

Over the Counter and Through the Woods: Navigating Analgesics at Discharge

Brittany Johnson, PharmD, CPh

Clinical Assistant Professor, UF College of Pharmacy
UFHealth Jacksonville Department of Pharmacy

Sophia Sheikh, MD

Associate Professor, UF College of Medicine Jacksonville
Department of Emergency Medicine



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Presentation Objectives

- Discuss the long-term and short-term use of over-the-counter (OTC) pain medications with considerations for and awareness of high-risk special populations and co-morbidities
- Evaluate when to follow-up for clinical evaluation
- Recognize the possible adverse drug reactions for over-the-counter pain relief including symptom presentations
- Identify techniques and methodologies for providing patient education on the use of over-the-counter pain medications at discharge
- Considerations for what items to include in a patient's discharge toolkit



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Over the Counter (OTC) Analgesics



Acetaminophen

OTC Dosage Forms	Dissolve packs, caplets, coated tablets, tablets, liquid gels, liquid, extended-release tablets 500 mg, 650 mg, 1000mg/30mL, 160mg/5mL	
Indications for Use	<ul style="list-style-type: none"> Fever reducer, pain reliever for minor aches and pains Headache Minor arthritis Premenstrual Cramps Muscle aches Common cold symptoms Toothache Backache 	
Dosing Recommendations	Adults and Children > 12 years	<ul style="list-style-type: none"> Take 1000mg by mouth every 6 hours while symptoms last Not to exceed 3000mg in a 24-hour period Do not take for > 10 days without consulting your provider
	Children under 12	Consult a provider prior to use
Adverse Effects	Severe liver damage may occur if greater than 4000mg per day is consumed, if taken with other acetaminophen containing products, consumed with ≥ 3 or more alcoholic drinks daily while taking acetaminophen	
Consult a Provider	<ul style="list-style-type: none"> Pain lasts more than 10 days Fever worsens or lasts greater than 3 days New symptoms occur while taking acetaminophen Redness or swelling are present 	
Patient Counseling Points	<ul style="list-style-type: none"> Do not use with any other medications that contain acetaminophen Speak with your doctor before use if taking warfarin, or have liver disease 	

Acetaminophen. *DailyMed*. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. Updated June 17, 2021. Accessed April 17, 2022.



Case Presentation

Tom is a 55-year-old male being discharged home after a fall from a ladder with minor injuries. He is participating with physical therapy and rates his pain a 4/10. Tom asks the provider if he can take the acetaminophen, he has at home for his knee pain.

What Counseling Points should be considered for Tom?



Acetaminophen. *DailyMed*. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. Updated June 17, 2021. Accessed April 17, 2022.



Case Presentation

- Maximum of 3,000 mg per day
- Do not consume > 3 alcoholic beverages per while taking this medication
- Read all labels to ensure that you are not receiving concomitant acetaminophen from other sources



Acetaminophen. *DailyMed*. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. Updated June 17, 2021. Accessed April 17, 2022.



Aspirin

OTC Dosage Forms	Tablets, enteric-coated tablets 81 mg, 325 mg	
Indications for Use	Temporary relief of minor aches and pains <ul style="list-style-type: none"> Consult a provider for other indications for use 	
Dosing Recommendations	Adults and Children > 12 years	<ul style="list-style-type: none"> Drink a full glass of water with each dose Take 325mg to 650mg by mouth every 4 hours, do not exceed 3900mg in a 24-hour period
	Children under 12	Consult a provider prior to use
Adverse Effects	<ul style="list-style-type: none"> Severe stomach bleeds may occur (increased risk occurs for individuals > 60 years old, have a history of stomach ulcers or bleeding problems, take other NSAIDs, consume \geq 3 alcoholic drinks per day, use aspirin longer than directed) Reye's Syndrome Stop use immediately if bloody or black tar stools, feel faint, vomit blood, have stomach pain that worsens, redness or swelling is present, new symptoms, ringing in the ears 	
Consult a Provider	<ul style="list-style-type: none"> Taking medications for gout, diabetes, or arthritis Asthma or other serious chronic condition History of bleed Heartburn or other stomach related issues High blood pressure, heart disease, liver cirrhosis or kidney disease Dehydration (e.g., not drinking fluids, or lost fluids due to vomiting or diarrhea) 	
Patient Counseling Points	<ul style="list-style-type: none"> Due to the delayed release formulation patients will likely not experience relief of headaches or other symptoms needing immediate pain relief 	

Aspirin. DailyMed. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. Updated December 30, 2021. Accessed April 17, 2022.



Low Dose Aspirin & Other NSAIDs

Table 2. Literature Review Describing Interaction Between Aspirin and NSAIDs.

Authors	Method	Conclusions
Lawson et al ³³	Coadministration of aspirin 81 mg once daily with acetaminophen (1000 mg), ibuprofen (400 mg), diclofenac (75 mg), or rofecoxib (25 mg). The NSAIDs were administered either 2 hours before or 2 hours after the aspirin.	The concomitant administration of ibuprofen, but not rofecoxib, acetaminophen, or diclofenac antagonized the irreversible platelet inhibition induced by aspirin. The effect of ibuprofen could be bypassed by administering aspirin 2 hours before a single dose of ibuprofen; however, when multiple doses of ibuprofen were given, these competitive effects were seen.
MacDonald and Wei ³⁴	Review of an anonymous database for 7107 patients who received low-dose aspirin (<325 mg) alone, aspirin plus ibuprofen, aspirin plus diclofenac, aspirin plus other NSAID	Statistically and clinically significant increased risk of mortality in users of aspirin plus ibuprofen compared with users of aspirin alone. No such increased risk was noted in users of aspirin plus diclofenac or other NSAIDs.
Capone et al ²⁶	Interaction between aspirin 100 mg and naproxen 500 mg twice daily in healthy patients in vitro and ex vivo	Naproxen interfered with the irreversible inhibitory effect of aspirin on platelet COX-1. Naproxen combined with aspirin might undermine the sustained inhibition of platelet COX-1 necessary for cardioprotection by aspirin.
Gladding et al ²⁹	Interaction between aspirin 300 mg and naproxen, tiaprofenic acid, ibuprofen, indomethacin, sulindac, and celecoxib. NSAIDs were given 2 hours prior to the aspirin.	Ibuprofen, indomethacin, naproxen, or tiaprofenic acid all block the antiplatelet effect of aspirin. Sulindac and celecoxib did not demonstrate any significant antiplatelet effect or reduce the antiplatelet effect of aspirin.

Expert Opinion

- Concomitant treatment with ≥ 2 NSAIDs may result in competition for binding and inhibition of the COX enzymes and alter pharmacological effects. This competition reduces the antiplatelet effects of low-dose aspirin, and increases the risk of thromboembolic events.
- Counsel patients to avoid concomitant use, if necessary separate aspirin dose 2 hours prior to NSAIDs

Krauss E, Cronin M, Dengler N, Segal A. Interaction Between Low-Dose Aspirin and Nonsteroidal Anti-Inflammatory Drugs Can Compromise Aspirin's Efficacy in Preventing Venous Thrombosis Following Total Joint Arthroplasty. *Clinical and Applied Thrombosis/Hemostasis*. January 2020. doi:[10.1177/1076029620920373](https://doi.org/10.1177/1076029620920373)
Stepensky D, Rimon G. Competition between low-dose aspirin and other NSAIDs for COX-1 binding and its clinical consequences for the drugs' antiplatelet effects. *Expert Opin Drug Metab Toxicol*. 2015 Jan;11(1):41-52. doi: 10.1517/17425255.2014.971010. Epub 2014 Oct 13. PMID: 25307725.



Naproxen Sodium

OTC Dosage Forms	Capsules, caplets, gel caps, liquid gels, tablets (All forms are 220mg strength)	
Indications for Use	Temporary relief of minor aches and pains caused by <ul style="list-style-type: none"> • Headache • Toothache • Backache • Menstrual cramps • The common cold • Muscular aches • Minor pain of arthritis • Fever 	
Dosing Recommendations	Adults and Children > 12 years	<ul style="list-style-type: none"> • Take 220 mg by mouth every 8 to 12 hours while symptoms persist • For the first dose you may take 440 mg within the first hour • Do not exceed 660 mg in a 24-hour period unless directed
	Children under 12	Consult a provider prior to use
Adverse Effects	<ul style="list-style-type: none"> • Severe stomach bleeds may occur (increased risk occurs for individuals > 60 years old, have a history of stomach ulcers or bleeding problems, take other NSAIDs, consume \geq 3 alcoholic drinks per day, use aspirin longer than directed) 	
Consult a Provider	<ul style="list-style-type: none"> • Pain worsens or lasts > 10 days • Fever gets worsens or lasts more than 3 days • Patient has difficulty swallowing • Redness or swelling is present, or any new symptoms appear • Naproxen may decrease this benefit of aspirin, and interact with diuretics • Patients with high blood pressure, diabetes, heart, liver, or kidney disease, asthma or had a past stroke 	
Patient Counseling Points	<ul style="list-style-type: none"> • Take with food or milk • Do not use right before or after heart surgery • Stop use if symptoms of stomach bleed: feel faint, vomit blood, bloody or black stools stomach pain that does not improv • Stop use if symptoms of heart attack: chest pain, trouble breathing, weakness in one part or side of body, slurred speech, leg swelling • increase the risk of heart attack, heart failure, and stroke, the risk is higher if you use more or take for longer than directed 	



Assessing Cardiovascular Risk of NSAIDs

Study Design

- Meta-analysis of all large scale randomized controlled trials comparing any NSAIDs to each other or NSAIDs to placebo.

Primary outcome

- Myocardial infarction

Secondary outcomes

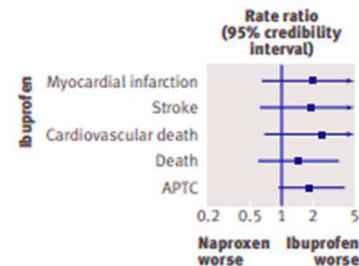
- Stroke, death from cardiovascular disease, and death

Methods

- 31 trials including 116,429 patients
- Patients received naproxen, ibuprofen, diclofenac, celecoxib, etoricoxib, rofecoxib, lumiracoxib, or placebo

Results

Of the NSAIDs evaluated ibuprofen was associated with the highest risk of stroke (3.36, 1.00 to 11.6), when compared to other NSAIDs



Among the NSAIDs analyzed, naproxen seemed least harmful for cardiovascular safety

Trelle S, Reichenbach S, Wandel S, Hildebrand P, Tschannen B, Villiger PM, Egger M, Juni P. Cardiovascular safety of non-steroidal anti-inflammatory drugs: network meta-analysis. *BMJ*. 2011 Jan 11;342:c7086. doi: 10.1136/bmj.c7086. PMID: 21224324; PMCID: PMC3019238



Case Presentation

Donald is 65-year-old male who presented to the hospital with complaints of severe headache which he self treated with OTC naproxen 220mg every 8 hours for the last 72-hours. He was found to be in hypertensive urgency, with an AKI. Donald taking Lisinopril 20 mg daily and Hydrochlorothiazide 25 mg po daily. He was supposed to follow up with his primary care to continue titrating his dose, but he has not been back in several months.

What medication interactions may have contributed to Donald's AKI?



Naproxen. DailyMed. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. Updated November 9, 2021. Accessed April 17, 2022.

AKI= Acute Kidney Injury



Case Presentation

- Co-administration of NSAIDs with thiazide diuretics or ACE-inhibitors increase the risk of renal toxicity
- NSAIDs may increase blood pressure and result in increased swelling and edema



Naproxen. DailyMed. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. Updated November 9, 2021. Accessed April 17, 2022.

AKI= Acute Kidney Injury



Ibuprofen

OTC Dosage Forms	Chewable (50 mg), Tablet (200mg), Liquid suspension (200mg/10mL, 100mg/5mL)	
Indications for Use	Temporary relief of minor aches and pains caused by	
	<ul style="list-style-type: none"> • Headache • Toothache • Backache • Menstrual cramps 	<ul style="list-style-type: none"> • The common cold • Muscular aches • Minor pain of arthritis • Fever
Dosing Recommendations	Adults and Children > 12 years	<ul style="list-style-type: none"> • 200 mg every 4 to 6 hours while symptoms persist • If pain or fever does not respond to 200 mg, increase to 400 mg • Use the lowest effective dose for the shortest duration • Do not exceed 1200 mg in a 24-hour period unless directed
	Children under 12	Consult a provider prior to use
Adverse Effects	<ul style="list-style-type: none"> • Severe stomach bleeds may occur (increased risk occurs for individuals > 60 years old, have a history of stomach ulcers or bleeding problems, take other NSAIDs, consume \geq 3 alcoholic drinks per day, use aspirin longer than directed) 	
Consult a Provider	<ul style="list-style-type: none"> • Pain worsens or lasts > 10 days • Fever gets worsens or lasts more than 3 days • Patient has difficulty swallowing • Redness or swelling is present, or any new symptoms appear • ibuprofen may decrease this benefit of aspirin, and interact with diuretics • Patients with high blood pressure, diabetes, heart, liver, or kidney disease, asthma or had a past stroke 	
Patient Counseling Points	<ul style="list-style-type: none"> • Take with food or milk • Do not use right before or after heart surgery • Stop use if symptoms of stomach bleed: feel faint, vomit blood, bloody or black stools stomach pain that does not improv • Stop use if symptoms of heart attack: chest pain, trouble breathing, weakness in one part or side of body, slurred speech, leg swelling • Increased risk of heart attack, heart failure, and stroke, the risk is higher if you use more or take for longer than directed 	

Ibuprofen. DailyMed. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. Updated June 13, Accessed April 17, 2022.



Case Presentation

Jane is 25-year-old female who presents to clinic with complaints of cramping that occurs just prior to menstruation. Jane has no known comorbidities aside from depression controlled with sertraline 50 mg po daily. She has no known drug allergies and denies taking any other medications. Jane states her friends recommended ibuprofen, but she wants to know if there are any major side effects or interactions with her medication before trialing it.

What education points should be considered for Jane?





Case Presentation

- Co-administration of NSAIDs and sertraline may increase risk of an upper GI bleed
- Recommend taking this medication with food or milk
- Educate Jane on the signs and symptoms of GI bleeding:
 - Bloody or dark tarry stools
 - Vomiting blood
 - Abdominal cramps or diarrhea
 - Fatigue, paleness, or syncope



Ibuprofen. DailyMed. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. Updated June 13;. Accessed April 17, 2022.



OTC Topical Analgesics



Diclofenac Sodium Topical Gel, 1%

OTC Dosage Forms	Gel (1%)	
Indications for Use	For the temporary relief of arthritis pain <u>ONLY</u> in the following areas: <ul style="list-style-type: none"> • Hand, wrist, elbow, foot, ankle, knee • This product may take up to 7 days to work for arthritis pain; it is not for immediate relief 	
Dosing Recommendations	Adults and Children > 12 years	Apply to Affected area 4 times daily, Max of 2 body areas at the same time Use ENCLOSED DOSING CARD to measure a dose <ul style="list-style-type: none"> • Hand, wrist, or elbow: 2.25 inches (2 grams) • Foot, ankle or knee: 4.5 inches (4 grams)
	Dosing Card	
Adverse Effects	<ul style="list-style-type: none"> • Per labeling risk profile is that of oral NSAIDs (e.g., liver, stomach bleed, heart attack and stroke warnings) • Discontinue if skin irritation occurs 	
Consult a Provider	<ul style="list-style-type: none"> • Redness or swelling is present in the painful area • Fever • Skin irritation • New symptoms appear • Symptoms or signs of stomach bleeding, heart problems or stroke 	
Patient Counseling Points	<ul style="list-style-type: none"> • May take up to 7 days to work, it is not for immediate relief, if no pain relief in 7 days discontinue use. Max use is 21 days. After applying this medicine, do not shower, bathe, or wash the affected area for at least 1 hour. Wait for at least 10 minutes before covering the treated skin with gloves or clothing • Apply to clean, dry skin that does not have any cuts, wounds, infections, or rashes • Do not use heating pads or apply bandages to where you have applied diclofenac sodium topical gel • Avoid exposing skin where you apply diclofenac sodium topical gel to sunlight and artificial light • Do not use sunscreens, cosmetics, moisturizers, insect repellants, or other topicals = on the same area 	

Diclofenac. DailyMed. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. Updated November 9, 2021. Accessed April 17, 2022.



Systemic Exposure of Topical Diclofenac Sodium Gel 1%

Following application of 4 grams of topical diclofenac 1% gel to the knee 4 times daily (160 mg/day) for 7 days

C_{max} of 0.6% and an AUC of 5.8% of the values obtained after administration of oral diclofenac sodium 50 mg 3 times daily

Following application of 4 grams of diclofenac 1% gel to each knee and 2 grams to each hand 4 times daily (480 mg/day) for 7 days

C_{max} of 2.2% and an AUC of 19.7% of the values obtained after administration of oral diclofenac sodium 50 mg 3 times daily

Formulation	C _{max} (ng/ml)
Diclofenac 50mg tablet	1298
Diclofenac 75mg tablet	2367
Diclofenac gel 1%	15
Diclofenac gel 3%	4
Diclofenac 1.5% solution	19
Diclofenac 1.3% patch	9

Gastrointestinal side effects generally lower with topical NSAIDs compared to oral NSAIDs



Topical Menthol

OTC Dosage Forms	Ointment (5%), patch (7.5%), Roll-on (16%), Gel (10.5%), Roll-on (4%)
Indications for Use	<p>For temporary relief of:</p> <ul style="list-style-type: none"> • minor aches and pains of muscles and joints associated with deep muscle therapy treatments, backache , arthritis, strains, sprains, bruises.
Dosing Recommendations	<p>Adults and Children > 12 years</p> <p>Apply to affected area no more than 10 times a day or as directed by your provider</p>
	<p>Children under 12</p> <p>Consult a provider prior to use</p>
Adverse Effects	<ul style="list-style-type: none"> • Rare cases of serious burns have been reported with products of this type burning sensation may occur upon application but generally disappears in several day
Consult a Provider	<ul style="list-style-type: none"> • Condition worsens or if symptoms persist for more than 7 days or clear up and occur again within a few days • Severe burning sensation, redness or irritation develop
Patient Counseling Points	<ul style="list-style-type: none"> • Do not bandage tightly • Avoid contact with eyes • Do not apply to wounds or damaged skin • Do not use with heating pads or other heating devices

Menthol. DailyMed. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. Updated January 14, 2021. Accessed April 17, 2022.



Topical Lidocaine

OTC Dosage Forms	Patch (4%), Cream (2%, 4%), Roll-on (4%)
Indications for Use	Temporarily relieves pain and itching due to: <ul style="list-style-type: none"> • minor cuts • minor scrapes • sunburn • minor skin irritations • minor burns • insect bites
Dosing Recommendations	Adults and Children > 12 years <ul style="list-style-type: none"> • Apply 1 patch at a time to affected area; no more than 3 to 4 times daily • Remove patch from the skin after at most 8-hour application
	Children under 12 <ul style="list-style-type: none"> • Consult a provider prior to use
Adverse Effects	Localized skin reactions occur, such as rash, itching, redness, irritation, pain, swelling and blistering
Consult a Provider	Symptoms persist for more than 7 days or clear up and occur again within a few days
Patient Counseling Points	<ul style="list-style-type: none"> • Do not use more than 1 patch at a time • Avoid use on wounds or damaged skin • Do not apply heating pad to patch area • Avoid contact with water, such as bathing, swimming or showering

Lidocaine. DailyMed. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. Updated April 7, 2021. Accessed April 17, 2022.



Combination OTC Analgesic Products



Combination Product Counseling

Primary Analgesic	Additional Active Ingredients
Acetaminophen	+ Aspirin + Aspirin + Caffeine + Aspirin + Diphenhydramine + Diphenhydramine
Aspirin	+ Caffeine
Ibuprofen	+ Acetaminophen + Diphenhydramine
Naproxen	+ Diphenhydramine
Camphor	+ Menthol + Methyl Salicylate
	+ Menthol + Capsicum Extract



Caffeine (Alertness aid, Vasoconstrictor)

Stop use and consult a provider if:

- Fatigue or drowsiness persists or continues to recur

Adverse effects:

- Nervousness, irritability, sleeplessness, rapid heartbeat

Diphenhydramine (Antihistamine, Sleep aid)

Consult a provider prior to use if you have:

- Emphysema, chronic bronchitis, glaucoma
- Trouble urinating due to an enlarged prostate gland

Adverse effects:

- Marked drowsiness may occur, use caution operating vehicle
- Alcohol, sedatives, and tranquilizers may increase drowsiness
- Excitability may occur, especially in children

Diphenhydramine. DailyMed. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. Updated December 5, 2019. Accessed April 17, 2022.
Caffeine. DailyMed. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. Updated July 30, 2010. Accessed April 17, 2022.



Combination Product Counseling

Primary Analgesic	Additional Active Ingredients
Camphor	+ Menthol + Methyl Salicylate
	+ Menthol + Capsicum Extract

Methyl Salicylate (Topical Analgesic)

- Do not apply to wounds or damaged skin
- Discontinue if redness or irritation occurs

Capsicum Extract (Topical Analgesic)

- Temporarily relieves minor pain of muscles and joints associated with arthritis, backache, strains, sprains, bruises
- Do not use if you are allergic **chili peppers**, with a heating pad, or on damaged skin
- Avoid contact with eyes
- Avoid use within 1-hour of bath or shower



Methyl Salicylate. DailyMed. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. Updated January 1, 2022. Accessed April 17, 2022.
Capsicum Extract. DailyMed. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. Updated April 6, 2011. Accessed April 17, 2022.

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Case Presentation

William is 45-year-old male being discharged from the hospital after suffering a motor vehicle accident. While his imaging indicates no structural damage to his spine, he reports still having lower back pain which he rates 3/10 and describes as a dull ache. He reports relief in the past with a topical menthol + methyl salicylate combination ointment.

What education points should be considered when counseling William about this medication as he prepares for discharge?





Case Presentation

- Topical combination products vary greatly with concentrations and dosage forms, so ensure you read the label for active ingredients
- Do not use this product with a heating pad, or wrap/bandage the area where the medication is applied
- Following application, wash your hands thoroughly and avoid eye contact
- Mild warming/cooling sensation may occur as a normal function of this medication, but discontinue use if skin irritation occurs





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Patient OTC Counseling Pearls

- Always update your healthcare provider about all medications you are taking, including OTCs, prescription medications, herbals and supplements
- Follow the dosing instructions, recommended duration, and warnings on the OTC packaging unless directed otherwise by a healthcare provider
- Read all the active ingredients on product packaging, as many OTC products have several active ingredients
- Discontinue using a product if side effects occur and consult your healthcare provider
- When discharging patients from the hospital ensure patients are educated and their OTC and prescription medications are properly reconciled to avoid therapeutic duplications

Discharge Planning Educational Materials and Pain Management Tools





Advancing innovation and safety in pain education, patient care and research

- Established in 2014 by Dr. Phyllis Hendry and Dr. Sophia Sheikh
- Overall goal is advancement of multimodal, safe pain management in healthcare systems to improve outcomes and reduce opioid risk.
- Housed in the University of Florida College of Medicine – Jacksonville, Division of Emergency Medicine Research





- Initial focus on EDs, Trauma and EMS; now multidisciplinary
- Healthcare providers are stressed due to lack of time, funding and materials for patient education.
- Many healthcare professionals (nurse, physician, PAs, nurse practitioners, pharmacists, etc.) have had no formal training in non-pharmacologic modalities.
- Patients need and want more than a prescription and/or a procedure
 - Patient education is synonymous with patient empowerment, patient advocacy, and patient safety (= patient self-efficacy).
 - Studies have shown that merely gaining a better understanding about the physiology of pain actually improves pain scores (Rethorn, Z. D., 2020).



Rethorn ZD, Pettitt RW, Dykstra E, Pettitt CD (2020) Health and wellness coaching positively impacts individuals with chronic pain and pain related interference. PLoS ONE 15(7): e0236734. <https://doi.org/10.1371/journal.pone.0236734>





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PAMI



Pain Assessment and
Management Initiative

- Now includes a multidisciplinary team from emergency medicine, pharmacy, pain medicine, PT, trauma/surgery, nursing, IT, toxicology, hospital POST (Pain and Opioid Stewardship Taskforce), Center for Data Solutions, etc.
- Collaboration MOUs with FL Hospital Association, Florida Society of Health System Pharmacists, and others





Past and Present PAMI Stakeholders/Collaborators

FENA Florida Emergency Nurses Association

Florida Society for Healthcare Risk Management & Patient Safety

FLORIDA PEDREADY

FCEP Florida College of Emergency Physicians

SPS SOCIETY FOR PEDIATRIC SEDATION

RAHEC SUWANNEE RIVER AREA HEALTH EDUCATION CENTER

FSHP

PAMI Pain Assessment and Management Initiative

UFHealth TRAUMAONE

UF UNIVERSITY OF FLORIDA College of Pharmacy

UF Pain Research and Intervention Center of Excellence

UF Jacksonville Aging Studies Center

UF Health PAIN AND OPIOID STEWARDSHIP TASKFORCE

COUNCIL OF FLORIDA MEDICAL SCHOOL DEANS

FACLP FLORIDA ASSOCIATION OF CHILD LIFE PROFESSIONALS, INC.

FHA FLORIDA HOSPITAL ASSOCIATION

UF UNIVERSITY OF FLORIDA College of Medicine Jacksonville

EMLIRC Emergency Medicine Learning & Resource Center

UF Academic Technology Information Technology



PAMI resources

- Pain Management and Dosing Guide
- **Discharge Planning Toolkit for Pain**
- Non-pharmacologic and Distraction Toolkit/Toolbox (Pediatric focused)
- Virtual reality viewers and brochure
- Online learning modules, all free access
- EMR order and discharge panels for specific pain conditions
 - **OTC analgesic starter kits for high-risk patients**
 - Pain toolkit supplies
- **Pain education and coaching consult service**
- pami.emergency.med.jax.ufl.edu/resources

PAMI Educational Materials and Free Resources

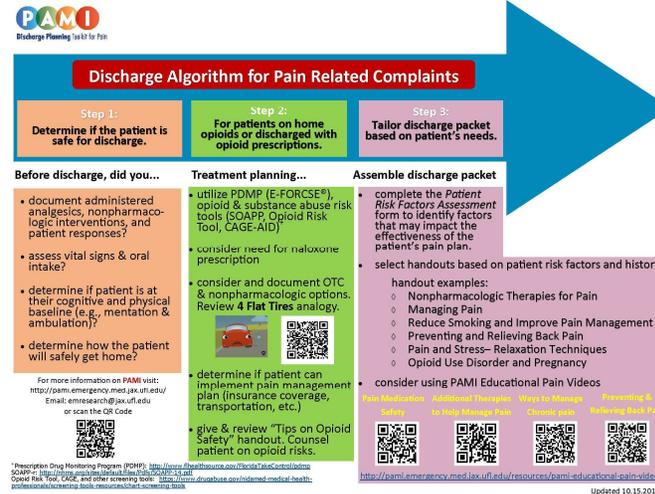
<p>Pain Assessment and Management Initiative</p> <p>pami.emergency.med.jax.ufl.edu</p>	<p>Pain Management and Dosing Guide</p> <p>Pharmacologic and non-pharmacologic management of acute and chronic pain in children and adults</p> <ul style="list-style-type: none"> • Stepwise approach to pain management • Non-opioids, opioids, ketamine and equianalgesic • Oral, nasal, parenteral & topical medications • Non-pharmacologic interventions
<p>Discharge Planning Toolkit for Pain</p> <p>A comprehensive discharge toolkit containing:</p> <ul style="list-style-type: none"> • Discharge Algorithm for Pain • Pain Risk Factors Assessment • Educational handouts • Flat tires car analogy from ACPA <p>Adapt the toolkit to your own needs!</p>	<p>Non-pharmacologic Toolkit</p> <p>A non-pharmacologic and distraction focused toolkit</p> <ul style="list-style-type: none"> • Course videos • Suggested toolbox components • Apps and resources • Educational handouts
<p>Patient Educational Videos</p> <p>Pain Medication Safety Additional Therapies</p> <p>Believe Back Pain Managing Chronic Pain</p> <p>Phone: 904-244-4909 Email: pami@jax.ufl.edu</p> <p>Facebook.com/AAMI LinkedIn.com/americanheartassociation</p>	<p>Virtual Reality (VR)</p> <p>VR has proven to be effective in reducing pain and anxiety during procedures, burn or wound management, in labor & delivery and more.</p> <p>Communication Cards</p> <p>Assist EMS, ED, hospital and other health care providers in communicating with nonverbal or non-English speaking patients and families. Available in English, Spanish and Creole!</p>

April 2021



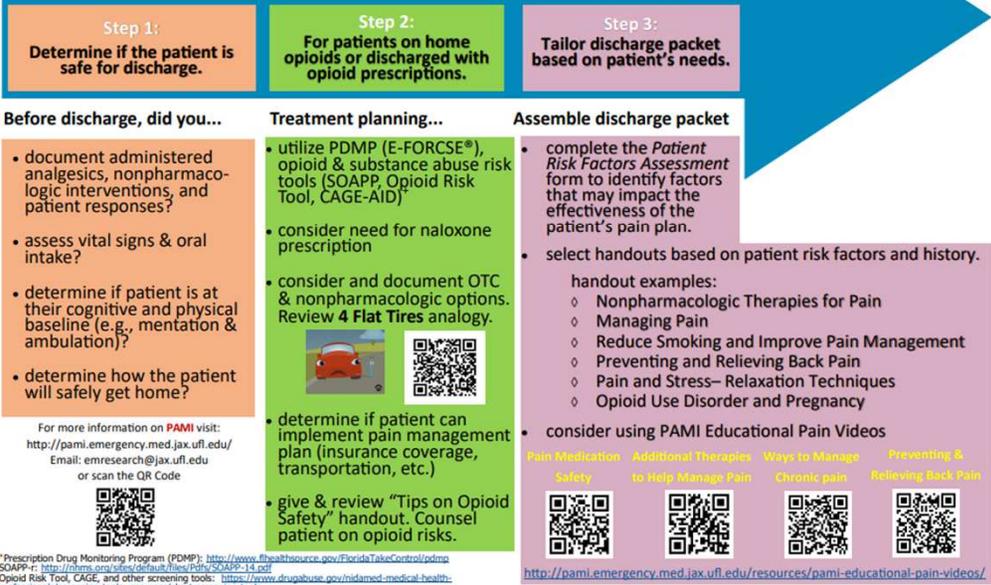
Analgesic Discharge Algorithm

- ✓ Determine if the patient is safe for discharge
- ✓ Review the patient's analgesic treatment plan and medications
- ✓ Tailor discharge packet information based on the patient's needs





Discharge Algorithm for Pain Related Complaints



*Prescription Drug Monitoring Program (PDMP): <http://www.flhealthsource.gov/FloridaTakeControl/pdmp>
 SOAPP-F: <http://pami.org/sites/default/files/SOAPP-F.pdf>
 Opioid Risk Tool, CAGE, and other screening tools: <https://www.drugabuse.gov/nidamed-medical-health-professionals/screening-tools-resources/chart-screening-tools>

Updated 10.15.2019



American Heart Association.

Patient risk factors assessment



Pain Risk Factors Assessment Form

Updated October 2019

What are **YOUR** "Pain Risk Factors"?

Did you know that all of the items listed below can worsen your pain?

Habits

- Smoking?
- Alcohol?
- Diet?

Sleep

- Poor
- Not refreshing
- Good

Exercise

- Not enough
- Too much
- Just right

Ergonomics

- Do you get pain while at work?
- Are you wearing comfortable shoes while at work?
- Do you do a lot of typing at work?

Other

- Money problems
- Stress/anger/fear
- History of physical or sexual abuse
- Alcoholism or drug addiction (you or your family)

How to be SAFE while taking your pain medications

- Take medications as prescribed
- Watch out for constipation
- Do NOT take pain medications with alcohol or sleep aids
- Watch out for signs of allergic reaction like rash and difficulty breathing

Adapted from the Pain Explanation and Treatment Diagram developed by Hillel M. Finestone
Finestone HM et al. The Pain Explanation and Treatment Diagram: A Tool to Enhance Patient Self-
Management of Persistent Pain. PM&R 2012(4):456-458.

For more information on PAMI visit:
<http://pami.emergency.med.jax.ufl.edu/>
Email: emresearch@jax.ufl.edu
or scan the QR Code



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Discharge Planning

Free Educational Materials and Pain Management Tools

The overall goal of PAMI is advancement of multimodal, safe pain management in healthcare systems to improve outcomes and reduce opioid risk.

- Free resources for patients and providers

- After discharge patient education

- Educational videos and presentations

- Non-pharmacologic pain therapy resources

pami.emergency.med.jax.ufl.edu





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Discharge Materials

Brochures and Printable Discharge Materials

PAMI
Discharge Planning Toolkit for Pain

The screenshot displays a comprehensive digital toolkit for pain management discharge planning. It features several key sections:

- QUESTIONS:** A list of common patient questions and their corresponding answers.
- RESOURCES:** A collection of links and information for further support.
- PAIN AND STRESS:** A section detailing the relationship between pain and stress, including a 'Deep Breathing' exercise.
- NONPHARMACOLOGIC THERAPIES TO TREAT PAIN:** A detailed guide on various non-drug approaches to pain relief.
- CONTACT US:** Information on how to reach the PAMI team for assistance.

Below the main toolkit interface, three physical brochures are shown, providing practical guidance on managing different types of pain medications.

Stretches & Exercises for Back Pain Relief & Prevention



(1) Back Extensions:

- Standing with feet about hip width apart (leaning against a countertop for balance if needed)
- Support yourself with your hands at your waist
- Gently bend back into a comfortable stretch, then slowly return upright
- Do 10-20 of these at a time, frequently throughout the day



(2) Lower Trunk Rotation Stretch:

- Lying on your back with your knees bent and feet flat
- Gently rock both of your knees to one side as you exhale
- Slowly bring your knees back to the center as you inhale
- Gently rock both of your knees to the other side as you exhale
- Repeat for 2-3 minutes, alternating sides

(3) Seated Cat/Camel Stretch:

- Sitting comfortably in a supportive chair with hands resting in your lap
- As you inhale, gently extend your trunk and draw your shoulders back for a gentle stretch
- As you exhale, gently tuck your pelvis under and round your trunk for a stretch in the opposite direction
- Repeat this for 2-3 minutes, moving slowly with your breath



(4) Core Activation Exercise:



- Lying on your back with your knees bent and feet flat
- Without holding your breath, gently draw your lower abdominal muscles towards your spine, as if you were flattening your back into the surface
- You can feel for this muscle activation with your fingers at your lower belly
- Hold for 10 seconds at a time, and do about 10 repetitions, once or twice per day

(5) Bridging Exercise:

- Lying on your back with your knees bent and feet flat
- Gently squeeze your gluteal (buttock) muscles
- Use those muscles to slowly lift your pelvis and back off the surface
 - Slowly lower back down and relax
 - Do this about 10-20 times, once or twice per day



To watch a brief video about back pain exercises, scan the QR code.



NON-OPIOID PAIN RELIEVERS

OVER-THE-COUNTER (OTC) MEDICATIONS

Acetaminophen, NSAIDs (non-steroidal anti-inflammatory drugs), and topical agents may be helpful in reducing your pain and the need for prescription medications like opioids.

Common OTC medications to relieve pain include medications taken by mouth, such as acetaminophen (Tylenol), ibuprofen (Advil, Motrin) and naproxen (Aleve).

Topical products like diclofenac gel (Voltaren), lidocaine patches, and menthol products (gels or creams) are also available OTC for pain.

OTC SAFETY CONSIDERATIONS

It is important to always read the **Drug Facts Label** of OTC products and follow the dosing directions for effective pain relief.

Taking more than directed does NOT equal faster relief. Excess acetaminophen can be harmful to your liver and too much ibuprofen or naproxen can lead to stomach, kidney, or heart damage.

- To avoid harmful medication effects:**
- Do not take more than the maximum dosage.
 - Take only one medication with the same active ingredient at a time.

Updated 3/2/2022



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 Phone: 904-244-4986
 Email: pami@jax.ufl.edu
 Website: pami.emergency.med.jax.ufl.edu

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UNDERSTANDING THE RISKS

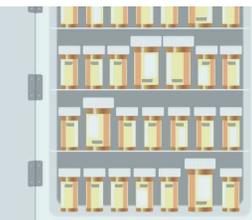
Opioids are one of the many methods that may be used to help treat your pain, but will not make your pain go away completely.

Your health care team will work with you to find the best way to manage your pain using either prescription or over-the-counter options, or both in some cases.

SIDE EFFECTS COMMONLY RELATED TO OPIOID USE MAY INCLUDE:

- Sleepiness/confusion
- Bad dreams/hallucinations
- Constipation
- Sweating
- Nausea/vomiting
- Itching
- Dry mouth
- Increased risk of falls
- Opioid dependence/addiction
- Respiratory depression (difficulty breathing)
- Overdose leading to death

Contact your doctor immediately if you experience one or more of these side effects while taking opioids.



USE CAUTION

KEEP A LIST OF YOUR MEDICATIONS

Keep an updated list of your medications including the name, dose, and how often you take them. If possible, keep this list with you and show your health care providers at medical appointments.

REDUCE YOUR RISK

- Do not drive or perform activities that require your full attention while taking opioid medications.
- Avoid alcohol when taking medications for pain.
- Be aware that opioid medications can increase your risk of falls and accidents.

IF YOU TAKE AN OPIOID, HAVE NALOXONE ON HAND:

If you are prescribed an opioid, ask your doctor to also prescribe you Naloxone too. Naloxone is a drug that can help reverse an opioid overdose should one occur.

TIPS FOR SAFE OPIOID USE



Opioids are prescription medications, such as oxycodone and hydrocodone that may be used to treat moderate-to-severe pain. These medications can be helpful, but also have risks.

KEEP YOUR DOCTOR INFORMED

Speak with your health care provider about ways to manage your pain using non-opioid medications to reduce the amount or length of time you need to take opioid medications. Always report any concerns or side effects.

AVOID MIXING MEDICATIONS

Unless otherwise discussed with your health care provider, benzodiazepines, muscle relaxers and sleep aids should be avoided. Taking these medications with opioids may increase your risk for harm.

PROPER STORAGE AND DISPOSAL

Store your prescription opioids in a secure location. It is important that these medications are kept out of reach of others.

Dispose of unused opioids immediately at your community drug-take-back program, a pharmacy mail back program or ask your doctor about other disposal options.



ABOUT OVER-THE-COUNTER (OTC) ORAL MEDICATIONS

There are certain pain medications available for purchase at local stores, pharmacies or online called nonprescription or over-the-counter (OTC) medications. These medications are available as oral and topical forms to help relieve pain and inflammation. Ask your local pharmacist if the cost is covered by your insurance, Medicare, or Medicaid plan.

Oral OTC pain relievers include nonsteroidal anti-inflammatory medications (NSAIDs), acetaminophen, and aspirin. Talk to your healthcare provider prior to taking these medications.

- Safety Reminders:**
- Read and follow all directions and warnings on the OTC packaging. Do not take more than prescribed.
 - Review all active ingredients in the OTC product.
 - There are several nonprescription NSAIDs. You should only take one NSAID at a time and only as directed.
 - You can take acetaminophen (Tylenol®) and ibuprofen (Motrin®, Advil®) or naproxen (Aleve®) together, if needed.
 - Avoid alcohol when taking these medications.
 - Avoid taking medications on an empty stomach.
 - Keep out of reach of children and pets.



OVER-THE-COUNTER ORAL PAIN MEDICATIONS

A safe guide to understanding OTC oral (pill & liquid) pain medications for adults & adolescents



Updated 1/6/2022

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Phone: 904-244-4988
 Email: pami@jax.ufl.edu
 Website: pami.emergency.medjax.ufl.edu



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ACETAMINOPHEN (TYLENOL®)	IBUPROFEN (ADVIL®, MOTRIN®) NSAID CLASS	NAPROXEN (ALEVE®) NSAID CLASS
--------------------------	--	----------------------------------

<p>ADULT DOSING</p> <p>Immediate relief tablets:</p> <ul style="list-style-type: none"> • 325-500mg tablet every 4-6 hours as needed. Do not exceed 4000mg in a 24 hour period. <p>Extended relief tablets:</p> <ul style="list-style-type: none"> • 650mg tablet every 8 hours as needed. Do not exceed 4000mg in a 24 hour period. <p>*Liquid formulations also available</p>	<p>200-600mg tablet every 4-8 hours, as needed.</p> <p>Do not exceed 2400mg in a 24 hour period.</p> <p>Use lowest effective dose to avoid side effects.</p> <p>Liquid: Available as 100mg/5ml oral suspension</p>	<p>220mg tablet every 8-12 hours. May take 2 tablets for first dose only, if needed.</p> <p>Do not exceed 660mg in a 24 hour period.</p>
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<p>WARNINGS</p> <ul style="list-style-type: none"> • Follow the dosing directions carefully. Do not take more than prescribed. Liver damage can occur if recommended dosing is exceeded. • If you have liver disease, do not take this product before discussing with your health care provider. 	<ul style="list-style-type: none"> • Do not use ibuprofen or any aspirin or other NSAID products before discussing with your healthcare provider, especially if: <ul style="list-style-type: none"> o You have stomach ulcers, history of stroke, or conditions involving your stomach, liver, kidneys, or heart. o You are taking blood thinners. o Do not take NSAIDs after 20 weeks of pregnancy. o You have asthma or nasal polyps. 	<ul style="list-style-type: none"> • Do not use naproxen or any aspirin or NSAID products before discussing with your healthcare provider, especially if: <ul style="list-style-type: none"> o You have stomach ulcers, history of stroke, or conditions involving your stomach, liver, kidneys, or heart. o Pregnant, or breastfeeding o You have asthma
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<p>OTHER INFORMATION</p> <ul style="list-style-type: none"> • There are many different formulations and combinations of acetaminophen available OTC, including cold medication products. Read labels carefully. • Verify all active ingredients in each OTC product before taking. 	<ul style="list-style-type: none"> • There are many different formulations and combinations of ibuprofen, naproxen, and aspirin available OTC. Read labels carefully. • Verify all active ingredients in each OTC product before taking. 	<ul style="list-style-type: none"> • There are many different formulations and combinations of ibuprofen, naproxen, and aspirin available OTC. Read labels carefully. • Verify all active ingredients in each OTC product before taking.
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PAMI Education Handout

4. Patient Education/Resource Handouts:

- [Managing Pain](#)
- [Safe Use of Pain Medication](#) ★
- [Over-the-Counter Handout: Topical Medications](#)
- [Over-the-Counter Handout: Oral Medications](#)
- [Reduce Smoking and Improve Pain Management](#) ★
- [Alcohol & Pain – Jacksonville, FL](#)
- [Alcohol & Pain – National](#) ★
- [Healthy Eating & Pain](#) ★
- [Exercise](#) ★
- [Back Pain Exercises](#)
- [Pain and Stress – Relaxation Techniques](#)
- [Aromatherapy and Breathing Techniques for Pain Relief](#)
- [Pain and Sleep](#)
- [Ergonomics](#)
- [Dental Pain](#)
- [Pregnancy and Back Pain](#)
- [Nonpharmacological Therapies for Pain](#)
- [Opioid Use Disorder \(OUD\) and Pregnancy: Jacksonville, FL](#)
- [Opioid Use Disorder \(OUD\) and Pregnancy: National](#)



Patient Education Videos

PAMI
Pain Assessment and Management Initiative

Educational videos for pain management

Watch these free PAMI developed videos with tips on how to help manage your pain.

Scan the QR code with your phone or visit pami.emergency.med.jax.ufl.edu to view the free videos and more resources.

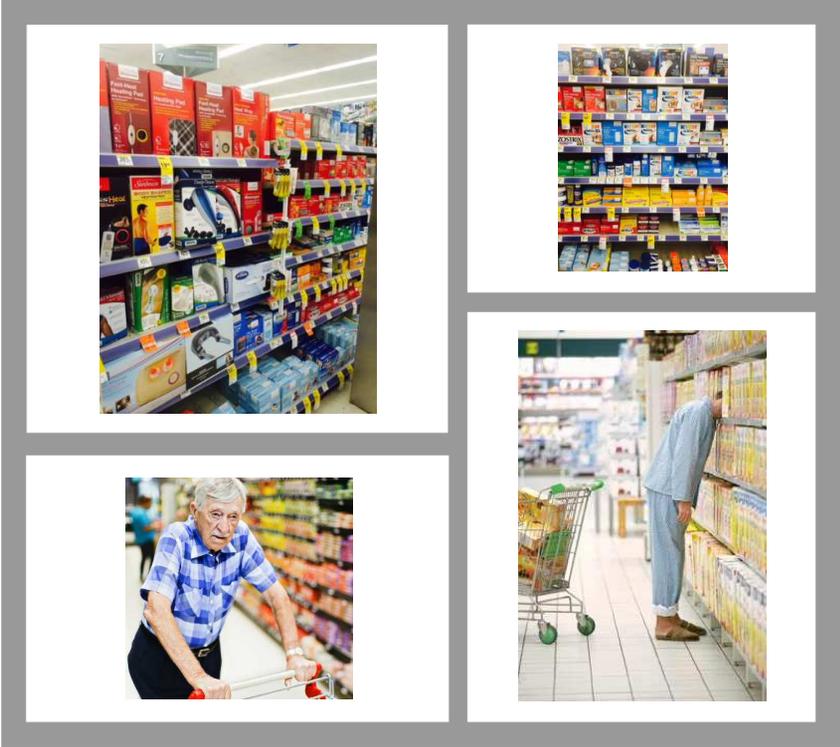
SCAN FOR ACCESS TO ADDITIONAL PAIN MANAGEMENT MATERIALS

Additional Therapies to Manage Pain
Non-pharmacological and alternative therapies for pain management

Pain Medication Safety
Useful information and tips on taking pain medication safely

Preventing and Relieving Back Pain
Tips and exercises to manage back pain

Ways to Manage Chronic Pain
Helpful tips on managing chronic pain



Pharmacy aisles can be very overwhelming!

Many patients are unaware of the effectiveness of OTC medications

Understanding of safe use is mixed



PAMI over-the-counter initiative

The OTC Starter kit initiative went live in April 2021.

- ED providers can order four different OTC options free for patients to take home: acetaminophen (tablet & liquid), ibuprofen, diclofenac gel, and lidocaine patches
- Use is intended for patients with acute or chronic pain who are unfunded, have severe conditions that may limit mobility, or have a transportation or other barriers that would make it difficult for them access a store to purchase OTC medications themselves
- PAMI OTC brochures and handouts related to OTC medications can be given to patients in conjunction with their starter kits items



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Pain Coach

Educates patients on non-pharmacologic, integrative and OTC analgesic options for pain management

- Basic review of pain neuroscience, prevention of acute to chronic pain transitions
- Demonstrate integrative techniques with the patient
- Review options to improve pain and quality of life
- Provide nonpharmacologic toolkit items and educational brochures
- Review OTC and topical analgesic options
- Work to empower patients and/or caregiver(s)



Lots of interests from other institutions/organizations (requests for job description, pain coach script, toolkit materials, vendor lists, literature review to support use of these tool)



Pain coach script

1. Introduction- Pain Coach and patient to build trust and rapport
2. Explanation- Pain Coaching/Education program, benefits of CAM
3. Outline- Reaffirm nothing is being taken away from the patient, and encourage questions "this is just a conversation"
4. Discussion- Patients relationship to pain, brief into to pain neuroscience, exposure to nonpharmacologic, CAM and OTC pain management interventions
5. Education- Toolkit items, coaching topics, establish patient interest
6. Coaching- Toolkit item utilization, hands on demonstration
7. Questions and/or feedback- Answer questions, provide additional education/coaching and applicable referrals



Discharge Toolkit

Materials tailored for patients being seen for pain-related conditions

- Acute and chronic pain
- ED or hospital discharge, some items for use while in hospital
- Expansion to outpatient areas

Toolkit items for consideration:

- Educational videos and brochures
- Pain journals and coloring sheets
- Hand acupressure device





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Discharge Toolkit

- Hot and cold gel packs
- Aromatherapy inhaler
- Virtual reality cardboard viewer
- Car with four flat tires stress ball



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Toolkit items stored in convenient carts in clinical areas

10/21/2021



Advancing innovation and safety in pain education, patient care and research
pami.emergency.med.jax.ufl.edu

Nonpharmacologic Pain Management Discharge Toolkit & ED Supply Cart Guide

The purpose of this cart is to provide easy ED access to materials that promote nonpharmacologic pain management for patients during their ED stay or at discharge. Nonpharmacologic methods assist in decreasing the dose or need for opioids and other pain medications and improve patient safety and comfort. Cart contents are non-billable and customized to individual patient need and care plan.

Medicare Beneficiary Inducement rules allow for nominal gifts with a total value ≤ \$15.00/visit (up to \$75.00 annually). The estimated value of individual patient discharge toolkits containing all cart contents are valued at ≤ \$15.00 in compliance with these rules.

PAMI Purple Cart Contents:

- Educational Brochures (OTC and topical analgesics, exercise, back pain, etc.)
- Hot & Cold Gel Packs (see label for safety and warming instructions)
- Aromatherapy individual inhalers: Lavender- calming & Eucalyptus and Lemon Grass- invigorating
- *AcuRel* wearable acupuncture device for headache/migraine (place on L4 point)
- Stress Ball/Car with 4 Flat Tires (Pain is like a car with 4 flat tires-Medications only "fill" one tire, integrative and non-opioid pain management interventions help "fill" the other 3 tires)
- Virtual Reality Viewers: see VR Brochure for instructions, recommended Apps and QR codes
- Pain Journals
- Coloring pages and pencils
- Blue and Red PAMI toolkit bags

1. Input 4-digit code to unlock cart, if unknown call 904-244-4986 or charge nurse. Cart will automatically lock after 60 seconds. If one or more drawers are open when cart locks, drawers will not shut. If this happens, unlock the cart by entering keypad code to close all drawers. **Make sure all drawers are closed and locked before leaving the cart.**

2. Before giving a patient any cart items, place a patient sticker in the inventory log located in the top drawer and check selected items. This is important for inventory and reporting purposes. You can also write in the patient information. Leave the inventory log form in the cart.

3. For questions, comments or to refill cart items, call 904-244-4986 to speak to a PAMI team member or email pami@jax.ufl.edu.

Thank you for being a patient advocate and PAMI Champion!





Patient example

Pt is a 55-year-old Hispanic female who reports acute on chronic R foot pain. Pt is retired and does not report regular physical activity. Pt has pmh of DM with a BMI of 30. Pt is currently taking opioids and has been for over 5 years to help with pain. She does not smoke and only occasionally consumes alcohol.

Nurses Note-Pt is in visible pain, tearful and is breathing quickly and erratically.



“You seem to be experiencing a lot of pain. Are you hurting anywhere other than your foot? Are you worried or feeling stressed? How well have you been sleeping?”

Pt is very scared and fearful about losing her foot and it has been affecting her sleep and social interactions. Pt reports only getting a few hours of sleep due to pain, stress, and fear. Pt has to sleep in a recliner as she cannot transfer to her bed. She reports limiting her social activities.

Resources to reduce pain and stress: mind-body therapies like yoga, meditations, VR (distraction), aromatherapy; PAMI HOs on sleep and chronic pain; social support networks.



Patient example

“Tell me about your eating and exercise habits”

Pt only eats microwavable foods and drinks sodas every day. She does not regularly participate in physical activity citing her poor mobility.

Opportunity to discuss link between diet, exercise and pain (PAMI HOs; PAMI videos),

- crock pot- can be filled in the morning with vegetables and meat (healthier option) and then no more prep is needed for dinner. Can also make enough for leftovers which are healthier than microwavable/ preservative rich foods.
- Low impact exercise, PT, mind-body therapies

o “Do you ever take OTC products to help with your pain?”

She reports that she only takes what she is prescribed.

Opportunity to discuss non-opioid alternative options that may be appropriate (PAMI HOs, PAMI videos)





Dog bite patient

70 y/o, catastrophic tissue and nerve damage from dog attack. Pt reports "severe" MSK, neuropathic, and post surgical pain, pain reported as "unmanaged."

Additional complaints- stress/ anxiety/ panic, insomnia, depression, "helplessness/ hopelessness"

Pain Coaching/Education

- Initial visit to introduce/ outline program, explain pain science, utilization of alternative therapies for pain and stress management
- Repeat visits utilizing virtual reality (VR)- respiratory exercises, mindfulness meditation, distraction techniques, neurotransmitter (dopamine/ serotonin) release through VR tours, introduction into guided imagery.

Testimonial- "It was a good way to help soothe yourself and get your mind in another place and not being in pain all the time. The breathing exercises help relax you. You get panicky sometimes in this much pain and you just need to breathe. The virtual reality has beautiful scenery and is calming and soothing, it almost puts me to sleep. I have been to the hospital before, not for this long, but this does not exist at other places. If people are open to it, I think others would enjoy what Doug offers."



MVC patient

- 62 y/o F involved in “minor” MVC resulting in MSK pain, tinnitus, and headache.
 - “Restrained driver c/o being in a MVC 2 days ago & now “everything hurts.” Pt has pain in R side of neck & head associated w/ ringing in her ears.” Imaging/ labs- Unremarkable
- Pt reports “pain is getting worse, dull/ achy, and burning. It got so bad I knew I had to come to the ER. I was getting so scared.” Additional complaints involve anxiety/stress, tinnitus, and headache.
- Pain Coaching/Education
 - Initial visit to introduce/ outline program, explain pain science, utilization of alternative therapies for pain and stress management, focused on “stress response”, the autonomic nervous system, and the impact of catastrophizing on pain and stress outcomes.
 - Educated patient on the biopsychosocial aspects of pain and how pain and worsening pain does not always equal worsening damage.
- Testimonial- “This makes so much sense. You are literally describing how I felt all weekend. Nobody has ever explained it to me like this. I understand more and am not as afraid of my body..... Thank you so much!”



Car with Four Flat Tires

Patient Education Model for Pain Management

When you are in pain you are like a car with 4 flat tires

Medication only pumps up one of your tires.

What will you use to pump up the other tires?





Lessons Learned

- Knowing when to defer, set boundaries, beyond scope
 - Spiritual aspects of pain
 - Psychological impacts of pain
- Listening to feedback to refine and develop new resources
- Communicate with treating team (pain coach)
 - Patients may report additional important clinical information
 - example of patient with possible abdominal aortic aneurysm (AAA); "Every time my heart beats I can feel it in my abdomen. Look you can even see it!"



Provider Feedback

- Everyone that talks to the pain coach seems much happier and uplifted. Thank you for everything you're doing; it's helping. –resident
- The team was having a hard time getting a patient's pain under control secondary to high catastrophizing/ stress and anxiety. Pt has been in the ED for 9+ hours. Coach spoke with patient and focused on stress management, increasing empowerment through utilization of toolkit items, and PNE. Provider quote 45 minutes after session: "The patient is feeling much better, she says it took her some time to understand everything you spoke about but she is feeling less stressed and anxious and now we feel comfortable discharging her." –attending



PAMI Overall Impact Since 2014 (Updated 2/2022)

280,000+

WEB PAGE VIEWS



Top 3 pages visited:

1. Pain Scales
2. Pain Management and Dosing Guide
3. Education Modules

87,000+

MATERIALS DOWNLOADED

SCHOLARLY ACTIVITY

30 Publications

42 Presentations

35 Posters



PAMI multidisciplinary team members have shared programmatic and research findings at the local, state, national and international level.

AGING WITH PAIN SERIES

330



Healthcare providers & older adults educated

The Aging With Pain Series (est. 2020) webinars and recorded presentations offer education on integrative pain management options.

6,974



CONTINUING EDUCATION CREDITS ISSUED

Healthcare providers in 44 U.S. states and 14 other countries have earned free CE credits from seven PAMI modules. (2015-4/2021)

MORE THAN

5,000



Dosing Guides distributed

The Pain Management & Dosing Guide undergoes a comprehensive annual review and is in its 6th edition.

PAIN COACHING & EDUCATION SERVICE

742

Patients received pain coaching

1,210

Patient pain discharge toolkits distributed



Launched in January 2021, the first known pain coaching service in a U.S. ED, provides hands-on integrative pain management training to patients and staff.

RESEARCH

1,077

Total patients enrolled in pain-related research



- **LEAP:** Linking Epigenetics with Prescription Opioid Abuse & High Impact Musculoskeletal Pain
- **HELP:** Neighborhood of Pain-Health Disparity Influence on Level of Chronic Pain Interference
- **IMPACT:** Impact of Health Disparity and Epigenetic Variability on Chronic Musculoskeletal Pain in African Americans Data & Tissue Bank
- **GAP:** Geospatial Analysis to Predict Pain Outcomes
- **STOP:** Screening Tool for Opioid-Prescription Injury
- **ED Revisit:** Pain and its Impact on Emergency Department Revisits



Preliminary Outcomes

PAMI ED-ALternatives Program (funded by SAMHSA)

- 1) EHR order panels for the treatment of renal colic, headache, low back, and non-low back musculoskeletal pain, containing both pharmacologic (opioid and non-opioid), non-pharmacologic treatment options (aromatherapy, hot/cold packs, acupressure devices, and virtual reality), and discharge OTC Starter-pack.
- 2) a Pain Education Coach who conducts educational sessions with patients, and
- 3) a non-pharmacologic pain management toolkit provided to patients at discharge.

Preliminary results:

Comparing pre- and post- implementation periods, the PAMI ED-ALT program decreased ED opioid administration and prescribing, increased use of opioid-alternatives, and potentially reduced hospital admissions for certain pain conditions and 30-day ED recidivism for pain.



Dissemination, year 2020

- Northwell Health Pain Management Clinic and Inpatient APRN program- inpatient pain service
- University of Rochester School of Nursing
- Army National Guard medics at Cecil Field
- Cook County Trauma/Burn ICU
- Corona Regional Medical Center
- University of Vermont Porter Medical Center pharmacists
- Nursing Administration at Indiana University Health Ball Memorial Hospital
- Eastern US Quality Improvement Collaborative
- University of Wisconsin-Madison Center for Health Enhancement System Studies requested permission to incorporate an AI-PAMI produced presentation in a research study
- Kuwait Children's Hospital and other international requests
- Missouri VA System, ProMedica and Circle of Life Holistic Health Center information on toolkit vendors
- East Orange General Hospital
- Indiana University
- Youngstown State University

Requests for PAMI materials, vendor list for toolkit items, literature review, learning module slides, etc



CONTACT US

Phone: 904-244-4986

Email: pami@jax.ufl.edu

Website: pami.emergency.med.jax.ufl.edu



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Thank You.
