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Prevention of Opioid Use Disorder in Women

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Outline

- Women and pain
- Women and opioid exposure
- Women and initial exposures
- Recommendations for prevention

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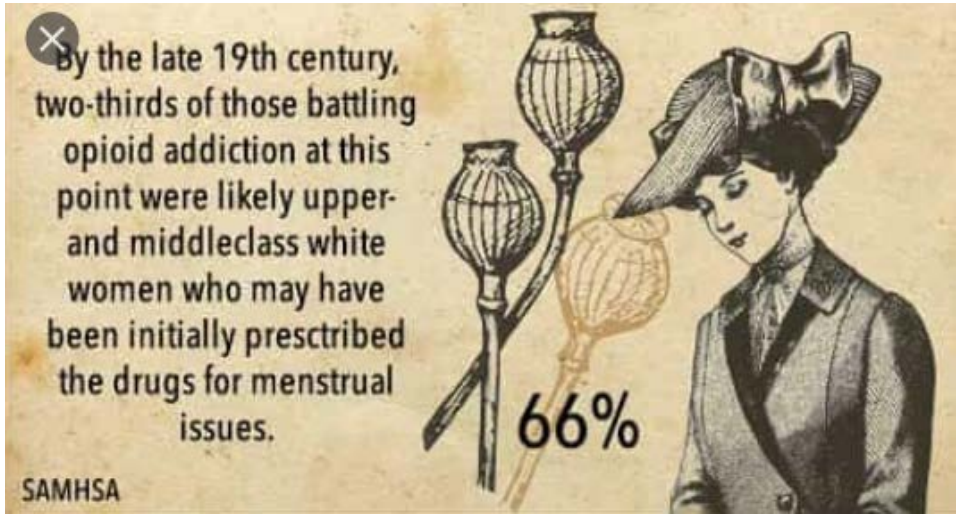
Gender is important to consider in opioid prescribing and prevention of misuse

Women and the opioid crisis: historical context and public health solutions

Mishka Terplan, MD, MPH, Fertil Steril 2017; 108: 195-9



Women and the Experience of Pain and Opioid Use Disorder: A Literature-based Commentary, Andrew L. Koons, DO; Marna Rayl Greenberg, DO, MPH; Robert D. Cannon, DO and Gillian A. Beauchamp, MD, Clinical Therapeutics/Volume 40, No. 2, 2018

Women and Opioids: something different is happening here, www.thelancet.com, Vol 392, July 7, 2018

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Women have more pain than men

Table 1
Prevalence of widespread pain in representative samples

Study	Country	Prevalence	Female	Male
Bergman	Sweden	Chronic	**15%**	**8%**
Buskila	Israel	Chronic	**14%**	**3%**
Gerdle	Sweden	1 wk	**34%**	**22%**
Hardt	United States	1 mo	4%	3%
Thomas	United Kingdom	1 mo	5%	3%
Winjhoven	Netherlands	Current	**12%**	**6%**
Winjhoven	Netherlands	1 y	**20%**	**11%**
Winjhoven	Netherlands	Chronic	**4%**	**1%**

Bolded numbers reflect significant sex differences in prevalence. Source: Fillingim et al (*J Pain* 2009;10[5]:451).

Manson, Metabolism, 2010

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Women experience pain differently than men: no matter then stimulus or the scoring system

(0 is the median; above line LOWER PAIN SENSITIVITY; below the line HIGHER PAIN SENSITIVITY)

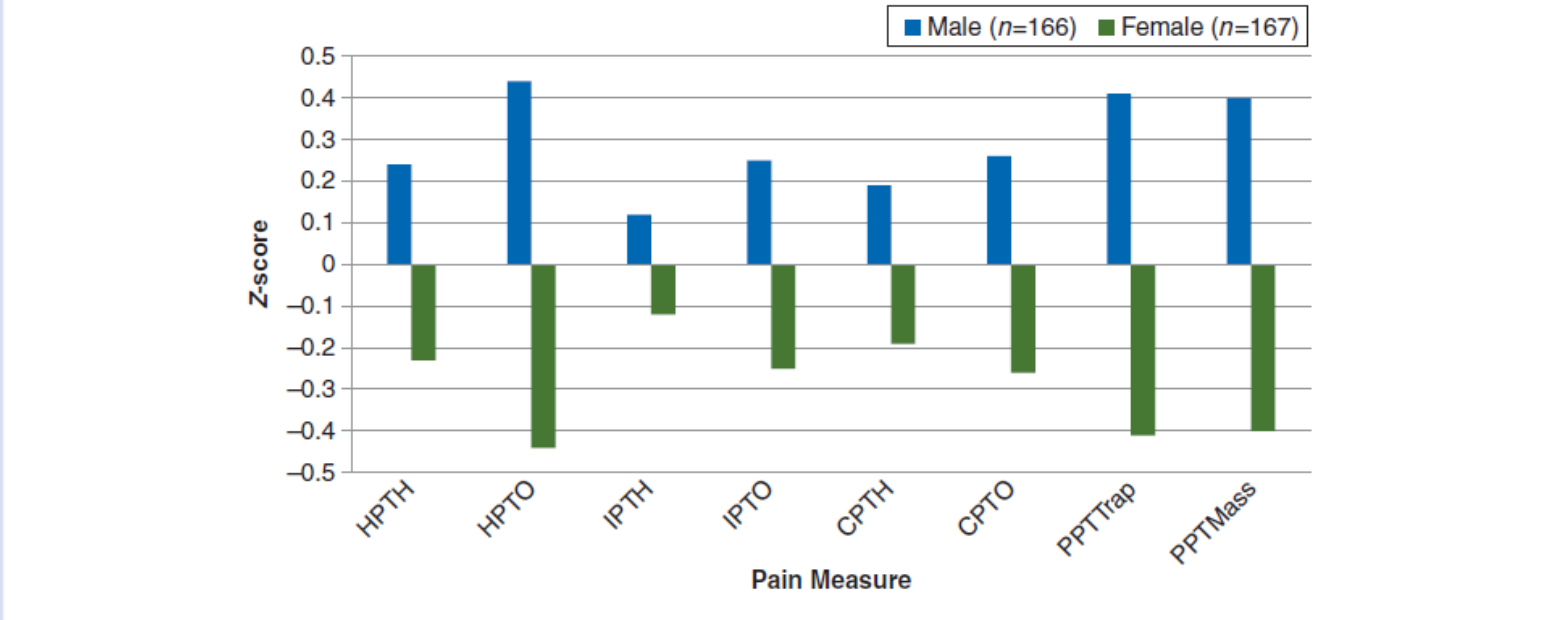

Fig 1 *Z*-scores for multiple pain measures in a sample of healthy young adults (166 female, 167 male). *Z*-scores were computed such that the mean for the entire sample is 0. Higher *Z*-scores reflect lower pain sensitivity and lower *Z*-scores reflect higher pain sensitivity. Sex differences were statistically significant for all pain measures ($P < 0.05$); however, the effect sizes ranged from small to large (Cohen's *d* in parentheses below), with a mean effect size in the moderate range ($d = 0.62$). HPTH=heat pain threshold ($d = 0.48$), HPTO=heat pain tolerance ($d = 0.98$), IPTH=ischaemic pain threshold ($d = 0.24$), IPTO=ischaemic pain tolerance ($d = 0.52$), CPTH=cold pain threshold ($d = 0.41$), CPTO=cold pain tolerance ($d = 0.55$), PPTTrap=pressure pain threshold at the trapezius muscle ($d = 0.90$), PPTMass=pressure pain threshold at the masseter muscle ($d = 0.89$). Details regarding pain testing methods have been reported previously.[25 26]

British Journal of Anaesthesia 111 (1): 52-8 (2013) doi:10.1093/bja/aet127

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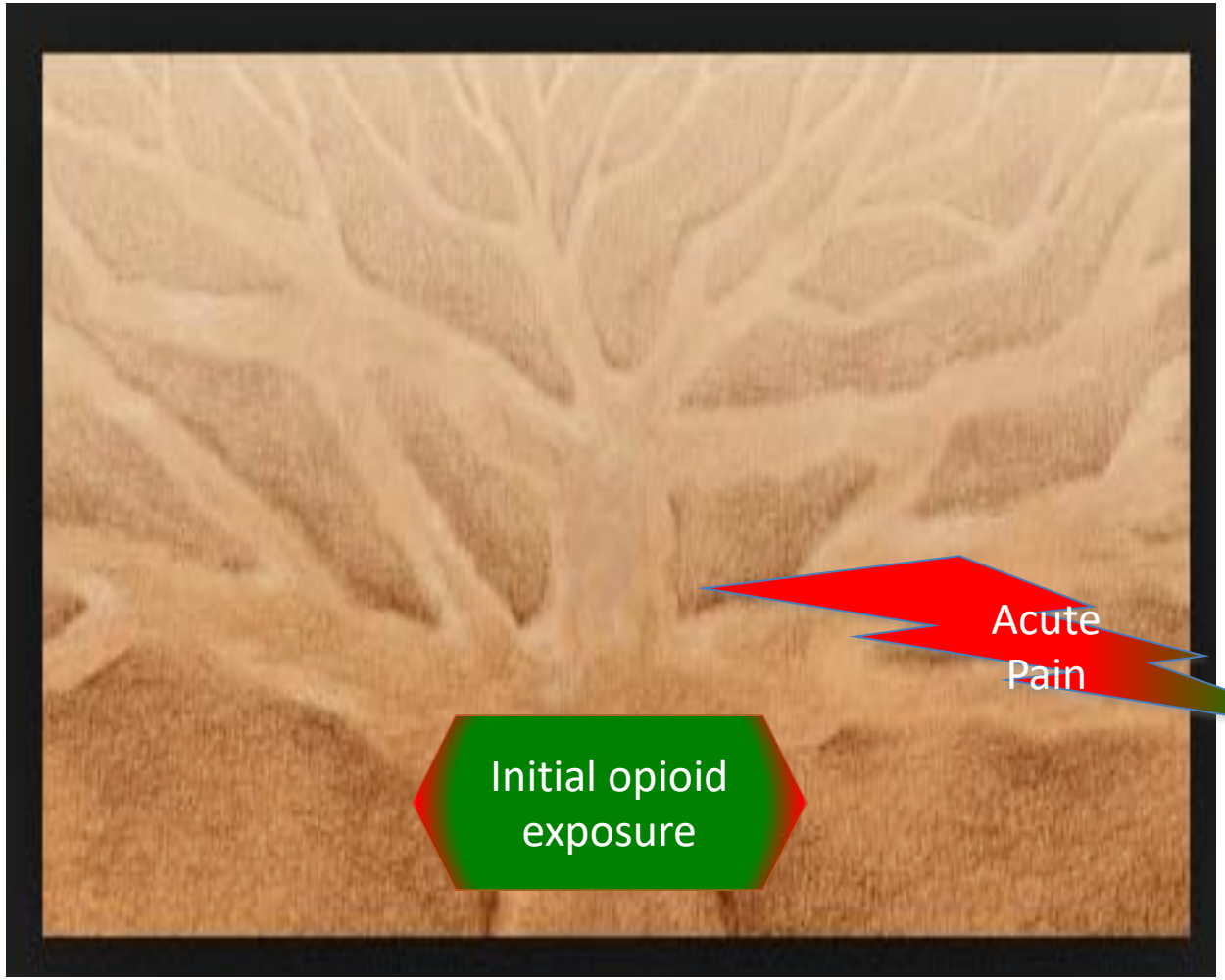
Pathway to opioid use/misuse for women is more likely to be through medical treatment than for men



60% of women with substance misuse start with a prescription for pain

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Women are more likely to receive an opioid, benzodiazepine, or both during an outpatient visit compared to men

When opioids were prescribed during US outpatient care visits between 1993 and 2014:

- Women were more likely to be given opioid (54% vs 46%) or benzodiazepine (66% vs 34%) prescriptions than men
- Women were more likely to be given combined opioid and benzodiazepine than men (55% vs 45%).

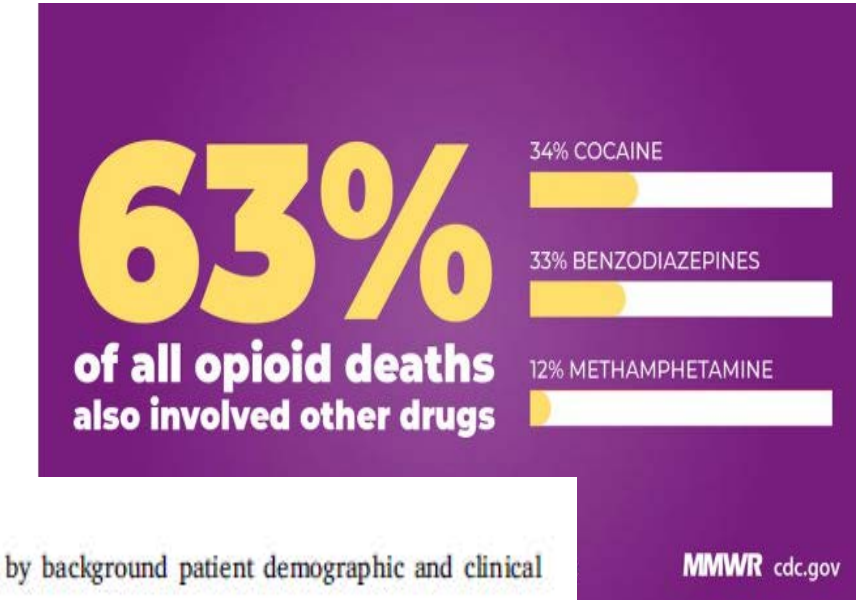

Table 1
Volume and distribution of annual ambulatory medical visits including Schedule IV benzodiazepines, Schedule II opioids, or both by background patient demographic and clinical characteristics, United States, 1993–2014.

	Visits, %			Comparisons [a]
	1. Both opioids and benzodiazepines (N = 1350)	2. Opioids, no benzodiazepines (N = 5351)	3. Benzodiazepines, no opioids (N = 19,413)	
Sex[b]				
Male	45.1	46.3	34.3	1—3***, 2—3***
Female	54.9	53.7	65.7	

Preventive Medicine Reports 9 (2018) 49-54

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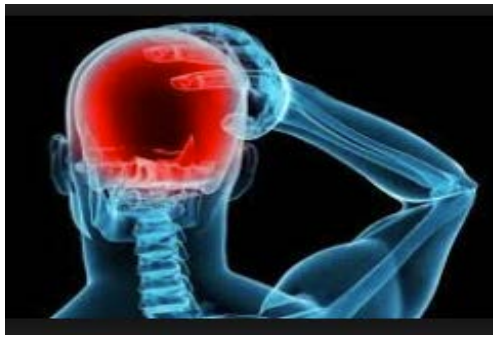
Why women are prescribed opioids: Prescription opioid use in pregnancy

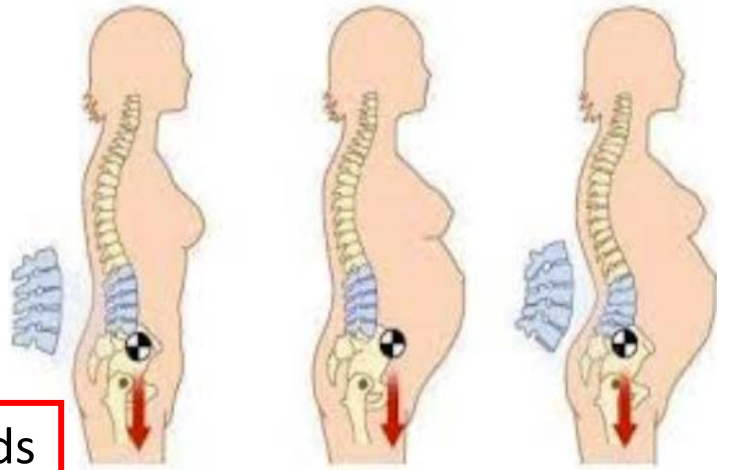
(and happens to be similar to non-pregnant women)

Table 3. Recorded Maternal Conditions, Stratified by Opi

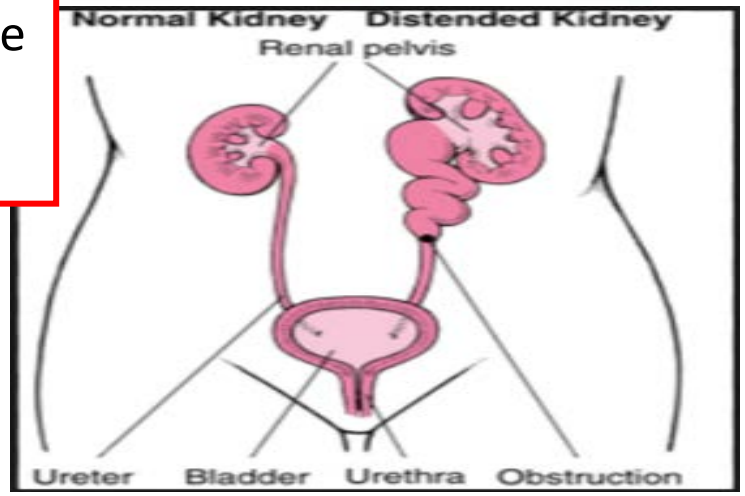
	Exposed to Opioids during Pregnancy (n = 76,742)
	N (%)
Back pain	28,189 (36.7)
Abdominal pain	24,515 (31.9)
Migraine	7,817 (10.2)
Joint pain	9,258 (12.1)
Fibromyalgia and or pain in multiple sites	4,690 (6.1)
Cough	8,521 (11.1)
Myalgia	4,696 (6.1)
Malignancy	1,200 (1.6)
Renal calculus	3,217 (4.2)
Rheumatoid arthritis	613 (0.8)
Opioid dependance	422 (0.5)
Other headache syndromes	7,967 (10.4)
Opioid abuse	123 (0.2)
Sickle cell anemia	87 (0.1)
Peripheral neuropathy	66 (0.1)
Chronic pancreatitis	63 (0.1)

LMP = last menstrual period.





Over 70% of reasons opioids prescribed are not for acute (or pregnancy related) conditions



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- While men are still more likely to have an overdose death, the difference in prescription opioid deaths is less pronounced.
- Between 1999 and 2016, opioid related deaths rose faster in women: rose by 404% in men and 583% in women.

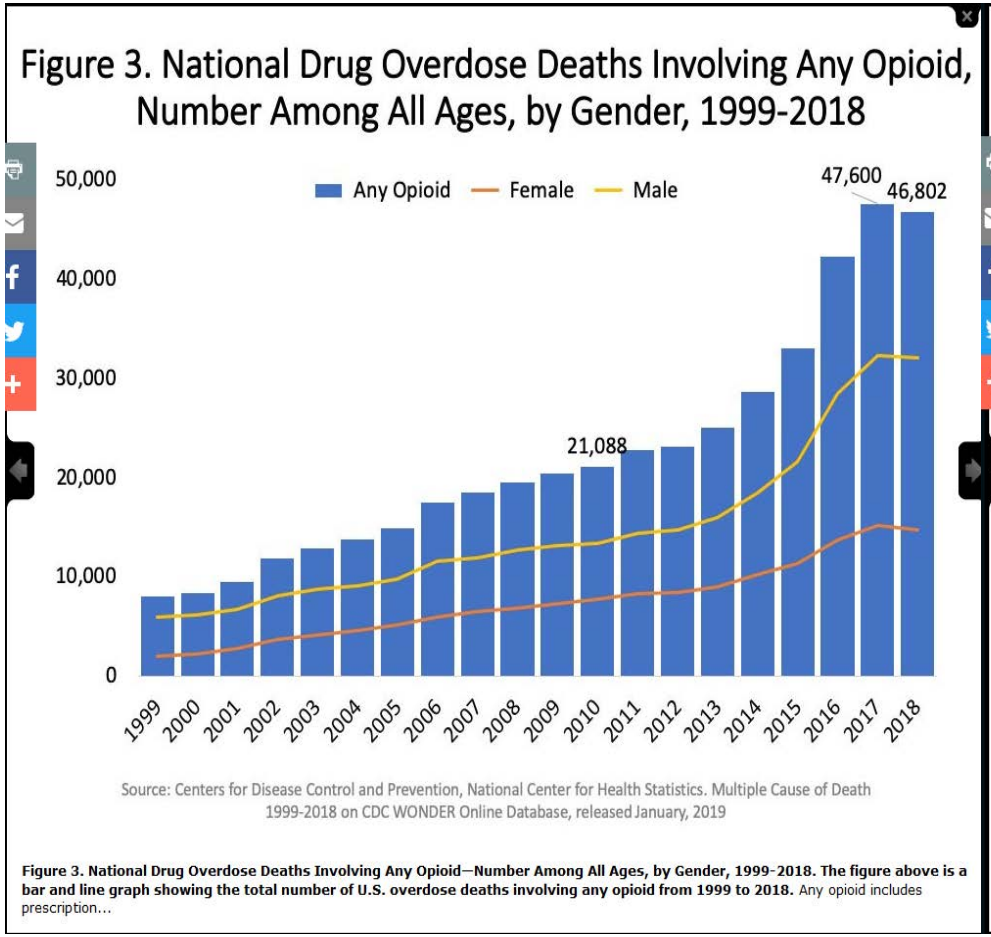

Figure 3. National Drug Overdose Deaths Involving Any Opioid—Number Among All Ages, by Gender, 1999-2018. The figure above is a bar and line graph showing the total number of U.S. overdose deaths involving any opioid from 1999 to 2018. Any opioid includes prescription…

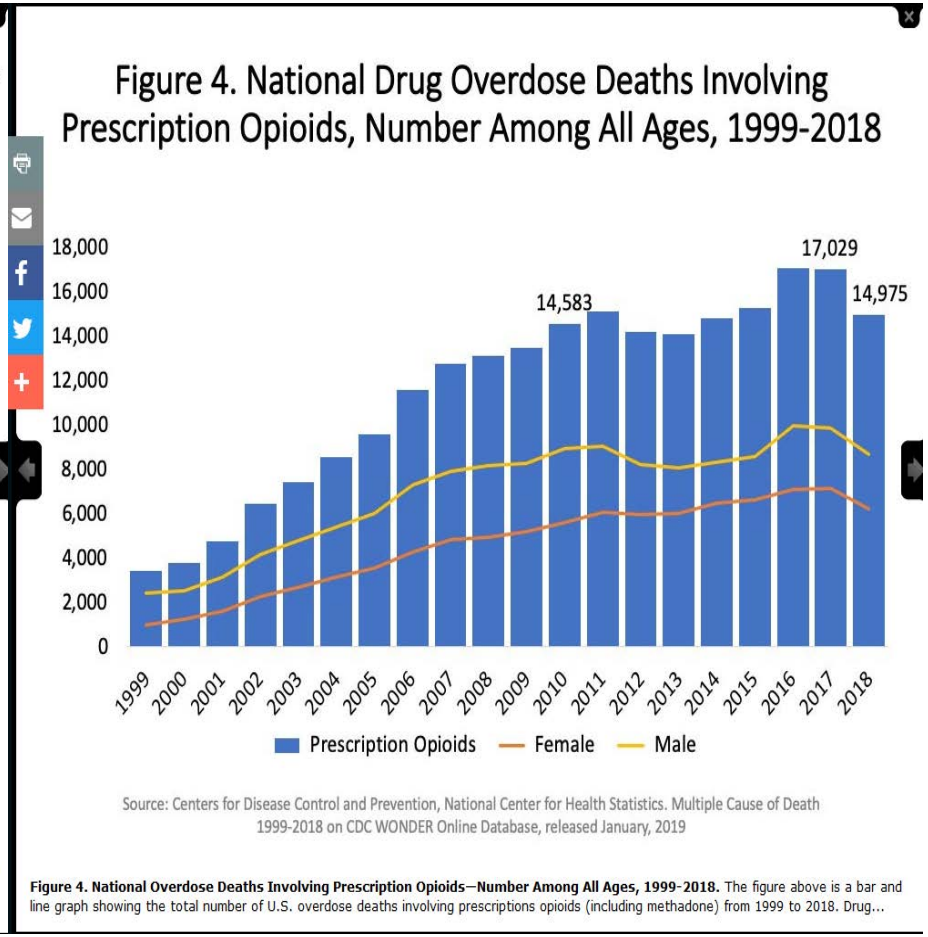

Figure 4. National Overdose Deaths Involving Prescription Opioids—Number Among All Ages, 1999-2018. The figure above is a bar and line graph showing the total number of U.S. overdose deaths involving prescriptions opioids (including methadone) from 1999 to 2018. Drug…

https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates

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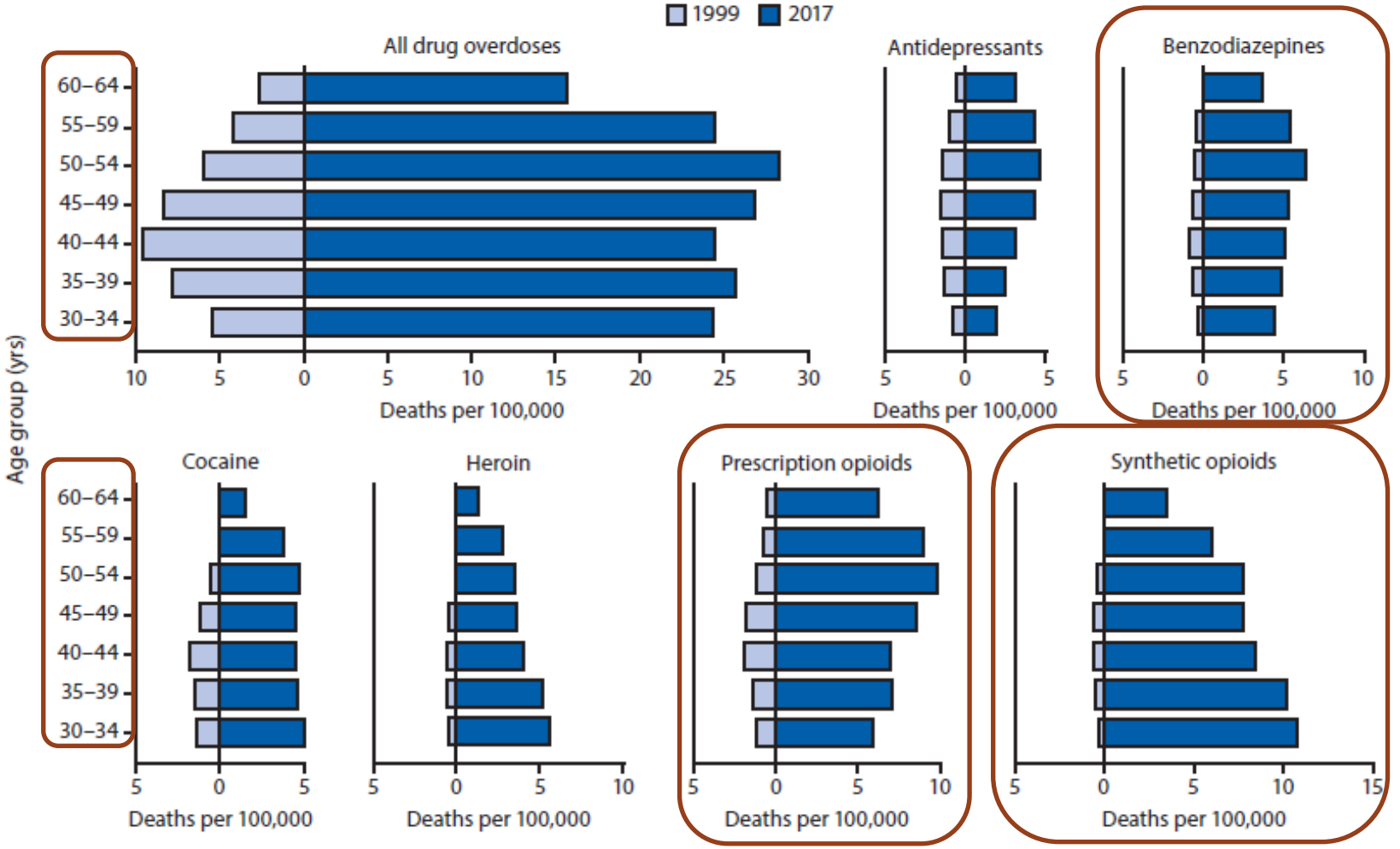
Prescription and synthetic opioids are the most common reason for overdose deaths in women

Remarkably high in women >50, think about the benzodiazepine prescriptions

FIGURE 2. Drug overdose deaths (unadjusted) per 100,000 women aged 30–64 years, by age group and involved drug or drug class — National Vital Statistics System (NVSS), 1999* and 2017†,§



* Rates in 1999 for certain age groups are not displayed because counts were <20 deaths.
† NVSS mortality data.
§ Drug overdose deaths were identified using *International Classification of Diseases, Tenth Revision* underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14. The multiple cause-of-death code or codes for each drug were *heroin*: T40.1; *prescription opioids*: T40.2 for natural and semisynthetic opioids (e.g., oxycodone and hydrocodone) and T40.3 for methadone; *synthetic opioids, excluding methadone* (e.g., fentanyl and tramadol): T40.4; *cocaine*: T40.5; *benzodiazepines*: T42.4; *and antidepressants*: T43.0–43.2. Deaths might involve more than one drug; thus categories are not exclusive.

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Why do women have an initial opioid prescription?

Cohort:
50% female
Note well:

- Back/musculoskeletal
- Headache
- Dental pain

Almost 70% of all opioid prescriptions were in these diagnoses

No evidence that opioids are indicated for these diagnoses

ORIGINAL REPORT

Patterns of opioid initiation at first visits for pain in United States primary care settings

Mallika L. Mundkur | Kathryn Rough | Krista F. Huybrechts | Raisa Levin | Joshua J. Gagne | Rishi J. Desai | Elisabetta Patorno | Niteesh K. Choudhry | Brian T. Bateman

TABLE 1 Frequency of opioid prescribing and quantity prescribed by primary care clinicians for 10 pain conditions in 2014

	Initial pain encounters	Initial pain encounters with opioid fill[a]	Days of opioid supplied[b]	Total mg morphine equivalents[b]
	n	% (95% CI)	Median [10th, 25th, 75th 90th percentile]	Median [10th, 25th, 75th, 90th percentile]
All conditions	230 958	9.1 (9.0–9.1)	7 [3, 5, 12, 30]	150 [90, 120, 300, 600]
Joint pain	71 735	6.6 (6.4–6.7)	8 [3, 5, 15, 30]	150 [100, 150, 300, 450]
Back pain without radiculopathy	54 682	14.5 (14.3–14.9)	7 [3, 5, 12, 25]	150 [90, 113, 300, 450]
Headache	40 005	4.1 (4.0–4.4)	7 [3, 4, 12, 24]	150 [75, 100, 300, 600]
Neck pain	18 957	10.2 (9.8–10.6)	7 [3, 5, 12, 23]	150 [75, 102, 300, 450]
Tendonitis/bursitis	18 888	4.9 (4.6–5.3)	7 [3, 5, 13, 30]	150 [90, 120, 300, 450]
Muscular strains/sprains	12 763	10.0 (9.5–10.5)	5 [3, 5, 8, 15]	150 [75, 100, 200, 300]
Back pain with radiculopathy	6983	20.2 (19.3–21.2)	7 [3,5, 13, 30]	158 [100, 150, 300, 450]
Nephrolithiasis	3593	15.3 (14.2–16.5)	5 [3, 3, 8, 15]	150 [75, 100, 225, 338]
Musculoskeletal injury	2153	7.9 (6.8–9.1)	7 [3, 4, 10, 20]	200 [100, 150, 300, 450]
Dental pain	1199	28.4 (25.9–30.1)	4 [2, 3, 7, 10]	100 [60, 75, 150, 225]

[a]Opioid fill occurred within 1 wk of pain encounter.

[b]Limited to patients with opioid fill.

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Why do women have an initial opioid prescription?

A LOT of opioids were prescribed:

- Median 7 days up to 30 days
- 100-200 MME

(Recommended: 3 days acute pain, <90 MME to reduce risk of overdose or persistent use)

ORIGINAL REPORT

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[b]Limited to patients with opioid fill.

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The opioid type, amount, and duration of the initial prescription matters: The higher MME and longer duration the initial supply, the more likely to have high risk opioid use

First Opioid Prescription and Subsequent High-Risk Opioid Use: a National Study of Privately Insured and Medicare Advantage Adults

Yongkang Zhang, PhD[1], Phyllis Johnson, MBA[1], Philip J. Jeng, MS[1], M. Carrington Reid, MD, PhD[2], Lisa R. Witkin, MD[3,4], Bruce R. Schackman, PhD[1,2,5], Jessica S. Ancker, PhD[1], and Yuhua Bao, PhD[1,5] J Gen Intern Med 33(12):2156–62, 2018

More overlapping opioid prescriptions

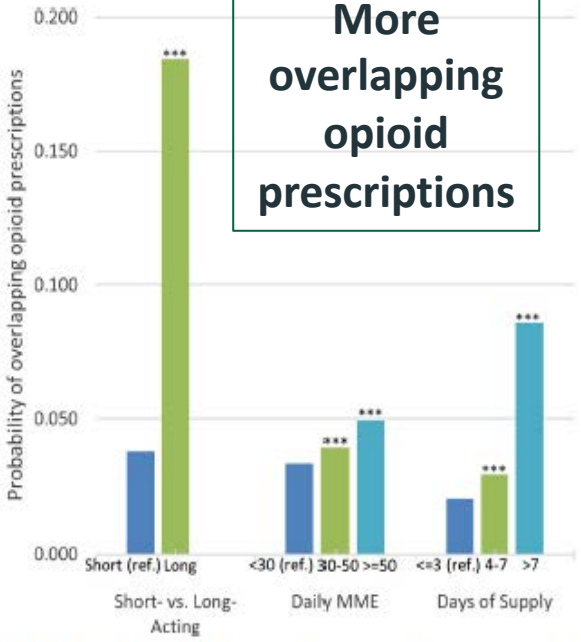

Fig. 1 Predicted probability of overlapping opioid prescriptions by features of the first opioid prescription, privately insured patients 18–64 years of age. Notes: significance denotes the difference between reference category and other categories; MME, morphine milligram equivalent; ref., reference group; ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

More overlapping opioid +benzo prescriptions

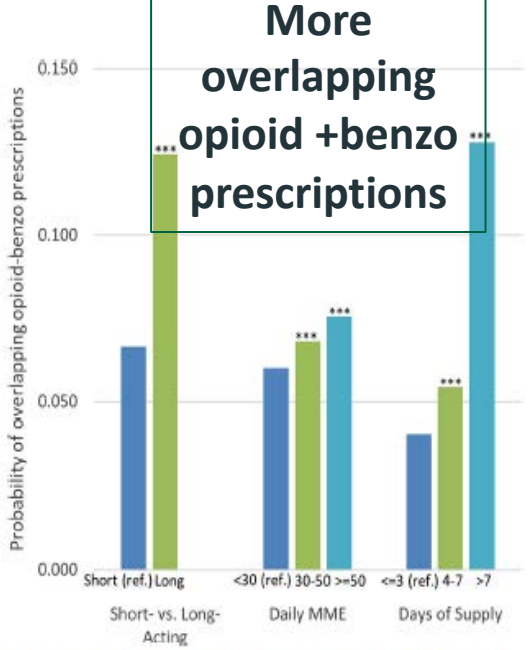

Fig. 2 Predicted probability of overlapping opioids and benzodiazepines by features of the first opioid prescription, privately insured patients 18–64 years of age. Notes: significance denotes the difference between reference category and other categories; MME – morphine milligram equivalent; ref., reference group; ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

More than 3 opioid prescribers

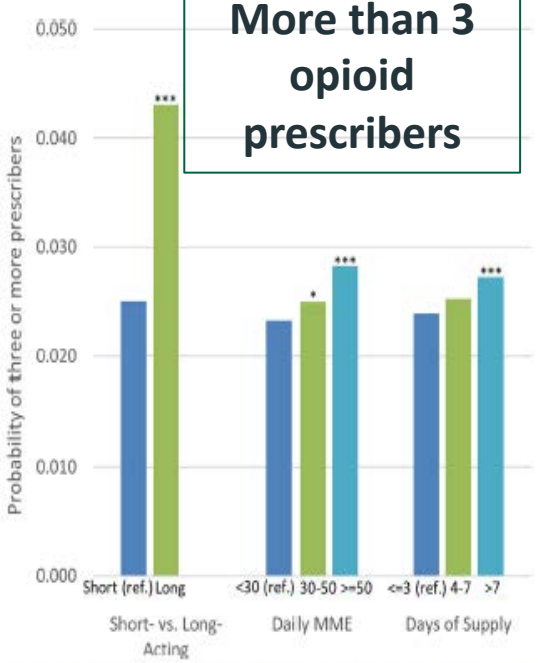

Fig. 3 Predicted probability of three or more prescribers of opioids by features of the first opioid prescription, privately insured patients 18–64 years of age. Notes: significance denotes the difference between reference category and other categories; MME, morphine milligram equivalent; ref., reference group; ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

MME>120

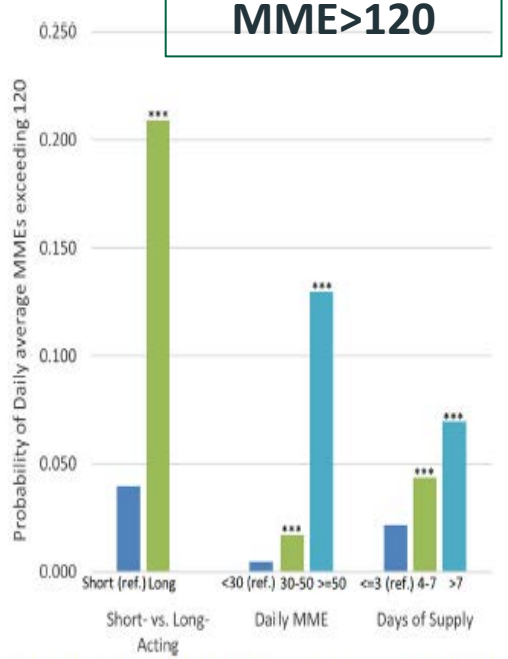

Fig. 4 Predicted probability of 120 or more daily average MMEs by features of the first opioid prescription, privately insured patients 18–64 years of age. Notes: significance denotes the difference between reference category and other categories; MME, morphine milligram equivalent; ref., reference group; ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$.

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Why do women get prescriptions related to reproduction?

Endometriosis: *Original Research*

Patterns of Prescription Opioid Use in Women With Endometriosis

Evaluating Prolonged Use, Daily Dose, and Concomitant Use With Benzodiazepines

Georgine Lamvu, MD, MPH, Ahmed M. Soliman, PhD, Shivaji R. Manthena, MS, Keith Gordon, PhD, Julie Knight, PharmD, and Hugh S. Taylor, MD

(Obstet Gynecol 2019;133:1120–30)

Delivery type, opioid prescribing, and the risk of persistent opioid use after delivery

APRIL 2019 **American Journal of Obstetrics & Gynecology**

Opioid Prescribing Patterns, Patient Use, and Postoperative Pain After Benign Hysterectomy

Sawsan As-Sanie, MD, MPH, Sara R. Till, MD, MPH, Erika L. Mowers, MD, Courtney S. Lim, MD, Bethany D. Skinner, MD, Laura Fritsch, BS, Alex Tsodikov, PhD, Vanessa K. Dalton, MD, MPH, Daniel J. Clauw, MD, and Chad M. Brummett, MD

Obstet Gynecol. 2017 December ; 130(6): 1261–1268.

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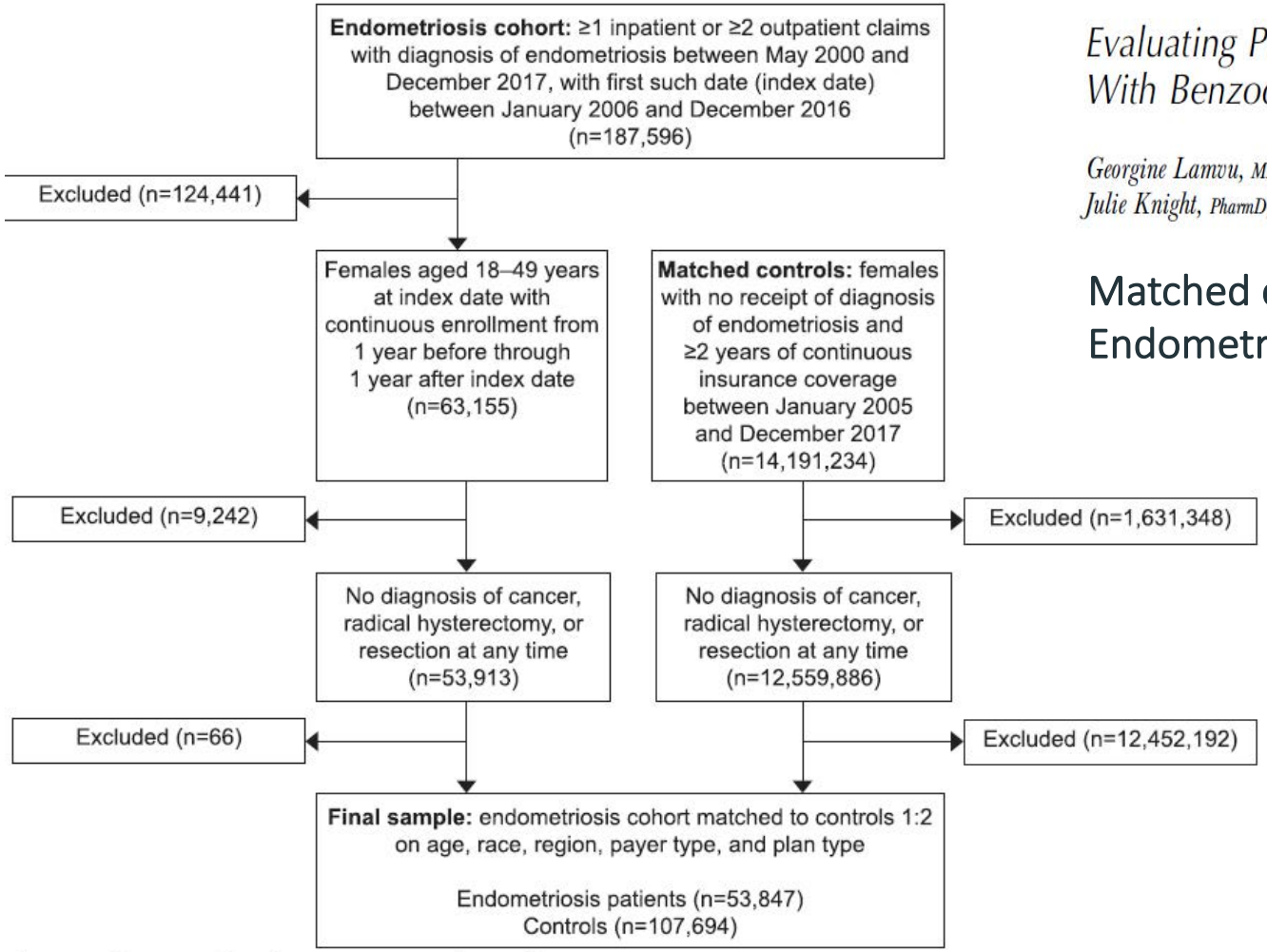

Fig. 1. Inclusion and exclusion criteria and sample size.
Lamvu. Opioid Use in Women With Endometriosis. Obstet Gynecol 2019.

Endometriosis: *Original Research*

OPEN

Patterns of Prescription Opioid Use in Women With Endometriosis

Evaluating Prolonged Use, Daily Dose, and Concomitant Use With Benzodiazepines

Georgine Lamvu, MD, MPH, Ahmed M. Soliman, PhD, Shivaji R. Manthena, MS, Keith Gordon, PhD, Julie Knight, PharmD, and Hugh S. Taylor, MD

Matched cohort. Excluded surgery
Endometriosis: more mood, anxiety disorders

Women with endometriosis:

- More likely to have an opioid prescription (79% vs 24%, RR 2.9)
- More likely to have >50 MME (46% vs 10%, RR 4.0)
- More likely to have >100 MME (155 vs 3%, RR 3.6)
- Opioid prescription >90 days (6% vs 3%, RR 1.3)
- Combined opioid benzo prescribing (10% vs 3%, RR 2)

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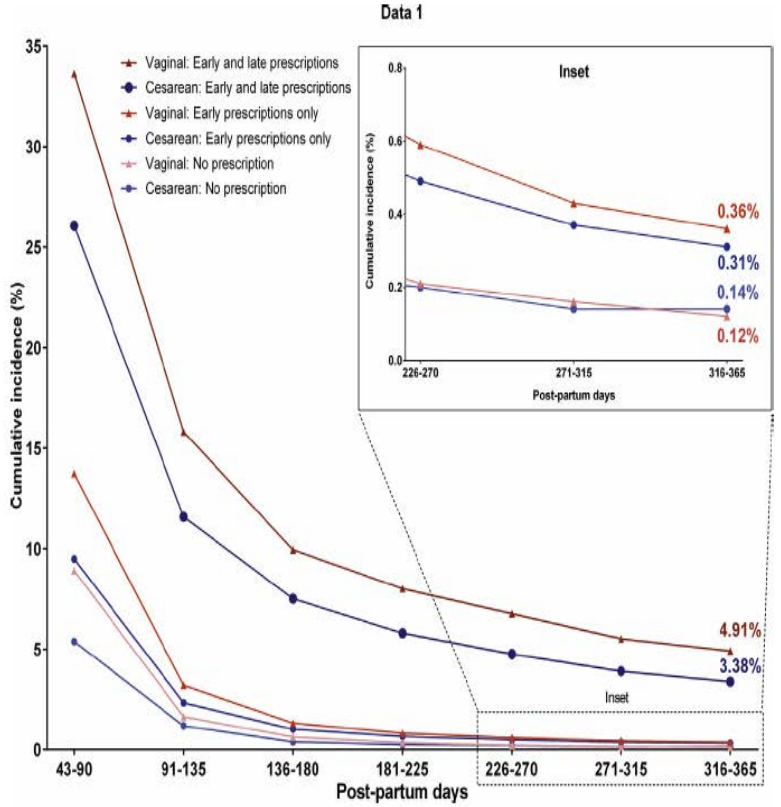
Delivery type, opioid prescribing, and the risk of persistent opioid use after delivery

APRIL 2019 American Journal of Obstetrics & Gynecology

FIGURE
Persistent opioid use at year following delivery by postpartum prescription exposure and delivery type



No prescription = 0 fills delivery day 42 (n = 3450 cesarean, n = 33,722 vaginal); early only = ≥1 fill from delivery day 7 and none from days 8 through 42 (n = 21,980 cesarean, n = 30,564 vaginal); early and late = ≥1 fill from delivery day 7 and day 8–42 (n = 5349 cesarean, n = 4482 vaginal); late only (not displayed) = 0 fill from delivery day 7 and ≥1 fill days 8 through 42 (n = 548 cesarean, n = 2446 vaginal).

Osmundson et al. Risk of persistent opioid use after delivery. Am J Obstet Gynecol 2019.

Persistent opioid use at a year postpartum is similar regardless of delivery:

- Vaginal birth 5%
- Cesarean 3%

Requiring opioid refill >6 weeks postpartum is the signal for persistent opioid use (>1 refill every 45 days for a year after delivery)

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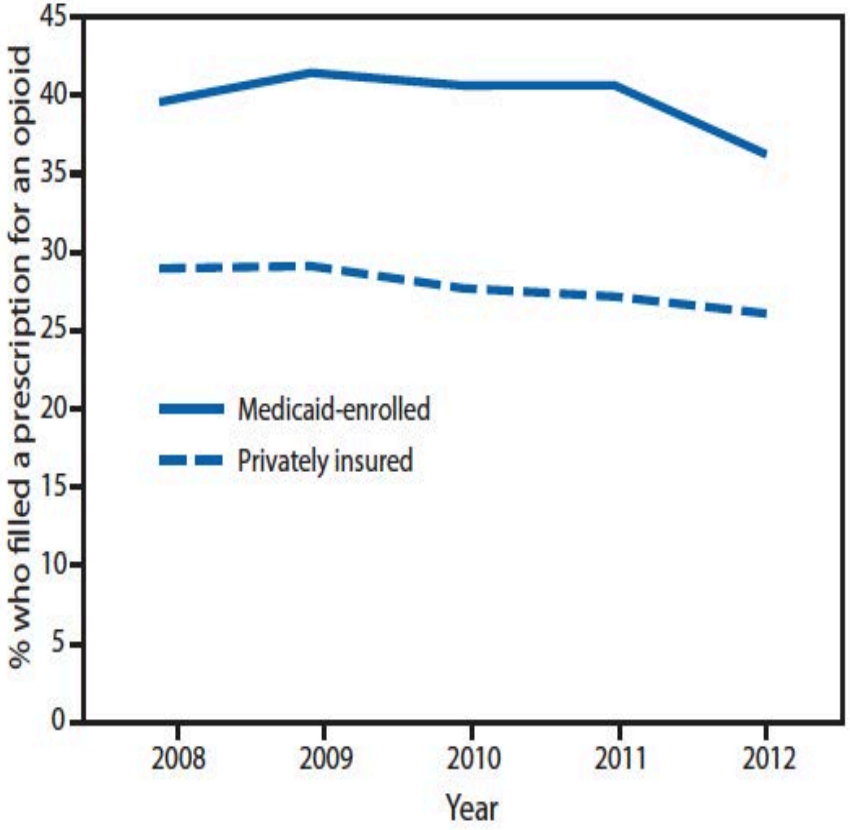
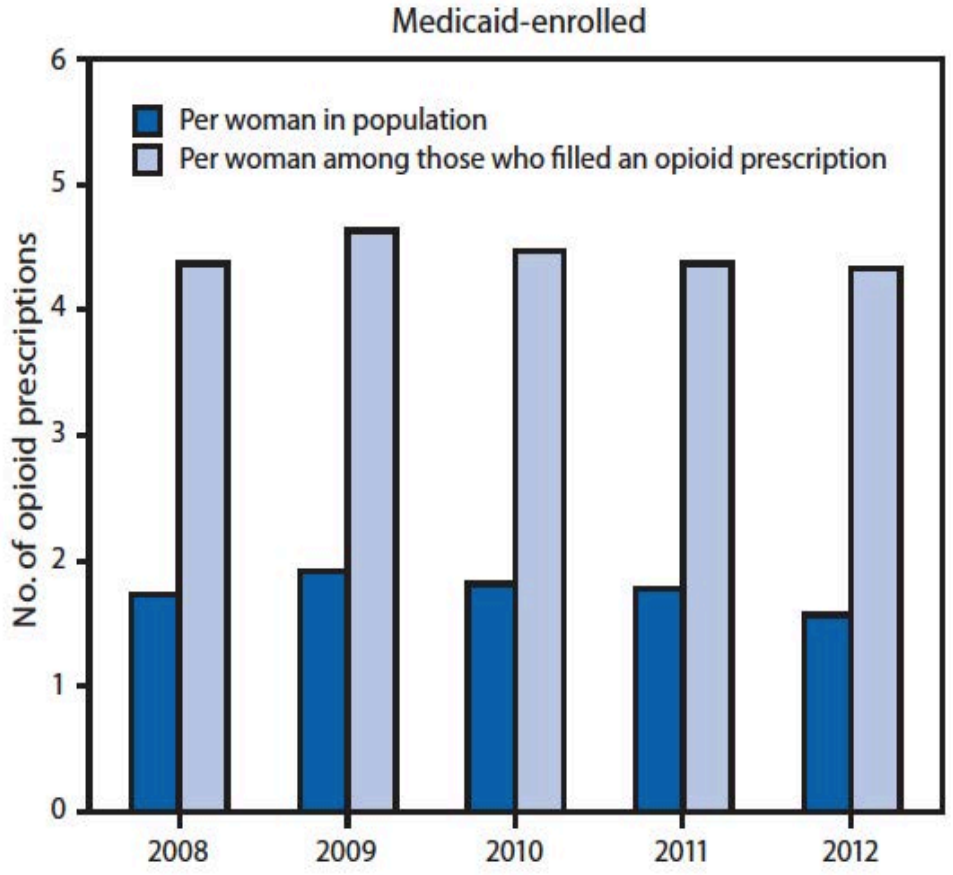
The medical profession needs to stop REFILLING opioid prescriptions:

- More common in Medicaid-enrolled women
- Once women fill one prescription, they are likely to have a number of prescriptions

FIGURE 1. Percentage of women aged 15–44 years who filled a prescription for an opioid from an outpatient pharmacy, by health care coverage type and year — United States, 2008–2012





Source: Truven Health's MarketScan Commercial Claims and Encounters and Medicaid data.

MMWR, January 2015

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Take Home Message: Women and Opioid Prescribing

- Women are more likely to experience pain
- Women are more likely to receive an opioid prescription for pain
- Women are more likely to have high risk prescribing: opioid with benzodiazepine
- Women die of overdose

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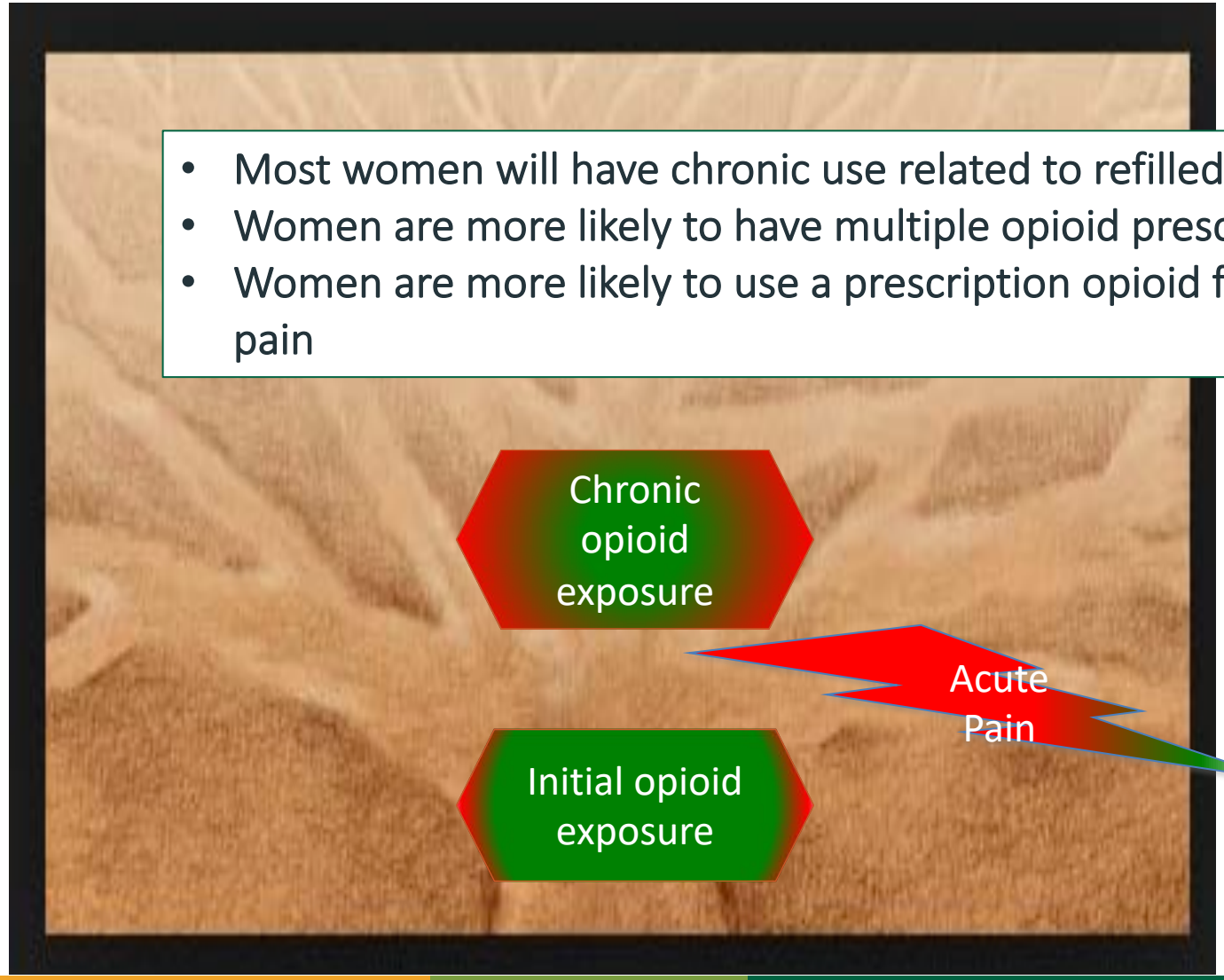
Paths to chronic opioid use/misuse

- Most women will have chronic use related to refilled prescriptions
- Women are more likely to have multiple opioid prescribers
- Women are more likely to use a prescription opioid for modulation of affect rather than pain



60% of women with substance misuse start with a prescription for pain

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Why do people misuse opioids?

Table 3. Main Motivation for Misuse of Prescription Opioids Among Adults With Misuse and Use Disorder in Past 12 Months*

Main Motivation	Adults Reporting Misuse Without Use Disorder (n = 2500)	Adults Reporting Use Disorder (n = 500)
Relieve physical pain	66.3 (63.73–68.95)	48.7 (42.11–55.33)
Relax or relieve tension	11.2 (9.48–13.00)	8.9 (5.14–12.70)
Experiment	2.2 (1.63–2.73)	1.1 (0.36–1.74)
Get high or feel good	10.8 (9.24–12.33)	16.2 (11.90–20.40)
Help with sleep	4.6 (3.48–5.76)	3.7 (0.77–6.61)
Help with emotions or feelings	2.4 (1.64–3.12)	7.0 (6.11–7.92)
Increase/decrease effects of other drugs	0.9 (0.35–1.41)	†
Hooked or have to misuse	0.6 (0.22–0.96)	12.0 (8.66–15.24)
Other	1.0 (0.49–1.47)	†

* Values are weighted percentages (95% CIs). The Substance Abuse and Mental Health Services Administration requires that any description of overall sample sizes based on the restricted-use data files be rounded to the nearest hundred to minimize potential disclosure risk.
† Estimate suppressed because of low statistical precision.

Annals of Internal Medicine ORIGINAL RESEARCH

Prescription Opioid Use, Misuse, and Use Disorders in U.S. Adults: 2015 National Survey on Drug Use and Health

Beth Han, MD, PhD, MPH; Wilson M. Compton, MD, MPE; Carlos Blanco, MD, PhD; Elizabeth Crane, PhD, MPH; Jinhee Lee, PharmD; and Christopher M. Jones, PharmD, MPH

People misuse prescriptions (not take as indicated, take someone else's medications):

- Untreated Pain (majority)
- Get high (minority)
- Relax, Mood, Sleep (more common in women)

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Where are these misused opioids coming from?

Table 4. Source of Prescription Opioids Obtained for Most Recent Episode of Misuse Among Adults With Misuse and Use Disorder in Past 12 Months*

Source	Adults Reporting Misuse Without Use Disorder (n = 2500)	Adults Reporting Use Disorder (n = 500)
Obtained for free from friend/relative	44.6 (41.79–47.39)	21.8 (16.86–26.78)
Obtained from 1 physician	33.8 (30.95–36.55)	40.4 (34.08–46.62)
Obtained from >1 physician	1.3 (0.60–1.98)	3.9 (0.50–7.24)
Bought from friend/relative	8.5 (6.98–10.00)	14.1 (10.47–17.65)
Bought from drug dealer/ stranger	3.1 (2.32–3.88)	13.8 (10.25–17.27)
Stolen from friend/relative	3.6 (2.53–4.61)	†
Stolen from physician's office, clinic, or pharmacy	0.5 (0.20–0.86)	†
Other	4.7 (3.41–5.95)	3.1 (1.22–5.06)

* Values are weighted percentages (95% CIs). The Substance Abuse and Mental Health Services Administration requires that any description of overall sample sizes based on the restricted-use data files be rounded to the nearest hundred to minimize potential disclosure risk.
† Estimate suppressed because of low statistical precision.

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Opioid availability from:

- **Friends or relatives that have extra from a prescription (over prescribing which allows diversion to others)**
- **getting a prescription from a provider**

are the major contributors to opioid availability and misuse

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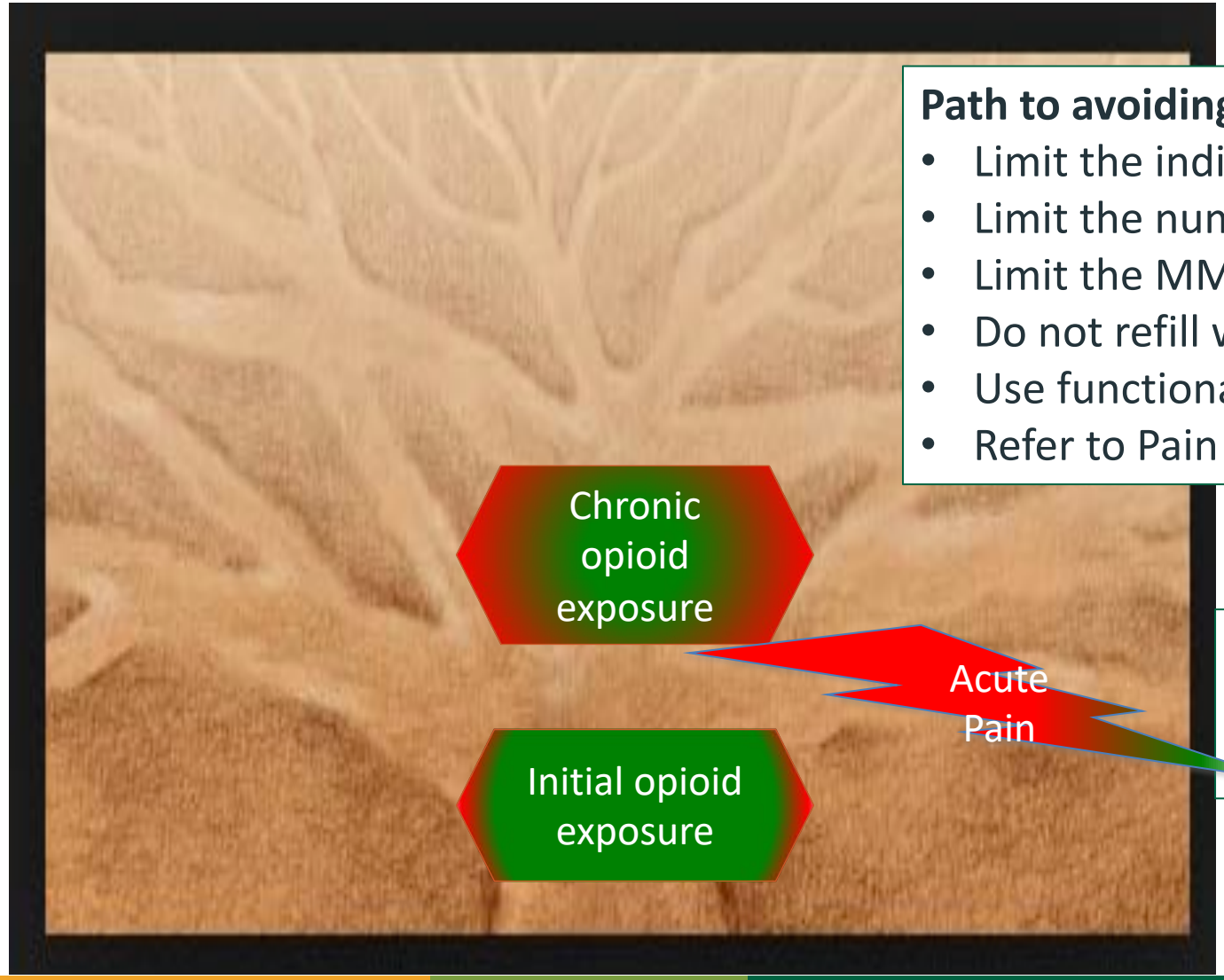
Paths to chronic opioid use/misuse



Path to avoiding opioid misuse:

- Limit the indications for prescribing an opioid
- Limit the number of days treated with opioid
- Limit the MME prescribed
- Do not refill without evaluation
- Use functional endpoints
- Refer to Pain Specialist

60% of women with substance misuse start with a prescription for pain

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How much opioid should be prescribed?

In general:

- 3 days, <50 MME (about 7 tablets oxycodone 5 mg)
- one oxycodone 5 mg=7.2 MME, conversion 1.5
- Search for guidelines for the specific condition

Specific approach to reduce opioid prescribing following birth:
a model for an approach to reduce opioid prescribing for acute pain

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Step 1: How many opioids are prescribed for a procedure (usually)

A lot of opioids are prescribed following vaginal birth:

- only 12% of women even fill that prescription
- <10% used any opioid in the hospital but had opioids prescribed at discharge anyway

TABLE 2
Prescribed opioids at discharge

Drug (MME)	Count (%)	Median MME (IQR)	MME range	Tablets, median (IQR)	Tablets range
	Vaginal delivery (N = 2749)				
Hydrocodone 10 mg (10)[a]	1543 (56.2)	300 (180–300)	50–1200	30 (15–30)	5–120
Hydrocodone 5 mg (5)[a]	1027 (37.4)	120 (60–150)	25–900	24 (12–30)	5–180
Tramadol 50 mg (5)	133 (4.8)	150 (120–150)	30–400	30 (24–30)	6–60
Codeine 30 mg (4.5)[a]	33 (1.2)	120 (96–144)	48–240	30 (24–36)	12–60
Multiple opioids	39 (1.4)	–	–	–	–
Total		200 (120–300)	25–1200	24 (12–30)	5–180

Badreldin et al. Postpartum opioid prescribing patterns. Am J Obstet Gynecol 2018.

MME: morphine milligram equivalent

7 oxycodone 5 mg tablets=50 MME/day

Dose >50 MME/day increases risk of opioid death

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A lot of opioids are prescribed after cesarean delivery: >90% of women have a prescription at discharge

TABLE 2
Prescribed opioids at discharge

Drug (MME)	Count (%)	Median MME (IQR)	MME range	Tablets, median (IQR)	Tablets range
	Cesarean delivery (N = 2849)				
Hydrocodone 10 mg (10)[a]	1979 (69.5)	300 (300–400)	50–1800	30 (30–36)	5 –180
Hydrocodone 5 mg (5)[a]	645 (22.7)	150 (120–150)	50–850	30 (24–30)	10–84
Tramadol 50 mg (5)	203 (7.1)	150 (150–200)	60–570	30 (30–40)	12–84
Codeine 30 mg (4.5)[a]	8 (0.3)	152 (96–120)	96–240	30 (24–30)	24–60
Multiple opioids	172 (6.0)	–	–	–	–
Total		300 (200–300)	50–1800	30 (30–30)	5–180

IQR, interquartile range; *MME*, morphine milligram equivalent.

[a] Commonly prescribed as combination formulary with acetaminophen 325 mg.

Badreldin et al. Postpartum opioid prescribing patterns. Am J Obstet Gynecol 2018.

MME: morphine milligram equivalent

7 oxycodone 5 mg tablets=50 MME/day

Dose >50 MME/day increases risk of opioid death

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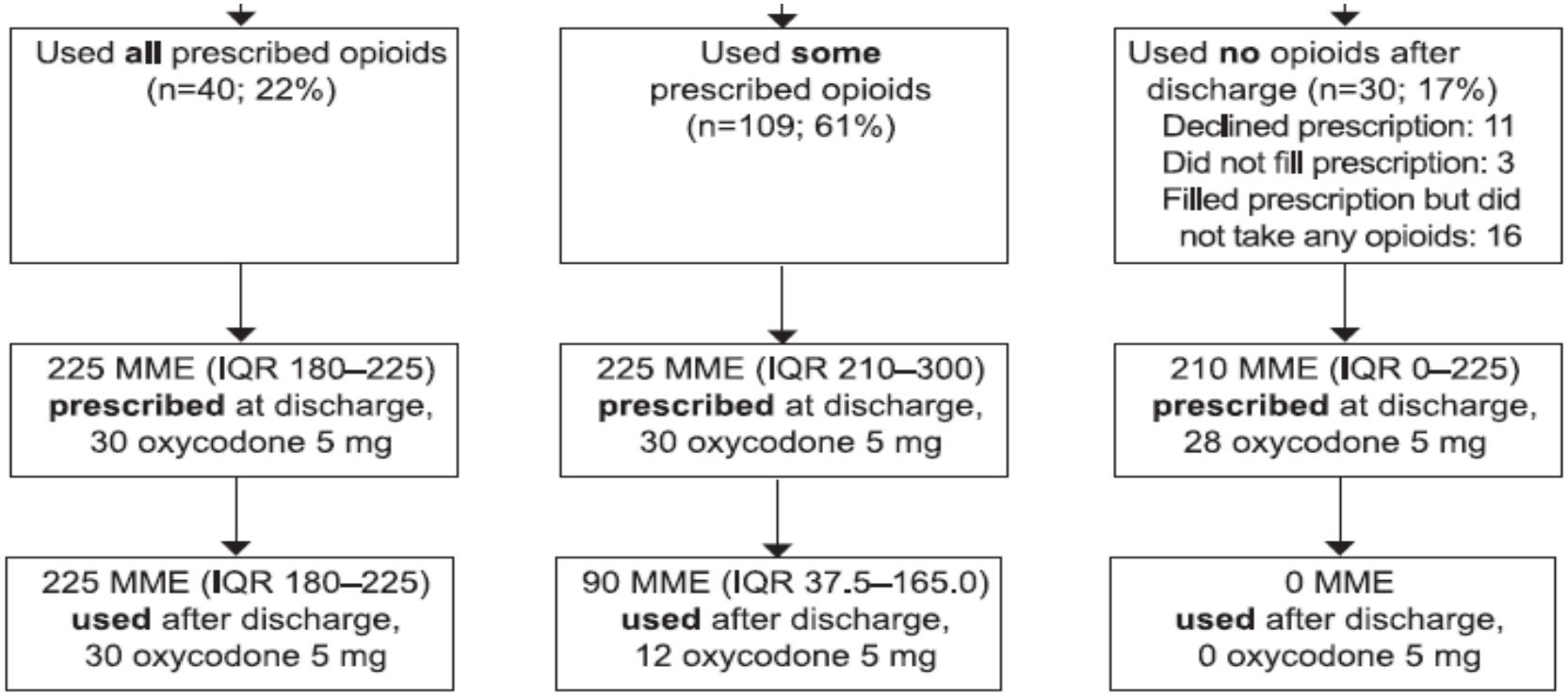
Step 2: How many opioids are used following a procedure

Opioids are overprescribed following cesarean delivery

- 75% of women have unused opioids
- 17% used NO opioids
- Median of 10 unused 5mg oxycodone tablets per patient (majority stored in unlocked location)



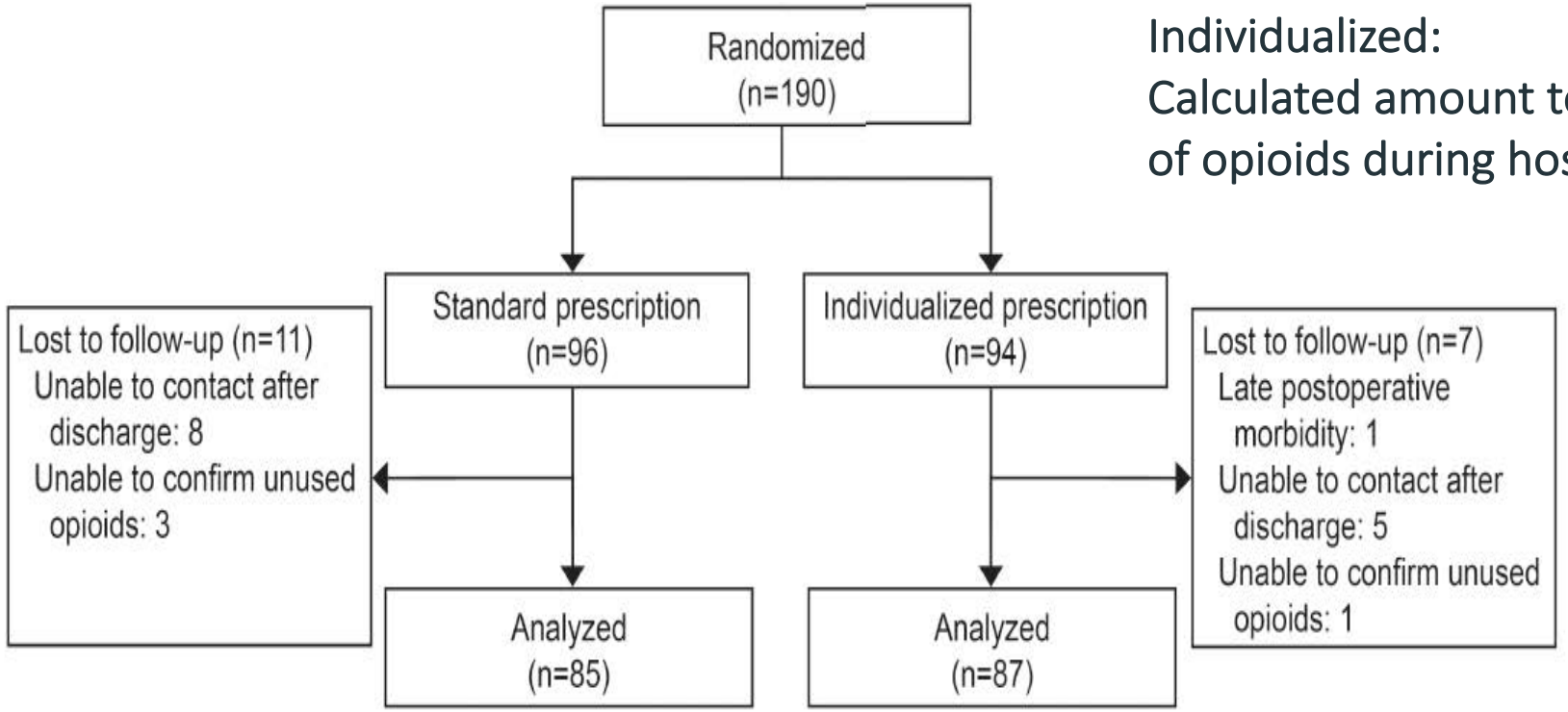
Obstet Gynecol 2017; 130:36–41

Step 3: can opioid prescribing be reduced without adverse effects?

Individualized Compared With Standard Post-Discharge Oxycodone Prescribing After Cesarean Birth:

A Randomized Controlled Trial

Sarah S. Osmundson, MD, MS[1], Britany L. Raymond, MD[2], Bradley T. Kook, MD[2], LeAnn Lam, BS[3], Elizabeth B. Thompson[4], Leslie A. Schornack, MD[2], Catherine E. Voorhees, MD[1], and Michael G. Richardson, MD[2]



Can discharge opioid prescribing be individualized?

Standard prescription:
Oxycodone 5 gm 30 tablets

Individualized:
Calculated amount to prescribe based on the use of opioids during hospitalization

Obstet Gynecol. 2018 September; 132(3): 624-630.

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Can discharge opioid prescribing be individualized?

Individualized Compared With Standard Post-Discharge Oxycodone Prescribing After Cesarean Birth:
A Randomized Controlled Trial

Sarah S. Osmundson, MD, MS[1], Britany L. Raymond, MD[2], Bradley T. Kook, MD[2], LeAnn Lam, BS[3], Elizabeth B. Thompson[4], Leslie A. Schornack, MD[2], Catherine E. Voorhees, MD[1], and Michael G. Richardson, MD[2]

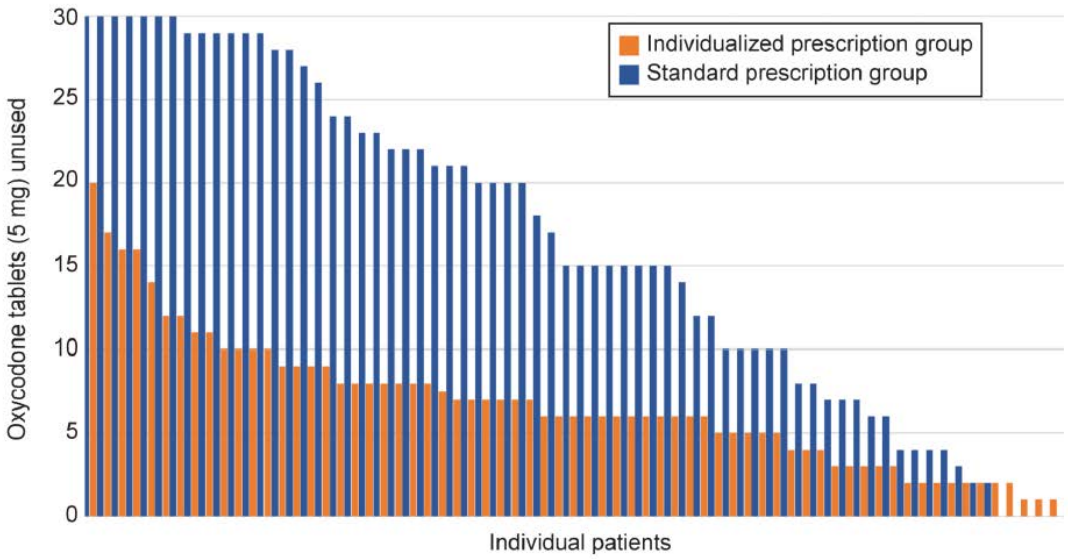

Figure 2.
Total oxycodone tablets (5 mg) unused for each patient in standard compared with individualized groups sorted in descending order.

Individual prescribing not only reduced the number of opioid tablets that remained unused, it also reduced the use of opioids

Obstet Gynecol. 2018 September; 132(3): 624-630.

Primary Outcome:
Number of opioid tablets prescribed but unused (oxycodone 5 mg)

Secondary outcome:
Number of tablets used
Frequency of opioid use
Frequency of refills
Pain satisfaction survey

Individual prescribing:
14 (12-16) tablets prescribed
5 (1-8) unused tablets
8 (4-14) tablets used
60% of tablets used

Standard prescribing:
30 tablets prescribed
10 (0-22) tablets unused
15 (6-30) tablets used
60% of tablets used

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Can discharge opioid prescribing be individualized?

- **Pain measures were similar**
- **Pain satisfaction was similar**

Individualized Compared With Standard Post-Discharge Oxycodone Prescribing After Cesarean Birth:

A Randomized Controlled Trial

Sarah S. Osmundson, MD, MS[1], Britany L. Raymond, MD[2], Bradley T. Kook, MD[2], LeAnn Lam, BS[3], Elizabeth B. Thompson[4], Leslie A. Schornack, MD[2], Catherine E. Voorhees, MD[1], and Michael G. Richardson, MD[2]

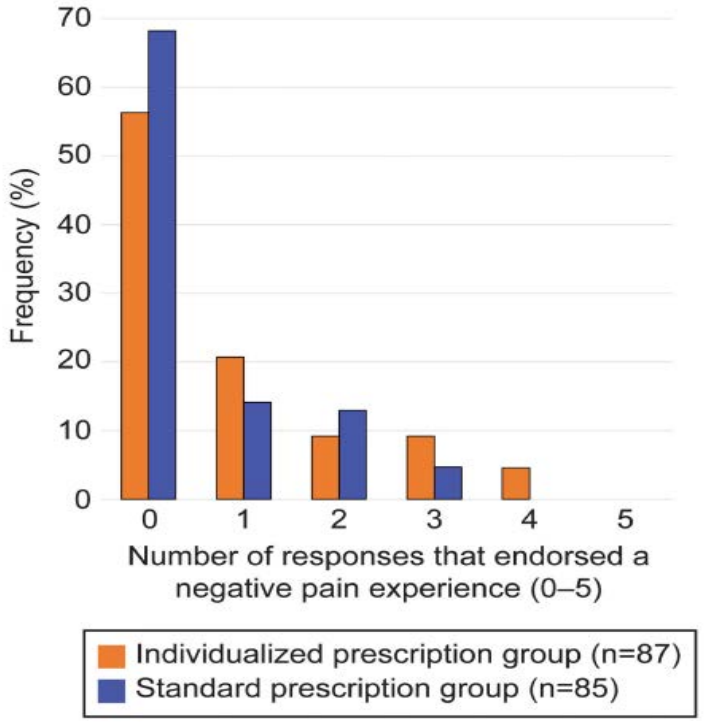

Figure 3.
Distribution of patient responses endorsing a negative pain experience by study group.

Characteristics of opioid use and patient reported pain after discharge

	Standard Prescription N=85	Individualized Prescription N=87	P-value or RR (95% CI)
Pain Measures			
Pain level since discharge (0–10)	3 (2–5)	4 (2–5)	0.42
I was discharged with too few opioid pills	9 (10.7)	18 (21.7)	2.02 (0.97–4.24)
Overall, my pain is poorly controlled by these medications?	3 (3.7)	1 (1.2)	0.33 (0.04–3.14)
Overall, my pain from delivery has been worse than I expected	11 (13.1)	19 (22.2)	1.71 (0.87–3.36)
Pain interfered significantly with my ability to do normal activities?	10 (11.9)	18 (21.2)	1.78 (0.87–3.62)
Since discharge, I needed more opioid than what was prescribed?	13 (15.5)	18 (21.2)	1.37 (0.72–2.61)

All data presented as n (%), mean ±SD, or median (IQR)

* Cumulative affirmative responses (0 to 5) to the preceding questions regarding pain.

Obstet Gynecol. 2018 September; 132(3): 624-630.

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A Shared Decision-Making Intervention to Guide Opioid Prescribing After Cesarean Delivery

Malavika Prabhu, MD,
Division of Maternal-Fetal Medicine, Department of Obstetrics and Gynecology, Massachusetts General Hospital, Boston, MA

- N=50 women
- approximately 10-minute shared decision-making session in which a clinician (obstetrician (MP) or anesthesiologist (EMH)) reviewed information verbally while the participants viewed a tablet computer-based decision aid
- Counseling: information on anticipated patterns of pain in the first 2 weeks after cesarean delivery
  - expected outpatient opioid use after cesarean delivery;
  - risks and benefits of opioid and non-opioid analgesics; and
  - information on opioid disposal and access to refills if needed
- participants chose the number of tablets (oxycodone 5 mg) they would be prescribed upon discharge, from 0 to 40 tablets; 40 tablets was the standard number of tablets prescribed by obstetric providers at our institution at the time of the study

Obstet Gynecol. 2017 July; 130(1): 42-46.

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A Shared Decision-Making Intervention to Guide Opioid Prescribing After Cesarean Delivery

Malavika Prabhu, MD,
Division of Maternal-Fetal Medicine, Department of Obstetrics and Gynecology, Massachusetts General Hospital, Boston, MA

Table 2. Oxycodone Use After Discharge and Satisfaction With the Pain Regimen

Outcome	Value
No. of oxycodone tablets chosen*	20.0 (15.0–25.0)
No. of oxycodone tablets used	15.5 (8.0–25.0)
No. of oxycodone tablets remaining	4.0 (0.0–8.0)
Need for oxycodone refills	4 (8.0)
Satisfied with outpatient pain management	26 (52.0)
Very satisfied with outpatient pain management	19 (38.0)

Data are median (interquartile range) or n (%).
* For six patients, the number of tablets prescribed was different from the number chosen such that the median (interquartile range) number of tablets dispensed was 20.0 (20.0–30.0).

Methods:

- Reviewed risks of opioids with patient
- Asked them how many pills they wanted to go home with (0-40)

- All were offered up to 40 tablets
- Most chose 20 tablets
- Still had some left over
- Few refills
- Most satisfied or very satisfied with pain management

Obstet Gynecol. 2017 July; 130(1): 42-46.

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Another piece of prevention: *Accidental overdose/ingestion*

Overdose Risk in Young Children of Women Prescribed Opioids

Yaron Finkelstein, MD,[a,b,c,d] Erin M. Macdonald, MSc,[d] Alejandro Gonzalez, MSc,[d] Marco L.A. Sivilotti, MD, MSc,[e,f] Muhammad M. Mamdani, PharmD,[d,g,h] David N. Juurlink, MD,[d,i,j] Canadian Drug Safety And Effectiveness Research Network (CDSERN)

TABLE 2 Maternal Prescription and Child Opioid Overdose

	No. (%) of Child Overdoses		OR (95% CI)
Medication Use by Mother	Cases, *n* (%) (*n* = 103)	Controls, *n* (%) (*n* = 412)	Unadjusted
NSAID	13 (12.6)	111 (26.9)	1
Opioid	90 (87.4)	301 (73.1)	2.41 (1.68–3.45)

TABLE 1 Characteristics of Cases and Controls

Characteristic	Cases (*n* = 103)	Controls (*n* = 412)	*P*
Children's characteristics			
Median (IQR) age, y	2 (1–3)	2 (1–3)	.996
Boy	53 (51.5)	212 (51.5)	.998
No. of siblings	1 (1–2)	1 (1–2)	.65

- Increased risk of 2.4-fold of accidental toddler overdose if mom has a prescription
- Median age 2
- Most patients do not store medications properly

Pediatrics. 2017 July; 139(3):e20162887

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Another piece of prevention: *Avoid having opioids in the house*

RESEARCH ARTICLE

Prescription opioid use and misuse among adolescents and young adults in the United States: A national survey study

Joel D. Hudgins[1,2]*, John J. Porter[1], Michael C. Monuteaux[1], Florence T. Bourgeois[1,2,3]

Pediatrics. 2017 July; 139(3):e20162887

Misuse by family

Friends or relatives most common source of opioid use in adolescents and young adults:

- 49% adolescents
- 58% young adults

Table 2. Extrapolated population estimates of source of prescription opioids among adolescents and young adults with opioid misuse[a].

Source of Opioid	Any Opioid Misuse (n = 3,257)[b]			
	Adolescents (n = 1,050)		Young adults (n = 2,207)	
	n	Percent (95% CI)	n	Percent (95% CI)
Obtained from healthcare system	433,462	23.1 (20.0–26.3)	1,407,643	26.1 (24.1–28.1)
One doctor	359,795	19.2 (16.4–22.1)	1,293,571	24.0 (22.1–25.9)
More than one doctor	42,051	2.2 (1.3–3.2)	71,562	1.3 (0.6–2.0)
Stole from doctor's office, clinic, hospital, or pharmacy	31,616	1.7 (0.5–2.8)	42,510	0.8 (0.3–1.3)
Obtained from friends or relatives	920,296	49.2 (44.8–53.6)	3,124,468	57.9 (55.4–60.5)
Obtained from friend or relative for free	626,662	33.5 (28.7–38.3)	2,233,560	41.4 (38.8–44.1)
Bought from friend or relative	151,486	8.1 (6.2–10.0)	657,733	12.2 (10.4–14.0)
Took from friend or relative without asking	142,148	7.6 (5.5–9.7)	233,175	4.3 (3.2–5.4)
Obtained from other source	516,681	27.6 (23.9–31.3)	859,474	15.9 (14.1–17.7)
Bought from drug dealer or stranger	121,009	6.5 (4.4–8.6)	422,616	7.8 (6.3–9.4)
Other	159,678	8.5 (6.8–10.3)	235,532	4.4 (3.4–5.3)
Unknown	235,994	12.6 (9.7–15.6)	201,326	3.7 (2.9–4.6)

[a]Values are weighted percentages and 95% CIs.

[b]The extrapolated population estimate is 7.2 million, of which 1.9 million are adolescents and 5.4 million young adults.

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Opioid use disorder can be prevented and how you can do this

(without more documentation)

Pain has a behavioral/emotional component: that MUST be addressed in the treatment plan

- Focus on functional improvement not absence of pain

Screen/Treat mood and anxiety disorders

Pain is very complex

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Opioid use disorder can be prevented and how you can do this

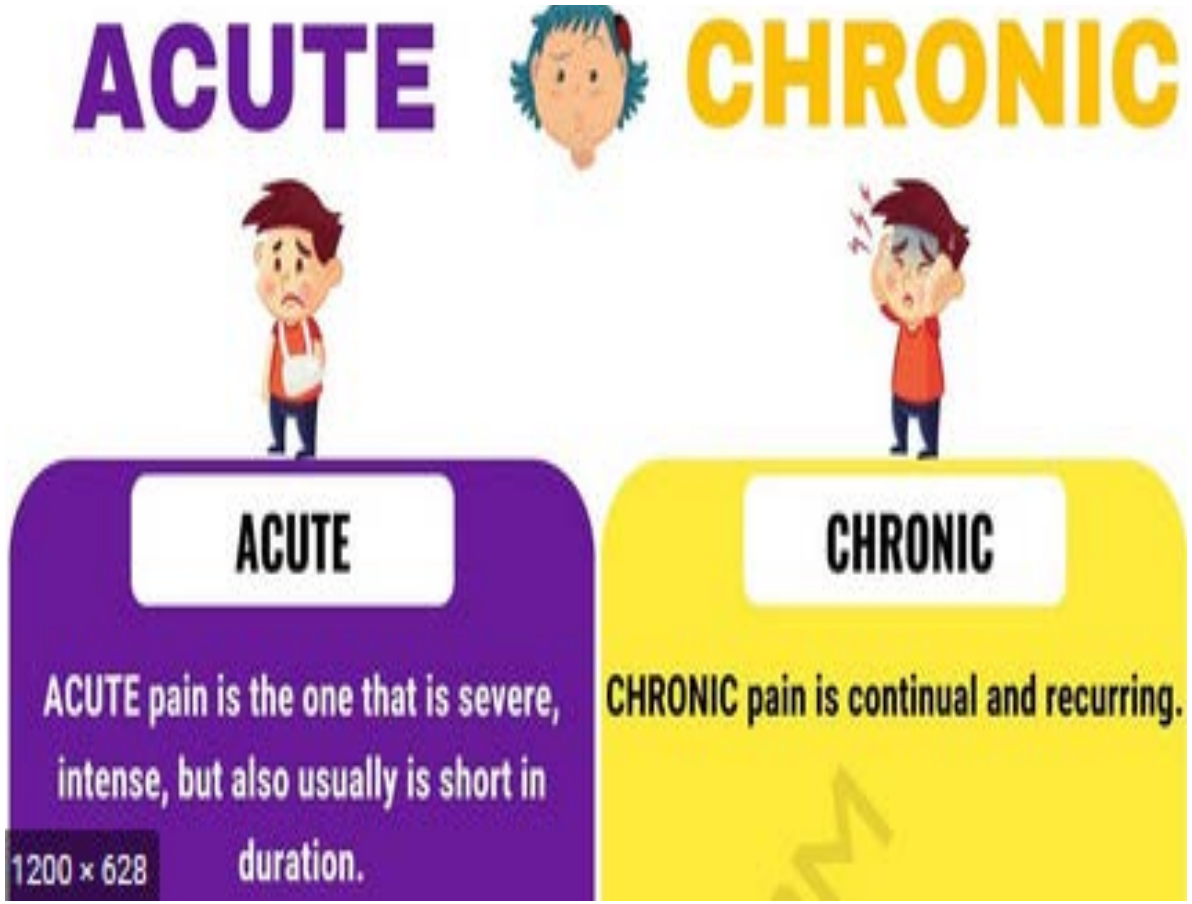
(without more documentation)

1. Prescribe only for acute pain with indications that are clear
    1. Explore diagnosis specific prescribing guidelines

2. Do not prescribe more than 3 days of opioid for acute pain

3. Limit MME to <50 MME for initial prescriptions

4. Avoid opioid for treatment of chronic non-cancer pain



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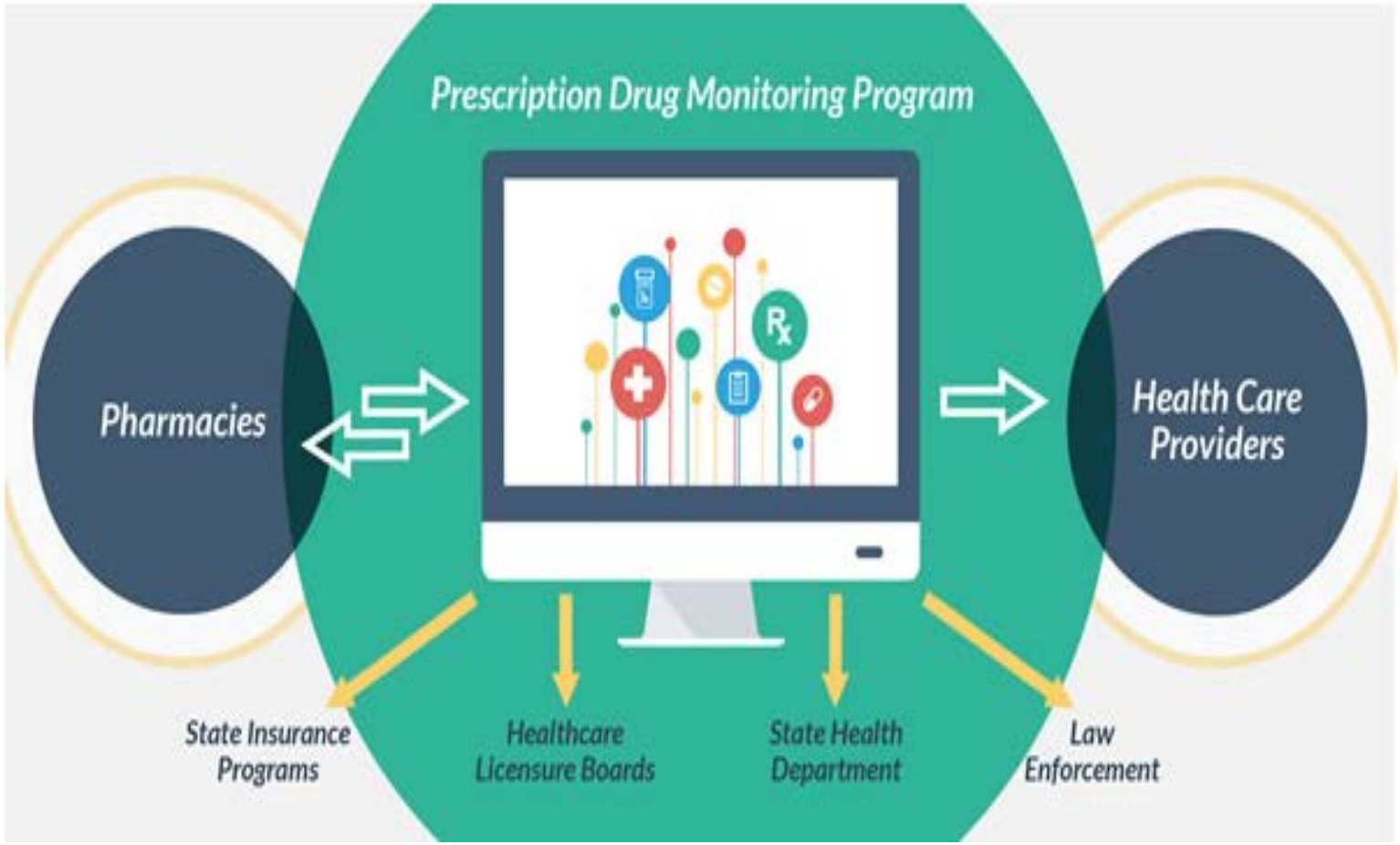
Opioid use disorder can be prevented and how you can do this

(without more documentation)

Avoid refills or duplicates: check Prescription Monitoring System before prescribing

- Ensures no duplicate prescribing/multiple prescribers
- Avoids opioid prescribing with hypnotics (benzodiazepines)
- Ask a provider to let you search if you are not a prescriber: they can give you permission to see prescribing for patients in your care



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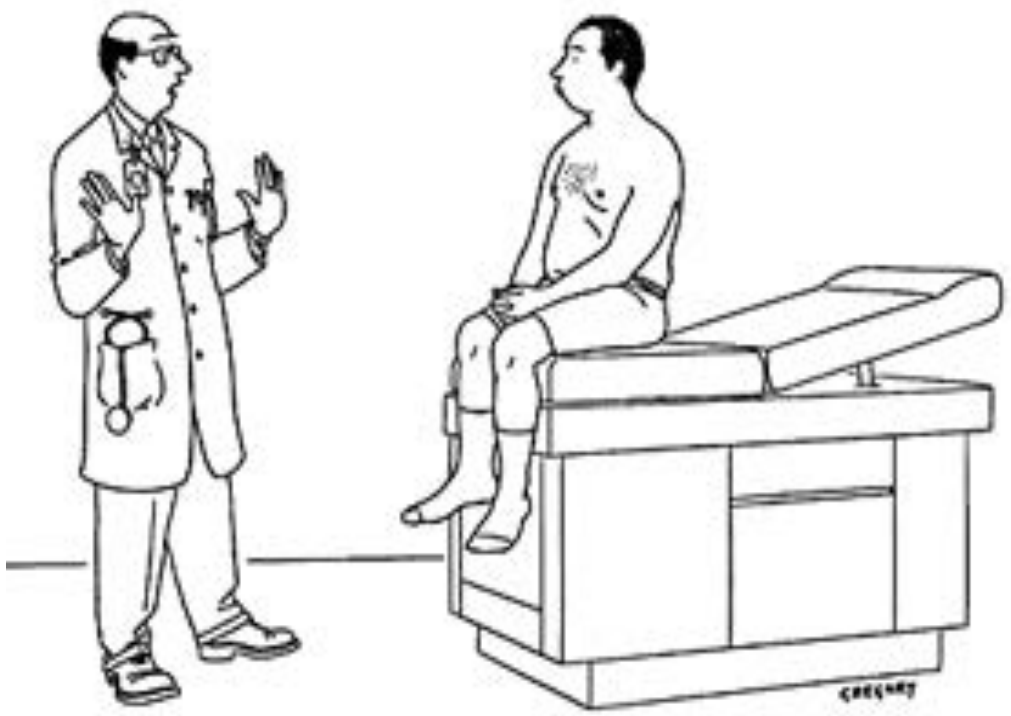
Opioid use disorder can be prevented and how you can do this

(without more documentation)

Use shared decision making to match anticipated opioid need with functional gains and develop a plan for follow-up

- Pain Specialist referral
- Cognitive Behavioral Therapy
- Counseling
- Set expectations for medication effectiveness



"Whoa—way too much information!"

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Opioid use disorder can be prevented and how you can do this

(without more documentation)

Discuss medication storage, safety, and disposal

- Strongly recommend a secure, locked cabinet or drawer (or gun safe)
- There is geographic variation in disposal
- Do NOT advertise where your pain medications are; this is a bad idea

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Resources

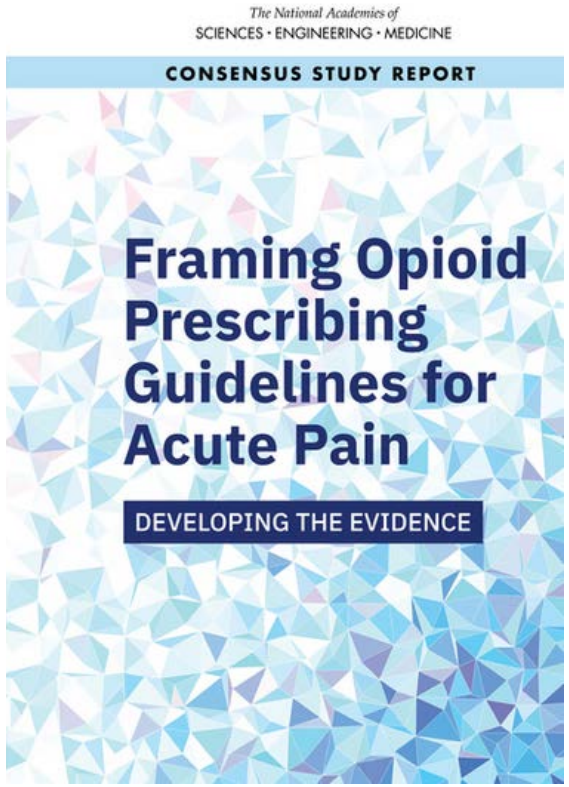
CDC Guideline for Prescribing Opioids for Chronic Pain
https://www.cdc.gov/drugoverdose/prescribing/guideline.html

Framing Opioid Prescribing Guidelines for Acute Pain
https://www.nap.edu/catalog/25555/framing-opioid-prescribing-guidelines-for-acute-pain-developing-the-evidence

Look for State and Society Opioid Prescribing Guidelines

- Maine: https://mainehealth.org/healthcare-professionals/clinical-resources-guidelines-protocols/opioid-use-treatment-resources
- New Hampshire: https://www.nhms.org/resources/opioid
- Vermont: http://www.vtmd.org/opiate-prescribing-substance-use-disorder-information

Online MME Calculator
https://www.mdcalc.com/morphine-milligram-equivalents-mme-calculator



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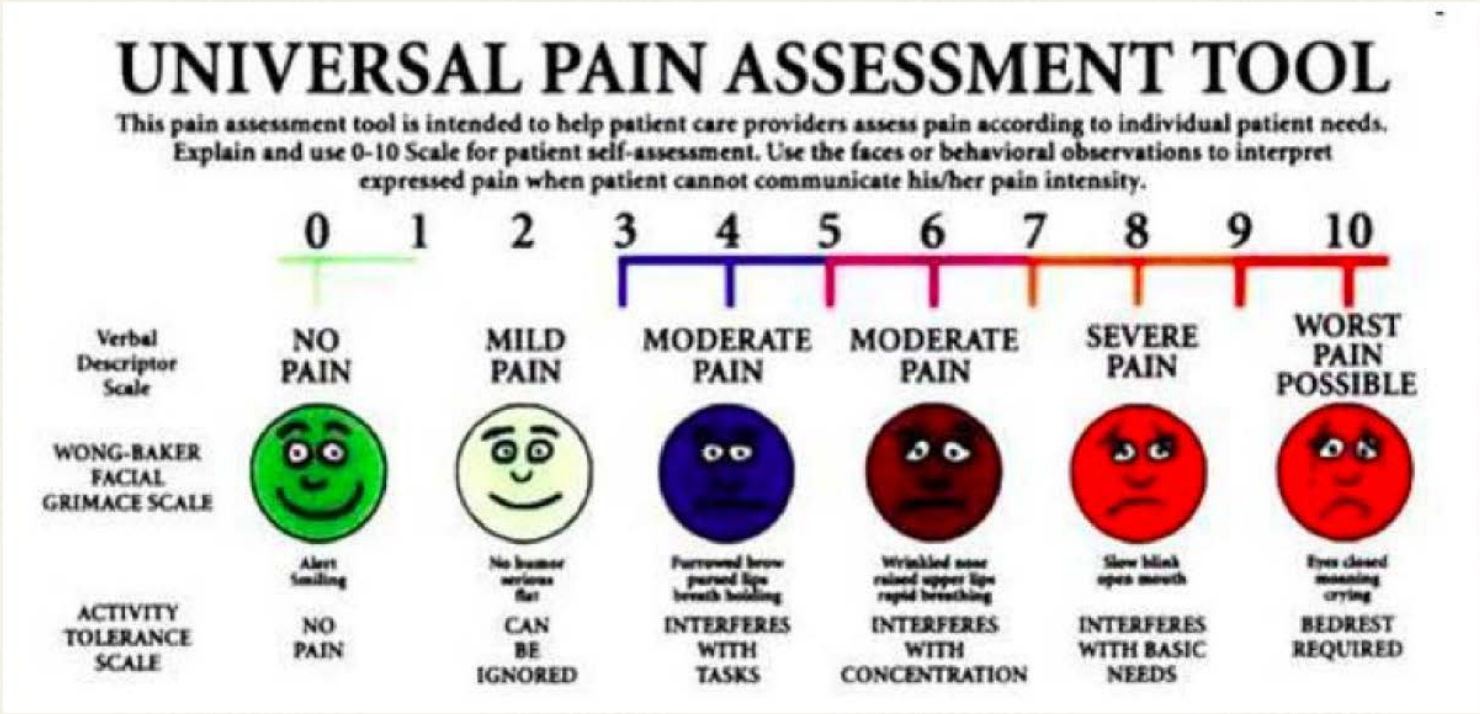
Shared Decision-Making For Prescription Opioids After Cesarean Delivery

WHAT IS PAIN?



Obstet Gynecol. 2017 July ; 130(1): 42–46.

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Shared Decision-Making For Prescription Opioids After Cesarean Delivery

HOW MUCH PAIN DO WOMEN USUALLY HAVE AFTER A C-SECTION?

During hospitalization, the average pain score that women report is 5.

5-6

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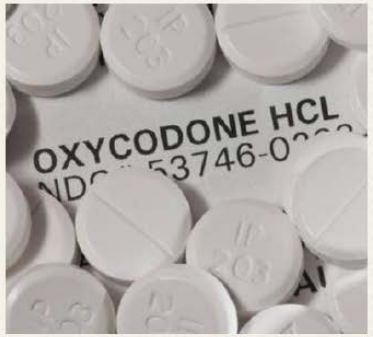
Shared Decision-Making For Prescription Opioids After Cesarean Delivery

WHAT PAIN MEDICINES WORK BEST AFTER A C-SECTION?

We don't know, which is why we are doing this study.



We know that each of these medications has benefits and side effects.

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Shared Decision-Making For Prescription Opioids After Cesarean Delivery

WHAT ARE THE BENEFITS AND SIDE EFFECTS OF EACH MEDICATION?

	EFFECT ON PAIN	SIDE EFFECTS	SAFE IN BREAST-FEEDING?
TYLENOL	MODERATE	MINIMAL *With overdose:* Liver Damage (rare)	YES
IBUPROFEN (MOTRIL OR ADVIL)	STRONG	HEARTBURN OR UPSET STOMACH (10%) WATER RETENTION *With overdose or long-term use:* Kidney damage or Stomach ulcer (rare)	YES
OXYCODONE (OPIOID)	STRONG	DROWSINESS, CONSTIPATION, ITCHING, NAUSEA, VOMITING, DIZZINESS *With overdose:* Oversedation (rare)	YES

Obstet Gynecol. 2017 July ; 130(1): 42–46.

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Shared Decision-Making For Prescription Opioids After Cesarean Delivery

WHAT ARE SOME OTHER RISKS OF MEDICATIONS LIKE OXYCODONE?

Some patients who are prescribed opioids like oxycodone after a C-section can become addicted to them,

but this risk is low.

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Shared Decision-Making For Prescription Opioids After Cesarean Delivery

WHAT ARE SOME OTHER RISKS OF MEDICATIONS LIKE OXYCODONE?

Opioid misuse and abuse is a major current health problem in the U.S.

Opioids that are misused are often obtained from a friend or relative - usually without the knowledge of the person to whom it was prescribed.

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Shared Decision-Making For Prescription Opioids After Cesarean Delivery

WHAT ARE YOUR OPTIONS FOR MANAGING YOUR PAIN AT HOME?

At this institution, most women who have a C-section are given a prescription for 40 tablets of oxycodone. They are also recommended to use ibuprofen and Tylenol.

Obstet Gynecol. 2017 July ; 130(1): 42–46.

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WHAT ARE YOUR OPTIONS FOR MANAGING YOUR PAIN AT HOME?

We have recently finished a study at this institution on how many oxycodone tablets women use at home after cesarean.

On average, women only use **20** tablets and are satisfied with their pain control.

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WHAT ARE YOUR OPTIONS FOR MANAGING YOUR PAIN AT HOME?

If their in-hospital pain scores were 3-4, they used **15** tablets of oxycodone at home...

If their in-hospital pain scores were 5-6, they used **23** tablets of oxycodone at home...

...and if their in-hospital pain scores were 7-8, they used **29** tablets of oxycodone at home.

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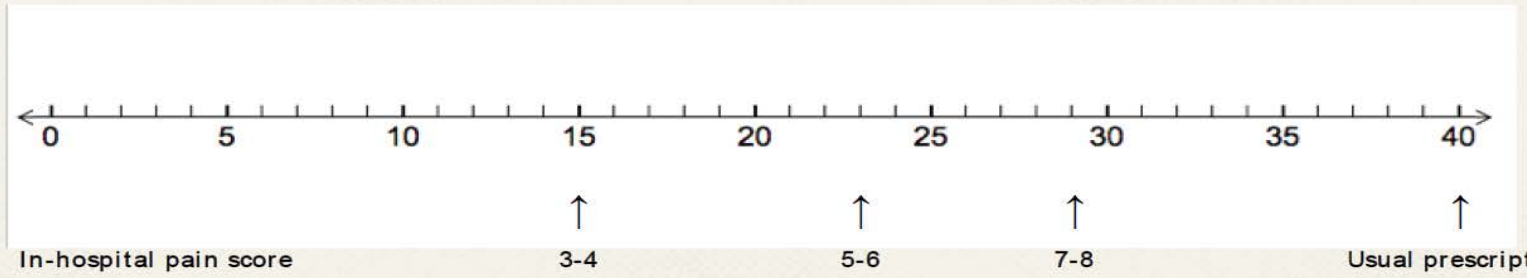
WHAT ARE YOUR OPTIONS FOR MANAGING YOUR PAIN AT HOME?

Please think about your average pain score while you have been in the hospital, and how many tablets of oxycodone you would like.

You can choose to receive a prescription for any number between 0 and 40 tablets of oxycodone.



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WHAT DO I DO IF I RUN OUT OF OXYCODONE AT HOME?

(A) Call your doctor or midwife's office to schedule an appointment.

(B) You can **always** call (555) 555-5555 to speak to an on-call provider. They are available 24 hours a day to give you advice if you're having pain.

You should know that to get a refill of oxycodone, you will need to be seen in person.

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WHAT DO I DO WITH ANY EXTRA OXYCODONE LEFT OVER?

You can dispose of oxycodone at most police stations and some pharmacies. Check with your pharmacy and local police station.

If these are not options for you, you can always flush your leftover oxycodone down the toilet.

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HOW MANY TABLETS OF OXYCODONE WOULD YOU LIKE TO BE PRESCRIBED WITH?

As a reminder, you can choose any number between 0 and 40 tablets.

THANK YOU FOR PARTICIPATING IN OUR STUDY!

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Summary

- Obstetricians overprescribe opioids
- Women do not need opioids prescribed in the hospital or at discharge following vaginal birth
- The amount of opioid prescribed after cesarean can be reduced without increased pain or dissatisfaction

Unused opioids are dangerous:

- Teens in the house
- Burglary
- Persistent use
- Should be kept in locked area (at all times, even when needed)

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Thank you for participating in this month's Community Rounds Workshop Series

Our next session will be held on September 2, 2020 from 12-1pm:
Treatment of Individuals with Stimulant Disorders, Rick Rawson, MD

For additional information visit:
Center on Rural Addiction: https://uvmcora.org
Vermont Center on Behavior and Health: http://www.med.uvm.edu/behaviorandhealth/

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