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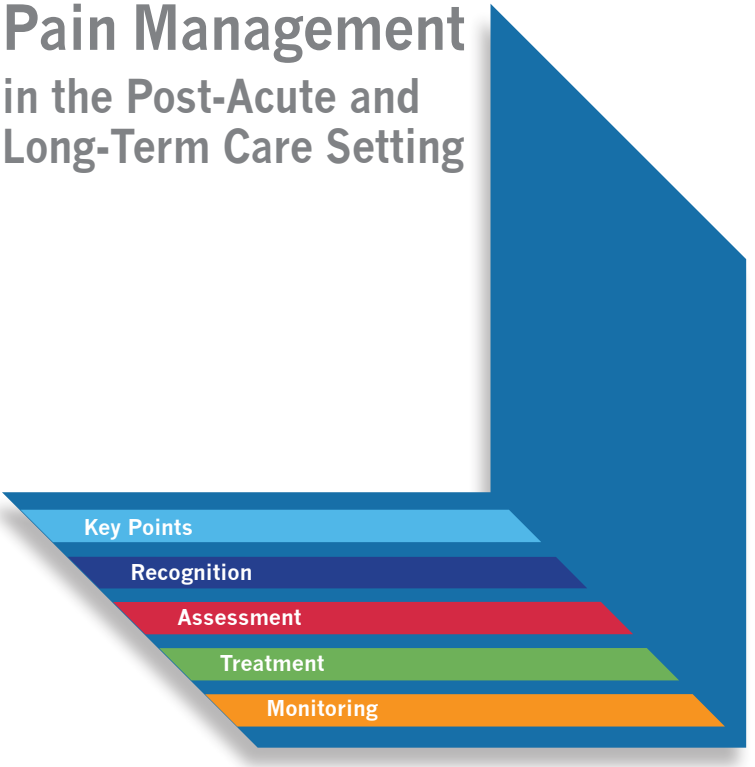
The Society For Post-Acute And Long-Term Care Medicine™

Pain Management

in the Post-Acute and Long-Term Care Setting



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⌟ Key Points

- **Acute and chronic pain are common in the post-acute and long-term care (PA/LTC) setting, and they affect measures of patients' wellbeing such as mood and the ability to perform activities of daily living. As many as 80% of LTC patients have at least one condition associated with pain.**
- **Persistent pain or its inadequate treatment is associated with many adverse outcomes in older people.**
- **Pain is frequently undertreated in cognitively impaired patients. Patients with cognitive impairment often manifest pain with nonverbal signs such as grimacing or furrowing their brow.**
- **Pain management should be considered a patient's right in the LTC setting.**
- **Opioids should be used judiciously, taking into account the risks vs. benefits, goals of care and the pain's impact on the patient's functional ability.**
- **This pocket guide is primarily about acute and chronic pain (management might be somehow different for patients on Palliative Care/Comfort Measures Only, with less focus on monitoring of adverse effects).**
- **Given the heterogeneous patient population in the PA/LTC setting, from acute postoperative pain to the frail and imminently dying, various state and federal regulations and the current "opioid crisis," optimal pain management in this setting is often challenging.**

Abbreviations

ADL(s), activities of daily living; **CABG,** coronary artery bypass grafting; **CAM**, complementary and alternative medicine; **CBC,** complete blood count; **COX-2,** cyclooxygenase-2; **CrCl**, creatinine clearance; **ER**, emergency room; **FDA**, U.S. Food and Drug Administration; **GFR,** glomerular filtration rate; **GI,** gastrointestinal; **HF,** heart failure; **HTN,** hypertension; **IR,** immediate release; **IV,** intravenous; **MAOI**; monoamine oxidase inhibitor; **NA;** not available; **NOAC(s)**, novel oral anticoagulants; **NSAID;** nonsteroidal anti-inflammatory drug; **OTC**, over the counter; **PO**, by mouth; **SC,** subcutaneous; **SNRI(s)**, serotonin–norepinephrine reuptake inhibitors; **SSRI(s)**, selective serotonin reuptake inhibitors; **TCA(s)**, tricyclic antidepressants; **TENS**, transcutaneous electrical nerve stimulation

STEP 1: Is pain present?

➤ **Evaluate the patient for pain upon admission, during periodic scheduled assessments and with a change of condition.**

Table 1. Some Conditions Associated With the Development of Pain in Older Adults

- Cardiopulmonary diseases (myocardial infarction, pulmonary thromboembolism, pleurisy, pericarditis, angina)
- Crystal-induced arthropathies (e.g., gout, muscle and joint disorders)
- Degenerative joint disease (e.g., osteoarthritis)
- Depression
- Fibromyalgia
- Gastrointestinal conditions (e.g., constipation [including opioid induced constipation], ileus, gastritis, gastroesophageal reflux, peptic ulcers)
- Headaches
- Immobility, contractures
- Infections
- Metabolic conditions (e.g., electrolyte abnormalities, vitamin D deficiency)
- Neuropathies (e.g., diabetic neuropathy, occipital or trigeminal neuralgia, post-herpetic neuralgia)
- Oral or dental pathology
- Osteoporosis (compression fractures)
- Peripheral arterial disease
- Polymyalgia rheumatica or giant cell arteritis (temporal arteritis)
- Post-stroke syndromes
- Postoperative pain
- Pressure ulcers
- Rheumatoid arthritis
- Spinal column disorders (spinal cord injuries, cervical or lumbar spinal stenosis or radiculopathy)
- Trauma (fractures, soft tissue injury)
- Urogenital conditions (e.g., bladder distention, infection, kidney stones)

➘ Recognition

Table 2. Common Misconceptions Among Patients and Caregivers About Pain

- Pain is an inevitable part of aging, and nothing can be done about it.
- Elderly patients, especially those who are cognitively impaired, have a higher tolerance for pain.
- Elderly patients and people who are cognitively impaired cannot be accurately assessed for pain.
- Patients say they are in pain to get attention.
- The patient "doesn't look like" he or she is in pain and therefore is probably not really in pain.
- The patient's vital signs are normal, so he or she must not be in significant pain.
- Elderly patients are likely to become addicted to pain medications.
- To acknowledge pain is a sign of personal weakness. (Conversely, to bear pain without complaint denotes strength of character.)
- Pain is a punishment for past actions.
- Acknowledging pain will mean undergoing intrusive and possibly painful tests.
- Acknowledging pain will lead to a loss of independence.
- Pain means death is near.
- Pain always indicates the presence of a serious disease.
- Use of opioids is the only effective means for treatment of significant pain.

➘ Assessment

STEP 2: Have the characteristics and likely causes of pain been adequately defined?

➤ **Better pain control is achieved when a specific pain source is identified and treated.**

Table 3. Nonspecific Signs and Symptoms That May Suggest the Presence of Pain

- Bracing, guarding, rubbing
- Change in behavior
- Change in gait
- Decreased activity levels
- Eating or sleeping poorly
- Fidgeting, increasing or recurring restlessness
- Frowning, grimacing, fearful facial expressions, grinding of teeth
- Loss of function
- Resisting certain movements during care
- Sighing, groaning, crying, breathing heavily
- Striking out, increasing or recurring agitation

Table 4. General Principles for Prescribing Analgesics in the PA/LTC Setting

- Evaluate the patient's medical condition and current medication regimen to determine the most appropriate therapy for pain.
- Consider whether the medical literature contains evidence-based recommendations for specific regimens to treat the identified causes of pain.
- In most cases, prescribe at least one routine, scheduled analgesic medication if the pain is felt to be chronic and persistent.[a]
- Prescribe a PRN medication to be used for severe or breakthrough pain.
- Use the least invasive route of administration possible; as a rule, the oral route is preferable.
- For nonsevere chronic pain, begin with a low dose and titrate carefully until comfort is achieved.
- For severe or acute pain, begin with a low or moderate dose as needed and titrate more rapidly than for chronic pain.
- Reassess and adjust the dose to optimize pain relief while monitoring and trying to minimize or manage side effects.
- Periodically assess the use of PRN medication and adjust routinely administered medication accordingly.
- Special attention should be given to optimizing pain control in the palliative/end of life patient.

[a] Exceptions to this principle are the use of PRN medication for mild to moderate pain and patient preference.

STEP 3: Provide appropriate interim treatment for pain

➤ **If pain is not treated or is not relieved by existing therapies, the practitioner should adjust or prescribe a pain relief regimen to maximize patient comfort and function, and minimize side effects while assessing the patient for underlying causes of pain.**

STEP 4: Perform a pertinent history and physical examination

➤ **The practitioner should take a medical pain-related history and perform a detailed physical examination. Information regarding current pain may be found in the patient's hospitalization discharge summary.**

➤ **The history should include a risk assessment for opioid abuse (i.e., prior history of illicit drug or substance use disorder, psychiatric conditions, and family history of the same. Prescribe a medication to be used as needed for severe or breakthrough pain. Tools for this include the Opioid Risk Tool and the Diagnosis Intractability Risk Efficacy Tool (DIRE).**

STEP 5: Are the cause(s) of pain identified?

➤ **If yes, proceed to Step 10; if no, proceed to Step 6. Pain is often categorized as nociceptive pain or neuropathic pain. Patients commonly have both types of pain. Nociceptive pain occurs with tissue injury. Neuropathic pain is caused by abnormal functioning of the nervous system.**

STEP 6: Perform further diagnostic testing, as indicated

➤ **Practitioner should perform laboratory, radiologic and other diagnostic tests as appropriate.**

STEP 7: Have the probable cause(s) of pain been identified?

➤ **If yes, proceed to Step 10; if no, proceed to Step 8.**

STEP 8: Obtain additional evaluation or consultation as necessary

➤ **Consider consultation when the diagnoses or conditions contributing to pain are still not clear after completion of Steps 4 to 7 or if special skills are required for definitive treatment.**

STEP 9: Have the probable cause(s) of pain been identified?

➤ **If yes, proceed to Step 10. If no, review Steps 4 to 8. If the cause(s) of pain still cannot be identified, document the inability to do so and proceed to Step 10.**

STEP 10: Summarize the characteristics and causes of the patient's pain and assess the impact of pain on function and quality of life

➤ **The practitioner and staff should collaborate on documenting a summary of the patient's situation including:**

- A description of the diagnoses and conditions contributing to the patient's pain or the reasons that the causes of the pain could not be established;
- A list of possible treatments for underlying diagnoses or conditions that are contributing to the patient's pain;
- The impact of the pain on the patient's function and quality of life;
- Reasons for recommending the use or nonuse of identified treatment options, taking into account the patient's state of health, prognosis, and advance care directives, as well as the preferences of the patient and family or health care proxy; and provision for access to family and friends, life review, including quality life experiences and completion of unfinished business at the end of life.

STEP 11: Adopt a patient-centered interdisciplinary care plan

➤ **Factors influencing the choice of treatments include:**

- The patient's underlying diagnoses or conditions that are causing or contributing to pain;
- The causes, location, nature, and severity of the pain;
- The patient's preferences and wishes as expressed directly, by a family member or other health care proxy, or in an advance directive;
- The patient's goal for pain management with respect to what constitutes an acceptable pain level, an acceptable sedation level, and acceptable side effects;
- Preferred route(s) of medication administration;
- Extent to which the patient's function is impaired by the pain;
- The patient's risk of opioid abuse.

➤ **Before prescribing an opioid the practitioner should consider checking the state prescription drug monitoring program.**

STEP 12: Set goals for pain relief

➤ **Establish the goals of pain treatment with input from the patient, family or health care proxy. For patients with chronic pain, primary goals often include not only reducing pain intensity, but also achieving functional outcomes such as improving independence in activities of daily living (ADLs), participating in activities, or optimizing cognition, mood, or sleep.**

STEP 13: Implement the care plan

➤ **On the basis of the information obtained and the analyses performed in the previous steps, implement an organized approach to managing the patient's pain.**

Table 5. Nonpharmacologic Treatments for Pain

Nonpharmacologic approaches for the management of pain in older adults are often beneficial alone or in combination with pharmacologic treatments.

• Exercise	• Tai Chi
• Ultrasound	• Mind-body practices (Meditation, Qigong, Yoga, etc.)
• Multidisciplinary rehab	• Biofeedback assisted relaxation
• Acupuncture	• Patient and caregiver education
• TENS	• Chiropractic or osteopathic manipulation
• Massage	• Heat or Cold
• Cognitive behavioral therapy	

Table 6. Selected Non-Opioid Oral Analgesics Used in the PA/LTC

Drug	Dose	Possible Adverse Effects	Precautions	Cost
Acetamino-phen	Starting dose: 325–500 mg every 4 h or 500–650 mg every 6 h Maximum dose: 3000 mg/24 h (dosing every 4–8 h)	• Toxic to liver if maximum dose exceeded • Rare cases of anaphylaxis and other hypersensitivity reactions have occurred	• Avoid exceeding maximum dose • Consider a maximum dose of 2000 mg/24 h if renal or hepatic impairment exists	$
NSAIDs[a,b]				

Ibuprofen[c]	Starting dose: 200 mg 3 times/d
	
	Maximum: 2400 mg/24 h (dosing every 6–8 h)
		• Dose-dependent
		  • Gastric bleeding
		  • Renal impairment
		  • Abnormal platelet function
		• Constipation, confusion, and headaches may be more common in older patients
			• Avoid high doses for prolonged periods
			• May be associated with HF exacerbations
			• Use with caution in patients with chronic kidney disease
				$

Naproxen (Naproxen sodium)	Initial dose: 250 mg (220–275 mg) twice daily	• Similar to ibuprofen	• Avoid high doses for prolonged periods • Use with caution in patients with chronic kidney disease • Naproxen appears to possess less cardiovascular risk	$

Table 6. Selected Non-Opioid Oral Analgesics Used in the PA/LTC *(cont'd)*

Drug	Dose	Possible Adverse Effects	Precautions	Cost
Meloxicam	Starting dose: 7.5 mg daily Maximum: 15 mg daily Not recommended if CrCl is ≤20 mL/min	• May cause GI discomfort • Compared with conventional NSAIDs, lower but still not inconsequential risk of GI bleeding	• Contraindicated in salicylate and NSAID allergy, perioperative pain post CABG • May exacerbate HTN, HF • Increased risk of cardiovascular thrombotic events	$$
Selective COX-2 inhibitor NSAID				
Celecoxib	Starting dose: 100 mg daily Maximum: 100–200 mg/24 h	• May cause GI discomfort • Compared with conventional NSAIDs, lower but still not inconsequential risk of GI bleeding	• Similar to ibuprofen • Use with caution in patients with a history of an allergy to sulfonamide antibiotics	$$

[a] This table does not include all possible NSAIDs.
[b] Do not use these medications regularly unless there are no other effective alternatives and they are prescribed along with a proton-pump inhibitor or misoprostol.
[c] There is evidence that low dose ibuprofen + acetaminophen is more effective than either alone or than opioids for acute pain.

Table 7. Specific Recommendations for Selective and Nonselective NSAID Use According to Patients' Underlying Risks and Comorbid Conditions

- Patients receiving NSAIDs should generally receive appropriate clinical and laboratory (CBC, renal function, liver function) monitoring.
- NSAIDs should generally be avoided in
  - Patients with chronic kidney disease and compromised liver function
  - Patients receiving anticoagulant therapy with warfarin, NOACs, or low-molecular-weight heparin
  - Patients receiving aspirin for cardiovascular protection because of both an increased risk of GI bleeding and interference with aspirin's anti-platelet effect.
- Patients who are at risk for GI bleeding or have a history of GI bleeding and who are prescribed an NSAID should receive concomitant misoprostol, high-dose H_2-receptor antagonists, or proton pump inhibitor therapy.

Table 8. Atypical Opioid Oral Analgesics

Drug	Dose
Tramadol	**For mild to moderate chronic pain**, starting dose for adults and geriatric patients aged ≥75 years: 25 mg once daily then titrated in 25 mg increments as separate doses every 3 d to reach a dose of 100 mg/24 h Thereafter, the total daily dose may be increased by 50 mg as tolerated every 3 d to reach 200 mg/24 h **For rapid relief of moderate to moderately severe pain** in patients in whom the benefits outweigh the risk of increased adverse reactions associated with higher initial doses, starting dose is 50–100 mg PO every 4–6 h, not to exceed 400 mg daily If GFR <30 mL/min: • Maximum 200 mg/24 h • Dose every 12 h For cirrhosis: • Maximum 100 mg/24 h • Dose every 12 h

Possible Adverse Effects	Kinetics	Precautions	Cost
• Dizziness occurs in >10% • Seizures • Serotonin syndrome • Nausea • Vomiting • Constipation • Somnolence • Flushing • Insomnia • Xerostomia • Pruritus • Dyspepsia	• 2% protein-bound • Half-life of 6–7 h	• May precipitate serotonin syndrome, seizures, respiratory depression, dependency • Use with caution in patients taking drugs that lower seizure threshold and in patients with history of (or at high risk for) seizures • Possesses opioid μ-receptor agonist activity. • Habituation or dependence is a risk; may be best to avoid tramadol in patients with a history of substance abuse or dependence if non-opioids can manage pain adequately • Use with caution in patients aged ≥65 years	$

Table 8. Atypical Opioid Oral Analgesics *(cont'd)*

Drug	Dose
Buprenorphine (sublingual tablet, buccal film, topical patch, injection)	**Acute moderate to severe pain**: ***IM or slow IV***: 0.3 mg every 6 to 8 hours as needed, may be repeated in 30 to 60 minutes **Chronic moderate to severe pain:** ***Buccal film***: **Opioid naïve**: 75 mcg once daily or every 12 hours if tolerating for 4 days then increase to 150 mcg every 12 hours **Opioid experienced**: Discontinue all around the clock opioids and dose as follows based on what they were receiving in oral morphine equivalents: <30 mg oral morphine equivalents: 75 mcg once daily or every 12 hours 30–89 mg oral morphine equivalents: 150 mcg every 12 hours 90–160 mg oral morphine equivalents: 300 mcg every 12 hours >160 mg oral morphine equivalents: buccal film may not be adequate Tirate in increments of 150 mcg every 12 hours every 4 days to adequate analgesia Taper when discontinuing buprenorphine. ***Transdermal Patch***: **Opioid naïve**: 5 mcg/hour applied once every 7 days **Opioid experienced**: Discontinue all around the clock opioids and dose as follows based on what they were receiving in oral morphine equivalents: <30 mg oral morphine equivalents: 5 mcg/hour applied once every 7 days 30–80 mg oral morphine equivalents: Taper current regimen to <30 mg of oral morphine equivalents for up to 7 days then initiate 10 mcg/hour applied once every 7 days >80 mg oral morphine equivalents: transdermal patch may not be adequate Dose titration may titrate 5–10 mcg up to every 72 hours Taper patch every 7 days when discontinuing buprenorphine patch. Of note, ***sublingual tablets*** are not FDA approved for the treatment of pain, rather the treatment of opioid dependence.

Possible Adverse Effects	Kinetics	Precautions	Cost
Injection: Sedation (66%) Hypotension (1%–5%) Dizziness (5%–10%) Vertigo (5%–10%) Headache (1%–5%) Nausea (5%–10%) Vomiting (1%–5%) Diaphoresis (1%–5%) Hypoventilation (1%–5%) *Buccal Film:* Dizziness (2%) Headache (4%) Drowsiness (1%) Nausea (9%–10%) Constipation (3%–4%) Vomiting (4%–5%) *Transdermal Patch*: Dizziness (2%–15%) Headache (3%–14%) Drowsiness (2%–13%) Nausea (6%–23%) Constipation (3%–3%) Local pruritus (4%–15%) *Sublingual tablets*: Headache (29%) Insomnia (21%) Diaphoresis (13%) Nausea (14%) Abdominal pain (12%) Constipation (8%) Vomiting (8%) Infection (12%)	Half-life of 2.5 to 3 hours for parenteral administration; however, half-life for other dosage forms ranges from 25 to 40 hours due to buprenorphine being highly (>96%) protein bound.	• Use caution in patients aged >65 years • Monitor for hypotension during titration • Buprenorphine still has abuse potential even though it is the drug of choice for weaning patients with opioid addiction, due to its mechanism of action • Obtain liver function tests prior to and during treatment due to drug metabolism • Because it is a mixed μ-opioid agonist-antagonist, buprenorphine may precipitate withdrawal symptoms in patients on high doses of pure agonist opioids • Avoid use in acute or severe asthma or GI obstruction	$$

Table 9. Adjuvant Analgesic Medications

Drug Class	Examples/ Dosages	Comments	Cautions/ Contraindications	Cost
Anticonvulsants				
		• May be used for neuropathic pain • May combine with opioids, SNRIs, TCAs, tramadol	• May causea dizziness, sedation, edema • Avoid or use with caution if NYHA HF class III/IV • Consider dose reduction or divided doses if CrCl is <60 mL/min	
	Gabapentin • Start 100–300 mg at bedtime • Increase/titrate to *q8h* dosing, with increases as tolerated every 1–7 d	Gabapentin extended release is used once daily. Do not exceed 3600 mg/day (consider lower maximum doses in geriatric patients).	Dose reductions for patients with CrCl <60 mL/min	$
	Pregabalin • Start 25–50 mg 3 times daily • May increase every 3 days by 25–50 mg per dose • Effective dose: 300 mg/d • Maximum: 600 mg/d	Similar to gabapentin but more stable pharmacokinetics	• Dose reductions for patients with CrCl <60 mL/min • Schedule V controlled substance	$$$
	Divalproex • Start 125 mg PO 3 times daily • Increase to 250 mg PO 3–4 times daily	Limited data, strong support for treatment of migraine	Hepatoxicity, pancreatitis, teratogenicity	$
	Carbamazepine • Start at 100 mg PO daily • Effective dose: 600 mg/d	Consider for trigeminal neuralgia second line for other pain conditions	• Monitor hepatic transaminases (AST, ALT), CBC, creatinine, blood urea nitrogen, electrolytes, serum carbamazepine levels • Multiple drug-drug interactions	$

Table 9. Adjuvant Analgesic Medications *(cont'd)*

Drug Class	Examples/ Dosages	Comments	Cautions/ Contraindications	Cost
Serotonin–noradrenaline reuptake inhibitors (SNRIs)				
	Duloxetine • Start 20–30 mg/d • Increase dose in 1 week if tolerated • Recommended dose 60 mg/d • Maximum dose 120 mg/d	• SNRIs beneficial in presence of comorbid depression, anxiety • Better tolerated than tricyclic antidepressants	• SNRIs contraindicated in patients taking MAOIs • SNRIs contraindicated in uncontrolled narrow angle glaucoma • Duloxetine not recommended if CrCl is less than 30 mL/min • Avoid combining with TCAs, tramadol, other SNRIs	$$
Tricyclic antidepressants (TCAs)				
		• TCAs beneficial in cormorbid depression, anxiety • May be combined with anticonvulsant or insomnia medications, opioids	• Strong anticholinergic effects • Avoid combining TCAs with SNRIs, tramadol • Avoid in presence of cardiac or electrocardiographic abnormality, glaucoma, orthostatic hypotension • Older persons rarely tolerate doses >75–100 mg/d	
	Nortriptyline • Start 10 mg at bedtime in frail, elderly patients • Effective dose: 10–50 mg/d • Maximum: 150 mg/d			$

Table 9. Adjuvant Analgesic Medications *(cont'd)*

Drug Class	Examples/ Dosages	Comments	Cautions/ Contraindications	Cost
Alternative Treatments				
	Arnica gel Apply topically 2–3 times daily	• OTC Agent • A 2013 evaluation of the evidence on topical herbal products concluded that arnica gel and comfrey extract gel might be helpful	• May cause an allergic reaction to those allergic to ragweed. • Do not apply to open or broken skin	$
Other Agents				
	Baclofen 5–20 mg PO 3 times daily	• May help with muscular spasms • May help trigeminal neuralgia; used in other types of neuropathic pain	Watch for drowsiness, dizziness	$
	Calcitonin nasal spray 1 spray daily	• Delayed onset of analgesia, few side effects • Effective for acute compression fracture pain • Stop after 4 weeks	Ineffective for metastatic bone disease	$

Table 10. Topical Analgesics

Agent/ Class	Formulation	Comments	Precautions	Cost
Counter-irritants (e.g., menthol, methylsalicylate, trolamine salicylate)	Creams, gels, liniments, lotions, ointments, sprays	May be moderately efficacious for musculoskeletal and arthritic pain	Can cause skin injury, especially when used with heat or with an occlusive dressing	
Capsaicin	• Cream (0.025%, 0.075%) • Patch (0.025%)	• Derived from red peppers • Depletes substance P, desensitizes nerve fibers associated with pain • Use routinely for optimal effectiveness • Begin with 0.025% strength and advance to higher concentration if necessary. Try 0.075% preparation for 6 wk before declaring treatment failure	• Main limitations are skin irritation and need for frequent application • For external use only • Keep out of eyes • Wash hands after application	$
Topical NSAIDs				
Diclofenac sodium	Gel (1%)	• Apply 2 g to each elbow, wrist, or hand 4 times daily • Apply 4 g to each ankle, knee or foot 4 times daily • Total daily dose for all affected joints should not exceed 32 g • Maximum dose for any single joint is 8 g for upper extremity joints, 16 g for any single lower extremity joint	• Contraindicated if patient has prior NSAID-induced anaphylaxis, asthma, or urticaria • Avoid use in combination with aspirin or other NSAIDs • Do not apply to broken skin or dermatitis • Do not apply with other topical agents • May cause photosensitivity reactions • Periodic transaminase monitoring should occur in patients receiving chronic therapy beginning 4–8 weeks after initiation	$$$
Diclofenac epolamine	Patch (1.3%)	• For short-term treatment of acute injuries or sprains • Apply one patch to the most painful area twice daily		$$

Table 10. Topical Analgesics *(cont'd)*

Agent/ Class	Formulation	Comments	Precautions	Cost
Topical Anesthetics				
Lidocaine	*Patch* 5% RX and 4% OTC *Cream* 4% OTC	• Frequently used for neuropathic pain • Studies suggest effectiveness for treatment of musculoskeletal pain	• Apply for 12 h/d, then remove • ≤3 patches should be applied at one time	$$
Benzocaine	Short-acting gels, cream, ointment, lotion, aerosols, lozenges	• For short-term use only	• Do not use on severely traumatized skin or mucous membranes • Geriatric patients are at greater risk of methemoglobinemia	$
Phenol	Oral spray, throat spray	• Chemodenervation effect time is variable	• When ingested, phenol may cause burning pain in the mouth and throat, nausea, vomiting, sweating, dark urine, and diarrhea	$

Table 11. Approximate Equianalgesic Dosing and Usual Starting Doses for Selected Pure Opioid Agonists

Medication	Equianalgesic Dose (for chronic dosing)		Usual Starting Doses		Cost
	IM/IV	Oral	Parenteral	PO	
Morphine	10 mg	30 mg	1.25–2.5 mg SC/IV every 3–4 h	2.5–7.5 mg IR or oral solution every 3–4 h	IR:$ ER:$$
Oxycodone	NA	20 mg	NA	2.5 mg IR or oral solution every 4–6 h	IR:$ ER:$$
Hydromorphone	1.5 mg	7.5 mg	0.2 mg SC/IV every 2–3 h	1–2 mg every 3–4 h	$
Hydrocodone	NA	30 mg	NA	2.5–5 mg every 4–6 h	Hydrocodone with acetaminophen: $ ER:$$
Oxymorphone	1 mg	NA		5 mg every 4–6 h	$$
Tapentadol	In patients previously taking other opioid therapy, titrate to effective and tolerable dose within range of 100–250 mg PO twice daily. There are no adequate data on direct conversion from other opioids. Titrate dose by <50 mg/dose twice daily (100 mg/day) every 3 days.		NA	50 mg every 4–6 h	$$
Fentanyl patch	(See Table 14)				$$
Methadone	(See Table 15)				$
Fentanyl non-topical formulations	Other formulations of fentanyl used to manage severe pain include sublingual tablets, lozenges, nasal spray, buccal tablets, and buccal film. These are immediate-release formulations and should not be used in patients who are opioid intolerant. These dosage forms are NOT dose equivalent.				$$$

Note that codeine and meperidine were omitted from the table because their use is generally not recommended.

Table 12. General Principles for Prescribing and Titrating Opioids

1. Identify the pain-relief and functional goals of opioid therapy.
A 50% reduction in the current level of pain or achievement of a pain rating of <3 on a 0–10 scale is a reasonable goal. Because pain is likely to be more intense with activities, it is helpful to measure pain during relevant activities to assess the adequacy of pain relief.

2. Choose an appropriate dose of an immediate-release opioid.
For an opioid-naïve frail elderly patient, it is common to choose a dose one-fourth to one-half of that recommended for a healthy adult. Lower initial doses are chosen because frail elderly patients are more susceptible to adverse medication effects and have age-related changes in renal function and volume of distribution. For patients with renal insufficiency, erring on the side of caution is preferred.

3. Specify the frequency of monitoring for beneficial and adverse opioid effects and specify notification parameters.
Acute sedation, manifested by difficulty arousing the patient to full consciousness, always precedes respiratory depression. To reduce the risk of respiratory depression, nurses should be instructed to assess the patient 30–60 minutes after a dose of an oral opioid and to notify the practitioner and hold the opioid dose if the patient:

- is unarousable (i.e., following verbal stimulation or light touch, patient is not able to give an appropriate verbal response or take nutrients safely),
- has a respiratory rate <10/minute associated with excessive sedation, or develops hypoxia.

Some practitioners also monitor pulse oximetry during titration or initiation of an oral opioid and specify notification parameters. Naloxone hydrochloride (Narcan) should be available in the facility's emergency kit.

4. Select a titration schedule based on opioid pharmacology.
If the patient has been receiving a stable dose of an oral opioid, the practitioner may increase the total daily dose by 25%–50% for mild to moderate pain and by 50%–100% for severe pain. If the patient is opioid naïve, the first few doses may need to be given at frequent intervals to build up serum and tissue levels.

Table 13. Opioid Titration Options

During the titration phase for oral opioids, assess pain relief and adverse effects at the peak opioid effect time. For immediate-release oral morphine and oxycodone, peak effects are seen after 30–60 minutes. If pain control is not at goal and the patient does not have excessive drowsiness, hypoxia, or respirations less than 10/minute, additional doses may be given using one of the following titration options (note that these titration options are appropriate for opioids such as morphine, hydromorphone, and oxycodone but are not appropriate for methadone because of its prolonged elimination half-life):

Option 1

- Give the chosen dose of oral opioid every 30–60 minutes until pain relief is obtained.
- Calculate the total amount of oral opioid used during titration to relieve pain.
- After pain is controlled, calculate the total amount of oral opioid used during titration to relieve pain. Give 25% of this total amount as the scheduled *q4h* dose.

Option 2 (for severe or escalating pain)

- If after the initial dose pain remains severe (≥7 on a 0–10 scale), double the initial dose and reassess in 30–60 minutes.
- If the pain has decreased to a moderate level (4–6 on a 0–10 scale), repeat the current dose and reassess.
- If the pain is well controlled (0–3 on a 0–10 scale), order the current dose *q4h* around the clock. Continue monitoring for adverse effects.

Because these calculations are estimates, it is essential that staff continue to monitor the patient closely for 24–72 hours to assess both for signs and symptoms of excessive sedation or respiratory depression and for the need to adjust dosing if pain is not relieved.

Table 14. Model Transdermal Fentanyl Policy

For the initial order for a fentanyl patch, practitioners are expected to prescribe according to the manufacturer's recommendations and to collaborate with the nursing supervisor.

1. To begin treatment with a strength of 25 mcg/h or greater, confirm that the patient is opioid tolerant, as evidenced by having received for at least one week
   - Oral morphine >60 mg daily, or
   - Oral oxycodone ≥30 mg daily, or
   - Oral hydromorphone ≥8 mg daily, or
   - Oral hydrocodone ≥60 mg daily.

   Note that the 12 mcg/h strength is not excluded from the contraindication for use in patients who are opioid naïve. However, this strength can be considered in patients receiving <60 mg of oral morphine equivalent per day.
2. Choose a fentanyl patch dose that is ≤25% the current total daily dose of oral morphine. (See table)

Equianalgesic Doses

Total Daily Oral Morphine Dose	Fentanyl Patch Strength
45–134 mg/d	25 mcg/h
135–224 mg/d	50 mcg/h
225–314 mg/d	75 mcg/h
315–404 mg/d	100 mcg/h

3. Review nurse's report of patient's current vital signs, including pulse oximetry, level of consciousness, degree of confusion, and usual level of oral intake.
4. Recommend notification parameters.
   i. Example: Notify if any of the following occur:
   - Patient is unarousable;
   - Respiratory rate is ≤10/min;
   - Patient shows increasing confusion;
   - Pulse oximetry is <92% on room air, or usual oxygen requirement to maintain pulse oximetry >92% increases; or
   - Oral intake is <50% of food or <1000 cc fluid per shift.

   ii. Monitor patient closely for 72–96 hours.
5. Review effectiveness of step-wise laxative regimen to prevent and control constipation. If no constipation preventive program is in place, prescribe one.
6. Ensure that a medication is available for breakthrough pain
   - For a patient beginning therapy with transdermal fentanyl, adequate analgesia may not occur for 36–72 hours. Steady state occurs at the end of 2nd patch dosing.

Table 15. Methadone Use in the PA/LTC

Cautions and Caveats When Considering Methadone Use

Several important caveats must be considered before using methadone for pain relief in frail elderly LTC patients:

- Rapid titration guidelines for other opioids do not apply to methadone
- Methadone is not appropriate for poorly controlled pain that requires rapid dose adjustments
- Because of methadone's prolonged elimination half-life, practitioners should increase the total daily dose of oral methadone no more frequently than every 7 days
- Practitioners should either have experience prescribing methadone or obtain consultation with a physician or consultant pharmacist who has expertise and experience prescribing methadone to frail elders
- The facility must ensure appropriate and timely monitoring for adverse opioid effects AND
- Finally, the use of methadone must be considered in the context of the specific patient and clinical scenario. For example, electrocardiogram (ECG) testing and extensive medication review may not be appropriate or necessary for a palliative care patient nearing the end of life.

Methadone is contraindicated if a person is receiving an MAOI or has severe chronic obstructive pulmonary disease or acute asthma. The practitioner must be aware of the many interactions between methadone and the medications, food, and drinks listed below. These lists are not comprehensive, so practitioners should review the patient's medications and diet with a consultant pharmacist before initiating methadone.

Methadone Pharmacology

Methadone has three known mechanisms of action, primarily via opioid μ-receptors but also exerting serotonin and norepinephrine reuptake inhibition. Although its peak analgesic effect is 30–60 minutes, it has a variable duration of analgesia, which can last 3–6 hours when first initiated and 8–12 hours after repeated dosing. The long elimination half-life of methadone can lead to anresi increased risk for sedation and respiratory depression, especially when dose adjustments occur more frequently than every 7 days.

The following drugs increase methadone serum levels:

- Nifedipine
- Erythromycin, other macrolides
- Ketoconazole, fluconazole (Diflucan), other imidazoles (increase 28%)
- Ciprofloxacin, other quinolones
- Selective serotonin reuptake inhibitors (SSRIs)
- Diazepam
- Ethanol
- Grapefruit juice
- Zidovudine

Table 15. Methadone Use in the PA/LTC *(cont'd)*

The following drugs decrease methadone serum levels:

- Phenytoin (lowers by 50%)
- Carbamazepine (may precipitate withdrawal)
- Phenobarbital (may precipitate withdrawal)
- Corticosteroids
- Risperidone (may precipitate opioid withdrawal syndrome)
- Chronic ethanol use
- Cigarette smoking
- Ritonavir
- Rifampin

QT Prolongation Associated with Methadone Use: Minimizing the Risk of Serious Arrhythmia

Methadone affects cardiac repolarization, prolonging the QTc interval in a dose-dependent fashion; effects are seen at doses as low as 29 mg per day. Conditions common among LTC patients that are important risk factors for QTc interval prolongation include structural heart disease and drug interactions that affect the cytochrome P450 system or elimination of methadone, as listed above.

Practitioners prescribing methadone are advised to consider the following recommendations from an expert panel:

- **Recommendation 1 (Disclosure):** When practitioners prescribe methadone, they should inform patients about arrhythmia risk.
- **Recommendation 2 (Clinical History):** Practitioners should ask patients about any history of structural heart disease, arrhythmia, or syncope.
- **Recommendation 3 (Screening):** All patients should have a pretreatment ECG to measure QTc interval and a follow-up ECG within 30 days and each year. If the methadone dosage is >100 mg per day or if patients have unexplained syncope or seizures, an additional ECG is recommended.
- **Recommendation 4 (Risk Stratification):** For patients in whom the QTc interval is between 450 and 500 milliseconds, the potential risks and benefits should be discussed, and they should be monitored more frequently.
- **Recommendation 5 (Drug Interactions):** Clinicians should be knowledgeable concerning interactions between methadone and other drugs that tend to prolong the QTc interval or to slow the elimination of methadone.

Table 16. Medications for Neuropathic Pain

Type of Agent	Medications
First-line	• Anticonvulsants (gabapentin, pregabalin) • Selective serotonin and norepinephrine reuptake inhibitors (duloxetine) • Lidocaine patch[a] (for localized peripheral neuropathy)
Second-line[b]	• Secondary amine tricyclic antidepressants (desipramine, nortriptyline) • Tramadol
Third-line	• Anticonvulsants (carbamazepine[c]) • Opioids (especially methadone)

[a] Indicated for post-herpetic neuralgia.

[b] Second-line agents may be used as first-line agents alone or in combination with other first-line agents for prompt relief of acute or severe neuropathic pain.

[c] Indicated for trigeminal neuralgia.

STEP 14: Reevaluate the patient's pain

- Because pain levels may fluctuate over time, use an appropriate pain assessment tool to re-evaluate the patient when it is observed that inadequate pain control may be affecting the patient's ability to perform ADLs, sleep pattern, mood, or participation in usual activities.

STEP 15: Adjust treatment as necessary

- The patient's pain care plan may need to be revised based on assessment that recommends appropriate medications and Complementary and Alternative Medicine (CAM) therapies for pain.

STEP 16: Is pain controlled?

- When patients have pain that is unresponsive to pain management, the practitioner may wish to consult with a pain specialist, geriatrician, neurologist, physiatrist, or palliative medicine practitioner.
- If pain is related to a somatoform disorder or has a spiritual or existential component a psychological or spiritual consult may be of benefit.
- Consultation may be of benefit and should be considered. Incorporate acceptable recommendations into the patient's care plan.
- If the consultant's recommendations are not carried out, document the reasons for this decision.

Complementary and Alternative Medicine

- CAM therapies have become increasingly common in treating chronic pain syndromes. However, there is limited information on the utilization and efficacy of most CAM therapy modalities.

STEP 17: Monitor the facility's performance in the management of pain

- Review the management of patients with pain through the facility's quality improvement process. Table 17 suggests indicators that a facility may wish to use to measure the success of interventions to manage pain.

Table 17. Sample Performance Measurement Indicators

Process Indicators

- Facility has adopted policies and procedures that promote a systematic, interdisciplinary, and individualized approach to pain management.
- Facility staff and affiliated professionals receive appropriate education that reflects current standards and practice in pain management.
- Patients are regularly assessed or evaluated for the presence of pain or risk factors for pain.
- Staff members have selected a pain assessment method appropriate for each patient's cognitive level.
- Scope of diagnostic workup for pain (or reasons for limiting its scope) and pain relief measures are documented in the patient's record.
- An appropriate, individualized, interdisciplinary care plan that includes stated care goals is implemented for each patient with pain.
- Environmental and other nonpharmacologic interventions are implemented to optimize function and quality of life for patients with pain.
- Analgesic medications are used and monitored appropriately in patients with pain.
- Patients prescribed NSAIDs are monitored for deterioration in cardiac, cognitive, or renal function and for the onset of GI symptoms and signs (including occult blood in the stool).
- When opioids are prescribed, a bowel regimen is implemented to prevent opioid-induced bowel dysfunction.
- During initiation of opioid therapy, a monitoring plan to address excessive sedation and respiratory depression is prepared and implemented.
- Patients with pain are assessed for depression.
- Charts include appropriate documentation of assessment, treatment, management, and outcomes, including pre- and post-intervention documentation of pain levels.

Outcome Indicators

- Increases in
  - Number of patients achieving pain control goals
  - Number of patients with pain showing improvements in function and quality of life
  - Number of patients receiving scheduled pain medications
- Decreases in
  - Number of doses of PRN pain medications
  - Number of patients with severe opioid-related constipation or fecal impaction
  - Number of patients reporting pain on a daily basis

Source

AMDA – The Society for Post-Acute and Long-Term Care Medicine. 10500 Little Patuxent Parkway, Suite 210, Columbia, MD 21044. Pain Management in the Long-Term Care Setting Clinical Practice Guideline. AMDA 2012.

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We recognize that people who reside in PA/LTC facilities are residents. Throughout this pocket guide, however, we use the term patient(s) because we are addressing individuals within the context of treating a medical condition.

Acknowledgements

AMDA – The Society for Post-Acute and Long-Term Care Medicine developed this educational tool with the support and cooperation of the Clinical Practice Steering Committee and Clinical Practice Guidelines and Tools Subcommittee.

A special thank you to the following members for their contributions:

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Robert Hogikyan, MD, MPH, CMD – Chair, Clinical Practice Guidelines and Tools Subcommittee
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