Evidence-Based Postoperative Opioid Prescribing Guidelines

PA NSQIP Consortium
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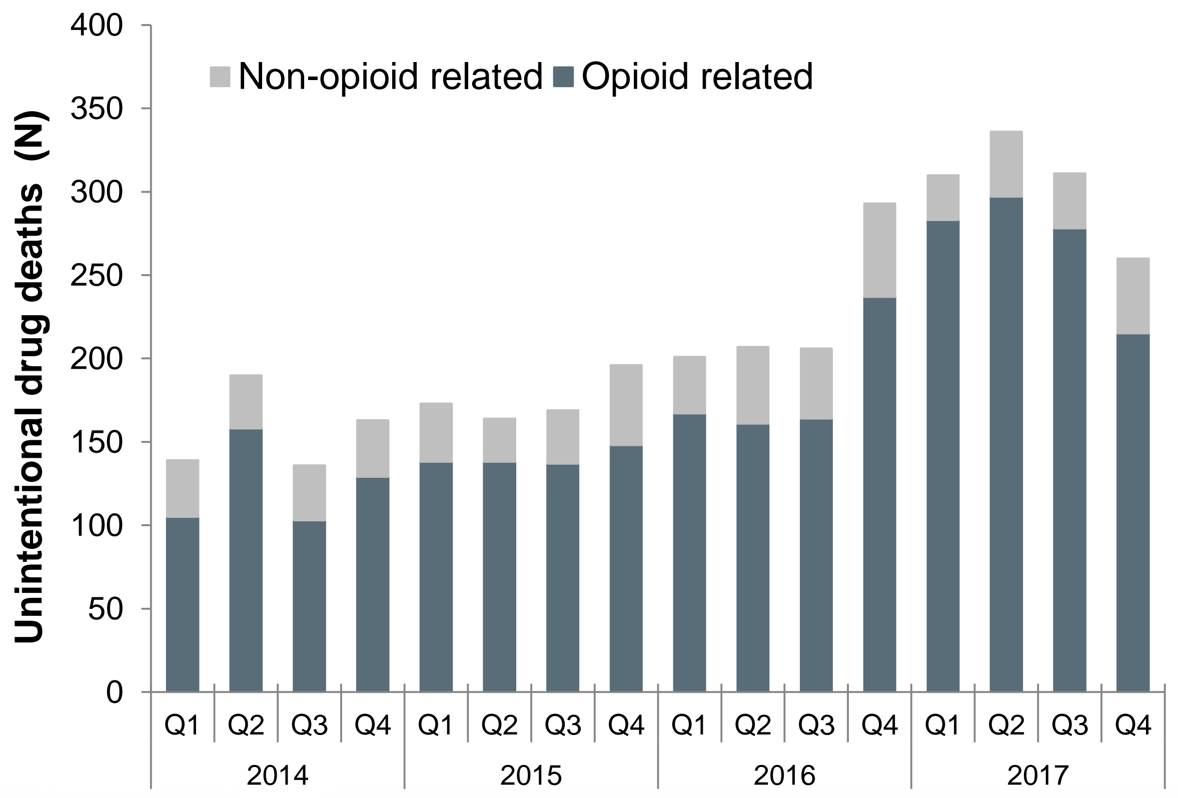
Evidence-Based Postoperative Opioid Prescribing Guidelines

- Philadelphia's opioid crisis
- Overprescribing of opioids post-operatively
- Rationale for # pills for opioid-naïve patients
- Proposed # of pills for opioid-naïve patients
- Guidance for chronic opioid users

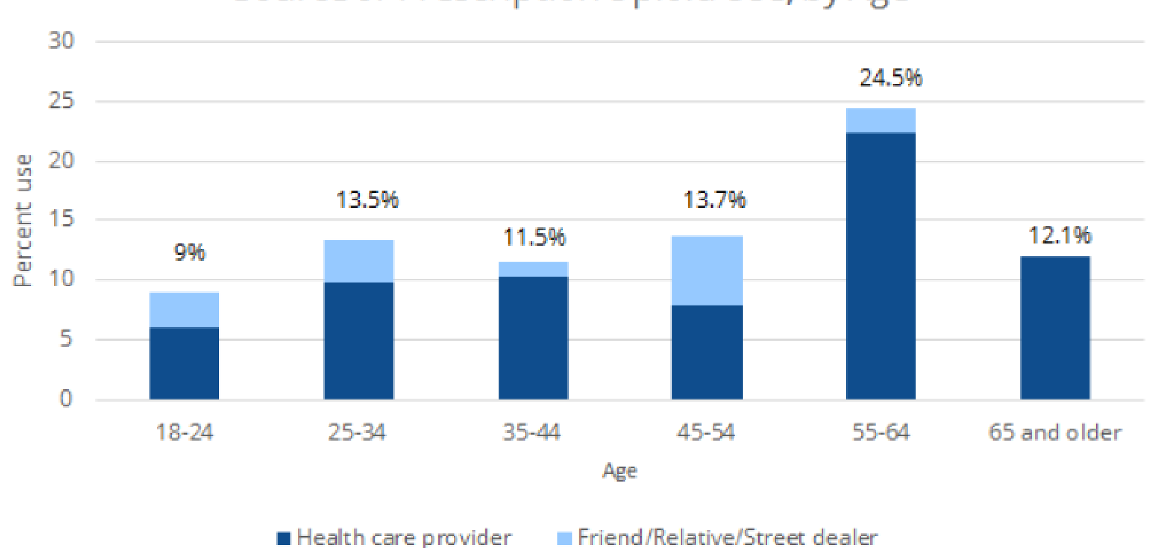
Over 1,200 people died from drug overdoses in 2017



Fatal overdoses are the tip of the iceberg

Measure	Count
Fatal overdoses (2017) Source: Medical Examiner's Office	1,217
In treatment for opioid dependence (publicly funded) Source: CBH/BHSI	~12,000
Misuse/abuse of prescription opioids (past year) Source: NSDUH	~55,000
Heroin use (past year) Source: NIH calculations, NYC study	~70,000
Adults currently using prescription opioids Source: PDPH Survey	~168,000
Adults using any prescription opioid (past year) Source: PDPH Survey	~496,000

Most people who use prescription opioids obtained them from their health care providers



Nationally, **4 out of 5** new heroin users start with prescription opioids.

Philadelphia Department of Public Health. Jones CM. 2013.

Opioid prescribing remains high in Philadelphia

Morphine Equivalents

400000
350000
300000
250000
200000
150000
100000
50000
0

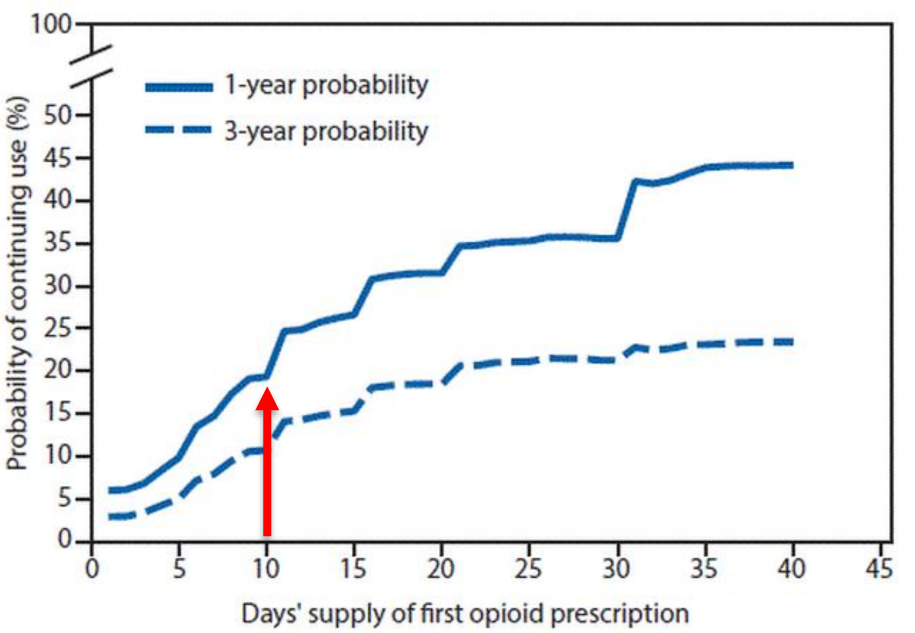
2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017

Year

DEA ARCOS

Each day of opioids in opioid-naïve patient increases the risk of long-term use

Probabilities of continued opioid use among opioid-naïve patients, by number of days' supply of first opioid prescription, United States, 2006-2015



12-20% of opioid-naïve patients who receive **10 days** of opioids become chronic opioid users.

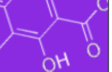
Nationally, **1 in 16 surgical patients** who are prescribed opioids become chronic opioid users.

MMWR 2017;66(10):265-269, Brummett CM et al. 2017.

Tools to help reduce opioid prescribing:

- Prescribing guidelines (mostly re chronic pain)
- Tapering guidelines
- Dental guidelines
- **Surgical guidelines**

Opioid Prescribing



Opioids can provide short-term relief of moderate to severe acute pain, but there is little evidence supporting their effectiveness for chronic pain, and they have substantial risks. Long-term opioid use should be reserved for patients with cancer-related pain, or patients receiving palliative or end-of-life care. If you prescribe opioids for other conditions, use safety principles as embodied by Limiting Use and Avoiding Adverse Consequences.

Limiting Use

1. **Do not prescribe opioids as first-line or routine therapy for chronic pain**; use nonpharmacologic and nonopioid pharmacologic therapies first (see Chronic Pain Treatment Principles).
2. **Discuss benefits, risks, and side effects of opioid therapy (e.g., addiction, overdose)**; continue to discuss the risks and benefits of opioids throughout treatment.
3. **Set realistic and measurable goals for pain and function**; plan for how opioid therapy will be stopped if benefits do not outweigh risks.
4. **Use short-acting opioids when starting opioid therapy for chronic pain.**
5. **Prescribe the lowest effective dosage when starting opioid therapy**, and reassess risks and benefits when increasing dosages to 50 morphine milligram equivalents (MME) per day or more, and avoid increasing dosages to 90 MME per day or more.
6. **Long-term opioid use often starts with treatment of acute pain.** When using opioids for acute pain, prescribe short-acting forms and no more than necessary; three days or less is often sufficient.

Prescribing Calculations
50 morphine milligram equivalents (MME) =
50 mg hydrocodone/day, or 33 mg oxycodone/day

Avoiding Adverse Consequences

7. **Follow-up regularly to re-evaluate risk of harm and reduce dose or taper if needed**; follow-up should occur within one to four weeks of starting opioid therapy or increasing dosage and continue quarterly.
8. **Prescribe naloxone to individuals who are undergoing long-term opioid therapy**, due to the higher risk of an overdose while taking these drugs.
9. **Check the Prescription Drug Monitoring Program (PDMP)** for prescriptions from other providers when starting opioid therapy and each time before writing a prescription.
10. **Use urine drug screening to identify prescribed substances and undisclosed use of other drugs** before starting opioid therapy and periodically thereafter.
11. **Avoid concurrent benzodiazepine and opioid prescribing.**
12. **Arrange treatment for opioid use disorder if needed, including medication-assisted treatment (buprenorphine or methadone).** Philadelphia's Department of Behavioral Health and Intellectual disAbility Services can help you identify treatment options through its website. (http://bit.ly/DBHResources)
13. **Consider incorporating buprenorphine treatment into your own practice.** Find out how through the SAMHSA website. (http://bit.ly/BUPTraining)

City of Philadelphia

Significant overprescribing of opioids in large health systems

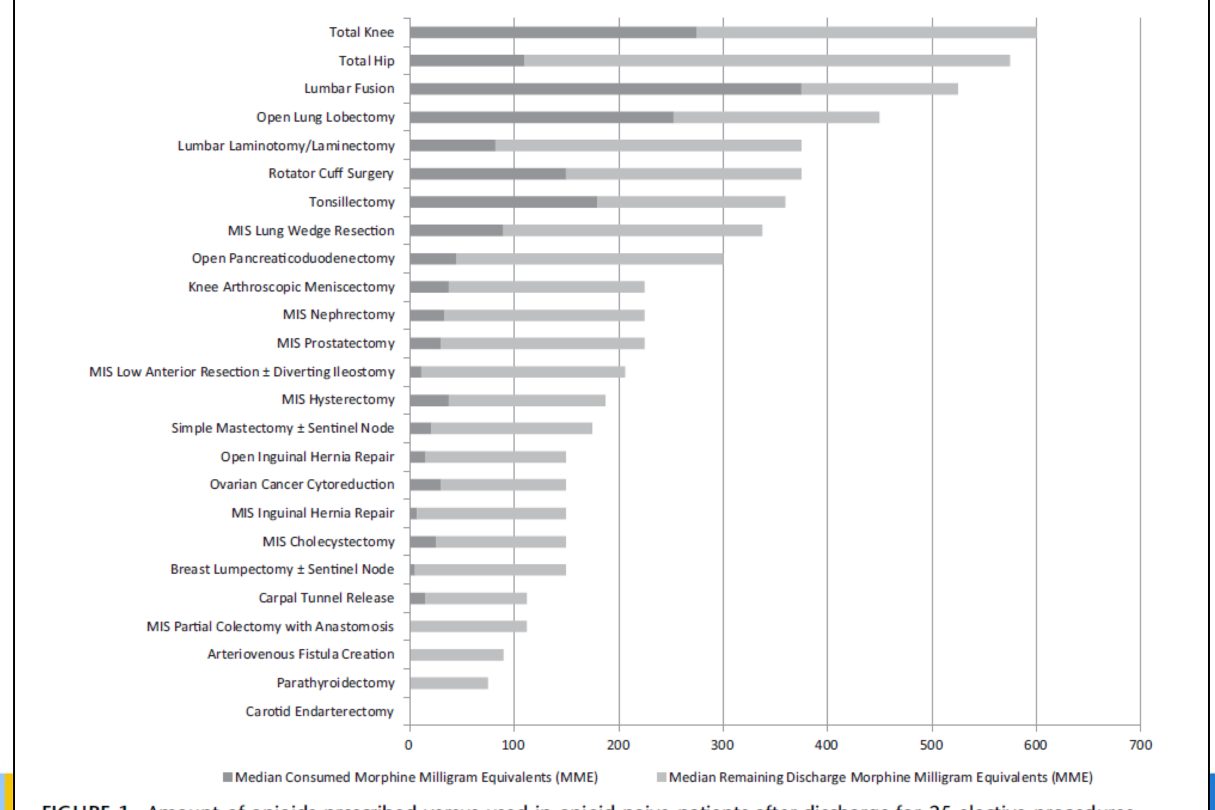
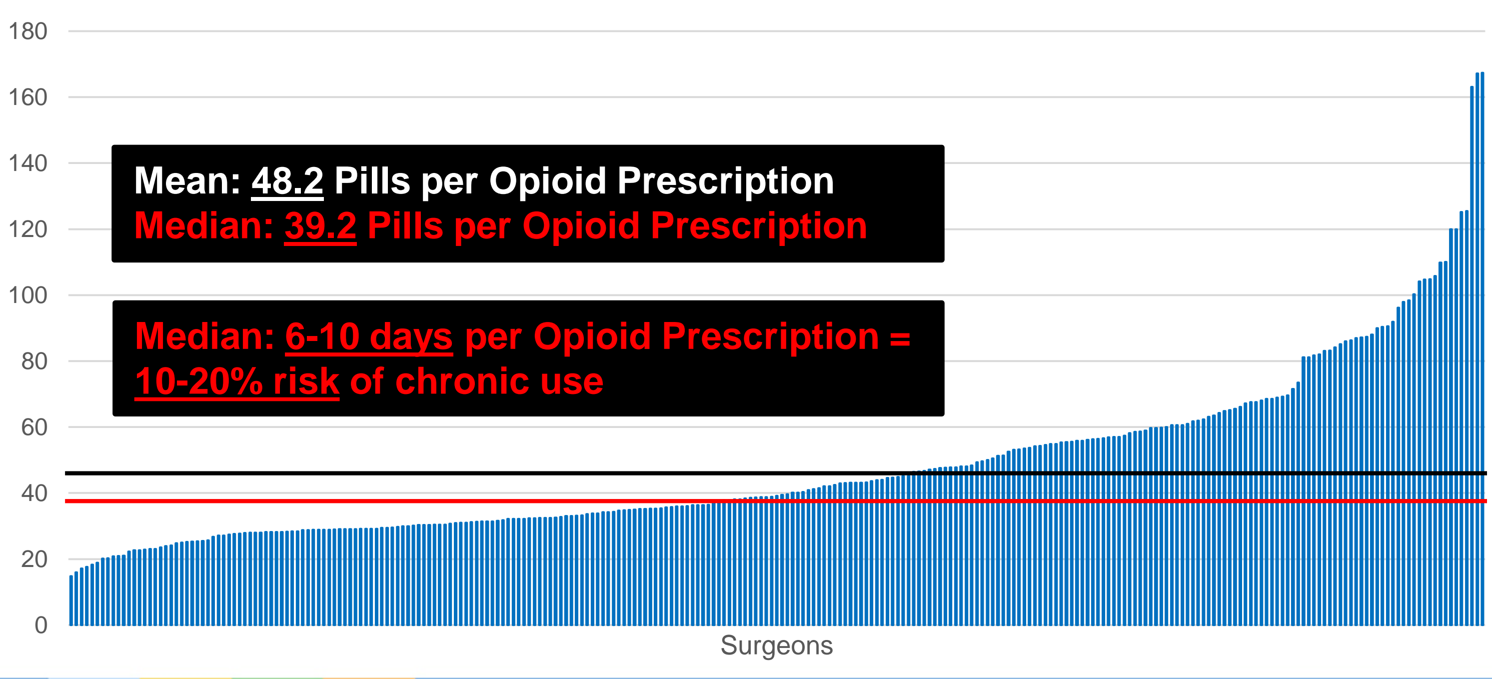


FIGURE 1. Amount of opioids prescribed versus used in opioid-naive patients after discharge for 25 elective procedures.

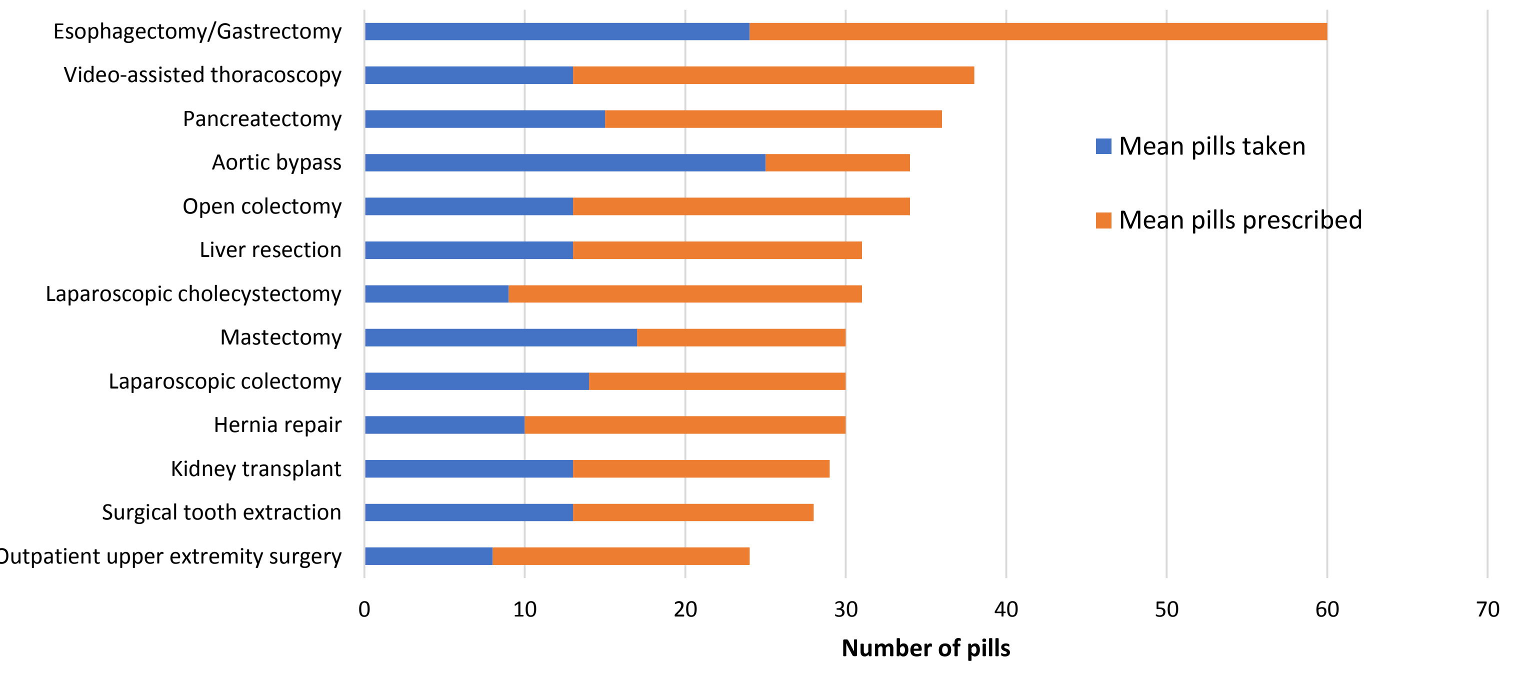
Thiels CA et al. 2018.

Overprescribing of opioids among surgeons in Philadelphia



2016 Medicaid Pharmacy Claims, Pennsylvania Department of Human Services

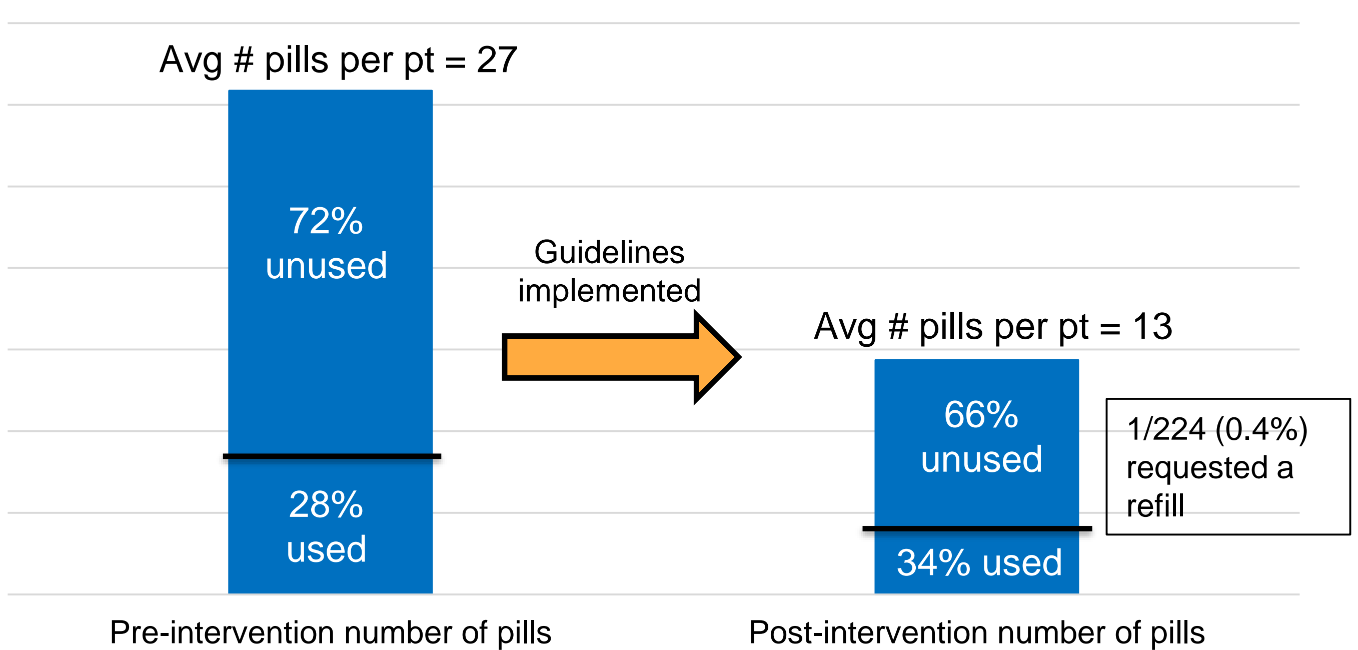
Patients in Philadelphia are not using most opioids prescribed



Maughn B et al. 2016. Kim N et al. 2016. Personal correspondence.

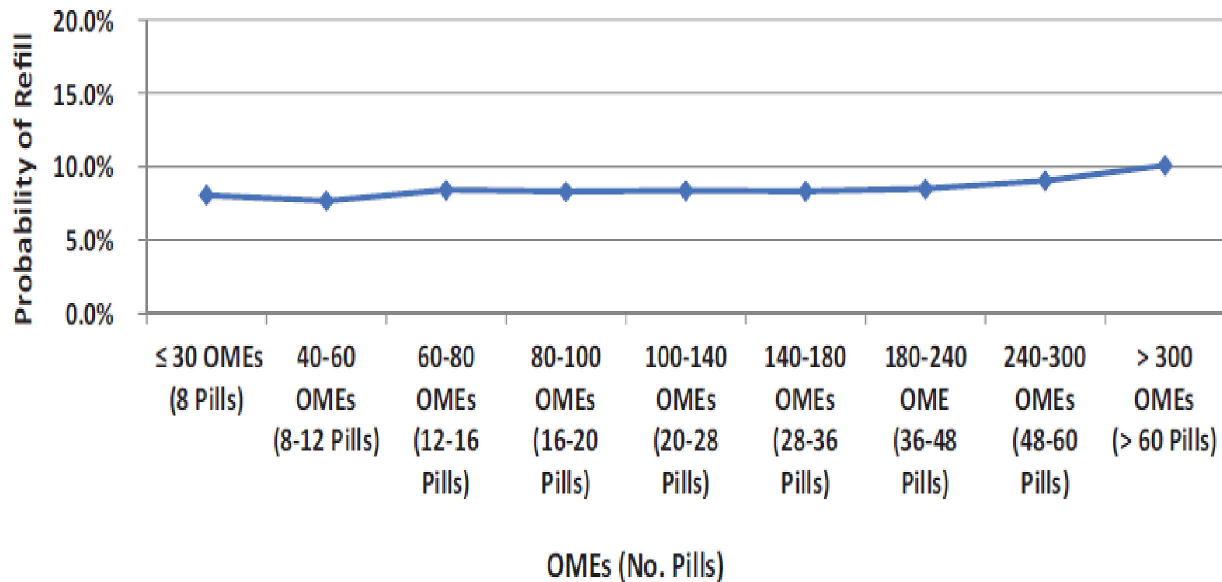
Patients are influenced by amount prescribed

When fewer are prescribed, they consume even fewer



Hill MV et al. 2017., Hill MV et al. 2018.

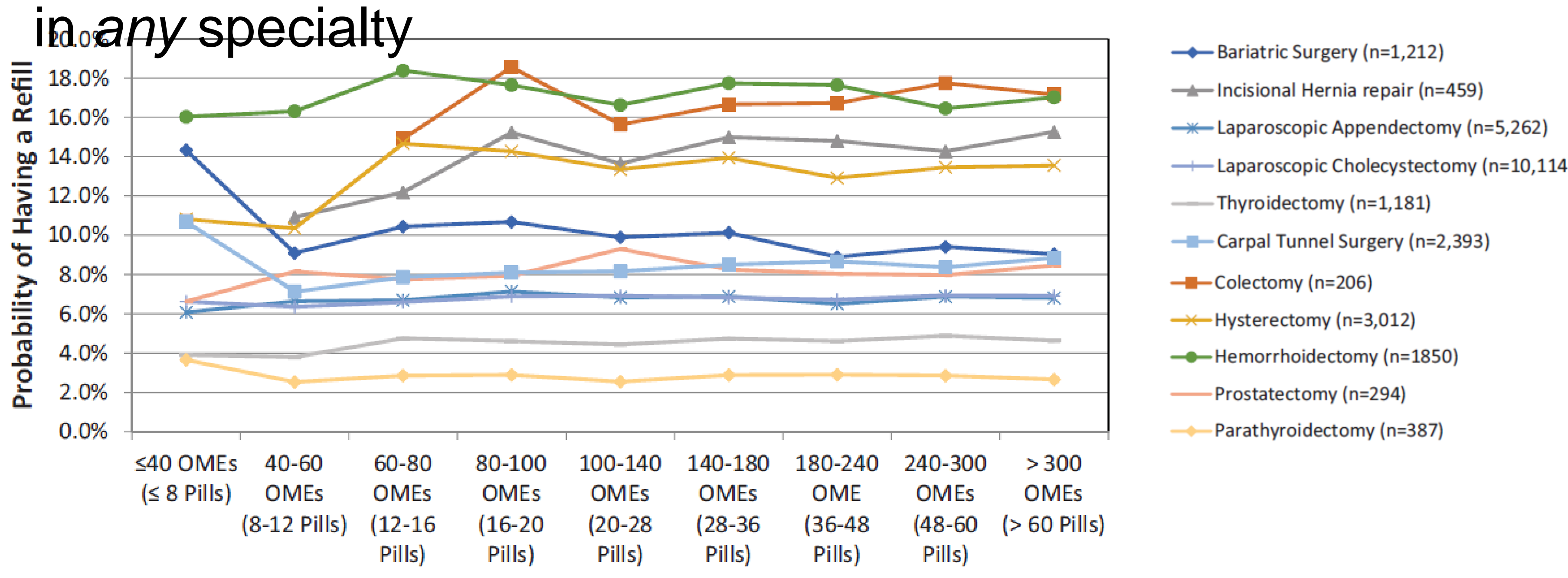
Lower prescribing is *not* associated with increased refill requests



N = 26,520 patients
OME = oral morphine equivalents

Sekhri S et al. 2017.

Lower prescribing is *not* associated with increased refill requests in *any* specialty



Sekhri S et al. 2017.

NSAIDS are MORE effective than opioids for post-op pain

80%
70%
60%
50%
40%
30%
20%
10%
0%

Ibuprofen 400mg + acetaminophen 1000mg
Ibuprofen 200mg + acetaminophen 500mg
Ibuprofen 400mg
Oxycodone 5mg
Placebo

*at least a 50% reduction of acute pain for 6 hours

Derry S et al. 2013. Derry CJ et al. 2013.

Opioids carry greater risk than many drugs recalled by FDA

Medication	Severe adverse outcome	Risk
Opioids 10 day prescription Acute pain	 Long-term use/Dependence Fatal overdose (per year)	 12-20% 0.8%
Rezulin (troglitazone)	Liver injury	0.5%
Vioxx (rofecoxib)	MI	0.4%
Omniflox (temafloxacin)	Hemocytic anemia, hypoglycemia	0.03%

MMWR 2017. Bohnert ASB et al. 2011.

THINK NSAIDS

OPIOID PRESCRIBING

Key Recommendations

- Do not prescribe opioids for **chronic pain**.
- **3 days or less** is usually sufficient for acute pain.
- Prescribe the **lowest effective dose** and avoid increasing dose to ≥90 MME/day.
- **Avoid concurrent** benzodiazepine and opioid prescribing.

Pennsylvania's standard prior authorization for opioids

Required for all:

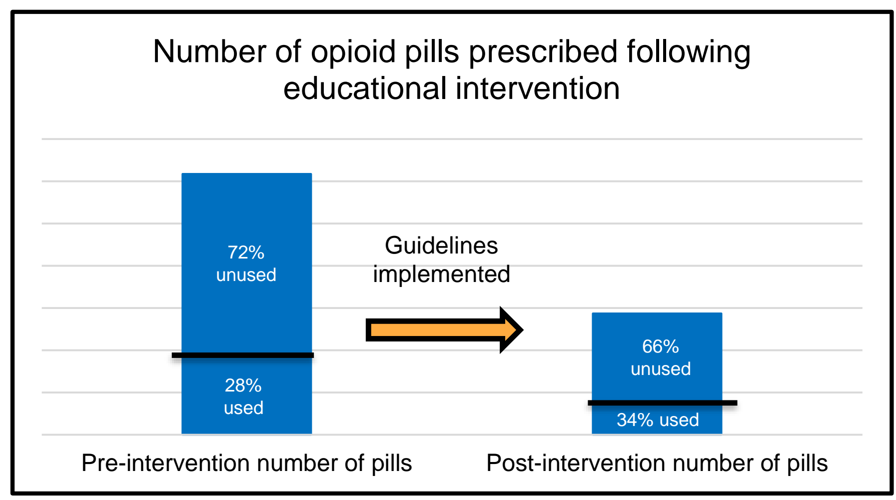
- Long-acting opioids
- Prescriptions for >3d for children, >5d for adults
- Prescriptions for > 90 MME/day → > 50 MME/day
  - Effective 9/1/18 for >90 MME and 7/1/19 for >50 MME
- Exceptions for cancer-related pain, hospice, sickle cell

Post-op Guidelines: Key Considerations

- Separate guidelines for **opioid-naïve** patients
- Many patients **may not require opioids**
- Recommendations based on **e-prescribing** availability, which allows supplementation if pain control insufficient
- **Pre- and postoperative use of non-opioid** treatments, including NSAIDS, acetaminophen and gabapentin is strongly encouraged
- **Patient education** important to explain that pain is a normal part of healing and set appropriate expectations for healing time

Post-op Guidelines: Rationale for pills for opioid-naïve patients

- Across multiple studies ~ 1/3 of currently prescribed pills are used
- When less prescribed, ~ 1/2 of original amount are used



- Therefore, **1/3 of currently prescribed pills should be upper limit and 1/2 of that should be recommended amount**
- **31%-48% of patients consume no opioids so 0 should be lower limit**

Kim N et al. 2017., Feinberg A et al. 2018., Hill MV et al. 2017., Hill MV et al. 2018., Thiels CA et al. 2018.

Draft guidelines for opioid-naïve patients

Specialty	Number of Pills* for Opioid Naïve Patients at Discharge Recommended (minimum – maximum)	
	Major procedure	Minor procedure
General, Colorectal, Gynecologic Oncology, Plastic	6 (0-13[1,2])	0
Orthopedic, Neurosurgery	9 (0-18[3])	0
Cardiothoracic, Vascular	9 (0-18[2])	0
OB/Gyn	6 (0-12[4])	0
Urologic	4 (0-8[5])	0
OMFS, ENT	5 (0-9[6])	0

* pill = 1 tab of 5mg oxycodone or equivalent MME in short-acting opioid

1. Cowan S, personal correspondence, 2. Thiels et al. 2018, 3. Mehta S, personal correspondence, 4. Bartels et al. 2016, 5. Bates et al. 2011, 6. Grey et al. 2018.

Examples of Major and Minor Surgery

MINOR	MAJOR
ENT and Oral Surgery	
• Tooth Extraction • Tonsillectomy and/or adenoidectomy • Thyroidectomy	• Maxillary or mandibular osteotomy • Resection of large benign or malignant mass requiring overnight hospital stay
General Surgery	
• Breast lumpectomy or mastectomy with or without LN biopsy or axillary dissection • Laparoscopic cholecystectomy • Hemorrhoidectomy	• Laparoscopic or open repair or resection of stomach, small bowel, colon, liver, pancreas, adrenals or liver • Open cholecystectomy
Gynecology	
• Dilation and curettage • Tubal ligation • Laparoscopy – limited endometriosis	• Hysteroscopic resection or ablation • Abdominal or transvaginal pelvic floor surgery
Urology	
• Cystoscopy, ureteroscopy • Vasectomy	• Resection of bladder or prostate tumor

MINOR	MAJOR
Neurosurgery and Spine Surgery	
• Discectomy	• Intracranial surgery • Spinal laminectomy and/or fusion
Orthopedic surgery	
• Arthroscopic surgery including ACL repair • Tendon surgery • Hardware removal or revision	• Knee, hip, shoulder or elbow joint replacement • Bunionectomy
Plastic surgery	
• Carpal tunnel release • Lipoma excision • Cosmetic breast surgery	• Free flap reconstruction • Panniculectomy
Cardiothoracic surgery	
• Bronchoscopy • Mediastinoscopy	• Resection of lung, esophagus or mediastinal mass
Vascular surgery	
• Varicose vein excision	• Aortic aneurysm repair • Carotid endarterectomy

Adapted from the Winnipeg Regional Health Authority, 2016

Guidance for Chronic Opioid Users

- **Do not increase opioids** above pre-operative levels
- Before surgery, **set expectations** for anticipated pain, healing time and post-operative opioid use
- If surgery was performed to address chronic pain (such as arthroplasty for end-stage OA), **consider taper as soon as acute pain is expected to resolve**
- If surgery did not address cause of chronic pain, **consider slow taper** and discuss with patient's prescribing physician

    - see Tapering Guidelines