Opiate-sparing Perioperative Care

Michelle L. Humeidan, M.D., Ph.D.
Associate Professor, Neuroanesthesiology, Department of Anesthesiology
Medical Director, Enhanced Surgical Recovery
Associate Faculty, Institute for Behavioral Medicine Research
The Ohio State University Wexner Medical Center

MedNet21

Learning goals

1. Understand impact of surgery-related opiate use
2. Understand alternatives to opiate medication for surgical pain
3. Case Reports in perioperative pain management
4. Review resources to guide pain management and the patient-perioperative physician relationship

Phases of the Opioid Epidemic

Phase 1:
- Began in the 1990s
- Overdose deaths largely due to prescription drugs

Phase 2:
- Began 2010
- Overdose deaths largely due to heroin

Phase 3:
- Began in 2013
- Overdose deaths due to synthetic opiates (fentanyl)

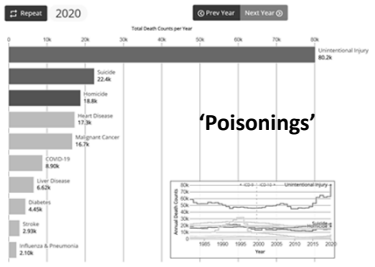
Opioid Epidemic

Nearly 841,000 people have died since 1999
from a drug overdose.

In 2017:
58 opioid prescriptions for every 100 Americans
(>40 Milligram Morphine Equiv. per day x 18 days on average)

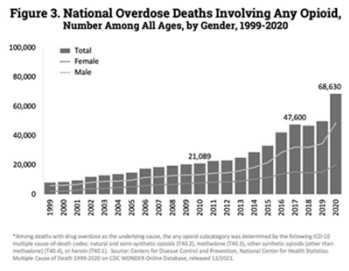
1.Wide-ranging online data for epidemiologic research (WONDER). Atlanta, GA: CDC, National Center for Health Statistics; 2020. Available at http://wonder.cdc.gov.

Unintentional injuries = #1 cause of death for Americans aged 1-44 years



WISQARS fatal injury data come from the National Vital Statistics System multiple-cause-of-death database. Available at http://cdc.gov.

Impact of the Opioid Epidemic



SOURCE: National Institute on Drug Abuse, https://nida.nih.gov

Impact of the Opioid Epidemic

The Centers for Disease Control and Prevention (CDC) estimates total "economic burden" of prescription opioid misuse in the US is **$78.5 billion a year**

(costs of healthcare, lost productivity, addiction treatment, criminal justice involvement)

Wide-ranging online data for epidemiologic research (WONDER). Atlanta, GA: CDC, National Center for Health Statistics; 2020. Available at http://wonder.cdc.gov.

Surgery-related Opioid Use

51 million Americans undergo inpatient surgery every year

>80% of patients receive opioids after low-risk surgery

(mostly oxycodone or hydrocodone, the most prescribed opioids implicated in drug overdose deaths)

Wunsch H, et al. JAMA. 2016;315:1654–1657
Hah JM et al. A&A 2017:125:1773-1740

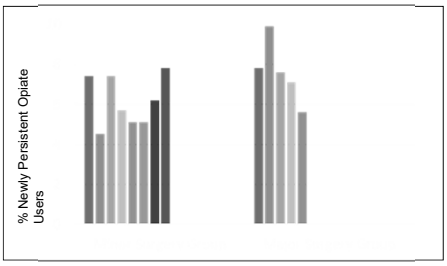
Impact of Surgery-related Opioid Use

Of patients surveyed in outpatient neurosurgery or orthopedic clinics of a tertiary academic medical center, *14.7% reported using opioids without a prescription in greater amounts, or longer than prescribed*

This far exceeds the national prevalence of opioid misuse of 1.9% among US adults

Wunsch H, et al. JAMA. 2016;315:1654–1657
Hah JM et al. A&A 2017:125:1773-1740

Surgery ↑ risk of opiate misuse



Brummett CM et al. JAMA Surg. 2017 Jun 21;152(6):e170504.

Surgery ↑ risk of opiate misuse

Procedure	Average opiate pills prescribed for postop pain	Newly-persistent users (>6 months use) (%)
Hysterectomy	45	7.5
Hernia	63	7.2
Colectomy	65	17.6
Rotator cuff	95	10.2
Hip replacement	119	9.9
Knee replacement	130	16.7
Sleeve gastrectomy	194	8.5

https://www.planagainstpain.com/

Impact of Surgery-related Opioid Use

Physician behavior (historical prescribing patterns) dictate post-op opiate prescriptions
more than patient needs/behavior!

Brandal D et al. Anesth Analg. 2017 Nov;125(5):1784-1792.

Impact of Surgery-related Opioid Use

Opioid prescribing in surgery patients >>> pain control needs

Variability is great!
(inguinal hernia postop opiate pills prescribed = 15 – 120)

67% - 92% of patients report unused opiates after surgery
Overall proportion of unused tablets ranges from 42% - 71%

Neuman, Mark D et al. Lancet vol. 393,10180 (2019): 1547-1557

Impact of Surgery-related Opioid Use

With growing awareness, from 2010-1016 opiate prescriptions have had a national downturn, *however*,

surgical, dental, and emergency care providers have continued to ↑ *prescribing*

Surgery average total MME ↑ nearly 70%!

Upp LA et al. Clinics in Plastic Surgery, 2020. 47(2), 181-190

Impact of Surgery-related Opioid Use

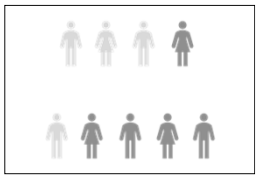
Surgery-related overprescribing → >3 billion un-used pills available for diversion and misuse

A 10% ↓ in post-surgery opiate prescribing could:

1. ↓ patients that become persistent users by 300K
2. save more than $800 million in drug costs alone

https://www.planagainstpain.com/

Impact of Surgery-related Opioid Use



<u>For Seniors:</u>

1 of 4 may avoid surgery due to concerns about opiates

4 of 5 desire more non-opiate options for pain control

https://www.planagainstpain.com/

Impact of Surgery-related Opioid Use

Less opiates = better surgical recovery:

- ↓ sedation
- ↓ respiratory depression
- ↓ nausea/vomiting
- ↓ ileus/constipation
- ↓ pruritus
- ↓ urinary retention
- ↓ chronic pain syndromes
- ↓ risk for opiate misuse disorders

Learning goals

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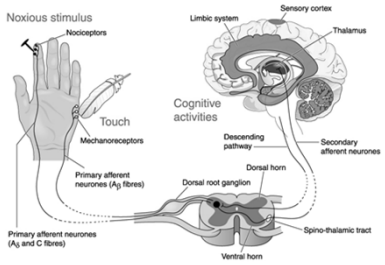
2. **Understand alternatives to opiate medication for surgical pain**
3. Case Reports in perioperative pain management
4. Review resources to guide pain management and the patient- perioperative physician relationship

9 of 10 patients say postsurgical pain is *mild or gone* by 4 days

SOURCE: American College of Surgeons, https://www.facs.org/

www.cdc.gov

Alternatives to opiates for surgical pain



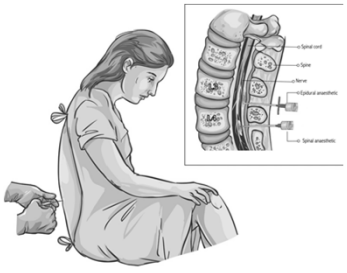
Alternatives to opiates for surgical pain

1. Medications:
   - Local anesthetic (IV, infiltration)
   - NSAIDs, COX-2 ∅, Acetaminophen
   - Anti-convulsants
   - Anti-depressants
   - Anti-spasmotics
   - NMDA-receptor ∅
   - α-2 receptor +
   - Sympatholytics

Alternatives to opiates for surgical pain

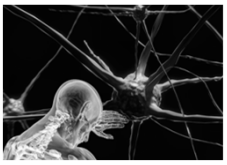
2. Regional anesthesia
   - Nerve blocks (single shot, continuous)
   - Neuraxial (continuous epidural, spinal)
   - Field block, Infiltration

Alternatives to opiates for surgical pain

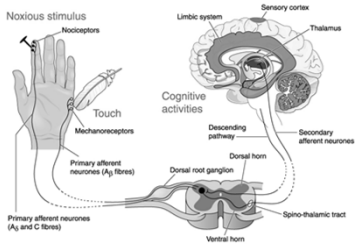


Alternatives to opiates for surgical pain

3. Complimentary
   - Heat/Ice
   - Meditation
   - Massage
   - Acupuncture
   - TENS



Alternatives to opiates for surgical pain



Alternatives to opiates for surgical pain

Safe and Effective Pain Control After Surgery
facs.org/safepaincontrol

aser AMERICAN SOCIETY FOR ENHANCED RECOVERY
aserhq.org

ERAS® Society
erassociety.org

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Case #1

45-year-old female presents for bilateral mastectomy and flap reconstruction for breast cancer

She is otherwise healthy, and takes ibuprofen occasionally for headaches

She is very nervous about using opiates but doesn't want to be in pain after surgery

How can the perioperative clinician develop a basic plan?

Case #1


NEWS

February 24, 2021

American Society of Anesthesiologists

14 Medical Specialty Organizations Achieve Pathway to Collaborative Guide for Acute Surgical Pain

Landmark pain summit results in agreement to publish resource for all clinicians

Foundational principles of forthcoming practice guideline:

1. Conduct a preop eval: medical and psychological conditions, concomitant medications, history of chronic pain, substance abuse, and previous postoperative treatment regimens and responses

2. Provide patient and family-centered, individually tailored education for managing postoperative pain. Document the plan and goals.


14 Medical Specialty Organizations Achieve Pathway to Collaborative Guide for Acute Surgical Pain

Foundational principles of forthcoming practice guideline:

3. Offer multimodal analgesia

4. Provide education on proper storage and disposal of opioids and tapering of analgesics after hospital discharge


14 Medical Specialty Organizations Achieve Pathway to Collaborative Guide for Acute Surgical Pain

Foundational principles of forthcoming practice guideline:

Assure the patient you will,

5. Use a validated pain assessment tool to track responses to postoperative pain treatments and adjust plans accordingly

6. Follow-up and adjust the pain management plan based on adequacy of pain relief and presence of adverse events.

7. Have access to consultation with a pain specialist

Case #1

SOURCE: American College of Surgeons, 'For Patients' www.facs.org/for-patients/safe-pain-control/

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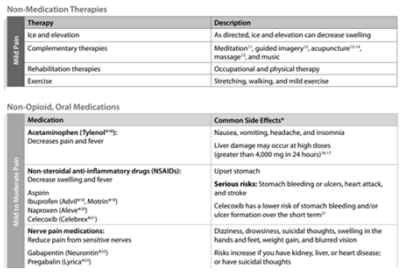


SOURCE: American College of Surgeons 'For Patients' www.facs.org/for-patients/safe-pain-control/

OPEN

Prescribing Recommendations

Procedure	Oxycodone* 5mg Tablets
Dental Extraction	0
Thyroidectomy	0 - 5
Laparoscopic Anti-reflux (Nissen)	0 - 10
Appendectomy – Lap or Open	0 - 10
Laparoscopic Donor Nephrectomy	0 - 10
Hernia Repair – Minor or Major	0 - 10
Sleeve Gastrectomy	0 - 10
Laparoscopic Cholecystectomy	0 - 10
Open Cholecystectomy	0 - 15

https://www.cdc.gov/acute-pain/postsurgical-pain/index.html
Michagen Open Prescribing Network (OPEN)

Case #2

75 year old male presents for open total colectomy for diverticulitis

He has a history of HTN, afib, IDDM, 25 pack-years of smoking and OSA (compliant with CPAP)

He takes HCTZ, coumadin, insulin and a statin

Case #2

What opiate-sparing pain options will you use to manage this patient?

Case #2

- Preoperative Pain Management Selections
  - ❑ Acetaminophen – *DO NOT ORDER IF PATIENT HAS SEVERE ACTIVE LIVER DISEASE*
    - ❑ 975mg tablet PO x 1 dose, Administer 2 hours prior to surgery. Do not administer if patient has severe active liver disease.
    - **OR**
    - ❑ Acetaminophen 975mg suppository PR x 1 dose, Administer 2 hour prior to surgery. Do not administer if patient has severe active liver disease.
  - ❑ GABAPENTIN- *DO NOT ORDR IF PATIENT HAS H/O OBSTRUCTIVE SLEEP APNEA*
    - ❑ For age <75 yo Gabapentin 300mg PO capsule PO x 1 dose, Administer 2 hours prior to surgery
    - ❑ For age >/= 75 yo- No gabapentin- Request that order set not even make this drug option for these patients
  - ❑ Oxycodone 5mg tablet PO x1 dose
  - ❑ NSAID- Select only one. *Order with caution for patients with history of cardiovascular disease, gastroduodenal ulcers, renal dysfunction or hepatic dysfunction*
    - ❑ Ibuprofen 400mg tablet PO x 1 dose, Administer 20 minutes prior to surgery.
    - ❑ Naprowen 500mg tablet PO x 1 dose, Administer 20 minutes prior to surgery.
    - ❑ Celecoxib 400mg capsule PO x 1 dose, Administer 20 minutes prior to surgery.
    - ❑ Meloxicam 15mg PO tablet x1 dose, Administer 20 minutes prior to surgery.

Case #2

Procedures for analgesia

- Low-thoracic epidural (local anesthetic and opiate) placed pre-operatively (assuming anticoag held)

other options:
intrathecal morphine,
transversus abdominis plane block

Case #2

Intra-operative/PACU multimodal analgesia

- Ketamine (0.25 mg/kg/hour IV) or
- IV lidocaine infusion (2 mg/kg/hour)
- Epidural infusion
- Opiates for breakthrough

Case #2

- Postoperative Pain Management Selections
  - ❑ **Acetaminophen- Do not order for patients with severe active liver disease**
    - ☑ Acetaminophen 975mg tablet PO TID
    - ❑ *in patients with chronic cirrhosis or chronic liver disease:* Acetaminophen 650mg tablet PO TID
  - ❑ **NSAID options (Do not order patients with Coronary Artery Disease & Renal Disease) Select only one:**
    - ❑ Ketorolac *Avoid ketorolac in patients > or = 65 years old* (request to not have this present if >/=65yo)
    - ❑ Ketorolac 15mg IVP Q6H x ____ doses (request to not have this present if >/=65yo)
    - ❑ Celecoxib 200mg capsule PO BID
    - ☑ Ibuprofen 600mg tablet PO TID
  - ❑ **Gabapentin (Do not order in patients with Obstructive Sleep Apnea)**
    - ❑ Gabapentin 100mg PO TID
    - ❑ In patients on intermittent hemodialysis: Gabapentin 100mg PO QHS
  - ❑ **Opioid Medications** Note: Oral therapy is preferred over IV therapy. IVP is preferred over PCA
    - ❑ *Age < 65 years:*
      - ❑ Oxycodone VARIABLE DOSE 5mg-10mg tablet PO Q3Hprn, mild pain, moderate pain
      - ❑ Hydromorphone VARIABLE DOSE 0.5m-1mg IVP Q3Hprn, severe pain
    - ☑ *Age >/= 65 years:*
      - ❑ Oxycodone VARIABLE DOSE 2.5mg-5mg tablet PO Q4Hprn, mild pain, moderate pain
      - ❑ Hydromorphone VARIABLE DOSE 0.2mg – 0.5mgIVP Q3Hprn, severe pain

Case #2

- **Optional Post-Op Pain Medications:**
  - ❑ **Skeletal Muscle Relaxants (select only one)**
    - ❑ Cyclobenzaprine 5mg tablet PO TID
    - ❑ Cyclobenzaprine 5mg tablet PO TIDprn
    - ❑ Methocarbamol 500mg IVPB TID- Order only if complete NPO
    - ❑ Diazepam 5mg PO Q6hprn (Use only if patient continues to experience muscle spasm after attempting other agents)
  - ❑ **Other Pharmacologic Options**
    - ❑ Lidocaine Patch 5% transdermal every 24 hours. Administer over 12 hours. Apply to ***.
    - ❑ Methyl salicylate (ANALGESIC BALM) ointment. 1 application prn. Apply to ***.

Case #2

Patient does great with very little need for opiate breakthrough medication.

He is ready for discharge on day 4.

How will you decide how much opiate, if any, to prescribe at discharge?

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

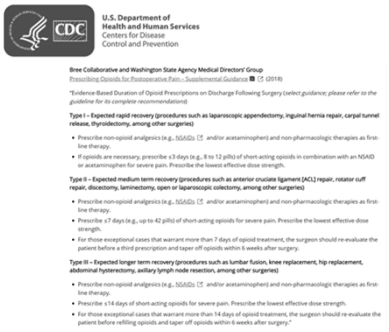
Summary of Treatment Recommendations

Michigan Opioid Prescribing Engagement Network (OPEN)
Michigan OPEN Prescribing Recommendations and Acute Care Opioid Treatment and Prescribing Recommendations: Summary of Selected Best Practices, Surgical Department
"For patients discharged from surgical department with an opioid prescription:

- Non-opioid therapies should be encouraged as a primary treatment for pain management (e.g., acetaminophen, ibuprofen).
- Non-pharmacologic therapies should be encouraged (e.g., ice, elevation, physical therapy).
- Do NOT prescribe opioids with other sedative medications (e.g., benzodiazepines).
- Short-acting opioids should be prescribed for no more than 3-5–day courses (e.g., hydrocodone, oxycodone).
- Fentanyl or long-acting opioids such as methadone [and] OxyContin … should NOT be prescribed to opioid naive patients."

Michigan OPEN surgery-specific opioid prescribing recommendations are regularly updated based on clinical data on opioid use.

https://www.cdc.gov/acute-pain/postsurgical-pain/index.html



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Bree Collaborative and Washington State Agency Medical Directors' Group
Prescribing Opioids for Postoperative Pain – Supplemental Guidance (2018)

"Evidence-Based Duration of Opioid Prescriptions on Discharge Following Surgery (*select guidance; please refer to the guideline for its complete recommendations*)

Type I – Expected rapid recovery (procedures such as laparoscopic appendectomy, inguinal hernia repair, carpal tunnel release, thyroidectomy, among other surgeries)

- Prescribe non-opioid analgesics (e.g., NSAIDs and/or acetaminophen) and non-pharmacologic therapies as first-line therapy.
- If opioids are necessary, prescribe ≤3 days (e.g., 8 to 12 pills) of short-acting opioids in combination with an NSAID or acetaminophen for severe pain. Prescribe the lowest effective dose strength.

Type II – Expected medium term recovery (procedures such as anterior cruciate ligament [ACL] repair, rotator cuff repair, discectomy, laminectomy, open or laparoscopic colectomy, among other surgeries)

- Prescribe non-opioid analgesics (e.g., NSAIDs and/or acetaminophen) and non-pharmacologic therapies as first-line therapy.
- Prescribe ≤7 days (e.g., up-to-42 pills) of short-acting opioids for severe pain. Prescribe the lowest effective dose strength.
- For those exceptional cases that warrant more than 7 days of opioid treatment, the surgeon should re-evaluate the patient before a third prescription and taper off opioids within 6 weeks after surgery.

Type III – Expected longer term recovery (procedures such as lumbar fusion, knee replacement, hip replacement, abdominal hysterectomy, axillary lymph node resection, among other surgeries)

- Prescribe non-opioid analgesics (e.g., NSAIDs and/or acetaminophen) and non-pharmacologic therapies as first-line therapy.
- Prescribe ≤14 days of short-acting opioids for severe pain. Prescribe the lowest effective dose strength.
- For those exceptional cases that warrant more than 14 days of opioid treatment, the surgeon should re-evaluate the patient before refilling opioids and taper off opioids within 6 weeks after surgery."

https://www.cdc.gov/acute-pain/postsurgical-pain/index.html

Case #2

OSUWMC Enhanced Surgical Recovery

Medications

• Tailor to inpatient use. Patients on pre-op opioids may have different needs
• Opioid prescription at discharge (Perscription for up to **20 pills** based on patient use day prior to discharge):
  ○ If 0 opioid pills taken, No prescription
  ○ If 1-3 opioid pills taken, prescribe 15 pills
  ○ If ≥ 4 opioid pills taken, prescribe 20 opioid pills
  ○ If discharged on POD#1, prescribe no more than 10 pills
• Can continue multimodal pain medications at discharge for up to 14 days

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Resources to guide the patient-perioperative physician relationship

Resources to guide the patient-perioperative physician relationship

CDC Provider Resources	CDC Patient Resources
Guideline for Prescribing Opioids for Chronic Pain	Preventing An Opioid Overdose (Tip Card)
Guideline Resources: Clinical Tools	Opioids for Acute Pain: Get the Facts
Calculating Daily Dose of Opioids, and Morphine Milligram Equivalents (MME)	Opioids for Acute Pain: What You Need to Know
More Training for Healthcare Providers	Conversation Starter: Recently Injured
More Resources on Acute Pain	

Resources to guide the patient-perioperative physician relationship

Safe and Effective Pain Control *After Surgery* facs.org/safepaincontrol

Resources to guide the patient-perioperative physician relationship

PROSPECT
(Procedure Specific Postoperative Pain Management Workgroup)

American Pain Society

American Society of Regional Anesthesia and Pain Medicine

American Society of Anesthesiologists'
Committee on Regional Anesthesia Recommendations

Resources to guide the patient-perioperative physician relationship

planagainstpain.com

References

1. Kumar K, et al. Anesth Analg. 2017 125(5):1749-1760.
2. Brummett CM et al. JAMA Surg. 2017 Jun 21;152(6):e170504.
3. Wunsch H, et al. JAMA. 2016;315:1654–1657
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6. www.planagainstpain.com (Pacira Pharmaceuticals, American Society for Enhanced Recovery, Shatter Proof)
7. www.cdc.gov (Centers for Disease Control)
8. National Institute on Drug Abuse, https://nida.nih.gov
9. American College of Surgeons 'For Patients' www.facs.org/for-patients/safe-pain-control
10. Upp LA et al. Clinics in Plastic Surgery, 2020. 47(2), 181-190