A Multimodal Approach to Optimize Postoperative Recovery and Analgesic Prescribing

Prisma Health Opioid Symposium 2020

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Disclosures

Intuitive Surgical
W.L. Gore
Ethicon

Outline

Information

Inspiration!

Enhanced Recovery After Surgery

Patient / Preop

Comorbidities
Medications
Expectations

Perioperative

Surgical complexity
Choice of approach
Perioperative Management

Hospital

Pain management
Bowel function
Mobility
LOS
Complications

Discharge

Pain management
Education
Complications
Return to normal activity
Return to work

Enhanced Recovery after Surgery

What does this actually mean?

Protocol-driven pathways designed to decrease perioperative risk, minimize recovery time, and improve outcomes.

Patient / Preop

Comorbidities

Expectations

ERAS: Preoperative Preparation

Comorbidities / Medications

- Preoperative weight loss
- Cardiopulmonary risk stratification
- Optimize nutrition
- Optimize diabetes management: HbA1c <7.5?
- Smoking cessation
- “Prehabilitation”

Orenstein SB, *Plast Reconstr Surg* 2018

ERAS: Preoperative Preparation

Managing Patient Expectations

- Positive preoperative expectations
- Psychological expectancy
- Forecasting

Alokozai A, *Clin Orthop Rel Dis* 2019
Waljee J, *Surgery* 2014
Benson Sven, *Pain* 2019

ERAS: Preoperative Preparation

Managing Patient Expectations

Visual Analogue Scale

Choose a Number from 0 to 10 That Best Describes Your Pain

No Pain — Distressing Pain — Unbearable Pain

0 1 2 3 4 5 6 7 8 9 10

ASK PATIENTS ABOUT THEIR PAIN

INTENSITY—LOCATION—ONSET—DURATION—VARIATION—QUALITY

"Faces" Pain Rating Scale

0	1	2	3	4	5
NO HURT	HURTS LITTLE BIT	HURTS LITTLE MORE	HURTS EVEN MORE	HURTS WHOLE LOT	HURTS WORST

van Dijk JFM, *Int J Nurs Stud* 2016

Perioperative / Postoperative

Perioperative Management

Pain Management

LOS

Enhanced Recovery After Surgery

Preoperative Cocktail

Acetaminophen 1000mg
Celebrex 400mg
Lyrica 75mg

Intraoperative

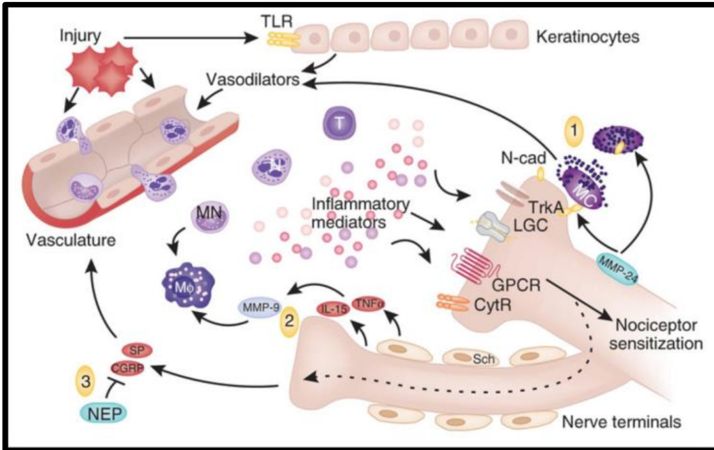
Ketamine infusion
Lidocaine infusion
Eliminate Fentanyl
Limit narcotic
Regional anesthesia

Postoperative

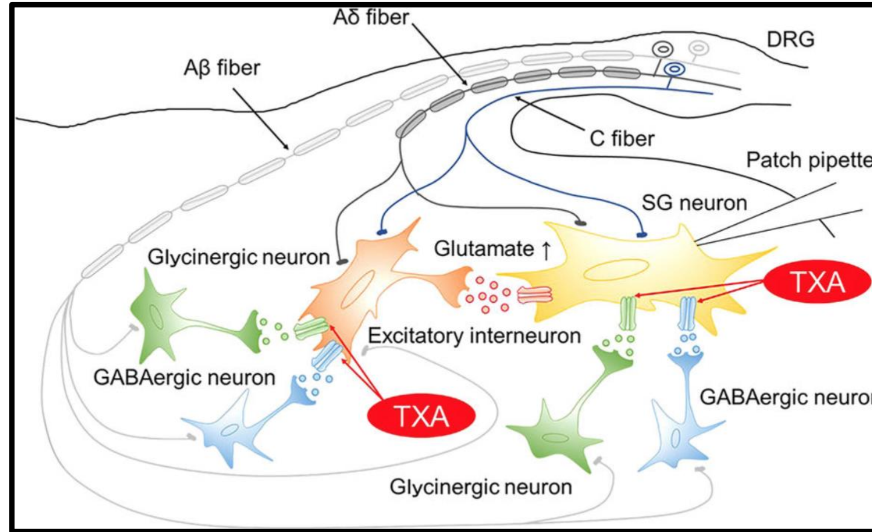
Ketamine infusion
Acetaminophen
Ketorlac
PO meds
IV for breakthrough only
No PCA

Warren JA, et al. *J Gastrointest Surg* 2017; 21(10):1692-99

Target multiple pain pathways



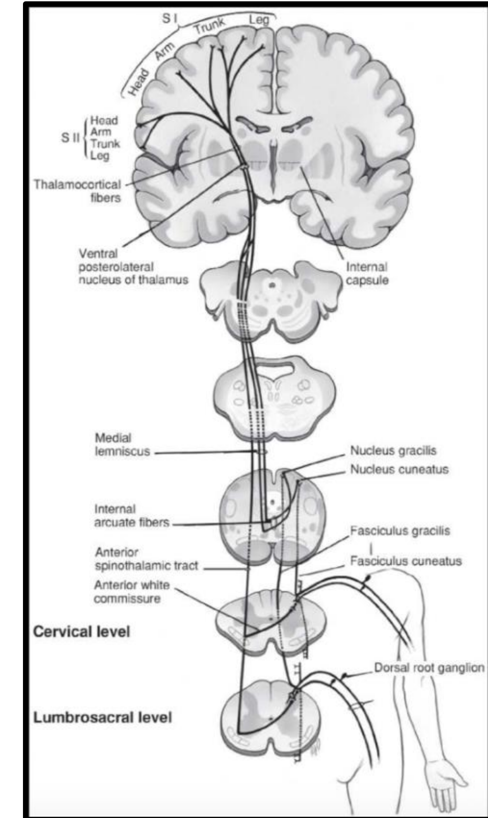
Nociception



Spinal Cord

Spinothalamic tract

Spinoreticulothalamic tract



Brain

Somatosensory cortex

Cingulate gyrus

Prefontal cortex

Cerebellum

Basbaum AI, et al. *Cell* 2009; 139(2):267-84

Pergolizzi JV, et al. *Pain Ther* 2017; 15:ES9-16

PRISMA HEALTH

ERAS: Perioperative Management

Effect of Multimodal Analgesia on Opioid Use After Open Ventral Hernia Repair

- Elimated PCA
- Reduced total MME by 60-75% over POD 0 - 2
- No difference in LOS

Warren JA, et al. *J Gastrointest Surg* 2017; 21(10):1692-99

ERAS: Perioperative Management

Length of Stay and Opioid Dose Requirement with Transversus Abdominis Plane Block vs Epidural Analgesia for Ventral Hernia Repair

- Reduction in LOS with TAP Block
- Reduction in MME by about 20% over POD 1 and 2

Warren JA, et al. *J Am Coll Surg* 2019; 228(4):680-686

Discharge

Pain management

Patient Education

ERAS: Discharge Pain Management

Do we *KNOW* how much opioid our patients need?

How were we trained to prescribe?

ERAS: Discharge Pain Management

Wide Variation and Excessive Dosage of Opioid Prescriptions for Common General Surgical Procedures

Maureen V. Hill, MD, Michelle L. McMahon, BS,† Ryland S. Stucke, MD,**
*and Richard J. Barth Jr., MD**

Common General Surgical Procedures

- Wide variation in prescribing
- 28% of pills used

Prescribing Guidelines: Outpatient

Outpatient Procedures: Simple

First Line: non-opioid

Ibuprofen 800mg

Acetaminophen 1000mg

Second Line: opioid

40 MME

Tramadol 50mg x 8 pills

Hydrocodone 5/325mg x 8 pills

Oxycodone 5mg x 6 pills

Outpatient Procedures: Simple

First Line: non-opioid

Ibuprofen 800mg

Acetaminophen 1000mg

Second Line: opioid

75 MME

Tramadol 50mg x 15 pills

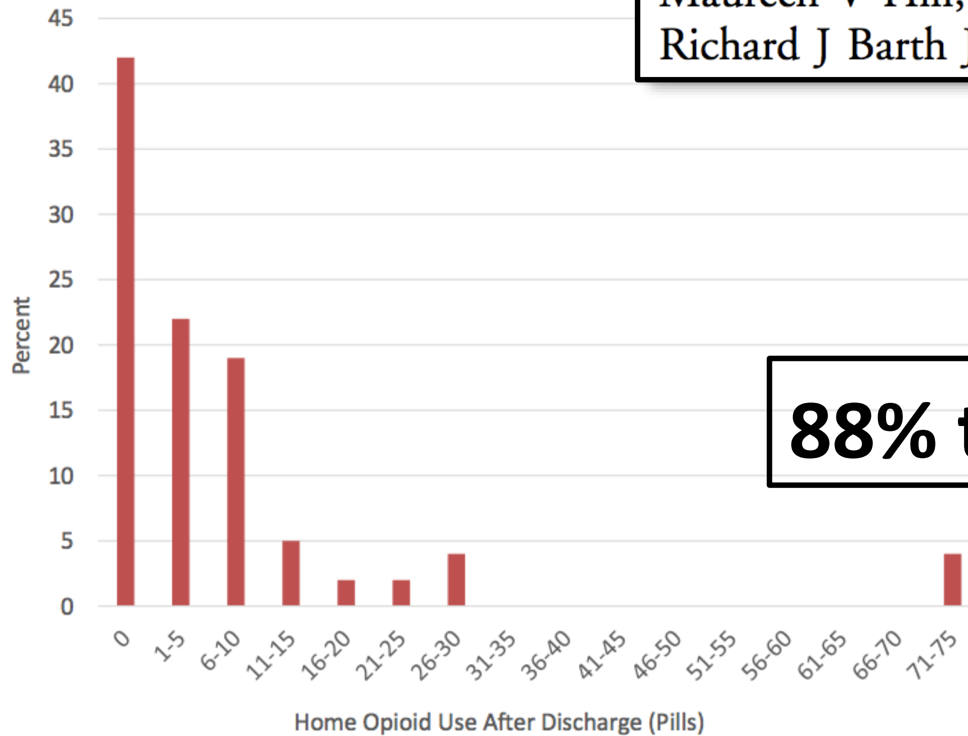
Hydrocodone 5/325mg x 15 pills

Oxycodone 5mg x 10 pills

ERAS: Discharge Pain Management

Guideline for Discharge Opioid Prescriptions after Inpatient General Surgical Procedures

Maureen V Hill, MD, Ryland S Stucke, MD, Sarah E Billmeier, MD, MPH, Julia L Kelly, MS, Richard J Barth Jr, MD, FACS



88% took <15 pills

ERAS: Discharge Pain Management

Guideline for Discharge Opioid Prescriptions after Inpatient General Surgical Procedures

Maureen V Hill, MD, Ryland S Stucke, MD, Sarah E Billmeier, MD, MPH, Julia L Kelly, MS, Richard J Barth Jr, MD, FACS

Table 3. Univariate and Multivariate Analysis of Variables Associated with Outpatient Opioid Use for Questionnaire Respondents Discharged on Postoperative Day 2 or Later

Variable	n	Pills taken after discharge, median (IQR)	Pills taken after discharge, mean (SD)	Univariate p Value	Multivariate p Value
No. of pills taken 24 h before discharge				<0.0001	<0.0001
0	63	0 (0,1)	1.5 (3.9)		
1–3	51	4 (0,12)	7.6 (9.3)		
≥4	41	13 (8,25)	21.2 (21.4)		

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Prescribing Guidelines: Inpatient

Inpatient Postoperative Discharge: *Based on last 24hr MME*

0-5 MME

- 15 MME (Tramadol x 3; Hydrocodone x 3; Oxycodone x 2)

6-15 MME

- 40 MME (Tramadol x 8; Hydrocodone x 8; Oxycodone x 6)

16-30 MME

- 80 MME (Tramadol x 16; Hydrocodone x 16; Oxycodone x 12)

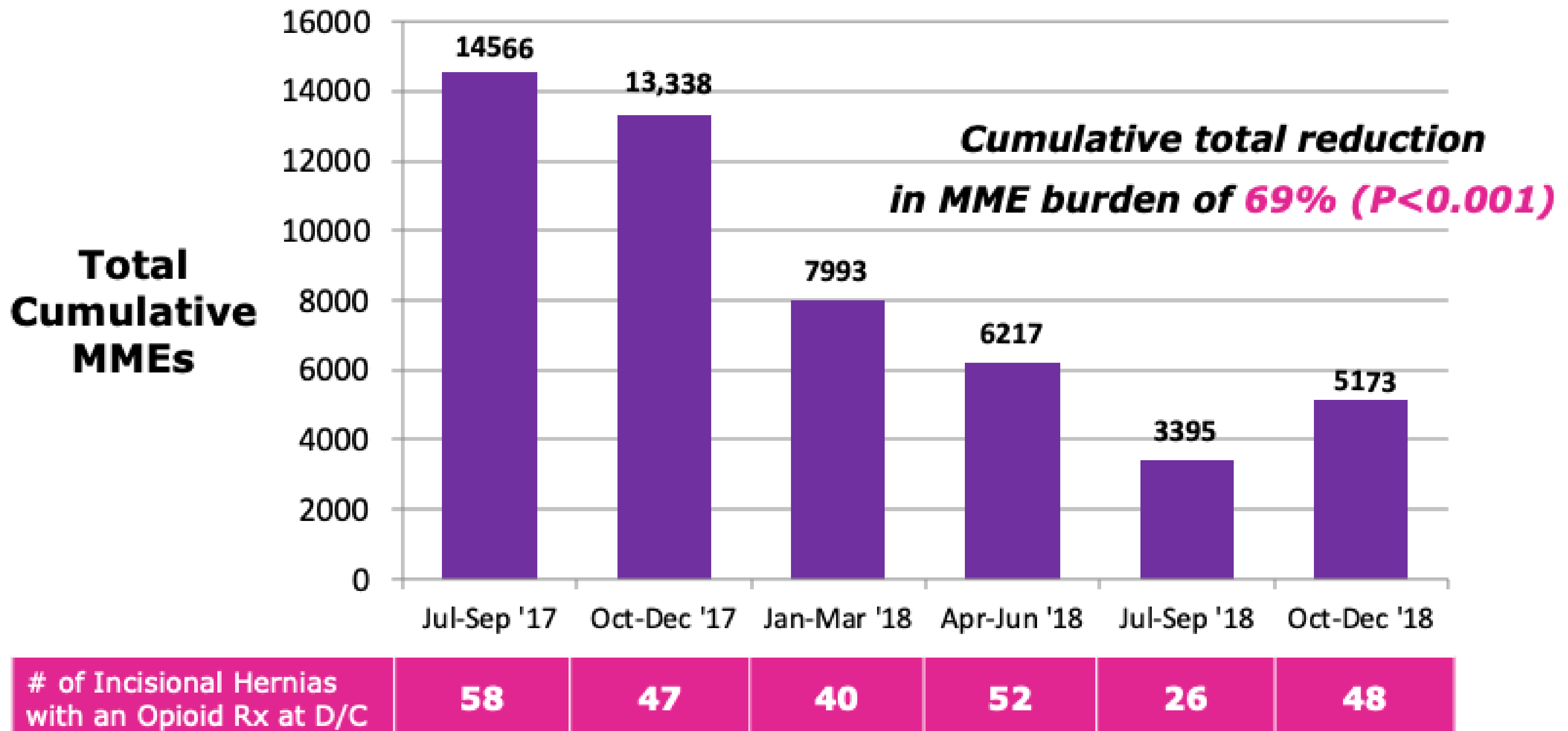
>30 MME

- 100 MME (Tramadol x 20, Hydrocodone x 20; Oxycodone x 15)

Preliminary Results

Prisma Health-Upstate Incisional Hernia Procedures

Total Discharge MME Burden of Opioid Prescriptions by Quarter



# of Incisional Hernias with an Opioid Rx at D/C	58	47	40	52	26	48

PRISMA HEALTH

Results:
Actual Opioid Utilization

179 cases: 101 had documentation of opioid use

	n	Overall pill average	Tramadol use (pills / MME)	Hydrocodone (pills / MME)	Oxycodone (pills / MME)	Refills (n)	Patients taking NO narcotic
Inguinal	36	2.1	5.9 / 29.3	n/a	n/a	1	23 (63.9%)
Umbilical/Epigastric	10	2.2	5.5 / 27.5	n/a	n/a	1	6 (60%)
Ventral/Incisional	61	4.75	7.8 / 40	8.5 / 45	17.1 / 203	8	12 (20%)

Key Factors

Multidisciplinary:

Anesthesia, Surgery, Pharmacy, Nursing

Interdisciplinary Opioid Stewardship Committee

IT solutions

Prescribing Guidelines / Protocols

There's evidence out there - Use it

Design practice specific pathways.

Physician champion(s)

Key Factors

Physician Education
- Current data on opioid use, abuse, diversion
- Alternatives

Nursing Education
- Protocols
- Patient expectations
- Alternatives

Patient Education
- Multimodal analgesia, opioid alternatives
- Expectations
- Opioid risks

Leveraging a Quality Collaborative

You are the most important part of your healthcare team – ask questions and know the facts before using opioids for your pain.

Michigan-OPEN.org

Safely store your opioids & dispose of any unused pills!

Safely store opioids out of reach of infants, children, teens & pets.

- Lock your pills if possible.
- Try to keep a count of how many pills you have left.
- Do not store your opioids in places that allow easy access to your pills. (Example: bathrooms, kitchens)

SAFELY dispose of unused opioids:

- Medication Take-Back Drives
- Pharmacy & police station drop boxes
- Mix drugs (do not crush) with used coffee grounds or kitty litter in a plastic bag, then throw away.

To find a list of local places that will take back your unused opioids, visit: https://apps.deadiversion.usdoj.gov/pubdispsearch/

Michigan OPEN is partially funded by the Michigan Department of Health and Human Services.

Do you know the facts about opioid pain medications?

OPEN
OPIOID PRESCRIBING ENGAGEMENT NETWORK

AHSQC
AMERICAS HERNIA SOCIETY QUALITY COLLABORATIVE FOUNDATION

What is an opioid?

An opioid is a strong prescription pain medication. Some possible side effects include nausea/vomiting, sleepiness/dizziness &/or constipation.

Common names of opioids:

- Hydrocodone (Vicodin, Norco)
- Oxycodone (Percocet, OxyContin)
- Morphine
- Codeine (Tylenol #3, Tylenol #4)
- Fentanyl
- Tramadol (Ultram)
- Methadone
- Hydromorphone (Dilaudid)
- Oxymorphone (Opana)

Only use your opioids for the reason they were prescribed.

Using opioids safely

- Ask your surgeon if it is okay to use over-the-counter acetaminophen (Tylenol) or ibuprofen (Motrin, Advil).
- Use your opioids if you still have severe pain, that is not controlled with the over-the-counter medications, or other non-opioid prescriptions.
- Let your doctor know if you are currently taking any benzodiazepines (i.e. Valium, Xanax).
- Do not mix opioids with alcohol or other medications that can cause drowsiness.
- As your pain gets better, wait longer between taking opioids.
- Only use your opioids for your surgical pain. Do not use your pills for other reasons.
- Your opioids are only for you. Do not share your pills with others.
- Diversion (sharing or selling) of opioids is considered a felony.
- Please discuss with your doctor if you are pregnant and considering opioid use.

Know the facts about opioid addiction

You are at higher risk of developing a dependence or an addiction to opioids if you:

- Have a history of depression or anxiety.
- Have a history of using or abusing alcohol, tobacco or drugs (including prescription or street drugs).
- Have a history of long term (chronic) pain.
- Take opioids for longer than a week.
- Take more pills, more often, than your doctor prescribed.

Opioid use puts you at risk of dependence, addiction or overdose!

Understanding pain goals after surgery

Our goal is to control your pain enough to do the things you need to do to heal: walk, sleep, eat & breath deeply.

Things to know:

- Pain after surgery is normal.
- Everyone feels pain differently.
- Pain is usually worse for the first 2-3 days after surgery.
- Most patients report using less than half of their opioid pills; many patients do not use any of their pills!

Other things to try for pain relief:

- Relaxation, meditation, and music can help control your pain.
- Talk to your doctor if your pain is not controlled.

Surgeon: ______________

Phone Number: ______________

Key Factors

“Pharmacologic Engineering”

Set up for success

Quality Improvement / Research:

What are your actual outcomes?

Measure, track, adapt

QI projects

Grant funding

Culture Change:

This will take some time!