



*Southern New Jersey*  
**PERINATAL  
COOPERATIVE**

The licensed Maternal and Child Health Consortium  
serving the seven counties of Southern New Jersey

# Achievement 2022



Regional  
Collaborative  
Database

## ACHIEVEMENT 2022

### Report of the Regional Collaborative Database

Since its inception in 1981, Southern New Jersey Perinatal Cooperative has recorded and documented trends in birth weight, mortality and transport in Southern New Jersey and presented these findings in the Regional Collaborative Database. Members of the Cooperative have, as part of the agency's core mission, directed their efforts toward developing and maintaining a regional perinatal system that ensures high-risk patients and infants receive optimal care. The effectiveness of these efforts is documented in the Regional Collaborative Database. This database also follows ongoing concerns and identifies emerging problems.

The regionalization of perinatal services includes these core objectives:

- Accessible quality care for pregnant patients and newborns
- Appropriate use of perinatal personnel and facilities
- Assurance of reasonable cost effectiveness

### *Thank You*

Production of the Regional Collaborative Database report is possible only through the support and assistance of the obstetrical and nursery staff of our member birth facilities. Their contributions are invaluable. We extend our gratitude to these individuals whose consistently high level of professionalism is the basis of the information in this report.

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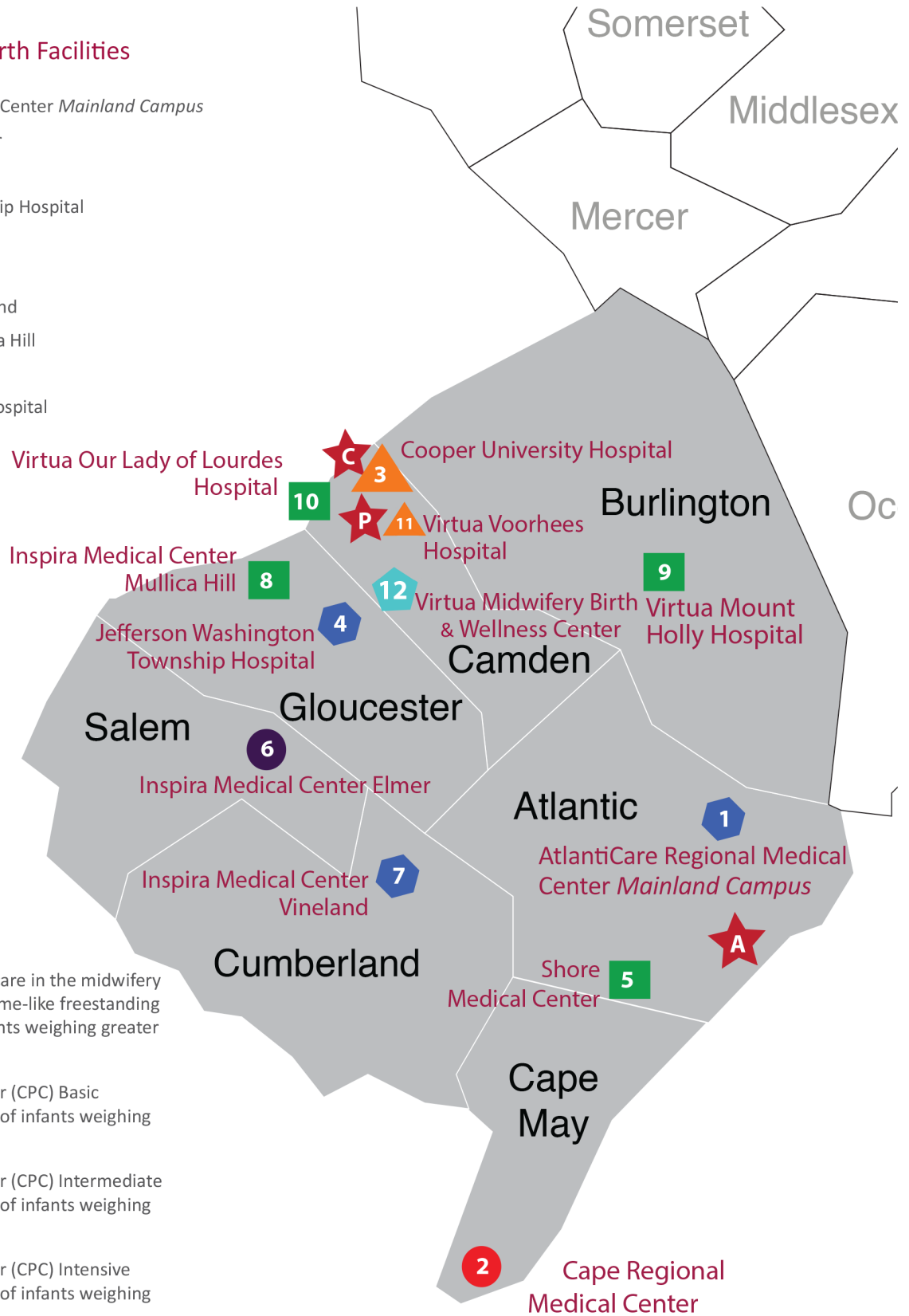
## Cooperative Member Birth Facilities

- 1 AtlantiCare Regional Medical Center *Mainland Campus*
- 2 Cape Regional Medical Center
- 3 Cooper University Hospital
- 4 Jefferson Washington Township Hospital
- 5 Shore Medical Center
- 6 Inspira Medical Center Elmer
- 7 Inspira Medical Center Vineland
- 8 Inspira Medical Center Mullica Hill
- 9 Virtua Mount Holly Hospital
- 10 Virtua Our Lady of Lourdes Hospital
- 11 Virtua Voorhees Hospital
- 12 Virtua Midwifery Birth & Wellness Center

## Birth Facility Type

-  Birth Center (BC) provides care in the midwifery and wellness model in a home-like freestanding facility for deliveries of infants weighing greater than 2500 grams.
-  Community Perinatal Center (CPC) Basic provides care for deliveries of infants weighing greater than 2500 grams.
-  Community Perinatal Center (CPC) Intermediate provides care for deliveries of infants weighing greater than 1500 grams.
-  Community Perinatal Center (CPC) Intensive provides care for deliveries of infants weighing greater than 1000 grams.
-  Regional Perinatal Center (RPC) provides full range of services for high-risk pregnancies and newborns.
-  Services Suspended September 2022

 **Cooperative Offices**  
*The Cooperative maintains offices in Absecon, Camden and Pennsauken.*



# THE COOPERATIVE

## REGIONAL BIRTH FACILITY SUMMARY

	BIRTH CENTER		BASIC		INTERMEDIATE		INTENSIVE		REGIONAL PERINATAL CENTERS		REGION	
	Actual	Rate %	Actual	Rate %	Actual	Rate %	Actual	Rate %	Actual	Rate %	Actual	Rate %
TOTAL FACILITY BIRTHS	38		338		5135		4534		8322		18220	
LIVE BIRTHS IN FACILITIES	38		337		5101		4497		8247		18393	
NEONATAL MORTALITY	0	0	0	0	6	1.18	22	4.89	32	3.88	60	3.29
LBW - LIVE BIRTHS < 2501 GM	0	0	6	1.78	395	7.74	451	10.03	739	8.96	1591	8.73
LBW - NEONATAL MORTALITY	0	0	0	0	5	12.66	20	44.35	28	37.89	53	33.31
VLBW - LIVE BIRTHS < 1501 GM	0	0	0	0	29	0.57	84	1.87	161	1.95	274	1.50
VLBW - NEONATAL MORTALITY	0	0	0	0	5	172.41	19	226.19	26	161.49	35	145.23
ELBW - LIVE BIRTHS < 1001 GM	0	0	0	0	12	0.24	40	0.89	85	1.03	137	0.75
ELBW - NEONATAL MORTALITY	0	0	0	0	5	416.67	18	450	26	305.88	49	357.66
ELBW2 - LIVE BIRTHS (500-1000 GM)	0	0	0	0	10	0.2	32	0.71	65	0.79	107	0.59
ELBW2 - NEONATAL MORTALITY	0	0	0	0	3	300.00	10	312.50	8	123.08	21	196.26
ELBW3 - LIVE BIRTHS (751-1000 GM)	0	0	0	0	7	0.14	12	0.27	41	0.50	60	0.33
ELBW3 - NEONATAL MORTALITY	0	0	0	0	2	285.71	4	333.33	2	48.78	8	133.33
FETAL MORTALITY > 499 GM	0	0	0	0	16	3.13	25	5.54	50	6.04	91	4.98
FETAL MORTALITY > 2500 GM	0	0	0	0	3	0.64	5	1.23	11	1.46	19	1.14
MATERNAL TRANSPORTS (% of total births + transports)	9	19.57	41	10.82	64	1.23	24	0.53	4	0.05	142	0.77
NEONATAL TRANSPORTS (% of live births)	2	5.26	15	4.45	71	1.39	53	1.18	102	1.24	243	1.33
NEONATAL MORTALITY AFTER TRANSPORTS (% of total births)	0	0	0	0	3	0.59	3	0.67	1	0.12	7	0.38
LIVE BIRTHS OUTSIDE FACILITIES	2	5.26	9	2.66	51	0.99	35	0.77	54	0.65	151	0.82

\*LBW = Low Birth Weight

\*VLBW = Very Low Birth Weight

\*ELBW = Extremely Low Birth Weight

# ACHIEVEMENT 2022



## New Jersey Data Sources

2022 represents the first full year of reporting in the New Jersey Department of Health's Vital Events Registration and Information (VERI) system. In the summer of 2021, all New Jersey birth facilities transitioned from the Vital Information Platform (VIP) to this new and improved state-supported system. The Vital Information Platform had been in use since 2015 when it replaced the disk operating system (DOS)-based Electronic Birth Certificate (EBC), New Jersey's first electronic tool, implemented in 1993. The Vital Events Registration and Information system continues the tradition, representing one of the most comprehensive perinatal data systems in the country. Birth record information and perinatal data are tracked for every birth after 19 weeks gestation in New Jersey facilities. The Vital Events Registration and Information system's web-based interface complies with federal standards with minimal support from facilities' IT departments.

The Southern New Jersey Perinatal Cooperative, Family Health Initiatives (FHI) and New Jersey Department of Health coordinate the Vital Events Registration and Information system's support by meeting regularly to discuss usage, definitions and data quality. Cooperative staff support quality improvement and provide technical assistance and reports to regional facilities related to the Vital Events Registration and Information system.

### Live Birth Analysis

In reviewing the data in this document, the denominator used for factors has some variation. In order to present data in the most useful format, the Cooperative uses two different live birth denominators. When presenting facility-based data (including the official Live Births number, Neonatal Mortality Rate, Fetal Mortality Rate and birth weight trends), Live Births in Facilities are used. This number excludes outside births and was 18,220 for 2022.

For population, disparity and behavioral health-based data (birth and pregnancy characteristics, delivery and feeding method), the Cooperative uses Total Live Births. This number includes outside births and was 18,393 for 2022.

### Disclaimer

The Vital Information Platform/Vital Events Registration and Information data in the following charts represent births that occurred in Cooperative member birth facilities.

Information is limited to those who delivered at or were transferred to a regional facility. This is facility-reported information and is not to be considered official or population based. These data are preliminary and are not considered official by the New Jersey Department of Health and may not be represented as such.

The accuracy of the data contained in this report is dependent upon the completeness and reliability of the information recorded by each birth facility.

Several birth certificate items are collected differently in the Vital Information Platform and Vital Events Registration and Information systems, so in some instances data had to be re-coded to be used in longitudinal reporting.

Contact the Cooperative with any questions about this process.

# ACHIEVEMENT 2022

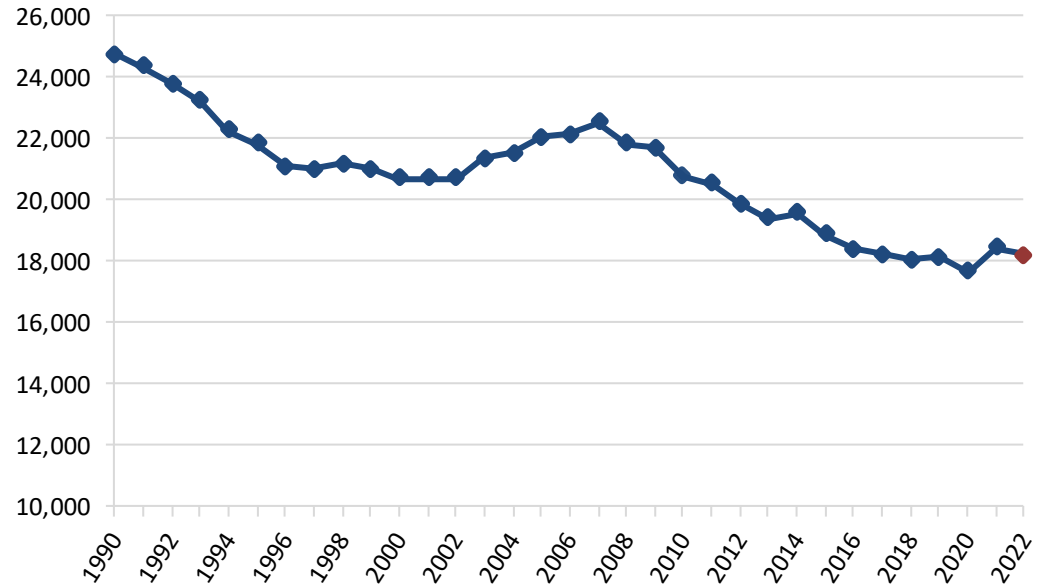
## Birth Trends

Consistent with statewide and national trends, births in Southern New Jersey peaked in 1990 and have declined rapidly since 2007. After a 4.1% rise in 2021, the largest one-year increase seen in the past 30 years, births in the region dropped slightly in 2022, declining by 1.1% to 18,220 births (See Figure 1).

New Jersey statewide birth trends, including provisional 2022 data from the National Center for Health Statistics, are presented in Figure 2. New Jersey experienced a 20.6% decrease in total births between 1990 and 2020. South Jersey contributed to this decline with a 27.1% decrease in births to residents in the region. However, in 2021 births statewide rose sharply, increasing by 5.1%, and births continued to rise in 2022, increasing by 1.4% to 102,883. Nationally, births remained stable in 2022.\*

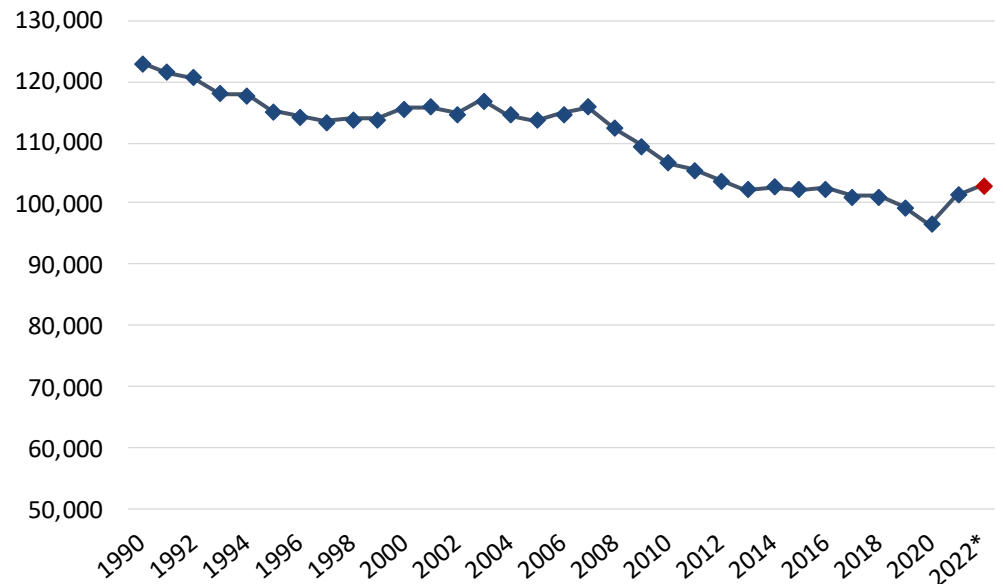
Southern New Jersey Births 1990-2022

Figure 1



New Jersey Births 1990-2022\*

Figure 2



\*Provisional - Hamilton BE, Martin JA, Osterman MJ. Births: Provisional data for 2022. Vital Statistics Rapid Release; no 28. Hyattsville, MD: National Center for Health Statistics. June 2023, DOI: <https://dx.doi.org/10.15620/cdc:127052>



## Distribution of Births

Of the 18,393 births in the southern New Jersey region in 2022, 65.5% were to residents of the region's northern counties (Burlington, Camden and Gloucester) (Figure 3). Non-residents accounted for 3.5% of births in South Jersey. Camden County had the greatest proportion of births in its facilities (49.2%) and represents the county with the highest percentage of regional births to residents (30.5%). Residents of Burlington, Cape May, Gloucester and Salem Counties were the most likely to travel outside their county to give birth.

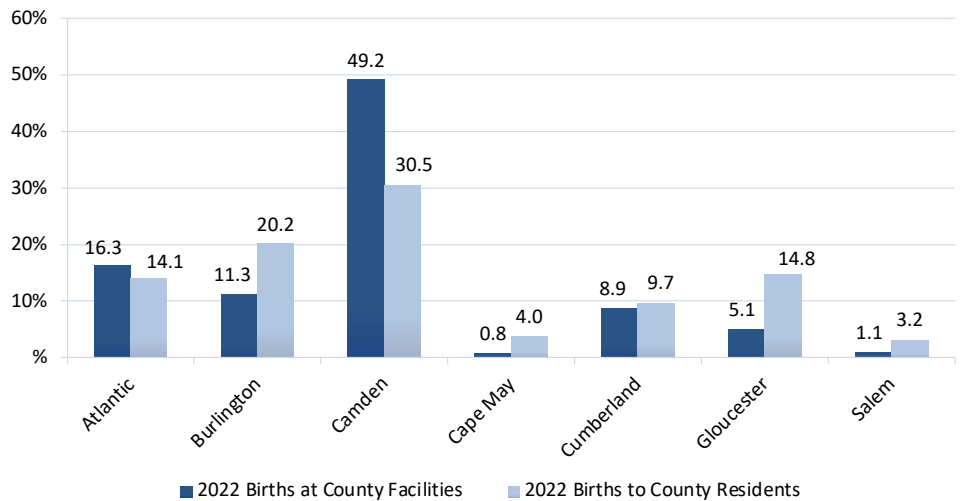
Table I depicts the total births that occurred in each county, comparing the five-year average from 2013-2017 with 2018-2022. The overall decline in live births across the region was 3.96%, but the size of the change varied widely across counties. Cape May and Salem Counties saw the largest decreases with the closing of Memorial Hospital of Salem County in 2014 and the suspension of maternity services at Cape Regional Medical Center in the third quarter of 2022. In contrast, Gloucester County had a 7.76% increase which aligns with the opening of Inspira Medical Center Mullica Hill in late 2019.

Disparities in birth outcomes exist in all of the counties, but because the population is highest in the northern counties and Atlantic County, they are more frequently eligible for consistent state and federal funding to address these concerns. In Salem, Cumberland and Cape May Counties, interventions designed to target inequities and to engage those families more likely to experience poor outcomes based on access and resources are often supported by local hospitals, foundations and charities.

The Cooperative works with its member birth facilities, coalitions and partner organizations in these areas to bring high-quality services that address community needs.

2022 Percentages of Births by County of Residence and Facility

Figure 3



Facility County Birth Averages 2012-2022

Facility Births by County	2013-2017	2018-2022	%Change
Atlantic	3214	3009	-6.37%
Burlington	2331	2155	-7.53%
Camden	8793	8733	-0.68%
Cape May	419	275	-34.43%
Cumberland	1928	1721	-10.77%
Gloucester	1911	2059	7.76%
Salem	363	257	-29.23%
<b>REGION</b>	<b>18958</b>	<b>18208</b>	<b>-3.96%</b>

Table I

# ACHIEVEMENT 2022

## Maternal Age

In 2022, the highest percentage of births in the region occurred to residents ages 30-34 years (34.5%), followed by 25-29 years (24.7%), 35-39 years (20.4%), 20-24 years (12.9%), 40-44 years (4.5%), under 20 years (2.6%) and 45 years and older (0.4%) (Figure 4).

Shifts in the distribution of births by maternal age have been dramatic since 2013. Teen births, discussed in the next section, decreased from 6.0% to 2.6%, a 57% decrease. During the same period, births to residents ages 35-39 increased from 13.3% to 20.4%, a 53% increase (Figure 5).

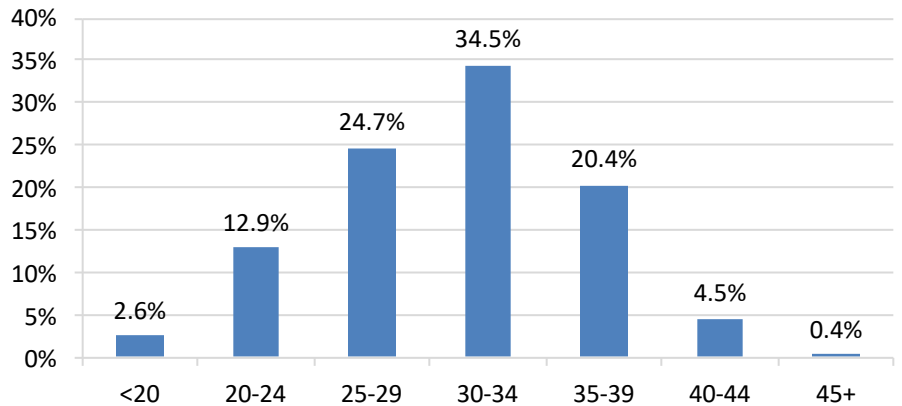
The last few years have exacerbated this trend. While births to residents under age 30 declined by 9.7% between 2019 and 2022, births among those age 30 and over rose 10.0% in the same time period.

Variation in the distribution of births by age group can be seen at the county level in Figure 6. Of the counties in the region, Burlington County had the highest proportion of births to residents ages 35 and over (28.5%) while Cumberland County had the highest percentage of births to residents under age 20 (5.4%).

Although Cumberland County continues to have the highest teen birth rate in the region, over the past five years there has been a 4.5% decrease in births to teens in Cumberland County and a 14.3% decrease regionally, even with the slight increase seen in 2020 (The total number of teen births is very small so minor shifts can have a significant impact on the percentage of births).

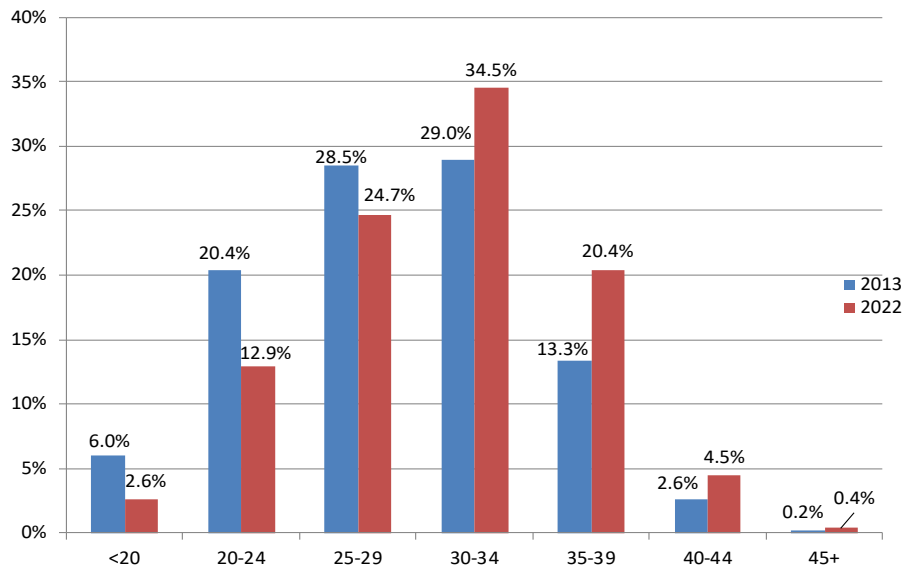
2022 Percentage of Births by Maternal Age

Figure 4



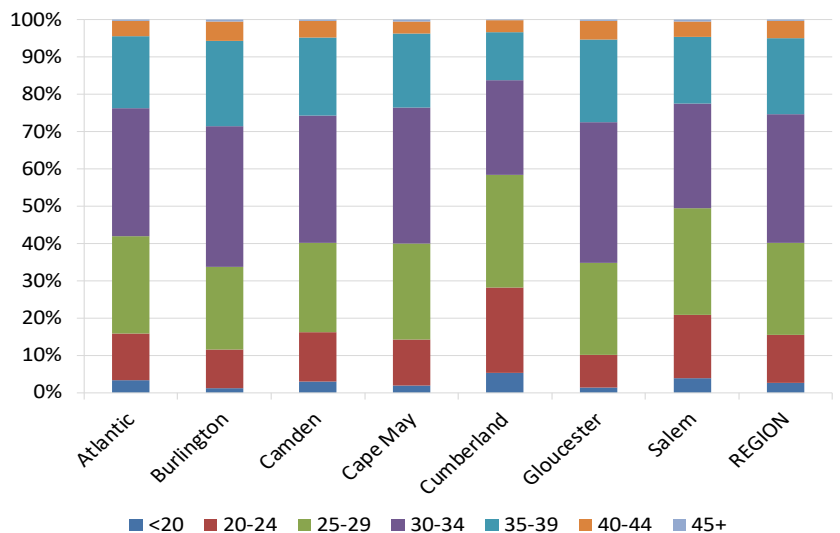
Distribution of Births by Maternal Age in 2013 and 2022

Figure 5



2022 County Births by Maternal Age

Figure 6



## Births to Teenagers

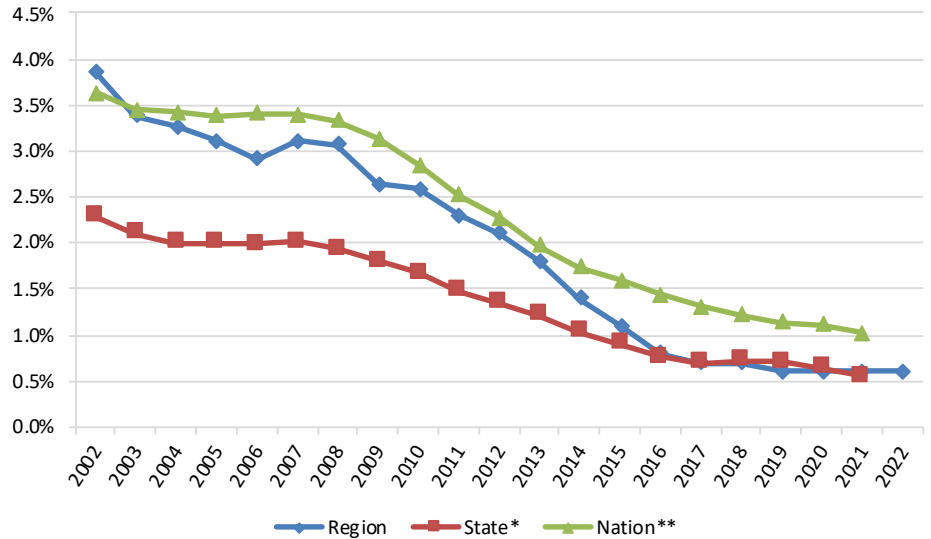
The percentage of births to teenagers ages 17 and younger in South Jersey has been on the decline over the past 20 years, decreasing 85% from 3.9% in 2002 to 0.6% in 2022 (Figure 7). While previously much higher than the state average, the gap has closed over time. Since 2016, teen birth rates in the region have been consistent with statewide rates.

In 2022, the majority (77.0%) of teenagers giving birth were 18- and 19-year-olds while 19.3% were 16- and 17-year-olds. Births among teenagers under age 16 were rare, making up only 3.7% of births to teenagers in 2022 (Figure 8).

The Cooperative's youth programs work with school and community-based organizations to decrease teenage pregnancy and sexually transmitted infection rates in Atlantic, Camden, Cumberland and Salem Counties, which have the highest percentages of births to teenagers in the state. Trained facilitators conduct evidence-based curriculum that address pregnancy prevention and sexually transmitted infections among youth ages 10 to 14, as well as factual information using the principles of harm reduction and youth development.

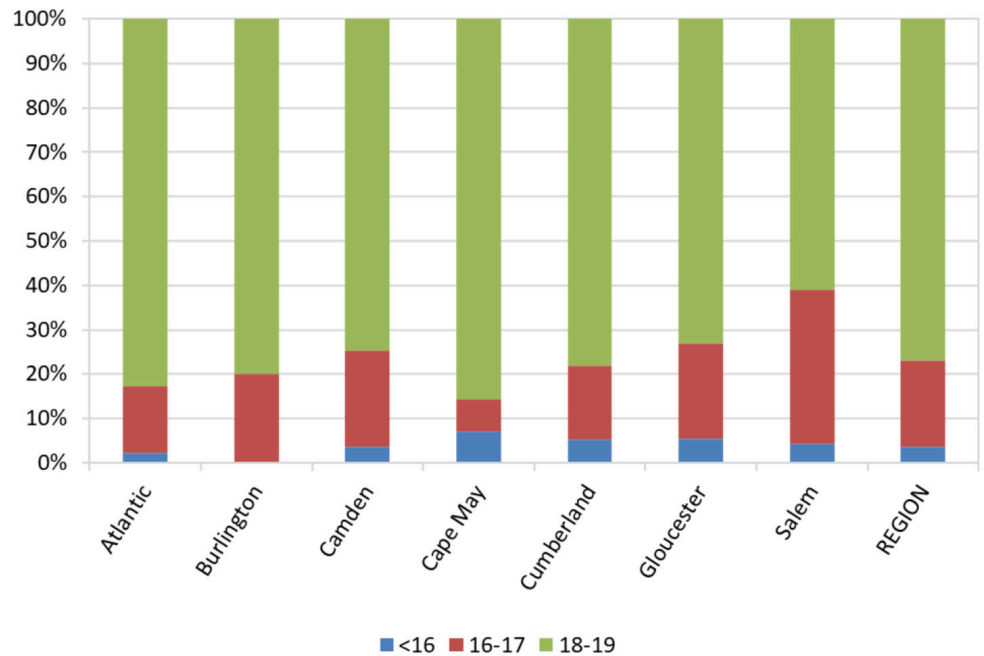
Births to Teenagers Ages 17 and Younger

Figure 7



2022 Births to Teenagers in Different Age Groups by County

Figure 8



\*Source: Center for Health Statistics, New Jersey Birth Certificate Database, Office of Vital Statistics and Registry, New Jersey Department of Health. <https://www-doh.state.nj.us/doh-shad/query/result/birth/BirthBirthCnty/Count.html> 6/9/2023

\*\*Source: United States Department of Health & Human Services (HHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics. National Vital Statistics System, Natality on CDC WONDER Online Database. Data are from the Natality Records 2007-2021, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/natality-current.html> on Jun 9, 2023 5:06:49 PM

## Pregnancy Characteristics

### Prenatal Care

Early and regular prenatal care is an important strategy to assure healthy pregnancy outcomes for patients and infants. Two of the most significant benefits are improved birth weight and decreased risk of preterm delivery.

Pregnant patients who do not receive adequate prenatal care are at risk for complications that may not be detected or managed in a timely manner. Additionally, critical preventive messages and infant care education are included in prenatal care. Information about safe sleep, lactation and postpartum warning signs are shared with patients. Referrals to community-based support services are provided during scheduled visits with the care team.

As shown in Figure 9, first trimester entry to prenatal care in the region remained consistent with statewide numbers at 73.7% in 2022.

Only 2.3% of patients in the region received no prenatal care prior to delivery. Cumberland County has the lowest first trimester entry to care rate, with only 63.2% accessing care in the first trimester.

Cooperative programs work to support early and adequate access to prenatal care for all pregnant South Jersey residents.

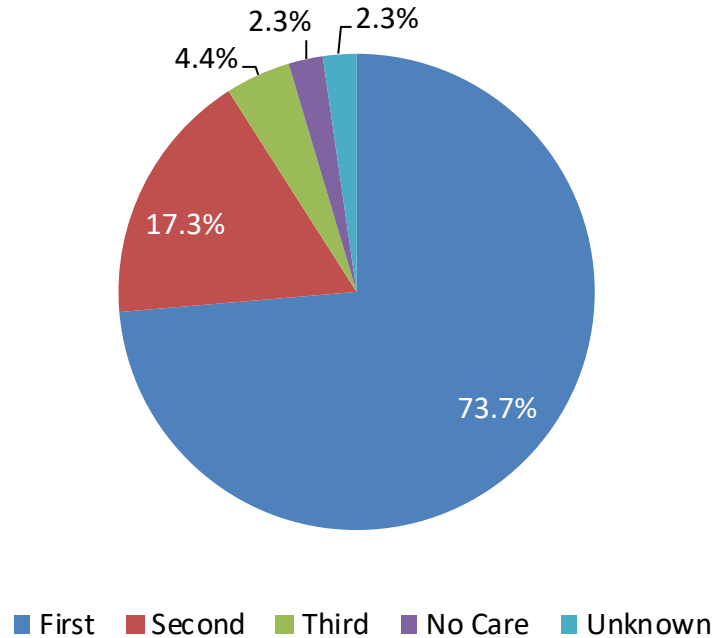
### Plurality

The risk of perinatal complications, including preterm birth, increases with multiple births. In 2022, singleton births represented 96.6% of all births in the region, twin births accounted for 3.28% and triplet births represented 0.11% of all births. There were no quadruplet births in 2022 (Table II).

Multiple births climbed dramatically for several decades due to a shift in maternal age at conception and an increased use of assisted reproductive technology. However, twin births as a percentage of all births have been trending downward in the past decade. In 2022, the percentage of twin births was 23.1% lower than the recent peak in 2011. Similarly, the percentage of triplet births was half of the recent peak in 2011. In 2022, only 15% of live births resulting from infertility treatment were multiples, down from 24% in 2016.

Entry to Prenatal Care by Trimester  
Member Facility Births

Figure 9



### Plurality

Year	Singleton		Twin		Triplet		Quadruplet		Total Multiples
	N	%	N	%	N	%	N	%	N
2013	18662	95.89	767	3.94	33	0.17	0	0	800
2014	18865	96.06	745	3.79	27	0.14	1	0.01	773
2015	18231	95.98	741	3.90	22	0.12	0	0	763
2016	17723	96.00	715	3.87	24	0.13	0	0	739
2017	17561	95.90	725	3.99	24	0.13	0	0	749
2018	17482	96.17	678	3.73	18	0.10	0	0	696
2019	17573	96.50	612	3.36	14	0.08	0	0	626
2020	17763	96.31	632	3.56	24	0.14	0	0	630
2021	17846	96.50	627	3.39	20	0.11	0	0	647
2022	17768	96.60	604	3.28	21	0.11	0	0	625

Table II

## Risk Assessment

Risk assessments conducted during pregnancy identify patients who are at high risk for maternal, fetal or infant morbidity or mortality. Early identification and intervention are keys to prevention. Because of this, a risk assessment screening occurs at the first prenatal visit and is updated throughout the course of prenatal care.

Pregnant patients identified as being at-risk receive high-quality prevention services or treatment for their conditions and those that might impact infant wellbeing. Providers assure linkage to appropriate clinical care and community resources through referral. Reducing the impact of factors associated with poor pregnancy outcomes is critical to both patients and babies.

Table III depicts some of the risk factors associated with Very Low Birth Weight (VLBW) births in 2022.

The association between tobacco use during pregnancy and the occurrence of Low birth Weight Births is clear from this analysis.

While 4% of all deliveries were to patients who used tobacco in pregnancy, 6% of Very Low Birth Weight deliveries were to those in the group.

Lack of prenatal care and multiple births (twins, triplets) are more likely to result in the birth of a Very Low Birth Weight infant. Age-related risks are consistently identified as putting patients under age 20 or over age 35 at increased risk. Health risks such as hypertension and preeclampsia are also associated with decreased birth weight.

In data reflective of national reports, Black patients in South Jersey continue to have a higher proportion of Low Birth Weight babies. Table III shows that while 19% of the births in the region were to Black patients, a much higher proportion of the Very Low Birth Weight births (35%) were to Black patients.

Since low birth weight is closely associated with infant mortality, reducing the incidence of Very Low Birth Weight infants born to Black patients is essential to reducing the racial disparity that has long challenged the perinatal healthcare community.

Prevalence of Risk Factors Among All Patients and Those with Very Low Birth Weight (VLBW) Births in 2022

Southern Region	ALL	<1501 grams	>1500 grams
<i>Live Births</i>	<b>18393</b>	281	18112
Mother's race: White	<b>60%</b>	43%	60%
Mother's race: Black	<b>19%</b>	35%	19%
Mother's ethnicity: Hispanic	<b>27%</b>	28%	27%
1st trimester entry to prenatal care	<b>74%</b>	62%	74%
No prenatal care	<b>2%</b>	14%	0%
Used tobacco during pregnancy	<b>4%</b>	6%	4%
Plurality of 2 or more	<b>3%</b>	22%	3%
Mother's age less than 20 years	<b>3%</b>	4%	3%
Mother's age 35 years or greater	<b>25%</b>	27%	25%
Primigravida	<b>30%</b>	33%	30%
Maternal risk: Hypertension in pregnancy	<b>10%</b>	21%	10%
Maternal risk: Eclampsia	<b>0.03%</b>	0.71%	0.02%

Table III

# ACHIEVEMENT 2022



Black women are treated differently during pregnancy in N.J., and it's killing them

Fewer mothers and babies are dying in New Jersey but too many are still at risk | Opinion

Murphy proposes \$33M boost in funding for maternal and infant health

Using midwives to deliver babies would save more lives if N.J. takes action, study says.



New Jersey maternal mortality report: Majority of deaths were preventable

A push to close the racial gap in maternal mortality rates in N.J.

N.J. releases plan to reduce maternal mortality rate, fix racial disparities

northjersey.com

How can NJ cut high death rate among Black mothers in childbirth? This group has a plan



S. Jersey's birthing mothers get help with avoiding complications | Opinion



New Maternal Infant Health Hub aims to strengthen midwifery in NJ

NJ hospitals earn high marks on U.S. News' best for maternity care



Tammy Murphy Announces Launch of Connecting NJ to Better Support Families



Maternal Health Center and Community Hub Announced for Trenton



Campaign for Overlook Maternity Center Project Bolts Ahead with Major \$1M Grant



New Jersey adds funding to help support health, well-being of mothers, babies and families in 2023 budget

## Newborn Feeding Method

Because of the many positive benefits of breastfeeding for child survival, growth and development, exclusive breastfeeding with an infant receiving only breast milk with no additional formula or supplementation is recommended by the World Health Organization for all infants.

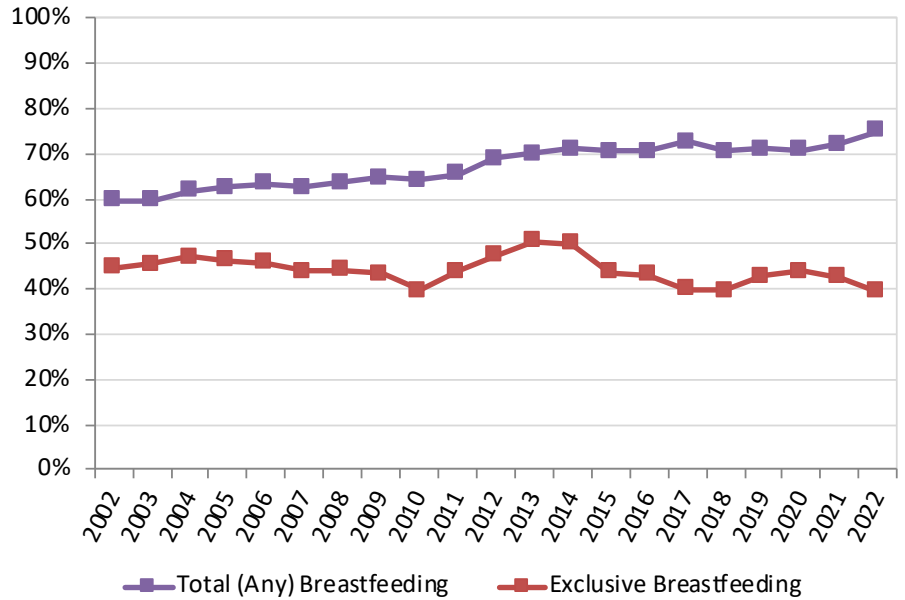
Efforts to improve supportive messages and lactation resources as a part of prenatal delivery and postpartum care have been standardized by most providers in Southern New Jersey. Regional breastfeeding rates have risen sharply since 2002 and have consistently stayed above 70% in recent years, reaching a new peak of 75.1% in 2022 (see Figure 10).

Unfortunately, despite the clear benefits, many birthing people do not breastfeed exclusively. Exclusive breastfeeding during the facility stay peaked at 50.5% in 2013 and dropped to a 20-year low of 39.3% in 2022.

In Southern New Jersey, as elsewhere in the United States, breastfeeding rates vary by race and ethnicity. Table IV depicts these trends over time. Between 2013 and 2022, the percentage of non-Hispanic Black birthing people breastfeeding at discharge increased by 23.0%. However, non-Hispanic White and Hispanic birthing people continue to have higher breastfeeding rates. Community programs that work to address these differences must address the legacy of institutional racism that continues to impact Black, and specifically African American birthing peoples' choices about breastfeeding their infants.

Breastfeeding at Discharge 2002-2022

Figure 10



Breastfeeding at Discharge by Race/Ethnicity 2013-2022

Year	Black, not Hispanic	White, not Hispanic	Hispanic/Latino, of any race
2013	57.0%	70.9%	73.7%
2014	59.9%	73.3%	74.0%
2015	59.6%	73.0%	72.6%
2016	62.2%	72.6%	73.6%
2017	64.1%	74.2%	74.3%
2018	62.7%	72.3%	72.2%
2019	61.5%	72.8%	71.7%
2020	63.8%	72.8%	69.4%
2021	64.9%	74.1%	70.6%
2022	70.1%	75.8%	75.6%
<b>Change over time</b>	<b>23.0%</b>	<b>6.9%</b>	<b>2.6%</b>

Table IV

## Method of Delivery

New Jersey remains in the top 20 states for high rates of Cesarean births. However, significant improvements have been made in recent years. Figure 11 compares the Cesarean section rates in Southern New Jersey to statewide rates (2022 New Jersey rates are preliminary). Cesarean section rates in the region have decreased more rapidly than statewide rates since 2014, although they have largely plateaued since 2019. In 2022, the statewide rate was 32.9%\* in comparison to the regional rate of 30.8%.

Since 2018, Cooperative member birth facilities have reduced the region's overall Cesarean section rate by 3.8% with five of the ten member facilities open in 2018 achieving a 10% or greater decrease.

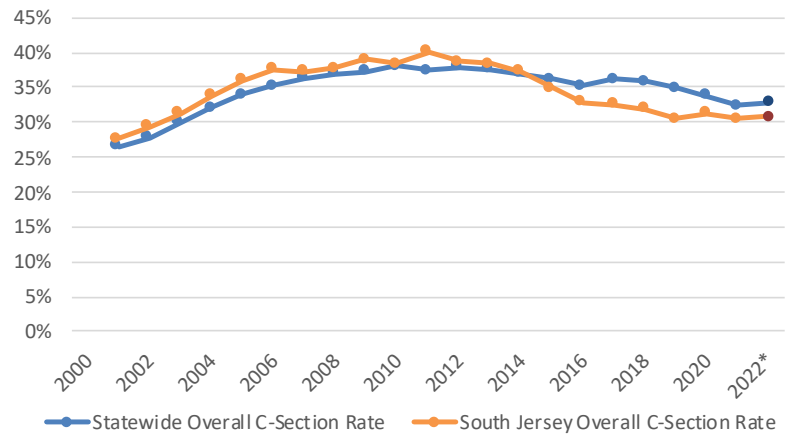
The Joint Commission on Accreditation of Hospitals has established a goal of reducing overall Cesarean section rates to less than 30%.

As can be seen in Table V, in 2022, Cooper University Hospital, Inspira Medical Center Elmer, Inspira Medical Center Vineland, Virtua Our Lady of Lourdes Hospital and Virtua Voorhees Hospital met this criterion based on Vital Events Registration and Information system data. With continued focus and planning, most regional hospitals are working to reduce unnecessary Cesarean deliveries.

Declines in the regional percentage of patients who have Cesarean births without trying to deliver vaginally are encouraging news. There was a 14.4% decrease in the percentage of patients who had no trial of labor before a Cesarean section between 2013 and 2022 (see Table VI). The last ten years have seen a decline in these procedures.

New Jersey and South Jersey Overall Cesarean Section Trends

Figure 11



Cesarean Section Rates by Hospital: 5-Year Comparisons

Hospital	2018	2022	% Change
AtlantiCare Regional Medical Center Mainland Campus	37.5%	32.7%	-12.7%
Cape Regional Medical Center	37.0%	39.9%	7.7%
Cooper University Hospital	20.1%	29.6%	47.2%
Inspira Medical Center Elmer	20.1%	14.8%	-26.5%
Inspira Medical Center Vineland	37.7%	28.3%	-24.8%
Jefferson Washington Township Hospital	32.0%	32.3%	1.2%
Shore Medical Center	46.5%	37.6%	-19.2%
Virtua Our Lady of Lourdes Medical Center	30.5%	25.5%	-16.4%
Virtua Mount Holly Hospital	35.0%	35.5%	1.5%
Virtua Voorhees Hospital	30.2%	29.3%	-2.9%
<b>REGION</b>	<b>32.0%</b>	<b>30.8%</b>	<b>-3.8%</b>

Table V

2013-2022 Method of Delivery

Year	Vaginal	C-Section/Failed Trial of Labor	C-Section/No Trial of Labor
2013	61.65	12.88	25.48
2014	62.74	11.61	25.66
2015	65.09	8.89	26.02
2016	67.09	7.47	25.43
2017	67.49	7.79	24.71
2018	68.10	7.55	24.40
2019	69.50	6.30	24.20
2020	68.68	6.76	24.53
2021	69.48	8.17	22.35
2022	69.23	8.97	21.81
<b>Change over time</b>	<b>12.30%</b>	<b>-30.36%</b>	<b>-14.40%</b>

Table VI

\*Provisional - Hamilton BE, Martin JA, Osterman MJ. Births: Provisional data for 2022. Vital Statistics Rapid Release; no 28. Hyattsville, MD: National Center for Health Statistics. June 2023, DOI: <https://dx.doi.org/10.15620/cdc:127052>

\*\*Inspira Medical Center Mullica Hill opened November 2019.



## Key Steps to Reduce Overall Cesarean Section Rates in the Region

### Reduce low-risk Nulliparous, Term, Singleton, Vertex (NTSV) Cesarean births

In 2022, the percentage of Cesarean births to standard presenting birthing people in Southern New Jersey facilities was 23.4%. The rate had been steadily increasing and reached a high point of 36.1% in 2011 before beginning to decline (see Figure 12). Unfortunately, this rate has risen slightly in the past two years. Making a change in rates for this group of low-risk, first-time deliveries is critical to a statewide reduction in Cesarean section rates.

In recent years, a far greater percentage of Nulliparous, Term, Singleton, Vertex Cesarean deliveries has occurred after induction rather than spontaneous labor (see Figure 13). In 2022, 11.2% of Nulliparous, Term, Singleton, Vertex deliveries were Cesarean sections that occurred after an induction while 6.2% were Cesarean sections after a spontaneous delivery. This represents a 64.3% reduction in Cesarean deliveries following spontaneous labor for these lower-risk patients between 2011 and 2022.

### Reduce repeat Cesareans without a trial of labor (i.e. birthing people who have had a previous Cesarean birth who are scheduled for the procedure before the onset of labor)

In 2022, 70.87% of deliveries to birthing people who had repeat Cesareans were Cesarean sections without a trial of labor (see Table VII). This type of delivery has been on the decline overall in Southern New Jersey. Since 2013, there has been a 14.6% decrease in no trial repeat Cesarean sections.

### Increase successful Vaginal Birth After Cesarean (VBAC) births

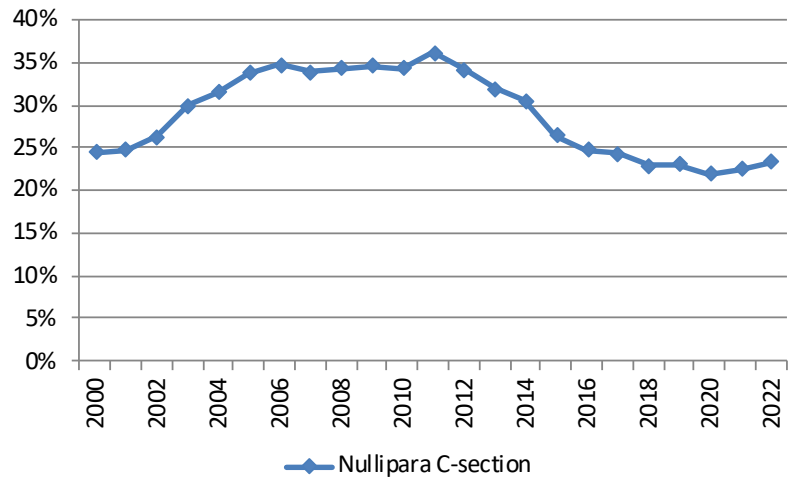
Between 2013 and 2016, the percentage of Vaginal Births After Cesareans that were successful rose dramatically from 64.71% to 81.36%. More recently, rates have leveled off. In 2022, 80.9% of Vaginal Birth After Cesarean Section deliveries were successful (see Table VII).

### Decrease induction of labor before 39 completed weeks of gestation

Because of the concern about the problems encountered by babies who are born less than but near term, this is an issue which is the focus of quality improvement activities across the United States.

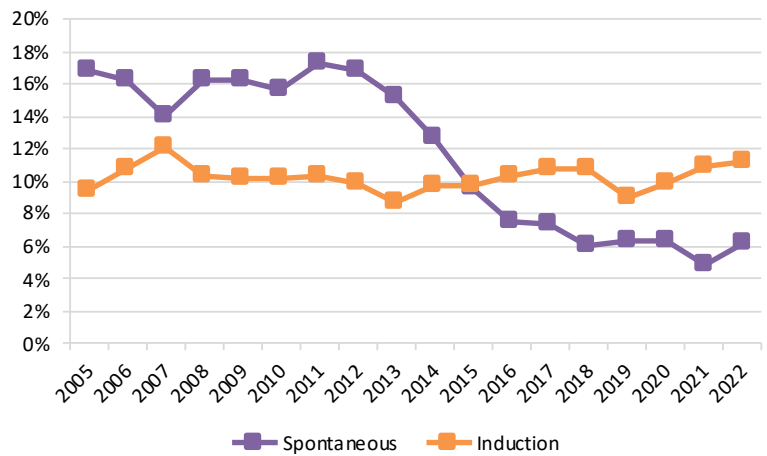
Southern New Jersey Low-Risk Nulliparous, Term, Singleton, Vertex Cesarean Birth Trends

Figure 12



Labor Initiation for Cesarean Deliveries, First-time Mothers, Singleton, Full-Term, Head Down

Figure 13



Total Cesarean Rate, Rate for First Deliveries, Percentage of Repeat Cesarean Sections with No Trial of Labor and Failed and Successful Vaginal Birth After Cesarean (VBAC) Deliveries

Year	Cesarean Rate	Nullipara C-section	No Trial Repeat	Failed VBAC	Successful VBAC
2013	38.35%	30.20%	82.97%	35.29%	64.71%
2014	37.26%	30.51%	83.55%	27.34%	72.66%
2015	34.91%	26.42%	83.24%	22.32%	77.68%
2016	32.91%	24.72%	82.21%	18.64%	81.36%
2017	32.51%	24.27%	80.75%	23.04%	76.96%
2018	31.95%	22.92%	80.96%	21.13%	78.87%
2019	30.48%	23.01%	81.07%	17.30%	82.70%
2020	31.29%	21.99%	78.55%	18.77%	81.23%
2021	30.52%	22.53%	73.95%	18.74%	81.26%
2022	30.77%	23.38%	70.87%	19.10%	80.90%
<b>Change over time</b>	<b>-19.77%</b>	<b>-22.58%</b>	<b>-14.59%</b>	<b>-45.88%</b>	<b>25.02%</b>

Table VII

# ACHIEVEMENT 2022

## Birth Weight Trends

Changes in medical management and the coordination provided by perinatal regionalization since 1995 set the stage for the increased survival of very small babies since the late 1990s. Technological and medical advances now support the live birth of many tiny, premature infants who would have died in delivery just 15 to 20 years ago, when the regional database was first developed.

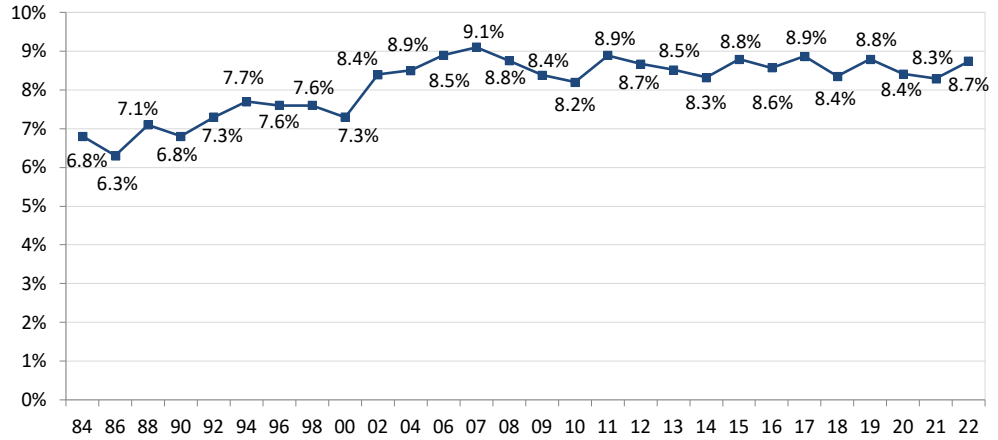
As shown in Figure 14, 8.7% of infants born in 2022 weighed less than 2501 grams (5.5 lbs.), an increase of 27.9% from the baseline year of 1984. Still, this does represent a decrease from the peak of 9.1% in 2007. Table VIII depicts five-year averages for 2013-2022; the largest decreases were seen in the smallest of infants.

In 2022, 274 (1.5%) babies born in member birthing facilities were categorized as Very Low Birth Weight (VLBW) because they weighed less than 1501 grams (3.3 lbs.). The birth rate of Very Low Birth Weight infants dropped steadily from 2016 to a 20-year low in 2021. The 2022 rate demonstrates a 14.5% increase. However, as Table VIII shows, the rate continues to be 11.5% lower in the most recent five-year period (see Table VIII; Figure 15).

In 2022, 137 (0.75%) babies born in member birthing facilities were categorized as Extremely Low Birth Weight (ELBW), weighing less than 1001 grams (2.2 lbs.). This group of infants is the most vulnerable and has the greatest impact on the neonatal mortality rate. Figure 15 shows birth trends for these tiniest of infants over time. The percentage of Extremely Low Birth Weight baby births dropped to a new low in 2021. In 2022, the percentage was 0.75%.

Birth Rate of Low Birth Weight (LBW) Infants 1984-2022

Figure 14



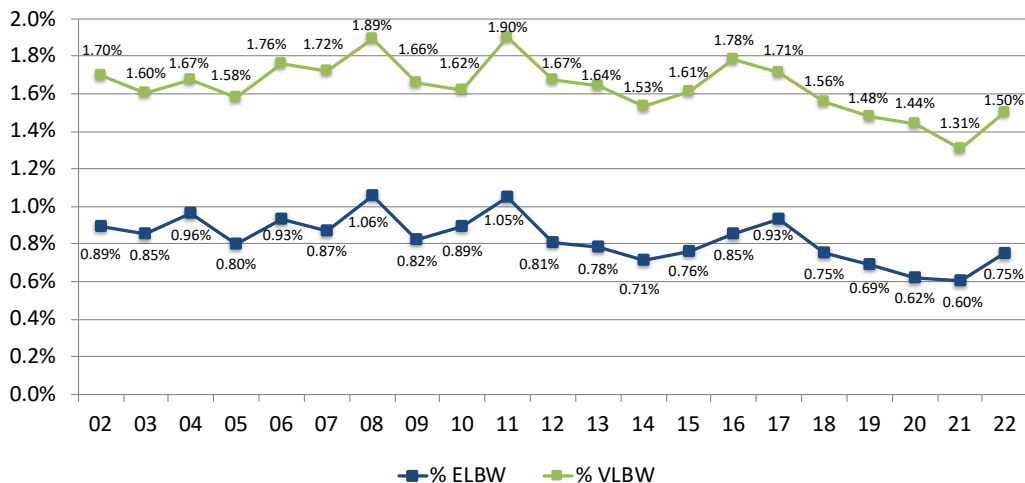
Birth Weight Distribution

Weight Group	2013-2017	2018-2022	%Change
<2501g (LBW)	8.61%	8.51%	-1.16%
<1501g (VLBW)	1.65%	1.46%	-11.52%
<1001g (ELBW)	0.81%	0.68%	-16.05%

Table VIII

Extremely Low Birth Weight (ELBW)/Very Low Birth Weight (VLBW) Birth Rate Comparison

Figure 15



## Neonatal Mortality

Since Low Birth Weight (LBW) is the single most important factor contributing to neonatal mortality, the Cooperative monitors the relationship between the incidence of Low Birth Weight births and neonatal mortality.

Figure 16 depicts the regional neonatal mortality rate trend from 1984 to present. After declining by 67% from the baseline year of 1984 and reaching a new low in 2021, the Neonatal Mortality Rate (NMR) rose by 29% to 3.29 deaths per 1000 live births in 2022.

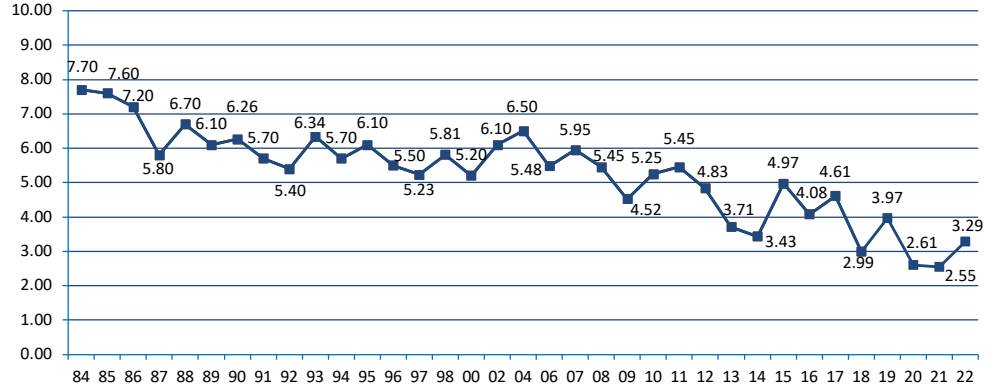
Table IX shows the five-year averages for neonatal mortality by weight group for Low Birth Weight babies since 2013.

Between 2013 and 2017, the average Neonatal Mortality Rate for babies born under 2501 grams was 44.52. In the most recent five years, the average rate was 31.67 deaths per 1000 live births. In 2022, there were 33.31 deaths of babies under 2501 grams per 1000 live births.

An examination of the distribution of births across categories demonstrates the impact of Extremely Low Birth Weight on the overall Neonatal Mortality Rate for the region. The ability to take a step back and examine longitudinal trends is a strength of the Cooperative's Regional Collaborative Database.

Neonatal Mortality 1984-2022

Figure 16



Neonatal Mortality Rate Birth Weight Distribution

Weight Group	5 Year Average 2013-2017	5 Year Average 2018-2022	% Change
Overall	4.16	3.08	-25.96%
<2501 g (LBW)	44.52	31.67	-28.86%
<1501 g (VLBW)	214.54	166.09	-22.58%
<1001 g (ELBW)	408.89	331.37	-18.96%

Table IX

# ACHIEVEMENT 2022

## Fetal Mortality

The Fetal Mortality Rate (FMR) is reported in two ways: 1) deaths of all fetuses weighing more than 500 grams (1.1 pounds) and 2) the subset of fetal deaths in later pregnancy when the fetus weighs more than 2500 grams (5.5 pounds). Collection of data on fetal deaths at or after 20 weeks gestation began in 2017 in the Electronic Birth Certificate system.

After trending downward since 2016, the Fetal Mortality Rate for births over 500 grams has varied in the past three years. However, the 2022 rate of 4.98 losses per 1000 births is the highest rate since 2009 (see Figure 17).

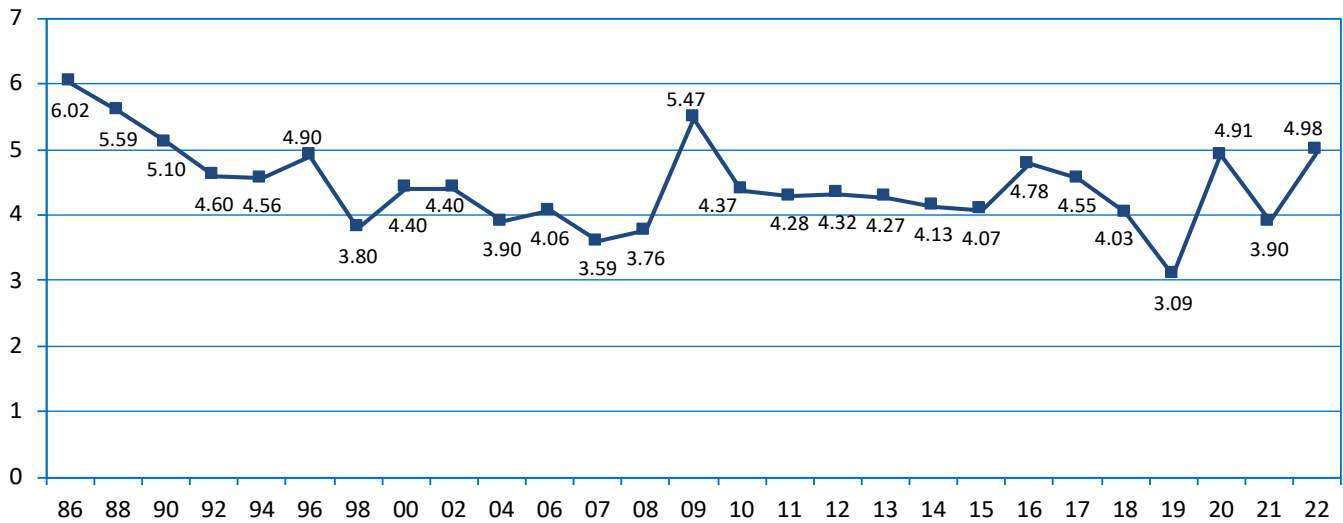
Since 1986, the Fetal Mortality Rate among infants weighing more than 2500 grams, a marker of late pregnancy complications and management, decreased 49.3%. As shown in

Figure 18, these cases are uncommon, and the small numbers can result in high levels of variability from year to year. In 2022, the Fetal Mortality Rate for this group was 1.14 losses per 1000 births.

The Cooperative has coordinated educational and consultation activities directed at reducing the Fetal Mortality Rate, which complement programs aimed at reducing neonatal mortality.

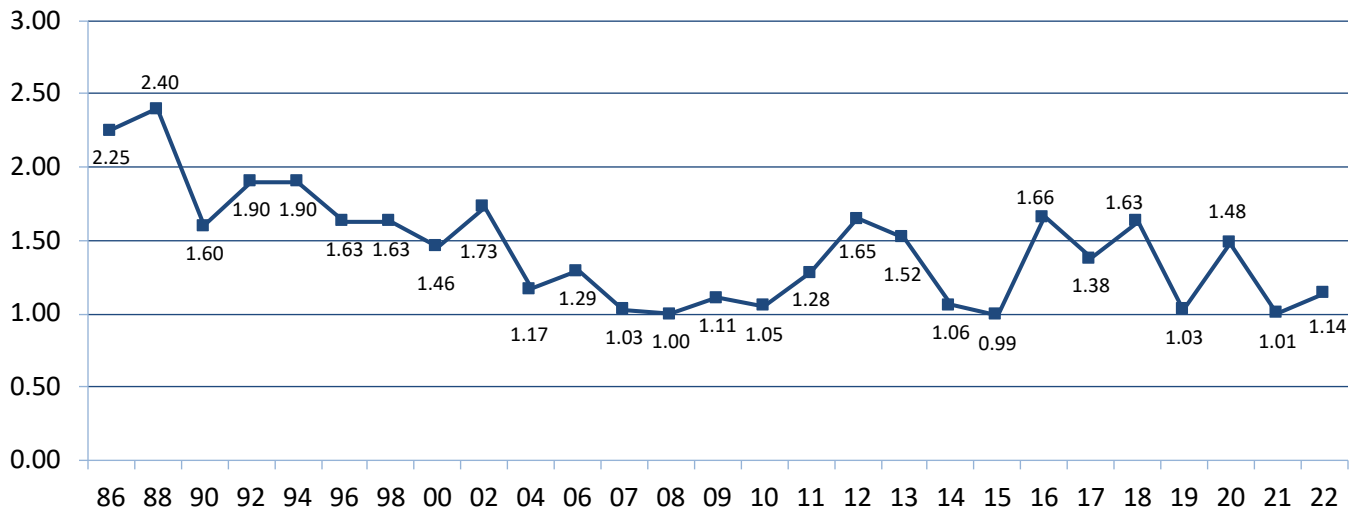
Fetal Mortality Rate > 500g 1986-2022

Figure 17



Fetal Mortality Rate > 2500g 1986-2022

Figure 18



## Racial Disparity

In order to make further progress improving birth outcomes in the United States, persistent racial disparities must be confronted head on. Black infants in America are more than twice as likely to die compared to White infants—with 10.4 Black infant deaths per 1000 births, compared to 4.4 White infant deaths per 1000 births, according to the most recent government data. \*While socioeconomic factors play a role—because racial disparities are seen even among college-educated birthing people with economic privilege and commercial insurance in the United States—other factors such as structural and societal racism, physiologic changes related to persistent stress and resulting epigenetic changes may be driving this difference.

An important analysis of the impact of racism on birth outcomes examines the impact of education, long held up as a protective factor and consistently linked to higher earnings for U.S. adults. Figure 21 demonstrates this analysis over the past three years in Southern New Jersey. As the figure indicates, Black Non-Hispanic birthing people in Southern New Jersey experience neonatal mortality at the highest rate regardless of educational attainment. Furthermore, White mothers who have stopped their education with a high school degree are half as likely to experience neonatal mortality as Black mothers with a college degree.

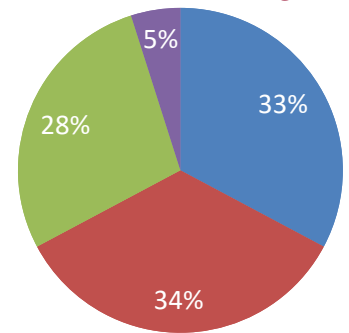
The Neonatal Mortality Rate (NMR) for White babies in Southern New Jersey in 2022 was 2.23 deaths per 1000 births while the Neonatal Mortality Rate for Black Non-Hispanic babies was 6.96, more than three times as high. As seen in Figures 19 and 20, Black babies made up only 16% of live births in the region in 2022, but accounted for 34% of neonatal mortality cases. This is largely due to a higher rate of Low Birth Weight births among Black patients, with 14.3% of Black babies weighing less than 2501 grams in 2022 in contrast with only 7% of White babies. Black infants were

more than four times more likely to be among the tiniest babies (less than 1001 grams or 2.2 pounds) and more than three times as likely to be among those under 1501 grams (3.3 pounds).

Hispanic infants are also at a heightened risk of poor birth outcomes, but to a lesser extent. They are more likely than non-Hispanic White infants in the region to be born preterm (10.2% versus 9%) and at a low birth weight (8.9% versus 7%) and are almost twice as likely to be among the smallest of infants under 1001 grams. They are also more likely to die in the first 28 days with a Neonatal Mortality Rate of 3.45 versus 2.23 for non-Hispanic White infants.

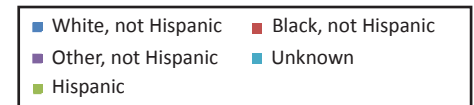
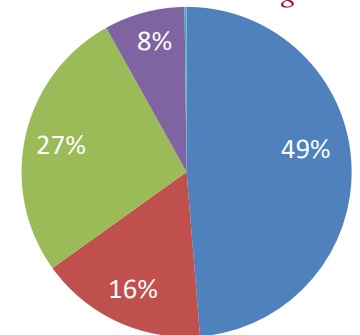
2022 Regional Neonatal Mortality by Race/Ethnicity

Figure 19



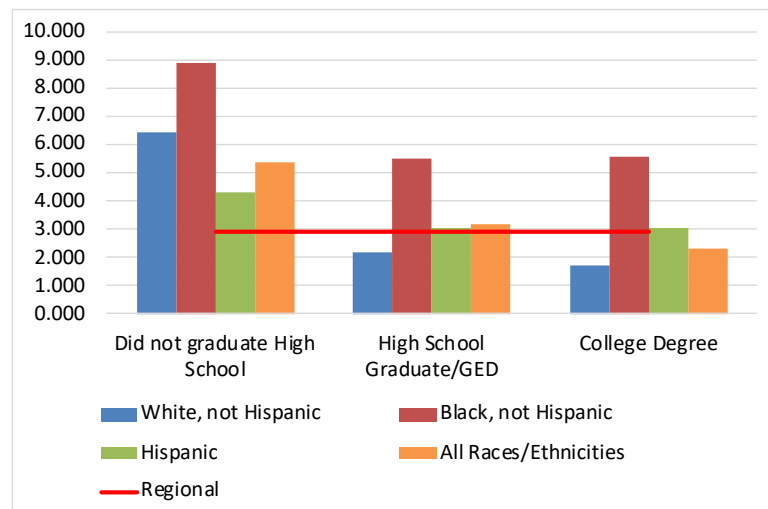
2022 Regional Live Births by Race/Ethnicity

Figure 20



Racial Disparities in Neonatal Mortality Rate 2020-2022

Figure 21



\* Ely DM, Driscoll AK. Infant mortality in the United States, 2020: Data from the period linked birth/infant death file. National Vital Statistics Reports; vol 71 no 5. Hyattsville, MD: National Center for Health Statistics. 2022. DOI: <https://dx.doi.org/10.15620/cdc:120700>.

\*\*Retrieved on June 13, 2023 from <https://www.nj.gov/governor/news/news/562021/20210125a.shtml>

## Transport Patterns

### Maternal Transports

An effective maternal transport system has been critical to the reduction in the mortality rate for Extremely Low Birth Weight (ELBW) infants in the region.

Survival rates for tiny infants—those weighing less than 1500 grams—improve when they are born at a facility with a Neonatal Intensive Care Unit (NICU). In 2022, 265 pregnant patients were transported to high-risk perinatal centers (see Figure 22).

The proportion of these transports going to Southern New Jersey Regional Perinatal Centers (RPCs) has consistently exceeded 85%.

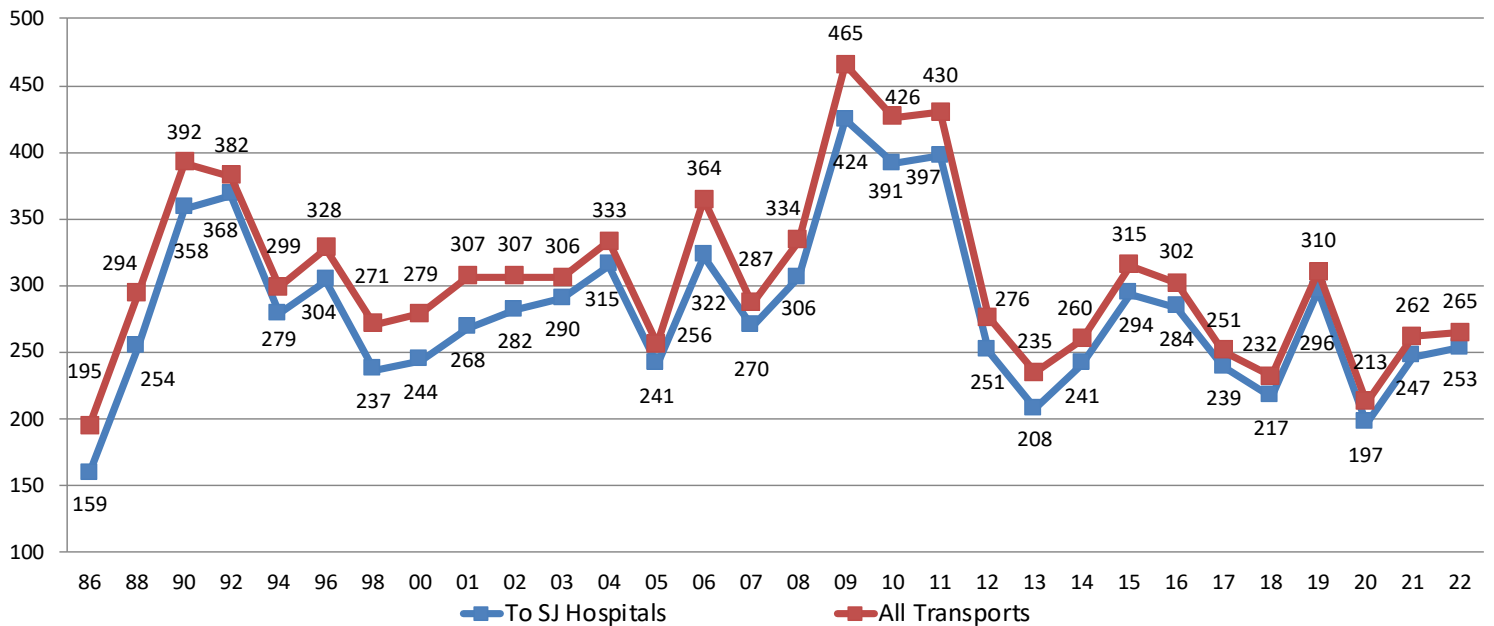
68% of the patients transported to Regional Perinatal Centers were 32 weeks gestation or less.

This trend corresponds with the decreased incidence of small babies born in hospitals without Neonatal Intensive Care Units and the increased survival of tiny infants.

Through the years, the Cooperative’s Regional Collaborative Database report has consistently demonstrated the effectiveness of the regional maternal transport system. Few infants weighing less than two pounds are born at community hospitals without Neonatal Intensive Care Units. Although every Community Perinatal Center (CPC) intermediate and Community Perinatal Center basic hospital is appropriately staffed and equipped to stabilize and care for tiny infants, having to transport these babies to a hospital with a Neonatal Intensive Care Unit is a risk that can be avoided if patients can be transported prior to delivery.

Maternal Transports

Figure 22



## Transport Patterns

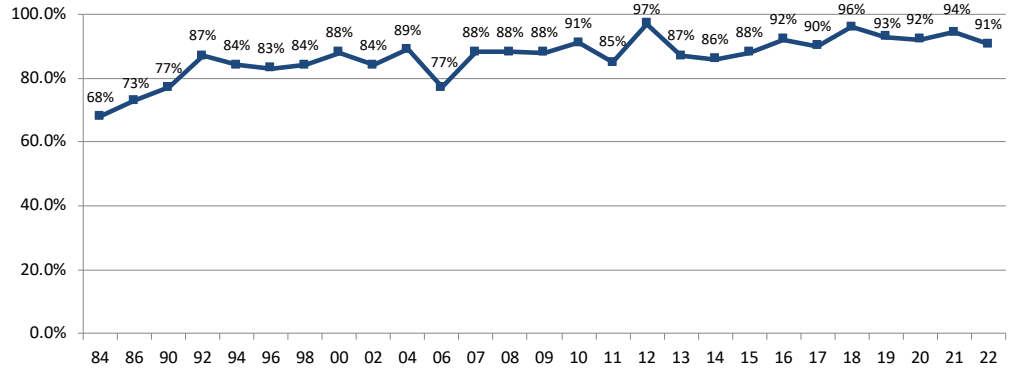
### Neonatal Transports

Early identification, referral and transport of high-risk pregnant patients helps ensure the majority of the smallest infants—who benefit the most from specialized neonatal care—are born at hospitals with these services. Figure 23 illustrates the significant change in where these infants are born since the first year these data were collected, when only 68% of the infants weighing one and two pounds were born at hospitals with Neonatal Intensive Care Units. In 2022, 91% of the tiniest infants were born at Regional Perinatal Centers and Community Perinatal Centers Intensive Facilities.

The maternal transport system ensures pregnant patients deliver in facilities prepared to care for their infants at any weight. In 2022, 243 infants were transported from Southern New Jersey facilities for neonatal intensive care (Figure 24). Of these infants, only 28.3% weighed 1500 grams or less, demonstrating the effectiveness of the maternal transport system in our region. Correspondingly, 52.0% of the transported infants weighed more than 2500 grams. Many of these larger infants who were transported required surgery or other specialized care in New Jersey and neighboring states.

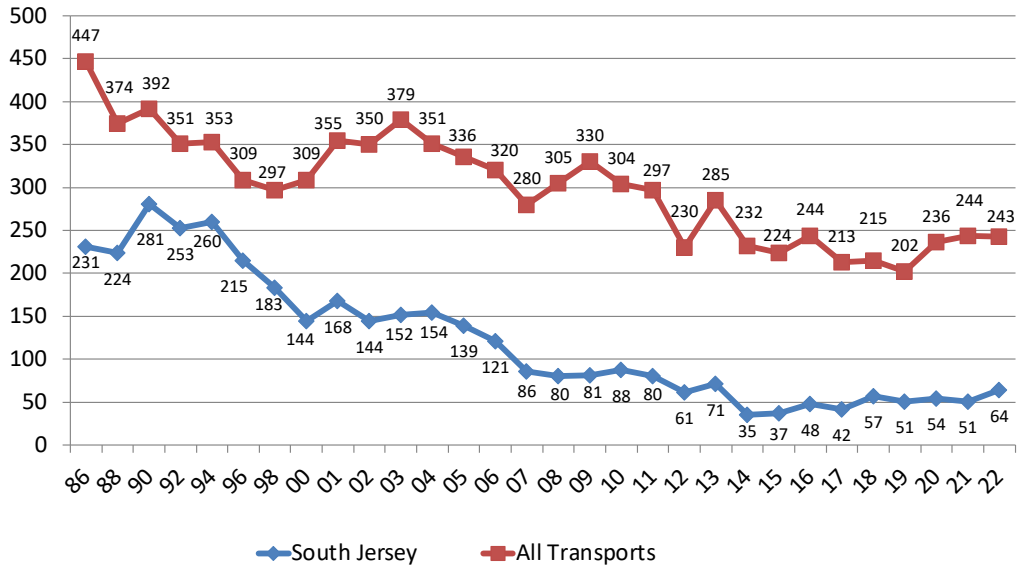
500-1000g Born at Regional Perinatal Centers (RPC) & Community Perinatal Centers (CPC) Intensive Facilities

Figure 23



Neonatal Transports

Figure 24



## Infants Born Outside Birth Facilities

The Cooperative's Regional Collaborative Database also tracks the number of infants born outside of hospital labor and delivery units. Outside births include emergency births at home, in transit to birthing facilities or in the hospital emergency department. This number does not include planned home deliveries.

In 1988, the number of births outside the hospital rose sharply and continued to climb until 1993 when the trend reversed. This rate remained relatively low until 2015 when it returned to the high levels of the early 1990s (Figure 25).

In 2022, 0.83% of births were outside births, a sharp rise from the previous

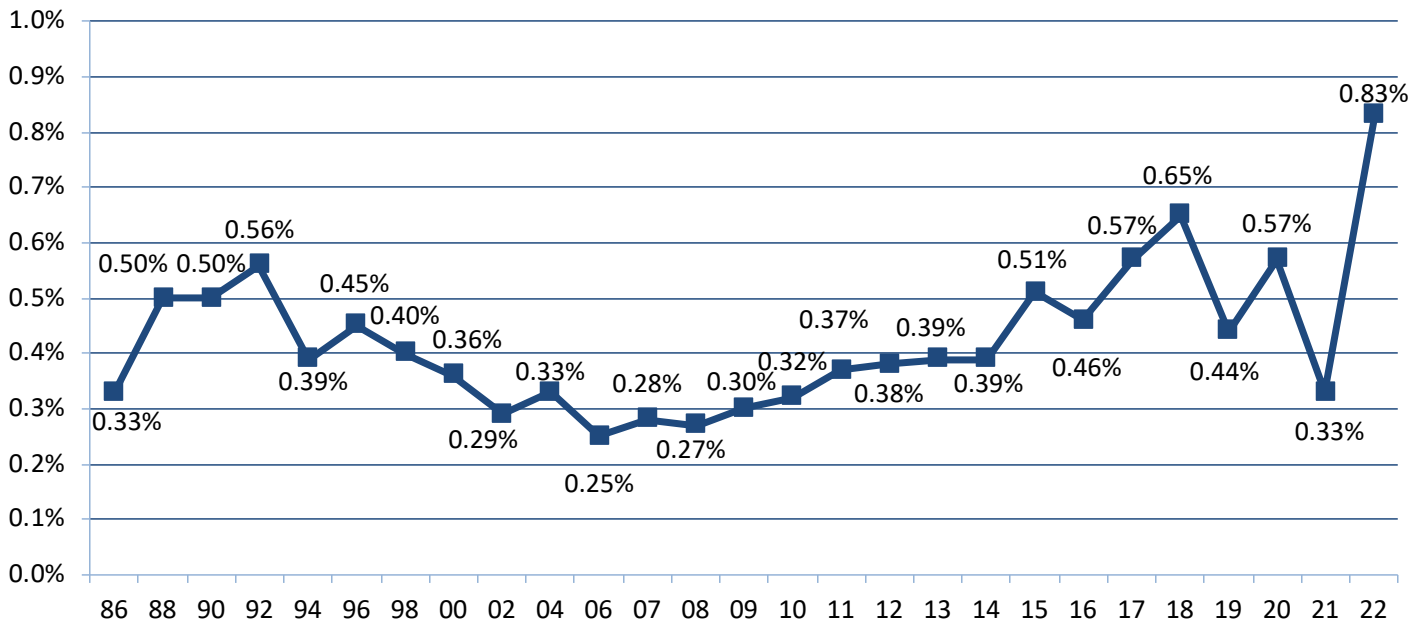
year. Previously, the highest number of recorded occurrences was 117 in 2018. The percentage of births outside the hospital has increased by 27.7% since 2018, with 151 births occurring outside the hospital in 2022.

Changes in the Vital Information Platform and later Vital Events Registration and Information system in the categorization of birth location may have improved identification of births in the hospital outside of labor and delivery. In 2022, 78 deliveries occurred in the hospital, outside of labor and delivery units, and 24 were born in transit to the hospital. 49 were unintended home births.

Although the majority of these infants are full-term, the fetal and neonatal mortality risk is higher than for infants born in a hospital with appropriate care and support. Therefore, continued surveillance is needed to determine preventable causes of these occurrences.

Percentages of Outside Births 1986 to 2022

Figure 25





## Definitions

### Live Births

Births of infants who take at least one breath regardless of gestational age or weight. Unless otherwise indicated, “births” in this document refers to live births.

### Total Births

Live births of any gestation and fetal deaths greater than 19 weeks gestation.

### Birth Rate

Annual number of births at Cooperative member birthing facilities.

### Birth Weight

The first weight of the newborn obtained after delivery. Birth weight is recorded in grams.

### Extremely Low Birth Weight (ELBW)

Birth weight of less than 1001 grams, or approximately 2 pounds, 3 ounces.

### Gestational Age

Clinical estimate of the length of time from the first day of the patient’s last normal menstrual period to the date of delivery.

### Induction

Labor brought on by medical intervention.

### Low Birth Weight (LBW)

Birth weight of less than 2501 grams, or approximately 5 pounds, 8 ounces.

### Newborn Feeding Method

The type of feedings (breast, formula or both) given in the 24 hours prior to discharge from the hospital.

### Nullipara

A patient who has not previously delivered a live infant.

### Teen Birth

Birth to a patient under 20 years of age.

### Tobacco, alcohol and substance use during pregnancy

Use of these substances as self-reported by patient.

### Trimesters of Pregnancy

The first trimester includes the first 12 weeks of pregnancy; the second trimester encompasses the 13<sup>th</sup> through the 27<sup>th</sup> weeks; the third trimester is the period after the 27<sup>th</sup> week through delivery.

### Vaginal Birth After Previous Cesarean (VBAC)

Vaginal delivery of a patient who has previously had a Cesarean delivery.

### Very Low Birth Weight (VLBW)

Birth weight of less than or equal to 1501 grams, or approximately 3 pounds, 5 ounces.

### Fetal Death

Death of a fetus prior to birth and after 19 weeks gestation.

### Neonatal Death

Death of an infant within the first 27 days of life.

### Perinatal Mortality

The sum of fetal deaths of 20 or more weeks gestation plus neonatal deaths.

### Post Neonatal Death

Death of an infant aged 28 days to one year of life.

### Primigravida

An individual who is pregnant for the first time.

## 2022 Regional Perinatal Database for South Jersey

Supporting data-driven interventions to improve the health of mothers, birthing people and babies in the region.



*Southern New Jersey*  
**PERINATAL  
COOPERATIVE**

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