The Role of Acute Care Prescribing in the Opioid Epidemic

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115 Americans die every day from an opioid overdose (that includes prescription opioids and heroin).
Opioid total dosage filled declined 12% from 2016 to 2017

This is the biggest single year drop in 25 years

MMEs dispensed (billions)

300  Number of opioid deaths
250  50k
200  40k
150  30k
100  20k
50   10k
0    0

'92  '94  '96  '98  '00  '02  '04  '06  '08  '10  '12  '14  '16

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
For Whom Do We Prescribe?
Opioid naive

Chronic 8%

Intermittent 30%
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

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

<table>
<thead>
<tr>
<th>Change in % of 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>

Why do surgeons prescribe too much?
The amount of opioid prescribed after surgery was not associated with patient satisfaction or refill rate.

Opioid naive

Chronic 8%

Intermittent 30%

New Persistent Use
New Persistent Opioid Use

6% Brummett CM et al. JAMA Surg. 2017; 152(6).
Opioid use after wisdom tooth extraction yields a nearly three-fold risk of new persistent opioid use after adjustment. This translates to more than 50,000 people annually.

Harbaugh et al, JAMA 2018
Can we improve prescribing?

Yes
Guidelines
50 pills $\rightarrow$ 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
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 \downarrow 35 \text{ pills per patient} = 13,000 \text{ pills kept out of the community}
Michigan Surgical Quality Collaborative (MSQC) participating sites
<table>
<thead>
<tr>
<th>Procedure</th>
<th>Hydrocodone (Norco)</th>
<th>Codeine (Tylenol #3)</th>
<th>Hydromorphone (Dilaudid)</th>
<th>Hydromorphone (Dilaudid)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 mg tablets</td>
<td>30 mg tablets</td>
<td>2 mg tablets</td>
<td>2 mg tablets</td>
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<tr>
<td>Laparoscopic Cholecystectomy</td>
<td>15</td>
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<tr>
<td>Laparoscopic Appendectomy</td>
<td>15</td>
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<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>
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<tr>
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<td>30</td>
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</tr>
<tr>
<td>Ileostomy/Colostomy Creation, Re-siting, or Closure</td>
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<tr>
<td>Open Small Bowel Resection or Enterolysis</td>
<td>30</td>
<td></td>
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<tr>
<td>Thyroidectomy</td>
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<tr>
<td>Hysterectomy</td>
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<td>Vaginal</td>
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<td>Laparoscopic &amp; Robotic</td>
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<tr>
<td>Abdominal</td>
<td>35</td>
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<tr>
<td>Wide Local Excision ± Sentinel Lymph Node Biopsy</td>
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<tr>
<td>Breast Biopsy</td>
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<tr>
<td>Sentinel Lymph Node Biopsy Alone</td>
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</tr>
<tr>
<td>Procedure</td>
<td>Old Recs</td>
<td>New Recs</td>
<td>% Change</td>
<td>Data for Recommendation</td>
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<td>--------------------------------------------------</td>
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<td>Laparoscopic Cholecystectomy</td>
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<td>Howard[1], Hill[2]</td>
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<td>Hill[3], Howard &quot;spillover&quot; data</td>
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<td>Open Incisional Hernia Repair</td>
<td>200</td>
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<td>-25%</td>
<td>New MSQG data (75th percentile)</td>
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<td>145</td>
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<td>Abdominal</td>
<td>220</td>
<td>185</td>
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Most Opioids Prescribed for Outpatient General Surgery Procedures Go Unused

72% OF PRESCRIBED PILLS WENT UNUSED

Source of Abused Prescription Painkillers

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

Source: CDC 2011/Drugfree.org
Michigan OPEN April 28th, 2018
Medication Take Back Event

- **Over 1 ton** (2000+ lbs) of pills collected
- **54,000** opioid pills collected
- **1976** oldest opioid collected
- **Surgery** most common reason for opioid
COMING SOON: Ability to customize all brochures with your organization's logo!

Opioid Facts Brochure
Learn the facts about opioid pain medications including:
- What is an opioid
- Using opioids safely
- Opioid addiction
- Safe disposal of opioids

DOWNLOAD BROCHURE
Do you know the facts about opioid pain medications?
Talking to Your Doctor about Pain Control Brochure

Ask questions and know the facts before using opioids for your pain.

- What is an opioid
- Questions to ask your provider
- Things to remember after your surgery
- Safe disposal of opioids

DOWNLOAD BROCHURE

Pain Management Techniques Brochure

Learn about strategies for managing pain and anxiety after surgery including:

- Mindful breathing
- Positive daily reflection

DOWNLOAD PRINT-FRIENDLY BROCHURE
Opioid Use Before Surgery: 34,186 participants from a single tertiary care center

Preoperative opioid use common

Likelihood higher for some surgeries

Opioid users report different characteristics

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

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

Preoperative opioid use common

23%

Prevalence higher for some surgeries

Orthopedic Surgery (65%)
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. Under review
over 55,000 participants

80% opioid naïve
CNS pain processing differences in patients with centralized pain

Facilitation
- Substance P
- Glutamate and EAA
- Serotonin (5HT$_{2a, 3a}$)
- Nerve growth factor

Inhibition
- Descending antinociceptive pathways
- Norepinephrine-serotonin (5HT$_{1a,b}$), dopamine
  - Opioids
- GABA
- Cannabinoids

From Dr. Daniel Clauw - With permission
Strategic Growth Plan

- Precision Health
- Engaging Providers
- Community Outreach
- Informing Policy
New prescribing recommendations based on patient consumption

Monitor Satisfaction, PROs

Reductions in patient opioid consumption

Reductions in opioid prescribing
Michigan OPEN Co-Directors

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Transplant Surgery

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Pain Medicine/Anesthesiology
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