Postpartum readmissions for hypertensive disorders in pregnancy during the COVID-19 pandemic

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BACKGROUND: Hypertensive disorders in pregnancy are one of the most common causes of readmission in the postpartum period. Because of the COVID-19 pandemic, early hospital discharge was encouraged for patients who were medically stable, because hospitalization rates among SARS-CoV-2–infected patients steadily increased in 2020. The impact of an early discharge policy on postpartum readmission rates among patients with hypertensive disorders in pregnancy is unknown.

OBJECTIVE: This study aimed to compare the postpartum readmission rates of patients with hypertensive disorders in pregnancy before and after implementation of an early discharge policy owing to the COVID-19 pandemic.

STUDY DESIGN: This was a quality improvement, retrospective cohort study of postpartum patients with antenatal hypertensive disorders in pregnancy who delivered and were readmitted because of hypertensive disorders in pregnancy at the New York University Langone Health medical center from March 1, 2019 to February 29, 2020 (control cohort) and from April 1, 2020 to March 31, 2021 (COVID-19 cohort). During the pandemic, our institution introduced an early discharge policy for all postpartum patients to be discharged no later than 2 days postpartum during the delivery admission if deemed medically appropriate. The reduction in postpartum length of stay was accompanied by the continuation of patient education, home blood pressure monitoring, and outpatient follow-up. The primary outcome was the comparison of the readmission rates for patients with postpartum hypertensive disorders in pregnancy. Data were analyzed using Fisher's Exact tests, chi-square tests, and Wilcoxon rank-sum tests with significance defined as $P<.05$.

RESULTS: There was no statistical difference in the readmission rates for patients with postpartum hypertensive disorders in pregnancy before vs after implementation of an early discharge policy (1.08% for the control cohort vs 0.59% for the COVID-19 cohort). The demographics in each group were similar, as were the median times to readmission (5.0 days; interquartile range, 4.0–6.0 days vs 6.0 days; interquartile range, 5.0–6.0 days; $P=.13$) and the median readmission length of stay (3.0 days; interquartile range, 2.0–4.0 days vs 3.0 days; interquartile range, 2.0–4.0 days; $P=.45$). There was 1 intensive care unit readmission in the COVID-19 cohort and none in the control cohort ($P=.35$). There were no severe maternal morbidities or maternal deaths.

CONCLUSION: These findings suggest that policies calling for a reduced postpartum length of stay, which includes patients with hypertensive disorders in pregnancy, can be implemented without impacting the hospital readmission rate for patients with hypertensive disorders in pregnancy. Continuation of patient education and outpatient surveillance during the pandemic was instrumental for the outpatient postpartum management of the study cohort. Further investigation into best practices to support early discharges is warranted.

Keywords: COVID-19, early discharge, hypertensive disorders in pregnancy, postpartum, readmission

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Why was this study conducted?

This study aimed to determine if an early discharge policy was a feasible protocol for postpartum patients with hypertensive disorders in pregnancies.

Key findings

With implementation of an early discharge policy, the readmission rate for patients with hypertensive disorders in pregnancy was not higher than the prepandemic readmission rate.

What does this add to what is known?

This study adds to the existing data regarding a safe postpartum length of stay and the effects of the pandemic on an obstetrical patient population at high 1risk for readmission.

Introduction

Hypertensive disorders in pregnancy (HDP) are one of the most common causes for obstetrical-related readmissions.[1] Previous studies have published postpartum readmission rates associated with HDP to range from 0.4% to 9.3%.[2–6] Severe maternal morbidities related to postpartum hypertension and preeclampsia include stroke, eclampsia, and death.[1,7] Between 2014 and 2017, HDP comprised 6.6% of pregnancy-related deaths.[8] These serious risks are why prompt and thorough evaluations are warranted for patients who exhibit any signs or symptoms of HDP during pregnancy and the postpartum period. The 2013 American College of Obstetricians and Gynecologists (ACOG) Hypertension in Pregnancy Executive Summary suggests that postpartum patients with HDP should "be monitored in the hospital or that equivalent outpatient surveillance be performed for at least 72 hours postpartum and again 7-10 days after delivery or earlier in women with symptoms."[9]

Standard postpartum hospitalization length of stay (LOS) is 48 hours after a vaginal delivery and 72 hours after a cesarean delivery.[10] For postpartum patients, early discharge can be considered if deemed medically appropriate and if the patient desires.[10] Because of the pandemic, standard labor and delivery protocols were modified to mitigate virus transmission and to decrease hospitalizations amid rising COVID-19 cases and hospitalization rates. Our institution introduced an early discharge policy (EDP) for all postpartum patients regardless of mode of delivery. Little is known about the impact of early discharge on readmission rates among postpartum patients with HDP. We aimed to compare the postpartum readmission rates associated with HDP before and after implementation of an EDP during the COVID-19 pandemic.

Materials and Methods

This was an institutional review board exempt, quality improvement, retrospective cohort study of postpartum patients with antenatal HDP who delivered and were readmitted postpartum for an HDP indication within 30 days at the NYU Langone Health-Tisch Hospital and NYU Langone Hospital-Brooklyn between March 2019 and March 2021. The study cohort was divided into the following groups: patients who delivered before implementation of the EDP (March 1, 2019 to February 29, 2020——control group) and patients who delivered after implementation of the EDP (April 1, 2020 to March 31, 2021——COVID-19 group).

Our institution's EDP authorized all postpartum patients, including those with HDP and regardless of mode of delivery, to be discharged no later than 2 days postpartum during the delivery admission if deemed medically appropriate. The EDP did not apply to the readmission time period. Criteria to determine the medical appropriateness of discharge during the delivery admission included, but was not limited to, having nonincreasing vaginal bleeding, no signs of infection, nonsevere blood pressure ranges at least 24 hours before discharge, and the absence of symptoms related to preeclampsia. There was no change in the criteria for determining the medical appropriateness of discharge during the COVID-19 period. At the time of discharge from the delivery admission, our obstetrical department provided HDP patients with education on the signs and symptoms of preeclampsia, a blood pressure monitoring kit, and outpatient follow-up 1 to 6 weeks postpartum. The practice of providing patient education and tools for outpatient surveillance were in place before the pandemic and was continued throughout the pandemic to remain in compliance with the ACOG recommendations. We evaluated the clinical course of patients readmitted with HDP during their delivery admissions and hospital readmissions. Demographic and clinical information were extracted via chart review from the electronic medical record.

The inclusion criteria were defined as individuals with antenatal HDP who were readmitted postpartum to our hospital because of HDP. The following hypertensive disorders in pregnancy were included: gestational hypertension (GHTN), chronic hypertension (CHTN), preeclampsia without severe features (PECwoSF), preeclampsia with severe features (PECwSF), chronic hypertension with superimposed preeclampsia without severe features (CHTN SIPECwoSF), chronic hypertension with superimposed preeclampsia with severe features (CHTN SIPECwSF), hemolysis, elevated liver enzymes, low platelet count (HELLP) syndrome, and eclampsia. Exclusion criteria included patients without antenatal HDP, postpartum patients who were readmitted for alternative diagnoses, and patients who delivered at a different institution.

The primary outcome was a comparison of postpartum readmission rates associated with HDP between the groups. The secondary outcomes were a comparison of the following during the delivery admission and readmission periods: HDP diagnosis, maximum

blood pressures during each hospitalization period, use of immediate-acting antihypertension medication, use of long-acting antihypertension medication, number of inpatient hypertensive crisis (defined as SBP ≥160 mm Hg and/or DBP ≥110 mm Hg), administration of intravenous magnesium postpartum, number of patients discharged home on long-acting antihypertension medication, amount of oral antihypertension medications on discharged home, LOS, time to readmission, intensive care unit (ICU) admission, postpartum eclampsia, postpartum stroke, and maternal death.

Study data were collected and managed in a secure Research Electronic Data Capture (Vanderbilt University, Nashville, TN) database. Statistical data were analyzed using RStudio, version 4.0.3 (R Core Team, Vienna, Austria). Categorical variables were assessed using chi-square tests and Fisher's Exact tests as appropriate. Continuous variables were assessed using Wilcoxon rank-sum tests. A P value of <.05 was considered statistically significant.

Results

There was a total of 3698 patients who delivery with antenatal HDP among a total of 18,951 deliveries during the study period. Overall, there were 31 (0.16%) postpartum patients with antenatal HDP who were readmitted for HDP of the 18,951 total deliveries. Before implementation of the EDP, 20 postpartum patients of 1847 patients who delivered with HDP (1.08%) were readmitted because of HDP before the COVID-19 period, and 11 postpartum patients of 1851 patients with HDP (0.59%) who delivered during the COVID-19 period were readmitted because of HDP (P=.10).

Of the entire delivered patient population during the study period, there was no significant difference in the racial or ethnic and socioeconomic status between the groups. The study cohort demographics of the control and COVID-19 groups are shown in Table 1. Patients in the control group had higher rates of vaginal deliveries (60.0% vs 40.0%) when compared with the COVID-19 group in which patients had higher rates of cesarean deliveries (81.8% vs 18.2%) (P=.08) (Table 1).

Most patients in each group were delivered because of an HDP diagnosis (60.0% vs 45.5%; P=.55) (Table 1). A total of 16 (80%) patients in the control group underwent induction of labor compared with 7 (63.6%) in the COVID-19 group (P=.41). Of those who underwent induction of labor, there was a higher rate of patients who had a cesarean delivery because of failed induction of labor, arrest of dilation, or fetal intolerance of labor among the COVID-19 group (71.4% [n=5] vs 37.5% [n=6]; P=.25). All patients in the COVID-19 group tested negative for COVID-19 on admission based on polymerase chain reaction testing.

During the delivery admission, there was no difference in the postpartum LOS between the 2 groups regardless of mode of delivery. The median postpartum LOS during the delivery admission in the control group was 2.0 days (interquartile range [IQR], 2.0−3.0 days), whereas the median postpartum LOS in the COVID-19 group was 2.0 days (IQR, 2.0−3.0 days; P=.58). When analyzed by mode of delivery, the median delivery admission LOS for postpartum patients who had vaginal deliveries in the control group was 2.0 days (IQR, 2.0−2.0 days) compared with 2.0 days (IQR, 2.0−2.0 days) for the COVID-19 group (P=.65). For those who had cesarean deliveries, the median delivery admission LOS for postpartum patients in the control group was 3.0 days (IQR, 2.8−3.0 days) compared with 2.0 days (IQR, 2.0−3.0 days) for the COVID-19 group (P=.17) (Table 2).

The HDP diagnosis in each group during the delivery admission and readmission periods are described in Table 2. During the delivery admission, there were only 3 patients with severe forms of preeclampsia (PECwSF or CHTN SIPECwSF), and no patients in the COVID-19 group had a severe form of preeclampsia. In comparison, all patients were readmitted with severe forms of preeclampsia in both groups.

The median postpartum LOS during the delivery admission (2.0 days; IQR, 2.0−3.0 days vs 2.0 days; IQR, 2.0−3.0 days; P=.58) and during the readmission period (3.0 days; IQR, 2.0−4.0 days vs 3.0 days; IQR, 2.0−4.0 days; P=.45) were similar between groups (Table 2). There was no difference in the median time to readmission after delivery (5.0 days; IQR, 4.0−6.0 days vs 6.0 days; IQR, 5.0−6.0 days; P=.13) in the 2 groups.

Management of HDP between groups were similar overall (Table 2). The mean maximum systolic blood pressure was similar in both groups during the delivery admission (156.8±15.0 mm Hg vs 152.2±9.7 mm Hg; P=.50) and during the readmission period (181.3±14.9 mm Hg vs 178.5±12.2 mm Hg; P=.63) (Table 2). During the delivery admission, only 3 patients had a single hypertensive crisis in the control group, and no inpatient hypertensive crisis occurred in the COVID-19 group. For the control group, the median time to administration of immediate-acting antihypertension treatment for persistent, severe-range blood pressures was 9.0 minutes (IQR, 7.5−17.0 minutes). During the readmission period, there were patients with a range of 1 to 3 hypertensive crises in both groups. There was no significant difference in the time to administration of immediate-acting hypertension treatment during a hypertensive crisis in either group. (Table 2)

Various long-acting antihypertension medications were used during the study period, and there was no difference in the long-acting antihypertension medications used (Table 2). Patients in both groups were discharged home with similar quantities of oral long-acting antihypertension medications during each admission (Table 2).

There was only 1 patient admitted to the ICU during the readmission period in the COVID-19 group and 0 in the control group (P=.35). This patient was readmitted to the ICU postpartum because of a refractory hypertensive emergency related to preeclampsia with severe features requiring nicardipine infusion for management. There were no patients with eclampsia, stroke, or maternal deaths in the entire study cohort.

TABLE 1
Study demographics

Demographics	Control cohort (n=20)	COVID-19 cohort (n=11)	*P* value
Age[a] (y)	35.9±5.6	32.6±6.1	.09
Advanced maternal age[b]	11 (55.0)	3 (27.3)	.26
Race and ethnicity[b]			.64
African-American	4 (20.0)	3 (27.3)	
White	14 (70.0)	6 (54.5)	
Hispanic	2 (10.0)	1 (9.1)	
Asian	0 (0)	0 (0)	
Other	0 (0)	1 (9.1)	
Nulliparous[b]	14 (70.0)	9 (81.8)	.68
BMI[a] (kg/m^2)	32.6±7.7	33.2±4.4	.56
Obesity[b] (BMI >30 kg/m^2)	12 (60.0)	8 (72.7)	.70
Singleton gestation[b]	19 (95.0)	10 (90.9)	1.0
Gestational age at delivery[c] (wk)	38.4 (37.2-39.4)	37.7 (37.5-38.6)	.56
Preterm delivery[b] (≤36 wk gestation)	3 (15.0)	0 (0)	.54
Chronic hypertension[b]	6 (30.0)	5 (45.5)	.45
On hypertension medication[b]	5 (83.3)	4 (80)	.68
Gestational diabetes mellitus[b]	1 (5.3)	1 (9.1)	.61
Preexisting diabetes mellitus[b]	0 (0)	0 (0)	––
Current smoker[b]	2 (10.0)	0 (0)	.53
Preeclampsia in previous pregnancy[b]	2 (10.5)	1 (9.1)	1.0
Mode of delivery[b]			.08
Vaginal delivery	12 (60.0)	2 (18.2)	
Cesarean delivery	8 (40.0)	9 (81.8)	
Delivery indication[b]			.55
Medically indicated owing to HDP diagnosis	12 (60.0)	5 (45.5)	
Medically indicated owing to other diagnoses	3 (15.0)	3 (27.3)	
Elective delivery	3 (15.0)	3 (27.3)	
Spontaneous labor	2 (10.0)	0 (0)	

BMI, body mass index; *HDP*, hypertensive disorders in pregnancy.

[a]Data are shown as mean±standard deviation

[b]Number (percentage).

[c]Median (interquartile range).

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Discussion

Principal findings

After the implementation of an EDP for delivery admissions, there was no statistical difference in the readmission rates among patients with antenatal HDP.

Results

Labor and delivery policy modifications because of the pandemic provided a unique opportunity for obstetrics to evaluate the safety of novel approaches to peripartum care. Valid concerns related to an EDP include an increase in postpartum readmissions, complications, and worse outcomes because hospital readmissions are associated with a high rate of morbidity and theoretically avoidable costs, particularly for patients with HDP.[11,12] This is consistent with other studies evaluating labor and delivery policy modifications linked to COVID-19 that did not demonstrate an increase in adverse postpartum maternal outcomes with shorter postpartum LOSs in the overall obstetrical population.[13–15] Although there was no overall difference in the LOS between groups during the delivery admission, our institution was able to safely implement an EDP that did not increase the rate of postpartum readmissions associated with HDP or adverse postpartum outcomes such as postpartum eclampsia, stroke, or death among the study cohort. Because our institution's baseline cesarean delivery rate was similar between the groups, the higher rate of cesarean deliveries in the COVID-19 group could have potentially influenced the lack of difference in the LOS among groups. The higher rate of cesarean deliveries among the COVID-19 group could potentially be explained by the higher rate of cesarean deliveries among patients who underwent induction of labor, most because of a HDP diagnosis.

Clinical and research implications

The overall baseline postpartum maternal readmission rate for all indications is 1% to 2%.[11] However, medical conditions, such as HDP, are associated with higher rates of postpartum readmissions.[5,16] During our study period, the readmission rate associated with HDP was about

TABLE 2
Comparison of hypertension management between cohorts

Cohort characteristics	Delivery admission			Readmission		
	Control cohort (n=20)	COVID-19 cohort (n=11)	*P* value	Control cohort (n=20)	COVID-19 cohort (n=11)	*P* value
Hypertensive disorder in pregnancy diagnosis[b]			.66			.63
Chronic hypertension	4 (20.0)	5 (45.5)		0 (0)	0 (0)	
Gestational hypertension	10 (50.0)	5 (45.5)		0 (0)	0 (0)	
Preeclampsia without severe features	3 (15.0)	1 (9.1)		0 (0)	0 (0)	
Preeclampsia with severe features	1 (5.0)	0 (0)		14 (70.0)	6 (54.5)	
Chronic hypertension with superimposed preeclampsia without severe features	0 (0)	0 (0)		0 (0)	0 (0)	
Chronic hypertension with superimposed preeclampsia with severe features	2 (10.0)	0 (0)		6 (30.0)	5 (45.5)	
Eclampsia	0 (0)	0 (0)		0 (0)	0 (0)	
HELLP Syndrome	0 (0)	0 (0)		0 (0)	0 (0)	
Length of stay[c] (d)	2.0 (2.0–3.0)	2.0 (2.0–3.0)	.58	3.0 (2.0–4.0)	3.0 (2.0–4.0)	.45
Vaginal delivery	2.0 (2.0–2.0)	2.0 (2.0–2.0)	.65	3.0 (2.0–4.0)	2.5 (2.3–2.8)	.45
Cesarean delivery	3.0 (2.8–3.0)	2.0 (2.0–3.0)	.17	2.0 (2.0–4.0)	4.0 (2.0–4.0)	.29
Maximum systolic blood pressure[a] (mm Hg)	156.8±15.0	152.2±9.7	.50	181.3±14.9	178.5±12.2	.63
Maximum diastolic blood pressure[a] (mm Hg)	94.8±9.1	97.6±10.5	.68	99.6±9.5	97.6±6.6	.49
Number of inpatient hypertensive crisis[c]	1.0 (1.0–1.0)	––	––	1.0 (1.0–2.0)	1.0 (0.5–2.0)	.90
Use of immediate-acting antihypertension medication[b]						
Oral nifedipine immediate release	0 (0)	0 (0)	––	0 (0)	0 (0)	––
Intravenous labetalol	3 (15)	0 (0)	.54	11 (64.7)	5 (45.5)	.63
Intravenous hydralazine	0 (0)	0 (0)	––	6 (35.3)	4 (36.4)	.74
Time to immediate-acting antihypertension treatment of hypertensive crisis[c] (min)						
First crisis	9.0 (7.5–17.0)	––	––	11.0 (6.0–14.0)	7.0 (5.3–10.0)	.14
Second crisis	––	––	––	10.0 (7.5–11.5)	10.0 (5.0–13.0)	.93
Third crisis	––	––	––	8.0 (7.0–10.0)	––	––
Received intravenous magnesium postpartum[b]	3 (15.0)	––	––	20 (100)	11 (100)	1.0
Oral long-acting antihypertension medications used while inpatient[b]						
Nifedipine extended release	1 (5.0)	2 (18.2)	.28	16 (80.0)	8 (72.7)	.68
Labetalol	4 (20.0)	3 (27.3)	.68	9 (45.0)	7 (63.6)	.46
Furosemide	0 (0)	0 (0)	––	0 (0)	0 (0)	––
Enalapril	0 (0)	0 (0)	––	1 (5.0)	0 (0)	1.0
Hydralazine	0 (0)	0 (0)	––	0 (0)	1 (9.1)	.35
Patients discharged home on long-acting antihypertension medication[b]	5 (25.0)	5 (45.5)	.42	20 (100)	10 (90.1)	.76
Number of oral antihypertension medications at discharge[c]	1.0 (1.0–1.0)	1.0 (1.0–1.0)	––	1.0 (1.0–1.3)	1.0 (1.0–1.0)	.52

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(continued)

TABLE 2
Comparison of hypertension management between cohorts *(continued)*

Cohort characteristics	Delivery admission			Readmission		
	Control cohort (n=20)	COVID-19 cohort (n=11)	*P* value	Control cohort (n=20)	COVID-19 cohort (n=11)	*P* value
Intensive care unit admission[b]	0 (0)	0 (0)	——	0 (0)	1 (9.1)	.35
Postpartum eclampsia[b]	0 (0)	0 (0)	——	0 (0)	0 (0)	——
Postpartum stroke[b]	0 (0)	0 (0)	——	0 (0)	0 (0)	——
Maternal death[b]	0 (0)	0 (0)	——	0 (0)	0 (0)	——

[a] Data are shown as mean±standard deviation; [b] Number (percentage); [c] Median (interquartile range).

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0.16%, which is lower than the readmission rates reported in previous studies that range from 0.4% to 9.3%.[2,6] Although the LOS between groups during the delivery admission were similar, an outpatient HDP management protocol for postpartum patients with HDP was continued after implementation of the EDP to adhere with the ACOG recommendations. It is important for healthcare institutions to implement an HDP outpatient management protocol in accordance with the ACOG recommendations because this is an essential component of EDPs. Future investigative aims should be directed toward best practices to develop postpartum discharge criteria and standardized outpatient follow-ups for patients with HDP.

Strengths and limitations

A strength of the study was the specific focus on readmissions in patients with antenatal HDP because HDP is one of the leading causes of postpartum readmissions and maternal morbidity and mortality. Limitations of the study include the retrospective nature of the study and the small sample size from a single institution, which limits the generalizability of the results. The true sample size is limited by those without antenatal HDP and patients who delivered and who were readmitted to a different institution because we were unable to obtain this information. In addition, although the COVID-19 pandemic offered an opportunity to compare groups with different postpartum LOS policies, it cannot be ignored that the pandemic caused wide-reaching changes in New York's healthcare infrastructure, and there may be difficulty in quantifying differences in the study cohort.

Conclusion

These findings suggest that policies reducing postpartum LOSs can be implemented without increasing readmission rates among patients with HDP. The reduction in postpartum LOS was accompanied by the continuation of a home-based blood pressure monitoring and the introduction of outpatient HDP management guidelines. Further research into optimal outpatient monitoring protocols for patients with HDP is warranted. ■

REFERENCES

1. Matas JL, Mitchell LE, Sharma SV, Louis JM, Salemi JL. Severe maternal morbidity at delivery and postpartum readmission in the United States. Paediatr Perinat Epidemiol 2021;35:627–34.

2. Stamilio DM, Beckham AJ, Boggess KA, Jelovsek JE, Venkatesh KK. Risk factors for postpartum readmission for preeclampsia or hypertension before delivery discharge among low-risk women: a case-control study. Am J Obstet Gynecol MFM 2021;3:100317.

3. Viglianti EM, Bagshaw SM, Bellomo R, et al. Hospital-level variation in the development of persistent critical illness. Intensive Care Med 2020;46:1567–75.

4. Clapp MA, Little SE, Zheng J, Robinson JN. A multi-state analysis of postpartum readmissions in the United States. Am J Obstet Gynecol 2016;215. 113.e1–10.

5. Mogos MF, Salemi JL, Spooner KK, McFarlin BL, Salihu HH. Hypertensive disorders of pregnancy and postpartum readmission in the United States: national surveillance of the revolving door. J Hypertens 2018;36:608–18.

6. Bump JM, Denning S, Harris T, Gandhi M, Davidson C. Characteristics of postpartum patients readmitted for management of hypertensive disorders of pregnancy. Obstet Gynecol 2020;135:137S.

7. Gestational hypertension and preeclampsia: ACOG Practice Bulletin, Number 222. Obstet Gynecol 2020;135:e237–60.

8. Division of Reproductive Health. Pregnancy mortality surveillance system. 2020. Available at: https://www.cdc.gov/reproductivehealth/maternal-mortality/pregnancy-mortality-surveillance-system.htm#race-ethnicity. Accessed October 10, 2021.

9. Hypertension in pregnancy. Report of the American College of Obstetricians and Gynecologists' Task Force on Hypertension in Pregnancy. Obstet Gynecol 2013;122:1122–31.

10. Practice ACoF, newborn, obstetric ACo. Postpartum Care of the Mother. In: Kilpatrick SJ, Papile L-A, Macones GA, eds. Guidelines for perinatal care, 8th ed., Elk Grove Village, IL: American Academy of Pediatrics; 2017:284–5.

11. Clapp MA, Little SE, Zheng J, Kaimal AJ, Robinson JN. Hospital-level variation in postpartum readmissions. JAMA 2017;317:2128–9.

12. Burke RE, Jones CD, Hosokawa P, Glorioso TJ, Coleman EA, Ginde AA. Influence of nonindex hospital readmission on length of stay and mortality. Med Care 2018;56:85–90.

13. Greene NH, Kilpatrick SJ, Wong MS, Ozimek JA, Naqvi M. Impact of labor and delivery unit policy modifications on maternal and neonatal outcomes during the coronavirus disease 2019 pandemic. Am J Obstet Gynecol MFM 2020;2:100234.

14. Handley SC, Gallagher K, Lindgren E, et al. Postpartum length of stay and hospital readmission before and during the coronavirus disease 2019 (COVID-19) pandemic. Obstet Gynecol 2022;139:381–90.

15. Bornstein E, Gulersen M, Husk G, et al. Early postpartum discharge during the COVID-19 pandemic. J Perinat Med 2020;48:1008–12.

16. Electronic address: smfm@smfm.org Society for Maternal-Fetal Medicine (SMFM)Combs CA, Goffman D, Pettker CM. Patient Safety and Quality Committee. Electronic address: smfm@smfm.org. Society for Maternal-Fetal Medicine Special Statement: a critique of postpartum readmission rate as a quality metric. Am J Obstet Gynecol 2022;226:B2–9.