Balancing Comfort and Safety in Pain Management

Kevin Hickey PA-C

Presentation from Joseph R. Hsu, MD

Vice Chair of Quality, Atrium Health Musculoskeletal Institute

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Medical Director, Global Healthcare Services

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Disclosures

- Stryker – Consulting, Speaker
- Smith & Nephew – Consulting, Speaker
- Depuy Synthes – Speaker
- Integra Lifesciences – Speaker

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  - Funding from CDC (CE14-004 Award Number CE002520)

- Guidelines Decision Support
  - Funding from CDC (102114-1)

- CDC RO1: Implementing a Multimodal Path to RecOVEry (IMPROVE): Primary and Secondary Prevention of Opioid Overdose in Acute Care (Mental Health, Substance abuse, OUD)
  - 1 R01 CE003001-01

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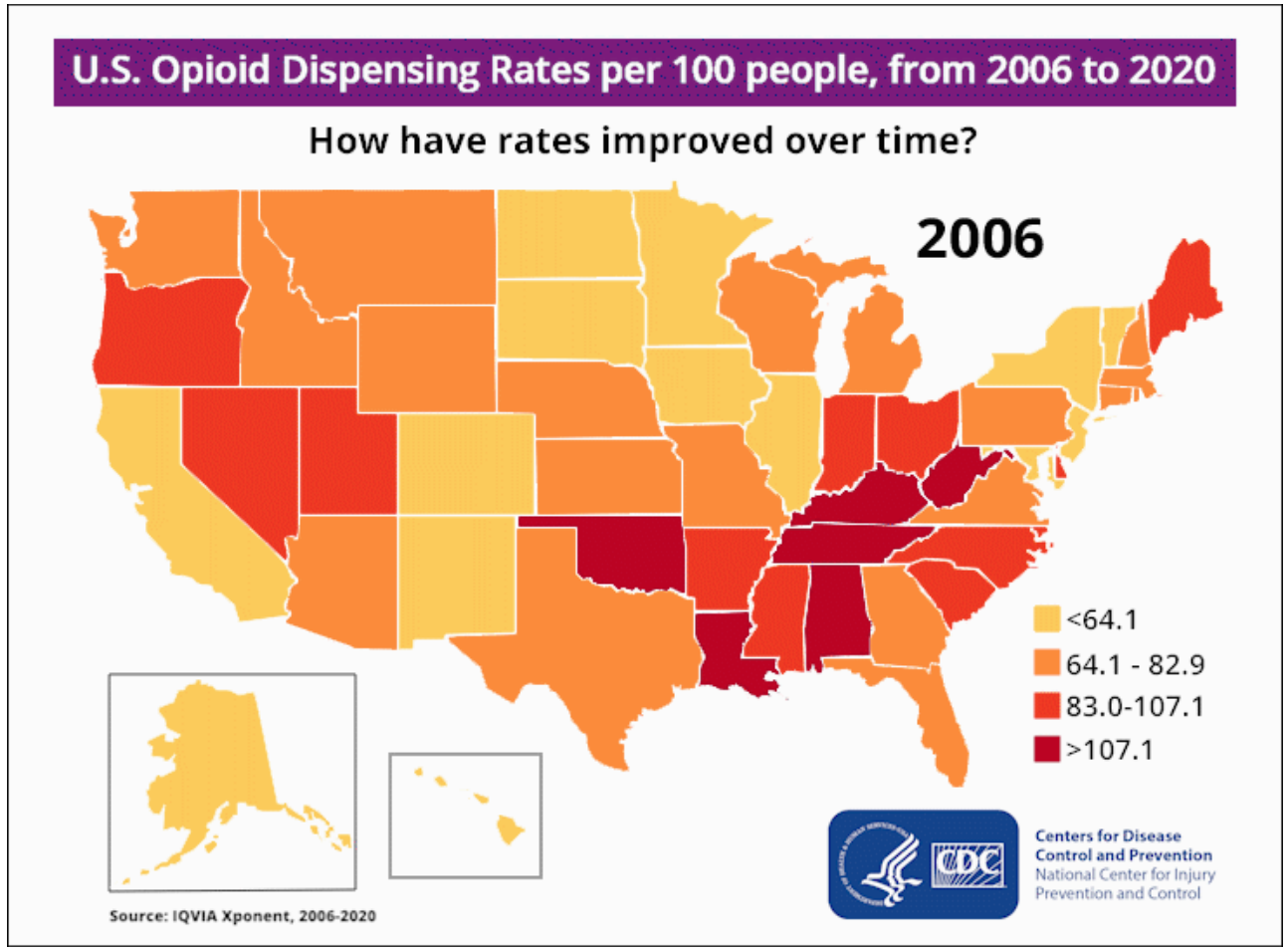
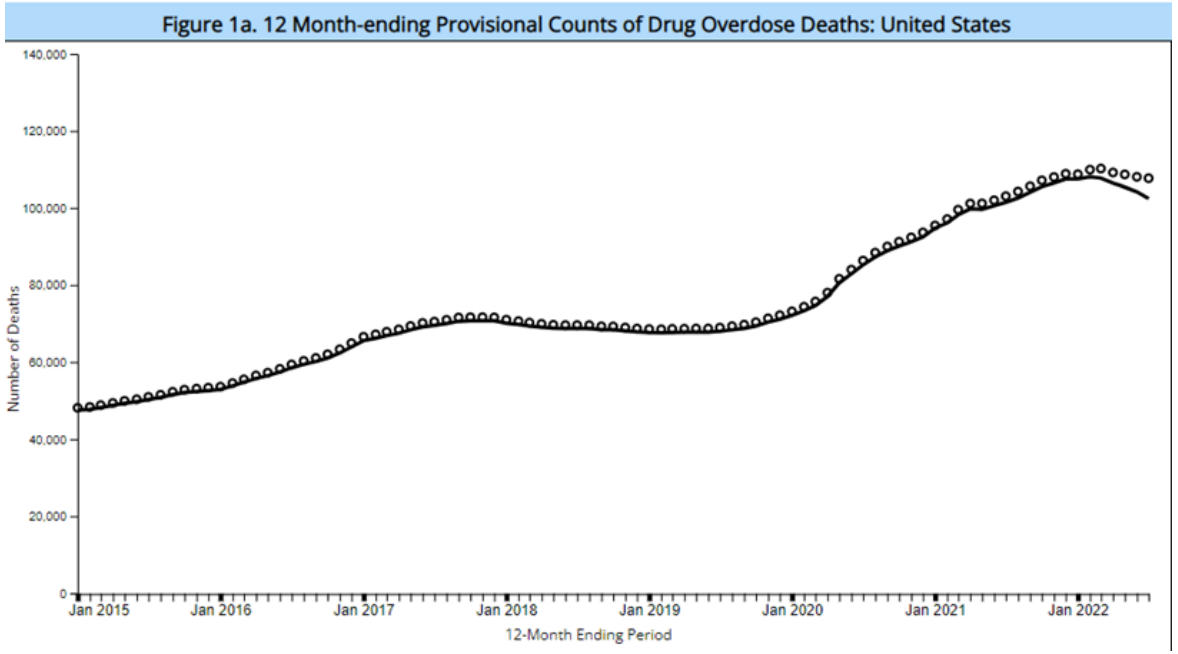
Prescription rates down, deaths still up





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Balance

Updated CDC Clinical Practice Guideline 2022

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

Morbidity and Mortality Weekly Report (*MMWR*)

CDC

CDC Clinical Practice Guideline for Prescribing Opioids for Pain — United States, 2022

Recommendations and Reports / November 4, 2022 / 71(3);1–95

Deborah Dowell, MD[1]; Kathleen R. Ragan, MSPH[1]; Christopher M. Jones, PharmD, DrPH[2]; Grant T. Baldwin, PhD[1]; Roger Chou, MD[3] (VIEW AUTHOR AFFILIATIONS)

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The Dream Team!

Review > J Orthop Trauma. 2019 May;33(5):e158-e182. doi: 10.1097/BOT.00

Clinical Practice Guidelines for Pain Management in Acute Musculoskeletal Injury

Joseph R Hsu [1], Hassan Mir [2], Meghan K Wally [1], Rachel B Seymour [1], Orthopaedic Trauma Association Musculoskeletal Pain Task Force

Collaborators, Affiliations – collapse

Collaborators

Orthopaedic Trauma Association Musculoskeletal Pain Task Force: Kristin R Archer, Basem Attum, Chad Coles, Jarrod Dumpe, Edward Harvey, Thomas Higgins, Joseph Hoegler, Jane Z Liu, Jason Lowe, Christiaan Mamczak, J. Lawrence Marsh, Anna N Miller, William Obremskey, Michael Ransone, William Ricci, David Ring, Babar Shafiq

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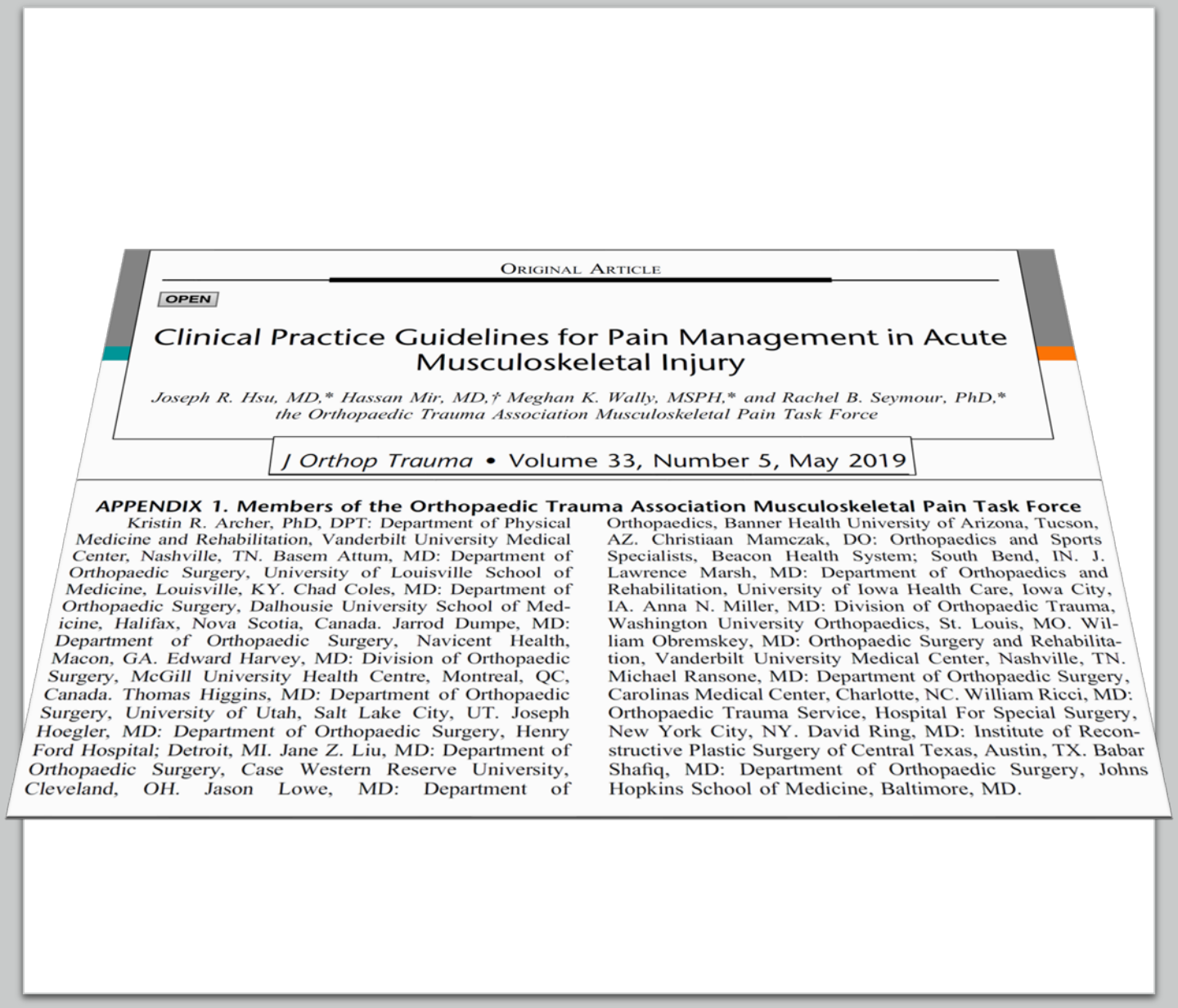
Our Intent

- Practical
- Make real recommendations
- Open access
- Publish methodology
  - ID gaps



ORIGINAL ARTICLE

OPEN

Clinical Practice Guidelines for Pain Management in Acute Musculoskeletal Injury

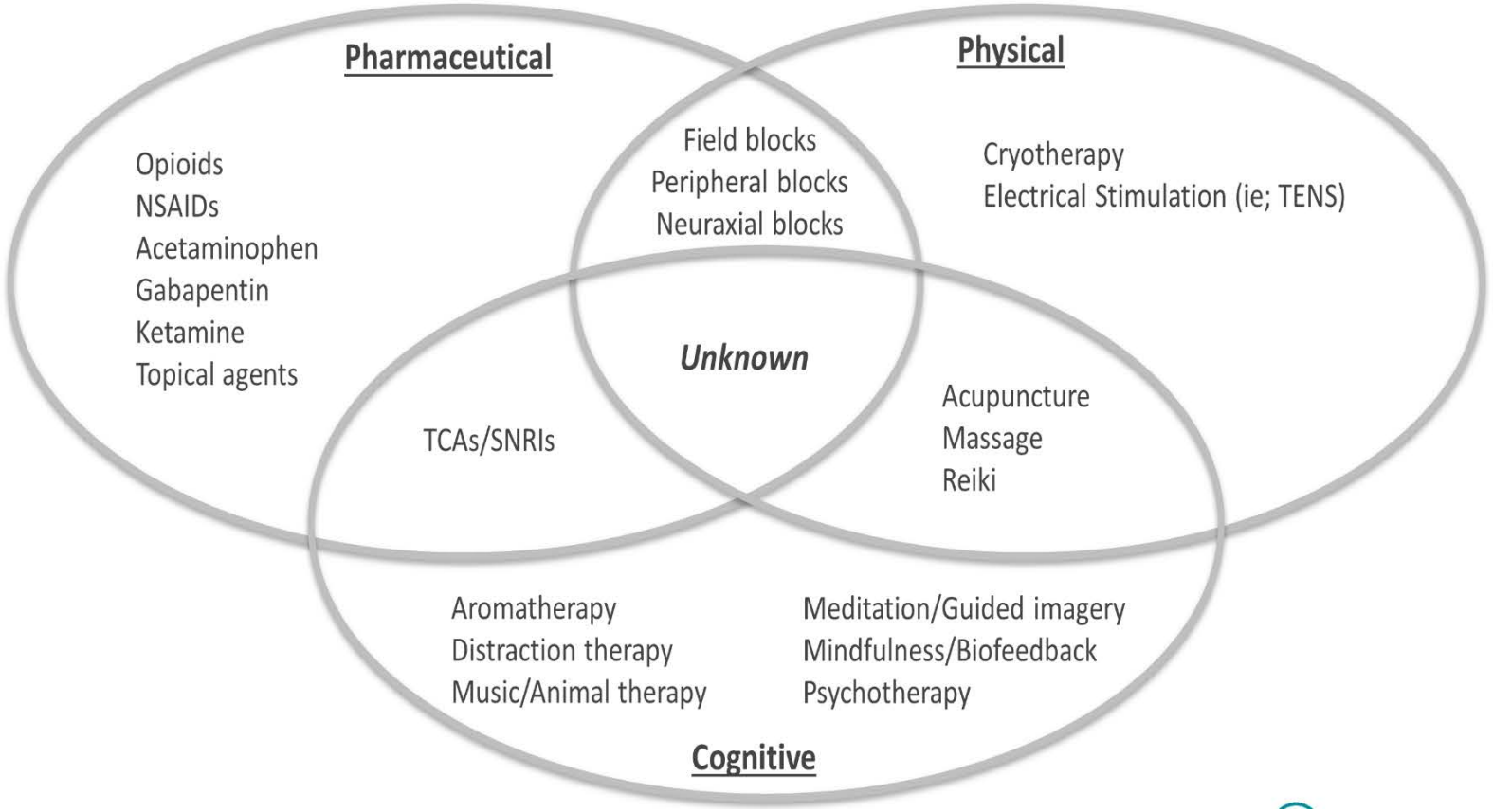
Joseph R. Hsu, MD, Hassan Mir, MD,† Meghan K. Wally, MSPH,* and Rachel B. Seymour, PhD,* the Orthopaedic Trauma Association Musculoskeletal Pain Task Force*

J Orthop Trauma • Volume 33, Number 5, May 2019

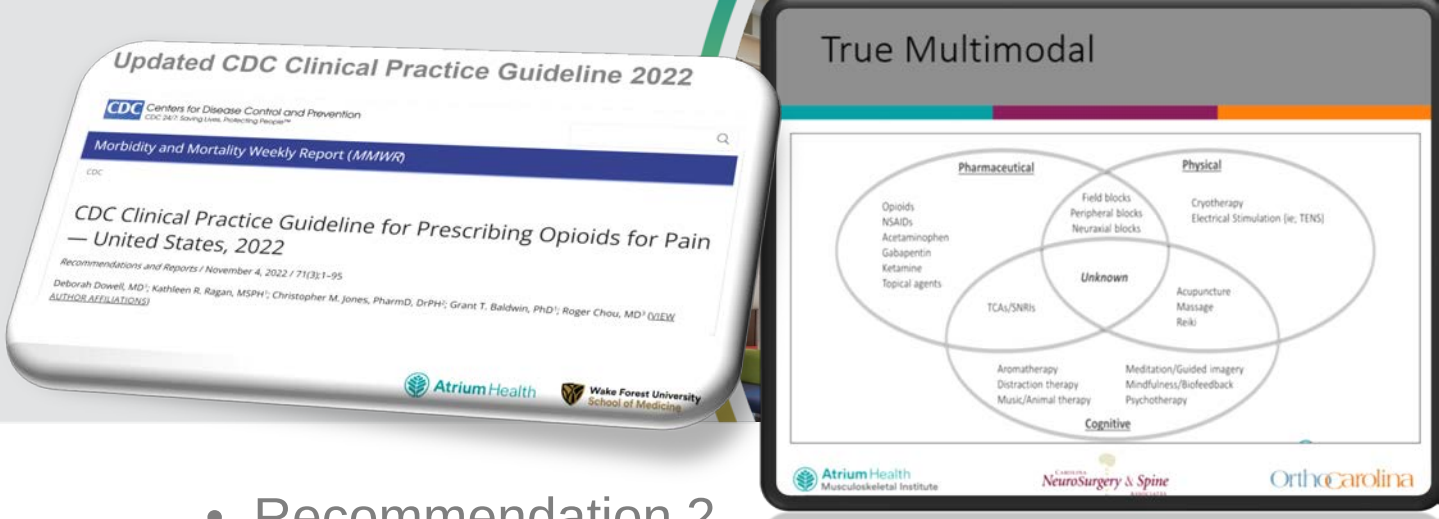
APPENDIX 1. Members of the Orthopaedic Trauma Association Musculoskeletal Pain Task Force

Kristin R. Archer, PhD, DPT: Department of Physical Medicine and Rehabilitation, Vanderbilt University Medical Center, Nashville, TN. Basem Attum, MD: Department of Orthopaedic Surgery, University of Louisville School of Medicine, Louisville, KY. Chad Coles, MD: Department of Orthopaedic Surgery, Dalhousie University School of Medicine, Halifax, Nova Scotia, Canada. Jarrod Dumpe, MD: Department of Orthopaedic Surgery, Navicent Health, Macon, GA. Edward Harvey, MD: Division of Orthopaedic Surgery, McGill University Health Centre, Montreal, QC, Canada. Thomas Higgins, MD: Department of Orthopaedic Surgery, University of Utah, Salt Lake City, UT. Joseph Hoegler, MD: Department of Orthopaedic Surgery, Henry Ford Hospital; Detroit, MI. Jane Z. Liu, MD: Department of Orthopaedic Surgery, Case Western Reserve University, Cleveland, OH. Jason Lowe, MD: Department of Orthopaedics, Banner Health University of Arizona, Tucson, AZ. Christiaan Mamczak, DO: Orthopaedics and Sports Specialists, Beacon Health System; South Bend, IN. J. Lawrence Marsh, MD: Department of Orthopaedics and Rehabilitation, University of Iowa Health Care, Iowa City, IA. Anna N. Miller, MD: Division of Orthopaedic Trauma, Washington University Orthopaedics, St. Louis, MO. William Obremskey, MD: Orthopaedic Surgery and Rehabilitation, Vanderbilt University Medical Center, Nashville, TN. Michael Ransone, MD: Department of Orthopaedic Surgery, Carolinas Medical Center, Charlotte, NC. William Ricci, MD: Orthopaedic Trauma Service, Hospital For Special Surgery, New York City, NY. David Ring, MD: Institute of Reconstructive Plastic Surgery of Central Texas, Austin, TX. Babar Shafiq, MD: Department of Orthopaedic Surgery, Johns Hopkins School of Medicine, Baltimore, MD.

True Multimodal



True multimodal



- Recommendation 1
- **Nonopioid therapies are at least as effective** as opioids for many common types of acute pain. Clinicians should maximize use of nonpharmacologic and nonopioid pharmacologic therapies as appropriate for the specific condition and patient and only consider **opioid therapy for acute pain if benefits are anticipated to outweigh risks** to the patient. Before prescribing opioid therapy for acute pain, clinicians should discuss with patients the realistic benefits and known risks of opioid therapy (recommendation category: B; evidence type: 3).

- Recommendation 2
- Nonopioid therapies are preferred for **subacute and chronic pain**. Clinicians should **maximize use of nonpharmacologic and nonopioid pharmacologic therapies** as appropriate for the specific condition and patient and only consider initiating opioid therapy if expected benefits for pain and function are anticipated to outweigh risks to the patient... consider **how opioid therapy will be discontinued if benefits do not outweigh risks** (recommendation category: A; evidence type: 2).

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ORIGINAL ARTICLE

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Clinical Practice Guidelines for Pain Management in Acute Musculoskeletal Injury

Joseph R. Hsu, MD, Hassan Mir, MD,† Meghan K. Wally, MSPH,* and Rachel B. Seymour, PhD,* the Orthopaedic Trauma Association Musculoskeletal Pain Task Force*

J Orthop Trauma • Volume 33, Number 5, May 2019

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Does this apply to children?

Pediatric Surgical services

Opioid reduction and elimination in pediatric surgical patients. Svetanoff WJ, Aviles N, Edmundson E, Millspaugh D, Fraser JD. J Pediatr Surg. 2021 Oct 22:S0022-3468(21)00721-1.

Validating an opioid prescribing algorithm in post-operative pediatric surgical oncology patients. Mansfield SA, Kimble A, Rodriguez L, Murphy AJ, Gorantla S, Huang EY, Anghelescu DL, Davidoff AM. J Pediatr Surg. 2020 Oct 6:S0022-3468(20)30680-8.

Reduction of post-operative opioid use in neonates following open congenital diaphragmatic hernia repairs: A quality improvement initiative. Grabski DF, Vavolizza RD, Roecker Z, Levin D, Swanson JR, McGahren ED, Gander JW. J Pediatr Surg. 2021 Sep 20:S0022-3468(21)00643-6.

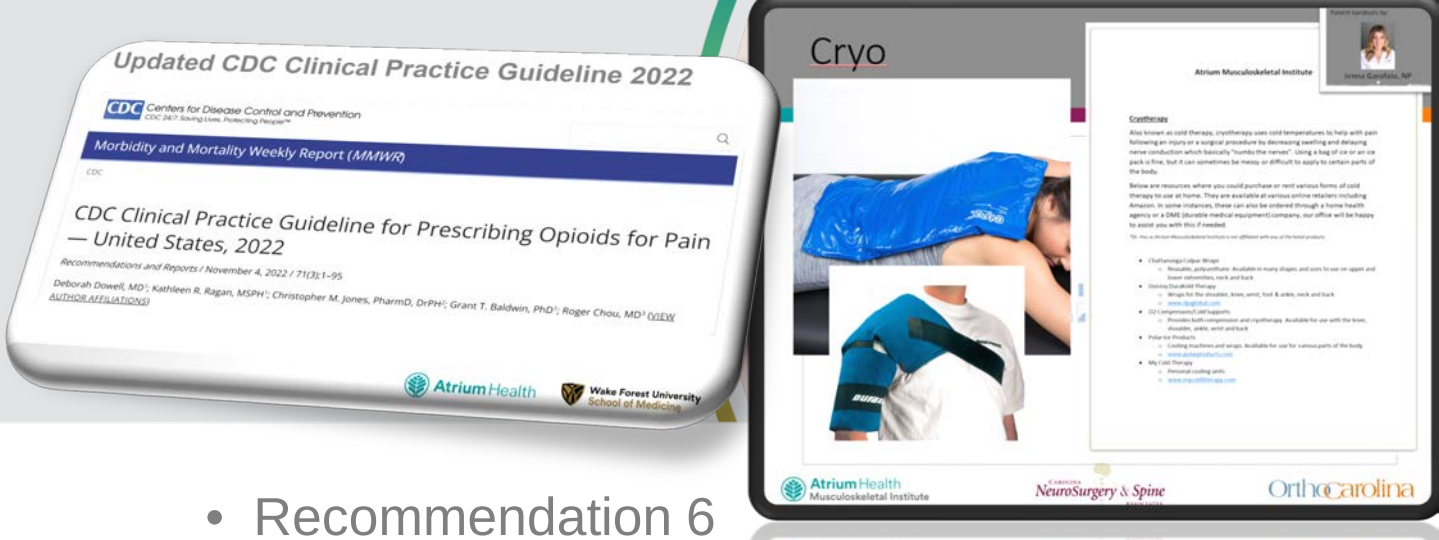
A Comparison of Adult and Pediatric Enhanced Recovery after Surgery Pathways: A Move for Standardization. Marulanda K, Purcell LN, Strassle PD, McCauley CJ, Mangat SA, Chaumont N, Sadiq TS, McNaull PP, Lupa MC, Hayes AA, Phillips MR. J Surg Res. 2022 Jan;269:241-248.

Pilot implementation of opioid stewardship measures using the national surgical quality improvement program-pediatric platform. Ingram ME, Tian Y, Kennedy S, Schäfer WLA, Johnson JK, Apley DW, Mehrotra S, Holl JL, Raval MV. J Pediatr Surg. 2021 Dec 17:S0022-3468(21)00840-X.

Peds Ortho practice guidelines

- 4 tiers of increasing invasiveness for 28 common pediatric orthopaedic procedures
- 91% of all prescriptions were within the guideline parameters
- significantly decrease the quantity of opioids prescribed

- Baker CE, Larson AN, Ubl DS, Shaughnessy WJ, Rutledge JD, Stans AA, Habermann EB, Milbrandt TA. Tiered Guidelines in a Pediatric Orthopaedic Practice Reduce Opioids Prescribed at Discharge. J Pediatr Orthop. 2021 Sep 27. doi: 10.1097/BPO.0000000000001974. Epub ahead of print. PMID: 34560763.



- Recommendation 5
- …already receiving opioid therapy… **optimize nonopioid therapies** while continuing… If benefits do not outweigh risks of continued opioid therapy… gradually taper to lower dosages… should **not be discontinued abruptly**, not rapidly reduce opioid dosages from higher dosages (recommendation category: B; evidence type: 4).

- Recommendation 6
- When opioids are needed for acute pain, clinicians should prescribe **no greater quantity than needed** for the expected duration of pain severe enough to require opioids (recommendation category: A; evidence type: 4).

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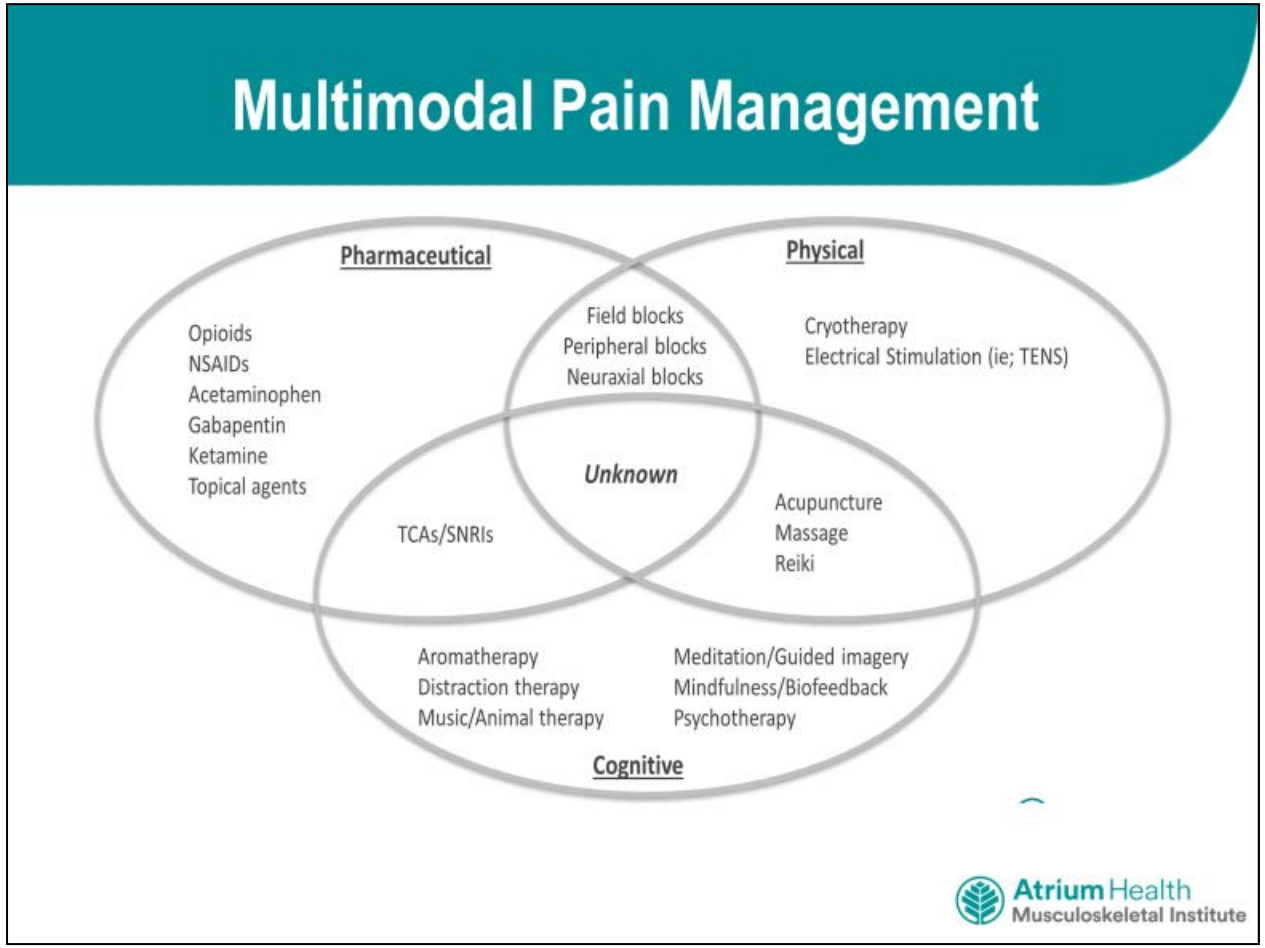
Cognitive


Multimodal Pain Management
Pharmaceutical
Opioids
NSAIDs
Acetaminophen
Gabapentin
Ketamine
Topical agents
Physical
Cryotherapy
Electrical Stimulation (ie; TENS)
Field blocks
Peripheral blocks
Neuraxial blocks
Unknown
TCAs/SNRIs
Acupuncture
Massage
Reiki
Aromatherapy
Distraction therapy
Music/Animal therapy
Meditation/Guided imagery
Mindfulness/Biofeedback
Psychotherapy
Cognitive
Atrium Health
Musculoskeletal Institute

Cognitive

Atrium Musculoskeletal Institute

Dr. Joseph Hsu

Meditation, Relaxation, Cognitive Behavioral Therapy & Guided Imagery: Additional Resources

Websites & Apps (available for iOS & Android devices)

- Calm
  - www.calm.com
- Headspace
  - www.headspace.com
- Insight Timer
  - www.insighttimer.com
  - Spanish: https://insighttimer.com/meditation-playlists/spanish-meditations
- American Academy of Orthopaedic Surgeons
  - https://aaos.org/Quality/PainReliefToolkit/?ssopc=1

YouTube

- 10 Minute Self-Healing Meditation for Relief from Injury, Illness, Pain & Negative Thoughts
  - https://www.youtube.com/watch?v=476ksk-FfPQ
- 20 Minute Guided Mindfulness Meditation on Coping with Pain
  - https://www.youtube.com/watch?v=uZEHwEtnaak
- STOPP Relaxation Technique
  - https://www.youtube.com/watch?v=3NHZkQ57wzE
- Progressive Relaxation for Stress Relief & Pain Management
  - https://www.youtube.com/watch?v=PqfNDTTngWo

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Guided Imagery

Guided Imagery is the use of relaxation and positive thoughts to improve physical well-being, health, and mood. It's a technique used to tap into your inner strength- ***you are stronger than you think!*** Helps you take control of a situation that may seem to be out of your hands. It is a good technique that is beneficial for you, your family and friends to use as you collectively navigate your path to recovery.

Below is a simple, yet effective technique:

1. Find a quiet place to sit or lie down and become relaxed. You can use the Deep Breathing or Tense & Relax methods to first become more relaxed.

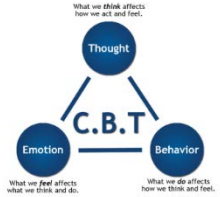
2. Clear all thoughts out of your mind and begin to imagine something. You can imagine any of the following, or come up with your own image:

- Imagine your favorite place (real or imaginary) or a place you would like to go to, like a peaceful lake, a sunny beach, or a beautiful mountain stream
- Imagine that your pain or discomfort is an electric current and you can turn it off by turning off the switch
- Imagine any pain you have can dissolve into a cloud and it can float away
- Imagine having a conversation with your pain or disease; pretend it can talk and imagine what it would say and what you could say back
- Imagine you can feel clean water or another liquid flowing through your body and cleansing out all the pain and discomfort
- Imagine you are a flower or the sun and you can feel your petals or rays flowing in the air
- Imagine you find a key and then a door that enters a room where you can leave all your pain and discomfort.

Whatever you imagine, try to imagine it with all your senses. How warm or cold is it? What do you smell in your image? If you could imagine touching something, how would it feel? What sounds do you hear in your image? What colors do you see? What would you say? How could you feel? There is no right or wrong way to do this! If using this technique does not feel natural at first, give it time- you will get better with practice. Just relax and use your imagination. Start with just 5 minutes and work your way up over time.

Source: champsonline.org

Web based

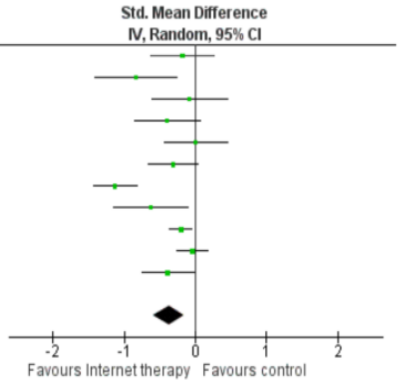


- Psychological therapies via the Internet reduced pain, disability, depression, and anxiety post-treatment. The positive effects on disability were maintained at follow-up.

Figure 4. Forest plot of comparison: 3 Non-headache post treatment, outcome: 3.1 Pain.

Study or Subgroup	Experimental Mean	SD	Total	Control Mean	SD	Total	Weight	Std. Mean Difference IV, Random, 95% CI
Berman 2009	3.68	2	41	4.02	1.81	37	8.4%	-0.18 [-0.62, 0.27]
Buhrman 2004	2.4	1.1	22	3.2	0.8	29	6.8%	-0.84 [-1.42, -0.26]
Buhrman 2011	3.15	2.2	26	3.35	2.6	28	7.3%	-0.08 [-0.62, 0.45]
Buhrman 2013	3.72	1.1	36	4.18	1.21	36	8.2%	-0.39 [-0.86, 0.07]
Buhrman 2013a	4.3	1.04	38	4.29	1	38	8.4%	0.01 [-0.44, 0.46]
Carpenter 2012	5.2	1.5	63	5.7	1.7	68	9.8%	-0.31 [-0.65, 0.04]
Chiauzzi 2010	5.13	0.2	95	5.35	0.19	104	10.4%	-1.12 [-1.42, -0.83]
Dear 2013	4.68	1.7	30	5.81	1.85	30	7.5%	-0.63 [-1.15, -0.11]
Lorig 2008	5.86	2.44	310	6.34	2.31	331	12.2%	-0.20 [-0.36, -0.05]
Ruehlman 2012	22.75	4.14	162	22.93	4.25	143	11.4%	-0.04 [-0.27, 0.18]
Williams 2010	4.3	1.6	59	4.9	1.5	59	9.5%	-0.38 [-0.75, -0.02]
Total (95% CI)			**882**			**903**	**100.0%**	**-0.37 [-0.59, -0.15]**

Heterogeneity: Tau² = 0.10; Chi² = 43.57, df = 10 (P < 0.00001); I² = 77%
Test for overall effect: Z = 3.32 (P = 0.0009)



Eccleston C, Fisher E, Craig L, Duggan GB, Rosser BA, Keogh E. Psychological therapies (Internet-delivered) for the management of chronic pain in adults. Cochrane Database of Systematic Reviews 2014, Issue 2. Art. No.: CD010152.

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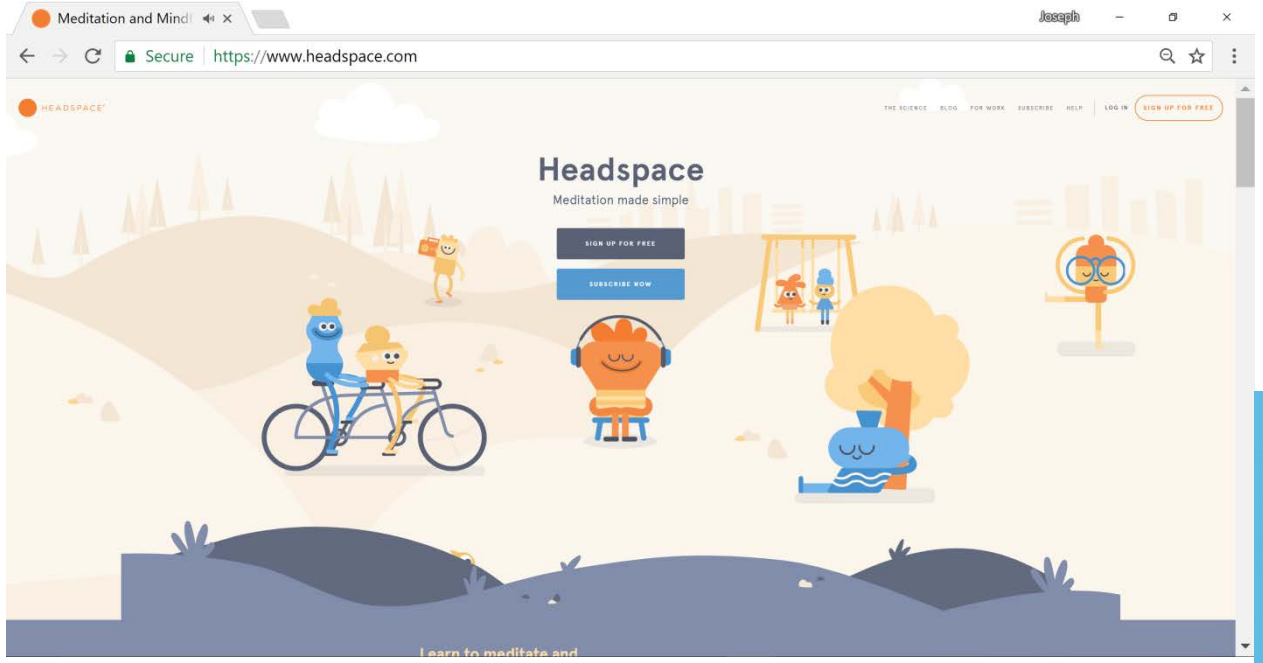
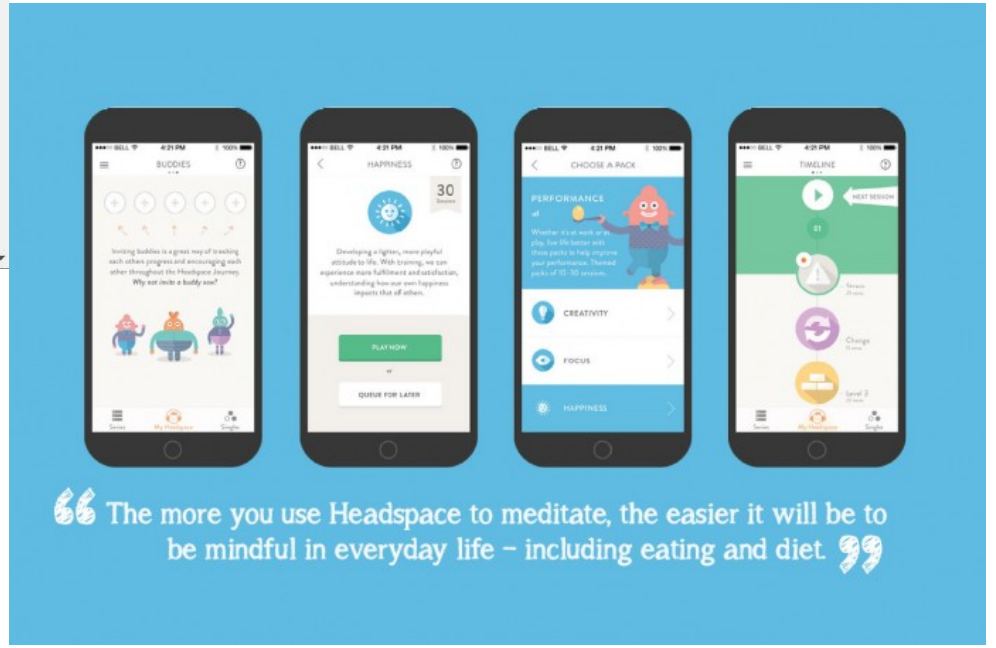
Cell phone app





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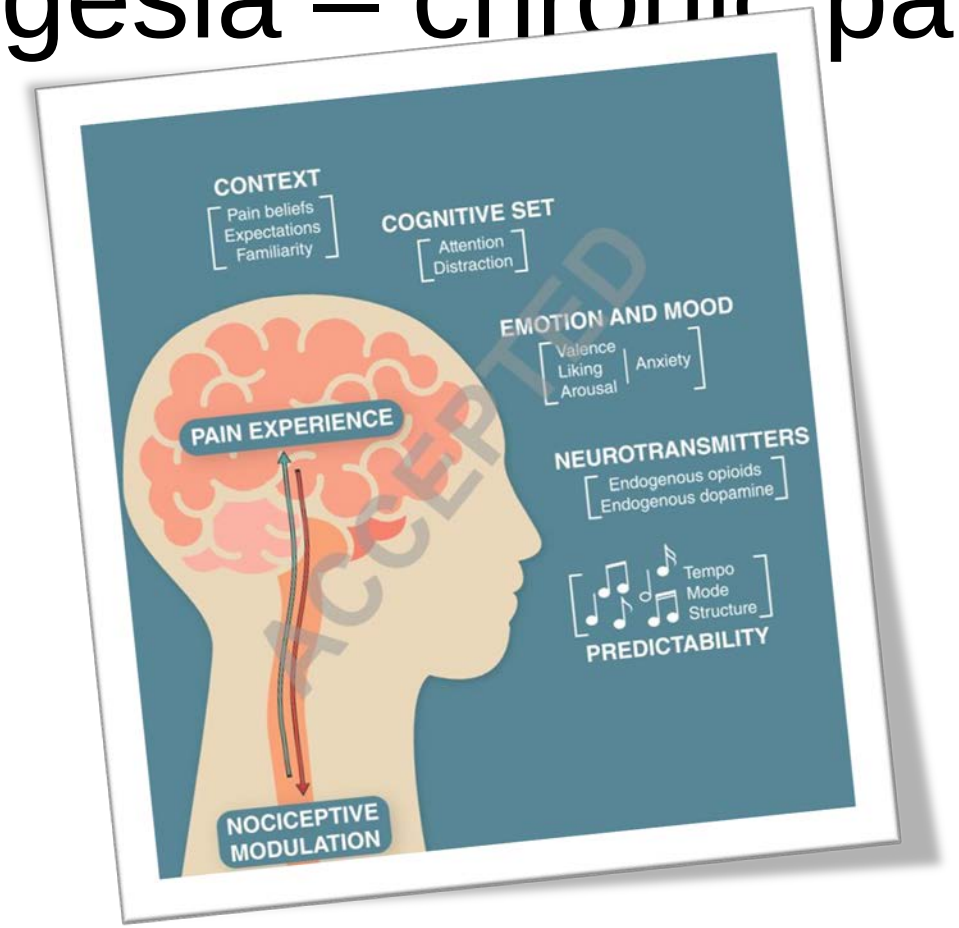
Music Induced Analgesia

- 51 studies
- 3663 subjects
- reduced pain
- increased the number of patients who reported at least 50% pain relief
- reduced requirements for morphine-like analgesics
- Small effect size

Cepeda MS, Carr DB, Lau J, Alvarez H. Music for pain relief. Cochrane Database of Systematic Reviews 2006, Issue 2. Art. No.: CD004843.

Music Induced Analgesia – chronic pain

- Reduced self-reported chronic pain and depressive symptoms
- Found music had greater effect when the patient chose music



Garza-Villarreal EA, Pando V, Vuust P, Parsons C. Music-Induced Analgesia in Chronic Pain Conditions: A Systematic Review and Meta-Analysis. Pain Physician. 2017 Nov;20(7):597-610. PMID: 29149141.

Music Induced Analgesia – post op

- Reduced postoperative pain (SMD -0·77 [95% CI -0·99 to -0·56]), anxiety (-0·68 [-0·95 to -0·41]), and analgesia use (-0·37 [-0·54 to -0·20]), and
- Increased patient satisfaction (1·09 [0·51 to 1·68]), but length of stay did not differ (SMD -0·11 [-0·35 to 0·12])

Hole J, Hirsch M, Ball E, Meads C. Music as an aid for postoperative recovery in adults: a systematic review and meta-analysis. Lancet. 2015 Oct 24;386(10004):1659-71. doi: 10.1016/S0140-6736(15)60169-6. Epub 2015 Aug 12. Erratum in: Lancet. 2015 Oct 24;386(10004):1630. PMID: 26277246.

MIA – Ortho?

- Reducing pain [standard mean difference (SMD) = -0.27; p = 0.002] and anxiety (SMD = -0.40; p = 0.0009).
- No statistically significant difference opioids

Patiyal N, Kalyani V, Mishra R, Kataria N, Sharma S, Parashar A, Kumari P. Effect of Music Therapy on Pain, Anxiety, and Use of Opioids Among Patients Underwent Orthopedic Surgery: A Systematic Review and Meta-Analysis. Cureus. 2021 Sep 29;13(9):e18377. doi: 10.7759/cureus.18377. PMID: 34725621; PMCID: PMC8555445.

Music for kids?

- Positive effect was demonstrated postop pain (SMD -1.07; 95%CI-2.08; -0.07) and on anxiety and distress (SMD -0.34 95% CI -0.66; -0.01 and SMD -0.50; 95% CI -0.84; - 0.16.

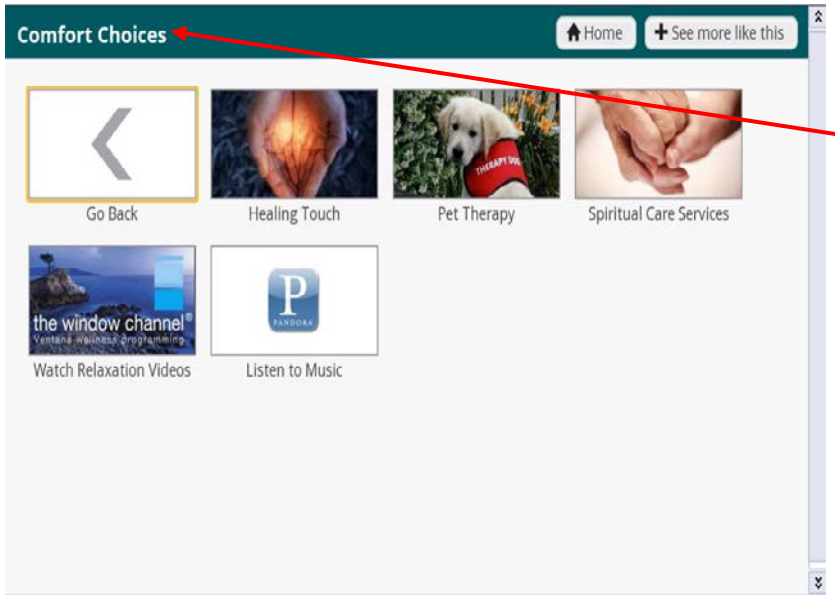
van der Heijden MJ, Oliai Araghi S, van Dijk M, Jeekel J, Hunink MG. The Effects of Perioperative Music Interventions in Pediatric Surgery: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. PLoS One. 2015 Aug 6;10(8):e0133608. doi: 10.1371/journal.pone.0133608. PMID: 26247769; PMCID: PMC4527726.

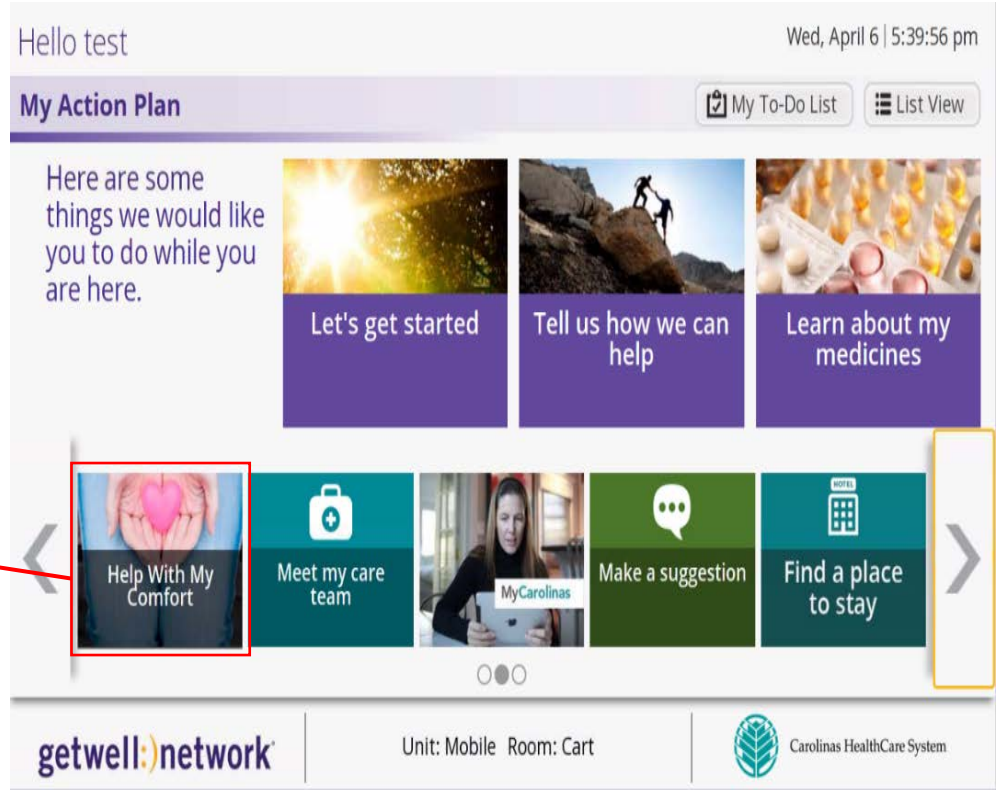
GetWellNetwork – Help With My Comfort

Main Benefits

include but are not limited to

- Comfort
- Relaxation
- Pain Management





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A Systematic Review on the Anxiolytic Effects of Aromatherapy in People with Anxiety Symptoms

Yuk-Lan Lee, BSc,[1] Ying Wu, BSc,[1] Hector W.H. Tsang, PhD,[1] Ada Y. Leung, MA,[1] and W.M. Cheung, PhD[2]

THE JOURNAL OF ALTERNATIVE AND COMPLEMENTARY MEDICINE
Volume 17, Number 2, 2011, pp. 101–108

- 16 RCTs
- Anxiolytic effects of aromatherapy

- Anxiety
- Pain
- Nausea

Review Article

Essential Oils for Complementary Treatment of Surgical Patients: State of the Art

Susanna Stea,[1] Alina Beraudi,[1,2] and Dalila De Pasquale[1,2]

Evidence-Based Complementary and Alternative Medicine
Volume 2014, Article ID 726341, 6 pages

TABLE 1: Summary of the evidences for the use of EO in surgical patients.

Condition	Essential oil	Number of reference
Anxiety	Lavender	[3, 8–10]
	Citrus sinensis	[10–12]
	Rosa damascene	[13]
	Neroli	[14]
	Lavandula officinalis + *Anthemis nobilis* + *Neroli*	[15]
Pain	*Citrus reticulata*	[18]
	Lavender	[19–21]
Nausea	*Menta* × *piperita*	[24–31]
	Zingiber officinale + *Mentha spicata* + *Menta* × *piperita*	[29]
Infection	*Melaleuca alternifolia*	[33–36]
	Menta spicata + *Thymus vulgaris* + *Eucalyptus globulus*	[37, 38]

The Effectiveness of Aromatherapy in Reducing Pain: A Systematic Review and Meta-Analysis

Shaheen E. Lakhan,[1,2] Heather Sheafer,[1] and Deborah Tepper[3]

Pain Research and Treatment
Volume 2016, Article ID 8158693, 13 pages

- Better for acute than chronic
- Strongest effect: postoperative

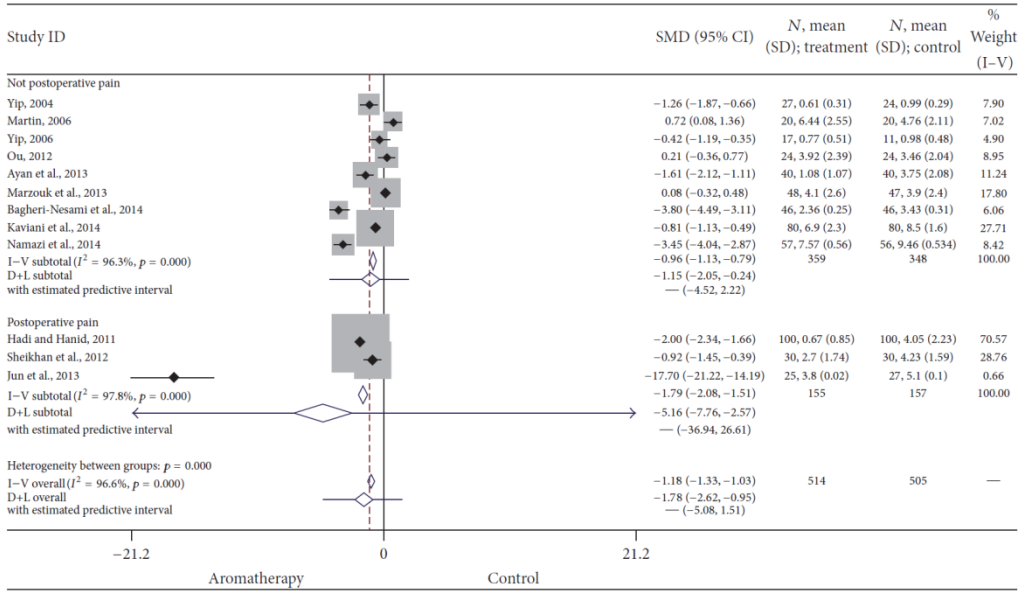
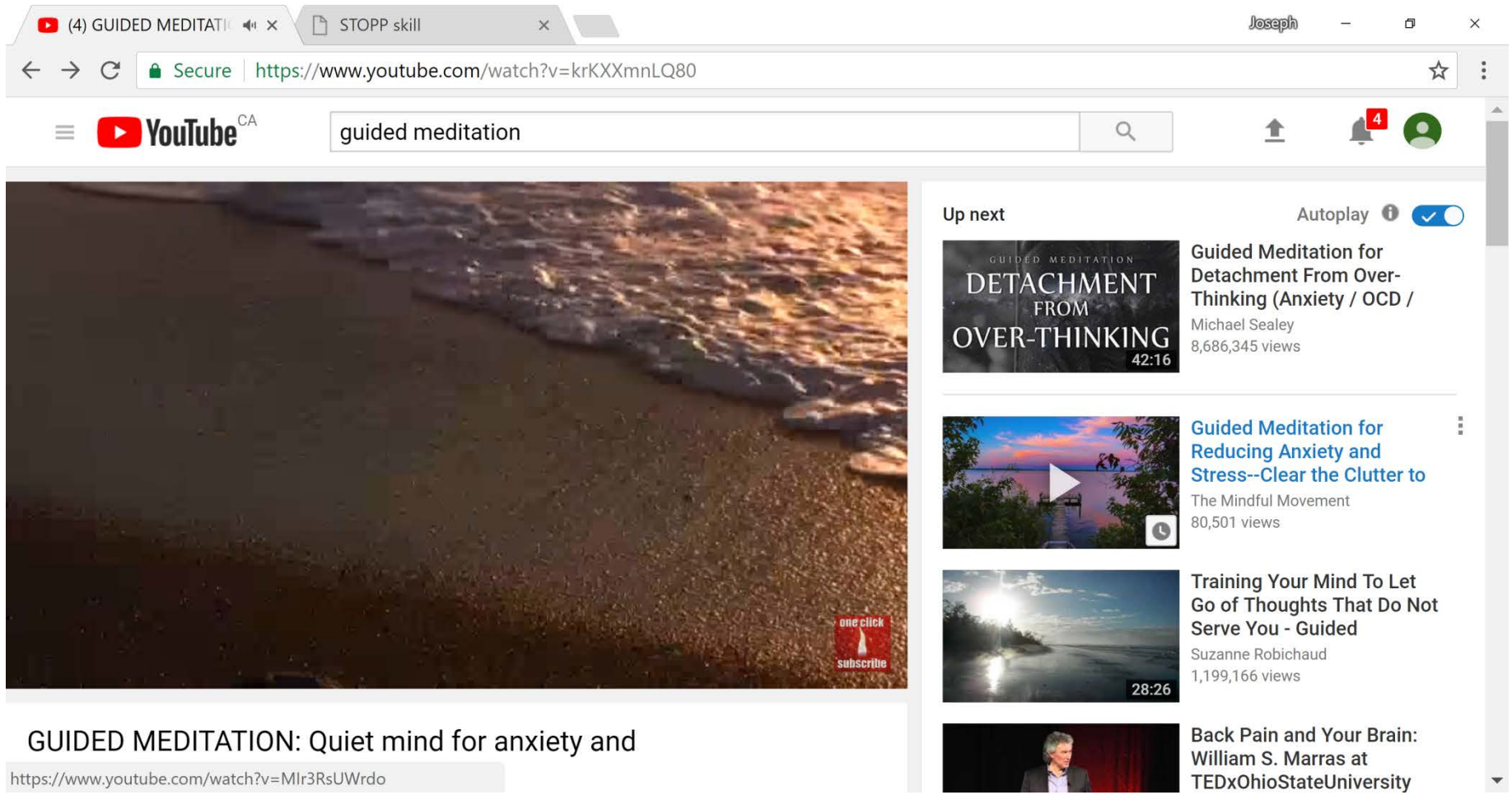


FIGURE 6: Forest plot: postoperative pain. This forest plot summarizes the results of postoperative pain studies. The numbers on the x-axis measure treatment effect. The gray squares represent the weight of each study. The larger the sample size, the larger the weight and the size of gray box. The small black boxes with the gray squares represent the point estimate of the effect size and sample size. The black lines on either side of the box represent a 95% confidence interval.

Guided meditation



https://www.youtube.com/watch?v=krKXXmnLQ80

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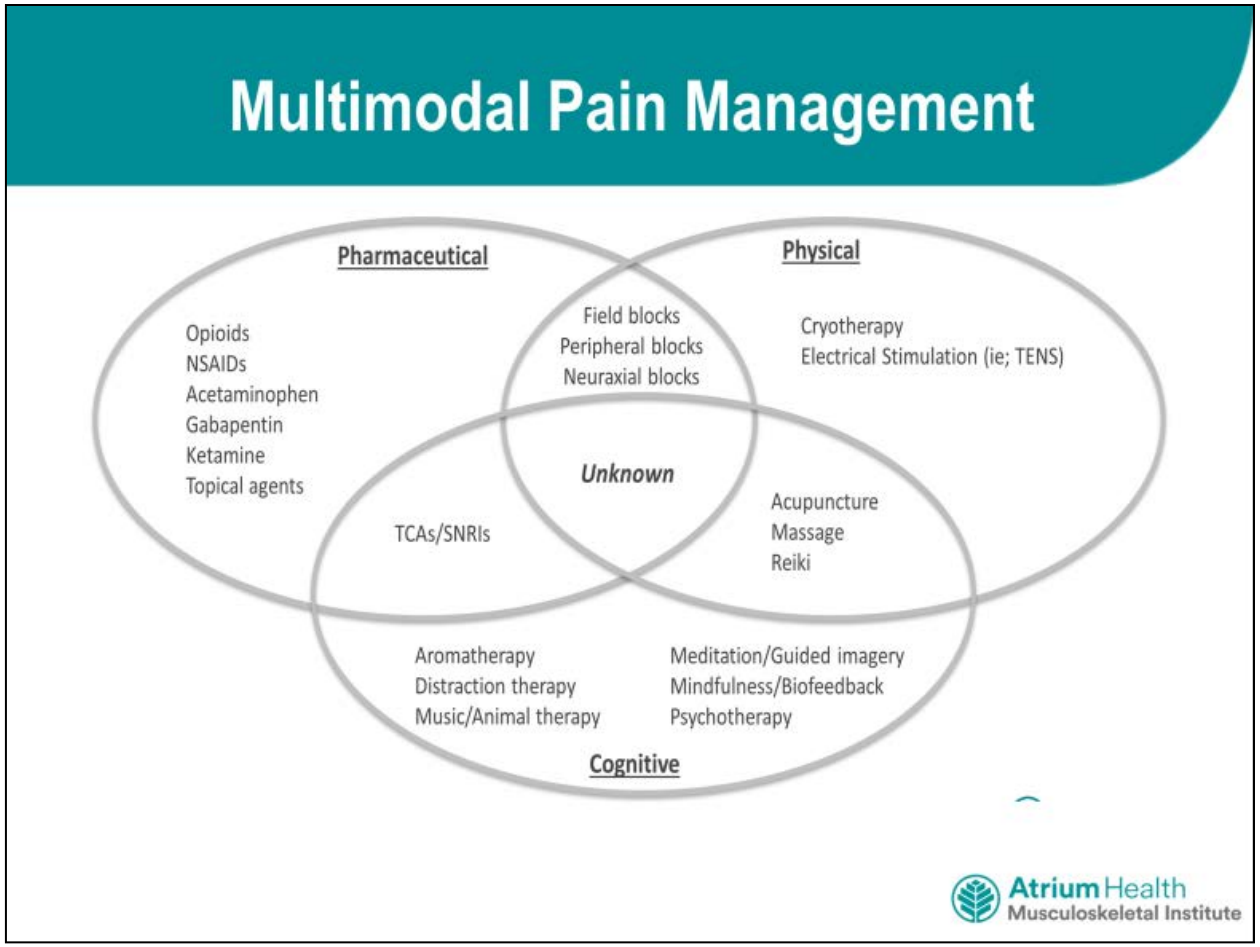
Nociception vs. Pain

- Nociception
  - sensory nervous system's response to certain harmful or potentially harmful stimuli
- Pain
  - cognitive and emotional response to nociception

https://www.youtube.com/watch?v=Tt52qS5Zttk&feature=youtu.be

Vranceanu AM, Jupiter JB, Mudgal CS, Ring D. Predictors of pain intensity and disability after minor hand surgery. J Hand Surg Am. 2010;35:956–960

Physical


Multimodal Pain Management
Pharmaceutical
Opioids
NSAIDs
Acetaminophen
Gabapentin
Ketamine
Topical agents
Physical
Cryotherapy
Electrical Stimulation (ie; TENS)
Field blocks
Peripheral blocks
Neuraxial blocks
Unknown
TCAs/SNRIs
Acupuncture
Massage
Reiki
Aromatherapy
Distraction therapy
Music/Animal therapy
Meditation/Guided imagery
Mindfulness/Biofeedback
Psychotherapy
Cognitive
Atrium Health
Musculoskeletal Institute

Cryo

Atrium Musculoskeletal Institute

Cryotherapy

Also known as cold therapy, cryotherapy uses cold temperatures to help with pain following an injury or a surgical procedure by decreasing swelling and delaying nerve conduction which basically "numbs the nerves". Using a bag of ice or an ice pack is fine, but it can sometimes be messy or difficult to apply to certain parts of the body.

Below are resources where you could purchase or rent various forms of cold therapy to use at home. They are available at various online retailers including Amazon. In some instances, these can also be ordered through a home health agency or a DME (durable medical equipment) company, our office will be happy to assist you with this if needed.

**Dr. Hsu or Atrium Musculoskeletal Institute is not affiliated with any of the listed products*

- Chattanooga Colpac Wraps
  - Reusable, polyurethane. Available in many shapes and sizes to use on upper and lower extremities, neck and back
- DonJoy DuraKold Therapy
  - Wraps for the shoulder, knee, wrist, foot & ankle, neck and back
  - www.djoglobal.com
- O2 Compression/Cold Supports
  - Provides both compression and cryotherapy. Available for use with the knee, shoulder, ankle, wrist and back
- Polar Ice Products
  - Cooling machines and wraps. Available for use for various parts of the body
  - www.polarproducts.com
- My Cold Therapy
  - Personal cooling units
  - www.mycoldtherapy.com

Cryotherapy

- Can decrease pain & opioids
  - Variable effect size

Thienpont E. Does advanced cryotherapy reduce pain and narcotic consumption after knee arthroplasty? Clin Orthop Relat Res. 2014 Nov;472(11):3417-23.

Cohn BT, Draeger RI, Jackson DW (1989) The effects of cold therapy in the postoperative management of pain in patients undergoing anterior cruciate ligament reconstruction. Am J Sports Med 17:344–349

Adie S, Kwan A, Naylor JM, Harris IA, Mittal R. Cryotherapy following total knee replacement. Cochrane Database Syst Rev. 2012 Sep 12;(9):CD007911

IMMEDIATE INTRAOPERATIVE CRYOTHERAPY

- Standard cryo effective

Compressive cryotherapy versus cryotherapy alone in patients undergoing knee surgery: a meta-analysis

Mingzhi Song[1,2†], Xiaohong Sun[1,3†], Xiliang Tian[1], Xianbin Zhang[4], Tieying Shi[3], Ran Sun[3,5*] and Wei Dai[3,5*]

Song *et al. SpringerPlus* (2016) 5:1074

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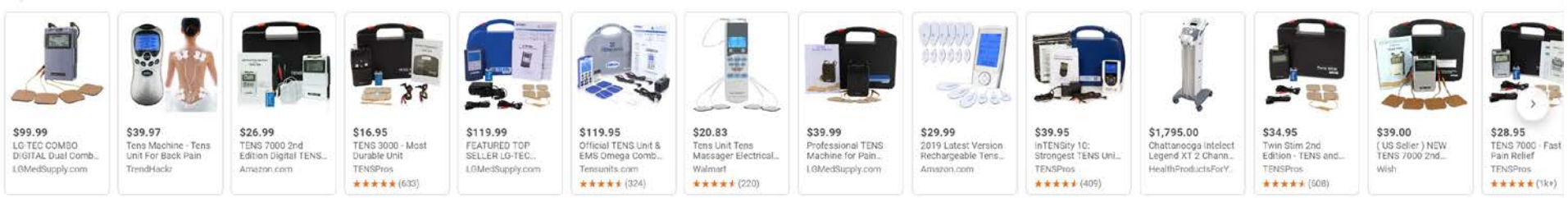
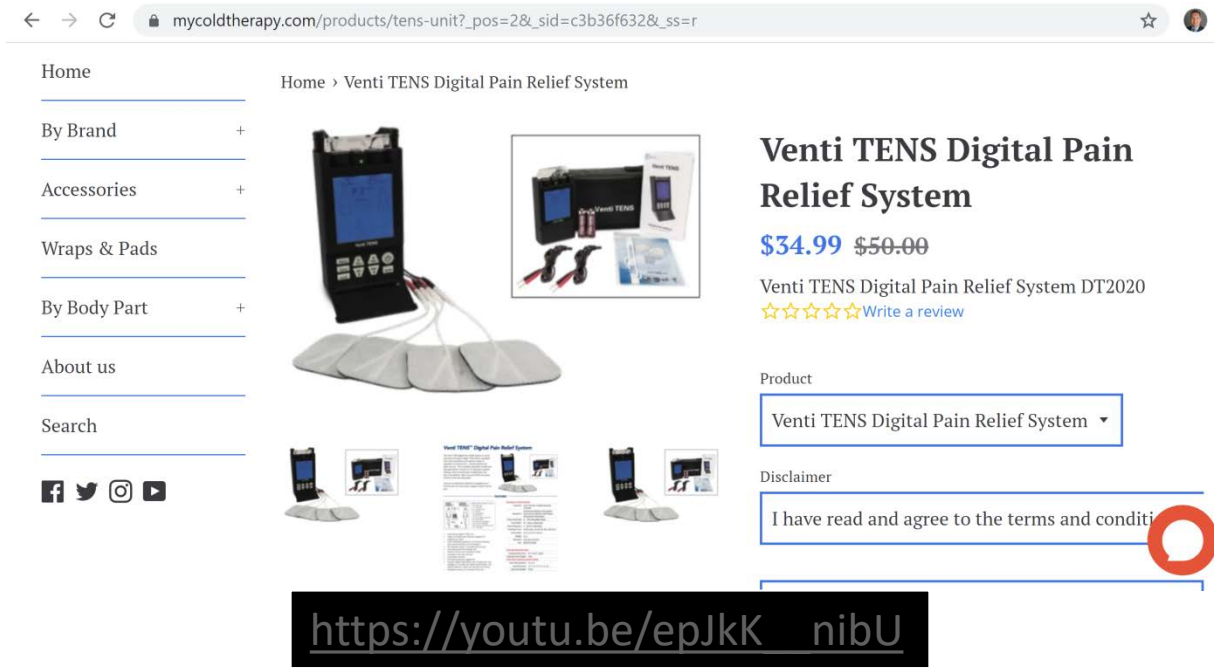
TENS: Transcutaneous electrical nerve stimulation





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TENS Handouts

By Elaine Shing, MD, PhD

TENS Unit Guidelines for Patients

Introduction:

- You, or a family member, may have been offered a TENS machine to wear after surgery or injury.
- The TENS machine works by sending small electrical signals through sticky pads attached to the skin. This is NON-INVASIVE. We encourage you to think of it as a massage.
- Our hope is that the TENS machine will help reduce your pain after surgery or injury.

* You can use your own TENS machine if you want. These are step-by-step instructions for the machine we provide. Use these instructions as general guidelines to set up your own machine. *

If You Choose to Use Our Machine:

How to Use the Machine:

1. Turn it on using the power button (red arrow). Make sure the knobs on top are also turned on.
2. Press and hold MODE (blue arrow) until the machine says MANUAL. Press MODE again. Keep pressing and releasing until you reach the setting **P19**. Make sure your machine is on P19 every time you use it.
3. P19 lets you change how strong the electrical signals are so that it fits your body.
4. VERY IMPORTANT: Set the signals to be **as strong as you can tolerate before it becomes painful.** You might find that your body gets used to one signal setting, and you will have to increase it.
   a. To increase or decrease the signal strength, use the UP and DOWN PR arrows (green circles). This changes the Hz (frequency), which you will feel as MORE or LESS intense electricity. Adjust to your comfort.
   b. We recommend trying to keep the Hz between **70-150 Hz.**
5. Select TIMER (yellow) and set the session time to the amount of time you desire. The machine will turn off automatically after this amount of time.

How Often to Use the Machine:

We recommend using it **2-4 times every day for 45 minutes every time**. You can use the machine more than 4 times per day if needed.

If You Choose to Use Your Own Machine:

- Set your machine to **MANUAL MODE** so you can adjust the strength of the electrical signals.
- Set the signals to be **as strong as you can tolerate before it becomes painful**. You might find that your body gets used to one signal setting, and you will have to increase it.
- We recommend trying to keep the Hz (frequency) between **70-150 Hz.**
- We recommend using the machine **2-4 times every day for 45 minutes every time**. You can use it more than 4 times per day if needed.

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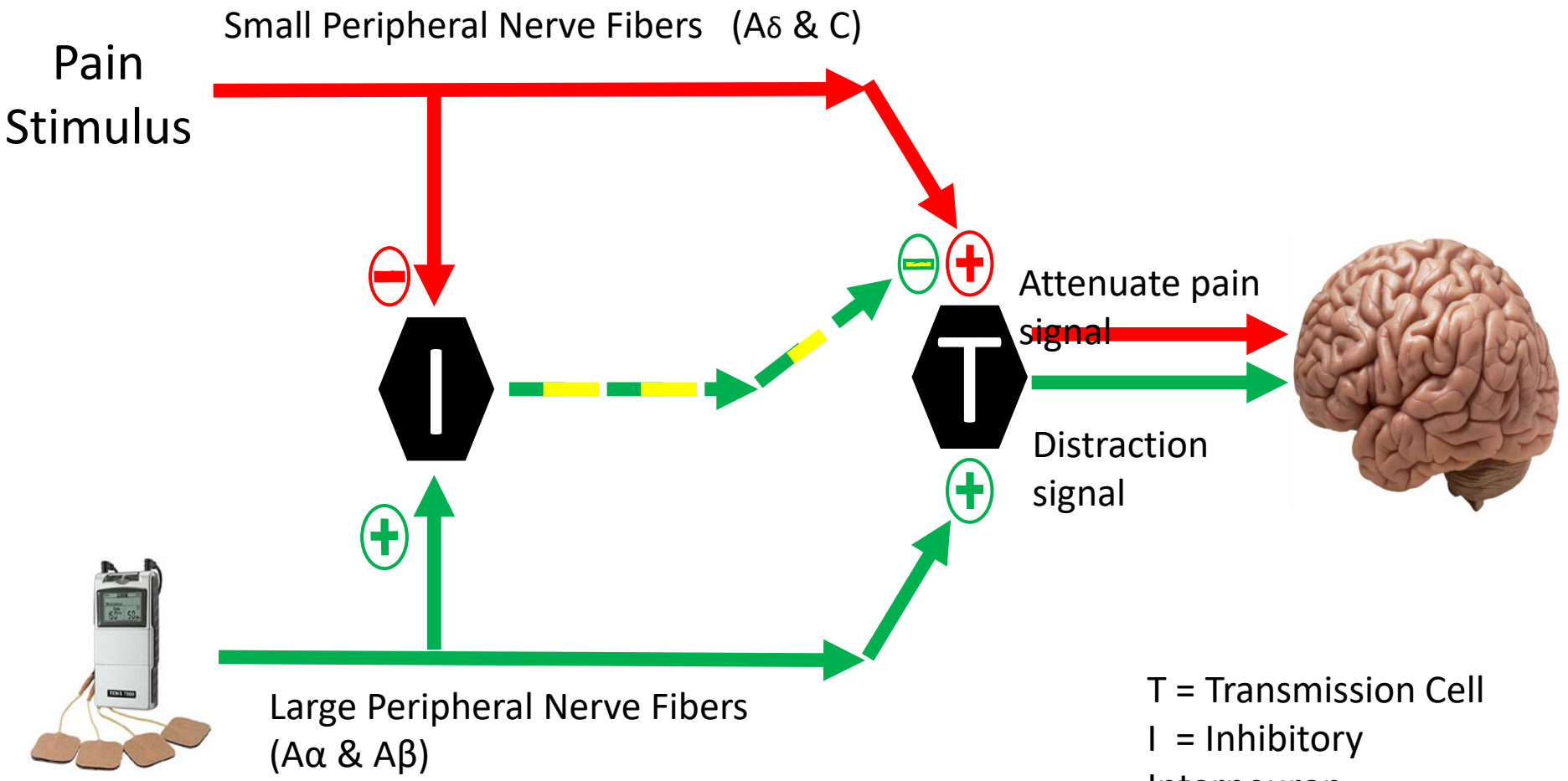
Gate Control Theory



PACU: Cryo + TENS

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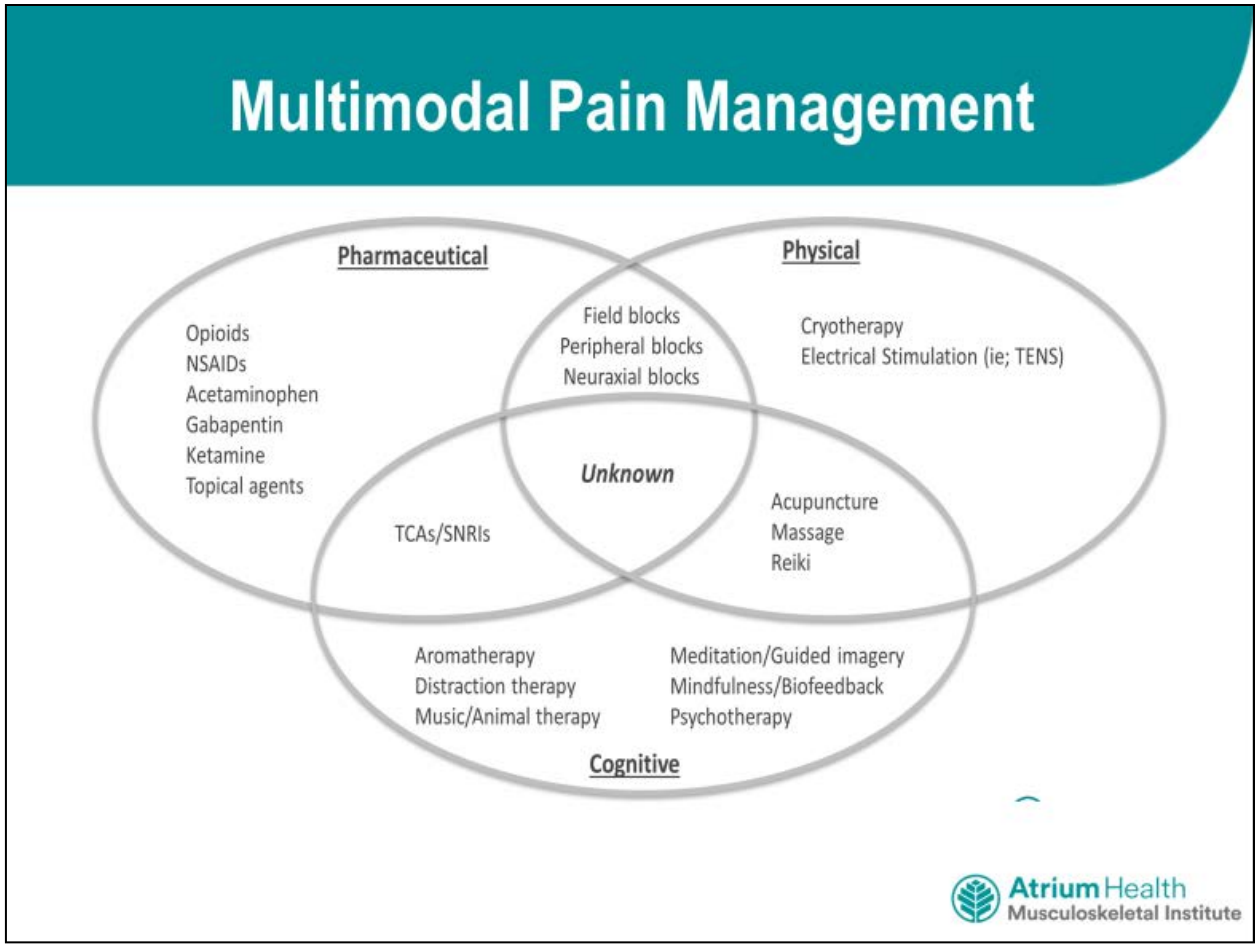
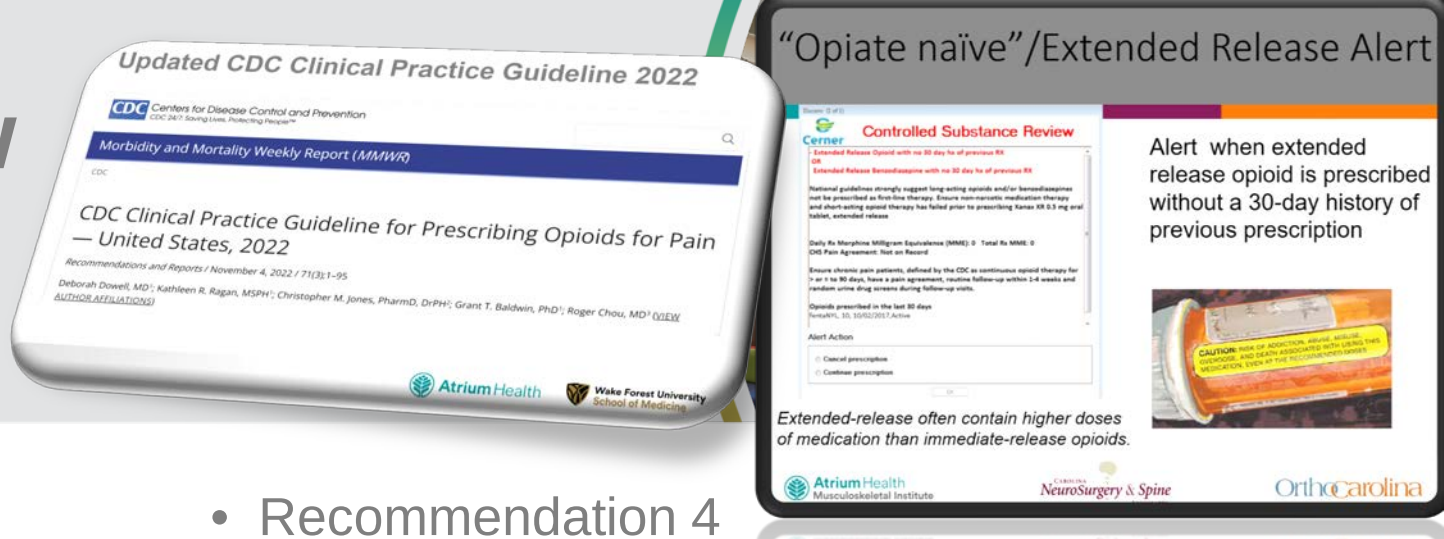
Pharmaceutical



Start low and go slow



- Recommendation 3
- When starting opioid therapy for acute, subacute, or chronic pain, clinicians should prescribe **immediate-release opioids** instead of extended-release and long-acting (ER/LA) opioids (recommendation category: A; evidence type: 4).

- Recommendation 4
- When opioids are initiated for opioid-naïve patients with acute, subacute, or chronic pain, clinicians should prescribe the **lowest effective dosage**. If opioids are continued for subacute or chronic pain, …should carefully evaluate individual benefits and risks when considering increasing dosage, and should **avoid increasing dosage above levels likely to yield diminishing returns** in benefits relative to risks to patients (recommendation category: A; evidence type: 3).

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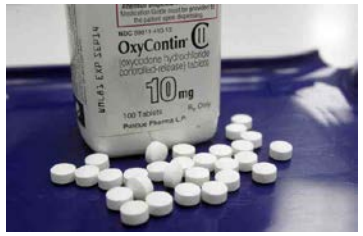
Prescribe with Precision



- Hydrocodone 5mg
  - 1po q6h = 20 MME/d (4 pills)
  - 2 po q4h = 60 MME/d (12 pills)

- Oxycodone 5mg
  - 1 po q6h = 30 MME/d (4 pills)
  - 2 po q4h = 90 MME/d (12 pills)

Table 1 Opioid equianalgesic doses[a]

Opioid	Approximate equianalgesic dose (oral and transdermal)[a]
Morphine (reference)	30 mg
Codeine	200 mg
Fentanyl transdermal	12.5 μg/h
Hydrocodone	30 mg
Hydromorphone	7.5 mg
Oxycodone	20 mg
Oxymorphone	10 mg

[a] This table should only be used for calculating daily morphine equivalent dose from all sources of opioids, not for conversion from one opioid to another.[32]

HOW MUCH IS 50 OR 90 MME/DAY FOR COMMONLY PRESCRIBED OPIOIDS?

50 MME/day:

- 50 mg of hydrocodone (10 tablets of hydrocodone/acetaminophen 5/300)
- 33 mg of oxycodone (~2 tablets of oxycodone sustained-release 15 mg)
- 12 mg of methadone (<3 tablets of methadone 5 mg)

90 MME/day:

- 90 mg of hydrocodone (9 tablets of hydrocodone/acetaminophen 10/325)
- 60 mg of oxycodone (~2 tablets of oxycodone sustained-release 30 mg)
- ~20 mg of methadone (4 tablets of methadone 5 mg)

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Inpatient medication recommendations

Status	Opioid	Nonopioid
Inpatient	Oxycodone/acetaminophen 5 mg/325 mg 1 tab po q 4 h PRN moderate pain 5 mg/325 mg 2 tabs po q 6 h PRN severe pain (hold next acetaminophen scheduled dose) Hydromorphone 1 mg IV q 3 h PRN for severe breakthrough pain	Ketorolac 15 mg IV q 6 h × 5 doses, followed by ibuprofen 600 mg po q 8 h Gabapentin 100 mg 1 tab po TID Scheduled acetaminophen 500 mg po q 12 h
Postdischarge		
Week 1 (at discharge)	Oxycodone/acetaminophen 5 mg/325 mg 1 tab po q 4 h PRN Dispense #42 (1 time Rx, no refills) Hydrocodone/acetaminophen 5 mg/325 mg or tramadol 50 mg (only if necessary—3 Rx Max)	Ibuprofen 600 mg po q 8 h × 7 d (Rx given) Gabapentin 100 mg 1 tab po TID × 7 days (Rx given) Scheduled acetaminophen 500 mg po q12 h × 7 d (can increase as combined opioid analgesic decreases) NSAIDs PRN as directed Gabapentin if necessary (up to 1800 mg/d)
Week 2	1 tab po q 4 h PRN Dispense #42	Scheduled acetaminophen 500 mg po q12 h (can increase as combined opioid analgesic decreases)
Week 3	1 tab po q6 hours PRN Dispense #28	Scheduled acetaminophen 1000 mg po q12 h (can increase as combined opioid analgesic decreases)
Week 4	1 tab po q8 hours PRN Dispense #21	Scheduled acetaminophen 1000 mg po q8 hours (can increase as combined opioid analgesic decreases)
Weeks 5+		NSAIDs PRN as directed Acetaminophen PRN as directed Gabapentin if necessary (then wean)

Dosage and duration can be less if tolerated.

*In conjunction with other best practice recommendations and individualized per treating physician discretion according to patient characteristics, local practice preferences, and state law.

PRN, pro re nata, "as needed"; TID, ter in die, three times per day.

OTA Acute MSK Pain Task Force Taper

- Major MSK surgery

Post Discharge		
Week 1 (at discharge)	Oxycodone/Acetaminophen 5mg/325mg 1 tab po q 4 hours PRN Dispense - #42 (1 time Rx, No Refills)	Ibuprofen 600mg po q 8 hours x 7 days (Rx Given) Gabapentin 100mg 1 tab po TID x 7days (Rx given) Scheduled Acetaminophen 500mg po q12 hours x 7 days (can increase as combined opioid analgesic decreases)
	Hydrocodone/Acetaminophen 5mg/325mg or Tramadol 50mg (Only If Necessary – 3 Rx Max)	NSAIDs PRN as directed Gabapentin if Necessary (up to 1800mg/day)
Week 2 Week 3 Week 4	1 tab po q 4 hours PRN Dispense - #42 1 tab po q6 hours PRN Dispense - #28 1 tab po q8 hours PRN Dispense - #21	Scheduled Acetaminophen 500mg po q12 hours (can increase as combined opioid analgesic decreases) Scheduled Acetaminophen 1000mg po q12 hours (can increase as combined opioid analgesic decreases) Scheduled Acetaminophen 1000mg po q8 hours(can increase as combined opioid analgesic decreases)
Weeks 5+		NSAIDs PRN as directed Acetaminophen PRN as directed Gabapentin If Necessary (then wean)

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- Minor MSK surgery

Status	Opioid	Non-opioid
Post Discharge		
Week 1	Hydrocodone/Acetaminophen 5mg/325mg or Tramadol 50mg 1 tab po q 6 hours PRN Dispense - #28 (1 time Rx, No Refills)	Ibuprofen 600mg po q 8 hours x 7 days (Rx Given) Gabapentin 100mg 1 tab po TID x 7 days (Rx given) Scheduled Acetaminophen 1000mg po q12 hours (can increase as combined opioid analgesic decreases)
Week 2	Hydrocodone/Acetaminophen 5mg/325mg or Tramadol 50mg (Only If Necessary – 2 Rx Max) 1 tab po q 8 hours PRN Dispense - #21	NSAIDs PRN as directed Gabapentin if Necessary (up to 1800mg/day) Scheduled Acetaminophen 1000mg po q8 hours (can increase as combined opioid analgesic decreases)
Week 3	1 tab po q12 hours PRN Dispense #14	Scheduled Acetaminophen 1000mg po q8 hours(can increase as combined opioid analgesic decreases)
Weeks 4+		NSAIDs PRN as directed Acetaminophen PRN as directed

OTA Acute MSK Pain Task Force Taper

- Non-operative

Injury Category	Opioid	Non-Opioid
Minor Injury (e.g. small bone fracture, sprain, laceration, etc.)	Tramadol 50mg (Only If Necessary - 2 Rx Max) 1 tab po q 6 hours PRN Dispense - #20, then #10	NSAIDs PRN as directed Scheduled Acetaminophen 1000mg po q8 hours, then PRN as directed
Major Injury (e.g. large bone fracture, rupture, etc.)	Hydrocodone/Acetaminophen 5mg/325mg or Tramadol 50mg (Only If Necessary – 2 Rx Max) 1 tab po q 6 hours PRN Dispense - #20, then #10	NSAIDs PRN as directed Scheduled Acetaminophen 1000mg po q12 hours, then PRN as directed

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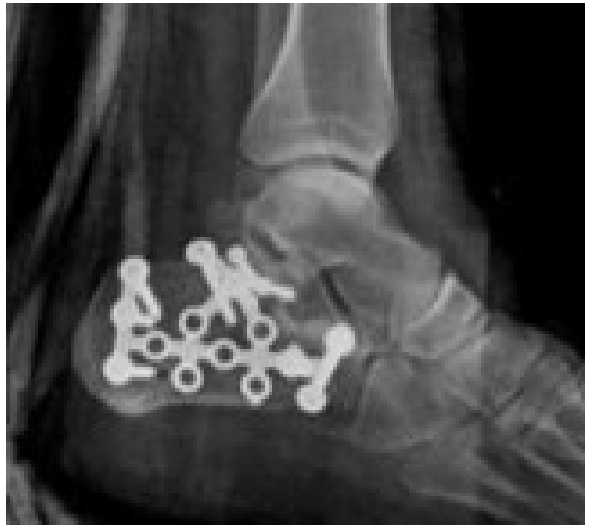
NSAID's



- They work after surgery

Kang H, Ha YC, Kim JY, Woo YC, Lee JS, Jang EC. Effectiveness of multimodal pain management after bipolar hemiarthroplasty for hip fracture: a randomized, controlled study. J Bone Joint Surg Am. 2013 Feb 20;95(4):291-6.

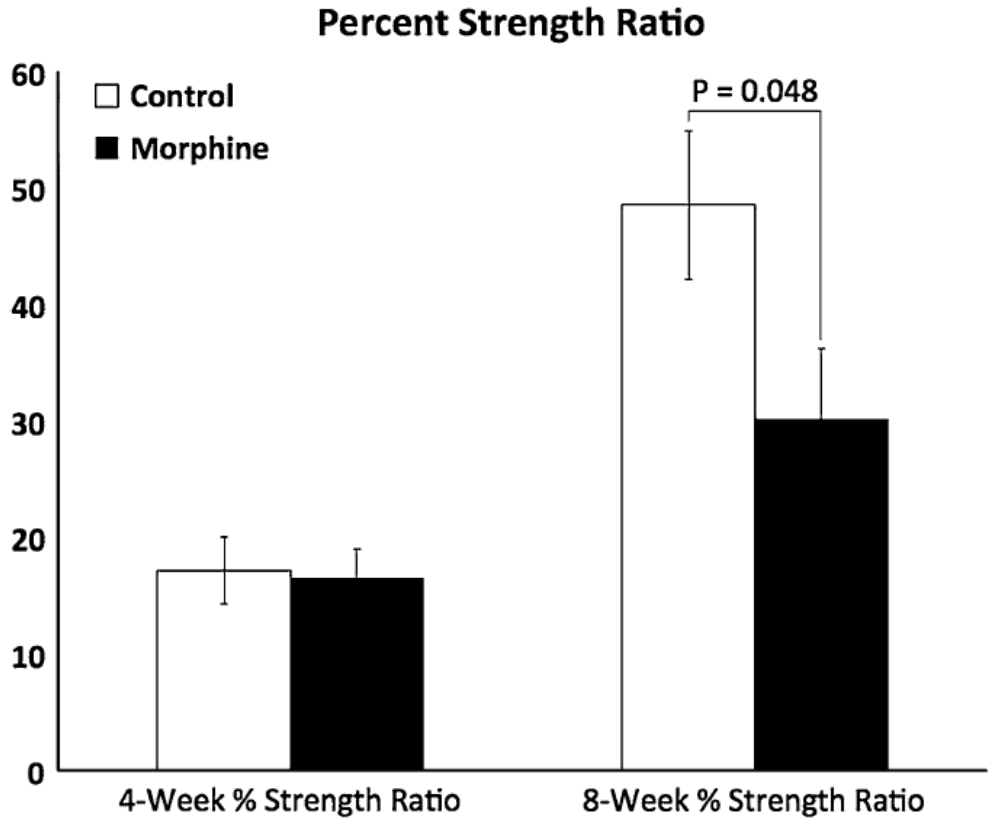
Norman PH, Daley MD, Lindsey RW. Preemptive analgesic effects of ketorolac in ankle fracture surgery. Anesthesiology. 2001 Apr;94(4):599-603.

Derry CJ, Derry S, Moore RA, McQuay HJ. Single dose oral ibuprofen for acute postoperative pain in adults. Cochrane Database Syst Rev 2009;(3):CD001548.

Postoperative Opioid Administration Inhibits Bone Healing in an Animal Model

Jesse Chrastil MD, Christopher Sampson BS,
Kevin B. Jones MD, Thomas F. Higgins MD

Clinical Orthopaedics and Related Research®
A Publication of The Association of Bone and Joint Surgeons®
Clin Orthop Relat Res (2013) 471:4076–4081



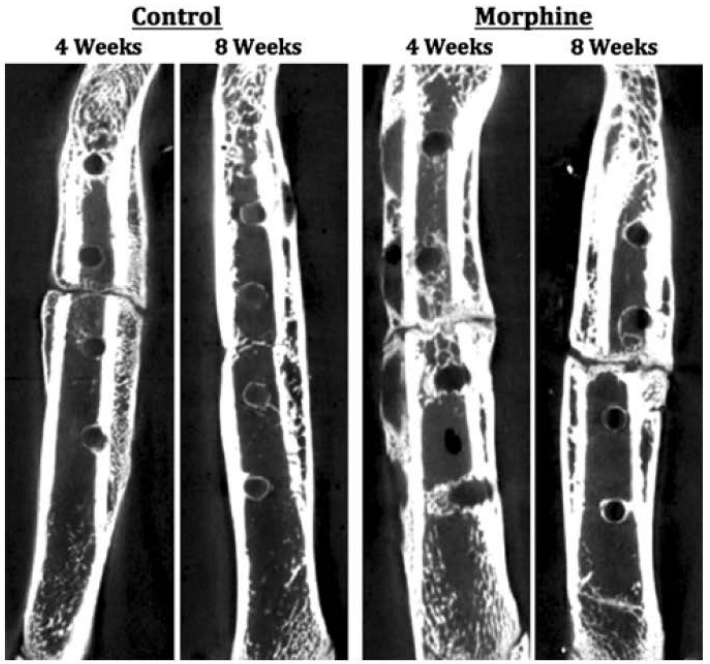


Fig. 2 Micro-CT images at 4 weeks and 8 weeks postoperatively. Gross evaluation of μCT images at 4 weeks reveals immature callus surrounding the osteotomy site, lack of bridging bone, and persistence of osteotomy lucency. The control and morphine groups have a qualitatively similar appearance at the 4-week time point. More notable differences can be seen at the 8-week time point. Callus resorption and interval cortical bridging are seen in the control group, whereas this is less apparent in the morphine group. There is less evidence of remodeling and persistent fibrous interposition at the osteotomy site.

Ketorolac (Toradol)

IV Ketorolac trometamol: as effective as morphine for surgical pain and pain related to cancer, and it has fewer side effects.

Gillis JC, Brogden RN. Ketorolac. A reappraisal of its pharmacodynamic and pharmacokinetic properties and therapeutic use in pain manage ment. Drugs 1997;53:13988.

GI haemorrhage risk only slightly higher with ketorolac than morphine (odds ratio 1.17 (95% CIs 0.991.13)); risk rises sharply more than five days or in patients older than 75

Strom BL, Berlin JA, Kinman JL, Spitz PW, Hennessy S, Feldman H, et al. Parenteral ketorolac and risk of gastrointestinal and operative site bleed ing. A postmarketing surveillance study. JAMA 1996;275:37682.

What about bleeding??

- RCT pediatric tonsillectomy
- Desaturation events increased substantially in the morphine group
  - average increase of 11.17 ± 15.02 desaturation events per hour (P < .01)
- no differences seen in analgesic effectiveness, tonsillar bleeding, or adverse drug reactions.

Morphine or Ibuprofen for post-tonsillectomy analgesia: a randomized trial.
Kelly LE, Sommer DD, Ramakrishna J, Hoffbauer S, Arbab-Tafti S, Reid D, Maclean J, Koren G.
Pediatrics. 2015 Feb;135(2):307-13

OTA CPG in action

- 40 consecutive outpatients
  - peripheral nerve block and a multimodal pain protocol between September 2019 and March 2020
- 70 consecutive pre-protocol patients
  - peripheral nerve block and hydrocodone-acetaminophen.
- Reduced opioid consumption by >50% in the first 4 days, higher satisfaction scores

Siow MY, Mitchell BC, Vuong CL, Zanzucchi A, Finneran JJ 4th, Girard PJ, Schwartz AK, Kent WT. Reduction of Opioid Consumption After Outpatient Orthopaedic Trauma Surgeries Using a Multimodal Pain Protocol. J Am Acad Orthop Surg. 2021 Oct 28. doi: 10.5435/JAAOS-D-20-01417. Epub ahead of print. PMID: 34723860.

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What can a system do?

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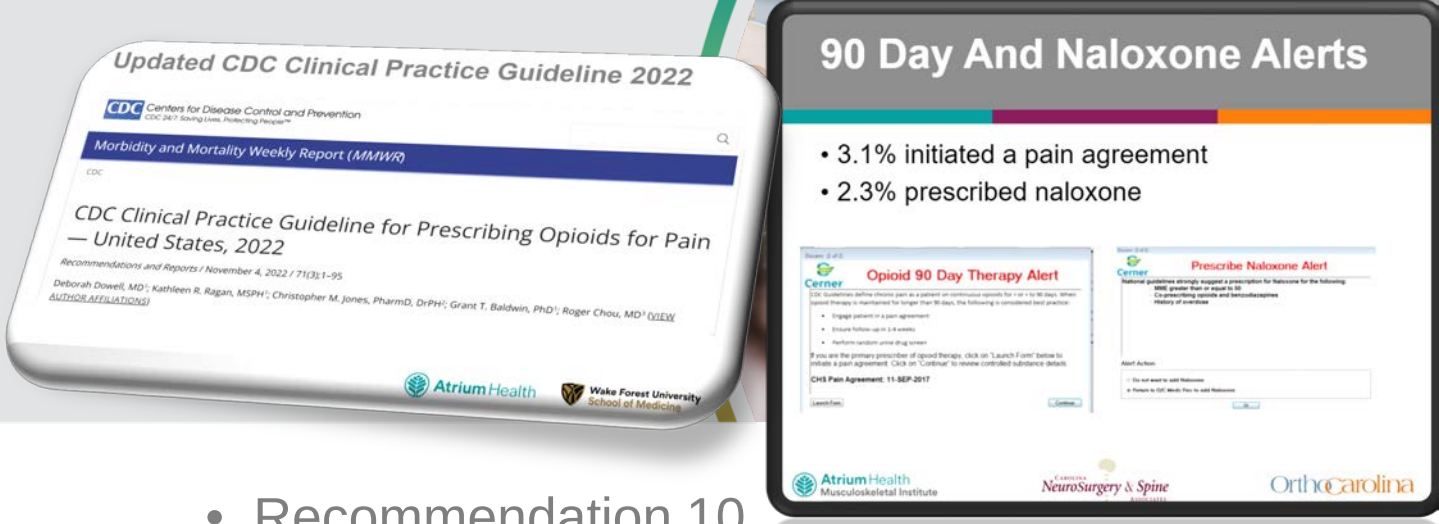

- Recommendation 9
- …**state prescription drug monitoring program (PDMP)** data to determine whether the patient is receiving opioid dosages or combinations that put the patient at high risk for overdose (recommendation category: B; evidence type: 4).

- Recommendation 10
- When prescribing opioids for **subacute or chronic pain**, clinicians should consider the benefits and risks of **toxicology testing** to assess for prescribed medications as well as other prescribed and nonprescribed controlled substances (recommendation category: B; evidence type: 4).

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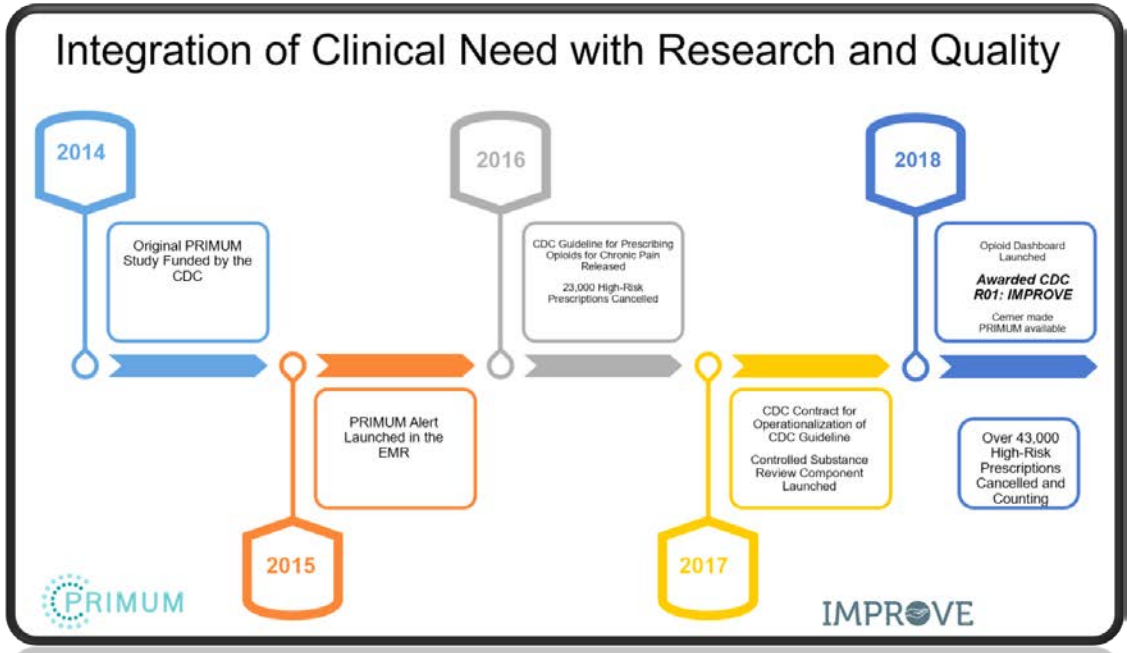
Outpatient effort



Seymour *et al. BMC Medical Informatics and Decision Making* (2016) 16:111
DOI 10.1186/s12911-016-0352-x

BMC Medical Informatics and Decision Making

TECHNICAL ADVANCE Open Access

Prescription reporting with immediate medication utilization mapping (PRIMUM): development of an alert to improve narcotic prescribing

Rachel B. Seymour[1,2*], Daniel Leas[1,2], Meghan K. Wally[1,2], Joseph R. Hsu[1,2] and the PRIMUM Group

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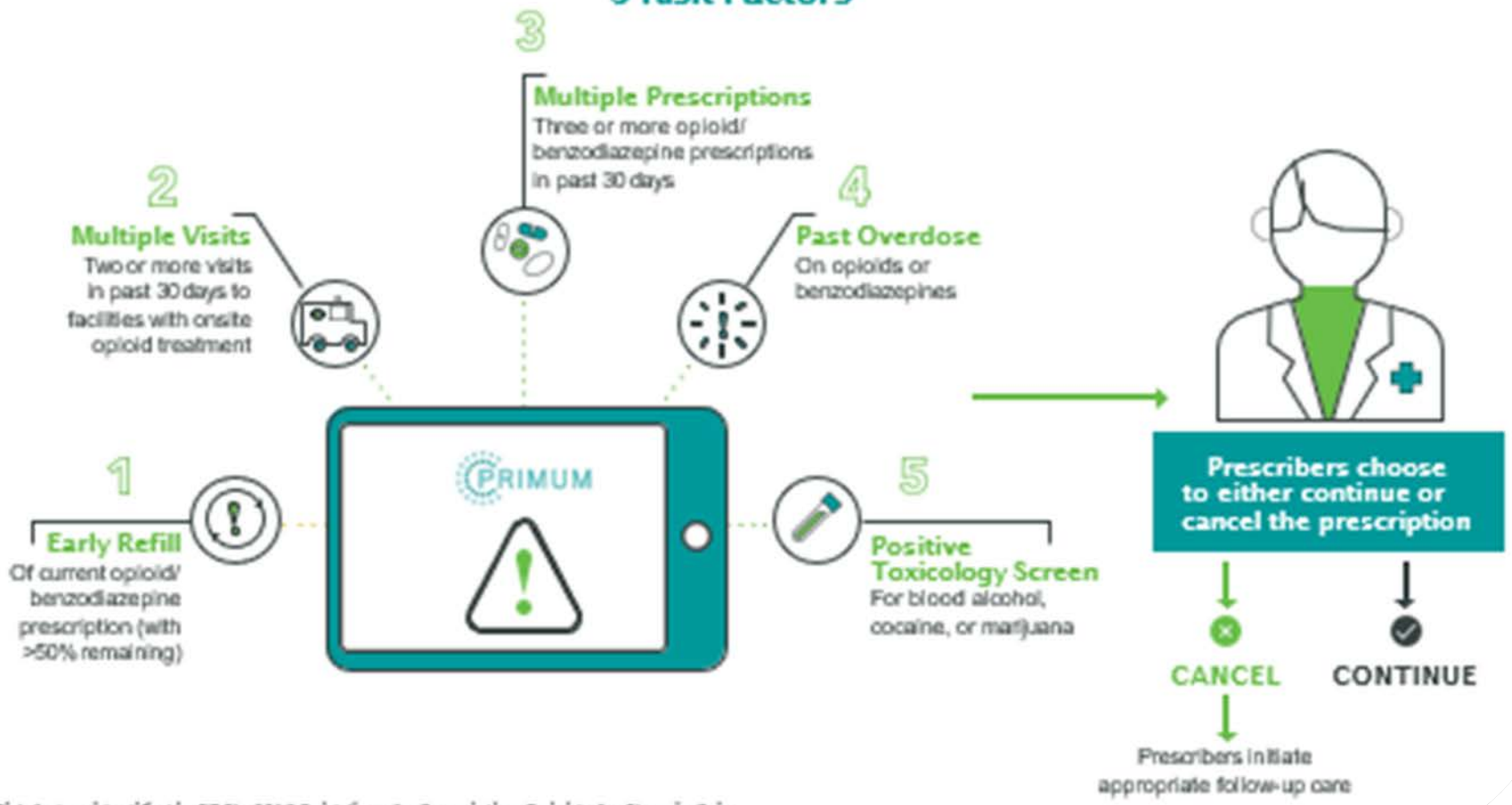
How PRIMUM Works

PRIMUM triggers an alert when one of five risk factors is identified in a patient's health record

5 Risk Factors*



*Risk factors identified in CDC's 2016 Guidelines for Prescription Opioids for Chronic Pain

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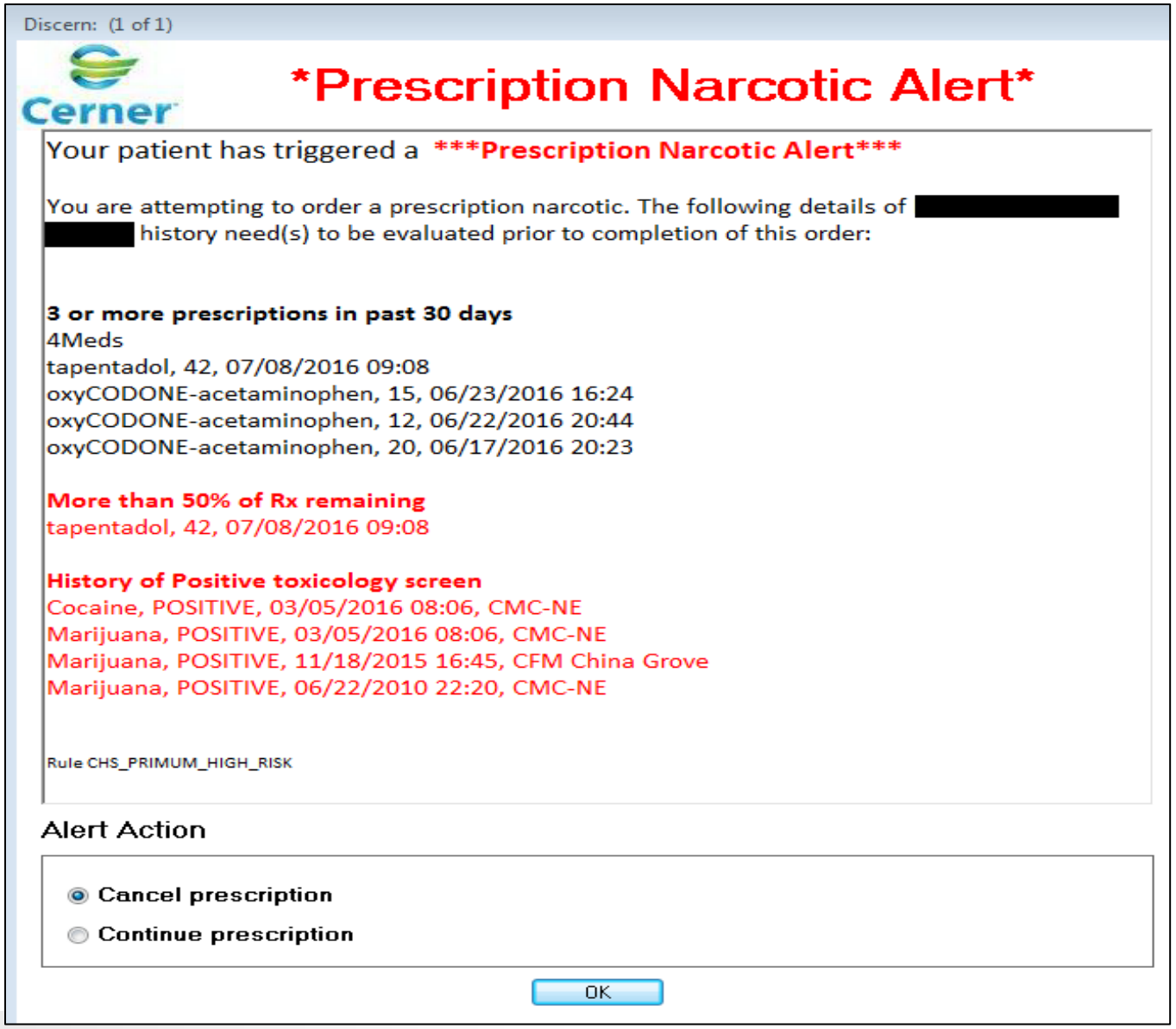

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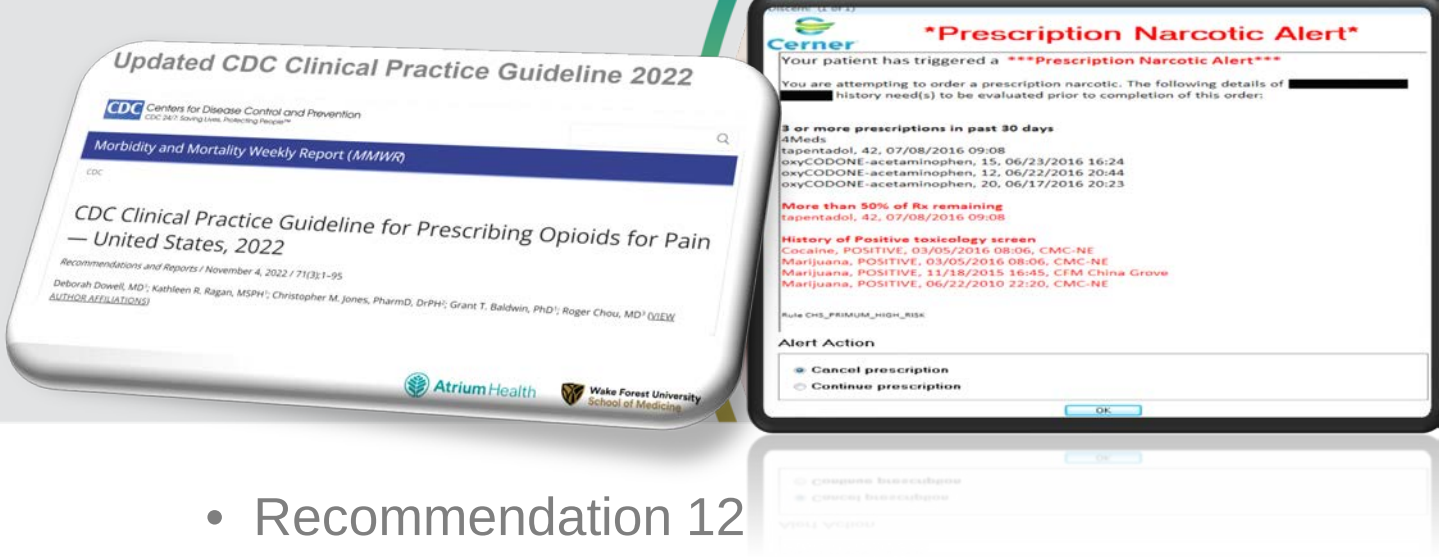

- Recommendation 11
- Clinicians should use particular caution when prescribing **opioid pain medication and benzodiazepines concurrently** and consider whether benefits outweigh risks of concurrent prescribing of opioids and other central nervous system depressants (recommendation category: B; evidence type: 3).

- Recommendation 12
- Clinicians should offer or arrange treatment with evidence-based medications to treat patients with opioid use disorder. **Detoxification on its own, without medications for opioid use disorder, is not recommended for opioid use disorder** because of increased risks for resuming drug use, overdose, and overdose death (recommendation category: A; evidence type: 1).

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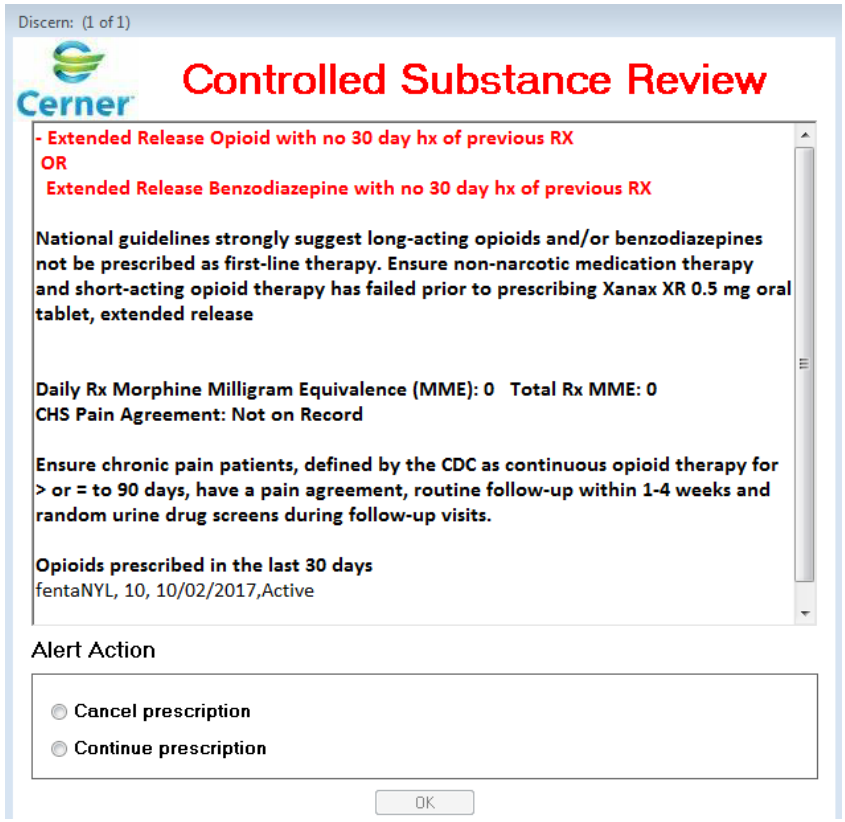
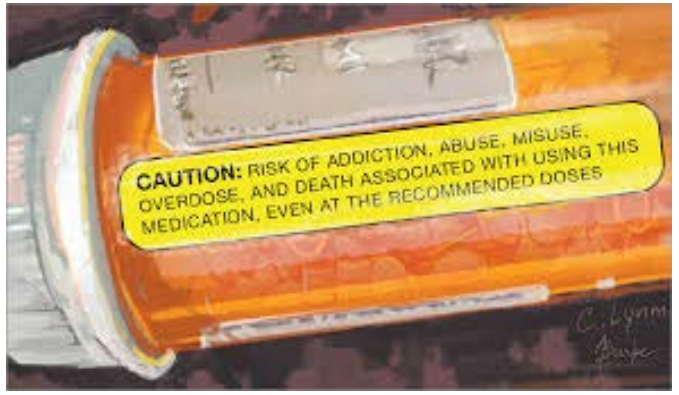
“Opiate naïve”/Extended Release Alert



Extended-release often contain higher doses of medication than immediate-release opioids.

Alert when extended release opioid is prescribed without a 30-day history of previous prescription



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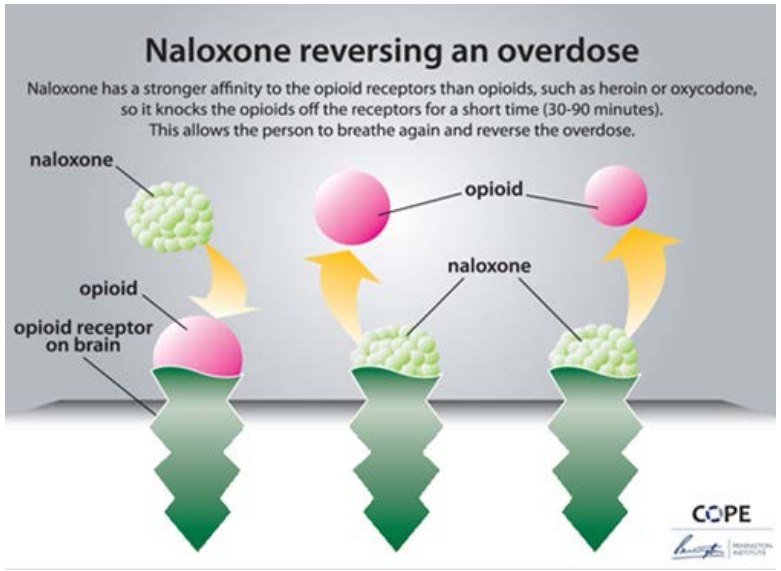
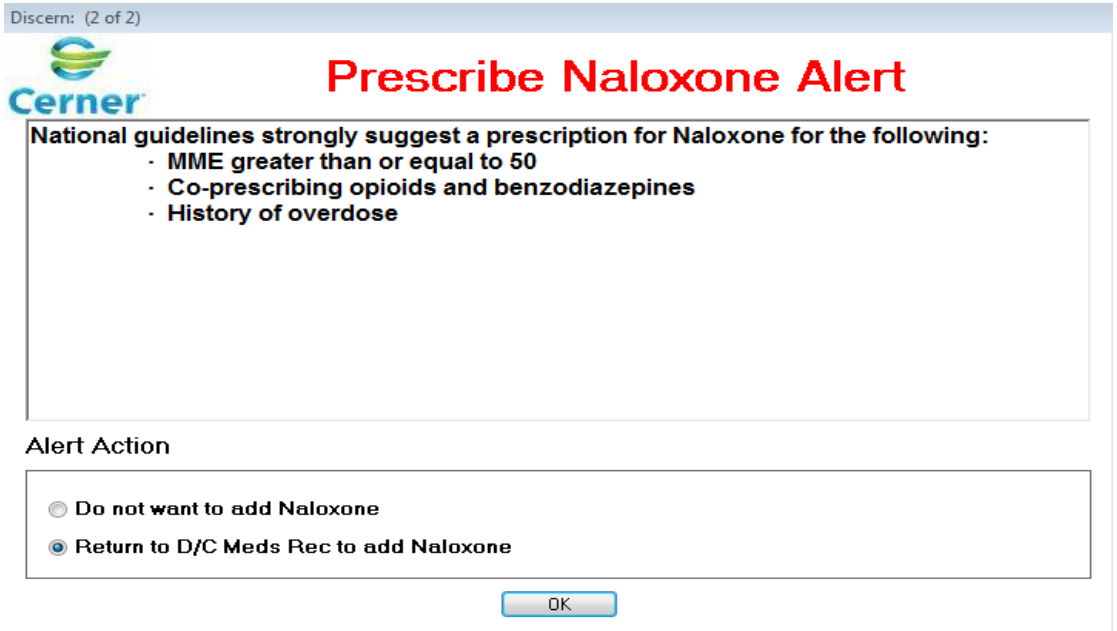
Naloxone Alert

- Alert to prescribe naloxone if:
  - > 50 MME/day
  - Previous overdose
  - Concurrent benzodiazepine





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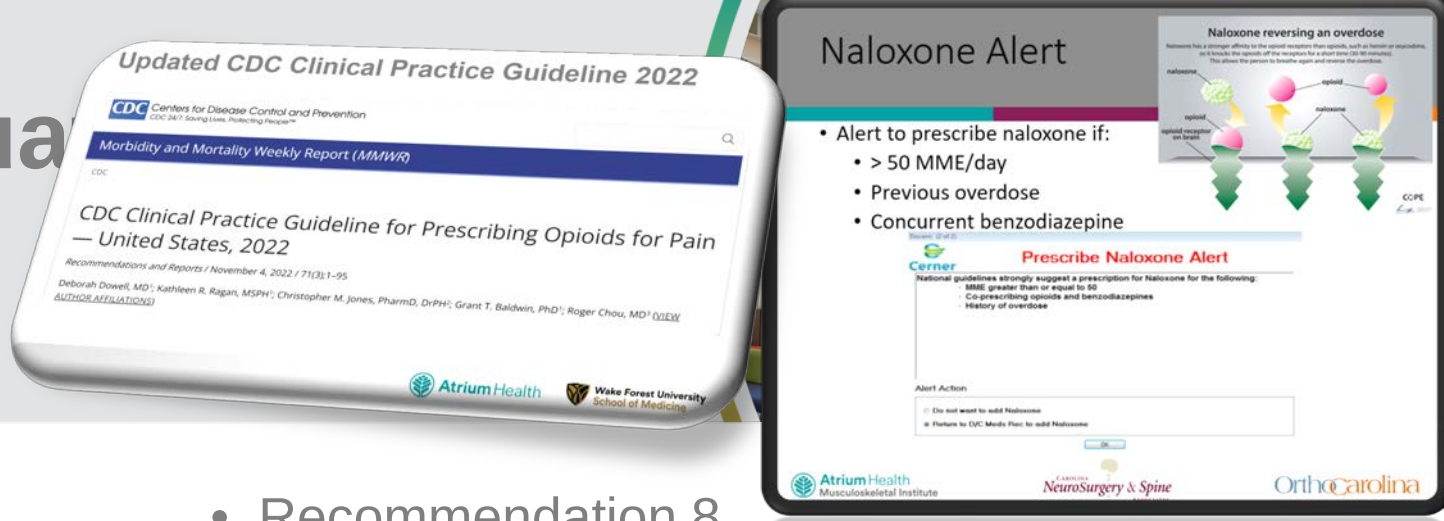
Evaluate and re-evalua



- Recommendation 7
- Clinicians should **evaluate benefits** and risks with patients **within 1–4 weeks** of starting opioid therapy for **subacute or chronic pain or of dosage escalation**. Clinicians should regularly reevaluate benefits and risks of continued opioid therapy with patients (recommendation category: A; evidence type: 4).

- Recommendation 8
- Before starting and periodically during continuation of opioid therapy, clinicians should **evaluate risk for opioid-related harms** and discuss risk with patients. Clinicians should work with patients to incorporate into the management plan **strategies to mitigate risk, including offering naloxone** (recommendation category: A; evidence type: 4).

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Discharge Instructions

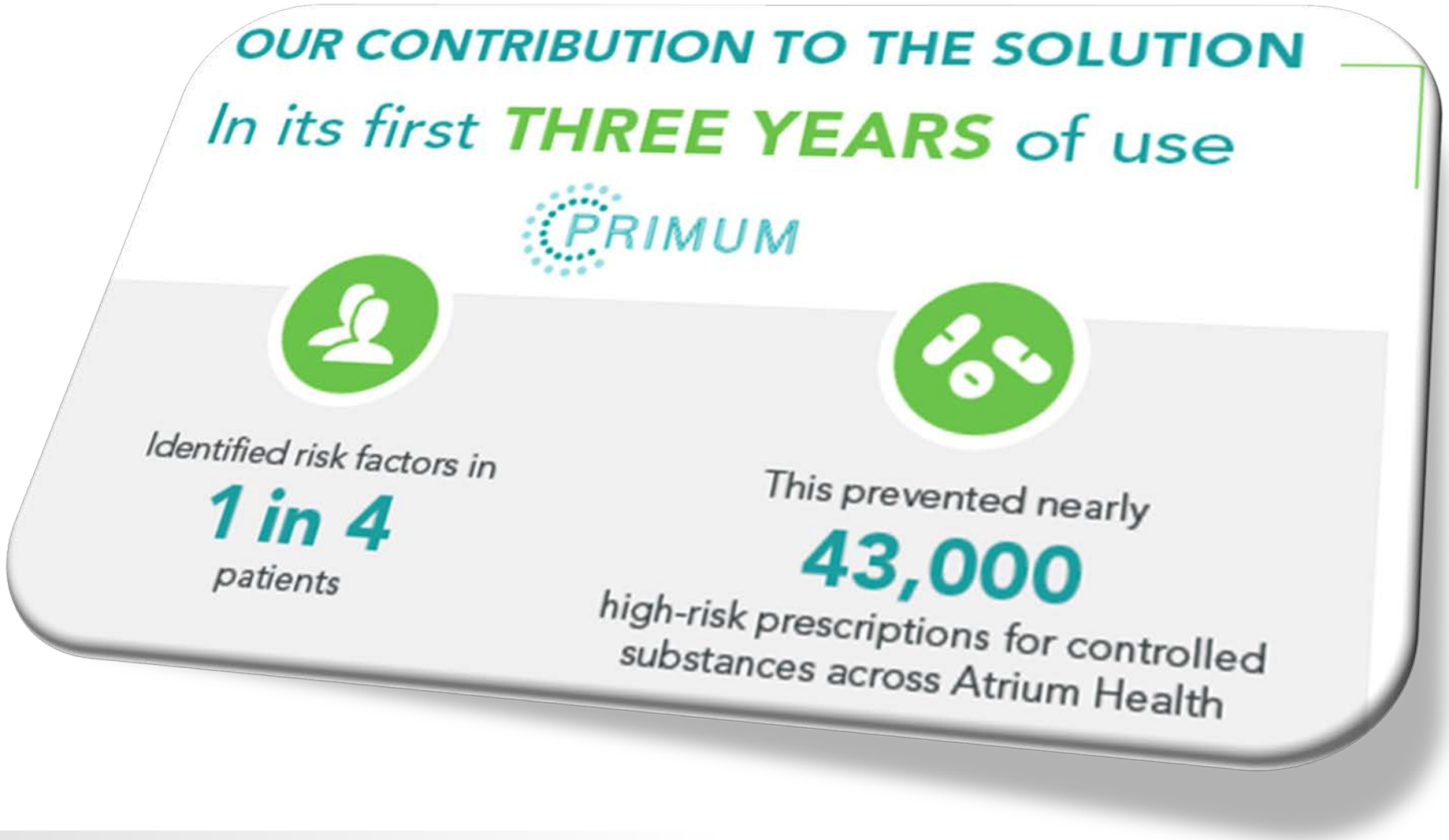
Safe opioid use and disposal education automatically print on discharge instructions for all encounters with any opioid prescription of any dose or duration

How to Safely Use Opioids:

- Take your drug only as ordered
- Do not share, give away, or sell your opioid. Do not use someone else's opioids
- Keep your opioid drug in a safe, locked place. Keep them away from children and others like guests, friends, loved ones
- Do not drink alcohol while using opioids
- Unless given by your doctor, do not take benzodiazepines(Xanax®, Valium®), muscle relaxants (Soma®, Flexeril®), Hypnotics (Ambien®, Lunesta®), or other opioids
- Do not drive or use heavy equipment while using opioids

How to Get Rid of Opioids:

- You should get rid of any pills you do not use. Your opioids were given to you for a certain problem. Once that problem is over it is against the law to use them for other reasons. Find your local drug "take-back" program or your pharmacy (drug store) mail-back program. Or use these steps:
  - Take drugs out of the pill bottle. Mix with cat litter or used coffee grounds
  - Put mixture into bag or a carton you can throw away. Make sure the bag can seal and the carton has a lid
  - Remove the label that has your name and date of birth. Remove the label that has the Rx number. If you can't remove the label, use a marker to cover it
  - Place sealed carton or bag and the empty pill bottle into trash
- For more info, visit: https://apps.deadiversion.usdoj.gov/pubdispsearch/spring/main?execution=e2s1



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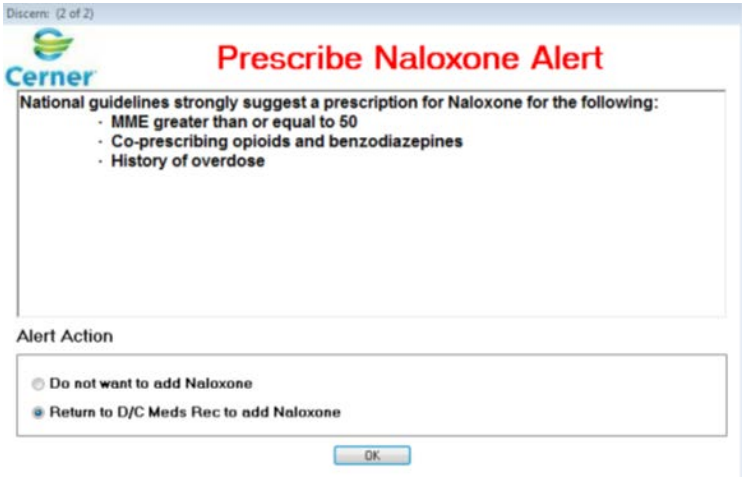
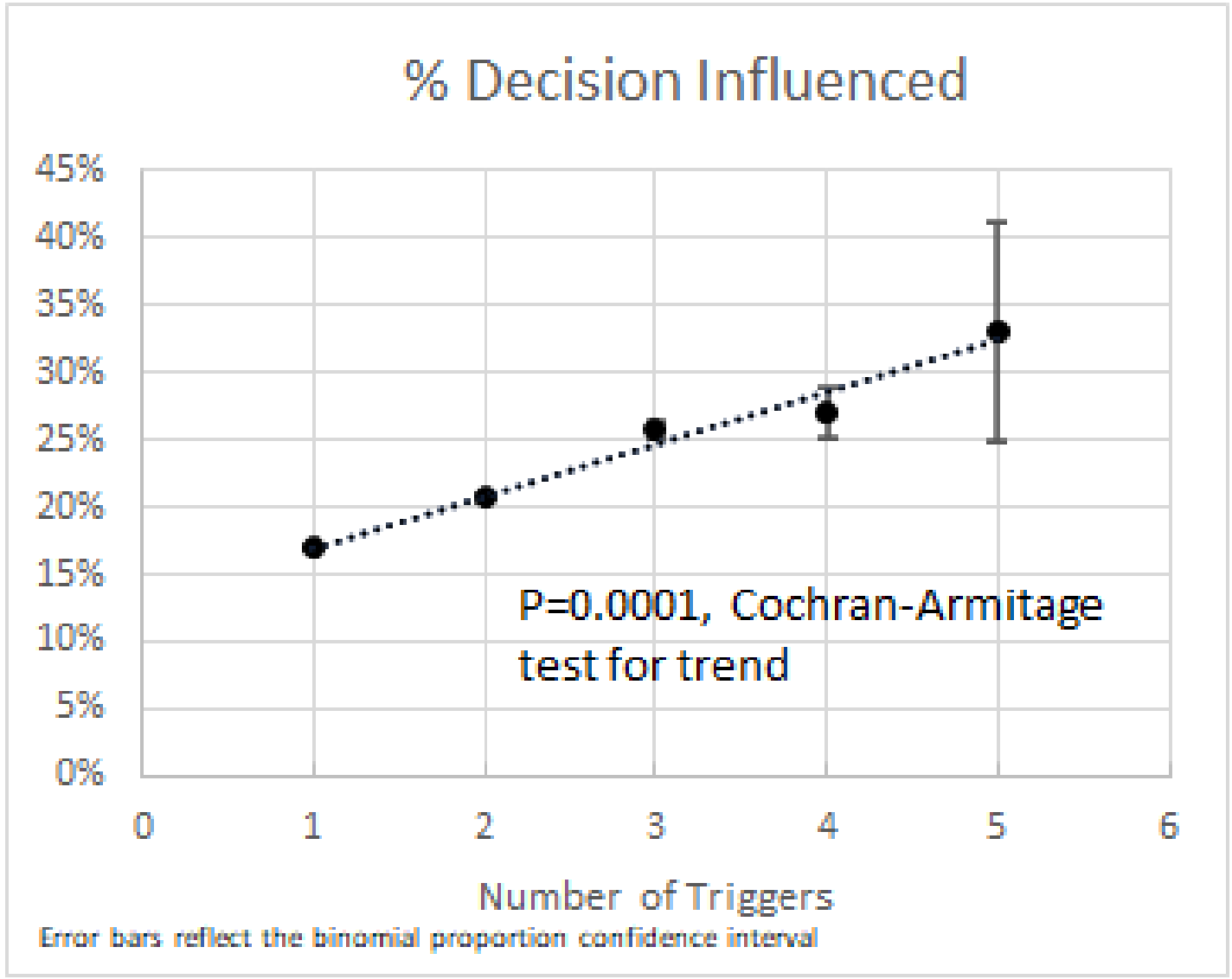
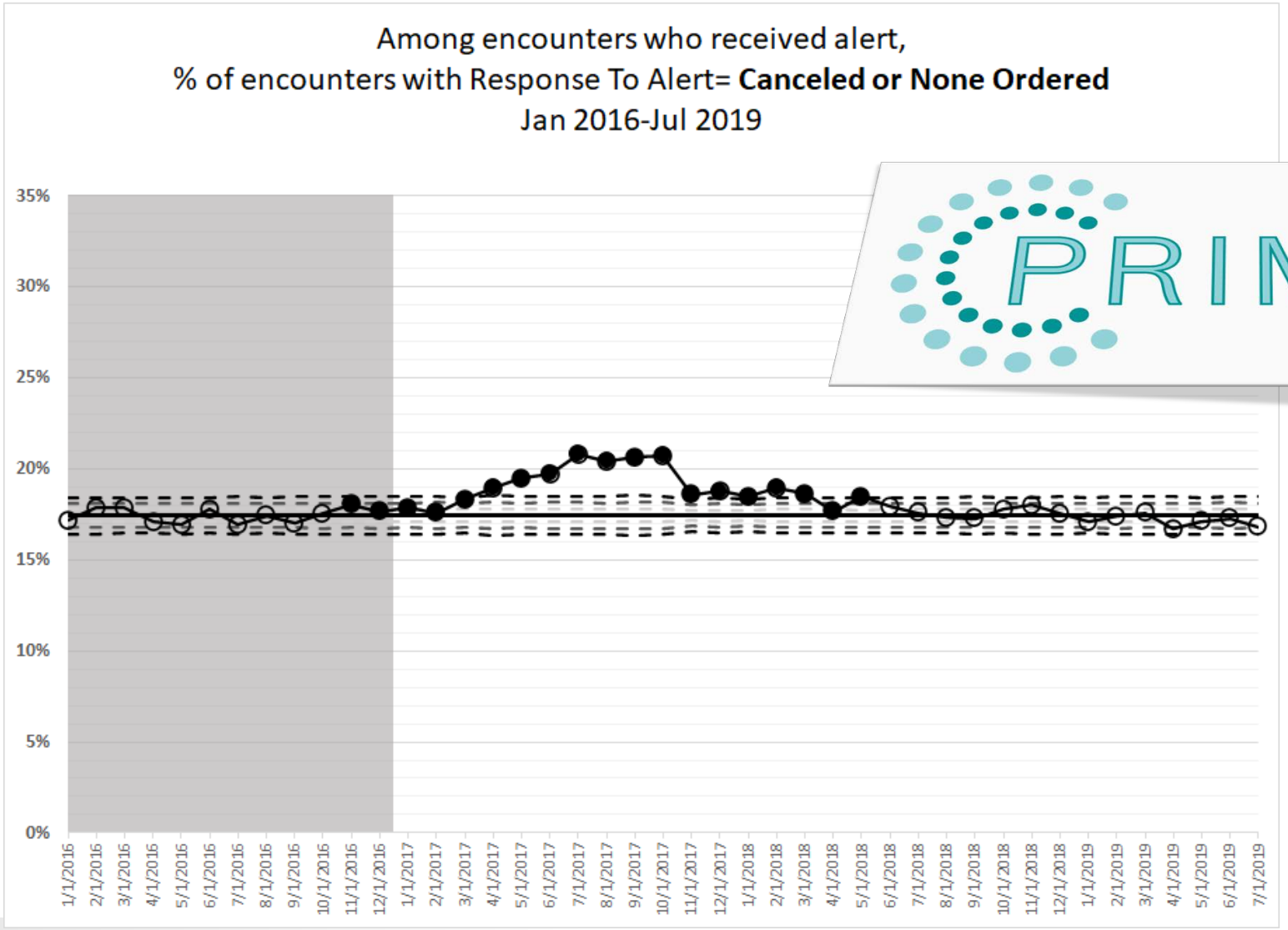
- 3.1% initiated a pain agreement
- 2.3% prescribed naloxone





- As number of risk factors increased, odds of decision influenced increased

“Decision Influenced” Over Time – 3 years



PRIMUM

Filled in symbols represent special cause variation

1 in 5 ecnounters sustained over 42 months

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Results

- Clinical decision support interventions sequentially launched
  - January 2016-July 2019
  - 2,368,118 encounters
- Alert triggered in 23.5% of encounters with prescription
- Prescriber decision influenced in 18.1% of encounters (n=100,301)
- Differences by drug, risk factor, specialty, and facility

What about Satisfaction Scores?

- Higher opioid doses post-op
  - Greater reported pain
  - Decreased satisfaction with pain relief

Chen L, Vo T, Seefeld L, Malarick C, Houghton M, Ahmed S, Zhang Y, Cohen A, Retamozo C, St Hilaire K, Zhang V, Mao J. Lack of correlation between opioid dose adjustment and pain score change in a group of chronic pain patients. J Pain. 2013; 14:384–392.

Opioid Use After Fracture Surgery Correlates With Pain Intensity and Satisfaction With Pain Relief

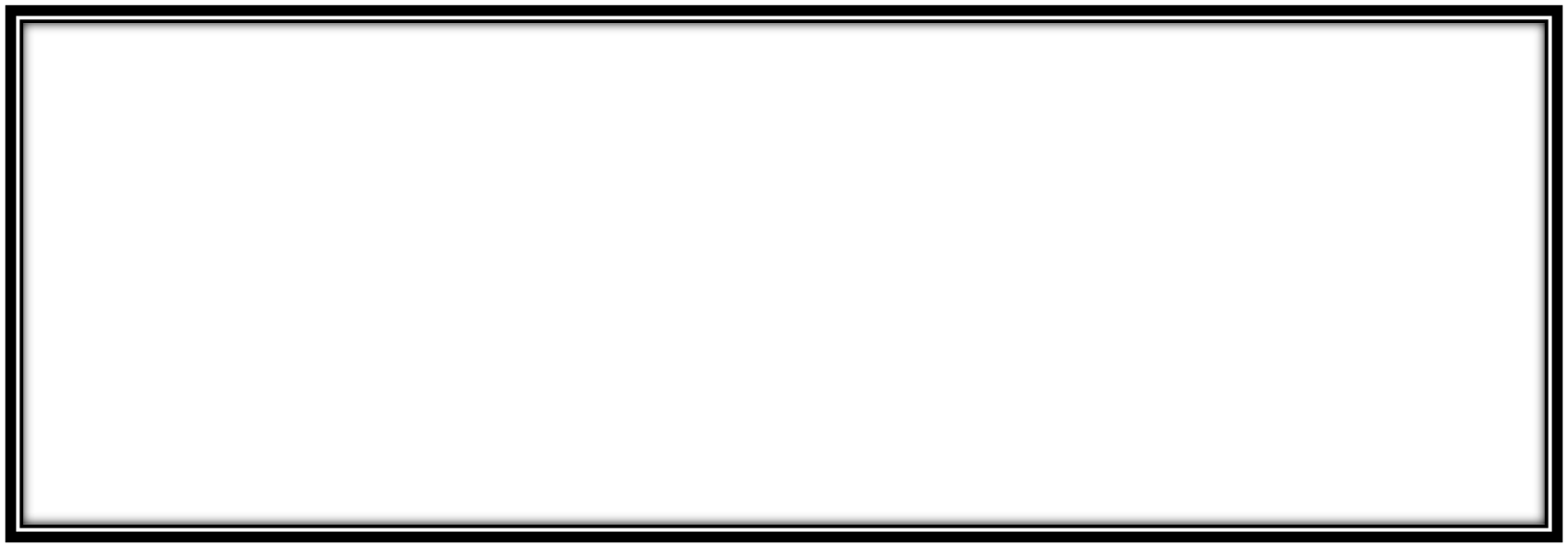
Arjan G. J. Bot MD, PhD, Stijn Bekkers BSc, Paul M. Arnstein PhD, R. Malcolm Smith MD, David Ring MD, PhD

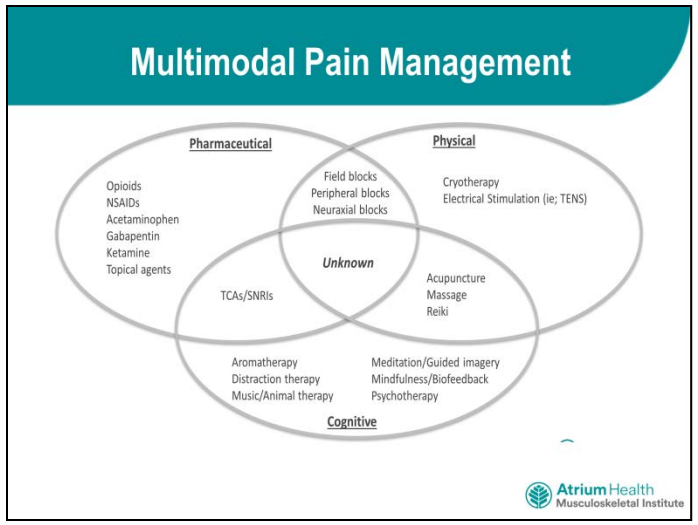
Clin Orthop Relat Res (2014) 472:2542–2549

Trevino CM, deRoon-Cassini T, Brasel K. Does opiate use in traumatically injured individuals worsen pain and psychological outcomes? J Pain. 2013;14:424–430.

PRIMUM Satisfaction

- 7,232 comments
  - 10 (0.1%) expressed frustration for not receiving opioids
- Opioid prescriptions
  - minimal association with Press Ganey scores





IMPROVE: Implementing a Multimodal Path to RecOVEry

Primary and Secondary Prevention of Opioid Overdose in Acute Care
(Mental Health, Substance abuse, OUD)

1 R01 CE003001-01

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Order sets to promote multimodal pain management	• Reduction in opioid exposure and opioid monotherapy
Targeted screening for depression and substance use	• Pathways for intervention on modifiable risk factors
Compiling risk information in workflow view	• Appropriate pain management while optimizing patient safety

“Opioid Sparing Pain Management Orders”

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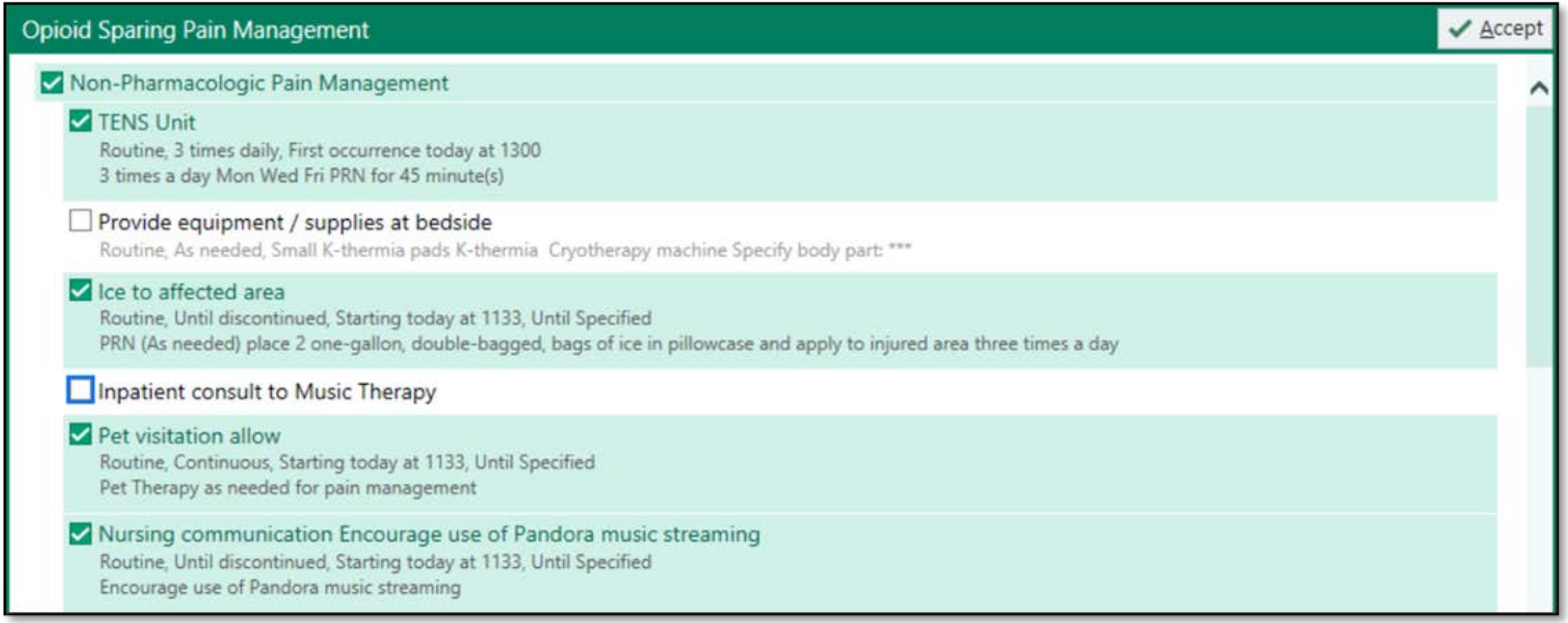
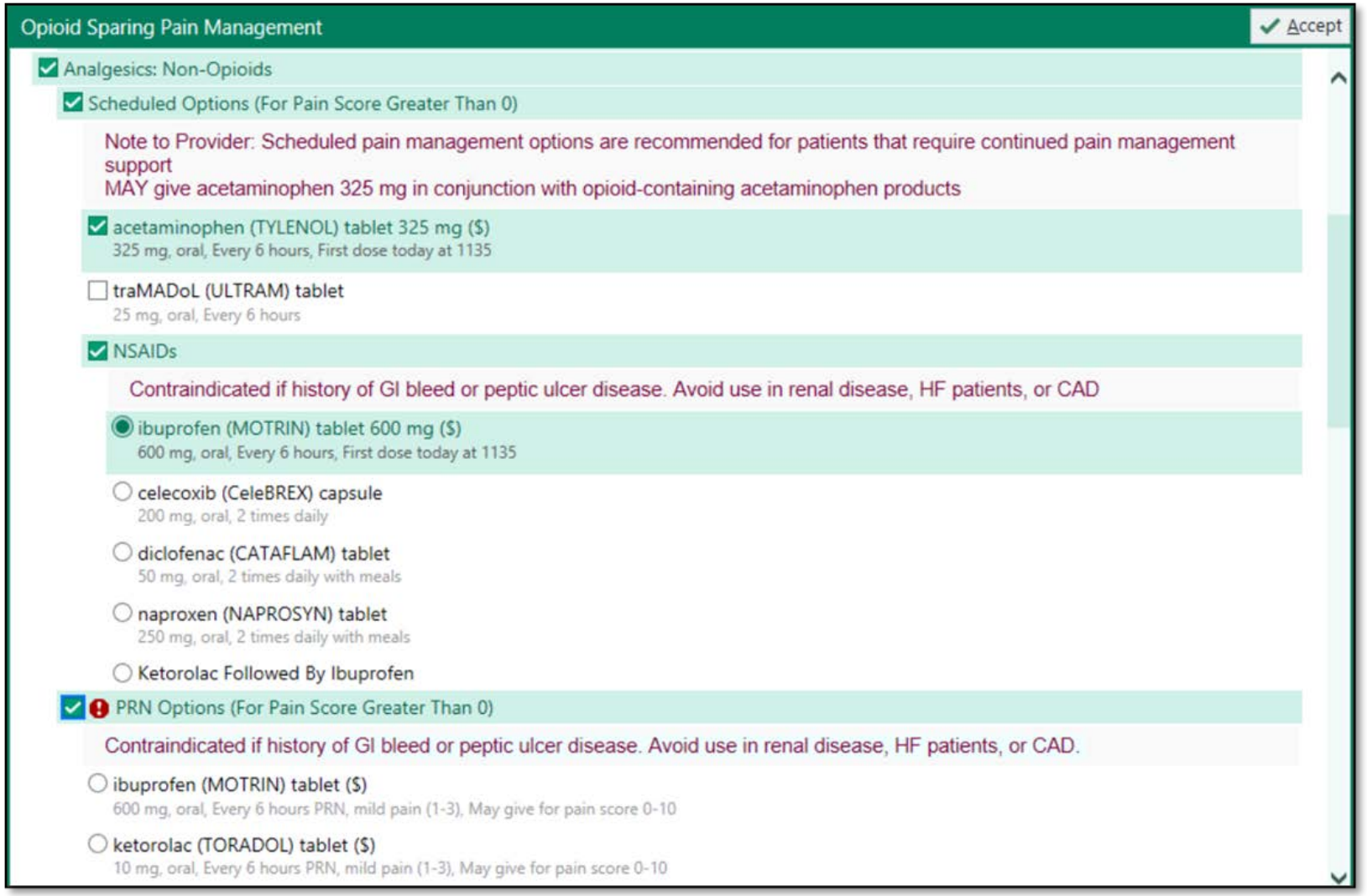
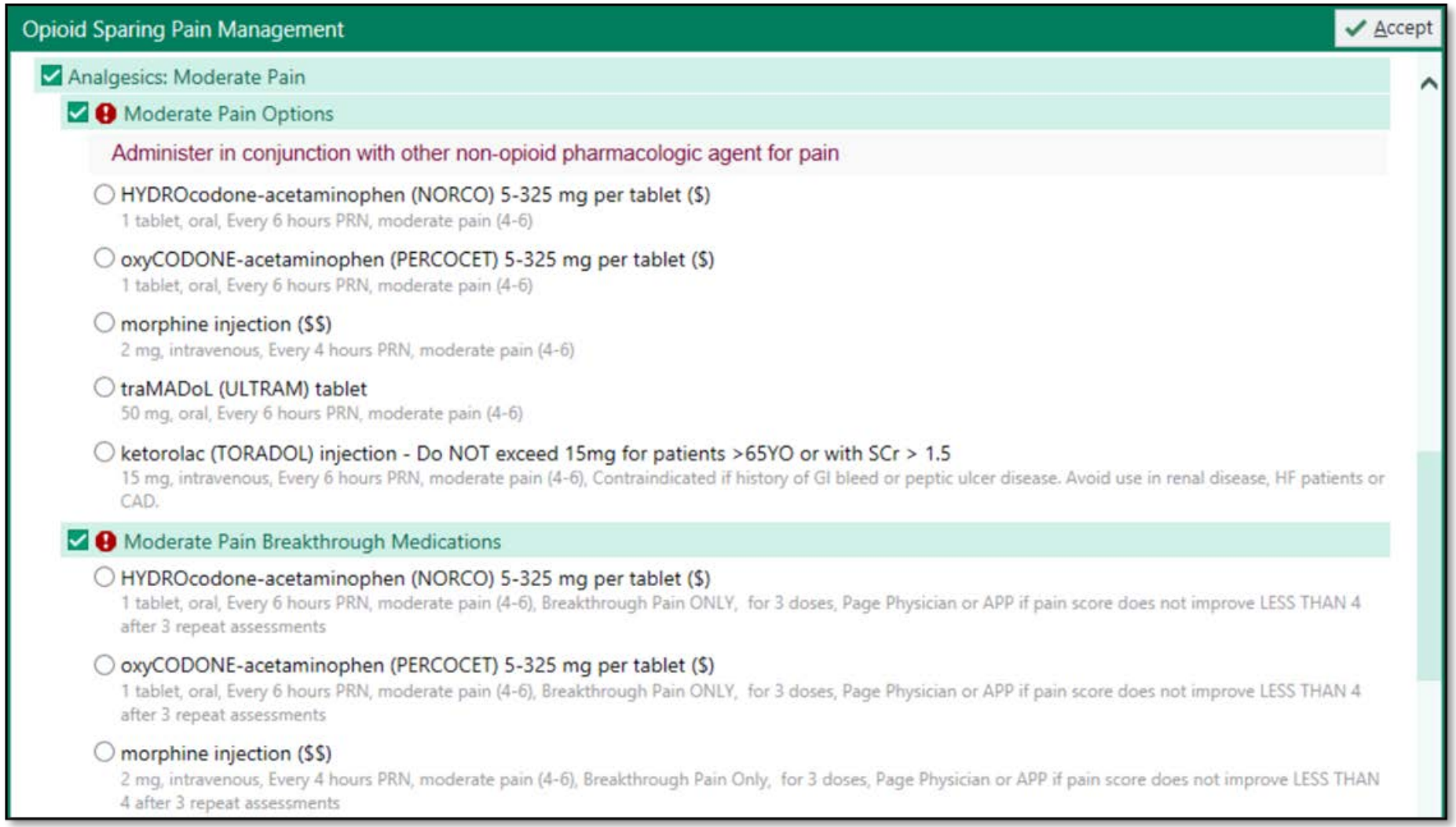
Non-Pharmacologic Pain Management



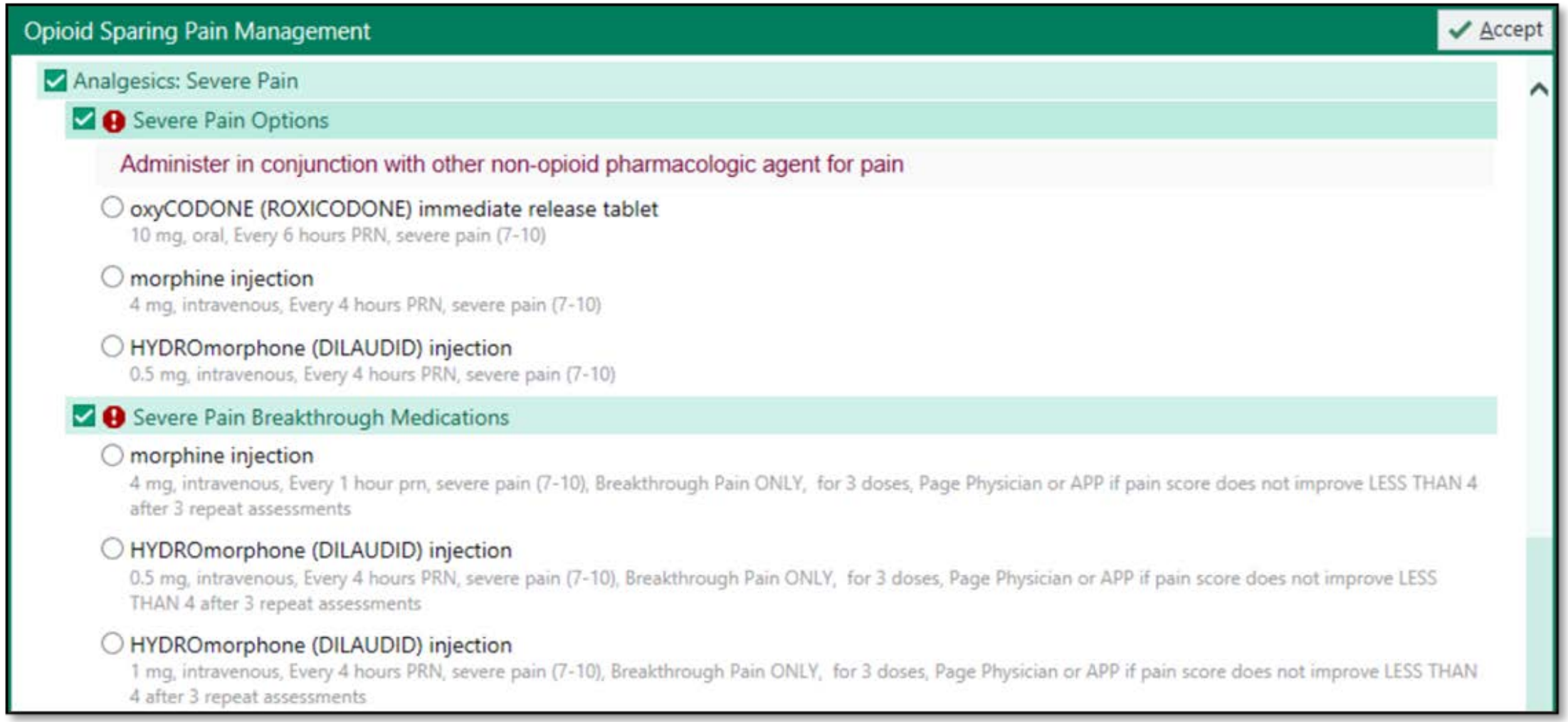
Analgesics: Non-Opioids



Analgesics: Moderate Pain

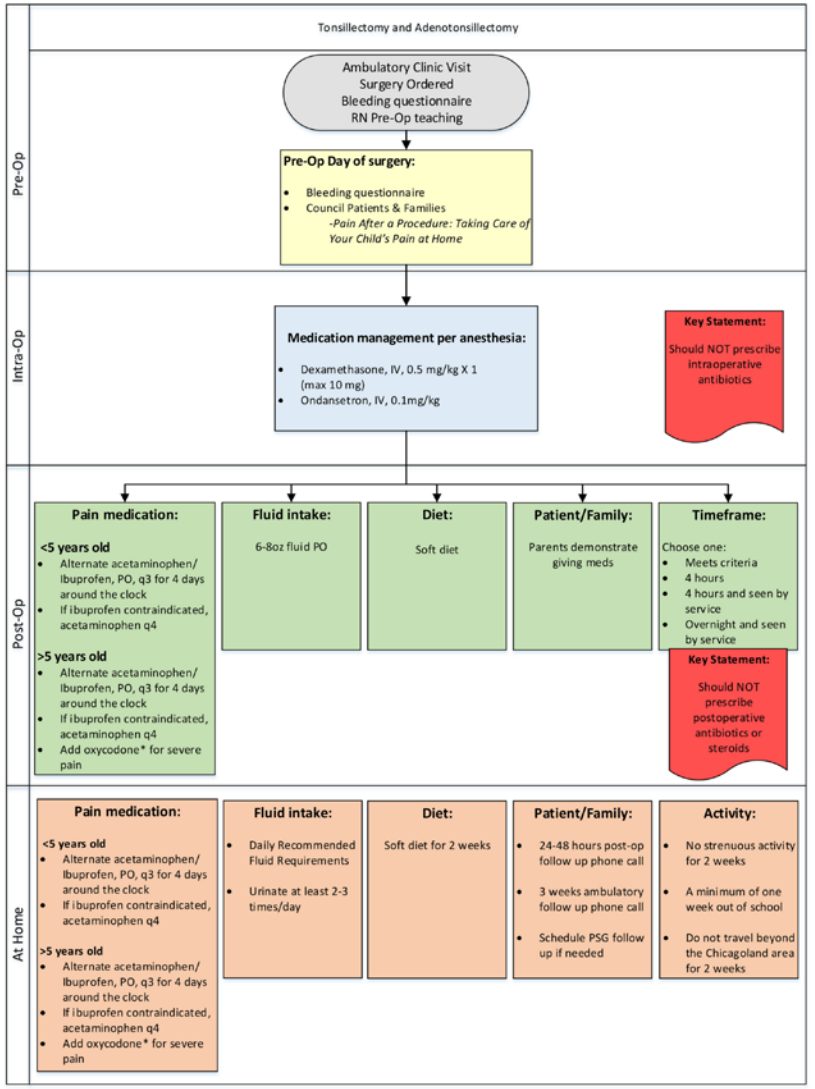


Analgesics: Severe Pain



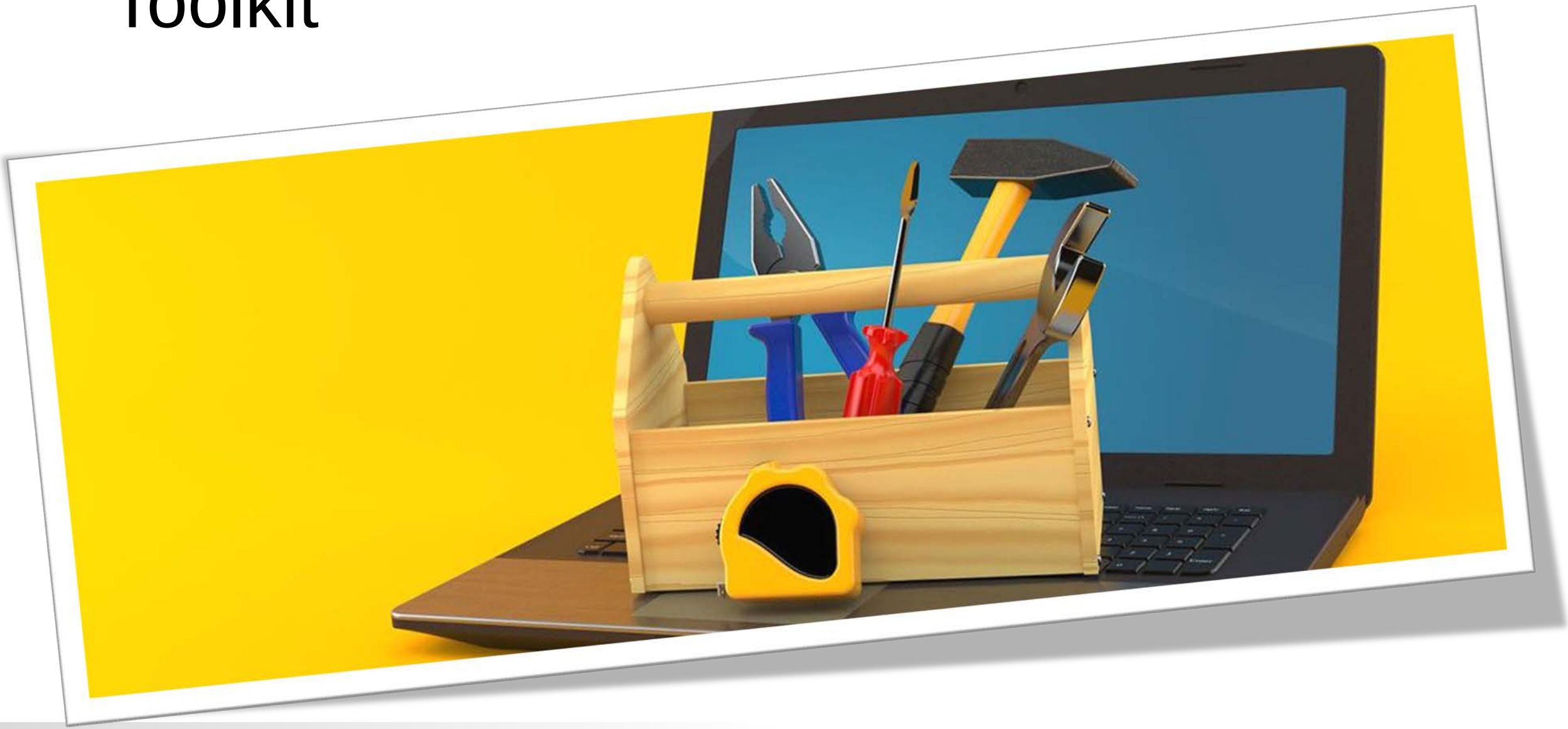
Pediatric order sets

- Reduction opioid prescription rates from 65.9% to 30.9%
- Requests outpatient opioid prescriptions did not increase
- no significant change in returns to the emergency ED for pain management



Standardized Order Set Exhibits Surgeon Adherence to Pain Protocol in Pediatric Adenotonsillectomy. Studer A, Billings K, Thompson D, Ida J, Rastatter J, Patel M, Huetteman P, Hoeman E, Duggan S, Mudahar S, Birmingham P, King M, Lavin J. Laryngoscope. 2021 Jul;131(7):E2337-E2343

Toolkit



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Multimodal Pain Resources

See our website and Supplementary Material in JOT Supplement:

- Patient Education Materials
- (English and Spanish)
  - Compression
  - Cryotherapy
  - Desensitization Therapy
  - Meditation/Guided Imagery
  - Pain Medications
- Pain agreement
- Opioid Tapers
- Multimodal Pain Orderset

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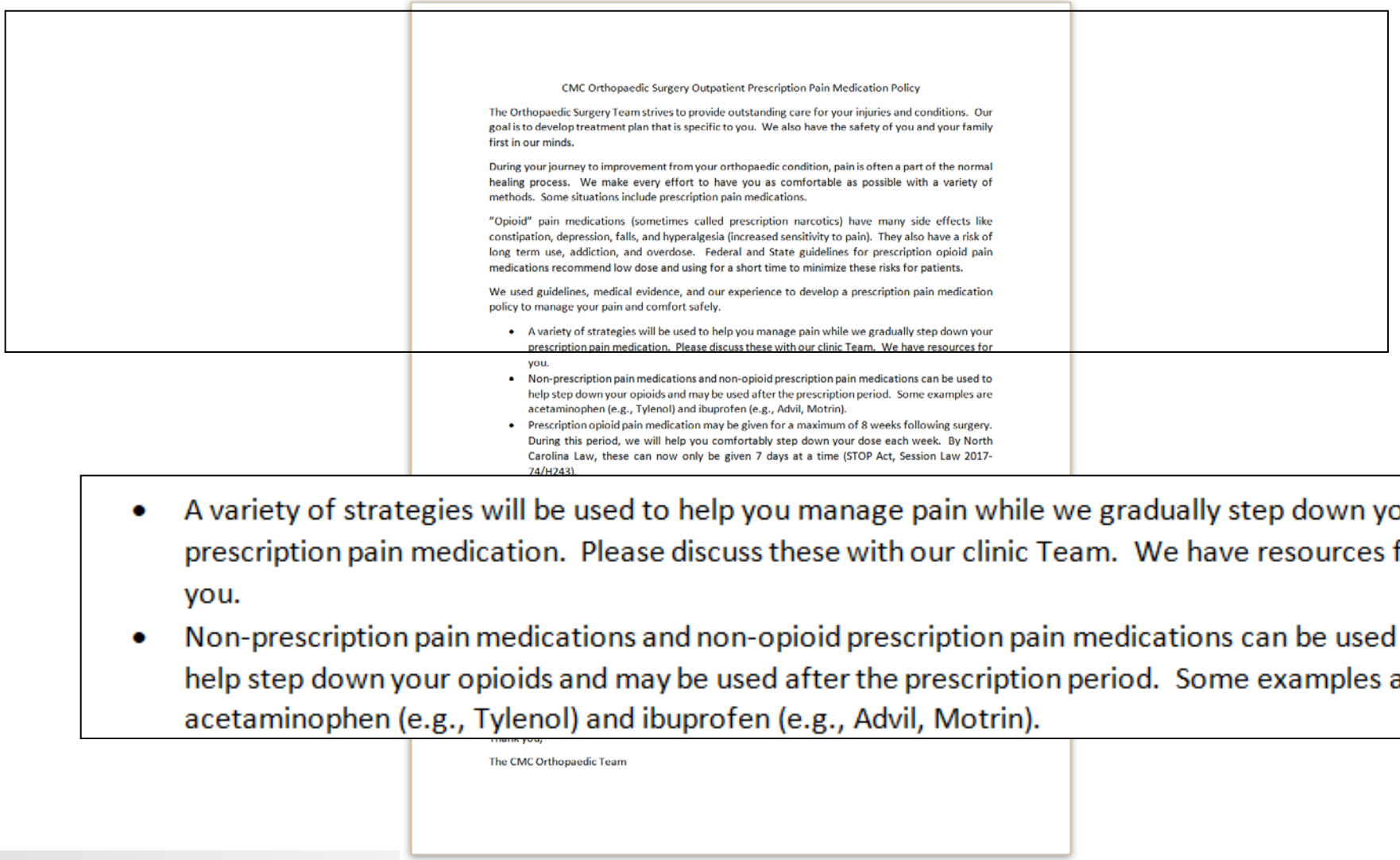
Patient facing material

Acute Pain education/Prescribing Policy



CMC Orthopaedic Surgery Outpatient Prescription Pain Medication Policy

The Orthopaedic Surgery Team strives to provide outstanding care for your injuries and conditions. Our goal is to develop treatment plan that is specific to you. We also have the safety of you and your family first in our minds.

During your journey to improvement from your orthopaedic condition, pain is often a part of the normal healing process. We make every effort to have you as comfortable as possible with a variety of methods. Some situations include prescription pain medications.

"Opioid" pain medications (sometimes called prescription narcotics) have many side effects like constipation, depression, falls, and hyperalgesia (increased sensitivity to pain). They also have a risk of long term use, addiction, and overdose. Federal and State guidelines for prescription opioid pain medications recommend low dose and using for a short time to minimize these risks for patients.

We used guidelines, medical evidence, and our experience to develop a prescription pain medication policy to manage your pain and comfort safely.

- A variety of strategies will be used to help you manage pain while we gradually step down your prescription pain medication. Please discuss these with our clinic Team. We have resources for you.
- Non-prescription pain medications and non-opioid prescription pain medications can be used to help step down your opioids and may be used after the prescription period. Some examples are acetaminophen (e.g., Tylenol) and ibuprofen (e.g., Advil, Motrin).
- Prescription opioid pain medication may be given for a maximum of 8 weeks following surgery. During this period, we will help you comfortably step down your dose each week. By North Carolina Law, these can now only be given 7 days at a time (STOP Act, Session Law 2017-74/H243).

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Thank you,

The CMC Orthopaedic Team

New Patient Education

- Created by MSKI Quality Advisory Committee
- Ask your practice manager about ordering
- Available in English and Spanish
- Branding for each region
- Approved by health literacy

Pain Management: Myths and Facts

Myth	Fact	More Information
Medicines are the best way to lower my pain. 	You can use many ways to help control your pain. These are medicines and tools such as cold therapy, meditation, music therapy and aromatherapy.	Scan below to learn more 
Opioid medicines are the only medicines that can help my pain. Examples of opioids are Percocet®, Oxycodone and Hydrocodone. 	There are other medicines that can lower pain. These are acetaminophen (Tylenol®), anti-inflammatories (ibuprofen, Motrin®, naproxen, and others) and gabapentin. These medicines help to lower the bad side effects of opioids.	
Acetaminophen (Tylenol®) and ibuprofen (Advil®, Motrin®) are bad for my liver or kidneys. I should not take them. 	It is not safe to take too much of any medicine. Unless a doctor told you not to take them, it is safe to take them. You should take them how your doctor tells you to.	
Ice or cold therapy makes my pain worse. 	The cold may cause discomfort at first. It will help with swelling and numbs the nerves. This will help with your pain over time. If you do not like using ice packs, there are other types of cold therapy. You can buy or rent these.	Scan below to learn more 

Approved by Atrium Health Medical Surgical Health Education Committee, March 2021

Myth	Fact	More Information
Meditation is not for me. 	Meditation might seem hard if you do not know how to do it. We can give you links to guided meditations that you listen to. These can help distract you from your pain. They can also help you sleep and lower your stress.	Scan below to learn more 
Ice and cold therapy are the only way to reduce my swelling. 	Compression (pressure) is another way to help reduce swelling. This will help as you become more active while you heal. Compression socks will reduce swelling. They will also help with pain.	Scan below to learn more 
I should not touch my skin around the area of my injury because it is sensitive. 	There are exercises that may make your injured area less tender. These exercises expose your skin to different textures, pressures and temperatures in a safe setting. These exercises are easy to do at home. You may have most of the supplies already.	Scan below to learn more 
Using a TENS unit will cause pain by shocking me. 	TENS units send small electrical signals through sticky pads attached to your skin. You can control how strong the signal is. You can choose a level that is comfortable for you. Ask your doctor if this is right for you.	Scan below to learn more 

Approved by Atrium Health Medical Surgical Health Education Committee, March 2021

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New Patient Education

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- Ask your practice manager about ordering
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Approved by Atrium Health Medical Surgical Health Education Committee, March 2021

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New Patient E

- Created by MSKI Quality Advisory Committee
- Ask your practice manager about ordering
- Available in English and Spanish
- Branding for each region

Atrium Health Musculoskeletal Institute

Cryotherapy (cold therapy)

Cold therapy uses a device to keep the area of your body with pain cold longer. This helps with pain after an injury or surgery. It helps with swelling and numbs the nerves. Using a homemade ice pack is fine, but it can be messy. It can also be hard to apply to some parts of the body.

Below are other types of cold therapy. You can buy or rent these to use at home. You can get them at online websites like Amazon. These can also be ordered through a home health agency or a medical supply company. Our office will be happy to help you with this if needed.

Where can I buy these?

- Chattanooga Colpac Wraps®
  - Comes in many shapes and sizes to use on arms, legs, neck, or back
- DonJoy DuraKold Therapy®
  - Wraps for the shoulder, knee, wrist, foot, ankle, neck, or back
  - www.djoglobal.com
- O2 Compression/Cold Supports®
  - Use on the knee, shoulder, ankle, wrist, or back
- Polar Ice® products
  - Cooling machines and wraps used for many parts of the body
  - www.polarproducts.com
- My Cold Therapy® products
  - Cooling machines and wraps used for many parts of the body
  - www.mycoldtherapy.com

Approved by Atrium Health Medical Surgical Health Education Committee, May 2019.

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ATENCIÓN: si habla español, tiene a su disposición servicios gratuitos de asistencia lingüística. Llame al 1-800-821-1535.

CHÚ Ý: Nếu bạn nói Tiếng Việt, có các dịch vụ hỗ trợ ngôn ngữ miễn phí dành cho bạn. Gọi số 1-800-821-1535.

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by Atrium Health Medical Surgical Health Education Committee, March 2021

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New Patient Education

Acute Pain Management

Learn to Manage Your Acute Pain

Acute pain usually:

- Starts quickly
- Is caused by something specific like surgery or an injury
- Does not last longer than a few months

What's the Plan?

STEP 1
Use over-the-counter pain relievers and other pain relief methods **FIRST.**

Examples:
- Acetaminophen (Tylenol®)
- Ibuprofen (Advil or Motrin®)
  - → Stronger doses of these medicines are prescriptions
  - → See below for important pain relief methods and tools

STEP 2
If you still have pain, continue using over-the-counter pain relievers and add your opioid meds **AS PRESCRIBED.**

Examples:
- Hydrocodone (Norco, Vicodin or Lortab)
- Oxycodone-acetaminophen (Percocet®)
- Tramadol (Ultram®)

STEP 3
LOWER your use of pain meds over time.

Timeline:
- Re-check your need for opioids every 5 to 7 days
- Stop opioids as soon as possible

Treating Pain

There are many ways to treat pain without the use of opioids.

- Self-care: Things you can do to lower pain on your own may include daily body movement, eating healthy or doing activities you enjoy.
- Key tools: Talk to your care team about how these could help you.
  - Mindfulness or meditation therapy
  - Cold therapy
  - TENS unit: a device that treats nerve pain
  - Music therapy
  - Aromatherapy
  - Pet Therapy
- Non-opioid medicines: Talk to your care team about these options.

Acute Pain Management

How a Pain Plan Helps You

- Get back to movement, exercise, activities, and relationships
- Improve happiness, satisfaction, and overall quality of life
- Understand your pain and create best plan for you
- Address other medical issues related to pain

Why Do We Limit the Use of Opioids?

Opioids can cause many side effects or problems:

- Constipation (cannot poop)
- Depression (feeling down or sad for long periods)
- Higher sensitivity to pain
- Long-term use, abuse, and overdose

What To Do if You Feel Like Your Meds Are Not Working Well

- Contact the doctor who prescribed your pain meds. You can call or send a message through your MyChart.
- Talk to your care team about options that will meet your specific needs.

We work together to create the best pain management plan for you. Our goal is to stop opioid use in 7 days or less. Please work with your care team for ongoing pain issues.

Approved by Atrium Health Medical Surgical Health Education Committee, January 2022.

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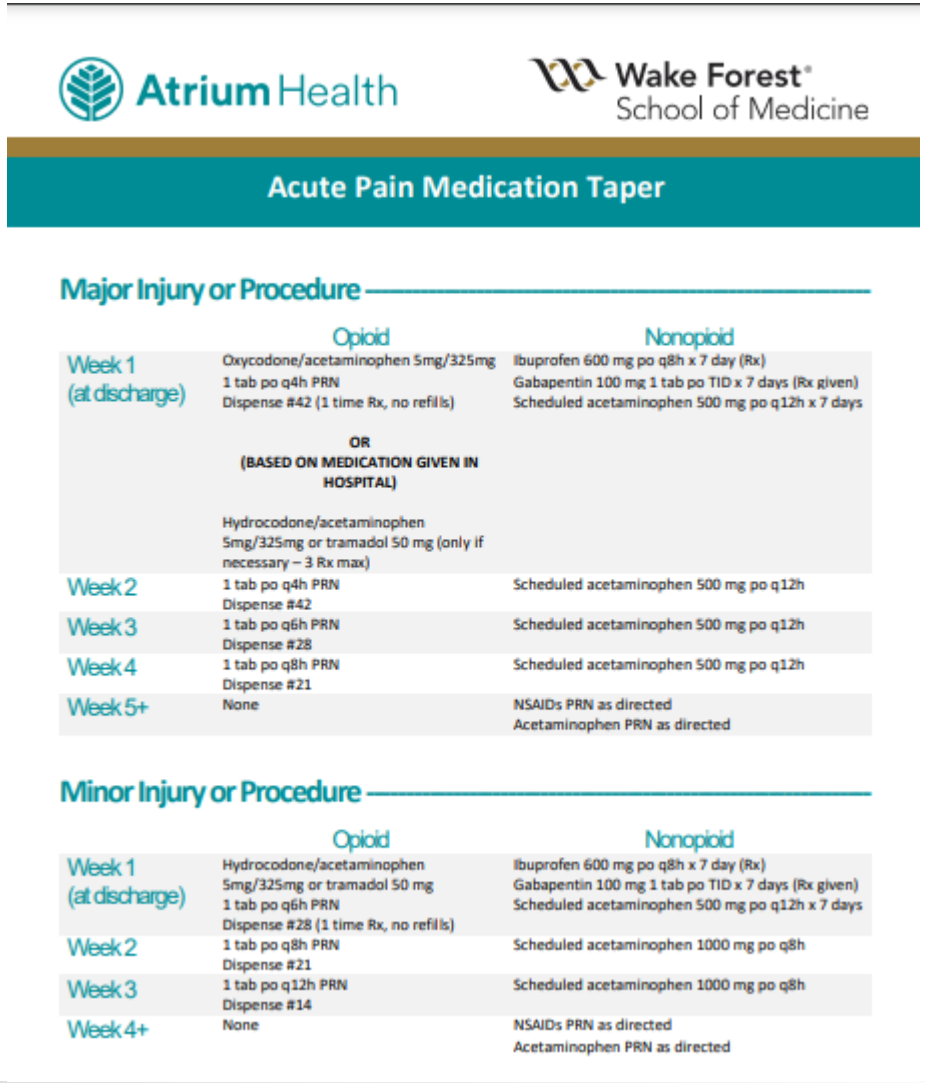
New Tapering Aid



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Acute Pain Medication Taper

Major Injury or Procedure

	Opioid	Nonopioid
Week 1 (at discharge)	Oxycodone/acetaminophen 5mg/325mg 1 tab po q4h PRN Dispense #42 (1 time Rx, no refills) **OR** **(BASED ON MEDICATION GIVEN IN HOSPITAL)** Hydrocodone/acetaminophen 5mg/325mg or tramadol 50 mg (only if necessary – 3 Rx max)	Ibuprofen 600 mg po q8h x 7 day (Rx) Gabapentin 100 mg 1 tab po TID x 7 days (Rx given) Scheduled acetaminophen 500 mg po q12h x 7 days
Week 2	1 tab po q4h PRN Dispense #42	Scheduled acetaminophen 500 mg po q12h
Week 3	1 tab po q6h PRN Dispense #28	Scheduled acetaminophen 500 mg po q12h
Week 4	1 tab po q8h PRN Dispense #21	Scheduled acetaminophen 500 mg po q12h
Week 5+	None	NSAIDs PRN as directed Acetaminophen PRN as directed

Minor Injury or Procedure

	Opioid	Nonopioid
Week 1 (at discharge)	Hydrocodone/acetaminophen 5mg/325mg or tramadol 50 mg 1 tab po q6h PRN Dispense #28 (1 time Rx, no refills)	Ibuprofen 600 mg po q8h x 7 day (Rx) Gabapentin 100 mg 1 tab po TID x 7 days (Rx given) Scheduled acetaminophen 500 mg po q12h x 7 days
Week 2	1 tab po q8h PRN Dispense #21	Scheduled acetaminophen 1000 mg po q8h
Week 3	1 tab po q12h PRN Dispense #14	Scheduled acetaminophen 1000 mg po q8h
Week 4+	None	NSAIDs PRN as directed Acetaminophen PRN as directed

Nonoperative Injury

	Opioid	Nonopioid
Minor injury	Tramadol 50 mg (only if necessary -- 2 Rx Max) 1 tab po q6h PRN Dispense #20, then #10	NSAIDs PRN as directed Scheduled acetaminophen 1000 mg po q8h, then PRN as directed
Major injury	Hydrocodone/acetaminophen 5mg/325mg or tramadol 50mg (only if necessary – 2 Rx Max) 1 tab po q6h PRN Dispense #20, then #10	NSAIDS PRN as directed Scheduled acetaminophen 1000 mg po q12h, then PRN as directed

- Based on OTA Clinical Practice Guideline
- Not patient-facing
- Sent to practice managers to print for clinicians
- Stay tuned for pre-op opioid taper this year!

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Balance


Thank you!
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