

# OPEN

Evidence. Resources. Engagement.

## Improving Medication Adherence after Surgery

Mark C. Bicket, MD, PhD  
Co-Director, OPEN  
Assistant Professor, Division of Pain Research  
Dept. of Anesthesiology  
@ MarkBicket



# Disclosures

None

# Objectives

Analyze how prescribing recommendations changed the use and consumption of opioid prescriptions after discharge from surgery

Examine techniques to promote adherence of non-opioid medications to manage pain

Discuss strategies to maximize safe storage and disposal of controlled substances

SECTION

# Introductions

**OPEN**  
Evidence. Resources. Engagement.

# Meet the Leadership.



**Mark Bicket, MD, PhD**



**Jennifer Waljee, MD,  
MPH, MS**



**Chad Brummett, MD**



**Michael Englesbe,  
MD**

OPEN is a  
transformative organization  
focused on  
evidence-based solutions with  
resources,  
engagement, and  
actions  
to change the way  
we care for acute pain.



# Our Mission

Improve acute care treatment, outcomes and overall community health

# Our Mission

Improve acute care treatment, outcomes and overall community health



**Reducing, eliminating  
unnecessary opioid  
exposures**



# Our Mission

Improve acute care treatment, outcomes and overall community health



**Reducing, eliminating  
unnecessary opioid  
exposures**



**Improving prescribing  
and substance use  
knowledge**

# Our Mission

Improve acute care treatment, outcomes and overall community health



**Reducing, eliminating  
unnecessary opioid  
exposures**



**Improving prescribing  
and substance use  
knowledge**



**Increasing awareness,  
use of best practices,  
and access to  
resources**

# Our Initiatives



Opioid  
Prescribing  
Recommendation  
s



Acute Care  
Pain  
Management



Safe Storage  
& Disposal



Public Health  
Policy



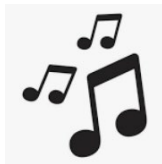
OUD/SUD  
Care Coordination



Naloxone  
Distribution



Stigma  
Reduction



Painless: The  
Opioid Musical

# Our Initiatives



Opioid  
Prescribing  
Recommendation  
s



Acute Care  
Pain  
Management



Safe Storage  
& Disposal



Public Health  
Policy



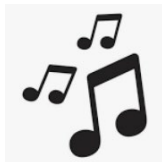
OUD/SUD  
Care Coordination



Naloxone  
Distribution



Stigma  
Reduction



Painless: The  
Opioid Musical

SECTION

# Opioid Prescribing Recommendations

**OPEN**  
Evidence. Resources. Engagement.

# Why do we prescribe too much?



# Why do we prescribe too much?



# Why do we prescribe too much?





# Why do we prescribe too much?



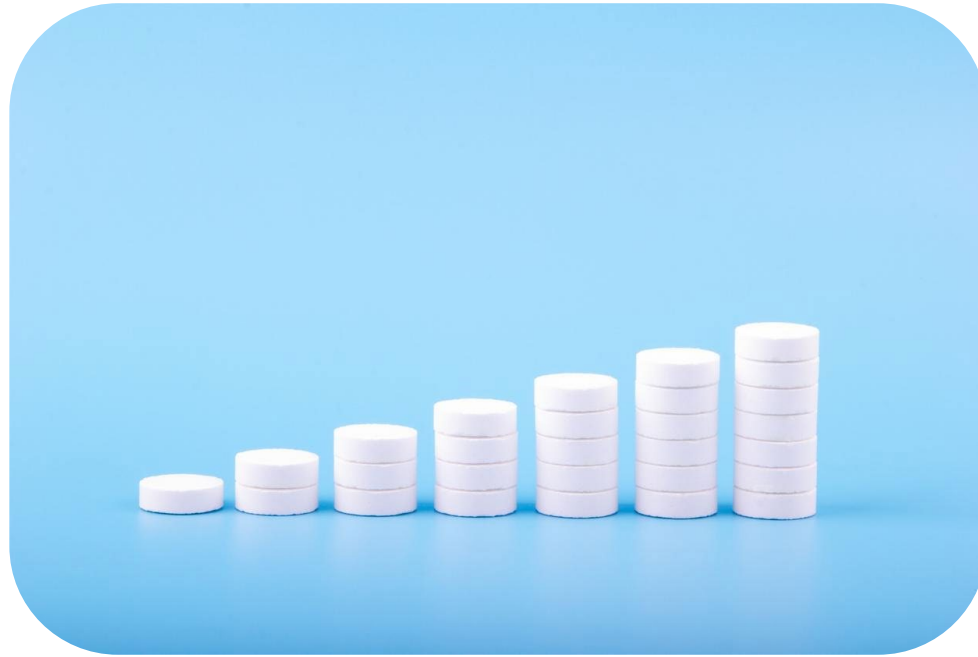
# Why do we prescribe too much?



# Why do we prescribe too much?



# What happens when we prescribe too much?



# New Persistent Opioid Use



6%

Brummett CM et al. *JAMA Surg.* 2017; 152(6).



8%

Goesling J et al. *Pain.* 2016;157(6).



13%

Johnson SP et al. *JHS.* 2016;41(10).



13%

Deyo RA et al. *Pain.* 2018. Epub.



5%

Harbaugh CM et al. *Pediatrics.* 2017. Epub.



10%

Lee JS et al. *JCO.* 2017. Epub



19%

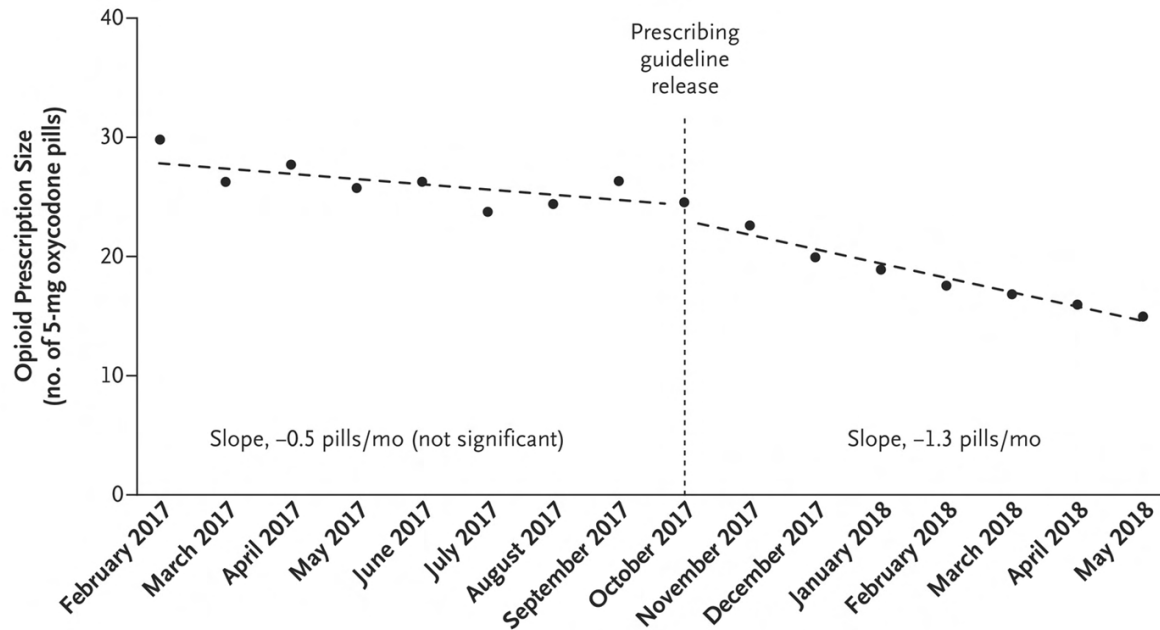
Marcusa D et al. *PRS.* 2017;140(6).

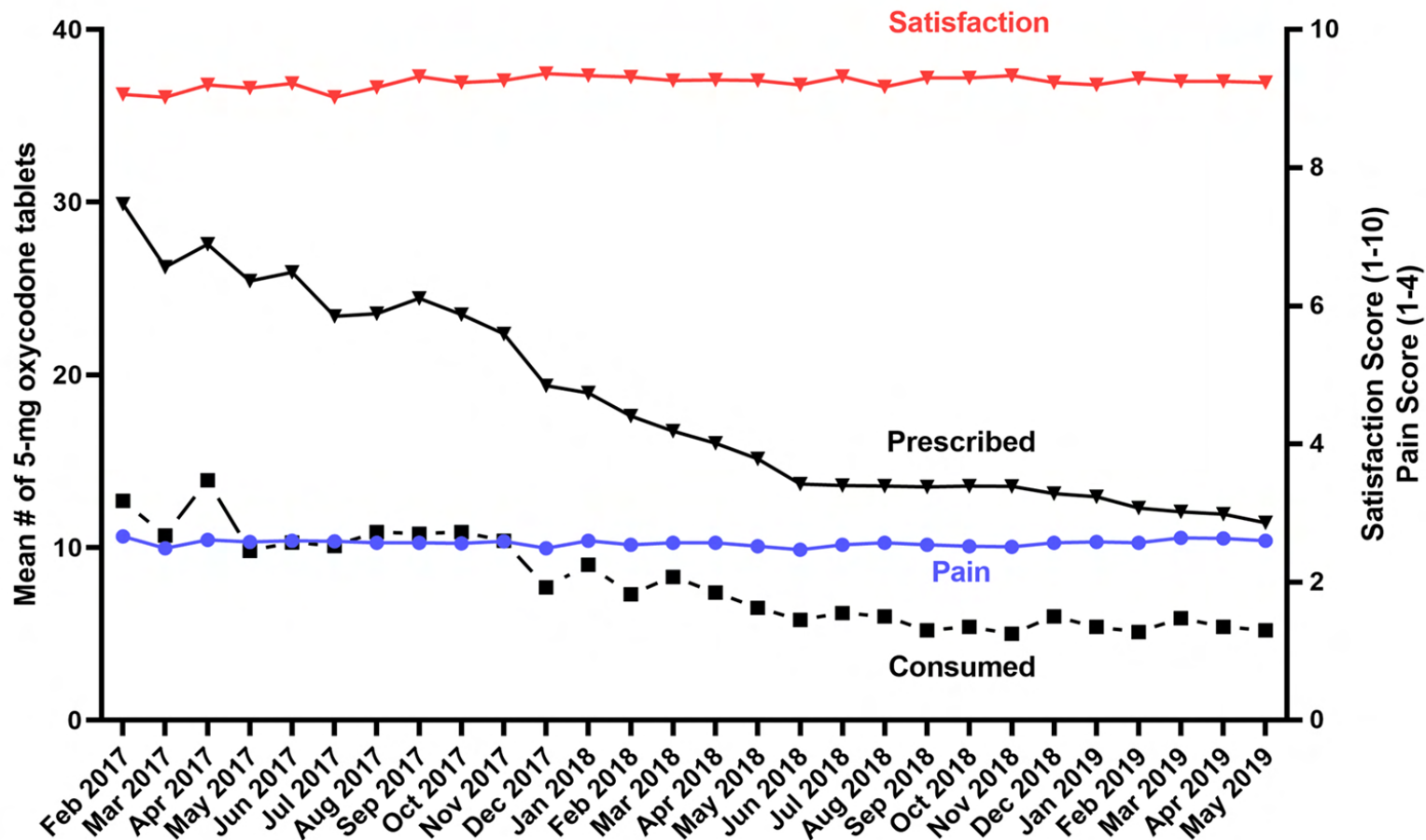
The amount of opioid prescribed after surgery was not associated with patient satisfaction or refill rate



Bateman BT, et al. Obstet Gyn 2017; Howard R, et al. JAMA Surg 2018; Lee JS, et al. JAMA 2017; Sekhri S, et al. Ann Surg 2017

# First Prescribing Guideline Released in 2017





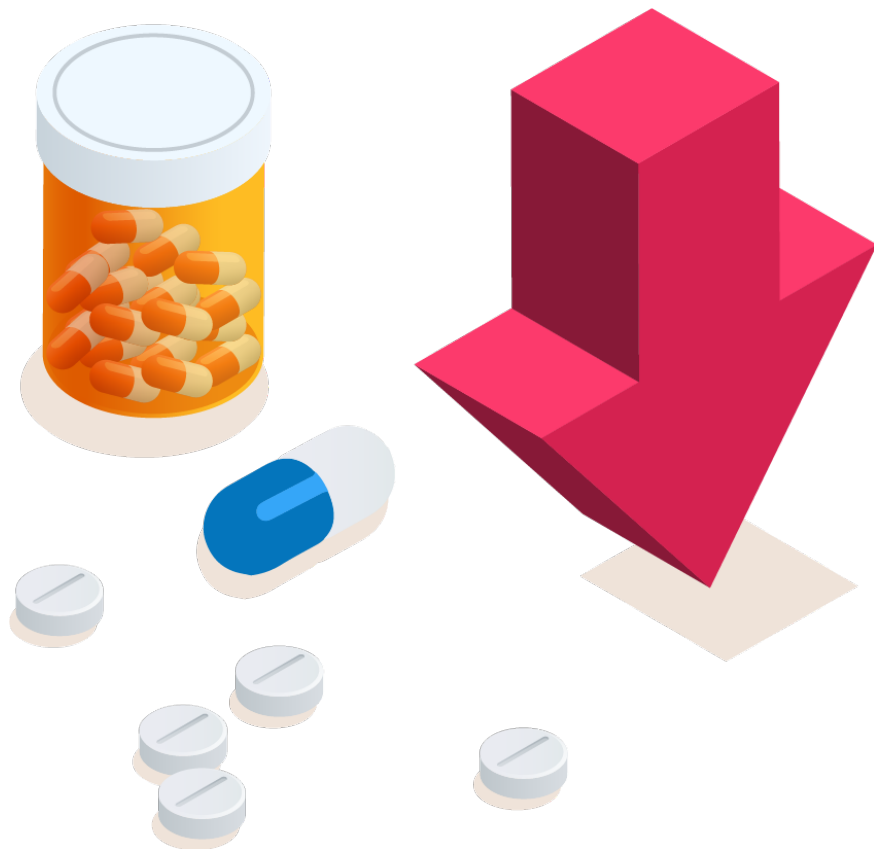
Vu JV, Howard RA, Gunaseelan V, Brummett CM, Waljee JF, Englesbe MJ. *N Engl J Med*. 2019;381(7):680-682.

Brown CS, Vu JV, Howard RA, Gunaseelan V, Brummett CM, Waljee JF, Englesbe ME. *BMJ Qual & Safety*. 2020, epub



# 76 %

Since establishing these guidelines, opioid prescribing after surgery has declined.



## Prescribing Recommendations – Updated 2022

Procedure	Oxycodone* 5mg tablets
Dental Extraction	0
Anti-reflux (Nissen) - Lap	0 - 5
Enterolysis - Lap	0 - 5
Excision of Rectal Tumor - Transanal	0 - 5
Thyroidectomy	0 - 5
Appendectomy - Lap or Open	0 - 10
Cholecystectomy - Lap or Open	0 - 10
Colectomy - Lap or Open	0 - 10
Donor Nephrectomy - Lap	0 - 10
Enterostomy Closure - Lap	0 - 10
Gastrorrhaphy	0 - 10
Hernia Repair - Major or Minor	0 - 10
Ileostomy/Colostomy Creation, Re-siting, or Closure	0 - 10
Pancreatotomy	0 - 10
Sleeve Gastrectomy	0 - 10

Procedure	Oxycodone* 5mg tablets
Small Bowel Resection or Enterolysis - Open	0 - 10
Carotid Endarterectomy	0 - 5
Prostatectomy	0 - 10
Cardiac Surgery via Median Sternotomy	0 - 25
Hysterectomy - Vaginal or Lap/Robotic or Abdominal	0 - 10
Cesarean Section	0 - 20
Breast Biopsy or Lumpectomy	0 - 5
Lumpectomy + Sentinel Lymph Node Biopsy	0 - 5
Sentinel Lymph Node Biopsy Only	0 - 5
Wide Local Excision ± Sentinel Lymph Node Biopsy	0 - 20
Simple Mastectomy ± Sentinel Lymph Node Biopsy	0 - 20
Modified Radical Mastectomy or Axillary Lymph Node Dissection	0 - 30
Total Hip Arthroplasty	0 - 30
Total Knee Arthroplasty	0 - 50

2017 - 10 Procedures

5 Iterations

2022 - 35 Procedures

*\*If prescribing hydrocodone 5mg, the number of tablets remain the same as listed above*

# Pediatric Prescribing Recommendations

Procedure	Dose of Opioid
Dental Extraction	0
Adenoidectomy	0
Appendectomy	0
Inguinal or Umbilical Hernia	0
Circumcision	0
Orchiopexy	0
Supracondylar Humerus Fracture	0

**0 doses opioid + acetaminophen + ibuprofen + non-medication [strategies](#)**

SECTION

# Non-Opioid Medication Adherence

**OPEN**  
Evidence. Resources. Engagement.

# ACETAMINOPHEN + NSAIDs

Acetaminophen and NSAIDs should be used together as first-line medications for postoperative pain in surgical patients without contraindications

Alternating medications has **not** shown to be more effective than taking together

Provide instruction with dosage, directions, and around the clock administration

# Improve Patient Counseling and Education

Instead of...

You will have some pain  
after surgery ...

Try...

Pain is worst 2-3 days after surgery and  
medication is only one part of the plan.

The goal of pain management is for you  
to walk, eat, breathe deeply, and sleep

# Improve Patient Counseling and Education

Instead of...

Take opioid medication  
every 6 hours for pain ...

Try...

Only use opioid medication for  
SEVERE breakthrough pain that is not  
controlled by acetaminophen and  
ibuprofen

# Improve Patient Counseling and Education

Instead of...

Use OTC medications as  
needed for pain

Try...

Take around the clock for the first 3-5  
days after surgery and then as needed



# Improve Patient Counseling and Education

Instead of...

Follow directions on bottle  
for OTC medications

Try...

**PRESCRIBE**

acetaminophen 1000 mg every 6 hours

and

ibuprofen 600 mg every 6 hours

unless contraindicated

# Patient Education on Opioids and Pain Management

Customizable brochure with your institution's logo, add logo at no cost



Add Your  
Logo Here



# How to Manage Pain Without Medications

Mindful breathing

Positive daily reflection

Meditation

Walking



SECTION

# Safe Storage and Disposal

**OPEN**  
Evidence. Resources. Engagement.





Remove risk of  
unnecessary exposure in  
the community.

OPEN supports:  
Take Back Events

Disposal Education and  
Awareness

Increased Access to  
Permanent Disposal  
Options

# Medication Disposal Box Program

Permanent medication disposal boxes

Available to communities in the state of Michigan

Promote safe disposal of unused medications

Apply for a fully-funded box for your organization



# Pediatric Medication Disposal Envelopes

Mail back disposal envelopes

Inserting unused medication into the  
7.5 x 11 envelope

Secure and mail in pre-paid package

Available to organizations caring for  
pediatric patients in the state of  
Michigan





## Wrap Up

Prescribing recommendations lead to positive changes in the use and consumption of opioid prescriptions after discharge from surgery

Language and resources help to promote adherence of non-opioid medications to manage pain

Several strategies to maximize safe storage and disposal of controlled substances exist via OPEN and in your community

# OPEN

Evidence. Resources. Engagement.

## Thank You.



<https://michigan-open.org>