

Supplemental Materials

SUPPLEMENTAL TABLE 3 ICD-10 Codes Used to Define Patient Conditions

Conditions	ICD-10-CM Codes
Maternal conditions	
Type 1 diabetes	E10*, 024.0*
Type 2 diabetes	E08*, E09*, E11*, E13*, 024.1*, 024.3*, 024.8*, 024.9*
Hypertension	I10*, 010.0*, 010.9*, 016.1*, 016.2*, 016.3*, 016.4*, 016.5*, 016.9*, I11.9*, I11.0*, 010.1*, I15.0*, I15.1*, I15.2*, I15.8*, I15.9*, 010.4*, I12.9*, I12.0*, 010.2*, I13.0*, I13.2*, I13.10*, I13.11*, 010.3*
Gestational diabetes	024.4, 024.41*, 024.43*
Gestational hypertension	013.1*, 013.2*, 013.3*, 013.4*, 013.5*, 013.9*
Preeclampsia	011*, 014.0*, 014.1*, 014.9*
Eclampsia	150.0*, 150.1*, 150.2*, 150.9*
HELLP	014.2*
Noncephalic fetus	032.1, 032.2, 032.8, 032.9
Placenta previa	044*
Infant conditions	
Jaundice (birth hospitalization)	P59.9, E80.6, P59.0, P59.3, P59.8, R17, P59.29, P58.0, K83.8, K83.1, P59.20, P58.9, P59.1, P58.3, P58.8, P55.8, D75.A, P58.2, Z91.89, P58.1, P58.41, P58.42
Hypoglycemia (birth hospitalization)	E16.2, P70.4, P70.1, P70.0, E16.1, E11.649, E08.649, E16.0, T38.3×5A, P70.3, E10.649, T38.3×1A, K91.2, E08.641, E13.649
Jaundice (rehospitalization)	P59.9, E80.6, P59.0, P59.3, P59.8, R17, P59.29, P58.0, K83.8, K83.1, P59.20, P58.9, P59.1, P58.3, P58.8, P55.8, P58.2, P58.1, P58.41, P58.42
Hypothermia (rehospitalization)	T68.XXXA, P80.9, R68.0, P80.8, T68.XXXD, T68.XXXS
Dehydration (rehospitalization)	E86.0, P74.1, E87.0, E86.1
Tachypnea (rehospitalization)	R06.82, P22.1
Infection (rehospitalization)	A01.01, A01.03, A02.1, A20.3, A22.1, A22.7, A26.7, A32.11, A32.12, A32.7, A37.11, A37.81, A37.91, A40.0, A40.1, A40.3, A40.8, A40.9, A41.01, A41.02, A41.1, A41.2, A41.3, A41.4, A41.50, A41.51, A41.52, A41.53, A41.59, A41.89, A41.9, A42.7, A42.81, A48.1, A54.86, A69.21, A74.9, A78, B00.7, B05.2, B20, B25.0, B37.1, B37.2, B37.3, B37.41, B37.42, B37.49, B37.5, B37.6, B37.7, B37.81, B37.82, B37.84, B37.89, B37.9, B39.2, B39.5, B44.9, B49, B77.81, B83.2, B97.89, E31.8, G00.1, G00.2, G00.3, G00.8, G00.9, G01, G02, G03.1, G03.8, G03.9, G04.2, G04.90, G06.0, G08, G96.19, I00, I95.9, J12.1, J12.2, J12.3, J12.81, J12.89, J12.9, J13, J14, J15.0, J15.1, J15.211, J15.212, J15.29, J15.3, J15.4, J15.5, J15.6, J15.8, J15.9, J16.0, J16.8, J17, J18.0, J18.1, J18.8, J18.9, J40, J42, J95.89, J98.4, K12.1, K28.9, K29.60, K63.9, L03.90, L22, M32.13, M46.26, M86.10, N39.0, 066.9, 075.3, 085, 091.02, 099.511, 099.512, 099.513, P23.9, P36.0, P36.10, P36.19, P36.2, P36.30, P36.39, P36.4, P36.5, P36.8, P36.9, P37.5, P39.8, P55.9, P96.89, R06.03, R65.10, R65.11, R65.20, R65.21, R68.89, R78.81, T17.908S, T36.95XA, T37.5×5A, T39.95XA, T41.3×5S, T45.1×5A, T50.905A, T80.211A, T80.211D, T80.29XA, T80.29XD, T81.12XA, T81.12XD, T81.44XA, T81.4XXA, T81.4XXD, T82.7XXA, T82.7XXD, T85.79XA, T85.79XD, U07.1, Y95

HELLP, hemolysis, elevated liver enzymes, low platelet count syndrome.

SUPPLEMENTAL TABLE 4 Patient Characteristics in the Prepandemic and COVID-19 Eras Among Vaginal Births

Characteristics	Prepandemic Era <i>n</i> = 102 352 (71.8%), <i>n</i> (%)	COVID-19 Era <i>n</i> = 40 133 (28.2%), <i>n</i> (%)	Standardized Difference	<i>P</i>
Maternal characteristics				
Maternal race and ethnicity				<.001
Non-Hispanic White	44 221 (43.2)	17 207 (42.9)	-.007	
Non-Hispanic Black	14 543 (14.2)	5968 (14.9)	.019	
Hispanic	15 216 (14.9)	6518 (16.2)	.038	
Other	8830 (8.6)	3471 (8.6)	.001	
Unknown	19 542 (19.1)	6969 (17.4)	-.045	
Insurance				<.001
Private	74 023 (72.3)	29 964 (74.7)	.053	
Public	25 084 (24.5)	8951 (22.3)	-.052	
Self-pay	3245 (3.2)	1218 (3.0)	-.008	
Maternal BMI				<.001
<18.5	4444 (4.3)	1625 (4.0)	-.015	
18.5 to <25	47 621 (46.5)	17 907 (44.6)	-.038	
25 to <30	26 273 (25.7)	10 474 (26.1)	.010	
30 to <35	11 806 (11.5)	4871 (12.1)	.019	
>35	7444 (7.3)	3364 (8.4)	.041	
Unknown	4764 (4.7)	1892 (4.7)	.003	
Smoking status				<.001
Never smoker	71 873 (7.2)	29 608 (73.8)	.082	
Former smoker	15 208 (14.9)	6114 (15.2)	.008	
Current smoker	7396 (7.2)	2135 (5.3)	-.078	
Unknown	7875 (7.7)	2276 (5.7)	-.081	
Maternal age, mean (SD), y	28.3 (5.7)	28.5 (5.7)	.031	<.001
Chronic diabetes	1155 (1.1)	485 (1.2)	.007	.21
Chronic hypertension	4101 (4.0)	1870 (4.7)	.032	<.001
Gestational diabetes	7341 (7.2)	2973 (7.4)	.009	.13
Gestational hypertension	12 426 (12.1)	5455 (13.6)	.043	<.001
Preeclampsia, eclampsia	4418 (4.3)	1917 (4.8)	.022	<.001
HELLP	90 (.1)	33 (.1)	-.002	.82
Previous cesarean delivery	808 (.8)	432 (1.1)	.030	<.001
Region				<.001
Midwest	26 422 (25.8)	9778 (24.4)	-.033	
Northeast	13 145 (12.8)	5885 (14.7)	.053	
South	33 615 (32.8)	14 278 (35.6)	.058	
West	29 170 (28.5)	10 192 (25.4)	-.070	
Urban	91 312 (89.2)	35 661 (88.9)	-.011	.05
Overall SVI, mean (SD)	.496 (.210)	.501 (.209)	.022	<.001
Infant characteristics				
Gestational age, mean (SD), wk	39.3 (1.05)	39.3 (1.04)	-.050	<.001
Birth wt, mean (SD), kg	3.36 (.44)	3.35 (.43)	-.020	<.001
Birth wt for gestational age				.23
SGA	6834 (6.7)	2621 (6.5)	-.006	
LGA	5563 (5.4)	2260 (5.6)	.009	
Male	51 224 (5.0)	20 010 (49.9)	-.004	.53
Jaundice during birth hospitalization	21 575 (21.1)	9375 (23.4)	.055	<.001
Hypoglycemia during birth hospitalization	5981 (5.8)	2842 (7.1)	.050	<.001
Percentage wt loss at discharge, mean (SD)	4.3 (2.8)	3.9 (2.6)	-.228	<.001
Short birth hospitalization LOS	26 182 (25.6)	15 787 (39.3)	.297	<.001

HELLP, hemolysis, elevated liver enzymes, low platelet count syndrome.

SUPPLEMENTAL TABLE 5 Patient Characteristics in the Prepandemic and COVID-19 Eras Among Cesarean Births

Characteristics	Prepandemic Era, n = 36253 (72.7%), n (%)	COVID-19 Era, n = 13624 (27.3%), n (%)	Standardized Difference	P
Maternal characteristics				
Maternal race and ethnicity				<.001
Non-Hispanic White	16 328 (45.0)	6229 (45.7)	0.014	
Non-Hispanic Black	5813 (16.0)	2508 (18.4)	0.063	
Hispanic	4747 (13.1)	2078 (15.3)	0.062	
Other	2719 (7.5)	1087 (8.0)	0.018	
Unknown	6646 (18.3)	1722 (12.6)	-0.158	
Insurance				.54
Private	27 035 (74.6)	10 225 (75.1)	0.011	
Public	8529 (23.5)	3142 (23.1)	-0.011	
Self-pay	690 (1.9)	257 (1.9)	-0.001	
Maternal BMI				<.001
<18.5	728 (2.0)	232 (1.7)	-0.023	
18.5 to <25	12 579 (34.7)	4457 (32.7)	-0.042	
25 to <30	10 103 (27.9)	3802 (27.9)	0.001	
30 to <35	6062 (16.7)	2377 (17.4)	0.019	
>35	5485 (15.1)	2255 (16.6)	0.039	
Unknown	1297 (3.6)	501 (3.7)	0.005	
Smoking status				<.001
Never smoker	23 977 (66.1)	9503 (69.8)	0.077	
Former smoker	6156 (17.0)	2375 (17.4)	0.009	
Current smoker	2779 (7.7)	822 (6.0)	-0.065	
Unknown	3341 (9.2)	924 (6.8)	-0.090	
Maternal age, mean (SD), y	30.0 (5.7)	30.2 (5.7)	0.047	<.001
Chronic diabetes	1059 (2.9)	409 (3.0)	0.005	.66
Chronic hypertension	2263 (6.2)	1039 (7.6)	0.055	<.001
Gestational diabetes	3783 (10.4)	1490 (10.9)	0.016	.11
Gestational hypertension	5556 (15.3)	2246 (16.5)	0.032	.002
Preeclampsia, eclampsia	2344 (6.5)	922 (6.8)	0.012	.23
HELLP	85 (0.2)	16 (0.1)	-0.028	.01
Previous cesarean delivery	5781 (15.9)	2620 (19.2)	0.086	<.001
Region				<.001
Midwest	8875 (24.5)	3323 (24.4)	-0.002	
Northeast	5044 (13.9)	2287 (16.8)	0.080	
South	13 167 (36.3)	5555 (40.8)	0.092	
West	9167 (25.3)	2459 (18.0)	-0.176	
Urban	32 074 (88.5)	12 029 (88.3)	-0.006	.59
Overall SVI, mean (SD)	0.491 (0.210)	0.484 (0.198)	-0.032	.002
Infant characteristics				
Gestational age, mean (SD), wk	39.2 (1.03)	39.1 (1.02)	-0.074	<.001
Birth wt, mean (SD), kg	3.43 (0.50)	3.43 (0.50)	-0.001	.93
Birth wt for gestational age				.07
SGA	2275 (6.3)	823 (6.0)	-0.010	
LGA	4312 (11.9)	1718 (12.6)	0.022	
Male	19 255 (53.1)	7182 (52.7)	-0.008	.43
Jaundice during birth hospitalization	8177 (22.6)	3438 (25.2)	0.063	<.001
Hypoglycemia during birth hospitalization	4107 (11.3)	1797 (13.2)	0.057	<.001
Percentage wt loss at discharge, mean (SD)	5.8 (3.3)	5.4 (2.8)	-0.116	<.001
Short birth hospitalization LOS	14 542 (40.1)	8314 (61.0)	0.428	<.001

HELLP, hemolysis, elevated liver enzymes, low platelet count syndrome.

SUPPLEMENTAL TABLE 6 Birth Hospitalization LOS in the Prepandemic and COVID-19 Eras

	Prepandemic Era, n (%)	COVID-19 Era, n (%)	Standardized Difference	P
Birth hospitalization LOS among all infants	n = 145 275 (71.8%)	n = 57 110 (28.2%)		
Birth hospitalization LOS of 0 midnights	298 (0.2)	121 (0.2)	0.001	<.001
Birth hospitalization LOS of 1 midnight	27 027 (18.6)	16 554 (29.0)	0.246	
Birth hospitalization LOS of 2 midnights	84 541 (58.2)	31 236 (54.7)	-0.071	
Birth hospitalization LOS of 3 midnights	25 287 (17.4)	7023 (12.3)	-0.144	
Birth hospitalization LOS of 4 midnights	6447 (4.4)	1625 (2.8)	-0.085	
Birth hospitalization LOS of 5 midnights	1675 (1.2)	551 (1.0)	-0.018	
Birth hospitalization LOS among infants born via vaginal birth	n = 102 352 (71.8%)	n = 40 133 (28.2%)		
Birth hospitalization LOS of 0 midnights	164 (0.2)	72 (0.2)	0.005	<.001
Birth hospitalization LOS of 1 midnight	26 018 (25.4)	15 715 (39.2)	0.297	
Birth hospitalization LOS of 2 midnights	67 580 (66.0)	21 470 (53.5)	-0.258	
Birth hospitalization LOS of 3 midnights	6311 (6.2)	2073 (5.2)	-0.043	
Birth hospitalization LOS of 4 midnights	1491 (1.5)	537 (1.3)	-0.010	
Birth hospitalization LOS of 5 midnights	788 (0.8)	266 (0.7)	-0.013	
Birth hospitalization LOS among infants born via cesarean birth	n = 36253 (72.7%)	n = 13 624 (27.3%)		
Birth hospitalization LOS of 0 midnights	113 (0.3)	43 (0.3)	0.001	<.001
Birth hospitalization LOS of 1 midnight	399 (1.1)	416 (3.1)	0.137	
Birth hospitalization LOS of 2 midnights	14 030 (38.7)	7855 (57.7)	0.386	
Birth hospitalization LOS of 3 midnights	16 525 (45.6)	4160 (30.5)	-0.314	
Birth hospitalization LOS of 4 midnights	4395 (12.2)	914 (6.7)	-0.186	
Birth hospitalization LOS of 5 midnights	791 (2.2)	236 (1.7)	-0.032	
Birth hospitalization LOS among rehospitalized infants	n = 1811 (1.20%)	n = 613 (1.10%)		
Birth hospitalization LOS of 0 midnights	9 (0.7)	4 (0.7)	0.006	.004
Birth hospitalization LOS of 1 midnight	287 (20.9)	154 (27.2)	0.149	
Birth hospitalization LOS of 2 midnights	807 (58.6)	329 (58.1)	-0.011	
Birth hospitalization LOS of 3 midnights	200 (14.5)	54 (9.5)	-0.154	
Birth hospitalization LOS of 4 midnights	59 (4.3)	17 (3.0)	-0.069	
Birth hospitalization LOS of 5 midnights	14 (1.0)	8 (1.4)	0.036	

LOS, length of stay

SUPPLEMENTAL TABLE 7 Adjusted Odds of Infant Rehospitalization by Birth Hospitalization LOS

Birth hospitalization LOS	All Births, aOR (95% CI)	Vaginal Births, aOR (95% CI)	Cesarean Births, aOR (95% CI)
0 midnights	3.89 (2.23–6.77)	4.36 (2.26–8.42)	4.28 (1.50–12.19)
1 midnights	1.04 (0.93–1.16)	0.97 (0.86–1.10)	6.34 (4.19–9.59)
2 midnights	reference	reference	reference
3 midnights	0.75 (0.65–0.87)	0.80 (0.66–0.96)	0.89 (0.70–1.14)
4 midnights	0.83 (0.66–1.04)	0.92 (0.67–1.26)	0.92 (0.63–1.35)
5 midnights	0.69 (0.46–1.03)	0.80 (0.49–1.31)	0.75 (0.36–1.55)

Model was adjusted for maternal age, race and ethnicity, first trimester BMI, insurance, smoking status, hypertension, diabetes, infant gestational age, infant sex, SGA and LGA, hyperbilirubinemia and hypoglycemia during the birth hospitalization, percent weight loss at discharge, ZIP code–associated SVI, COVID-19 era; with hospital system as a random intercept. The model of all births also includes mode of delivery.