



Issues and Challenges with Pain Management in Both the Pediatric and Aging Populations: Implications for Pharmacists



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Disclosures

Drs. Hovestreydt and Matthews state that they have no relevant affiliation or financial relationship or relationship to products or devices with a commercial interest related to the content of this activity to disclose.

The clinical reviewer, Michele A. Faulkner, PharmD, FASHP, discloses that she is on the Speakers' bureau for Biogen (area of focus: Alzheimer's disease).

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Learning Objectives

Upon completion of this activity, the participant should be better able to:

- **List** the most common causes of acute and chronic pain in children and adolescents
- **Discuss** pain management strategies for pediatric patients
- **Recognize** the influence of family dynamic and caregiver beliefs on pediatric pain management
- **Identify** considerations for the use of opioid analgesics in older adults
- **Describe** opioid safety measures in older adults
- **Explain** proper storage and disposal of opioids and the risk of diversion



Part 1A

Pediatrics, Pain & Family Dynamics

Introduction

- Acute pain is defined as an unpleasant sensory experience as a response to a noxious stimulus
- Pain in pediatrics is common, not well-recognized, and undertreated
 - Neonatal hospital patients receive 7-17 painful procedures a day
 - In most cases of infants, no analgesic methods are used
 - Patients with medical conditions more often experience painful diagnostic procedures (i.e. venipuncture, lumbar puncture, aspirations)
- Most common pain in children is acute pain
 - Occurs as a result of injury, illness, or medical procedures
- Other sources of pain
 - Headaches
 - Medical conditions (e.g., sickle cell anemia, etc)

<https://www.iasp-pain.org/resources/fact-sheets/pain-in-children-management/>

Pediatrics. 2001;108(3):793-797. doi:10.1542/peds.108.3.793

U.S. Department of Health and Human Services. National Pain Strategy: a comprehensive population health strategy for pain. 2016. Available at: https://www.iprcc.nih.gov/sites/default/files/documents/NationalPainStrategy_508C.pdf

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Types of Pain in Children

- Acute nociceptive pain
 - Peripheral nerve ending activations
- Psycho/social/emotional pain
- Neuropathic pain
 - Injury or dysfunction of somatosensory system
- Chronic pain

Children (Basel). 2016;3(4):42

Chronic Pain in Children

- Estimated 20-35% of children and adolescents affected; leading cause of morbidity
- Greater than 10% of children in hospitals demonstrate chronic pain syndromes
- Not defined by a specific time period but rather pain that continues past normal healing period and lacks “the acute warning function of physiological nociception”
- May be persistent or episodic
- Can impact the entirety of the nervous system
 - Increased response of central nervous system to both painful and nonpainful stimuli may cause or contribute to many chronic pain syndromes

<https://www.iasp-pain.org/resources/fact-sheets/pain-in-children-management/>
Children (Basel). 2016;3(4):42

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Chronic Pain in Children (cont'd)

- Many chronic or recurrent pain syndromes now thought to be manifest from an underlying pain condition
 - Pain sensitivity/central sensitivity
 - Headaches, musculoskeletal pain, chest pain, fibromyalgia etc.
 - Considered to come from the same underlying sensitivity to pain, manifesting in different locations
 - May exist in conjunction with acute pain (“chronic-on-acute”)
 - May require varying therapy for the acute component (i.e. opioids) but not for use as chronic therapy

<https://www.iasp-pain.org/resources/fact-sheets/pain-in-children-management/>
Children (Basel). 2016;3(4):42

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Impact of Unaddressed Pain and Chronic Pain in Children

- Can impact neurobiological and psychosocial development
- Increased morbidity and mortality
- Early exposure to pain linked to higher pain ratings in school aged children, reduced cognition and motor function
- Links to increased chronic pain, anxiety (21.1% vs 12.4%) and depression (24.5% vs 14.1%) in adulthood
- 17% of adults with chronic pain had a history of chronic pain during childhood (80% indicated the pain persisted since childhood)
- Can impact socialization, academics, and family function

<https://www.iasp-pain.org/resources/fact-sheets/pain-in-children-management/>

Children (Basel). 2016;3(4):42

Clin J Pain. 2019;35(6):515-520

Children (Basel). 2021 May; 8(5): 420

Pain Avoidance and Catastrophizing

- Important factor in pediatric chronic pain research and practice
 - Important for clinicians and parents to identify ways to distract, reduce fear and perception of pain
- Catastrophizing can increase the pain experience— negative cognitive and emotional processes that amplify pain
- Children's pain is linked to their own and their parent's level of catastrophizing
 - Parent's own experiences impact children's experience and behavior
- Fear can cause upregulation of physical and psychological dysfunction
 - Positive link of fear of pain and disability

Children (Basel). 2016;3(4):42

Considerations in Pediatric Populations

Biases and Assumptions of Pediatric Pain

- Myths that infants and children do not experience pain similar to adults
- Lack of assessment for pain
- Knowledge gap of providers in treating pain in children
- Fears of using analgesic medications in children
- Beliefs about pain in child development
- Potential inability of children to articulate, describe pain

Pediatrics. 2001;108(3):793-797

Considerations in Pediatric Populations (cont'd)

- Family and Caregiver Dynamics
 - Parental pain experiences, beliefs, behaviors are important factors in pediatric pain syndromes
 - Research suggests that recurrent pain that children experiences is frequently directly related to family (genetic and environmental)
 - Causal mechanisms common to pediatric pain disorders might include shared genes
 - Parental migraine and recurrent abdominal pain- significantly associated with adolescent chronic pain
 - Parents who are overly protective or critical of children's pain- children may experience more impairment or somatic symptoms

Pediatrics. 2001;108(3):793-797
Clin J Pain. 2019;35(6):515-520

Considerations in Pediatric Populations (cont'd)

- Perception and biases of caregivers related to the use of analgesics, opioids
 - Avoidance of pain medication? Overuse? Fears and assumptions?
- Parental access to chronic opioids
 - Consider risks and behaviors in adults as well in prescribing and dispensing
- Use of opioids in teenagers, access to opioids
 - 3.6% of adolescents reported opioid misuse

Pediatrics. 2001;108(3):793-797
Clin J Pain. 2019;35(6):515-520

Best Practices for Pain Management in Pediatrics

- The American Academy of Pediatrics (AAP) and the American Pain Society (APS) jointly issued a statement to underscore the **responsibility of health care professionals** to take a leadership and advocacy role **to ensure humane and competent treatment of pain and suffering in all infants, children, and adolescents.**
- **Recommended strategies included:**
 - Providing a calm environment for procedures to reduce distress-producing stimulation
 - Use appropriate self-report, behavioral, observational, and/or physiologic measures to assess pain
 - Anticipate predictable painful experiences
 - Intervene, and monitor accordingly
 - Use a multimodal (pharmacologic, nonpharmacologic, behavioral) approach to pain management
 - Involve families and tailor interventions to the individual child

Pediatrics. 2001;108(3):793-797. doi:10.1542/peds.108.3.793

Assessment of Pain in Children

- Utilize self reporting of the individual where possible
- Where self-reporting not possible, refer to behavior, physiologic indicators
- Consider ability to articulate, impact of psychosocial and behavioral considerations
- Assessment tools vary by age and reporting ability and include:
 - Numeric Rating Scale (> 7 years old)
 - Faces Pain Scale (> 3 years old)
 - FLACC Pain Rating Scale (1-3 years old)
 - N-PASS (< 1 year old)
 - r-FLACC (unable to self-report)

<https://www.iasp-pain.org/resources/fact-sheets/pain-in-children-management/>
Pediatrics. 2001;108(3):793-797.

Acute Pain Management in Pediatrics

- Medications

- Nonopioids

- Acetaminophen, ibuprofen, naproxen, ketorolac, celecoxib, lidocaine patch

- Opioids

- Fentanyl, hydromorphone, morphine, oxycodone
- Codeine and tramadol are **contraindicated** in children < 12 years and for pain management after removal of tonsils and/or adenoids in those < 18 years
 - CYP2D6 polymorphism


- Nonpharmacologic therapies

- Distraction, comforting touch, tactile comfort, controlled breathing, relaxation, imagery, hypnosis

https://www.nhpco.org/wp-content/uploads/2019/04/PALLIATIVECARE_Nonpharmacological.pdf


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Acute Pain Management in Pediatrics (cont'd)



Acute Pain Type	Management Strategy
Procedure-related Pain	<ul style="list-style-type: none">• Deep sedation analgesia• Local anesthetics• Alternative therapies such as cognitive behavioral strategies, massage, heat compresses
Post-operative Pain	<ul style="list-style-type: none">• Opioids may be indicated for moderate to severe pain• Non-opioid analgesics to augment opioid amounts needed• Early treatment and effective doses favored (can result in lower amounts of analgesics given)• Continuous or round the clock dosing recommended for persistent moderate to severe pain• Oral administration recommended for mild to moderate pain where possible
Acute illness Pain	<ul style="list-style-type: none">• May necessitate use of acetaminophen, NSAIDs, opioids or local medications as indicated (i.e. headaches, otitis media, other illnesses)

Sample Nonopioid Regimen for Acute Pain Management

An illustration on the left side of the slide shows a person in a purple shirt lying on a blue mat, appearing to be in pain or discomfort. The background features abstract, swirling shapes in shades of blue and orange.

Medication	Dosing
Acetaminophen	10 mg/kg/dose every 6 hours (maximum = 4000 mg/day)
Ibuprofen	5 mg/kg/dose every 6 hours (maximum = 2400 mg/day)

Administer acetaminophen and ibuprofen in an alternating fashion (every 3 hours) except while sleeping during the first 3 days and on as-needed basis starting on day 4 after surgery

Ann Otol Rhinol Laryngol. 2015;124(10):777-781

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Opioid Use in Pediatrics

- Acute pain after surgery or injury is most common indication for opioids in pediatrics
- 40% of hospitalized children received opioids
- Rates of opioid prescriptions for routine pains:

Indication (Common pains)	Rate of Prescribing
Back pain	21.5%
Abdominal pain	13%
Headache	12.7%
Musculoskeletal	11.3%

JAMA Surg. 2019;154(12):1154-1155
Clin J Pain. 2019;35(6):515-520

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Opioid Use in Pediatrics (cont'd)

- From 1999 to 2016 opioid-related overdoses increases by 250% in children and adolescents
- Opioid prescribing in adolescents doubled between 1994 and 2007 (3% to 5.5% of ambulatory and ED visits)
- More recently rates appear to be stabilizing or decreasing across several analyses
- Nearly 20% of children have received opioids by the age of 18
- Use is higher in the United States than in many other developed countries

JAMA Surg. 2019;154(12):1154-1155
Clin J Pain. 2019;35(6):515-520

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Opioid Use in Pediatrics (cont'd)

- In 2019, 3.5% of US children and young adults had ≥ 1 dispensed opioid prescription
 - Of prescriptions for opioid-naive patients, 41.8% > 3-day supply
 - Of prescriptions for young children, 8.4% and 7.7% were for codeine and tramadol
- Of prescriptions for adolescents and young adults:
 - 11.5% had daily dosages of ≥ 50 morphine milligram equivalents
 - 4.6% had benzodiazepine overlap
- Overall, 45.6% of prescriptions were defined as high risk
- Dentists and surgeons wrote 61.4% of prescriptions

Pediatrics. 2021;148(3):e2021051539.

Guidelines for Opioid Prescribing in Children and Adolescents After Surgery

- Adolescents who receive an opioid prescription after surgery may have a **higher likelihood of receiving more opioid prescriptions** within the following year
- Optimal postoperative regimen should balance adequate pain relief for recovery while minimizing adverse effects
- Opioid-free postoperative analgesia is feasible for many pediatric operations
- Perioperative intravenous nonopioid medications and/or regional or neuraxial anesthesia should be used as part of an opioid-sparing regimen
- When discharge analgesics are deemed necessary, a nonopioid option or options are recommended as first-line treatment

JAMA Surg. 2021;156(1):76-90

Sample Opioid Dosing in Pediatrics

Medication	Initial Oral Dosing
Morphine	<p>Infants \leq 6 months:</p> <ul style="list-style-type: none">• 0.08 to 0.1 mg/kg/dose every 3 to 4 hours <p>Infants $>$ 6 months, children & adolescents:</p> <ul style="list-style-type: none">• $<$ 50 kg: 0.2 to 0.5 mg/kg/dose every 3 to 4 hours prn• \geq 50 kg: 15 to 20 mg every 3 to 4 hours prn
Oxycodone	<p>Infants \leq 6 months:</p> <ul style="list-style-type: none">• 0.025 to 0.05 mg/kg/dose every 4 to 6 hours prn <p>Infants $>$ 6 months, children & adolescents:</p> <ul style="list-style-type: none">• $<$ 50 kg: 0.1 to 0.2 mg/kg/dose every 4 to 6 hours prn• \geq 50 kg: 5 to 10 mg every 4 to 6 hours prn

Chronic Pain Management in Pediatrics

- Opioids not routinely indicated for primary pain disorders (i.e. headaches, musculoskeletal pain) causing chronic pain
- Other treatment modalities may include:
 - Rehabilitation
 - Non-pharmacologic methods
 - Psychologic methods (therapy etc.)
 - “Normalizing life”
 - Nonopioid analgesics and adjuvant medications

Friedrichsdorf S.J. Prevention and treatment of pain in hospitalized infants, children, and teenagers: From myths and morphine to multimodal analgesia; Proceedings of the Pain 2016: Refresher Courses, 16th World Congress on Pain; Yokohama, Japan. 23–30 September 2016; Washington, DC, USA: International Association for the Study of Pain, IASP Press; 2016. pp. 309–319

<https://www.iasp-pain.org/resources/fact-sheets/pain-in-children-management>

<https://www.aboutkidshealth.ca/article?contentid=3260&language=english>

JAMA Netw Open. 2020;3(10):e2022398

Anesth Analg. 2019;128(4):811-819.

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Guidelines on the Management of Chronic Pain in Children (WHO)

- Interdisciplinary, multimodal approach
 - Physical therapies, either alone or in combination with other treatments
 - Psychological management through cognitive behavioral therapy and related interventions
 - Appropriate pharmacological management tailored to specific indications and conditions
 - Includes the use of opioids under the principles of opioid stewardship

Guidelines on the management of chronic pain in children. Geneva: World Health Organization; 2020.

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Pediatric Sickle Cell Disease – Acute and Chronic Pain Management (ASH)

- Acute crisis
 - Rapid assessment and administration of analgesics
 - Opioids ± ketamine (intranasal)
 - Regional anesthesia
 - Nonpharmacologic therapies
- Chronic pain
 - In favor of cognitive behavioral therapies
 - Opposes initiation of chronic opioid therapy
 - No recommendation for nonopioid and adjuvant analgesics

Blood Adv. 2020;4(12):2656-2701



Questions and Answers



Part 1B

Implications for Pharmacists

Education Opportunities for Pharmacists

- Familiarize with Opioid Analgesics Risk Evaluation and Mitigation Strategies (REMS)
 - Education Blueprint for Health Care Providers Involved in the Treatment and Monitoring of Patients with Pain
 - Provides information for health care providers to use for counseling patients on risks and considerations of the use of opioids
- Counsel patients and providers on non pharmacologic alternatives, and non-opioid alternative therapies to manage pain where possible
- Educate adolescents and parents about risks of opioids
- Encourage disposal of medications when no longer using
- Ensure proper security of opioids (assigning responsibility)

<https://www.fda.gov/drugs/information-drug-class/opioid-analgesic-risk-evaluation-and-mitigation-strategy-rems>

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Recommendations of the PPAG for Opioid Use in Children and Adolescents

Pharmacists should:

- Proactively engage licensed prescribers on the customized selection of opioids and other non-opioid alternatives
- Actively provide education on proper storage, disposal, and administration of prescription opioids to prevent misuse, overdose, or development of opioid use disorder
- Actively engage in education of patients, families, and local communities to increase public awareness of the dangers regarding opioid misuse
- Lead or actively participate in institutional efforts to implement opioid stewardship programs
- Advocate for universal use of electronic prescription drug–monitoring programs by prescribers and “real-time” data submission of opioids dispensed at pharmacies
- Participate in the distribution of naloxone to individuals and organizations that meet state-determined criteria through standing orders, protocol orders, collaborative practice agreements, or pharmacist prescriptive authority
- Actively endorse the American Academy of Pediatrics policy statement to improve access to evidence-based treatment for adolescents and young adults with opioid use disorder and advocate for an expanded role of the pharmacist in detoxification and office-based pharmacotherapy



Questions and Answers



Part 2A

Opioids and the Aging

Pain in Older Adults

- Overall prevalence of common pain conditions (e.g., arthritis, rheumatism, chronic back or neck problems, and frequent headaches): ~43% in U.S. adults
- 11.2% of adults report having daily pain
- Percentage of the population impacted by pain increases with age
 - 8.5% of 18-29 year-old adults experiencing pain
 - over 30% of persons over 65 years experiencing pain

NCHS Data Brief. 2020;(390)1-8

https://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fmmwr%2Fvolumes%2F65%2Frr%2Frr6501e1er.htm


Pain Management in Aging Populations

- Pain is common in older adults and can cause functional impairment and reduced quality of life
- Although older adults are at higher risk for adverse drug reactions, opioid analgesics can be safe and effective with careful consideration of patient risk factors
 - Consider variations in pharmacodynamics and pharmacokinetics
 - Drug absorption, drug distribution and drug metabolism can all be affected by aging
 - Drug elimination can be impacted by decreased renal blood flow and decreased GFR (i.e. morphine and hydromorphone)
 - Generally opiates will become more potent in the elderly with increased duration of action
 - Concomitant medications and drug interactions
 - Other risk factors in the elderly (i.e. falls risk, proper administration, risk of sedation and respirator depression, cognitive impairment)

Drugs Aging. 2021 Sep 7 : 1–11
Clin Interv Aging. 2008;3(2):273-278

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Approach to Chronic Pain Management



Obtain a detailed patient history

Diagnose and rule out dangerous or modifiable causes of pain

Establish realistic expectations for pain relief

Create a patient-centered, comprehensive plan

Approach to Pain Management



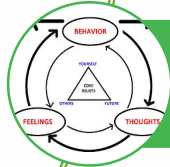
Medications



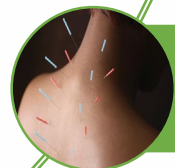
Restorative Therapies



Interventional Procedures




Behavioral Health Interventions



Complementary & Integrative Health

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Pharmacotherapy for Chronic Pain by Indication



Drug/Therapeutic Class	Indication
Acetaminophen	Musculoskeletal (MSK) pain
Anticonvulsants	Fibromyalgia, neuropathic pain
Antidepressants	Fibromyalgia, MSK pain, or neuropathic pain ± h/o depression
Cannabinoids	Neuropathic pain
Low-dose naltrexone	Refractory chronic pain, fibromyalgia
Muscle relaxants	MSK pain
NMDA-receptor antagonists	Neuropathic pain
NSAIDs	MSK pain
Opioids	MSK and neuropathic pain; avoid in fibromyalgia (tramadol possible exception)
Topical agents	Localized pain; use NSAIDs for MSK pain; use capsaicin or lidocaine for neuropathic pain

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General Considerations for Analgesic Use

- Diagnosis
- Duration
- Age
- Comorbidities
- Potential drug interactions
- Treatment cost and accessibility
- Complexity of the regimen
- Health literacy
- Risk for misuse and substance use disorder
- Risk for overdose

American Pain Society. Principles of Analgesic Use. 7th ed. 2016.

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Physiologic Changes Related to Aging



Pharmacological Concern	Change with Normal Aging	Common Disease Effects
Gastrointestinal absorption or function	<ul style="list-style-type: none"> • Slowing of gastrointestinal transit time may prolong effects of continuous-release enteral drugs 	<ul style="list-style-type: none"> • Disorders that alter gastric pH may reduce absorption of some drugs
	<ul style="list-style-type: none"> • Opioid-related bowel dysmotility may be enhanced in older patients 	<ul style="list-style-type: none"> • Surgically altered anatomy may reduce absorption of some drugs
Transdermal absorption	<ul style="list-style-type: none"> • Under most circumstances, there are few changes in absorption based on age but may relate more to different patch technology used 	<ul style="list-style-type: none"> • Temperature and other specific patch technology characteristics may affect absorption
Distribution	<ul style="list-style-type: none"> • Increased fat to lean body weight ratio may increase volume of distribution for fat-soluble drugs 	<ul style="list-style-type: none"> • Aging and obesity may result in longer effective drug half-life
Liver metabolism	<ul style="list-style-type: none"> • Oxidation is variable and may decrease resulting in prolonged drug half-life 	<ul style="list-style-type: none"> • Cirrhosis, hepatitis, tumors may disrupt oxidation but not usually conjugation
	<ul style="list-style-type: none"> • Conjugation usually preserved 	
	<ul style="list-style-type: none"> • First-pass effect usually unchanged 	
	<ul style="list-style-type: none"> • Genetic enzyme polymorphisms may affect some cytochrome enzymes 	

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Physiologic Changes Related to Aging (cont'd)

Pharmacological Concern	Change with Normal Aging	Common Disease Effects
Renal excretion	<ul style="list-style-type: none">• Glomerular filtration rate decreases with advancing age in many patients, which results in decreased excretion	<ul style="list-style-type: none">• Chronic kidney disease may predispose further to renal toxicity
Active metabolites	<ul style="list-style-type: none">• Reduced renal clearance will prolong effects of metabolites	<ul style="list-style-type: none">• Renal disease• Increase in half-life
Anticholinergic side effects	<ul style="list-style-type: none">• Increased confusion, constipation, incontinence, movement disorders	<ul style="list-style-type: none">• Enhanced by neurological disease processes

J Pain. 2011;12(3 Suppl 1):S14-S20

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Opioid Use in Aging Populations

- Substance use disorder in older adults is underdiagnosed and undertreated
 - Limited research in this area
 - Older adults are increasing percentage of population seeing help for substance use disorders
 - In 2019, almost 50,000 people in the US died from opioid overdoses

<https://www.drugabuse.gov/drug-topics/opioids/opioid-overdose-crisis>

Drugs Aging. 2021;1-11

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Opioid Use in Aging Populations (cont'd)

- Unintended consequences of opioid regulations
 - Changes to the patient-prescriber relationship
 - Lack of access to pain management
 - Ambivalence or anxiety about existing opioid use
 - Concerns about future use

Gerontologist. 2020;60(7):1343-1352


Guidelines for Prescribing Opioids for Chronic Pain

- Use nonpharmacological and nonopioid interventions first
 - Avoid using opioids without them
- Discuss risks and benefits before starting opioids and then periodically
- Use immediate-release opioids instead of extended-release opioids when starting therapy
- Prescribe the lowest effective dose
- Evaluate opioid benefits and harms with patients within 1 to 4 weeks after starting treatment or changing the dose
 - Reassess at least every 3 months thereafter

Guidelines for Prescribing Opioids for Chronic Pain (cont'd)

- Evaluate risk for opioid-related harm and provide access to naloxone
- Check the PDMP at before starting opioids and then with every refill
- Use urine drug testing at baseline and then at least annually
- Avoid co-prescribing opioids and benzodiazepines
- Routinely screen for opioid use disorder and assist with arranging treatment when necessary

Sample Opioid Dosing in Older Adults



Medication	Dosing (Opioid Naïve)
Buprenorphine	Transdermal patch: 5 mcg/hr every 7 days Buccal film: 75 mcg once daily or every 12 hours
Hydrocodone-acetaminophen	5-325 mg po every 4-6 hours
Hydromorphone	1-2 mg po every 4-6 hours
Morphine	7.5 mg po 4-6 hours
Oxycodone	2.5-5 mg po every 4-6 hours
Tramadol	25-50 mg po every 4-6 hours (max 300 mg/day)

Routine Monitoring of Opioid Therapy - 8 As

- Analgesia
- Adverse effects
- Function including ability to perform Activities of daily living
- Presence of Aberrant drug-related behaviors
- Affect
- Use of Adjuvant analgesics
- Adherence
- Access to treatment

When to Reconsider the Role of Opioids

- Lack of significant pain reduction
- Lack of improvement in function
- Persistent adverse effects
- Persistent nonadherence
- Worsening pain (possibility of opioid-induced hyperalgesia or need for further intervention)
- Overdose or other serious opioid-related event
- Concomitant use of medications that can increase the risk of adverse outcomes

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Tapering Chronic Opioid Therapy

- Should be slow enough to minimize opioid withdrawal
- Individualized and patient-centered
- Slow taper = 10% every 4 weeks
 - Most appropriate for patients on chronic opioid therapy
- OK to hold taper as needed but avoid going back to higher doses

Considerations in Aging Populations

- **Cancer pain is common in elderly and frequently necessitates use of opioids**
 - Up to 80% of elderly with cancer experience pain (pain medicine)
 - >80% of cases controlled with routine therapy, 20% require adjuvant medications to control pain
 - Weak opioids (i.e. tramadol and codeine) have limited efficacy in cancer pain
 - Severe pain benefits from stronger opioids (morphine, oxycodone, hydromorphone, fentanyl, methadone)
 - Neuropathic pain related to cancer therapy can also be treated with opioids
 - 7-10% of patients receiving opioids for cancer pain experience sedation
 - Alternatives may include NSAIDs, corticosteroids, bisphosphonates

Clin Interv Aging. 2008 Jun; 3(2): 273–278

<https://www.cancernetwork.com/view/management-pain-older-person-cancer-part-2-treatment-options>

Considerations in Aging Populations (cont'd)

- Dementia may impact ability to perceive, report and recall pain
 - May lead to potentially unrecognized and unreported pain
- Common side effects: constipation, CNS depression, urinary retention
 - Consider dose reduction, management of effects, alternative opioids, adjuvant therapies
- Increased risk of falls, fall injuries, and fractures in the setting of opioid use

Clin Interv Aging. 2008 Jun; 3(2): 273–278
J Gerontol A Biol Sci Med Sci. 2020;75(10):1989-1995

Considerations in Aging Populations (cont'd)

Chronic pain and renal impairment:

- **Nonopioids**

- No dose adjustment: acetaminophen, capsaicin, lidocaine
- Use with caution: topical NSAIDs
- Avoid: oral NSAIDs

- **Opioids**

- No dose adjustment: buprenorphine, fentanyl patch, hydromorphone
- Use with caution: hydrocodone-acetaminophen, oxycodone, methadone, tramadol immediate-release, codeine
- Avoid: morphine, tramadol extended-release

- **Adjuvants**

- Use with caution: SNRIs, Gabapentinoids
- Avoid: TCAs, muscle relaxants

Am J Med. 2019;132(12):1386-1393

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Considerations in Aging Populations (cont'd)

- CMS Drug Management Program (effective January 1, 2022)
 - All Part D sponsors are required to have a drug management program (DMP), and to include beneficiaries with a history of opioid-related overdose in their DMP pursuant to the Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities (SUPPORT) Act
 - All at-risk beneficiaries under a will be targeted for medication therapy management (MTM)
 - Plans must provide all MTM enrollees with information about safely disposing prescription drugs that are controlled substances, including opioids

Am J Med. 2019;132(12):1386-1393

Opioid Use in Long-Term Care (LTC)

- Older adults living in LTC settings experience a higher incidence of chronic pain than those living in the community and are prescribed opioids at approximately twice the rate
- Society for Post-Acute and Long-Term Care Medicine policy statement that addresses responsible opioid stewardship

J Gerontol Nurs. 2019;45(9):5-10
<https://paltc.org/opioids%20in%20nursing%20homes>

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Questions and Answers



Part 2B

Implications for Pharmacists

Considerations for Pharmacists: Opioid REMS

The FDA Opioid Analgesic REMS Education Blueprint for Health Care Providers Involved in the Treatment and Monitoring of Patients with Pain outlines factors and tools to consider prior to initiating opioid therapy to assist with risk mitigation:

- Evaluating appropriateness based on patient risk factors
- Using the least amount of medication necessary to manage pain
- Providing naloxone as a universal precaution
- Using screening tools for misuse prior to and during treatment with an opioid

Considerations for Pharmacists: Additional Interventions and Strategies

- Collaboration, communication, and education with the care team
- Academic detailing
- Community outreach
- Educational activities for pharmacy learners

Am J Health Syst Pharm. 2019;76(7):424-435

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Naloxone Use and Dispensing

- Opioid receptor antagonist at mu-, delta-, and kappa-opioid receptors
 - Displaces opioids from receptors, can precipitate withdrawal
- Reverses effects of respiratory and CNS depression (and analgesia) with 3-5 minutes
 - A second dose may be necessary if no response is observed
- No abuse potential
- Can be administered safely by those without formal medical training
- Important to counsel those administering to seek emergency help immediately after administration

PrescribeToPrevent (<http://prescribetoprevent.org/>)

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Naloxone Use and Dispensing (cont'd)

- Valuable tool for inadvertent overdose or administration or unanticipated respiratory depression
 - Naloxone access is estimated to be correlated with at least a 9% reduction in opioid-related deaths
- Naloxone standing orders
 - Low rates of naloxone dispensing currently seen despite an increase in laws enabling access to naloxone in communities
- Good Samaritan laws

Co-Prescribing Naloxone for Patients on Chronic Opioid Therapy (COT)

- Observational study (N=164)
 - Included all patients on COT for CNCP regardless of amount of prescribed opioids
 - 65 patients self-reported renal, hepatic, pulmonary diseases or sleep apnea as comorbidities
 - Median MME was 90 mg/day
 - No patient used the naloxone rescue kit
 - Demonstrates the implementation of co-prescribing of naloxone in a universal precautions model for all patients prescribed COT as an effective patient and public health intervention

Subst Abus. 2016;37(4):591-596

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Safe Storage and Disposal of Opioids

- Education on safe storage and disposal has been shown to be **suboptimal**
 - Reasons for not storing opioids in a locked location include no access to safe storage and inconvenience
 - Reasons for not disposing unused opioids include saving for future need, saving for someone they know, and not being told to do so
 - Messaging in package inserts for opioid products was shown to be inconsistent
 - Postoperative prescription opioids often go unused, unlocked, and undisposed
 - Opioids were found to be stored unsafely in households with children

J Pain Res. 2020;13:987-995

Ann Intern Med. 2018;169(3):198-199

JAMA Surg 2017 Nov 1;152(11):1066-1071

Pediatrics 2017 Mar;139(3):e20162161

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Safe Storage and Disposal of Opioids (cont'd)

An illustration on the left side of the slide shows a person lying on a large, stylized pill. The pill is blue and white, and the person is wearing a purple shirt and blue pants. The background is a light blue and white swirl.

Store opioids in a locked container

Keep opioids in their original package

Keep opioids out of children's reach

Do not share your medication

Safely dispose of unused pills

Safe Storage and Disposal of Opioids (cont'd)

- Disposal options

- Community-based drug disposal program
 - Controlled Substance Public Disposal Locations
- Opioid disposal kits
- Mail-back programs
- Remove labeling from the bottle, mix the drugs with an unpleasant substance, and place in the garbage separate from the bottle
- Last resort – flush

<https://www.fda.gov/drugs/safe-disposal-medicines/disposal-unused-medicines-what-you-should-know>

<https://www.fda.gov/drugs/disposal-unused-medicines-what-you-should-know/drug-disposal-fdas-flush-list-certain-medicines#FlushList>

<https://apps.deaiverison.usdoj.gov/pubdispsearch/spring/main?execution=e1s1>

Tex J Health Syst Pharm. 2020;19(1):46-51



Conclusions and Questions & Answers

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Thank You