

OBSTETRICS

Opioid prescribing patterns among postpartum women



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BACKGROUND: Women commonly receive opioid prescriptions following hospitalization. The rise of the opioid epidemic in the United States underscores the importance of a better understanding of prescribing patterns. Although delivery is the most frequent reason for hospitalization in the United States, there is inadequate knowledge regarding opioid prescribing at postpartum hospital discharge.

OBJECTIVE: We sought to describe opioid prescribing patterns at the time of discharge following delivery in a large, diverse cohort, and to describe the relationship of these patterns with objective and subjective measures of pain prior to discharge.

STUDY DESIGN: This is a retrospective cohort study of all deliveries at a single, high-volume tertiary care center over a 1-year period. Women were excluded from analysis if they had evidence of recent opioid use, or their labor, delivery, or postpartum course was notable for rare, nonroutine events anticipated to increase pain. Medical records were queried for demographic and clinical data, including whether an opioid prescription was provided at discharge, and if so, details of that prescription. The primary outcome was amount of opioid morphine milligram equivalents prescribed at discharge, described separately for women after vaginal and cesarean deliveries. Among women who received a prescription, we additionally assessed associations between prescription quantity and subjective (patient-reported pain score) and objective (inpatient opioid requirement during the final 24 hours of hospitalization) assessments of pain. Descriptive and bivariable analyses were performed.

RESULTS: Of the total 12,611 women, 12,326 were eligible for inclusion. Of 9038 women postvaginal delivery and 3288 women

postcesarean delivery, 30.4% and 86.7% received an opioid prescription at discharge, respectively. Of women receiving discharge opioid prescriptions, median morphine milligram equivalents received was 200 (interquartile range: 120–300) following vaginal and 300 (interquartile range: 200–300) following cesarean delivery. Nearly half (45.7%) of women postvaginal delivery and 18.5% of women postcesarean delivery who received an opioid prescription used 0 morphine milligram equivalent during the final hospital day. Similarly, 26.5% and 18.5% of women after vaginal and cesarean delivery, respectively, reported a pain score of 0 of 10 prior to discharge. Regardless of delivery mode, the amount of opioids prescribed did not differ between those who reported a pain score of 0 of 10 and those who reported a pain score of >0 of 10 immediately prior to discharge. Similarly, for women who underwent cesarean delivery, the morphine milligram equivalents prescribed did not differ between those who used 0 morphine milligram equivalents and those who used >0 in the 24 hours prior to hospital discharge.

CONCLUSION: Postpartum women are commonly prescribed opioids at the time of postpartum hospital discharge. There is a wide range of morphine milligram equivalents prescribed at hospital discharge following delivery, highlighting a lack of standardization. Furthermore, regardless of objective and subjective measures of pain prior to discharge, women received similar amounts of prescription morphine milligram equivalents following either vaginal or cesarean deliveries.

Key words: opioid epidemic, opioid prescribing, postpartum pain, prescribing patterns

Introduction

Opioid abuse has reached epidemic levels in the United States. With the number of opioid-related overdose deaths quadrupling since 1999, opioid abuse is now the leading cause of injury-related death in the United States.¹ These alarming trends parallel the increase in opioid prescriptions, which are thought to be a driving force of the epidemic,^{2,3} both by serving as an initial outpatient opioid exposure for future addiction⁴ and by increasing the supply of illicit opioids through

diversion of prescription pain medication.^{2,3}

Opioids are frequently prescribed at the time of hospital discharge. In fact, 1 study showed that 15% of people admitted to the hospital filled an opioid prescription within 7 days of discharge.⁵ With almost 4 million births occurring in the United States annually, delivery is the most frequent reason for hospitalization.^{5,6} Recent data on opioid prescribing at the time of hospital discharge after cesarean delivery have demonstrated that the amount of opioids prescribed generally exceeds the amount consumed.^{7,8} However, to what extent patients' perceived pain and inpatient opioid use are associated with amount of opioids prescribed is unclear.

Data regarding opioid prescribing following vaginal delivery are even sparser.

One study of Medicaid-enrolled women reported that 12% of women who had a vaginal delivery filled an opioid prescription after discharge, and that this action was not associated with having had obstetrical lacerations or postpartum bilateral tubal ligation.⁹ Although the authors concluded opioid prescribing following vaginal delivery was not related to "pain-inducing conditions," the association of objective and subjective measures of pain, such as inpatient opioid use and patient-reported pain scores, with outpatient prescribing patterns is not known.

Thus, our objectives were to describe opioid prescribing patterns at the time of discharge following either cesarean or vaginal delivery in a large cohort of postpartum women and to describe the relationship of these patterns with objective and subjective measures of pain prior to discharge.

Cite this article as: Badreldin N, Grobman WA, Chang KT, et al. Opioid prescribing patterns among postpartum women. *Am J Obstet Gynecol* 2018;219:103.e1-8.

0002-9378/\$36.00

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<https://doi.org/10.1016/j.ajog.2018.04.003>

AJOG at a Glance

Why was this study conducted?

We sought to describe opioid prescribing patterns at the time of discharge following delivery and the relationship of these patterns with objective and subjective measures of pain prior to discharge.

Key findings

In all, 30% of postpartum women following vaginal delivery and 87% of postpartum women following cesarean delivery were discharged from the hospital with an opioid prescription. The amount of prescription opioids did not vary by objective or subjective reports of pain.

What does this add to what is known?

Postpartum women are commonly prescribed opioids at hospital discharge, but the quantity does not appear to be based on subjective or objective measures of pain at the time of discharge.

Materials and Methods

This is a retrospective cohort study of all opioid-naïve women hospitalized for delivery at a single, high-volume tertiary care center over a 1-year period (Dec. 1, 2015, through Nov. 30, 2016). At this academic medical center, patients are racially, ethnically, and socioeconomically diverse and are cared for by >200 private and university-employed attending physicians, nurse practitioners, midwives, and physicians in training. The majority of women receive neuraxial analgesia during the intrapartum period. Women undergoing cesarean delivery routinely receive neuraxial long-acting opioids. Postpartum pain typically is managed by the obstetrical team. Discharge prescriptions are at the discretion of the individual provider; there are no standard order sets for pain medicine prescriptions at the time of hospital discharge. Additionally, at the time of the study, there were no existing hospital guidelines about postpartum narcotic prescriptions for either inpatient or outpatient use.

Women were included in this analysis if they were ≥ 18 years of age, did not have a documented nonsteroidal anti-inflammatory drug or morphine allergy, and did not have explicit evidence of recent opioid use. Evidence of recent opioid use was defined as either a diagnosis of opioid abuse or having been prescribed ≥ 3 prescriptions for an

opioid in the year prior to delivery or a prescription for buprenorphine, methadone, or fentanyl within a year of hospitalization (based on the electronic medical record prescribing data and hospital admission documentation of patient or provider report). We excluded women from analysis if they had received general anesthesia without concurrent neuraxial anesthesia, underwent a hysterectomy, had been admitted to the intensive care unit, or had a postpartum admission exceeding 10 days. The conditions were chosen as exclusion criteria as they represent rare and extreme events¹⁰ that may reasonably be expected to result in analgesic requirements beyond the typical range and therefore bias results.

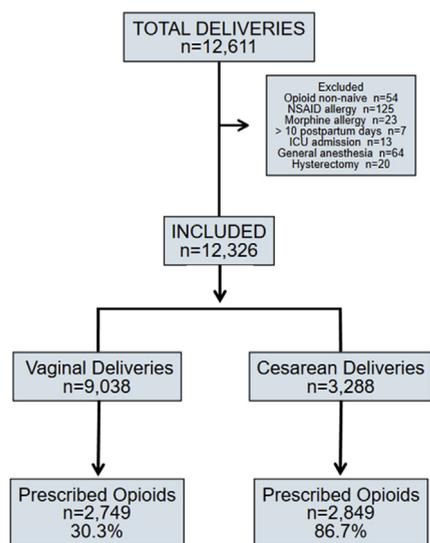
A comprehensive and integrated repository of all clinical data sources, including all inpatient and outpatient electronic records available from this center, was queried for demographic, clinical, and pharmacy data. Billing records, including *International Classification of Diseases, Ninth Revision*, and *International Statistical Classification of Diseases, 10th Revision* codes, were used to corroborate documented diagnoses of postpartum complications, substance abuse, and psychiatric comorbidities. Clinical data were directly confirmed from the medical records where abstracted data were unclear. The same electronic medical and pharmacy

records were used to determine whether an opioid prescription was provided at discharge, and if so, the details of the prescription. Those details included the type of opioid as well as the strength and number of tablets prescribed. All opioids were converted to oral morphine milligram equivalents (MME) to allow for comparison across types of opioids.¹¹ Total MME of the prescription was calculated by converting the type and strength of opioid prescribed to MME and multiplying this value by the number of tablets prescribed. Women who underwent vaginal delivery were analyzed separately from those who underwent cesarean delivery. For both groups, the primary outcome was the total MME prescribed at discharge.

As each prescription written by a given provider is unlikely to be independent of others written by that provider, we characterized the extent to which each individual provider prescribes the same quantity of opioid repeatedly at the time of postpartum discharge. This was done by calculating the frequency of each provider's most common prescription; for example, if a provider most commonly prescribed 30 tablets, we determined the proportion of all of those provider's patients who received a prescription for 30 tablets. This frequency was then averaged across all providers. An average of frequencies was calculated separately for providers prescribing to women who underwent cesarean deliveries and vaginal deliveries.

To evaluate the association of measures of pain control at the time of postpartum discharge with opioid prescribing patterns, we performed 2 analyses on those who received an opioid prescription. First, to assess an objective measure of pain control, we compared women who had used 0 MME during the final 24 hours of hospitalization with those who used >0 MME. Inpatient postpartum opioid pain medications are most commonly written for as pro re nata, and women are provided these medications upon request.

Second, to assess a subjective measure of pain control, we compared women

FIGURE 1
Cohort flowchart

ICU, intensive care unit; NSAID, nonsteroidal antiinflammatory drug.

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who reported a pain score of 0 of 10 at the time of discharge with those who reported a pain score of >0 of 10. Pain scores are assessed by nurses concordantly with acquisition of vital signs; women are asked to report their current perception of pain on a scale of 0-10, with 0 equating no pain and 10 equating the worst pain imaginable. Women were allowed to request or decline inpatient pain medications regardless of pain score. Additionally, to further characterize the association of quantity of opioids prescribed to pain scores and inpatient MME administered, we calculated the Spearman correlations between discharge MME and these measures (pain score and inpatient MME) as continuous variables.

Finally, we conducted an analysis comparing inpatient MME use and pain scores of women who received any opioid prescription as compared to those who did not receive an opioid prescription at the time of hospital discharge.

All analyses were conducted using software (Stata 14; StataCorp, College Station, TX) and are presented as median (interquartile range [IQR]) or frequency (percent) as appropriate. Box

TABLE 1
Demographic and clinical characteristics

	Vaginal delivery, N = 9038	Cesarean delivery, N = 3288
Maternal age, y	31.83 (\pm 4.78)	33.42 (\pm 4.76)
Married	6740 (76.51)	2507 (78.37)
Race/ethnicity		
Non-Hispanic white	4968 (58.35)	1803 (58.11)
Non-Hispanic black	729 (8.56)	321 (10.34)
Hispanic	1566 (18.40)	513 (16.53)
Asian	713 (8.37)	257 (8.28)
Other	538 (6.32)	209 (6.74)
Public insurance	4312 (47.59)	1464 (44.53)
Delivery BMI, kg/m ²	29.76 (\pm 5.25)	31.76 (\pm 6.13)
Nulliparous	4424 (48.95)	1729 (52.59)
Gestational age at delivery, wk	38.90 (\pm 2.47)	38.53 (\pm 2.46)
Nonsmoker	8069 (90.57)	2879 (89.02)
History of substance abuse	48 (0.53)	20 (0.61)
Anxiety disorder	1096 (12.13)	422 (12.830)
Depressive disorder	1035 (11.45)	394 (11.98)
Prior cesarean delivery	343 (3.80)	1227 (37.32)
Cesarean delivery in labor	—	1622 (49.35)
Postpartum hemorrhage	265 (2.93)	366 (11.13)
Infectious complications ^a	588 (6.49)	330 (10.04)
Operative vaginal delivery	662 (7.32)	—
Major vaginal laceration ^b	274 (3.03)	—
Intrapartum regional analgesia	7844 (86.79)	—
Postpartum LOS, d	2 (1–2)	3 (3–4)
Pain score at discharge	1 (0–2)	2 (1–3)
Inpatient opioid MME ^c	0 (0–0)	30 (10–50)

Data reported as N (%), mean (\pm SD), or median (interquartile range).

BMI, body mass index; LOS, length of stay; MME, morphine milligram equivalent.

^a Includes chorioamnionitis, endometritis, wound and perineal infection; ^b Defined as third- or fourth-degree lacerations;

^c Calculated from use during last 24 h of admission.

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plots were generated showing the distribution of prescribed opioid MME at discharge. A scatter plot showing the range of provider prescribing was generated. Bivariable analyses were conducted using χ^2 tests. This study was approved by the Northwestern University Institutional Review Board.

Results

Of the 12,611 women who delivered during the study period, 97.7% (N =

12,326) were eligible for inclusion in this analysis, of whom 73.3% (N = 9038) underwent vaginal delivery and 26.7% (N = 3288) underwent cesarean delivery (Figure 1). In the vaginal delivery cohort, the majority (58.4%) was non-Hispanic white and privately insured (52.4%). Approximately half (49.9%) were nulliparous and the majority (86.8%) utilized intrapartum neuraxial analgesia (Table 1). Women in the vaginal delivery group reported a median pain score of 1

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
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.

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(IQR 0–2) of 10 at the time of discharge and used a median of 0 (IQR 0–0) MME during the final 24 hours of postpartum hospitalization. The demographic characteristics of the cesarean delivery cohort were comparable to the vaginal delivery cohort (Table 1). Women who underwent cesarean delivery reported a median pain score of 2 (IQR 1–3) of 10 at the time of discharge and used a median of 30 (IQR 10–50) MME during the final 24 hours of postpartum hospitalization.

Overall, 45.3% of postpartum women received an opioid prescription on discharge, including 30.3% (N = 2749) of women who underwent vaginal delivery and 86.7% (N = 2849) of women who underwent cesarean delivery (Figure 1). The median MME prescribed to women after vaginal delivery was 200 (IQR 120–300) MME, whereas the median MME prescribed to women after cesarean delivery was 300 (IQR 200–300) MME (Table 2). The median tablet count prescribed following vaginal delivery was 24 (IQR 12–30) tablets and following cesarean delivery was 30 (IQR 30–30) tablets. The range of tablet count

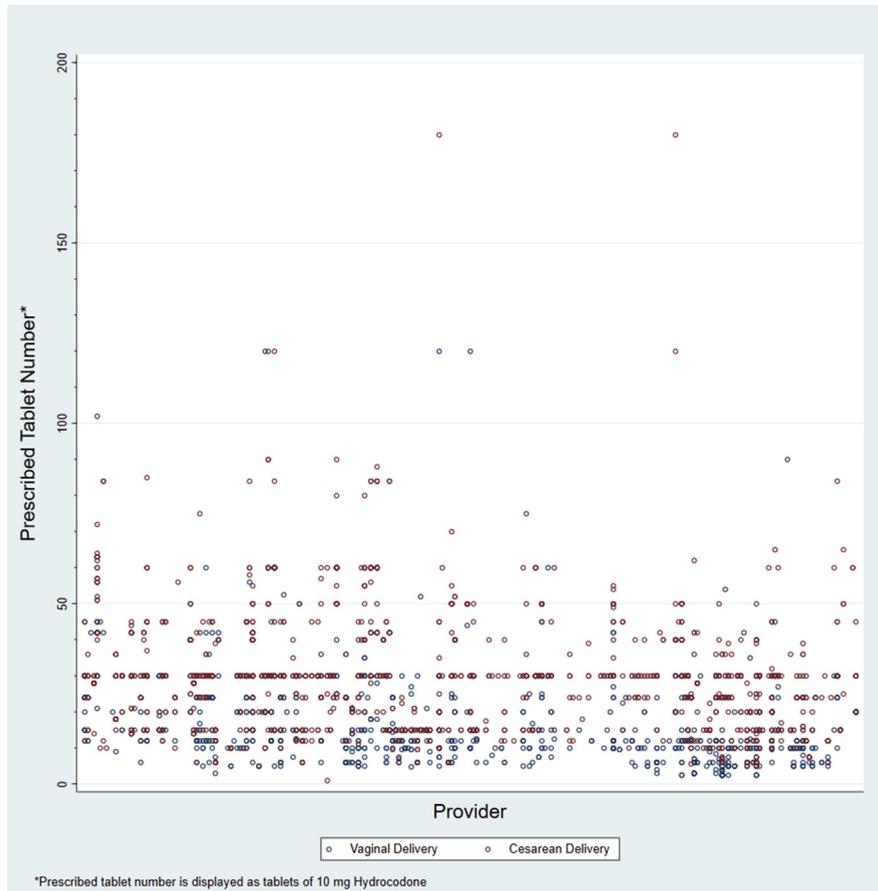
prescribed was 5–180 for both women who had vaginal and cesarean deliveries. Hydrocodone 10 mg (MME = 10), the most commonly prescribed opioid, was prescribed for 56.2% and 69.5% of women who received a discharge opioid prescription following vaginal delivery and cesarean delivery, respectively. Conversely, many fewer women received tramadol prescriptions, which comprised only 4.8% and 7.1% of prescriptions after vaginal and cesarean delivery, respectively. A minority of women (1.4% postvaginal delivery, 6.0% postcesarean delivery) received multiple opioid prescriptions (Table 2). Figure 2 shows the range of opioid prescribing by provider depicted as a scatter plot in which unique providers are depicted on the X-axes. Providers prescribed identical MME quantities on average for 71.9% of women who underwent cesarean deliveries and 83.7% of women who underwent vaginal deliveries.

Among women who received an opioid prescription after vaginal delivery, nearly half (45.7%) used 0 MME during the final 24 hours of their hospitalization and a quarter (26.5%)

reported a pain score of 0 of 10 prior to hospital discharge (Table 3). Women who received 0 MME in the last 24 hours of hospitalization actually received a discharge prescription of significantly greater MME (median 240 [IQR 120–300] MME) than those who had used >0 MME during the last 24 hours of hospitalization (median 150 [IQR 100–300] MME; $P = .001$). Women who underwent vaginal delivery who reported a pain score of 0 of 10 received similar amounts of opioid (median 200 [IQR 120–300] MME) at the time of discharge when compared to those who reported a pain score of >0 of 10 (median 200 [IQR 120–300] MME; $P = .415$) (Figure 3). Among women who received a discharge prescription, there was no significant correlation between the total amount of MME prescribed at discharge and the amount of MME used during inpatient hospitalization ($\rho = -0.03$, $P = .19$) or between the total amount of MME prescribed at discharge and pain score ($\rho = -0.01$, $P = .77$).

Among women who received an opioid prescription after cesarean

FIGURE 2
Number opioid tablets prescribed displayed by provider



Number opioid tablets prescribed displayed by provider. Scatter plot visually depicts prescribing variation by provider. Providers are along X axis and number of opioid tablets contained in each prescription they prescribed is along Y axis. Each dot represents separate prescription. Prescriptions following vaginal (blue dots) and cesarean (red dots) deliveries.

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delivery, 18.5% (N = 526) used 0 MME during the last 24 hours of their hospitalization. Similarly, 18.5% (N = 528) who received an opioid prescription reported a pain score of 0 of 10 at the time of hospital discharge (Table 3). The discharge median MME for women postcesarean delivery did not differ between women who used 0 MME (300 [IQR 210–300] MME) or >0 MME (300 [IQR 200–300] MME) during the final 24 hours of hospitalization ($P = .988$) (Figure 3). Similarly, the median discharge MME did not differ between women who reported a pain score of 0 of 10 (300 [IQR 210–300] MME) or >0 of 10 (300 [IQR 200–300] MME) at the time of discharge ($P = .360$) (Figure 3).

The correlation between the total amount of MME prescribed at discharge and the amount of MME used during inpatient hospitalization was statistically significant but weak ($\rho 0.12$, $P < .001$), while the correlation between total amount of MME prescribed at discharge and pain score was not significant ($\rho 0.001$, $P = .96$).

Finally, we examined the amount of inpatient MME and reported pain score among women who did and who did not receive an opioid prescription at the time of hospital discharge. Among women who underwent a vaginal delivery, the median inpatient MME use was higher (10, IQR 0–30) in those who received a discharge prescription vs 0 (IQR 0–0) in

those who did not ($P < .001$). Women who underwent vaginal delivery reported a median pain score of 2 (IQR 0–3) in those who received a discharge prescription vs 1 (IQR 0–2) in those who did not ($P < .001$). Among women who underwent a cesarean delivery, those who received an opioid prescription at the time of hospital discharge used a median of 35 (IQR 10–50) inpatient MME vs 0 (IQR 0–40) MME in those who did not receive a prescription ($P < .001$). The median pain score was 2 (IQR 1–3) in women who received a discharge prescription vs 2 (IQR 1–3) in those who did not ($P = .004$).

Comment

Delivery is the most common reason for hospital admission in the United States.⁶ Yet, little is known regarding opioid prescribing patterns at the time of postpartum hospital discharge. Further, a growing body of literature suggests that postoperative patients are prescribed opioids in excess of the amount that will be used.^{7,8} As the opioid epidemic continues to widen, and the degree to which initial opioid prescriptions are associated with chronic use, pill diversion, and accidental ingestion become increasingly clear,^{12,13} greater clarity surrounding postpartum opioid prescribing practices is needed. Our results indicate that postpartum women are commonly prescribed opioids at the time of postpartum hospital discharge. Furthermore, the quantity of opioid prescribed at discharge commonly comprises enough tablets for 5–7 days of continuous use, regardless of mode of delivery or of subjective and objective measures of pain in the 24 hours prior to discharge.

Our findings complement those derived from large administrative databases. Jarlenski et al,⁹ who performed a retrospective cohort study of 164,720 Medicaid-enrolled women in Pennsylvania who had vaginal deliveries from 2008 through 2013, reported that 12% of women filled an opioid prescription within 5 days of hospital discharge. Of these women, only a minority (28.2%) had a pain-inducing condition such as bilateral tubal ligation, perineal laceration, or episiotomy. Our results

TABLE 3
Measures of pain control among women prescribed opioid upon discharge

Mode of delivery	Inpatient opioid MME ^a = 0	Pain score = 0
Vaginal delivery, N = 2749	1256 (45.7)	729 (26.5)
Cesarean delivery, N = 2865	526 (18.5)	528 (18.5)

N (%).

MME, morphine milligram equivalent.

^a Inpatient opioid MME is calculated from use during last 24 h of admission.

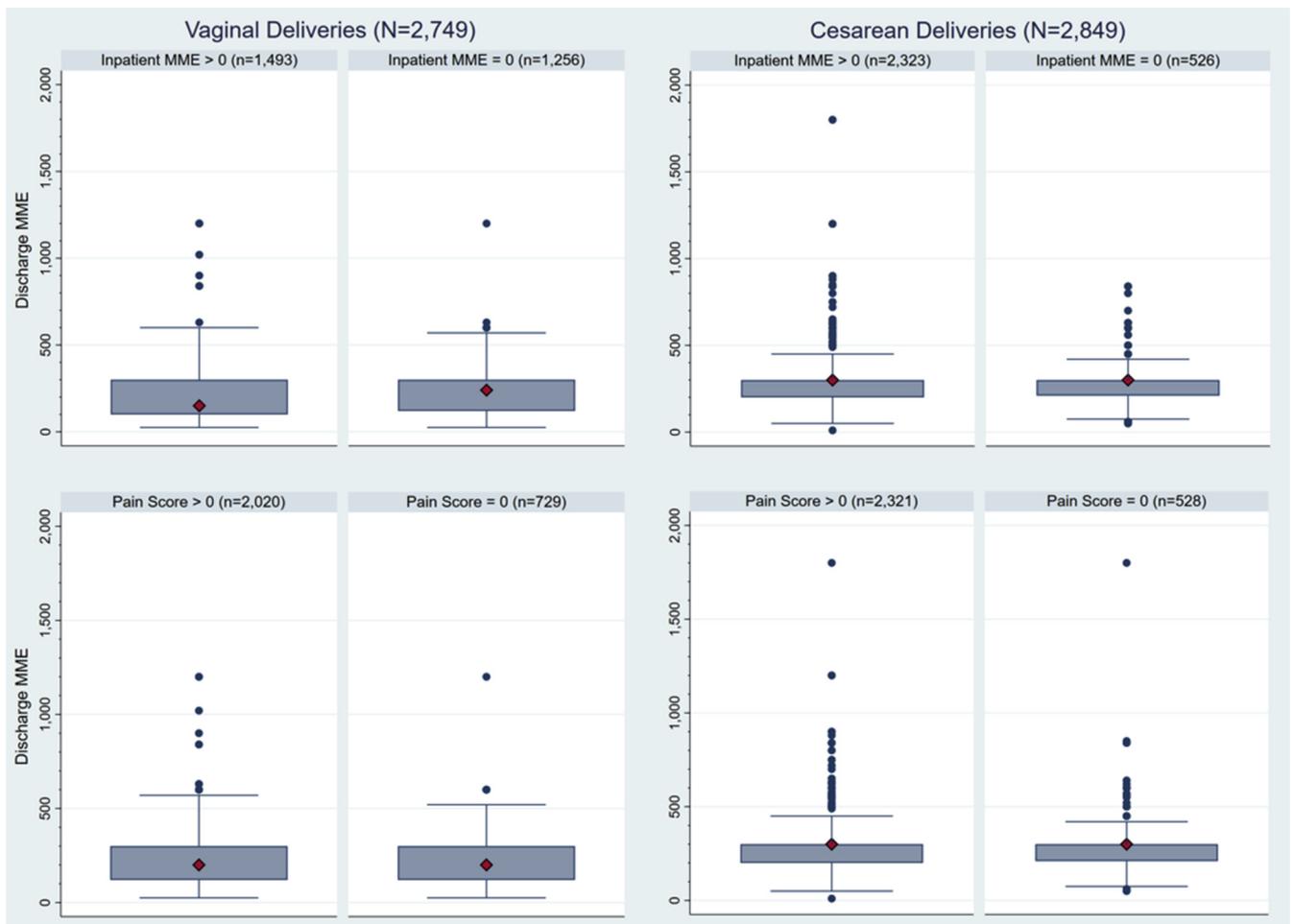
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suggest that an even larger proportion of women undergoing vaginal delivery received a prescription for an opioid at discharge. Similarly, our results support

the finding that the presence of pain-inducing conditions did not significantly alter providers' opioid prescribing patterns following vaginal delivery.

Although some prior data suggest that inpatient MME requirement following cesarean delivery is associated with outpatient opioid use,⁸ our study suggests that actual prescribing patterns for opioids were disconnected from objective measures of inpatient pain, not only for women who underwent cesarean delivery but for those who underwent vaginal delivery as well. In this cohort, a large proportion of women prescribed opioids at discharge had received no opioids at all during the final 24 hours of their hospitalization. Moreover, following cesarean delivery, these women received a similar amount of

FIGURE 3
Discharge MME range by inpatient MME and last pain score



Discharge morphine milligram equivalents (MME) shown as box plots in quantiles. Values outside of 1.5 times interquartile range (blue dots)¹⁵ and median values (red diamonds). Women who had vaginal delivery and received 0 inpatient MME are compared to those who had >0 inpatient MME. Women who had vaginal delivery and reported pain score of 0 of 10 are compared to those who had pain score of >0 of 10. Similar images are shown for women who had cesarean deliveries.

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opioid at the time of discharge as their counterparts who had used inpatient opioids until discharge. Following vaginal delivery, women who used no opioids during the final 24 hours of hospitalization, in fact, received significantly more opioids at discharge than their counterparts. Similarly, patient-reported pain score at the time of discharge was not associated with opioid prescribing patterns for women who had either vaginal or cesarean deliveries.

Although our results show a statistically greater inpatient MME use and patient-reported pain scores in those women who received an opioid prescription as compared to those who did not receive an opioid prescription, it is worthwhile to examine the clinical relevance of these differences. For example, it is notable that among women who underwent a vaginal delivery, the median difference of inpatient MME used in women who received a discharge opioid prescription represents only 1 tablet of hydrocodone 10 mg. These findings suggest providers may not modify their prescribing practices on the basis of the degree of pain at discharge and that although there is substantial variation in prescribing patterns between providers, individual providers provide similar opioid prescriptions regardless of their patients' needs. Our finding that the majority of providers write the same prescription for each of their patients further emphasizes this point; with 70–80% of the prescriptions providers write being for the exact same quantity, it would seem that greater individualization is warranted.

The Centers for Disease Control and Prevention has recently stressed the importance of using the lowest possible opioid dose for the shortest duration for management of acute pain.^{11,14} This quantity should rarely exceed 50 MME per day.¹¹ These recommendations suggest the need for increased awareness of specific opioids and their MME.¹⁴ For example, while 1 mg of hydrocodone is equivalent to 1 MME, 1 mg of oxycodone is equivalent to 1.5 MME. Stated another way, a written prescription to 5 tablets of hydrocodone

10 mg daily or 3 tablets of oxycodone 10 mg daily both approximate the recommended daily limit. Our results highlight this need—despite the varying strengths of the commonly prescribed opioids, similar tablet counts of opioids are prescribed. The wide range of MME prescribed at postpartum discharge for both vaginal and cesarean deliveries indicates a lack of standardization among providers and a need for continued provider education. The surplus of opioid tablets in communities and the diversion of excess tablets are known to contribute to the opioid crisis; >50% of people abusing opioids report having received pills for free from friends and family.³

This study is notable for its collection of detailed patient-level data from a large-volume, tertiary care institution with a diverse patient and provider population. Additionally, access to a unified electronic medical record, as well as administrative and pharmacy records, increases the granularity of our data and allows for a more nuanced analysis. Our limited exclusion criteria resulted in exclusion of <3% of the total cohort and resulted in a sample population that may be more readily generalizable and demonstrates the variation that exists in the setting of a delivery without extreme complications. Our findings are further strengthened by the inclusion of women who had undergone either vaginal or cesarean deliveries, and who were both privately and publicly insured. However, our study is not without limitations. Primarily, this is a retrospective study and therefore is susceptible to incomplete data and misclassification. We used reasonable assessment of women's prior opioid use status based on prior opioid prescriptions; self-report in the medical record; and clinical, *International Classification of Diseases, Ninth Revision*, and *International Statistical Classification of Diseases, 10th Revision* diagnosis. Despite this, we cannot be certain that our ascertainment was all encompassing. Additionally, we only have data regarding prescribed opioids and therefore cannot make comments regarding filled prescriptions or opioid use. Nevertheless, given the relationship of a

prescription to potential opioid availability, we believe knowledge of prescribing patterns is fundamentally important in understanding modifiable factors that can be targeted in public health initiatives. Finally, our study was limited to 1 academic institution, and thus its generalizability cannot be known.

This study was designed to elucidate postpartum opioid prescribing practices at the time of hospital discharge. Women hospitalized for birth, regardless of mode of delivery or delivery complications, are commonly prescribed opioids at hospital discharge. Moreover, the quantity of prescription MME following vaginal and cesarean delivery is similar, regardless of objective and subjective measures of pain prior to discharge. As our nation addresses the opioid epidemic, increased provider awareness and education of best practices in prescribing will be essential. ■

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Received Nov. 20, 2017; revised March 27, 2018; accepted April 2, 2018.

This study is supported by the Society for Maternal-Fetal Medicine/AMAG 2017 Health Policy Award. Dr Yee is supported by *Eunice Kennedy Shriver* National Institute of Child Health and Human Development K12 HD050121-11. Research reported in this publication was supported, in part, by the National Institutes of Health (NIH) National Center for Advancing Translational Sciences, grant number UL1TR001422. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

The authors report no conflict of interest.

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