



# Break Free from the Cycle: Steps to Implementing an Opioid-Sparing Emergency Department

# Disclosures

All planners, presenters, reviewers, and ASHP staff of this session report no financial relationships relevant to this activity.



# Opium Wars Episode IV: A New Hope

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# Objectives

- Interpret and apply current evidence regarding acute pain management

# Case 1

44 year old male, **left femur fracture**

**Refusing opioids** – former heroin user (10 years sober)

What can we do for his pain?

## Case 2

17 year old female, peritonsillar abscess

Requiring needle aspiration

“Deathly afraid of needles”

# ~~Pain: The Fifth Vital Sign~~

# Opioid prescribing among specialties, 2015

Specialty	Opioid Rx - n, millions (%)	Opioid Rx/Total Rx (%)
Family medicine	52.5 (18.2)	5.6
Internal medicine	43.6 (15.1)	4.8
Non-physician prescriber	32.2 (11.2)	7.2
General practice	32.2 (11.2)	7.5
Surgery	28.3 (9.8)	36.5
Dentistry	18.5 (6.4)	29.0
Pain medicine	14.5 (5.0)	48.6
Emergency medicine	12.5 (4.3)	20.7
Physical med and rehab	9.3 (3.2)	35.5
All others	45.3 (15.7)	3.6



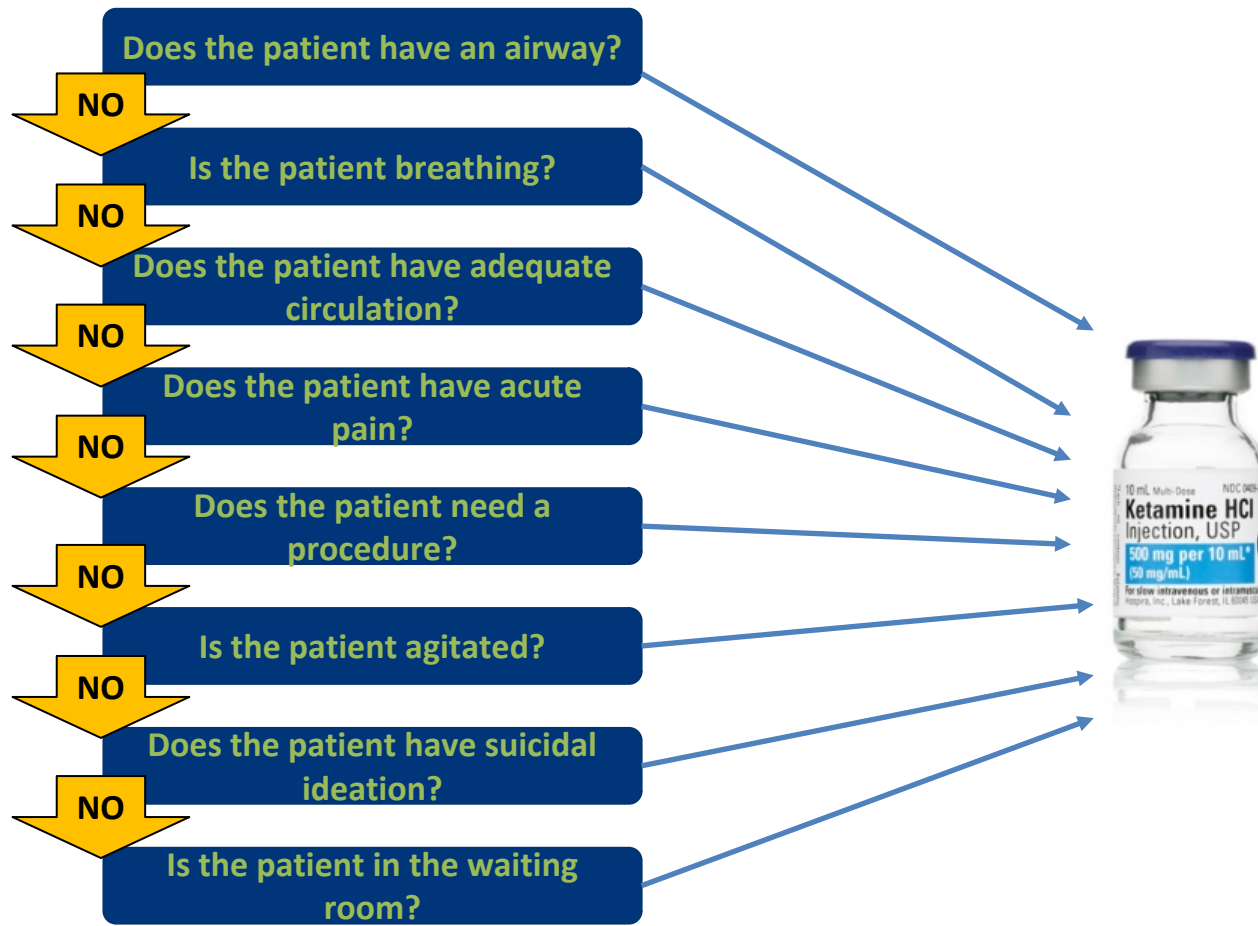
# Treat 'em and street 'em

- Top ED medications
  - 0.9% sodium chloride
  - Acetaminophen
  - Ondansetron
  - ***Morphine***
  - Aspirin
- Top ED discharge Rx
  - Acetaminophen
  - Ondansetron
  - ***APAP/oxycodone***
  - ***Tramadol***
  - Cephalexin

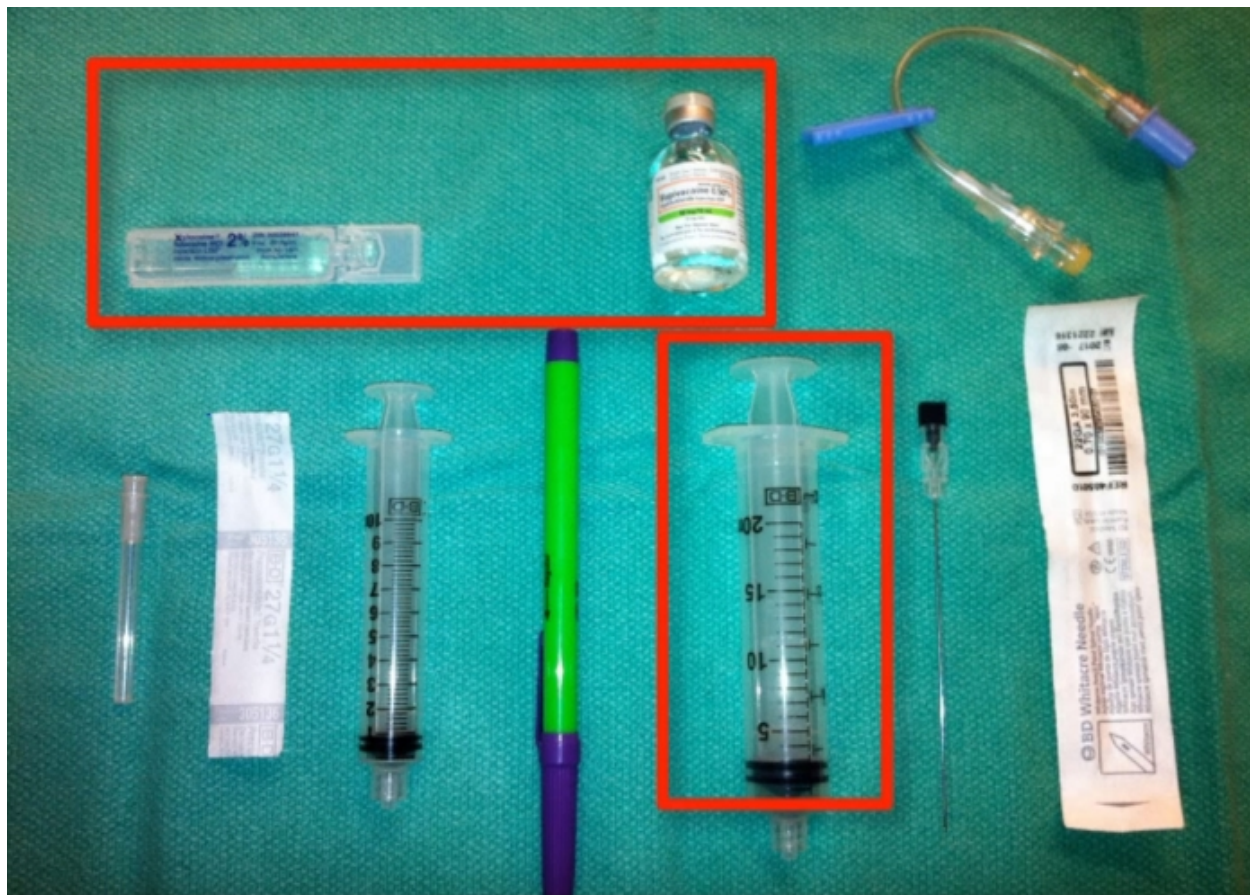
# ALTO<sup>SM</sup> Program

<b>Extremity fracture or dislocation</b>	<ul style="list-style-type: none"><li>• Nitrous oxide + intranasal ketamine</li><li>• Ultrasound-guided regional anesthesia</li></ul>
<b>Musculoskeletal pain</b>	<ul style="list-style-type: none"><li>• Ibuprofen + acetaminophen</li><li>• Lidocaine or diclofenac patches</li><li>• Cyclobenzaprine or diazepam</li><li>• Trigger-point or other soft tissue injection</li></ul>

St. Joseph's Regional Medical Center in Paterson, New Jersey  
Alternatives to Opiates (ALTO)

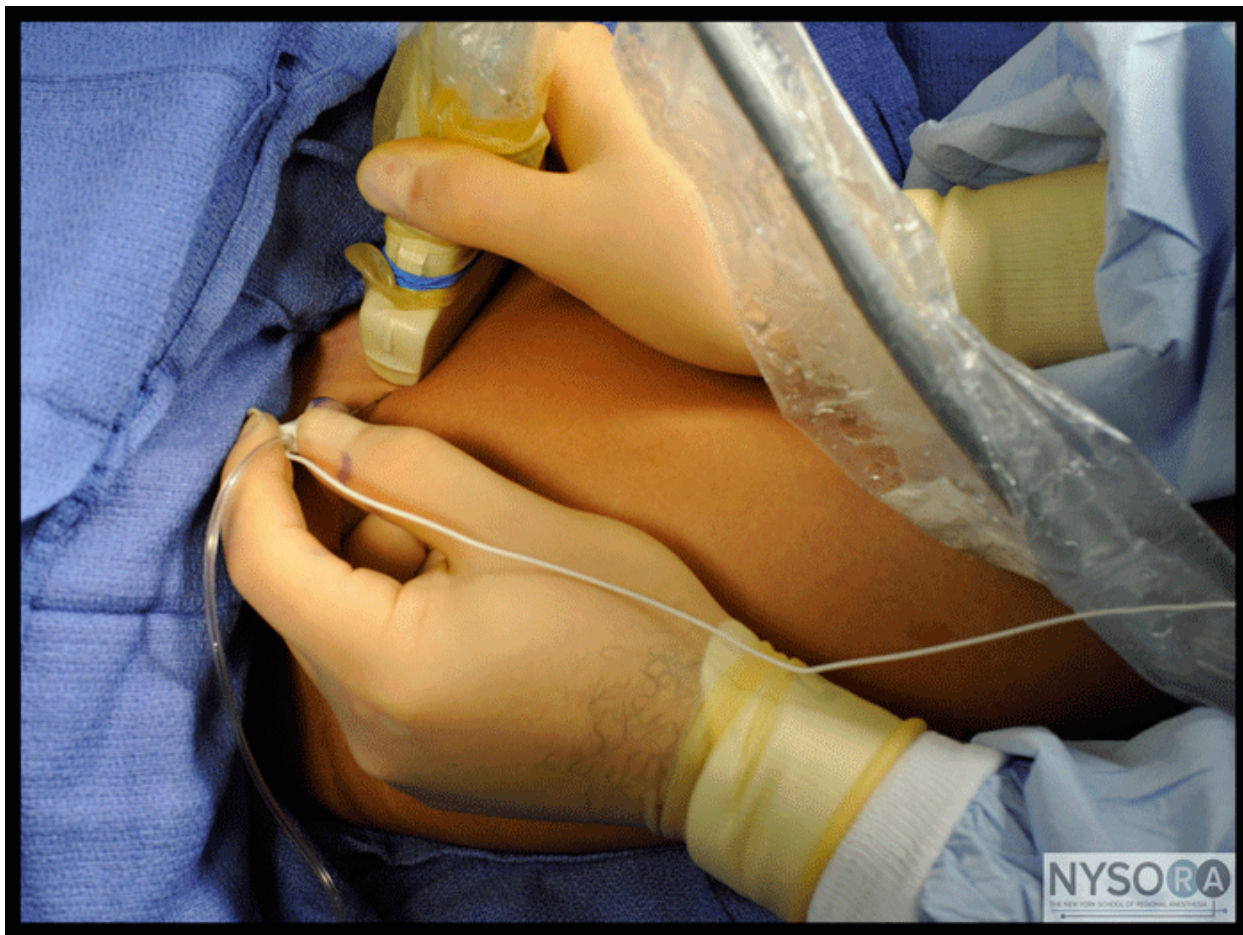


# Hocus POCUS



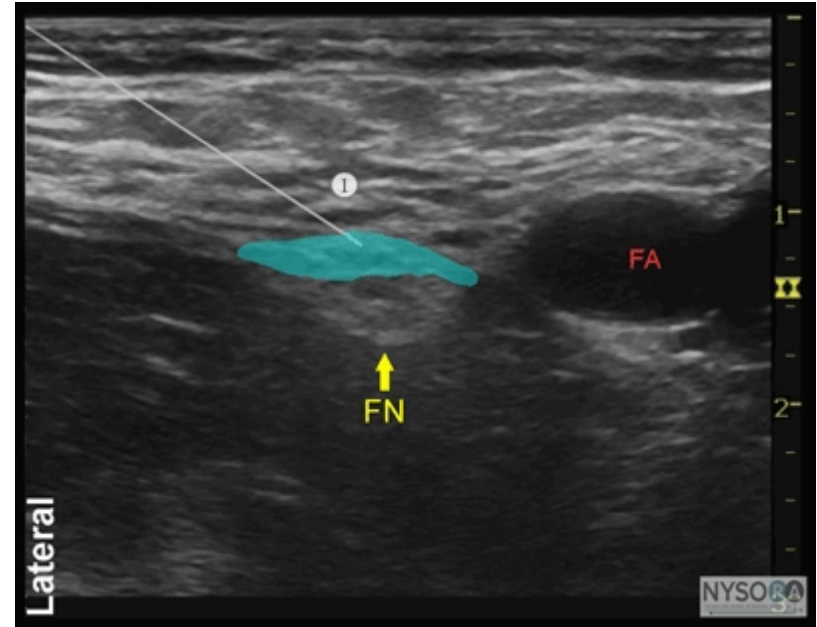
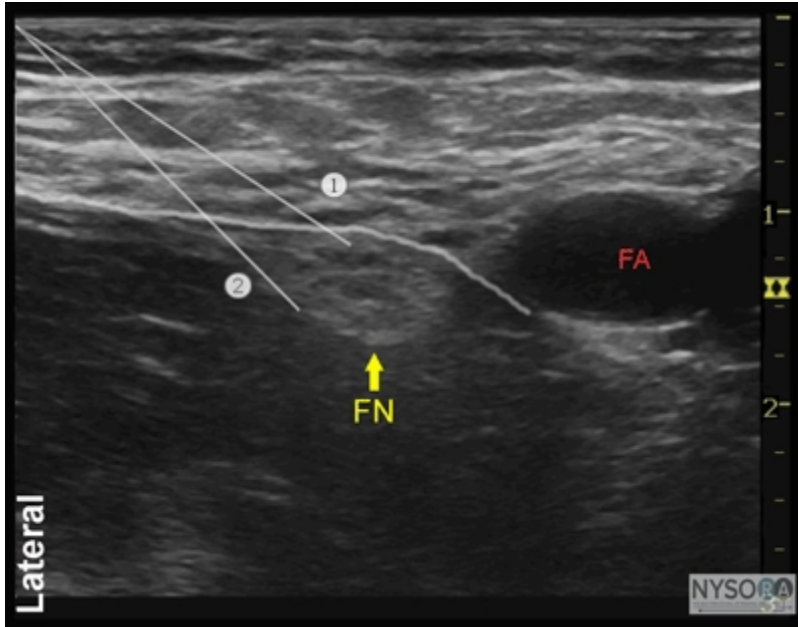
University of Calgary Emergency Medicine. Ultrasound guided Femoral Nerve Block.

Available at <https://youtu.be/G3BVx8Tynnw>





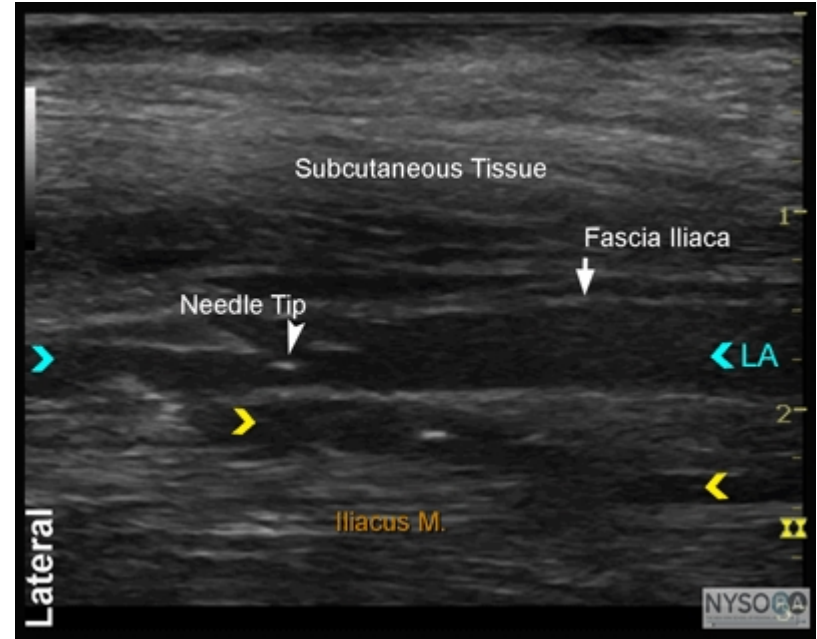
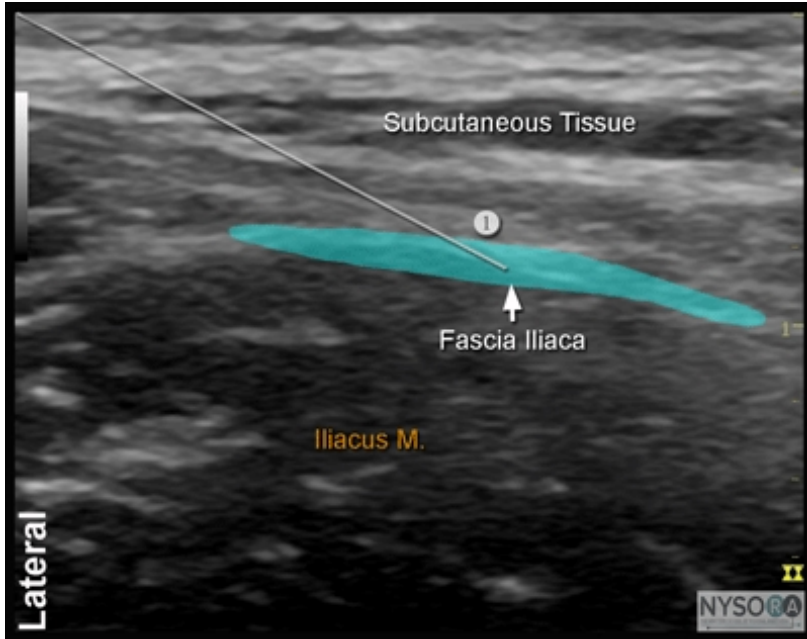
# Femoral Nerve Block - FNB



**Ultrasound-Guided Femoral Nerve Block.**

<https://www.nysora.com/ultrasound-guided-femoral-nerve-block>

# Fascia Iliaca Block - FINB



**Ultrasound-Guided Fascia Iliaca Block.**

<https://www.nysora.com/ultrasound-guided-fascia-iliaca-block>



# New Kid On The (regional) Block

- Indications (too many to list)
- Contraindications
  - Allergies to anesthetic agent
  - Infection at the site
  - Therapeutic anticoagulation (relative)
  - Previous femoral bypass (relative)

# Systematic review

9 RCTs, N= 547

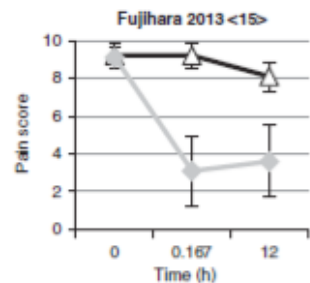
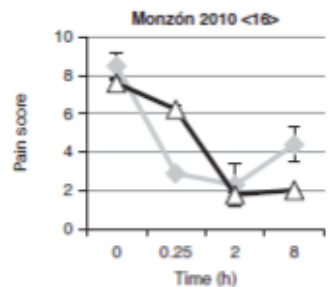
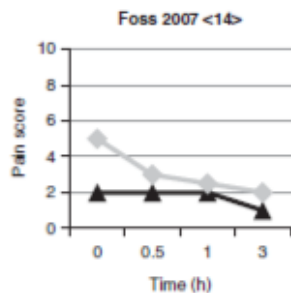
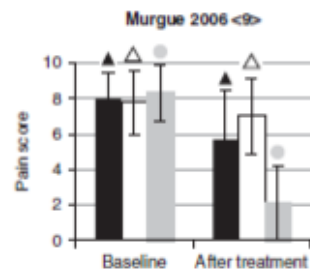
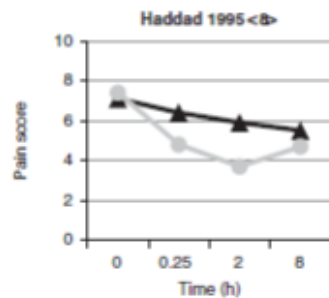
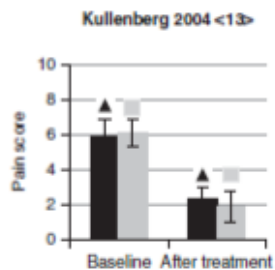
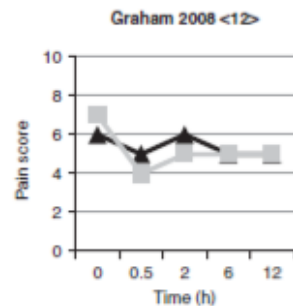
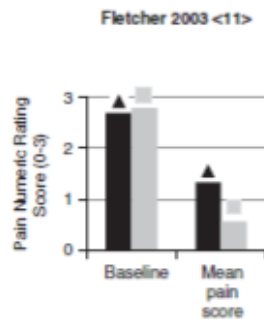
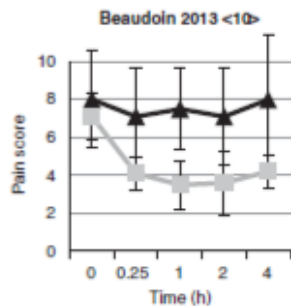
Emergency physician in 5 studies

Ultrasound guidance = 1

Bupivacaine / Mepivacaine( $\pm$ epi) / Ropivacaine

Primary outcome - reduction in pain

▲ = Parenteral opiates    △ = NSAID and/or acetaminophen  
 ■ = 3-in-1 FNB    ● = FNB    ◆ = FICB



# Ultrasound Guided FNB

- Blinded, RCT (N=33)
- Femoral neck or intertrochanteric fractures

**FNB- 25 mL of 0.5% bupivacaine plus morphine**

**SC- Morphine alone plus sham nerve block**

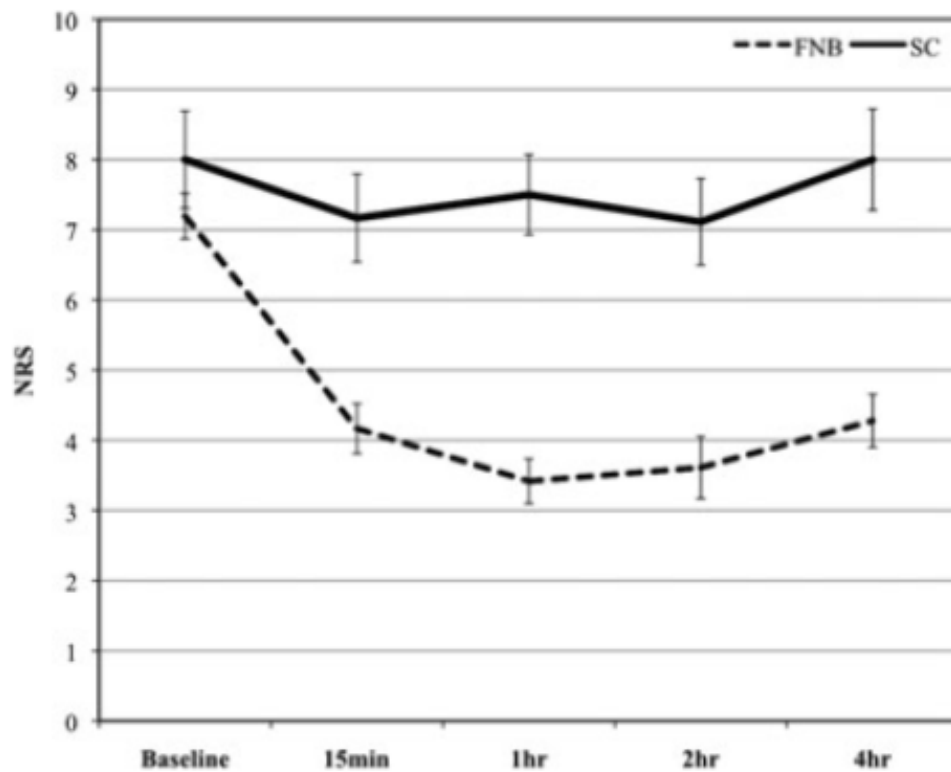
Outcome	FNB Group	SC Group	p-value
Pain scores			
NRS			
Baseline	8.3 (5 to 10)	8.0 (5 to 10)	0.300
4 hours	4.0 (0 to 10)	8.0 (6 to 10)	<0.001*
SPID	11.0 (-4.0 to 44.0)	4.0 (-7.0 to 11)	0.001*
%SPID (%)	36.9 (-25 to 100)	13.4 (-25 to 27.5)	0.001*
33%SPID, <i>n</i> (%)	12 (67)	0 (0)	<0.001*
Parenteral analgesia			
Preprocedure morphine (mg)	3.0 (0.0 to 20.0)	5.5 (0.0 to 16.0)	0.489
Rescue morphine (mg)	0.0 (0.0 to 6.0)	5.0 (0.0 to 21.0)	0.028*
Adverse events			
Hypotension, <i>n</i> (%)	0 (0)	3 (17)	0.229
Respiratory depression, <i>n</i> (%)	4 (22)	9 (50)	0.164
Nausea/vomiting, <i>n</i> (%)	5 (28)	5 (28)	1.000

Unless otherwise specified, data are presented as median (range).

FNB = femoral nerve block; NRS = numeric rating scale; SC = standard care; SPID = summed pain-intensity difference.

Hypotension defined as systolic BP < 100 mm Hg at any time during study period; respiratory depression defined as hypoxia (room air O<sub>2</sub> sat < 92% or need for supplemental O<sub>2</sub> any time during study period) or hypopnea (respiratory rate < 10 breaths/min)

\*Statistically significant ( $p < 0.05$ ).



PMID: 23758305

## LAST but not least

- LAST – Have lipid in the department
  - Blunt tip needles / epinephrine mixtures
- Neuropathy/nerve damage
- Fall risk

## Bottom Line

- At least as effective as opioids
- Decrease opioid use/adverse effects?
- Supports safety and feasibility in most EDs (as fast as 4 minutes)
- Drug shortages
  - Liposomal bupivacaine / diphenhydramine not options





# Nitrous Oxide - Analgesia

**$\text{N}_2\text{O} \rightarrow \text{CRF} \rightarrow \text{Endogenous opioids (midbrain)}$**

**Inhibits GABAergic interneuron (pons)**

**Increased NE  $\rightarrow \alpha_1$  and  $\alpha_{2B}$  (spinal chord)**

**Reduces ascending pain impulses**

# Why Nitrous Oxide?

**Rapid onset / short duration**

**Patient controlled analgesia**

PMID: 27073749

PMID: 11593469

PMID: 19464612

PMID: 23406077

PMID: 28190665

PMID: 26585197

# Indications / Uses

- Laceration
- Lumbar punctures
- Venipuncture
- Incision and drainage
- Wound care
- Orthopedic injuries
- Musculoskeletal pain
- Abdominal pain

# Nitrous oxide contraindications

- “Trapped air”
  - Pneumothorax
  - COPD
  - Pneumocephalus
  - Intraocular air bubbles
  - Middle ear effusions
  - Air embolism
  - Bowel obstruction
  - Decompression sickness
- Laryngospasm

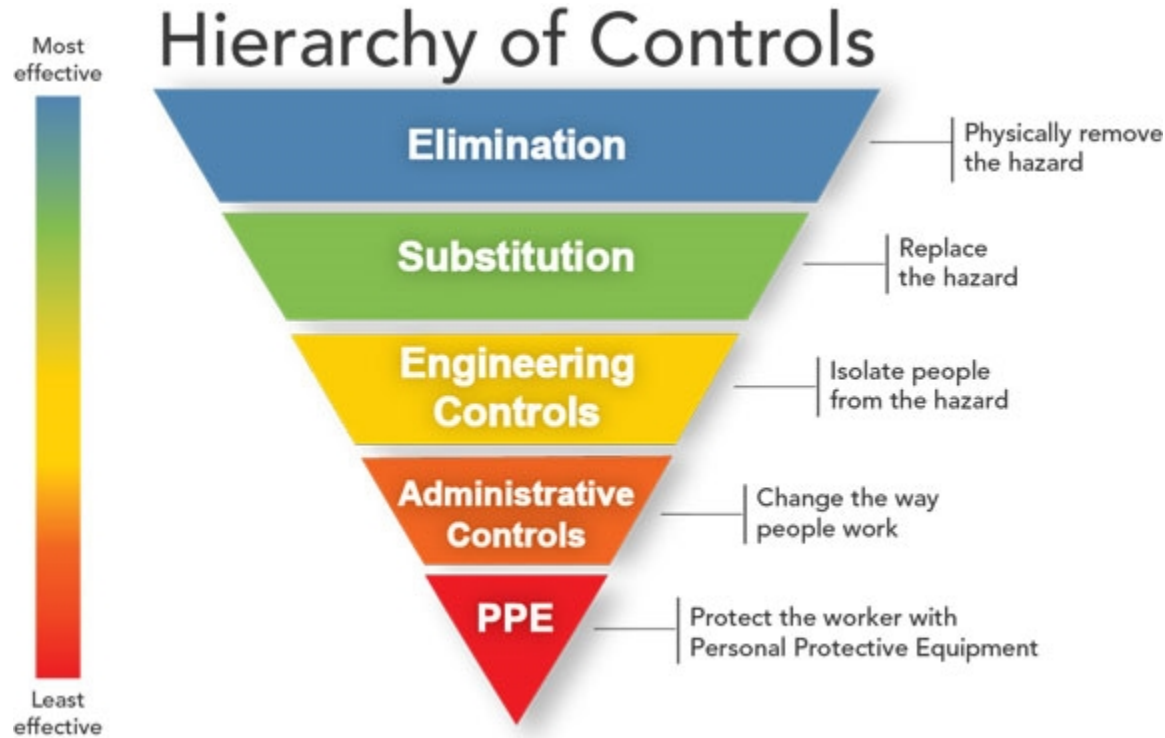
# Nitrous Oxide complications

- Abuse
- Workplace health hazard
- B12 deficiency
  - Chronic use of nitrous oxide → hematologic problems, bone marrow suppression, and CNS toxicity
- Impact on opioid prescriptions?

**Effective analgesia that disappeared**

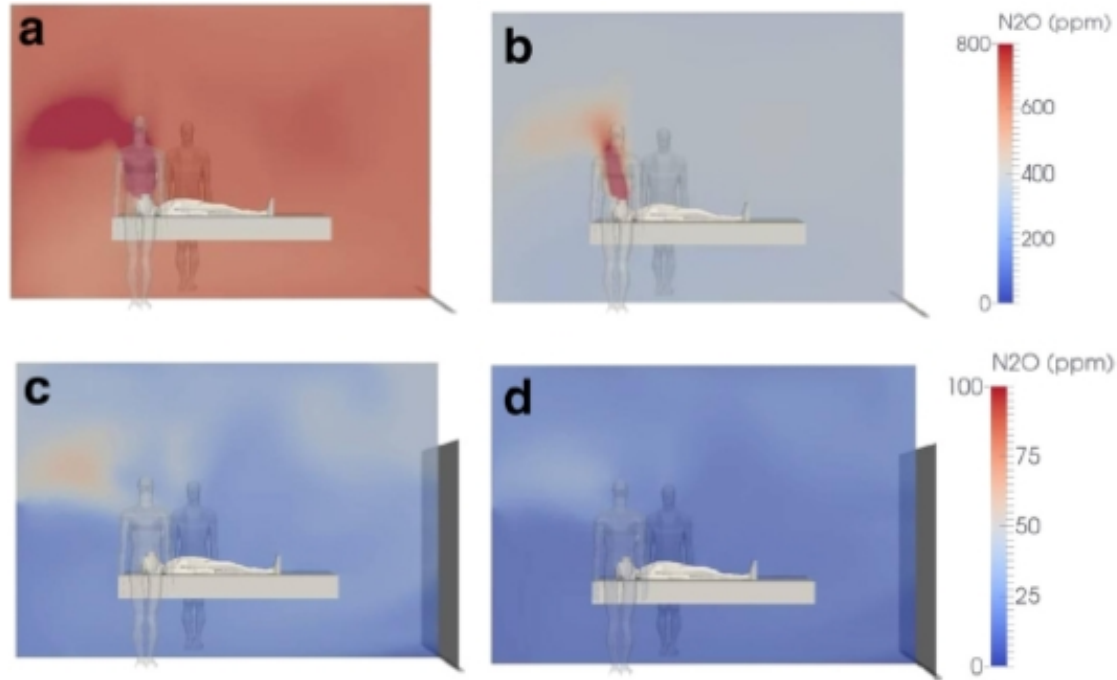
**Prevalent in EDs in the 80's and 90's**

**What happened?**





# It's complicated...



PMID: 27390620

## Nitrous oxide – Bottom Line

- Effective analgesia and sedation (patient controlled)
- Impact on opioid prescriptions at discharge (similar to every other opioid sparing program)
- Workplace safety / abuse potential

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What can we do for his pain?

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Requiring needle aspiration

“Deathly afraid of needles”

## KEY TAKEAWAYS

- 1) **MULTIMODAL PAIN MANAGEMENT**
- 2) **OPIOIDS HAVE A PLACE IN CARE, JUST NOT AS DEFAULT ANALGESIA**
- 3) **THOROUGH CONSIDERATIONS OF NOVEL/REINTRODUCED THERAPIES**

# References And Further Reading

- Haddad FS, Williams RL. Femoral nerve block in extracapsular femoral neck fractures. J Bone Joint Surg Br 1995; 77(6):922-3.
- Fletcher AK, Rigby AS, Heyes FL. Three-in-one femoral nerve block as analgesia for fractured neck of femur in the Emergency Department: A randomized, control trial. Ann Emerg Med 2003;41(2):227-33.
- Kullenberg B, Ysberg B, Heilman M, et al. Femoral nerve blockade as pain relief in hip fractures. Lakartidningen 2004;101(24):2104-7.
- Murgue D, Ehret B, Massacrier-Imbert S, et al. Equimolar nitrous oxide/oxygen combined with femoral nerve block for emergency analgesia of femoral neck fractures. J Eur Urg 2006;19(1):9-14.
- Foss NB, Kristensen BB, Bundgaard M, et al. Fascia iliaca compartment blockade for acute pain control in hip fracture patients: a randomized, placebo-controlled trial. Anesthesiology. 2007; 106(4):773-8. PMID: 17413915
- Graham C, Baird K, McGuffie A. A pilot randomised clinical trial of 3-in-1 femoral nerve block and intravenous morphine as primary analgesia for patients presenting to the emergency department. Hong Kong J Emerg Med 2008; 15(4):205-11.
- Henderson K, Akhtar S, Sandoval M, et al. Femoral nerve block for pain management of hip fractures in the emergency department: preliminary results of a randomized, controlled trial. Ann Emerg Med 2008;52(4):S164.
- Monzón D, Vazquez J, Jauregui JR, Iserson KV. Pain treatment in post-traumatic hip fracture in the elderly: regional block vs. systemic non-steroidal analgesics. International journal of emergency medicine. 2010; 3(4):321-5. PMID: 21373300
- Szucs S, Iohom G, O'Donnell B, et al. Analgesic efficacy of continuous femoral nerve block commenced prior to operative fixation of fractured neck of femur. Perioper Med(Lond) 2012;1:4.
- Fujihara Y, Fukunishi S, Nishio S, et al. Fascia Iliaca Compartment Block: Its Efficacy for Patients with Proximal Femoral Fracture. J Orthop Sci 2013;18(5):793-7.
- Luger TJ, Kammerlander C, Benz M, et al. Peridural anesthesia or ultrasound-guided continuous 3-in-1 block: which is indicated for analgesia in very elderly patients with hip fracture in the emergency department? Geriatr Orthop Surg Rehab 2013;3(3):121-8.
- Beaudoin FL, Haran JP, Liebmann O. A comparison of ultrasound-guided three-in-one femoral nerve block versus parenteral opioids alone for analgesia in emergency department patients with hip fractures: a randomized controlled trial. Academic emergency medicine. 2013; 20(6):584-91. PMID: 23758305
- Ritcey B, Pageau P, Woo MY, Perry JJ. Regional Nerve Blocks For Hip and Femoral Neck Fractures in the Emergency Department: A Systematic Review. CJEM. 2016; 18(1):37-47. PMID: 26330019

# References And Further Reading

- Levy B, Paulozzi L, Mack KA, Jones CM. Trends in Opioid Analgesic-Prescribing Rates by Specialty, U.S., 2007-2012. Am J Prev Med. 2015 Sep;49(3):409-13. PMID: 25896191
- Sanders RD, Weimann J, Maze M. Biologic effects of nitrous oxide: a mechanistic and toxicologic review. Anesthesiology. 2008 Oct;109(4):707-22. PMID: 18813051
- Pichelin M, et al. Modelling levels of nitrous oxide exposure for healthcare professionals during EMONO usage. Ann Occup Environ Med. 2016; 28: 30 PMID: 27390620
- Dula, David J. et al. Nitrous oxide levels in the emergency department. Annals of Emergency Medicine , Volume 10 , Issue 11 , 575 – 578
- Huang C, Johnson N. Nitrous Oxide, From the Operating Room to the Emergency Department. Curr Emerg Hosp Med Rep. 2016; 4: 11–18. PMID: 27073749
- Gerhardt RT, King KM, Wiegert RS. Inhaled nitrous oxide versus placebo as an analgesic and anxiolytic adjunct to peripheral intravenous cannulation. Am J Emerg Med. 2001 Oct;19(6):492-4. PMID: 11593469
- Furuya A, Ito M, Fukao T, Suwa M, Nishi M, Horimoto Y, Sato H, Okuyama K, Ishiyama T, Matsukawa T. The effective time and concentration of nitrous oxide to reduce venipuncture pain in children. J Clin Anesth. 2009 May;21(3):190-3. PMID: 19464612
- Hoeffe J, Doyon Trottier E, Bailey B, et al. Intranasal fentanyl and inhaled nitrous oxide for fracture reduction: The FAN observational study. Am J Emerg Med. 2017 May;35(5):710-715. PMID: 28190665
- Ducassé JL, Siksik G, Durand-Béchu M. Nitrous oxide for early analgesia in the emergency setting: a randomized, double-blind multicenter prehospital trial. Acad Emerg Med. 2013 Feb;20(2):178-84. PMID: 23406077
- Herres J, Chudnofsky CR, Manur R, et al. The use of inhaled nitrous oxide for analgesia in adult ED patients: a pilot study. Am J Emerg Med. 2016 Feb;34(2):269-73. PMID: 26585197



## Opium Wars Episode VI: Return of the Protocols

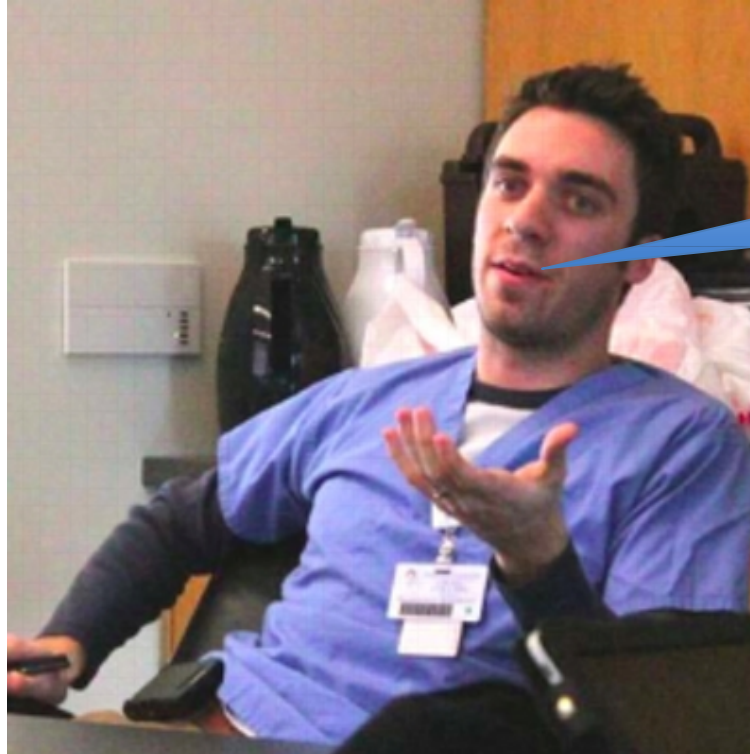
David E. Zimmerman, Pharm.D., BCPS, BCCCP  
Assistant Professor of Pharmacy at Duquesne University  
Emergency Medicine Clinical Pharmacist-UPMC Mercy Hospital  
@DEZ\_EMPharmD



# Objective

- Design a non-opioid treatment regimen for patients with acute pain presenting to the emergency department
- Recommend strategies for the development and successful implementation of an opioid sparing emergency department

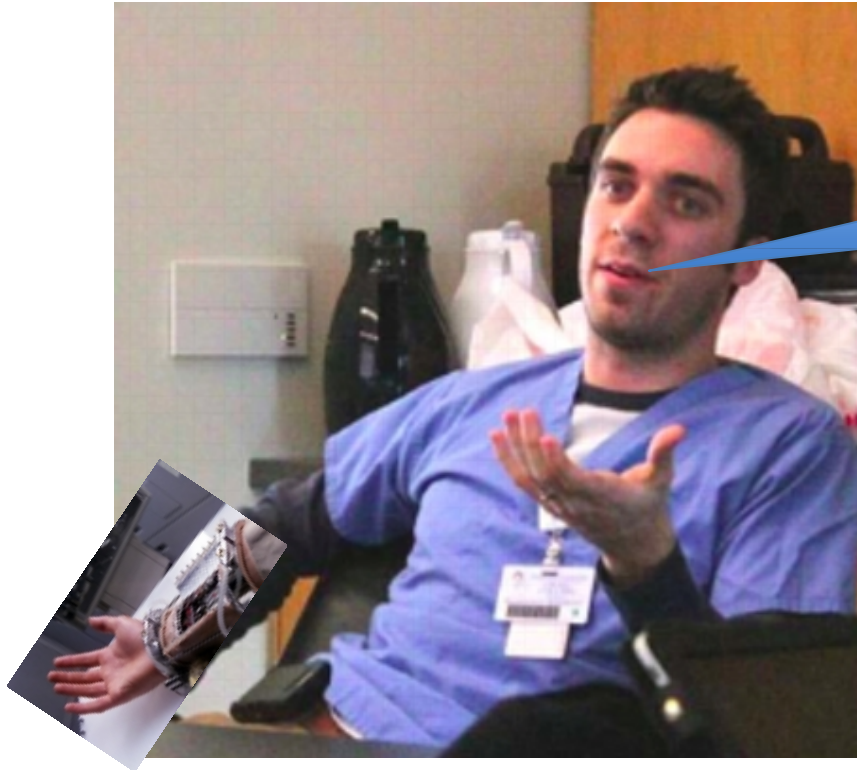
# I just learned about non-opioid strategies from this guy...now what?



Knowledge!

@iEM\_PharmD

# I just learned about non-opioid strategies from this guy...now what?



@iEM\_PharmD

# Clinical Situation

- As the ED pharmacist at a well-staffed hospital located on a tropical island, LotsOfKeta General, you recognize the opioid epidemic is affecting your hospital. You would like to implement alternatives to opioid (ALTO) regimen to the ED but unsure of what to do. So you attended this talk...action....



<http://www.noaa.gov/educational-resources>

# Rally the troops

- Emergency medicine administration
- Nursing administration
- Pharmacy administration
- Hospital administration
- Pain/anesthesia team



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<https://pixabay.com/en/conference-room-table-chairs-beamer-338563/>

# Implementation Discussion Points

- What current protocols and order sets do we have?
- What committees/groups does this have to go through?
- Do I have to evaluate state laws and scope of practice?
- How are we going to educate?
- Pharmacy considerations
  - Stocking
  - Preparation

# How are you going to implement ALTO?

- A single drug protocol (ketamine, lidocaine, etc.)
- Disease state protocol (headache/migraine, renal colic, etc.)
- Orderset

# IT Considerations

- Protocol/order set built in CPOE
- Infusion pumps update (if applicable)
- Implementing monitoring
  - Documentation of metrics (vitals, pain scores, etc...)



# Educate & Reeducate

- Don't just educate once or in one format
  - Emails
  - Presentations
  - Signs
  - Orientation
- Be open to suggestions/input

# I don't know...I'm worried about my patient satisfaction scores

- Following ALTO Implementation at Swedish Medical Center
- > 20% reduction in opioid use per day (per morphine equivalents)
- No change in Press-Ganey patient satisfaction scores related to pain

# Clinical Situation

- You have gotten the team together and have agreed to implement something...a team member says “can’t we just ask someone on a listserv for protocols”?” ...Fear not!!



**FEAR LEADS TO ANGER  
ANGER LEADS TO HATE  
HATE LEADS TO MISUSING OPIOIDS**

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# Implementing Lidocaine

- Dosing/concentration
- Preparation
- Monitoring
- Repeat dosing/continuous infusions

# Implementing Ketamine

- Legal & policy considerations
- Dosing/concentration/administration
- Repeat dosing/continuous infusions
- Monitoring

# Evaluate Current Order Sets

- How many give the option of an opioid?
- Discharge prescriptions
- Incorporating prescription drug monitoring program (PDMP)



**DO OR DO NOT  
THERE IS NO TRY**

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# Creating Disease State Protocols

- Assess agents commonly used and formulary/dispensing locations
- Don't forget about non-pharmacologic therapies!!!
- Opt-in or opt-out of choices?
- Make sure to re-evaluate/update when new data is released

# Migraine/Headache

## 1<sup>st</sup> Line

- Prochlorperazine 10 mg IV + diphenhydramine 25 mg IV
- Ketorolac 10 mg IV
- 0.9% NaCl 1000 mL

## 2<sup>nd</sup> Line

- Metoclopramide 10 mg IV
- Acetaminophen 1 gm PO
- Trigger point injection with lidocaine

## 3<sup>rd</sup> Line

- Haloperidol 5 mg IV
- Magnesium 2 gm IV
- Valproic acid 500 mg IV

[https://coacep.org/docs/COACEP\\_Opioid\\_Guidelines-Final.pdf](https://coacep.org/docs/COACEP_Opioid_Guidelines-Final.pdf)

<https://www.aliem.com/2018/01/prochlorperazine-metoclopramide-diphenhydramine-acute-migraine-headache/>



# Renal Colic

## 1<sup>st</sup> Line

- Acetaminophen 1 gm PO
- Ketorolac 10 mg IV

## 2<sup>nd</sup> Line

- Lidocaine 1.5 mg/kg IV

## 3<sup>rd</sup> Line

- Ketamine 0.3 mg/kg IV
- Intranasal desmopressin (?)

# Musculoskeletal Pain

- Non-IV Options
  - Acetaminophen, ibuprofen
  - Lidocaine 5% patch
  - Diclofenac topical
  - Ketamine intranasal
  - Trigger-point injection
- IV Options
  - Ketamine
  - Ketorolac
  - Diazepam

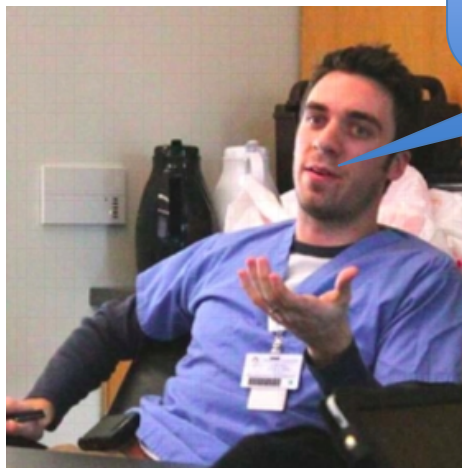
# Clinical Situation

- Now we return to LotsofKeta General where you and the team have successfully implemented ALTO regimens into your ED...now what??

# Monitor

- Follow-up on use
  - Being used? Is there less opioid use?
  - Adequately treating pain?
  - Has there been any ADR or medication safety issues?

Sounds like a future  
MUE for my  
residents



ADR, adverse drug reaction

@iEM\_PharmD

# Key Takeaways

- 1) TEAM WORK WILL MAKE THE DREAM WORK
- 2) ORDERSETS & PROTOCOLS ARE KEY TO IMPLEMENTING ALTO INTO THE ED
- 3) IMPLEMENTING ALTO TAKES TIME. BE PATIENT & DON'T GET



ALWAYS PASS ON WHAT  
YOU HAVE LEARNED

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# References & Further Reading

- Duncan RW, Smith KL, Maguire M, Stader DE III. Alternatives to opioids for pain management in the emergency department decreases opioid usage and maintains patient satisfaction. *Am J Emerg Med*. Apr 22 2018. doi: 10.1016/j.ajem.2018.04.043
- Colorado ACEP 2017 Opioid prescribing and treatment guidelines. [https://coacep.org/docs/COACEP\\_Opioid\\_Guidelines-Final.pdf](https://coacep.org/docs/COACEP_Opioid_Guidelines-Final.pdf). Accessed on September 14<sup>th</sup> 2018.
- Hosseinienejad SM, Jahanian F, Irankar ES, et al. Comparing the analgesic efficacy of morphine plus ketamine versus morphine plus placebo patients with acute renal colic: a double-blinded randomized controlled trial. *Am J Emerg Med*. Sep 3 2018. [epub ahead of print]. doi: 10.1016/j.ajem.2018.09.004.
- Karlow N, Schlaepfer CH, Stroll CRT, et al. A systematic review and meta-analysis of ketamine as an alternative to opioids for acute pain in the emergency department. *Acad Emerg Med*. Jul 17 2018. [epub ahead of print]. doi: 10.1111/acem.13502
- Motov S, Mann S, Drapkin J, et al. Intravenous subdissociative-dose ketamine versus morphine for acute geriatric pain in the emergency department: a randomized controlled trial. *Am J Emerg Med*. May 6 2018. [epub ahead of print] doi: 10.1016/j.ajem.2018.05.030
- Motov S, Mai M, Pushkar I, et al. A prospective randomized, double-dummy trial comparing IV push low dose ketamine to short infusion of low dose ketamine for treatment of pain in the ED. *Am J Emerg Med*. 2017;35:1095-1100.
- Motov S, Yasavolian M, Likourezos A, et al. Comparison of intravenous ketorolac at three single-dose regimens for treating acute pain in the emergency department: a randomized controlled trial. *Ann Emerg Med*. 2017;70(2):177-184.
- Motov S, Strayer R, Hayes BD, et al. The treatment of acute pain in the emergency department: a white paper position statement prepared for the American Academy of Emergency Medicine. *J Emerg Med*. 2018;54(5):731-6.

# References & Further Reading

- Friedman BW, Dym AA, Davitt M, et al. Naproxen with cyclobenzaprine, oxycodone/acetaminophen, or placebo for treating acute low back pain: a randomized clinical trial. *JAMA*. 2015; 314(15):1572-80.
- Soleimanpour H, Hassanzadeh K, Vaezi H, et al. Effectiveness of intravenous lidocaine versus intravenous morphine for patients with renal colic in the emergency department. *BMC Urol*. 2012; 12:13.
- Makhoul T, Kelly G, Schult RF, Acquisto NM. Intravenous lidocaine for renal colic in the emergency department. *Am J Emerg Med*. Aug 23 2018. [epub ahead of print]. 10.1016/j.ajem.2018.08.056.
- Motov S, Drapkin J, Butt M, et al. Pain management of renal colic in the emergency department with intravenous lidocaine. *Am J Emerg Med*. 2018;36(10):1862-64.
- Jalili M, Shirani F, Entezari P, Hedayatshodeh M, Baigi V, Mirfazaelian H. Desmopressin/indomethacin combination efficacy and safety in renal colic pain management: a randomized placebo controlled trial. *Am J Emerg Med*. Aug 11 2018. [epub ahead of print]. doi: 10.1016/j.ajem.2018.08.033.
- Dolatabadi AA, Memary E, Kariman H, Gigloo NK, Baratloo A. Intranasal desmopressin compared with intravenous ketorolac for pain management of patients with renal colic referring to the emergency department: a randomized clinical trial. *Anesth Pain Med*. 2017;7(2):e43595.
- Masoumi K, Darian AA, Forouzan A, et al. The efficacy of intranasal desmopressin as an adjuvant in the acute renal colic pain management. *Pain Res Treat*. 2014;2014:320327. doi: 10.1155/2014/320327
- LaPietra A. Starting an ALTO Program. <https://www.aliem.com/2018/09/acep-e-qual-podcasts-opioid-initiative/>. Accessed September 15th 2018.
- The Colorado ALTO Project. <https://cha.com/wp-content/uploads/2018/01/CHA-Opioid-Checklist.pdf>. Accessed September 21 2018.

# Question 1

- Which of the following is a common adverse effect seen with IV lidocaine?
  - A. Dizziness
  - B. Cardiac dysrhythmia
  - C. Hypertension
  - D. Respiratory depression



## Question 2

- Which of the following is/are important to consider when implementing a ketamine protocol in the ED?
  - A. Hospital protocols and state laws should be evaluated as ketamine is labeled as an anesthetic and a controlled substance
  - B. There are several commercially available concentrations of ketamine
  - C. Diluting and administering over 15 minutes reduces unreality
  - D. All of the above

## Question 3

- Patient Yo Da is a 900 year old male presenting today with left sided flank pain and reports his pain score at a “10/9 pain is”. Patient states “meditate I have, but still in pain I am”. He reports no allergies and has no past medical history. The medical team has a strong suspicion for renal colic. Which of the following would you recommend as a first line agent for his pain?
  - A. Hydromorphone 0.5 mg IV
  - B. Ketorolac 30 mg IV
  - C. Lidocaine 1.5 mg/kg IV
  - D. Ketorolac 10 mg IV