

# Evidence-based analgesia prescribing to prevent opioid harms after surgery: A call to action

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# **Disclosures**

#### I currently receive research funding from:

- Canadian Institutes of Health Research (CIHR)
- Merck Canada Inc. (Investigator-Initiated Study Grant)
- Mitacs Canada (Accelerate Program)
- Society of American Gastrointestinal and Endoscopic Surgeons (SAGES)

#### I currently receive salary support from:

• Fonds de recherche du Québec - Santé (FRQS)



# Main message

- Risk of opioid misuse and addiction should be taken into account when managing postoperative pain.
- There is very limited evidence supporting the benefits of using opioids after surgical discharge.







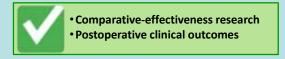








- I am not a pharmacist nor a pharmacologist;
- I am **not** a prescriber;
- I am a PhD scientist focused on surgical outcomes research.













Focus on opioid prescription after postoperative discharge, with very limited attention to analgesia delivered during hospital stay.









#### Evidence-based analgesia prescribing to prevent opioid harms after surgery

- 1
- 2 Postoperative opioid prescribing: US and Canada 🚹 🌉 versus The World 🎧

Good intentions gone wrong: Postoperative analgesia and the opioid crisis

- 3 Why do clinicians in prescribe opioids after surgical discharge?
- 4 Current evidence regarding opioid analgesics after postoperative discharge
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- 6 Our current research
- Summary and conclusions

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## Good intentions gone wrong: Surgery and the opioid crisis

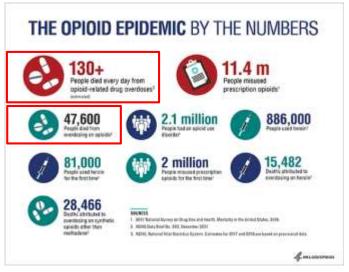
Summary and conclusions



https://health-infobase.canada.ca/datalab/national-surveillance-opioid-mortality.html

### Good intentions gone wrong: Surgery and the opioid crisis

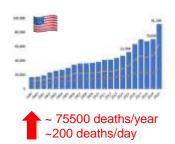
#### Opioid Epidemic in the US



https://www.hhs.gov/opioids/about-the-epidemic/index.html







#### **POTENTIAL CAUSES:**

- Pandemic-related stress and social isolation leading to changes in drug use behaviors.
- Erratic and volatile drug supply due to border and travel restrictions.
- Reduced accessibility to addiction, mental health, and harm reduction services.

Opioid- and Stimulant-related Harms in Canada - Public Health Infobase | Public Health Agency of Canada https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)01653-6/fulltext



# Are we facing an opioid crisis in Europe?

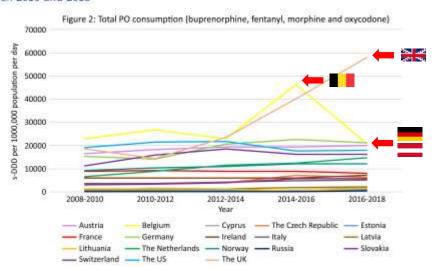
\*Katia M C Verhamme, Arthur M Bohnen



Verhamme KMC, Bohnen AM. Are we facing an opioid crisis in Europe? Lancet Public Health. 2019 Oct;4(10):e483-e484.



Is Europe facing an opioid crisis like the United States? An analysis of opioid use and related adverse effects in 19 European countries between 2010 and 2018



Pierce M, et al. Is Europe facing an opioid crisis like the United States? An analysis of opioid use and related adverse effects in 19 European countries between 2010 and 2018. Eur Psychiatry. 2021 Jun 21;64(1):e47.



#### Responding to the opioid crisis in North America and beyond: recommendations of the Stanford-Lancet Commission

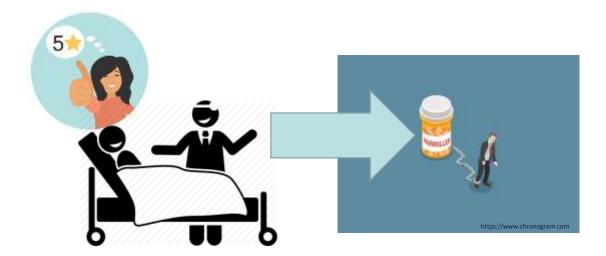
Keith Humphreys, Cheises & Shower, Cheistina M Andreus, Arry S B Bohriert, Margaret I. Brandeau, Jonathan P Caulkins, Jonathan H Chen, Mariano-Fiorentina Cuillar, Yasroin I. Hurd, David N Jouránk, Howard K Koh, Erin E Krein, Anna Lembke, Sean C Mackey, Lisa Lanimont Guellette. Brian Suffoletto, Christine Timka

## Domain 7: Prevent opioid crises beyond the USA and Canada

- Prevent pharmaceutical companies in the USA from exporting fraudulent and corrupting opioid promotion practices
- Distribute free, generic morphine for analgesia to hospitals and hospices in low-income nations

Kalkman GA, et al. Trends in use and misuse of opioids in the Netherlands: a retrospective, multi-source database study. Lancet Public Health. 2019

#### Good intentions gone wrong: Surgery and the opioid crisis



Makary MA, Overton HN, Wang P. Overprescribing is major contributor to opioid crisis. BMJ. 2017;359:j4792.

#### Good intentions gone wrong: Surgery and the opioid crisis



Surgeons are the 2nd largest subgroup of specialist involved in opioid prescribing

Levy et al. Am J Prev Med. 2015;49(3):409-413



6-17% of patients become chronic opioid users after surgery

Brummett CM, et al. JAMA Surgery. 2017;152(6):e170504.
Brescia AA, et al. Ann Thorac Surg. 2019; 108(4):1107-1113.



**40–70%** of opioid pills prescribed for surgical patients go unused

Bicket MC, et al. JAMA Surgery. 2017; 152(11):1066-1071

## Good intentions gone wrong: Surgery and the opioid crisis



Inappropriate opioid prescription after surgery

Mark D Neuman, Brian T Bateman, Hannah Wunsch

The impact of surgery on the opioid crisis cannot be underestimated...

Neuman MD, Bateman BT, Wunsch H. Inappropriate opioid prescription after surgery. Lancet. 2019;393(10180):1547-1557.

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## Postoperative opioid prescribing: US and Canada 🙌 🌉 versus The World 🌍



# Postoperative opioid prescribing: US and Canada 🛂 🌉 versus The World 🌍

		Population		cription after harge
IIDVUMA Ti	Differences in Prescription of Narcotic Pain Medication After Operative Treatment of Hip and Ankle Fractures in the United States and the Netherlands  Annelson L. C. Lindenbersone, MSc., Gip. T. T. Hehmerberth, MSc., Alexandra C. Schnellen, MSc., Mark Yeahas, MD, David Kong, MD, and Finer Kloon, MD, PhD  J Trauma. 2009;67: 160–164	Hip/Ankle fracture repair	USA 84% (n=190)	Netherland s 5% (n=116)
	Comparison of Opioid Utilization Patterns After Major Head and Neck Procedures Between Hong Kong and the United States Ryan J. L. MD; Myriam Loyo Li, MD; Emigue Leon, MS; Chemie W. K. Ng, BA; Makse Shindo, MD; Katie Manasone; Peter Anderson, MD; Daniel Clayburgh, MD; PhD; Mark Was, MD; Jason Y. K. Chan, MBBS  JAMA Otolaryngol Head Neck Surg. 2018;144(11):1060-1065.	ENT	<b>USA</b> <b>86%</b> (n=567)	Hong Kong 0.5% (n=263)
SURGERY	Opioids After Surgery in the United States Versus the Rest of the World  The International Patterns of Opioid Prescribing (IPOP) Multicenter Study Kaafarani H, Han K: Mohamad EM, et al. (Ann Surg 2020;272:879–886)	Appendectomy Cholecistectomy Inguinal hernia rep. (Lap, open)	USA 92% (n=655)	'Rest of the World' 5% (n=4035)



#### Quality of Postoperative Pain Management in American Versus European Institutions

C. Richard Chapman, Duncan A. Stevens, and Arthur G. Lipman Journal of Pain & Palliative Cure Pharmacotherapy. 2013;27:350–358.

sizes). Overall, the results are clear in demonstrating much better pain control in the ensemble of European countries as compared to the United States.



Satisfaction with pain relief after operative treatment of an ankle fracture Gijs T.T. Helmerhorst 3°, Anneliuuk L.C. Lindenhovius 3°, Mark Vrahas 1, David Ring 6°, Peter Kloen 1

ijs T.T. Helmerhorst\*\*, Anneluuk L.C. Lindenhovius\*\*, Mark Vrahas\*, David Ring\*\*, Peter Kloen\*
Injury, Int. J. Care Injured 43 (2012) 1958–1961

Conclusions: Pain and satisfaction with pain relief are culturally mediated. Patients that use non-opioid pain medication report less pain and greater satisfaction with pain relief than patients managed with opioid pain medication.

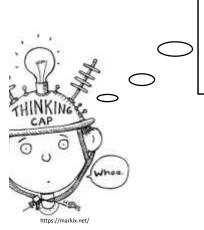


Pain after orthopaedic surgery: differences in patient reported outcomes in the United States vs internationally. An observational study from the

PAIN OUT dataset R. Zaslansky<sup>1,\*</sup>, W. Meissner<sup>1</sup> and C. R. Chapman<sup>2</sup>
British Journal of Anaesthesia, 120 (4): 790–797 (2018)

Conclusions: Three PROs differed between international and US patients, with higher 'worst pain' for US patients.

Neither risk factors, nor patient mix accounted for the observed differences for 'worst pain'.



https://markix.net/

# Why do clinicians in prescribe so much opioids after surgical discharge?



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# Why clinicians in **Mars** prescribe opioids?

Established prescribing behaviours

Convenience

Ensure patient satisfaction

Unfounded pharma industry claims

Moore PA, et al. Why do we prescribe Vicodin? J Am Dent Assoc. 2016;147(7):530-3.

# Why clinicians in **M** prescribe opioids?

Established prescribing behaviours

Convenience

Ensure patient satisfaction

Unfounded pharma industry claims

 Learned in medical school and specialty training:

"Opioids are the most effective oral analgesics for managing acute pain"



Moore PA, et al. Why do we prescribe Vicodin? J Am Dent Assoc. 2016;147(7):530-3.

# Why clinicians in **[Market**] prescribe opioids?

# Established prescribing behaviours

#### Convenience

Ensure patient satisfaction

Unfounded pharma industry claims

- Analgesia prescribing for the most severe outcome (i.e. for the few patients who will have a 'painful recovery')
- Avoids receiving a phone call or patients returning to the hospital/clinic



Moore PA, et al. Why do we prescribe Vicodin? J Am Dent Assoc. 2016;147(7):530-3.

# Why clinicians in **M** prescribe opioids?

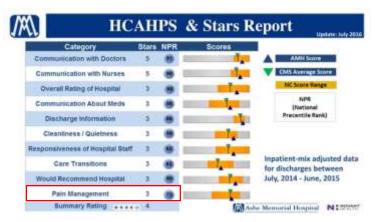
# Established prescribing behaviours

#### Convenience

Ensure patient satisfaction

Unfounded pharma industry claims

 Especially when patient satisfaction is linked to hospital reimbursement



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The decision to prescribe opioids after surgical discharge largely depends on surgeons' preference, habits, and prescribing culture

There is an urgent need for robust trials comparing opioid vs. opioid-free analgesia to guide clinical decision-making!





# Preventing opioid prescription after major surgery: a scoping review of opioid-free analgesia



Julio F. Fiore Jr. 1,3,4,6,5,1, Ghadeer Olleik<sup>1,4,7</sup>, Charbel El-Kefraoui<sup>1</sup>, Bernardo Verdolin<sup>1,4</sup>, Araz Kouyoumdjian<sup>1,7</sup>, Allison Alldrit<sup>1,8</sup>, Ana G. Figueiredo<sup>1,4</sup>, Sofia Valanci<sup>1,4</sup>, Javier A. Marquez-GdeV<sup>4</sup>, Matthew Schulz<sup>7</sup>, Dan Moldoveanu<sup>3,4</sup>, Philip Nguyen-Powanda<sup>9</sup>, Gordon Best<sup>7</sup>, Alexander Banks<sup>7</sup>, Tara Landry<sup>3</sup>, Nicolò Pecorelli<sup>1</sup>, Gabriele Baldini<sup>4,5</sup> and Liane S. Feldman<sup>1,3,4,6</sup>

#### Review aim:

To assess the extent, range and nature of the literature addressing opioid-free analgesia after major surgery\*

\*WHO definition: any surgery conducted in a hospital operating room

#### **Funding:**



Preventing opioid prescription after major surgery: a scoping review of opioid-free analgesia

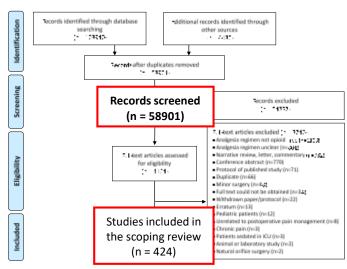
#### **Review methods**

- > Inclusion criteria:
  - Studies addressing opioid-free analgesia after surgery
  - Any type of study design (from case studies to RCTs)
- We extracted study characteristics including design, country, year, surgical procedure(s) and interventions.

Fiore JF Jr, Olleik G, El-Kefraoui C, et al. Preventing opioid prescription after major surgery: a scoping review of opioid-free analgesia. Br J Anaesth. 2019;123(5):627-636.

# Preventing opioid prescription after major surgery: a scoping review of opioid-free analgesia

#### Results



Fiore JF Jr, Olleik G, El-Kefraoui C, et al. Preventing opioid prescription after major surgery: a scoping review of opioid-free analgesia. Br J Anaesth. 2019;123(5):627-636.

# Preventing opioid prescription after major surgery: a scoping review of opioid-free analgesia

#### **Results** h= 5 (1%) + n= 11 (3%) 7 RCTs comparing opioid versus opioid-Limited focus on non-42 (~10%) addressed opioidfree analgesia pharmacological therapy free analgesia after 424 discharge Studies 72% addressed 3 surgical specialties No knowledge syntheses identified

Fiore JF Jr, Olleik G, El-Kefraoui C, et al. Preventing opioid prescription after major surgery: a scoping review of opioid-free analgesia. Br J Anaesth. 2019;123(5):627-636.



# Opioid versus opioid-free analgesia after surgical discharge: a systematic review and meta-analysis of randomised trials

Julio F.Fiore Jr.\*, Charbel El-Kefrapui.\*, Marc-Aurele Chay, Philip Nguyen-Powanda, Uyen Du, Ghadeer Olleik, Faterne Rajabiyazdi, Araz Kouyoumdjian, Alexa Denksen, Tara Landry, Alexandre Amar-Zifkin, Arry Bergeron, Agruhotram V.Ramanakumar, Marc Martel, Lawrence Lee, Gabriele Baklini, Liano S.Feldman

#### Review aim:

To summarize the evidence regarding the comparative-effectiveness of opioid versus opioid-free analgesia after postoperative discharge.

#### **Funding:**







# 

#### Medscape

Opioids May Cause More Harm Than Good After Mild to Moderate Surgery

(NEJM

Journal Watch

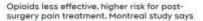
Nonopioid Analgesia Is as Effective as Opioids Following Minor or Moderate Surgeries

# Post-surgery opioids at home can do more harm than good, study says

The RI-MURC study was published days before Canada warried the opinid crisis is worsening on Thursday.

in \$4.0000 - June 24.0000 1 Emercial and 1 D June 14 representation







Opioid versus opioid-free analgesia after surgical discharge: a systematic review and meta-analysis of randomised trials

#### **Methods**

- ➤ Inclusion criteria: Multidose randomized controlled trial (RCT) comparing opioid versus opioid-free analgesia after postoperative discharge (any surgical procedure).
- Primary outcomes of interest: Pain intensity on day 1 post-discharge (VAS), adverse events (vomiting).
- Quality assessment: Cochrane Risk of Bias Tool for Randomized Controlled trials (RoB 2).
- > Analysis approach: Random effects meta-analyses.
- > Certainty of evidence: GRADE approach

Fiore JF Jr, El-Kefraoui C, Chay M-A, et al. Opioid versus opioid-free analgesia after surgical discharge: A systematic review and meta-analysis of randomized trials. Lancet 2022; 399 (10343): 2280-2293.

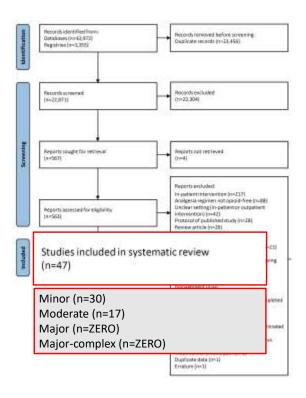
#### Opioid versus opioid-free analgesia after surgical discharge: a systematic review and meta-analysis of randomised trials

#### Methods



Surgery extent	Examples
Minor (clinic/day surgery)	Dental, eye, hand surgeries
Moderate (OR/day surgery)	General abdominal, thyroid, breast surgery
Major (OR/in-patient/short LOS)	Colon, liver, kidney resections
Major-complex (extensive tissue trauma/impairment)	APR, Whipple's, thoraco- abdominal procedures

Fiore JF Jr, El-Kefraoui C, Chay M-A, et al. Opioid versus opioid-free analgesia after surgical discharge: A systematic review and meta-analysis of randomized trials. Lancet 2022; 399 (10343): 2280-2293.



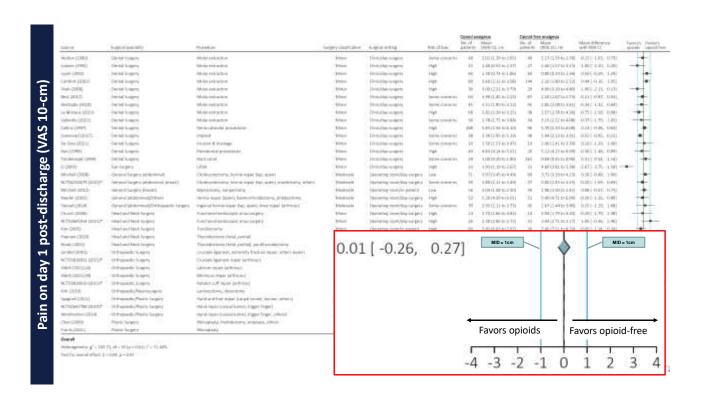
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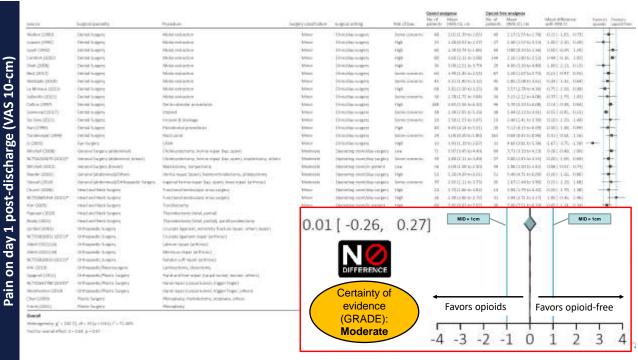
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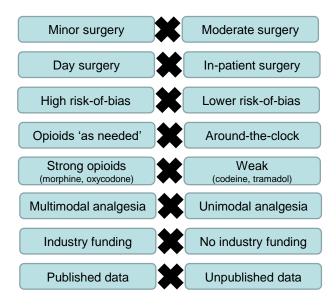
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## Addressing heterogeneity...





Fiore JF Jr, El-Kefraoui C, Chay M-A, et al. Opioid versus opioid-free analgesia after surgical discharge: A systematic review and meta-analysis of randomized trials. Lancet 2022; 399 (10343): 2280-2293.

# Opioid versus opioid-free analgesia after surgical discharge: a systematic review and meta-analysis of randomised trials

Pain on other days after discharge (VAS 10-cm)



	No. of trials	No. of patients	Effect size [WMD (95% CI)]	Evidence supports	Quality of evidence
Post-discharge day 0	21	2317	-0.25 (-0.74, 0.24)ª	No difference	Low
Post-discharge day 2	29	3054	0.01 (-0.26, 0.28) <sup>a</sup>	No difference	Moderate
Post-discharge day 3	26	2321	0.44 (0.18, 0.70) <sup>a</sup>	No difference	Moderate
Post-discharge day 4-7°	22	1946	0.23 (-0.01, 0.47) <sup>a</sup>	No difference	Low
Post-discharge day 8-30 <sup>d</sup>	9	677	0.33 (-0.32, 0.99) <sup>a</sup>	No difference	Very low

Fiore JF Jr, El-Kefraoui C, Chay M-A, et al. Opioid versus opioid-free analgesia after surgical discharge: A systematic review and meta-analysis of randomized trials. Lancet 2022; 399 (10343): 2280-2293.

#### Opioid versus opioid-free analgesia after surgical discharge: a systematic review and meta-analysis of randomised trials

#### Other postoperative outcomes



	No. of trials	No. of patients	Effect size [WMD (95% CI)]	Evidence supports	Quality of evidence
Pain interference (first week post-discharge) <sup>e</sup>	6	657	3.51 (1.01, 6.02) <sup>a</sup>	No difference	Low
Quality of recovery (post- discharge day 2) <sup>f</sup>	2	156	-0.34 (-0.87, 0.19)ª	No difference	Moderate
Patient dissatisfaction	14	1750	1.14 (0.67, 1.94) <sup>b</sup>	No difference	Low
Healthcare reutilization	8	778	0.88 (0.30, 2.61) <sup>b</sup>	No difference	Very low

Fiore JF Jr, El-Kefraoui C, Chay M-A, et al. Opioid versus opioid-free analgesia after surgical discharge: A systematic review and meta-analysis of randomized trials. Lancet 2022; 399 (10343): 2280-2293.

#### Opioid versus opioid-free analgesia after surgical discharge: a systematic review and meta-analysis of randomised trials





#### Adverse events

	No. of trials	No. of patients	Effect size [WMD (95% CI)]	Evidence supports	Quality of evidence
Nausea	21	3544	2.37 (1.59, 3.55)	Opioid-free	High
Vomiting (co-primary outcome)	12	2789	1.63 (1.04, 2.57)	Opioid-free	High
Constipation	16	2227	1.63 (1.04, 2.57)	Opioid-free	High
Dizziness	14	2878	2.22 (1.20, 4.08)	Opioid-free	High
Drowsiness	14	1695	1.57 (1.02, 2.42)	Opioid-free	Moderate
Pruritus	10	1730	1.27 (0.73, 2.21)	No difference	Low

Fiore JF Jr, El-Kefraoui C, Chay M-A, et al. Opioid versus opioid-free analgesia after surgical discharge: A systematic review and meta-analysis of randomized trials. Lancet 2022 (Accepted).

Opioid versus opioid-free analgesia after surgical discharge: a systematic review and meta-analysis of randomised trials

#### Conclusion

- Findings from this meta-analysis support that **opioid prescribing** at surgical discharge **does not reduce pain intensity** but does **increase adverse events**.
- Evidence relied on trials focused on surgeries of minor and moderate extent, suggesting that clinicians can consider prescribing opioid-free analgesia in these surgical settings.
- Data were largely derived from low quality trials ⇒ there is a great need to advance the quality of research in this field.

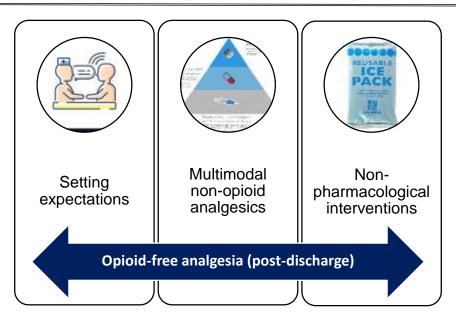
Fiore JF Jr, El-Kefraoui C, Chay M-A, et al. Opioid versus opioid-free analgesia after surgical discharge: A systematic review and meta-analysis of randomized trials. Lancet 2022; 399 (10343): 2280-2293.

- 1 Good intentions gone wrong: Postoperative analgesia and the opioid crisis
- 2 Postoperative opioid prescribing: US and Canada 🛃 尽 versus The World 🎧
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- 6 Our current research
- **7** Summary and conclusions

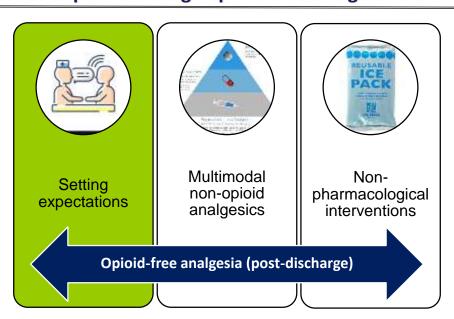
#### Evidence-based analgesia prescribing to prevent opioid harms after surgery

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## What does post-discharge opioid-free analgesia look like?



## What does post-discharge opioid-free analgesia look like?



#### What does post-discharge opioid-free analgesia look like?

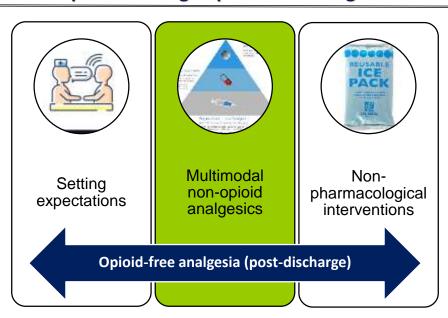
## **Setting expectations**



"Some pain after surgery is normal.
You should be able to walk and do light activity, but may be sore for a few days. This will gradually get better..."



## What does post-discharge opioid-free analgesia look like?

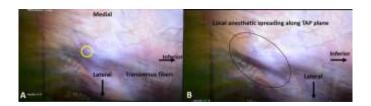


# In-hospital: Regional analgesia



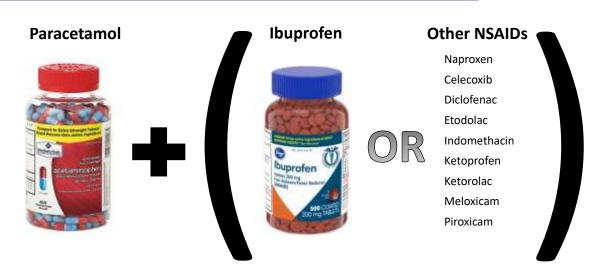
Transversus abdominis plane block versus local anesthetic wound infiltration for optimal analgesia after laparoscopic cholecystectomy: A systematic review and meta-analysis with trial sequential analysis

Sina Grape a, , Kyle Robert Kirkham b, Liliane Akiki c, Eric Albrecht d



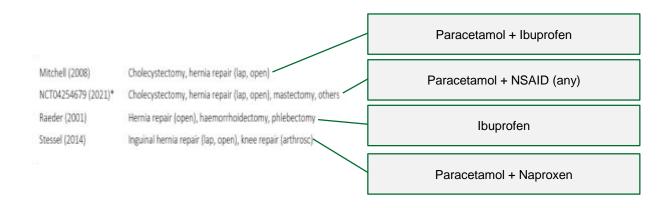
Grape S, et al. Transversus abdominis plane block versus local anesthetic wound infiltration for optimal analgesia after laparoscopic cholecystectomy: A systematic review and meta-analysis with trial sequential analysis. J Clin Anesth. Epub 2021; PMID: 34243030.

# **Discharge prescription: Around-the-clock non-opioids**



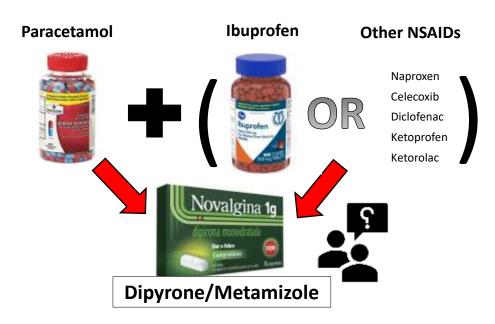
# Discharge prescription

Opioid versus opioid-free analgesia after surgical discharge: A systematic review and meta-analysis of randomized trials

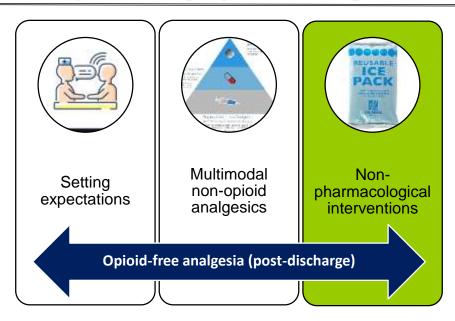


Fiore JF, et al. Opioid versus opioid-free analgesia after surgical discharge: A systematic review and meta-analysis of randomized trials (manuscript under review)

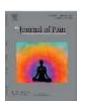
# **Discharge prescription: Around-the-clock non-opioids**



## What does post-discharge opioid-free analgesia look like?



# Non-pharmacological pain interventions



Guidelines on the Management of Postoperative Pain

Management of Postoperative Pain: A Clinical Practice Guideline From the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of Anesthesiologists' Committee on Regional Anesthesia, Executive Committee, and Administrative Council



Cognitive-behavioral modalities	Physical modalities
<ul><li>Relaxation therapy</li><li>Guided imaginary</li><li>Music</li><li>Hypnosis</li></ul>	<ul> <li>Transcutaneous electrical nerve stimulation</li> <li>Acupuncture</li> <li>Massage</li> <li>Cold therapy (ice packs)</li> </ul>

Weak recommendation, low-quality evidence

Chou R, et al. J Pain. 2016 Feb;17(2):131-57.

## Non-pharmacological pain interventions

# Cognitive-behavioral modalities

- · Relaxation therapy
- · Guided imaginary
- Music
- Hypnosis

#### Physical modalities

- Transcutaneous electrical nerve stimulation
- Acupuncture
- Massage
- Cold therapy (ice packs)

Fortunately, the tide started shifting recently with new studies providing more robust evidence...

# Non-pharmacological pain interventions

# Cognitive-behavioral modalities

- · Relaxation therapy
- Guided imaginary
- Music
- Hypnosis

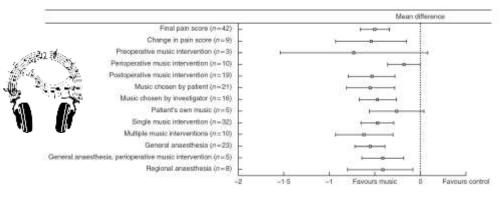
#### Physical modalities

- Transcutaneous electrical nerve stimulation
- Acupuncture
- Massage
- Cold therapy (ice packs)



# Meta-analysis evaluating music interventions for anxiety and pain in surgery

A. Y. R. Kühlmann<sup>1</sup>, A. de Rooij<sup>2</sup>, L. F. Kroese<sup>1</sup>, M. van Dijk<sup>1,4</sup>, M. G. M. Hunink<sup>5,6,7</sup> and J. Jeekel<sup>2</sup>



Kühlmann AYR, de Rooij A, Kroese LF, van Dijk M, Hunink MGM, Jeekel J. Meta-analysis evaluating music interventions for anxiety and pain in surgery. Br J Surg. 2018 Jun;105(7):773-783.

## Non-pharmacological pain interventions

# Cognitive-behavioral modalities

- Relaxation therapy
- Guided imaginary
- Music
- Hypnosis

#### Physical modalities

- Transcutaneous electrical nerve stimulation
- Acupuncture
- Massage
- Cold therapy (ice packs)



#### The Effect of Cryotherapy Application on Postoperative Pain

#### A Systematic Review and Meta-analysis

Msaddi, Hala<sup>r,n</sup>; Lillie, Erin<sup>r</sup>; Silva, Stephanie<sup>3</sup>; Cross, Jori-Lee<sup>†</sup>; Ladha, Karim<sup>L,5</sup>; Choi, Stephen<sup>c,0</sup>; Mocon, Aaron<sup>§</sup>; Karanicolas, Paul<sup>r,1</sup>A<sup>r,n</sup>



#### Results:

Fifty-one RCTs (N = 3,425 patients) were included. With moderate certainty evidence, patients treated with cryotherupy experienced a reduction in pain on posinperative day 1 (atmodardized mean differences -0.50, 95% CI -0.74 to -0.29, F-74%) and day 2 (standardized mean differences -0.63, 95% CI -0.93 to -0.35, F-83%) relative to without expotherapy application. With moderate certainty of evidence, cryotherapy reduces opioid consumption in morphism milliequivalents and reception willibequivalents/kg, (mean differences -0.43, 95% CI -12.42, -2.44, F= 90%) and (mean differences -0.89, 95% CI -1.45, -0.33, F= 90%), respectively. With low certainty evidence, cryotherapy does not affect hospital LDS or rate of SSS.

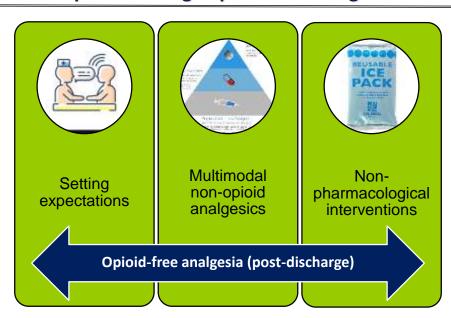


Cryotherapy is a pragmatic, noncostly intervention that reduces postoperative pain and opioid consumption with no effect on SSI rate or hospital LOS.

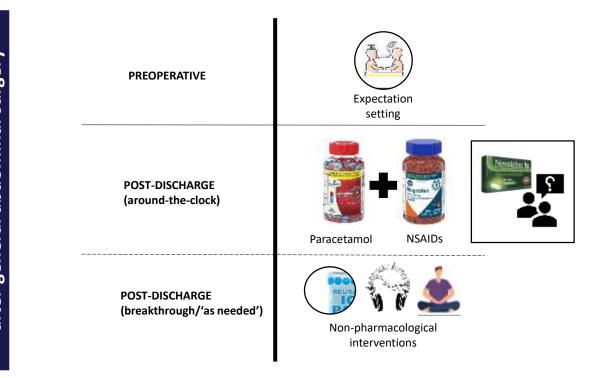


Muaddi H, Lillie E, Silva S, Cross JL, Ladha K, Choi S, Mocon A, Karanicolas P. The Effect of Cryotherapy Application on Post-operative Pain: A Systematic Review and Meta-analysis. Ann Surg. 2021 Epub ahead of print.

## What does post-discharge opioid-free analgesia look like?



Post-discharge opioid-free analgesia after general abdominal surgery



#### Evidence-based analgesia prescribing to prevent opioid harms after surgery

1 Good intentions gone wrong: Postoperative analgesia and the opioid crisis

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Original Investigation | Surgery

Feasibility of Prospectively Comparing Opioid Analgesia With Opioid-Free Analgesia After Outpatient General Surgery

A Pilot Randomized Clinical Trial

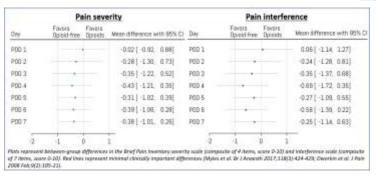
Uyen Do. MSc; Charbel El-Kefraoui, 8Sc; Makeria Pook, BHSc; Saba Bahardi, MD, MSc; Natasha Barone, MSc; Philip Nguyen-Powanda, 8Sc; Lawrence Lee, MD, PhD. Gabriele Baldini, MD, MSc: Liane S. Feldman, MD; Juko F. Fiore Jr., PhD; and the McGill Better Opioid Prescribing Collaboration

Feasibility of recruitment, randomization, interventions, and data collection \



Supported equipoise.



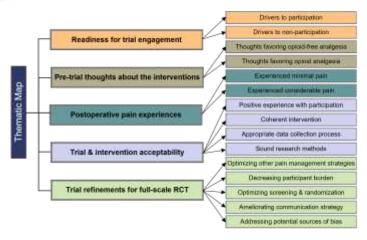


Do U, El-Kefraoui C, Pook M, Balvardi S, Barone N, Nguyen-Powanda P, Lee L, Baldini G, Feldman LS, Fiore JF Jr. Feasibility of Prospectively Comparing Opioid Analgesia With Opioid-Free Analgesia After Outpatient General Surgery: A Pilot Randomized Clinical Trial. JAMA Netw Open. 2022 Jul 1;5(7):e2221430.



#### 5110—Opioid-free analgesia after outpatient general surgery: A qualitative study focused on the perspectives of patients and clinicians involved in a pilot trial

Uyen Do<sup>1,3</sup> · Makena Pook<sup>1,2</sup> · Tahereh Najafi¹ · Fateme Rajabiyazdi³ · Charbel El-Kefraoui¹ · Saba Balvardi <sup>1,4</sup> · Natasha Barone<sup>5</sup>. Hiba Elhaj<sup>1</sup>. Phillip Nguyen-Powanda<sup>1,2</sup>. Lawrence Lee<sup>1,2,4,6</sup>. Gabriele Baldini<sup>1,7</sup>.
Liane S. Feldman<sup>1,2,4,6</sup>. Julio F. Fiore<sup>1,2,4,4,6</sup>. on Behalf of The McGill Better Opioid Prescribing (MBOP) Collaboration



Do, U, et al. Opioid-free analgesia after hospital discharge following outpatient general surgery: A qualitative study focused on the perspectives of patients and clinicians involved in a pilot trial. Surg Endosc 2022, Online ahead of print

# Opioid-free analgesia after outpatient general surgery: A randomized controlled trial

Postoperative Analgesia Intervention with Non-opioid Alternatives II (PAIN-Alt II)

#### **Opioid analgesia**



Around-the-clock non-opioid analgesics (paracetamol and/or NSAIDs) and opioid tablets 'as needed' for breakthrough pain.

#### **Opioid-free** analgesia

Around-the-clock non-opioid analgesics and, in the case of breakthrough pain, rescue analgesia will be provided by increasing doses and/or adding non-opioid drugs or non-pharmacological interventions.

#### Targeted funding:



CIHR Project Grant Program



**US Department of Defense Medical Research Program** 



- 1 Good intentions gone wrong: Postoperative analgesia and the opioid crisis
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# **Summary and conclusions**

- There is still a great need to advance the quality and scope of research in this field

Postoperative analgesia prescribing should be guided by <u>evidence</u> rather than by tradition and dogma.



#### Perioperative Care and Outcomes Research (PCOR) Lab



Christos Mousoulis, PhD

Postdoctoral Fellow

Elahe Khorasani, PhD
Postdoctoral Fellow



Ghadeer Olleik, MSc PhD Candidate



Makena Pook, BSc PhD Candidate



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Katy Dmowski, BSc MSc Candidate



Shrieda Jain, BSc MSc Candidate



Tahereh Najafi, PhD Research Associate



Pepa Kaneva, MSc Research Coordinator

# Thank you!



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