

SC MATERNAL AND NEWBORN HEALTH QUALITY  
CY2020

# Annual Results Summary

*Celebrating 10 Years of the SC Birth Outcomes Initiative*

January 2022

DEVELOPED BY:

The University of South Carolina, Institute for Families in Society  
under contract to the SC Department of Health and Human Services



**Institute for Families in Society**

*Improving Policy. Advancing Practice.  
Strengthening Communities and Family Well-Being.*



## DATA SOURCES DISCLOSURE

In accordance with guidelines established by HIPAA and related data use agreements between agencies, the data behind the visualizations and products presented within this presentation are not publicly available.

Access to this data for research or other purposes is handled under mechanisms that require authorization by the South Carolina Department of Health and Human Services (SCDHHS) or Revenue and Fiscal Affairs (RFA).

More information regarding key terms, outcomes, data sources, and data caveats are available in this report:

<https://boi.ifsreports.com/resources/documents/AboutTheData.pdf>

To view additional data, visit <https://boi.ifsreports.com>.

# Celebrating 10 Years of the South Carolina Birth Outcomes Initiative

This year, the South Carolina Birth Outcomes Initiative (SCBOI) celebrated its ten-year anniversary. For a decade, this statewide coalition of over 100 multi-sector stakeholders has worked together to improve the health outcomes of all moms and babies.



Get the 10-Year Anniversary infographic  
[shealthviz.sc.edu/boi-information-products](https://shealthviz.sc.edu/boi-information-products)

There is much to celebrate and here are a few of the highlights.

- 20 milk depots are in SC as of 2021. In 2011, there were zero.
- Fewer babies are being born too soon. There was a 7% relative decrease in early elective deliveries from 2018 to 2020.
- 18 hospitals are now certified as Baby-Friendly®. In 2011, there were zero.
- CenteringPregnancy group prenatal care sites have increased from 2 to 19.
- Moms enrolling in SC Medicaid and opting for immediate postpartum Long-Acting Reversible Contraception (LARC) has seen a nearly 4X increase.
- Nearly 8,000 women in SC Medicaid received Screening, Brief Intervention, and Referral to Treatment (SBIRT) assessments in 2020.
- There has been an 8% relative improvement in the rate of severe maternal morbidity in SC from 2018 to 2020.
- Despite SC hospitals serving more than 1,600 COVID-19 perinatal patients during the first year of the pandemic, SCBOI continued to thrive virtually and launched two new initiatives: SC Alliance for Innovation on Maternal Health (SC AIM) and the SC Postpartum Care Learning Collaborative (SCPCLC).



# About This Report

## Background

In celebration of SCBOI, this report provides data to help SCBOI stakeholders prioritize areas of greatest need for the future. Using data from hospital billing, Medicaid eligibility and claims, and birth records, this brief summarizes key maternal and newborn health quality trends and characteristics for calendar year 2020, and it is a companion summary document to the annual results presentation given at the January 2022 SCBOI monthly meeting.

## Report Contents

- CY2020 snapshots for maternal delivery demographics and outcomes, newborn outcomes, and delivery facility and payer information.
- Maternal and newborn health quality three-year trends for the following outcomes: early elective deliveries and inductions, potentially avoidable primary cesareans, severe maternal morbidity, low birthweight (LBW), and prematurity.
- Summary of select communities of opportunity who may benefit from additional targeted support including women with specific demographic characteristics, experiencing chronic disease or behavioral health needs, and with reduced access to care.

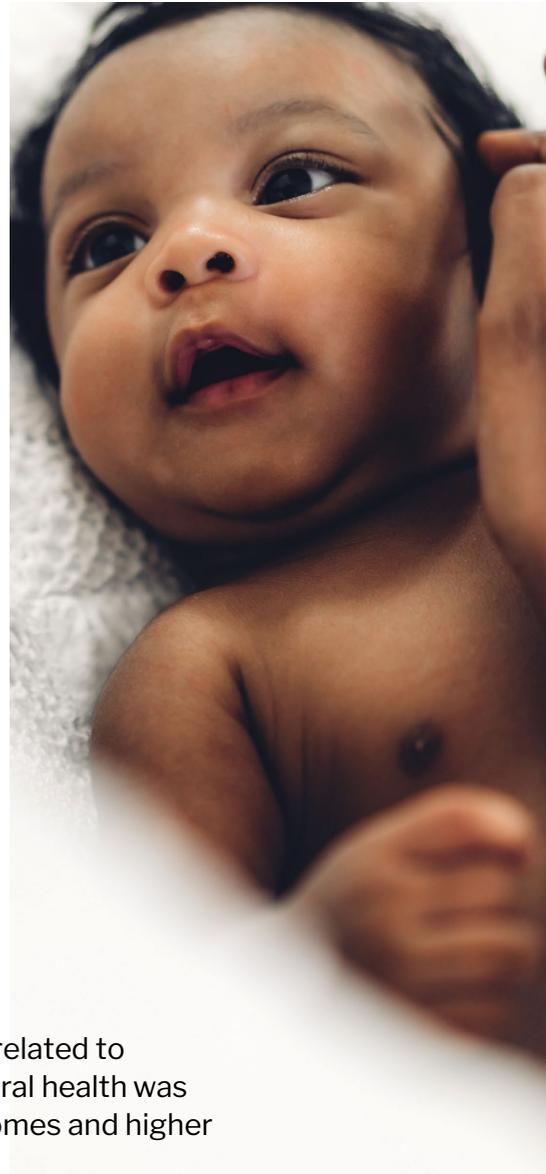
# Key Findings

## Delivery Summary

- Access to perinatal level care continued to decrease in CY2020. Two labor and delivery units permanently closed, and one was diverted due to COVID-19.
- 1 out of 3 deliveries were cesareans and 2 out of every 5 were induced. Early elective deliveries and severe maternal morbidity have decreased; potentially avoidable primary cesareans rates held steady.
- Women delivering in SC experienced high rates of behavioral health and chronic conditions.
- Nearly half of SC babies were delivered prior to term, and 1 out of 10 were low birthweight. Both prematurity and LBW are increasing.

## Communities of Opportunity

- Identifying as Black, Non-Hispanic race, receiving Medicaid benefits, and delivering after age 30 were consistent characteristics associated with higher comparative rates.
- Having an ED visit or inpatient stay with a diagnosis related to chronic disease or both chronic disease and behavioral health was associated with both poor maternal and infant outcomes and higher utilization patterns.
- Hospitals treated 1,653 perinatal COVID-19 patients in the first year of the pandemic.





## CY2020 Delivery & Newborn Snapshots

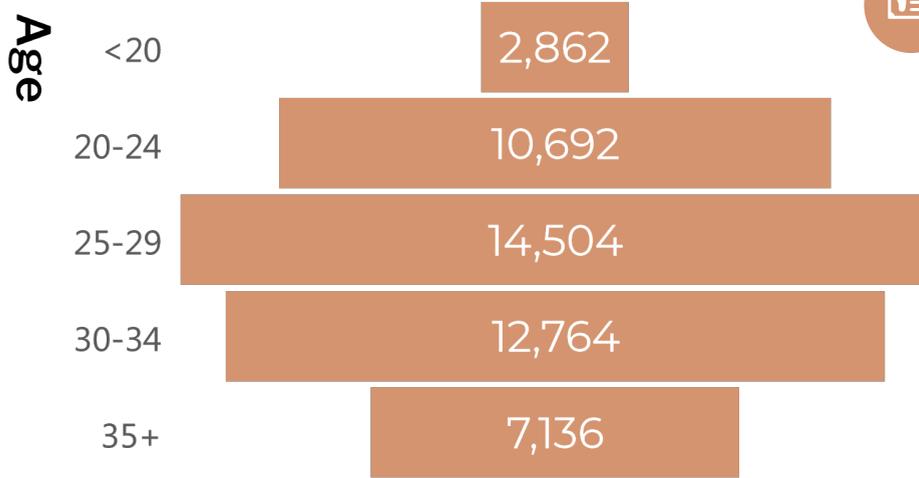
This section summarizes maternal demographics and delivery and newborn outcomes to provide greater context regarding the characteristics of obstetric and neonatology patients in order to better identify needs for service delivery.

# CY2020 Maternal Demographics Snapshot

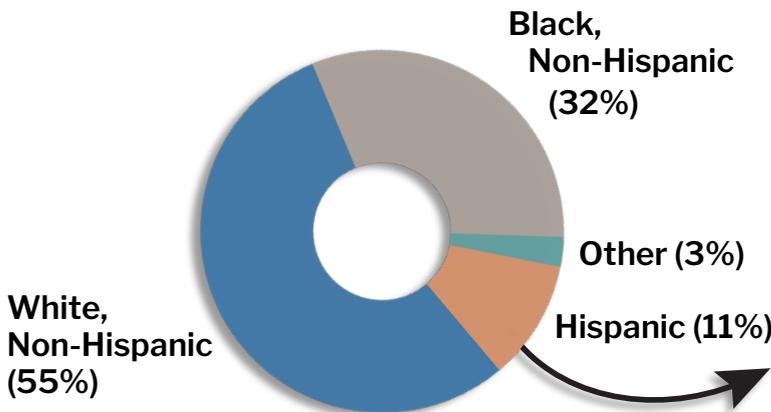
NOTE: Percentages may not total to 100% due to rounding.



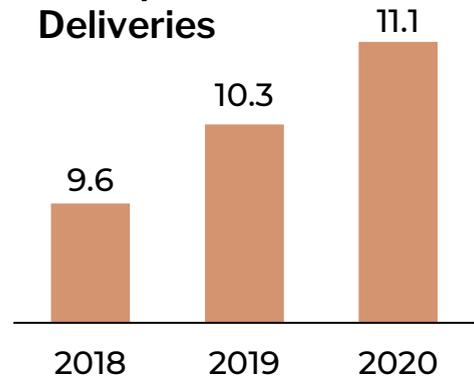
**CY2020 DELIVERY SAMPLE**  
N LINKED DELIVERIES=47,958



## Race/Ethnicity



## Growth in % of Hispanic Deliveries



## TAKEAWAYS



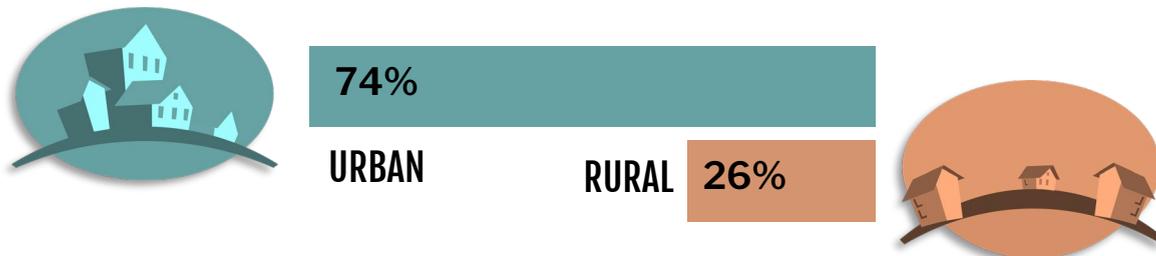
There was a 2% relative decrease in deliveries in CY20 compared to CY19 (-1,008).

Deliveries to women identifying as Hispanic increased 1.5%.

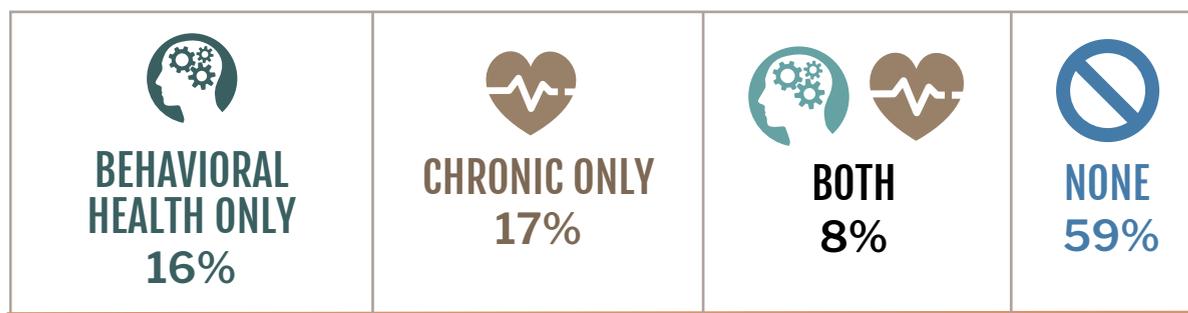
# CY2020 Maternal Demographics Snapshot

NOTE: Percentages may not total to 100% due to rounding.

## Residence: Urban vs. Rural



## Disease Profile Summary



### % With

	Mental Health Conditions	23%
	Substance Abuse	13%
	Obesity	17%
	Cardiovascular Disease	10%
	Hypertension	8%
	Diabetes	3%

Defined by pre-12 months, delivery, and available postpartum ED visits and inpatient stays. Pregnancy-specific conditions are not included in these definitions.

## TAKEAWAY



About one out of every four deliveries were to women living in rural areas or to women who had a diagnosis for a chronic or behavioral health condition.

# CY2020 Delivery Snapshot

NOTE: Percentages may not total to 100% due to rounding.



Mode of Delivery		% Potentially Avoidable Primary Cesareans Among all singleton, non-breech/transverse, non-premature, first-time moms
Vaginal	Cesarean	
31,925	16,033	<b>27%</b>
<b>67%</b>	<b>33%</b>	

## Induced & Early Elective Deliveries



Induced: **42%**  
 Early Elective Induced: **24%**  
 Early Elective Delivery: **42%**

**Severe Maternal Morbidity**  
**<2%**

## Parity

No prior live births	18,989	40%
1 prior live birth	15,149	32%
2 prior live births	8,163	17%
3+ prior live births	5,642	12%

## TAKEAWAYS



- 1 out of 3 deliveries were cesareans.
- 2 out of every 5 deliveries were induced or were to first-time mothers.

# CY2020 Newborn Snapshot

NOTE: Percentages may not total to 100% due to rounding.

## Gestation



## PLURALITY



97%

Singleton



3%

Multiple



10%

Had Low Birthweight

## TAKEAWAY



Nearly half of SC babies were delivered prior to term, and 1 out of 10 were low birthweight.



## CY2020 Facility & Payer Snapshot

This section provides a summary of the payer of deliveries **with special attention given to Medicaid, which pays for 60% of deliveries.** To aid in understanding the delivery system of care, hospital information regarding OB unit closures, level of care, and region is also provided.

# CY2020 Facility & Payer Snapshot

NOTE: Percentages may not total to 100% due to rounding.



## Payer

	#	%
Private	15,146	32
Medicaid	28,959	60
Other	3,094	7
Self-Pay/Indigent	760	2



## Hospitals

### PERINATAL LEVEL

	#	%
No Level	492	1
Level I	4,061	8
Level II	25,106	52
Level III/IV	18,299	38

### PERINATAL REGION

	#	%
Piedmont I	12,014	25
Piedmont II	3,503	7
Midlands III	13,952	29
Pee Dee IV	5,892	12
Low Country V	12,597	26

## TAKEAWAY



Nearly a third of women delivering were expected to have private insurance.

About half of deliveries were in a perinatal level II facility, which is licensed to serve moderate to high-risk patients.

The Midlands region served the most obstetric patients.

The **perinatal level** of a hospital indicates its ability to provide appropriate care for women and newborns at various levels of risk for poor delivery and birth outcomes. Hospitals with higher Level designations have the expertise and resources needed to care for higher risk mothers and newborns.



# CY2020 Facility & Payer Snapshot (continued)

## FOCUS ON MEDICAID DELIVERIES: *WHY DOES IT MATTER?*

### Medicaid paid for **60% of all deliveries in CY2020.**

- For women identifying as **Black, Non-Hispanic**, **85%** of their deliveries were paid for by Medicaid.
- For women identifying as **Hispanic**, **75%** of their deliveries were paid for by Medicaid.
- For women **residing in rural areas**, **72%** of their deliveries were paid for by Medicaid.
- For women **under the age of 20**, **92%** of their deliveries were paid for by Medicaid.

Overall, Medicaid pays for:

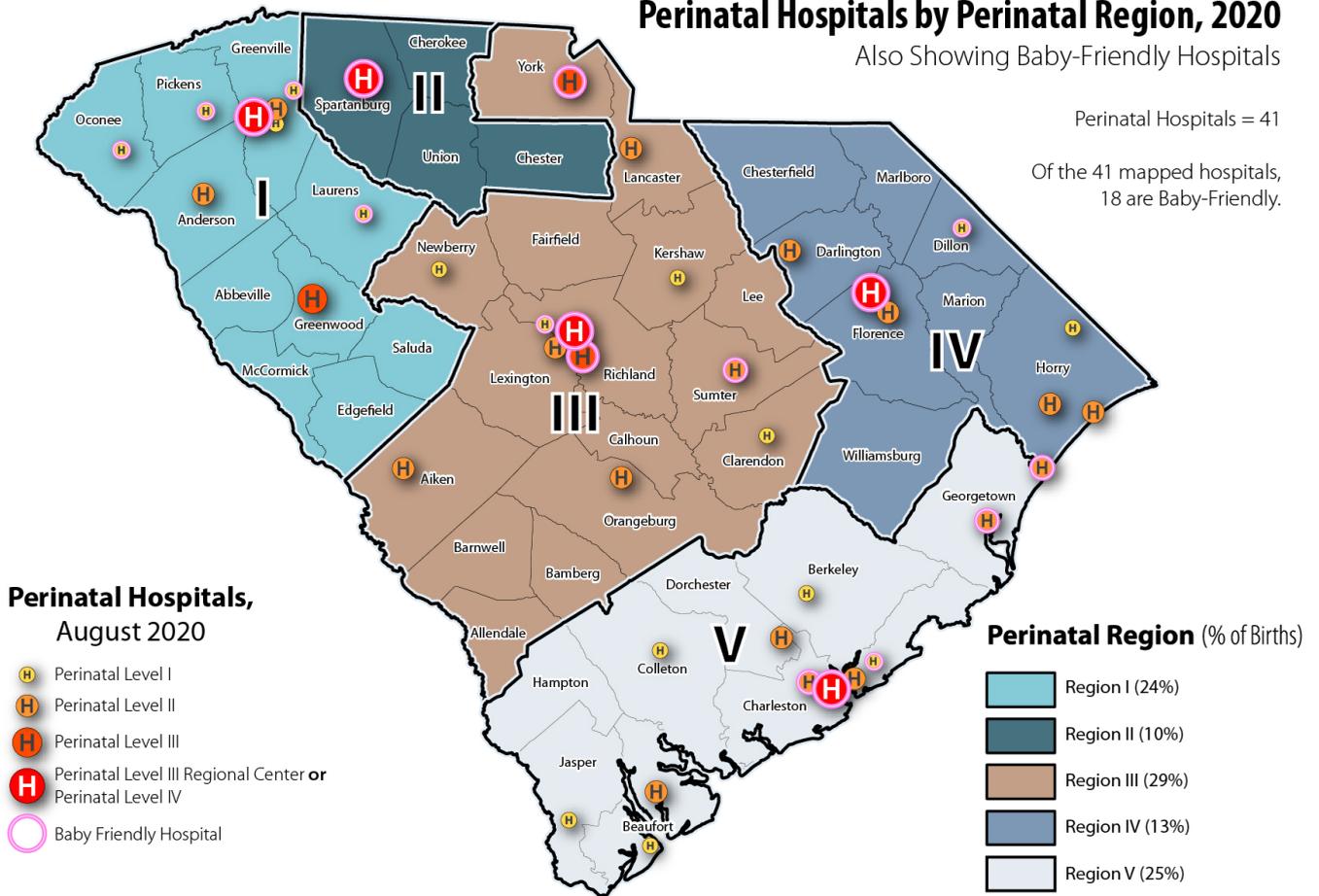


during the year prior to and after delivery.

# CY2020 Facility & Payer Snapshot (continued)

## Perinatal Hospitals by Perinatal Region, 2020

Also Showing Baby-Friendly Hospitals



Notes: Georgetown Memorial stopped delivering in September 2020 and Roper St. Francis Mount Pleasant in December 2020. Baptist Easley was on COVID-19 diversion as of April 2020.

## TAKEAWAYS



There are currently 8 counties in SC that are considered maternity care deserts defined in CY20 by March of Dimes using HRSA data.

In total, 11 OB units have closed since SCBOI started with only 4 new units opening.

At the start of SCBOI in 2011, SC had 47 hospitals delivering babies. By the end of 2020, this had decreased to 38.



## Maternal and Newborn Health Quality Trends

This section's summary results for CY18 to CY20 trends tests are provided to identify both strengths and areas for potential improvement related to the SCBOI primary maternal and newborn outcomes.

# Maternal Health Quality Trends

Measure	2018-2020 Trend
Early Elective Deliveries & Inductions (TJC, PC-01)	
Primary C-Section (TJC, PC-02)	
Severe Maternal Morbidity	Mixed result: CA Trend test not significant, but adjusted Chi-square test was. 

**Arrows that are filled denote statistical significance at P<.05.**

**Note:** 3-year trend analysis was conducted using the Cochran-Armitage and adjusted Chi-square tests.

## TAKEAWAYS

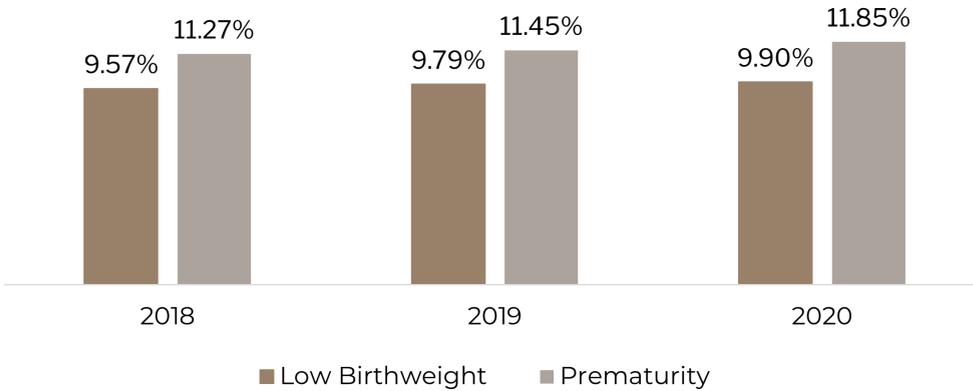


Early elective deliveries were trending down. More data are needed to see whether this reflects the impact of the pandemic which stopped elective procedures.

Renewed focus on supporting vaginal birth may be needed.

The rate of severe maternal morbidity in CY20 was 1.67%, a decrease from 1.82% in CY18 (8% relative improvement). This may correspond with the state's engagement in AIM.

# Newborn Health Quality Trends



Measure	2018-2020 Trend
LBW	
Premature	

Arrows that are filled denote statistical significance at  $P < .05$ .

**Notes:** 3-year trend analysis was conducted using the Cochran–Armitage and adjusted Chi-square tests. Logistic regression models were used to examine CY2020 between-group rate differences adjusting for age, race, gender, payer, perinatal level, and residence.

## TAKEAWAYS



Both low birthweight and prematurity increased each year from CY2018 to CY2020. The increase in premature babies was statistically significant.

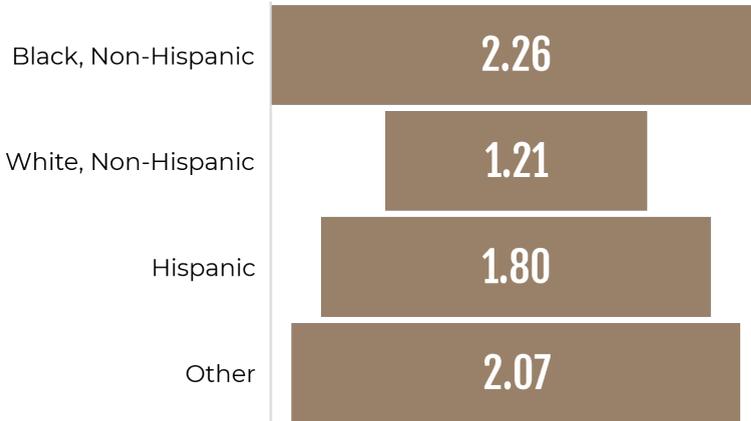


## Select Communities of Opportunity

This section provides a snapshot of some of the maternal characteristics most associated with poor maternal and newborn outcomes with specific focus on demographics, clinical conditions, and access to care. These communities of opportunity may benefit from additional intervention and clinical support.

# Select Communities of Opportunity: Maternal Health

Severe Maternal Morbidity by Race, %



**Notes:** Logistic regression models were used to examine CY2020 between-group rate differences adjusting for age, race, gender, payer, perinatal level, and residence.

Women identifying as Black, Non-Hispanic: AOR = 1.402 p=0.0002; women identifying as Hispanic: AOR = 1.567, p = 0.0083)

## TAKEAWAYS



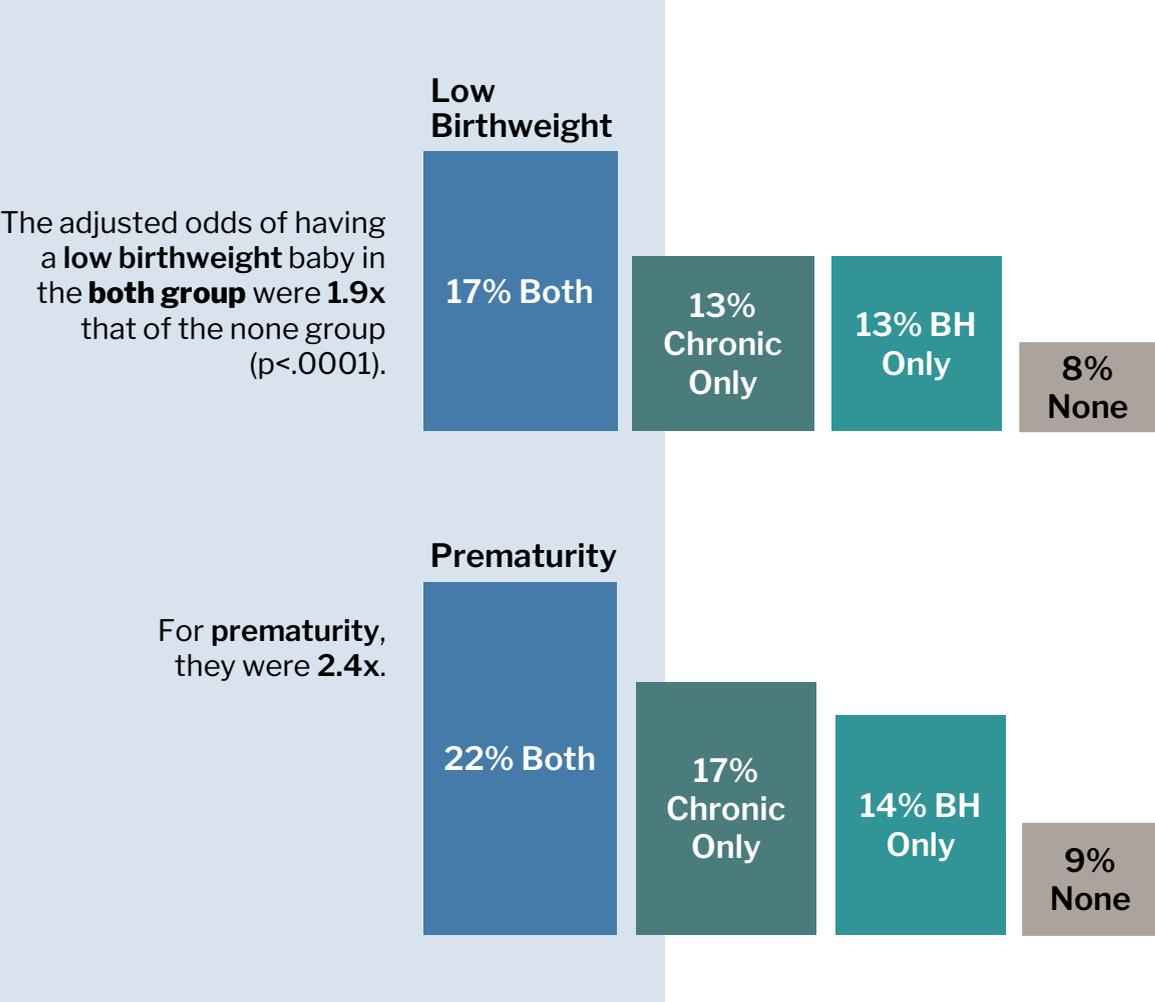
### Select Communities of Opportunity:

Women experiencing both chronic disease and behavioral health had nearly 3x the rate of severe maternal morbidity in CY2020 compared to those with no diagnosis (3.24% v. 1.16%, AOR = 2.67, p<.0001).

Being over the age of 35 was a statistically significant risk factor across several outcomes. For instance, their rate of potentially avoidable primary cesareans was 47% compared to 28% for women ages 25-29 (AOR = 2.30, p<.0001).

Hospitals treated 1,653 perinatal COVID-19 patients in the first year of the pandemic. The number of visits was highest in July 2020, followed by January 2021.

# Select Communities of Opportunity: Chronic Disease & Behavioral Health & Birth Outcomes



## TAKEAWAY



### Select Communities of Opportunity:

Women experiencing both chronic disease and behavioral health are at highest risk for poor birth outcomes.

Women identifying as Black, Non-Hispanic race also had 2x the odds of having a low birthweight baby than women identifying as White in CY2020 (AOR = 2.06,  $p < .0001$ ).

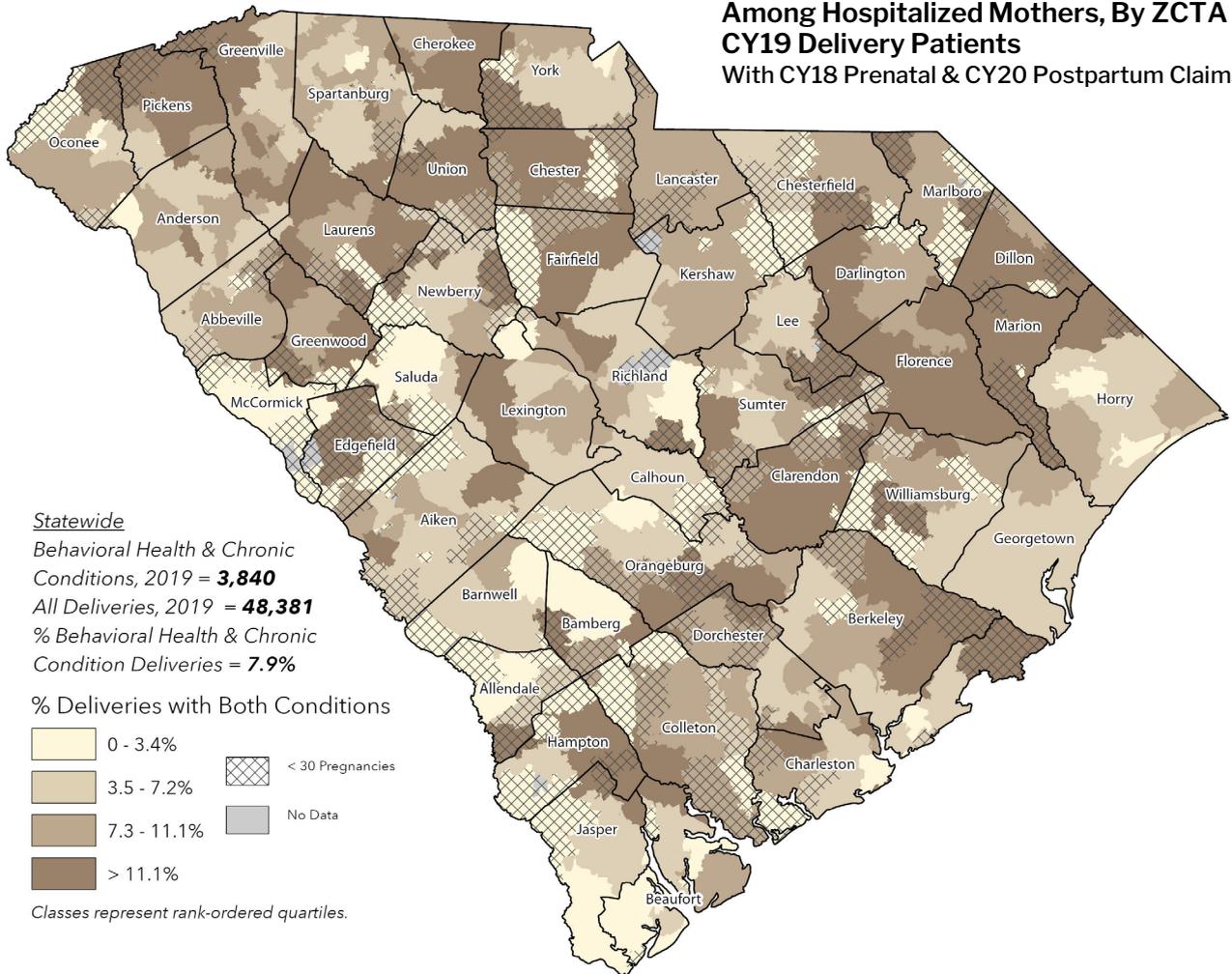
Women residing in rural areas had slightly higher rates of LBW as well (AOR = 1.12,  $p = 0.0032$ ).

The rate of premature births paid for by Medicaid was 14% compared to 9% for private insurance (AOR = 1.32,  $p < .0001$ ).

# Select Communities of Opportunity: Chronic Disease & Behavioral Health & Birth Outcomes (continued)

Residence for Pregnancies With ED Visits or Inpatient Stays  
for Both Chronic Disease & Behavioral Health

**Behavioral Health & Chronic Conditions  
Among Hospitalized Mothers, By ZCTA  
CY19 Delivery Patients  
With CY18 Prenatal & CY20 Postpartum Claims**



## TAKEAWAY

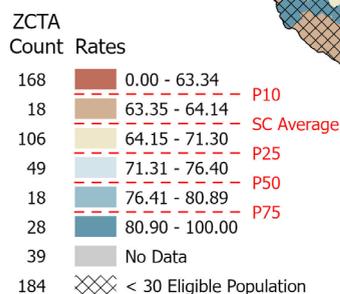


Based on maternal residence, areas shaded in the darkest brown had greater than 11.1% of their deliveries with an ED visit or inpatient stay with primary or secondary diagnosis codes for both chronic disease and behavioral health.

# Select Communities of Opportunity: SC Postpartum Care Learning Collaborative

## Postpartum Care HEDIS Rates, CY2020

Statewide Reported Rate: 64.1%  
(15,192 / 23,687) \* 100



Note: Less than 30 enrollees yield rates that are not generally stable.

National Benchmark Percentiles:  
 10th Percentile = 63.34%  
 25th Percentile = 71.30%  
 50th Percentile = 76.40%  
 75th Percentile = 80.89%  
 90th Percentile = 84.18%



Map Created: November 2021

Source: IFS Administrative Claims Data, CY2020



## TAKEAWAY



Addressing these chronic and behavioral health needs will require investments in prenatal and postpartum care. As of July 1, 2021, Medicaid beneficiaries qualifying due to their pregnancy are eligible for an extension of coverage from 60 days to 12 months postpartum. In addition, SCBOI has launched the SC Postpartum Care Learning Collaborative to pilot innovative Plan-Do-Study-Act cycles to address gaps in postpartum care access.

The map details zip-code tabulation areas where 63.34% or lower of pregnant Medicaid recipients had adequate postpartum care.



# CONTACT

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