The Role of Acute Care Prescribing in the Opioid Epidemic

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  • Consultant- Recro Pharma, Heron Therapeutics
die every day from an opioid overdose (that includes prescription opioids and heroin).
Major Public Health Crisis

- 4% US share of world population
- 80% US share of opioid consumption
Opioid total dosage filled declined 12% from 2016 to 2017
This is the biggest single year drop in 25 years

MMEs dispensed (billions)

- 300
- 250
- 200
- 150
- 100
- 50

Number of opioid deaths

- 50k
- 40k
- 30k
- 20k
- 10k

Number of opioid prescriptions peaked in 2011

Opioid prescriptions peaked in 2011

Other Key Findings

- All 50 states & D.C. had declines over 5%
- 8.9% average drop nationwide in number of opioid prescriptions
- 7.8% decline in new patients starting opioids
- 16% decline for prescriptions for 90+ MME/day

SOURCE: AP & IQVIA’s Institute for Human Data Science
SOURCE: CDC
Pre-Operative Opioid Use and Associated Outcomes after Major Abdominal Surgery


Increased Costs Per Hospitalization

$2,341 (avg. additional cost / patient)

Increased Rate of Complications

16% → 20% (% of patients)

Increased Rate of Readmissions

6% → 10% (% of patients)
Preventing Chronic Opioid Use and Abuse Before it Starts

Chronic Opioid Use

Opioid Diversion into the Community

Opioid Epidemic

Current Strategic Efforts
**Acute care prescribing 2010-2016**

<table>
<thead>
<tr>
<th>Change in % of new opioid Rx 2010-2016</th>
<th>OMEs in Rx 2014-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 17.6%</td>
<td>396 → 403</td>
</tr>
<tr>
<td>+ 68%</td>
<td>153 → 154</td>
</tr>
<tr>
<td>+ 2.4%</td>
<td>197 → 226</td>
</tr>
<tr>
<td>- 8.2%</td>
<td>380 → 283</td>
</tr>
</tbody>
</table>

Larach et al. *Annals of Surgery* 2018
Why do surgeons prescribe too much?
The amount of opioid prescribed after surgery was not associated with patient satisfaction or refill rate.

6% Brummett CM et al. JAMA Surg. 2017; 152(6).
Persistent Opioid Use After Wisdom Tooth Extraction

70,942 patients age 13-30 years with commercial insurance underwent wisdom tooth extraction.

<table>
<thead>
<tr>
<th>Postoperative opioid prescribing was common</th>
<th>Opioid prescribing increased risk for persistent use</th>
<th>Routine opioid prescribing in dental extractions should be avoided</th>
</tr>
</thead>
<tbody>
<tr>
<td>78% of patients filled an opioid prescription</td>
<td>2.7x Increased odds of new persistent opioid use</td>
<td>Opioid prescribing places patients at risk for chronic use and dependence</td>
</tr>
</tbody>
</table>

Harbaugh CM, et al. JAMA 2018

[www.michigan-OPEN.org](http://www.michigan-OPEN.org)
Can we improve prescribing?

Yes
Guidelines
50 pills → 15 pills

Average Prescribed
Average Consumed

No change in calls for refills (3-4%)
No change in patient-reported pain scores
Patients consumed fewer pills
Supersize it!

370 Patients \times 35 \text{ pills per patient} = 13,000 \text{ pills kept out of the community}
<table>
<thead>
<tr>
<th>Procedure</th>
<th>Hydrocodone (Norco)</th>
<th>Codeine (Tylenol #3)</th>
<th>Hydromorphone (Dilaudid)</th>
<th>Tramadol</th>
<th>Oxycodone</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 mg tablets</td>
<td>30 mg tablets</td>
<td>2 mg tablets</td>
<td>50 mg</td>
<td>5 mg</td>
</tr>
<tr>
<td>Laparoscopic Cholecystectomy</td>
<td>15</td>
<td>15</td>
<td>10</td>
<td></td>
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<tr>
<td>Laparoscopic Appendectomy</td>
<td>15</td>
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</tr>
<tr>
<td>Inguinal/Femoral Hernia Repair (open/laparoscopic)</td>
<td>15</td>
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<tr>
<td>Open Incisional Hernia Repair</td>
<td>30</td>
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<tr>
<td>Laparoscopic Colectomy</td>
<td>30</td>
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<tr>
<td>Open Colectomy</td>
<td>30</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Ileostomy/Colostomy Creation, Re-siting, or Closure</td>
<td>40</td>
<td></td>
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</tr>
<tr>
<td>Open Small Bowel Resection or Enterolysis</td>
<td>30</td>
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<tr>
<td>Thyroidectomy</td>
<td>10</td>
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<tr>
<td>Hysterectomy</td>
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<tr>
<td>Vaginal</td>
<td>20</td>
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<tr>
<td>Laparoscopic &amp; Robotic</td>
<td>25</td>
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<tr>
<td>Abdominal</td>
<td>35</td>
<td></td>
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</tr>
<tr>
<td>Wide Local Excision ± Sentinel Lymph Node Biopsy</td>
<td>30</td>
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<tr>
<td>Simple Mastectomy ± Sentinel Lymph Node Biopsy</td>
<td>30</td>
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<td>Lumpectomy ± Sentinel Lymph Node Biopsy</td>
<td>15</td>
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<tr>
<td>Breast Biopsy</td>
<td>10</td>
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<tr>
<td>Sentinel Lymph Node Biopsy Alone</td>
<td>15</td>
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</tbody>
</table>
New prescribing recommendations based on patient consumption

Monitor Satisfaction, PROs

Reductions in opioid prescribing

Reductions in patient opioid consumption
# Michigan OPEN Prescribing Recommendations

## 2019 Update

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<tr>
<th>Procedure</th>
<th># 5mg Oxycodone</th>
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<td>10</td>
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<tr>
<td>Open Cholecystectomy</td>
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<tr>
<td>Appendectomy – Lap or Open</td>
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<tr>
<td>Thyroidectomy</td>
<td>5</td>
</tr>
<tr>
<td>Hysterectomy – Vaginal, Lap/Robotic, or Abdominal</td>
<td>15</td>
</tr>
<tr>
<td>Modified Radical Mastectomy or Axillary Lymph Node Dissection</td>
<td>30</td>
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<tr>
<td>Laparoscopic Donor Nephrectomy</td>
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<td>Breast Biopsy or Lumpectomy</td>
<td>5</td>
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<tr>
<td>Lumpectomy + Sentinel Lymph Node Biopsy</td>
<td>5</td>
</tr>
<tr>
<td>Sentinel Lymph Node Biopsy</td>
<td>5</td>
</tr>
<tr>
<td>Simple Mastectomy + Sentinel Lymph Node Biopsy</td>
<td>20</td>
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<tr>
<td>Cesarean Section</td>
<td>15</td>
</tr>
<tr>
<td>Wide Local Excision + Sentinel Lymph Node Biopsy</td>
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<td>Sleeve Gastrectomy</td>
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<tr>
<td>Prostatectomy</td>
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<tr>
<td>Laparoscopic Anti-reflux (Nissen)</td>
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<tr>
<td>Carotid Endarterectomy</td>
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<tr>
<td>Total Hip Arthroplasty</td>
<td>30</td>
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<tr>
<td>Total Knee Arthroplasty</td>
<td>50</td>
</tr>
<tr>
<td>Dental</td>
<td>0</td>
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</tbody>
</table>
Most Opioids Prescribed for Outpatient General Surgery Procedures Go Unused

72% of prescribed pills went unused

Source of Abused Prescription Painkillers

- 55.0% Obtained free from friend or relative
- 17.3% Bought from friend or relative
- 11.4% Took from friend or relative without asking
- 7.1% Prescribed a MD
- 4.8% Other
- 4.4% Got from drug dealer or stranger

Source: CDC 2011/Drugfree.org
Michigan OPEN October 27, 2018
Medication Take Back Event

Over 3000 lbs
Of pills collected

40,000+
Opioid pills collected

1972
Oldest opioid collected

Surgery
Most common reason for opioid
Do you know the facts about opioid pain medications?
Opioid Use Before Surgery:
34,186 participants from a single tertiary care center

Preoperative opioid use common: 23%

Likelihood higher for some surgeries:
- Upper extremity: aOR = 3.07
- Spine/spinal cord: aOR = 2.68
- Pelvic (non-hip): aOR = 3.09
- Lower extremity: aOR = 3.61

Opioid users report different characteristics:
Higher rates of substance use, comorbidities, sleep apnea, psychological distress, widespread body pain

Hilliard PE, et al. JAMA Surgery 2018
Opioid Use Before Surgery: 34,186 participants from a single tertiary care center

Preoperative opioid use common

23%

Orthopedic Surgery (65%)

Prevalence higher for some surgeries

Neurosurgery Spine (55%)

Opioid users report different characteristics

Higher rates of substance use, comorbidities, sleep apnea, psychological distress, widespread body pain

Hilliard PE, et al. JAMA Surgery 2018
Donating to a University of Michigan Biorepository

The purpose of a biorepository is to store bodily materials (biopsies) and personal health information for research projects that have not yet been planned. The biorepository combines the biopsies and health information into "banks" that can later be shared with researchers to help advance medicine.

This pamphlet provides information about participating in a biorepository at the University of Michigan by donating your biospecimens and health information.

over 55,000 participants

80% opioid naïve
Our Goals

- Eliminate unnecessary opioid exposures
- Reduce opioid use when necessary
- Eliminate new persistent use
- Manage pain
- Enable functional recovery
Practical Guidelines for Postop Prescribing

- **Educate** patients and set expectations
- **Encourage** Acetaminophen, NSAIDs, local anesthetics, and other non-opioid treatments
- **Avoid co-prescribing** benzodiazepines and sedatives
- **Check a PDMP** before prescribing opioids
Opioid Prescribing for Opioid Naïve Patients

1. Prescribe only 1 short-acting opioid
2. No long-acting opioids
3. Avoid pre-op opioid prescription
4. Prescribe naloxone in high-risk patients
Current Process

Surgery

I need more opioids for my pain!

No surgical issue. Go see your PCP.

Persistent opioid use

Patient’s responsibility to schedule follow-up

Bounce back to surgeon

“Should I prescribe?” - PCP

Surgery
Current Process

Surgery

<table>
<thead>
<tr>
<th>I need more opioids for my pain!</th>
</tr>
</thead>
</table>

Persistent opioid use

Ideal Process

Pre-op expectations

Active referral

Informed decision making

I need more opioids for my pain!
How do we stop this from happening?
How do we stop this from happening?

- GET DATA
- GUIDE/REWARD CHANGE
- COLLABORATE
Michigan OPEN Co-Directors

Jennifer Waljee, MD, MPH, MS
Plastic and Hand Surgery

Michael Englesbe, MD
Transplant Surgery

Chad Brummett, MD
Pain Medicine/Anesthesiology
The Team, The Team, The Team.
Learn more about our work:

http://michigan-open.org

http://precisionhealth.umich.edu

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