step 2 opioids have maximum doses that are dictated by the dosing limits of the nonopioid. Step 3 opioids, which are not combined with either of these drugs, do not have maximum doses; consequently, they should be titrated against pain relief rather than dosed at an arbitrary number of milligrams. It is not uncommon for patients in chronic pain to be taking hundreds of milligrams of morphine daily; some patients may require several grams daily. The important principle is the careful titration of dosing based on clinical response. The prescribing algorithms for step 2 and 3 drugs shown in **Figure 2** and **Figure 3**
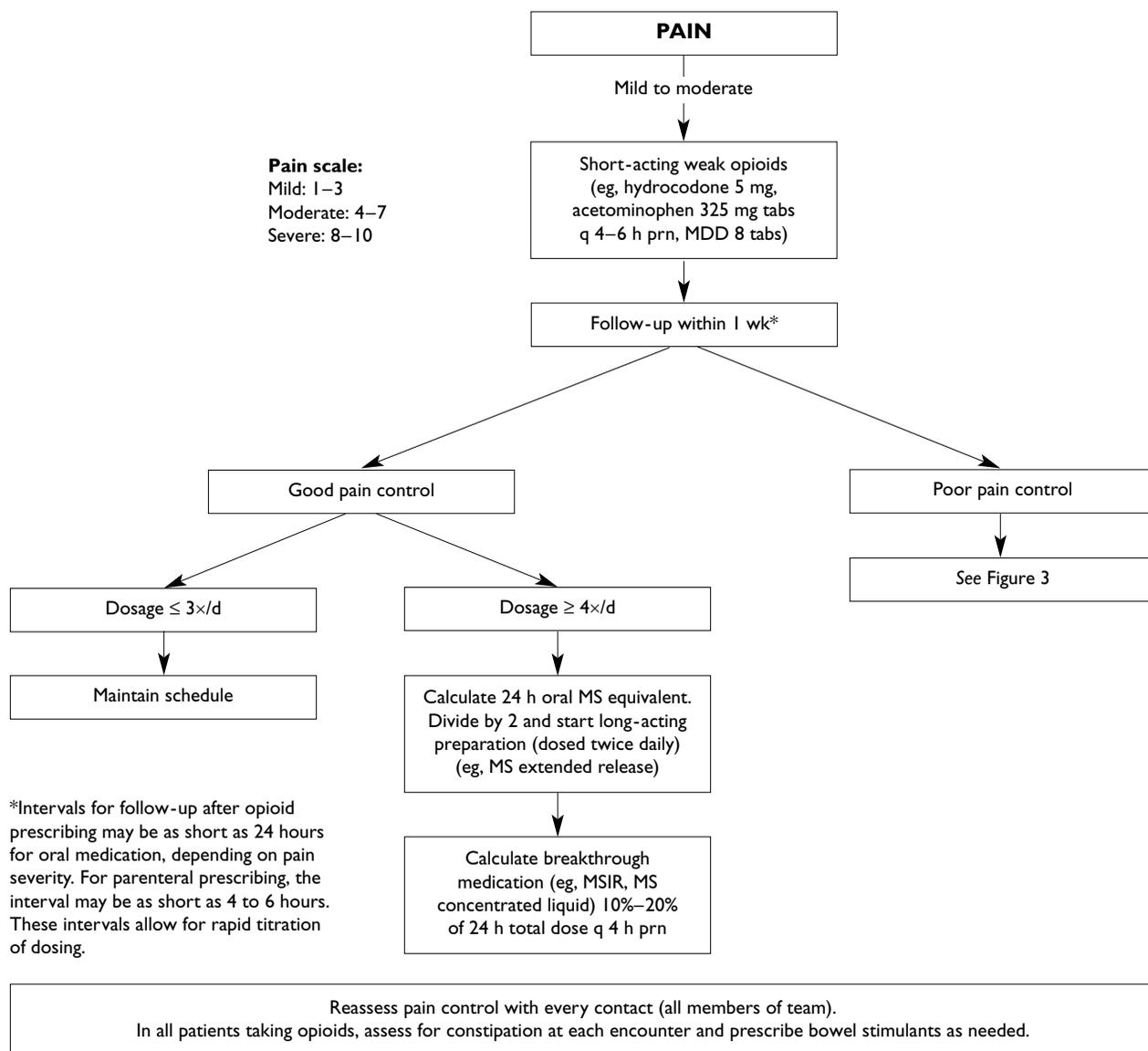
illustrate usual starting doses and recommended percentage increases for titration.

Opioids are available in both short-acting and long-acting forms. Many patients will ultimately be given long-acting opioid preparations, available for morphine, oxycodone, and fentanyl. For initial prescribing, however, short-acting preparations are usually given at frequent intervals in order to gauge an effective dosage range over a 24-hour period. When opioid administration occurs in a carefully titrated fashion based on the patient's clinical response to pain control, concerns with opioid overdose can be avoided. Appropriate monitoring for signs of possible opioid depression (ie, increasing somnolence, decreasing respiratory rate) allow for prompt reduction in opioid dosing in a timely fashion and before irreversible harm occurs. When reasonable pain relief has been achieved on an as-needed basis, the 24-hour total dosage of orally administered morphine is calculated. The total dosage is then converted into divided dosages, and an equianalgesic long-acting preparation is prescribed.

When long-acting preparations are used, a breakthrough agent is also prescribed. The breakthrough agent is often the same drug, but in a short-acting form and in a dose that reflects a percentage of the total daily opioid dose (usually 10%–20%). It provides assurance that the patient has medication to relieve pain if the long-acting preparation is at an insufficient dosage or if there is escalating pain. Summing the number of breakthrough doses used in the next 24-hour period then allows recalculation of the total daily opioid requirement. Based on that recalculation, a new long-acting dosage and breakthrough agent is prescribed. This prescribing method is illustrated in the case discussed later.

Adjusting Dosages

In the setting of moderate or severe pain, dose

PAIN

Mild to moderate

Pain scale:
Mild: 1–3
Moderate: 4–7
Severe: 8–10

Short-acting weak opioids
(eg, hydrocodone 5 mg,
acetominophen 325 mg tabs
q 4–6 h prn, MDD 8 tabs)

Follow-up within 1 wk*

Good pain control

Poor pain control

See Figure 3

Dosage ≤ 3×/d

Dosage ≥ 4×/d

Maintain schedule

Calculate 24 h oral MS equivalent.
Divide by 2 and start long-acting
preparation (dosed twice daily)
(eg, MS extended release)

*Intervals for follow-up after opioid
prescribing may be as short as 24 hours
for oral medication, depending on pain
severity. For parenteral prescribing, the
interval may be as short as 4 to 6 hours.
These intervals allow for rapid titration
of dosing.

Calculate breakthrough
medication (eg, MSIR, MS
concentrated liquid) 10%–20%
of 24 h total dose q 4 h prn

Reassess pain control with every contact (all members of team).
In all patients taking opioids, assess for constipation at each encounter and prescribe bowel stimulants as needed.
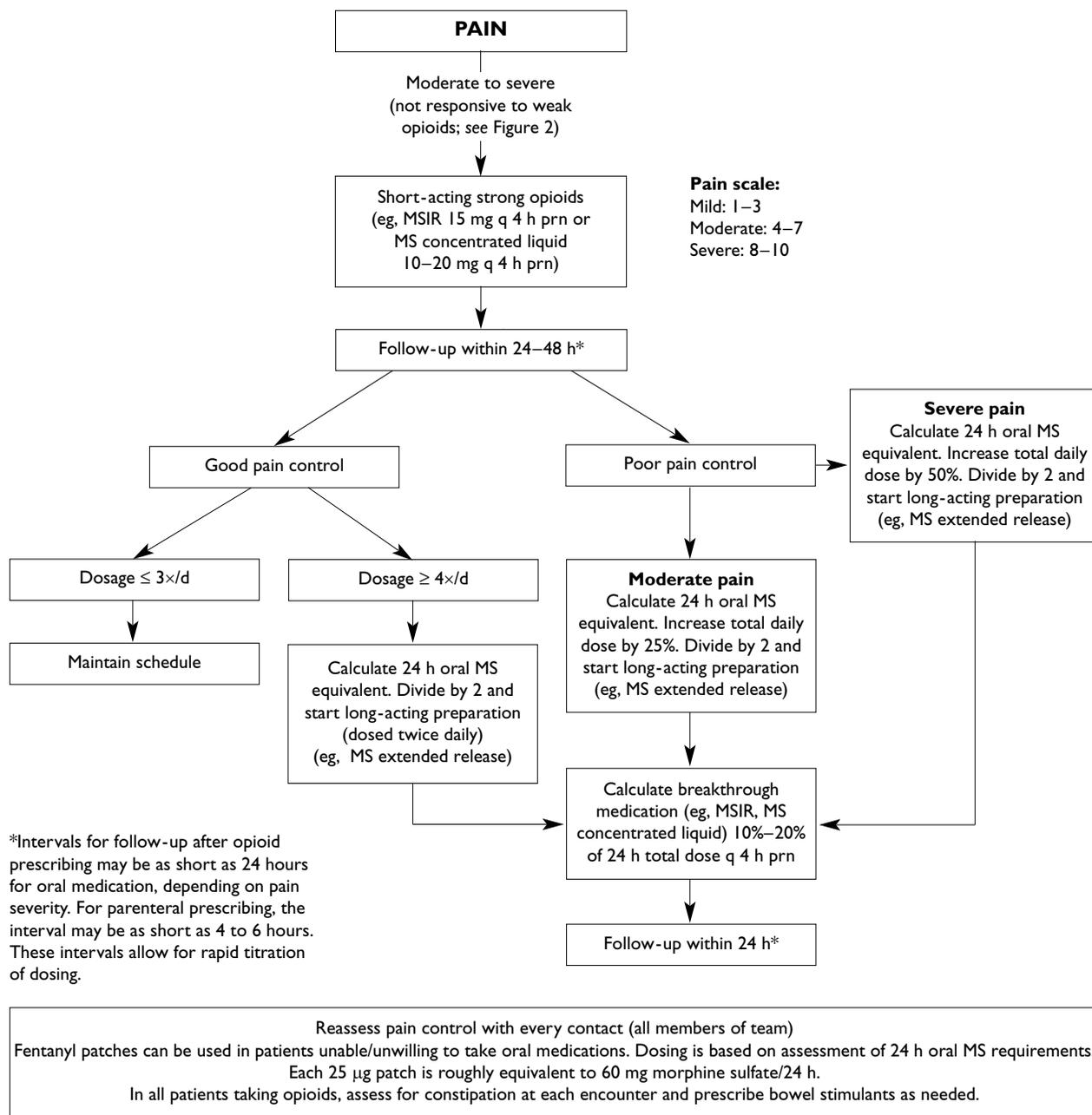
Figure 2. Calculating baseline and breakthrough medication: prescribing initial opioids (WHO ladder step 2). MDD = maximum daily dose; MS = morphine sulfate; MS-IR = morphine sulfate intermediate release; prn = as needed; q = every. (Developed by Larry H. Goldberg, MD, Josephine Cinquini, RN, and Nancy Harte, RN, CHPN. Adapted with permission of Rainbow Hospice, Park Ridge, Il.)

adjustments can be made every 24 hours; some of the required follow-up evaluations can be conducted by phone, assuming patients are reliable. Most pain can be controlled within days with this disciplined approach.

At times, intravenous administration of morphine, which allows titration at a much more rapid rate, is necessary. The same principles used to guide oral administration apply. In the patient who has not received regular opioids (an opioid-naive patient), a low infusion rate (eg, 0.5–1 mg/h) should be used first, and a

breakthrough dose should be calculated. At 4- to 8-hour intervals, pain relief and total opioid received should be reassessed, with adjustment of the base rate or size of the intravenous push bolus reflecting the need for additional morphine, as determined by the frequency of bolus usage. In patients receiving regular oral opioids but requiring parenteral therapy, the infusion rate is based on an equianalgesic conversion to determine the initial hourly infusion rate.

At times, patients will be switched from one opioid preparation to another. A common reason for this

PAIN

Moderate to severe
(not responsive to weak
opioids; *see Figure 2*)

Short-acting strong opioids
(eg, MSIR 15 mg q 4 h prn or
MS concentrated liquid
10–20 mg q 4 h prn)

Pain scale:
Mild: 1–3
Moderate: 4–7
Severe: 8–10

Follow-up within 24–48 h*

Good pain control

Poor pain control

Severe pain
Calculate 24 h oral MS
equivalent. Increase total daily
dose by 50%. Divide by 2 and
start long-acting preparation
(eg, MS extended release)

Dosage ≤ 3×/d

Dosage ≥ 4×/d

Maintain schedule

Calculate 24 h oral MS
equivalent. Divide by 2 and
start long-acting preparation
(dosed twice daily)
(eg, MS extended release)

Moderate pain
Calculate 24 h oral MS
equivalent. Increase total daily
dose by 25%. Divide by 2 and
start long-acting preparation
(eg, MS extended release)

Calculate breakthrough
medication (eg, MSIR, MS
concentrated liquid) 10%–20%
of 24 h total dose q 4 h prn

*Intervals for follow-up after opioid
prescribing may be as short as 24 hours
for oral medication, depending on pain
severity. For parenteral prescribing, the
interval may be as short as 4 to 6 hours.
These intervals allow for rapid titration
of dosing.

Follow-up within 24 h*

Reassess pain control with every contact (all members of team)
Fentanyl patches can be used in patients unable/unwilling to take oral medications. Dosing is based on assessment of 24 h oral MS requirements.
Each 25 µg patch is roughly equivalent to 60 mg morphine sulfate/24 h.
In all patients taking opioids, assess for constipation at each encounter and prescribe bowel stimulants as needed.

Figure 3. Calculating baseline and breakthrough medication: prescribing follow-up opioids (WHO ladder step 3). MS = morphine sulfate; MS-IR = morphine sulfate intermediate release; prn = as needed; q = every. (Developed by Larry H. Goldberg, MD, Josephine Cinquini, RN, and Nancy Harte, RN, CHPN. Adapted with permission of Rainbow Hospice, Park Ridge, Il.)

opioid rotation is to minimize unpleasant adverse effects. Changing opioid preparations also may be necessary in patients titrated to good pain control on parenteral opioids who are ready for oral dosing. For conversion between opioids or routes of administration, a chart of equianalgesic doses of the various opioid preparations should be followed. An example of such a chart is provided in the **Table 1**. Such equianalgesic calculations are often started at 50% to 75% of the calculated equianalgesic dose to allow for incomplete cross-tolerance between opioid preparations.

There are several common reactions to opioids when initially administered, including sedation/lethargy, confusion, nausea/vomiting, and constipation.

Except for constipation, patients generally develop tolerance to these adverse effects if the opioid is continued beyond 2 to 4 days.[7] In patients with chronic pain, the initial relief of pain often allows for prolonged sleep for the first time in a long while, which should not be mistaken for oversedation. If nausea or vomiting is likely, prophylactic administration of an antiemetic (eg, prochlorperazine, metoclopramide) is appropriate. When both patients and families are counseled to expect these reactions, patients will usually continue to take the opioids through the initial unpleasant period.

Adjuvant Medications

The WHO ladder includes the use of adjuvant or co-analgesic medications. Several excellent tables are available, as referenced earlier.[5] These medications are used in certain defined circumstances and are continued with each step of the ladder if they seem effective.

Certain adjuvant medications depend on whether the pain is somatic/nociceptive, visceral, neuropathic, or mixed. Somatic pain, originating in soft tissue and joints, is usually responsive to NSAIDs and opioids. In cases of metastatic disease to the bones, NSAIDs are particularly effective and should be used as first-line agents. Cyclooxygenase-2 inhibitors (eg, celecoxib) can be used in patients intolerant of NSAIDs. Visceral pain, often associated with metastatic involvement of peritoneal or pleural surfaces and with blocked hollow or tubular organs, may respond well to anticholinergic agents, including hyoscyamine, glycopyrrolate, and scopolamine. Neuropathic pain originates in damaged nerve tissue (eg, tissue invaded by tumor, damaged by radiation or trauma, or affected by postinfectious causes) and has been thought to respond poorly to opioids. Such pain is frequently described as lancinating or stabbing and may follow an anatomic neural path. Antidepressant agents (eg, nortriptyline, amitriptyline) and anticonvulsant agents (eg carbamazepine, phenytoin, gabapentin) are the usual first line agents used for neuropathic pain. Of interest, methadone—an opioid—also seems to have significant value in treating neuropathic pain. The effectiveness of methadone appears to be due to its impact on multiple pathways, including N-methyl-D-aspartate (NMDA) antagonism and inhibition of serotonin and norepinephrine reuptake, as well as the mu opioid receptor pathway typical of other opioids.[8] Other appropriate adjuvant medications include muscle relaxants, bisphosphonates (for bone pain related to hypercalcemia), and drugs to treat the coexisting anxiety that often accompanies chronic pain states.

Regional nerve blocks, spinal anesthesia, and radia-

Table 1. Equianalgesic Opioid Chart*

First Opioid	Second Opioid	Route	Dosage Ratio (in mg)
Codeine	Morphine sulfate	po:po	7:1
Hydrocodone	Morphine sulfate	po:po	5:2
Oxycodone	Morphine sulfate	po:po	1.5:1
Hydromorphone	Morphine sulfate	po:po	1:4
Hydromorphone	Morphine sulfate	po:IV	3:4
Hydromorphone	Hydromorphone	po:IV	5:1
Fentanyl	Morphine sulfate	patch:po	25 μg:60 mg/24 h
Methadone†	Methadone	po:IV	2:1
Methadone	Morphine sulfate	po:po	nonlinear
Morphine sulfate	Morphine sulfate	po:IV	3:1
Morphine sulfate	Hydromorphone	po:IV	20:1
Meperidine	Morphine sulfate	IV:IV	10:1
Meperidine	Morphine sulfate	IV:po	3:1

po = by mouth; IV = intravenously.

*Example: Converting a 15 mg hydromorphone po dose to an IV morphine sulfate dose: ratio of 3:4 means that each 3 mg of po hydromorphone is equianalgesic to 4 mg IV morphine sulfate. 3/4 = 15/x; x = 20. 15 mg po hydromorphone is equal to 20 mg IV morphine sulfate.

†Methadone should be used with caution and in consultation with clinicians experienced in its use.

tion also play a role in palliative care. The use of these modalities is usually reserved for patients whose pain cannot be controlled with aggressive use of the medications (including chronic opioid infusions) outlined in the WHO pain ladder. Intrathecal and epidural pumps are available as well; implantable devices are usually reserved for patients expected to live more than 4 to 6 months.

Case Presentation: Mrs. Brendan

History and physical examination. Mrs Brendan is a 72-year-old woman with recurrent colon cancer that has metastasized to her bones, lungs, and liver. She has just been enrolled in hospice care (see part 1 of this series).[1] She has lost 11.3 kg (25 lb) in the past 4 months and has had nagging abdominal discomfort. She takes ibuprofen as needed. She previously lived alone but now lives with her sister for help and companionship. She is mildly dyspneic and experiences moderate pain in the ribs and thighs, which she rates as 6/10 on an analogue scale. She is increasingly dependent for help with activities of daily living.

Discussion. Mrs. Brendan is experiencing 2 types of pain: nociceptive/somatic pain from bony metastases and visceral pain from lung and liver involvement. In accordance with the WHO ladder, ibuprofen is prescribed as an around-the-clock medication (600–800 mg every 8 hours). Because pain relief is inadequate over the next few days, a step 2 drug is added (1–2 tablets of hydrocodone 5 mg/acetaminophen 325 mg every 4–6 hours as needed). An anticholinergic agent is added as an adjuvant medication for the visceral pain (hyoscyamine 0.125 mg every 6–8 hours as needed). Because follow-up during the next several days still reveals significant pain, advancement to a step 3 drug occurs; the acetaminophen/hydrocodone is replaced by morphine sulfate immediate-release (MSIR) 15 mg every 4 hours as needed for pain. The patient is encouraged to take sufficient doses to relieve pain. After 24 hours, clinical titration will determine the dosage for a long-acting preparation.

Follow-up reveals that Mrs. Brendan has taken 8 doses of MSIR 15 mg in the preceding 24 hours. Her daily oral dose of morphine is thus 120 mg. Consequently, she is given long-acting morphine sulfate 60 mg every 12 hours (120 mg in 2 divided doses). At the same time, a breakthrough dosage of MSIR 15 mg every 4 hours as needed is prescribed (this dosage is within the recommended 10% to 20% of the total daily dosage). Follow-up in several days reveals good pain control, with breakthrough dosing needed only 2 to 3 times daily.

Ever since the patient was first started on step 2 and 3 medications, she has received senna/docusate (2 tablets twice daily) to counteract the constipating effects of the opioids. She and her family were also warned of the likelihood of short-term sedation and lethargy with initial opioid usage.

NONPAIN SYMPTOM MANAGEMENT
Breathlessness

Many patients toward the end of their lives experience respiratory insufficiency and failure. In the hospice model of care, the goal of therapy generally would not be to correct the breathlessness but rather to relieve the distress caused by the breathlessness and to provide comfort for patients progressing through respiratory failure to death. These patients are commonly prescribed benzodiazepines (to break the cycle of breathlessness-anxiety-breathlessness) and opioids (to relieve the sensation of breathlessness) on a regular dosing schedule. An opioid is usually given on an every 30- to 60-minute schedule as needed because of the unpredictable evolution of symptoms. Dosing is reflective of symptoms rather than based on a preconceived

maximum allowable dose. If dosing exceeds 3 to 4 doses per day for several days, a long-acting opioid conversion is calculated according to the protocol described for pain management, including the provision of breakthrough doses. If there are easily treated reversible causes (eg, bronchospasm, pneumonia, uncompensated heart failure), primary treatment may be indicated, depending on the benefits and burdens of treatment and the performance status of the patient (**Table 2**; see also part 1 of this series for a discussion of the Palliative Performance Scale [PPS][1]). Patients within hours or days of death, however, are often better served with symptom-directed therapy as outlined above. Such patients often have a performance status of 20% or less.

The principle of intended and unintended consequences (also called the double effect) underlies the prescribing of opioids in the context of end-stage breathlessness, with the primary goal being relief of symptoms. (This principle is discussed in greater detail in part 1 of this series.[1]) Other interventions include elevating the head of the bed, opening windows, and using fans. Supplemental oxygen is often provided; delivery of oxygen by nasal prongs is preferred to delivery by a more obtrusive mask. In the actively dying patient, the goal of supplemental oxygen is not to correct hypoxemia but to provide a comfortable death; the administration of oxygen is often comforting to the family, especially in the hospital setting.

Constipation, Diarrhea, and Anorexia

Constipation is a common symptom among debilitated patients for a variety of reasons, including generally decreased mobility and decreased food and fluid intake. Constipation is also a persistent adverse effect of opioid administration. Attention to bowel function and appropriate interventions are vital to avoid the nagging discomfort experienced by constipated patients.

If a patient does not defecate within 4 to 5 days, a rectal examination should be performed to rule out fecal impaction. A bulking agent (eg, psyllium fiber) should be avoided unless adequate fluid intake (ie, 24 oz of water daily) can be assured. Without the requisite fluid, bulking agents can lead to even greater constipation. Most patients routinely require a peristaltic agent such as senna, often combined with a stool softener. Dosing up to 4 tablets twice daily is not uncommon. Careful attention to a bowel regimen through prophylactic prescribing can minimize the need for more aggressive catharsis when constipation becomes marked.

Diarrhea can be related to dietary intake, medications, or a number of gastrointestinal dysfunctional

Table 2. Palliative Performance Scale

Percent	Ambulation	Activity and Evidence of Disease	Self Care	Intake Level	Consciousness
100	Full	Normal activity; no evidence of disease	Full	Normal	Full
90	Full	Normal activity; some evidence of disease	Full	Normal	Full
80	Full	Normal activity with effort; some evidence of disease	Full	Normal or reduced	Full
70	Reduced	Unable normal job/work; some evidence of disease	Full	Normal or reduced	Full
60	Reduced	Unable hobby/house work; significant disease	Occasional assistance necessary	Normal or reduced	Full or confusion
50*	Mainly sit/lie	Unable to do any work; extensive disease	Considerable assistance necessary	Normal or reduced	Full or confusion
40	Mainly in bed	As above	Mainly assistance	Normal or reduced	Full or drowsy or confusion
30	Totally bed-bound	As above	Total care	Reduced	Full or drowsy or confusion
20	As above	As above	Total care	Minimal sips	Full or drowsy or confusion
10	As above	As above	Total care	Mouth care only	Drowsy or coma
0	Death	—	—	—	—

Adapted with permission from Anderson F, Downing GM, Hill J, et al. Palliative performance scale (PPS): a new tool. J Palliat Care 1996; 12:5–11.

*50% performance status generally corresponds to a patient needing nursing home care or full-time supervision at home.

states.[9] Treatment consists of dietary manipulations and judicious use of antidiarrheal agents, including diphenoxylate and loperamide. Tincture of opium is a longstanding antidiarrheal agent that can be very effective. In unusual circumstances, octreotide, an antisecretory agent administered parenterally, may be necessary to control otherwise intractable diarrhea.

Anorexia is a very common symptom accompanying many end-of-life conditions and usually represents an inevitable progressive stage of disease. Patients often either do not want to eat or experience unpleasant nausea and vomiting. It is often appropriate to provide education to the patient and family to assist them in accepting the anorexia. Good control of pain, constipation, oral infections (eg, thrush), and depression may improve appetite. Pharmacologic agents that are occasionally useful include dexamethasone, prednisone, megestrol, cannabinoids, and cyproheptadine.

Anxiety, Agitation, Delirium, and Depression

Attention to the mental and emotional status of patients is appropriate in a holistic approach to good palliative care. Relevant symptoms can generally be divided into the categories of anxiety, agitation, delirium, and depression. The mainstay of therapy is careful assessment. The very act of being allowed to express uncomfortable feelings to professional caregivers who will listen patiently and respectfully can be extremely helpful to patients and families. The therapeutic value of reflective listening can be maximized when multiple members of the interdisciplinary team, including social workers, chaplains, home heath aides, and volunteers, engage in such activity.

When symptoms become marked or persistent, pharmacologic interventions are often required. Lorazepam is the most commonly used anxiolytic agent. It has a fairly rapid onset and a short duration of action; it is also available in a variety of dosing forms, including a liquid form that is buccally absorbed. Temazepam and lorazepam are also effective agents for sleep. Alprazolam may be of special benefit in patients with chronic obstructive pulmonary disease. Because of the cycle of pain-anxiety-pain present for many patients, anxiolytic agents are commonly prescribed for a multitude of patients in palliative care. As with other chronic states, around-the-clock dosing provides more even control than does as-needed dosing. Of note, some patients experience paradoxical reactions to benzodiazepines

and manifest greater agitation; further dosing with this class of drugs is then inappropriate.

Agitation can be related to the primary diagnosis, as in patients with dementia or schizophrenia, or can represent a reaction to the declining health and emerging dependency that characterizes the end-of-life period. As many as 20% of patients may experience terminal agitation during the hours or days immediately preceding death.[10] For patients in agitated states, administration of a benzodiazepine may be useful, but antipsychotic medications such as haloperidol, chlorpromazine, or risperidone—at times in combination with benzodiazepines—are often necessary. Haloperidol is the most commonly prescribed agent, and dosing is titrated rapidly (eg, 0.5–1 mg every 2–4 hours, increasing in 1 mg increments, as needed, for sedation). Parenteral administration of these medications can be used in extremely agitated patients. In patients with severe, intractable agitation, it may be necessary to sedate the patient to the level of unconsciousness to control some symptoms. Such palliative sedation should occur only after all other options have been exhausted, consultation with a palliative care or hospice specialist has occurred, and the patient or family has consented. Specific guidelines for such treatment are available.[11]

Delirium, or the sudden appearance of an altered mental state, may be associated with a reversible condition, including infection, metabolic abnormalities, drug effects, hepatic or renal failure, hypoxia, stool impaction, or central nervous system involvement (including malignancy).[12] The depth of the search for reversible causes is, in part, a function of the overall status of the patient. In a patient nearing death (PPS score ≤ 20%), extensive imaging or blood studies are most likely not indicated. Downward titration of drugs associated with delirium (eg, opioids, anticholinergic agents, corticosteroids) should, however, still be attempted. Constipation and urinary retention can also precipitate agitation in the infirm patient.

Some degree of depression is appropriate when patients are confronted with their impending death. Supportive care includes respectful listening and acknowledgment. If depression is severe, however, pharmacologic treatment may be beneficial. Selective serotonin reuptake inhibitors (SSRIs) are generally well tolerated. Because of the delay in onset of their effect (as long as 2 weeks), psychostimulants such as methylphenidate are occasionally used in the initial prescribing period. It is important to remember, however, that sadness represents not a pathologic condition in many patients toward the end of life, but rather an appropriate psychological response and, therefore,

does not mandate pharmacologic intervention. The depth and persistence of the sadness can be helpful in differentiating depression from appropriate grief reactions.

SKIN CARE AND DECUBITUS ULCER MANAGEMENT

Skin care and decubitus ulcers should be a major focus of end-of-life care. Because many patients are cachectic, with little muscle or adipose tissue, and are confined to bed, decubitus ulcers are very difficult to prevent. Gentle skin care, frequent turning, special attention to mattresses and padding, and prompt protection for damaged areas are all critical. In the incontinent patient who is confined to bed, placement of a Foley catheter to protect the diapered area from moisture may be appropriate. As with other symptoms at the end of life, a realistic goal may be the prevention of decubitus ulcer extension and the treatment of associated pain, rather than aggressive interventions to effect healing.

TERMINAL STAGE MANAGEMENT

Active dying usually occurs over a period of several days, seldom taking more than a week to 10 days. A decreasing level of consciousness, withdrawal, diminishing interest in oral intake, increasing dysphagia, and profound weakness commonly herald the terminal stage. Signs of dehydration and autonomic dysfunction may be present, including oliguria, decreasing blood pressure, tachycardia, and constipation/diarrhea. Most patients experience a slow, relatively peaceful transition to death, especially if breathlessness and pain have been adequately treated. A smaller number of patients experience terminal agitation, which can be distressing to both the patient and any family and friends present.

As a patient declines toward death (ie, PPS ≤ 20%), medications other than those for symptom control should be discontinued. Critical comfort drugs include analgesic, sedative, anxiolytic, antiemetic, and anticonvulsant agents. Intensol forms of morphine, lorazepam, and haloperidol, which can be absorbed buccally even in unconscious patients, may be appropriate at this stage. Support for the family to foster understanding of the impending death and assurance that suffering is minimized is invaluable. Emphasizing the value of family presence at the bedside and, if applicable, the rendering of care in the comfort of a patient's own home can result in an even greater appreciation of those acts and help address the family's feelings of helplessness. Pronouncing death, helping the family with funeral arrangements, and providing psychosocial support of the newly bereaved family after death are all services rendered by members of the hospice team.

CONCLUSION

Caring for patients, as well as their families, with advanced progressive illness requires a familiarity with issues and therapies needed in other patient encounters, with a special emphasis on communication of goals, values, and wishes as well as excellent attention to the palliation of symptoms. Identifying realistically achievable medical goals and helping families identify their values can lead to better and more appropriate end-of-life care. With pertinent education and clinical experience, most primary care physicians can master the skills needed to deal with the varied psychosocial and medical issues encountered, especially when working as part of an interdisciplinary team that the palliative care and hospice models of care afford. Care of patients and their families toward the end of life can bring a special satisfaction. Professionals often feel that the satisfaction derived from the care rendered to these patients and families satisfies a major goal in originally entering the health care field.   **HP**

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