



Achievement 2020
Regional Collaborative Database

Southern New Jersey Perinatal Cooperative

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



2020 ACHIEVEMENT

Report of the Regional Collaborative Database

Since its inception in 1981, SNJPC 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 that high-risk mothers 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 women and newborns
- Appropriate use of perinatal personnel and facilities
- Assurance of reasonable cost effectiveness

Thank You

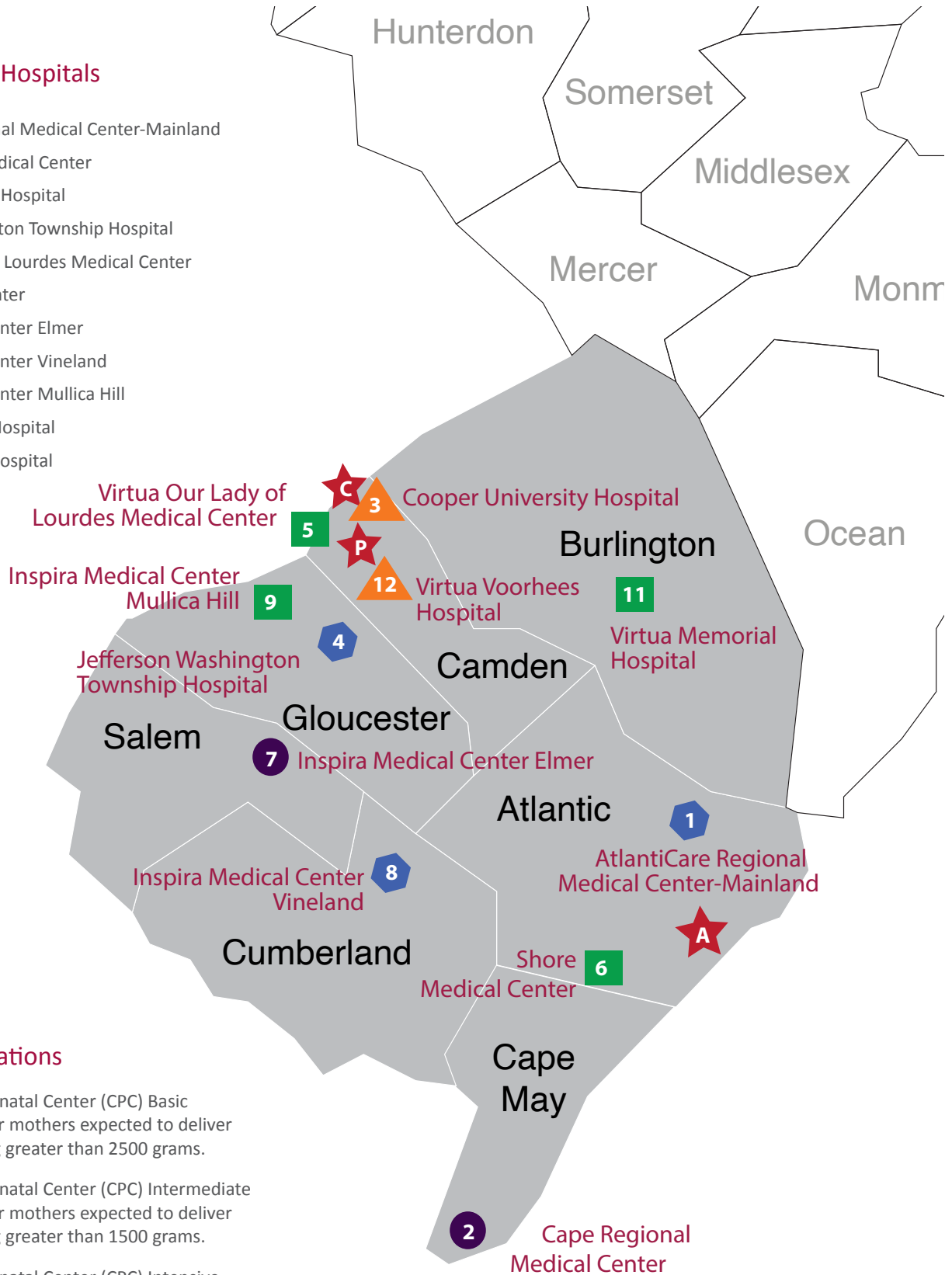
Production of the Regional Collaborative Database report is possible only through the support and assistance of the obstetrical and nursery staffs of our member hospitals. Their contributions are invaluable. We extend our gratitude to these individuals whose consistently high level of professionalism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

Table of Contents





Regional Hospital Summary	5
Vital Information Platform	7
Birth Trends	8
Distribution of Births	9
County	
Maternal Age	
Teen Births	
Pregnancy Characteristics.....	12
Prenatal Care	
Plurality	
Risk Assessment.....	13
Racial Disparities.....	14
Newborn Feeding Method.....	15
Method of Delivery.....	16
Key Steps to Reduce Overall Cesarean Rates in the Region	
Infants Born Outside of the Hospital.....	18
Birth Weight Trends	19
Neonatal Mortality	20
Fetal Mortality.....	21
Transport Patterns	22
Maternal	
Neonatal	
Headlines	24
Definitions	25


SNJPC Member Hospitals

- 1 AtlantiCare Regional Medical Center-Mainland
- 2 Cape Regional Medical Center
- 3 Cooper University Hospital
- 4 Jefferson Washington Township Hospital
- 5 Virtua Our Lady of Lourdes Medical Center
- 6 Shore Medical Center
- 7 Inspira Medical Center Elmer
- 8 Inspira Medical Center Vineland
- 9 Inspira Medical Center Mullica Hill
- 10 Virtua Memorial Hospital
- 11 Virtua Voorhees Hospital



Hospital Designations

-  Community Perinatal Center (CPC) Basic provides care for mothers expected to deliver infants weighing greater than 2500 grams.
-  Community Perinatal Center (CPC) Intermediate provides care for mothers expected to deliver infants weighing greater than 1500 grams.
-  Community Perinatal Center (CPC) Intensive provides care for mothers expected to deliver infants weighing greater than 1000 grams.
-  Regional Perinatal Center (RPC) provides full range of services for high-risk mothers and newborns.

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

REGIONAL HOSPITAL SUMMARY

	BASIC		INTERMEDIATE		INTENSIVE		RPC		REGION	
	ACTUAL	RATE %	ACTUAL	RATE %	ACTUAL	RATE %	ACTUAL	RATE %	ACTUAL	RATE %
TOTAL HOSPITAL BIRTHS	590		4941		4615		7653		17799	
LIVE BIRTHS IN HOSPITAL	589		4914		4566		7587		17656	
NEONATAL MORTALITY	2	3.40	7	1.425	12	2.63	25	3.30	46	2.61
LBW - LIVE BIRTHS < 2501 GM	24	4.07	318	6.47	414	9.07	728	9.60	1484	8.41
LBW - NEONATAL MORTALITY	2	83.33	3	9.43	10	24.16	22	30.22	37	24.93
VLBW - LIVE BIRTHS < 1501 GM	3	0.51	24	0.49	69	1.51	158	2.08	254	1.44
VLBW - NEONATAL MORTALITY	2	666.67	3	125.000	10	144.93	19	120.25	34	133.86
ELBW - LIVE BIRTHS < 1001 GM	3	0.51	7	0.14	24	0.53	75	0.99	109	0.62
ELBW - NEONATAL MORTALITY	2	666.67	2	285.714	10	416.667	17	226.67	31	284.404
ELBW2 - LIVE BIRTH (500-1000)	2	0.34	5	0.10	18	0.39	65	0.86	90	0.51
ELBW2 - NEONATAL MORTALITY	1	500.00	0	0.000	4	222.22	9	138.46	14	128.440
ELBW3 - LIVE BIRTH (751-1000)	0	0.00	2	0.04	11	0.24	35	0.46	48	0.27
ELBW3 - NEONATAL MORTALITY	0	0.000	0	0.000	2	181.82	2	57.14	4	83.33
FETAL MORTALITY > 499 GM	1	1.698	18	3.651	28	6.103	40	5.251	87	4.909
FETAL MORTALITY > 2500 GM	1	1.767	6	1.304	5	1.203	12	1.747	24	1.482
MATERNAL TRANSPORTS (% of total births + trans)	27	4.38	71	1.42	37	0.80	2	0.03	137	0.76
NEONATAL TRANSPORTS (% of live births)	27	4.58	65	1.32	50	1.10	94	1.24	236	1.34
NEONATAL MORTALITY AFTER TRANSPORTS (% of live births)	1	1.70	3	0.61	2	0.44	2	0.26	8	0.45
LIVE BIRTHS OUTSIDE HOSPITAL	6	1.02	35	0.71	34	0.74	26	0.34	101	0.57



Vital Information Platform

The New Jersey Vital Information Platform (VIP) system is one of the most comprehensive perinatal data systems in the country. Birth record information and perinatal data are tracked for every birth in New Jersey hospitals.

Adopted by all NJ birthing hospitals in 2015, VIP replaced the DOS-based Electronic Birth Certificate (EBC) which was the source for this report since 1993. Southern New Jersey Perinatal Cooperative (SNJPC), Family Health Initiatives (FHI) and the New Jersey Department of Health (NJDOH) coordinate support by meeting regularly to discuss issues with use, definitions and data quality. VIP's web-based interface complies with federal standards with minimal support from hospitals' IT departments.

SNJPC staff support quality improvement and provide technical assistance to regional hospitals related to VIP. VIP has transformed how New Jersey's hospitals share birth record information and perinatal data, expanding our possibilities for new insight.

Live Birth Analysis

As you review the data in this document, you will see that the denominator used for factors has some variation. In order to present data in the most useful format, SNJPC uses two different live birth denominators. When presenting hospital-based data (including the official Live Births number, Neonatal Mortality Rate, Fetal Mortality Rate and birth weight trends), we use Live Births in Hospitals. This number excludes outside births and was 17,656 for 2020.

For population, disparity and behavioral health based data (birth and pregnancy characteristics, delivery and feeding method), SNJPC uses Total Live Births. This number includes outside births and was 17,757 for 2020.

Disclaimer

The VIP data in the following **charts** represents births that occurred in Cooperative member facilities.

Information is limited to those who delivered at or were transferred to a regional facility. This is hospital reported information and is not to be considered official or population-based. These data are preliminary and are not considered official by the NJDOH 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 VIP birth facility.

Birth Trends

Consistent with statewide and national trends, births in Southern New Jersey peaked in 1990 and have declined rapidly in the past decade, dropping to 17,757 births in 2020 (see Figure 1).

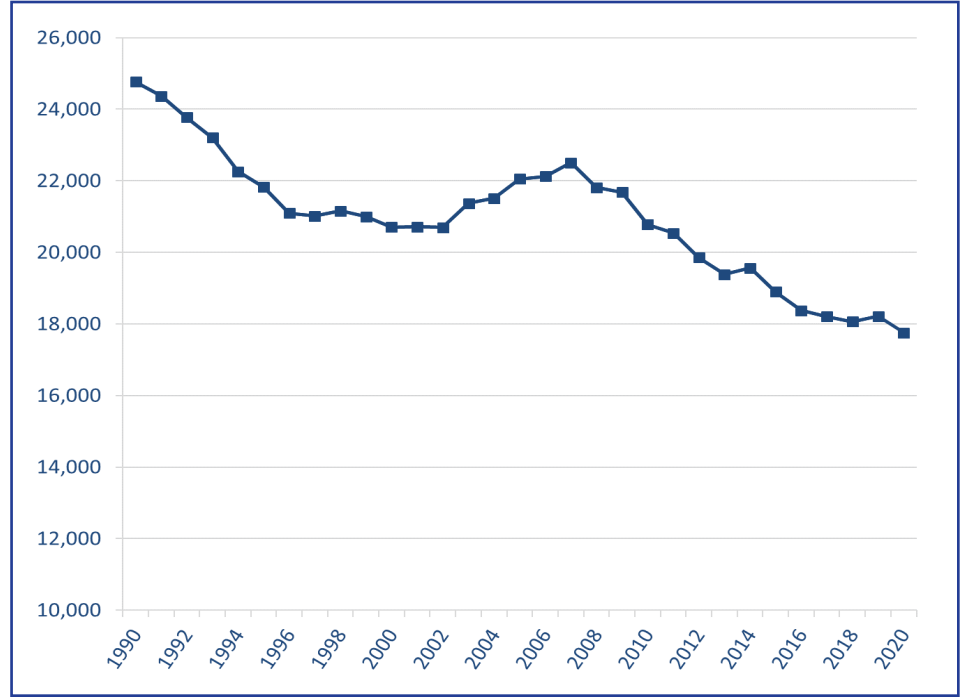
NJ statewide birth trends, including preliminary 2020 data, are presented in Figure 2. NJ experienced a 22% decrease in total births between 1990 and 2020. South Jersey contributed to this decline with a 28% decrease in births to mothers in the region.

Economic and public health analyses of the reduction in birth rates nationally point to significant decreases in births to teens, especially Black and Hispanic teens, as the driver for the overall reduction.

There is considerable speculation regarding the impact of COVID-19 on in-hospital birth trends in the region. An analysis of 2020-2021 monthly data in comparison with trends over the past five years will allow us to gain a clear understanding of the effect in the upcoming months.

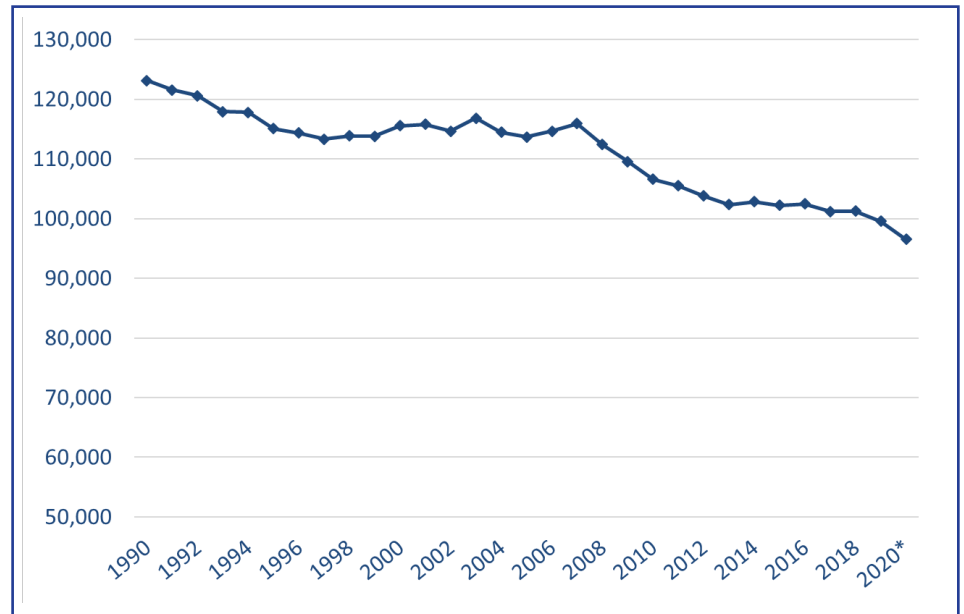
Southern New Jersey Births 1990-2020

Figure 1



New Jersey Births 1990-2020

Figure 2



Distribution of Births

Of the 17,757 births in the southern region in 2020, 64% were to residents of the region's northern counties (Burlington, Camden and Gloucester) (Figure 3). Nonresidents accounted for 3.4% of births in South Jersey.

Table I depicts the total births that occurred in each county, comparing the five-year average from 2011- 2015 with 2016-2020. The overall decline in live births across the region was 7.8%, but the size of the change varied widely across counties. While the number of births decreased in all counties, the largest drop occurred in Salem County, with the closing of the Memorial Hospital of Salem County in 2014.

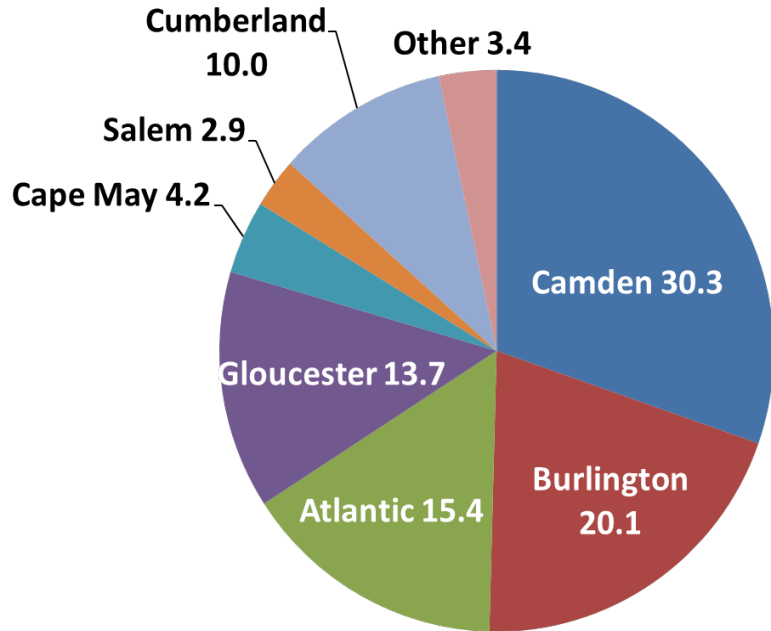
Disparities in birth outcomes exist in all of the counties, but because the population is highest in the northern counties and Atlantic City, they are more frequently eligible for consistent state and federal funding to address these concerns.

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 foundations and charities.

SNJPC works with our hospitals, coalitions and partner organizations in these areas to bring high-quality services that address community needs.

2020 Percentage of Births by County of Residence

Figure 3



County Birth Totals Five-Year Averages 2011-2020

Hospital Births by County	2011-2015	2016-2020	%Change
Atlantic	3437	3041	-11.51%
Burlington	2497	2197	-12.02%
Camden	8863	8588	-3.09%
Cape May	482	344	-28.55%
Cumberland	2016	1812	-10.11%
Gloucester	1975	1924	-2.57%
Salem	445	278	-37.54%
REGION	19713	18185	-7.76%

Table I

Maternal Age

In 2020, the highest percentage of births in the region occurred to mothers aged 30-34 years (33.4%), followed by 25-29 years (25.7%), 35-39 years (18.8%), 20-24 years (14.6%), 40-44 years (4.2%), under 20 years (2.8%), and 45 years and older (0.4%)(Figure 4).

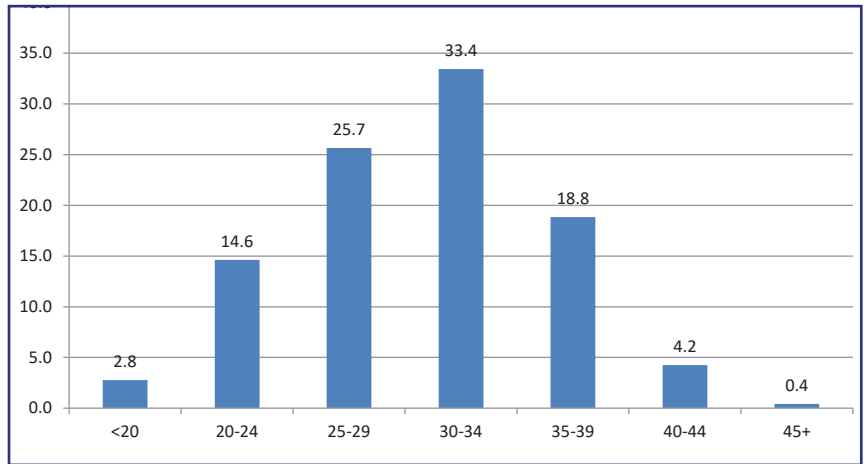
Shifts in the distribution of births by maternal age have been dramatic since 2010. Teen births, discussed in the next section, decreased from 8.6% to 2.8%, a 67% decrease. During the same time period, births to mothers aged 35-39 increased from 12.3% to 18.8%, a 53% increase (Figure 5).

Variation in the distribution of births by age group can be seen at the county level in Figure 6. Of the counties in the Southern consortia, Burlington County had the highest proportion of mothers aged 35 and over (27.6%) while Cumberland had the highest percentage of mothers under 20 (5.7%).

Cumberland County is ranked last in the state for teen births, but over the past five years, it has had a 14.9% decrease in births to teens, even with the slight increase seen in 2020. (The total number of births is small and can impact the percent of births without a real change in the number of births.)

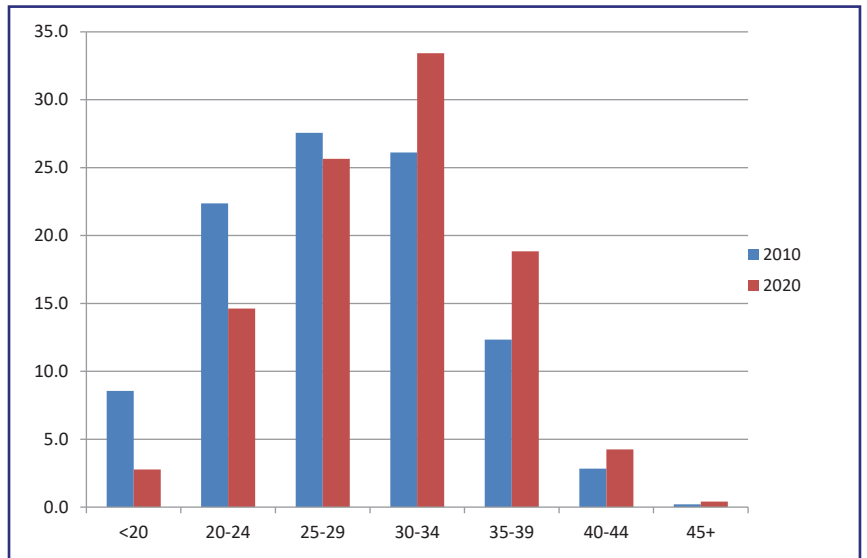
2020 Percent of Births by Maternal Age

Figure 4



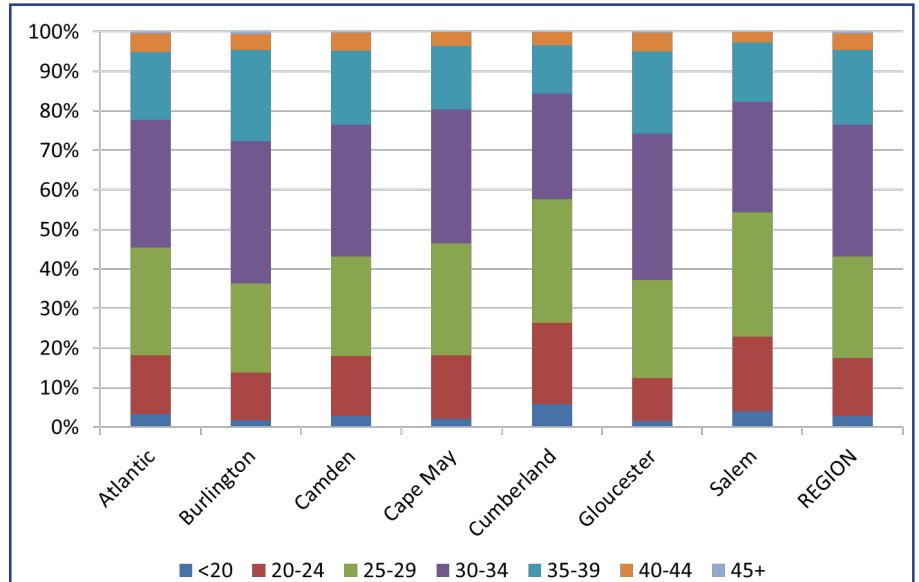
2010 & 2020 Percent of Births by Maternal Age

Figure 5



2020 County Percent of Births by Maternal Age

Figure 6



Births to Teens

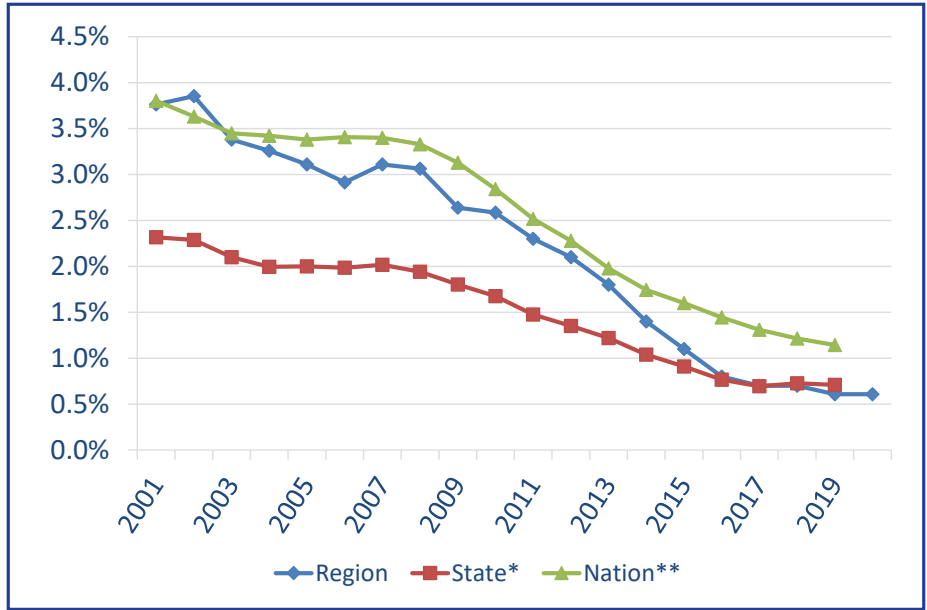
The percentage of births to teens aged 17 years and younger in the southern region has been on the decline in the past 20 years, decreasing 84% from 3.8% in 2001 to 0.6% in 2020 (Figure 7). While previously much higher than the state average, the gap has closed over time and since 2016 rates in the region have been similar to the rates statewide.

In 2020, the majority (78.0%) of teens giving birth were 18 and 19 years of age while 19.1% of teen mothers were 16 and 17-year-olds. Births among teens under 16 were rare, making up only 2.9% of teen births in 2020 (Figure 8).

SNJPC youth programs work with school and community organizations to influence teen pregnancy rates in Southern NJ including in Salem and Cumberland counties which have some of the highest percentages of births to young mothers in the state. These programs are conducted by trained facilitators and address pregnancy and sexually transmitted infection among youth ages 11-19 using evidence-based programs focused on education, prevention and youth development.

Births to Teens 17 and Younger as Percent of Total Births

Figure 7

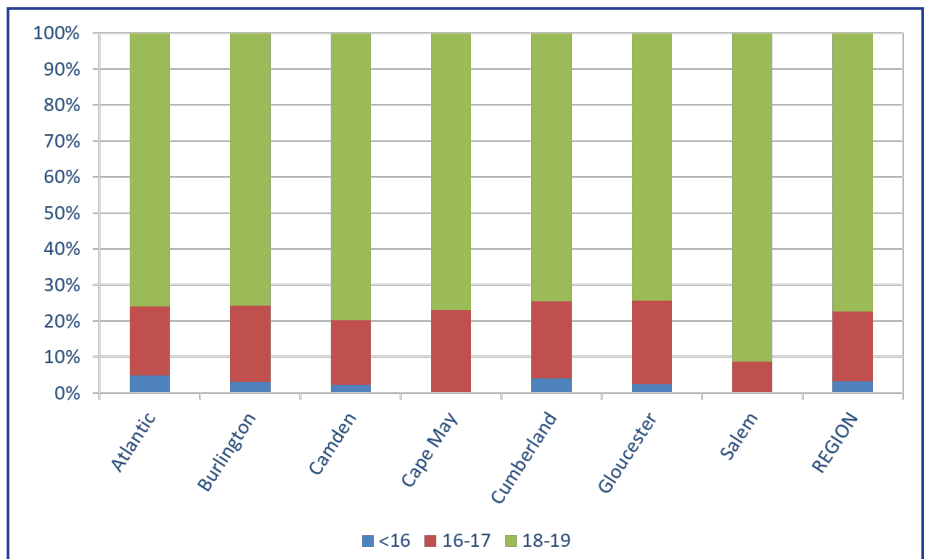


*Source: Center for Health Statistics, New Jersey Department of Health. <https://www-doh.state.nj.us/doh-shad/query/result/birth/BirthBirthCnty/Count.html>. 5/28/2021

**Source: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics, Natality public-use data 2007-2019, on CDC WONDER Online Database, May 2021. Accessed at <http://wonder.cdc.gov/natality-current.html> on May 11, 2021, 11:16:49 AM

2020 Births to Teens in Different Age Groups by County

Figure 8



Pregnancy Characteristics

Prenatal Care

Early and regular prenatal care is an important strategy to assure healthy pregnancy outcomes for mothers and infants. Two of the most significant benefits are improved birth weight and decreased risk of preterm delivery. Pregnant women who do not receive adequate prenatal care are at risk for complications that may not be detected or managed in a timely manner.

As shown in Figure 9, first trimester entry to prenatal care in the region remains consistent with statewide numbers at 70.7% in 2020. Only 1.6% of women in the region received no prenatal care prior to delivery.

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

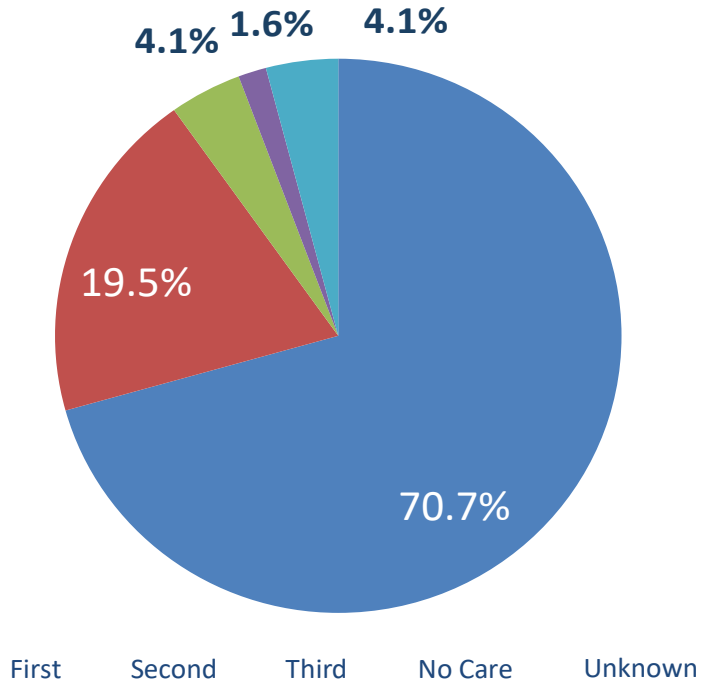
Plurality

In 2020, singleton births represented 96.31% of all births in the region, twin births represented 3.56% and triplet births represented 0.14% of all births. There were no quadruplet births in 2020 (Table II).

After holding relatively steady (with some variation) in the past decade, births to twins have been lower in the past three years. Births to twins in 2020 decreased by 16.63% from the recent peak in 2011. It is unclear if this represents a true change given the relatively small numbers.

Entry to Prenatal Care by Trimester
SNJPC Member Hospital Births

Figure 9



Plurality

	N	%	N	%	N	%	N	%	N
2010	20202	96.16	785	3.74	21	0.10	0	0	806
2011	19844	95.51	888	4.27	45	0.22	0	0	933
2012	19276	95.99	787	3.92	19	0.09	0	0	806
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	17101	96.31	632	3.56	24	0.14	0	0	656

Table II

Risk Assessment

Risk assessments conducted during pregnancy identify women 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 women identified as being at-risk receive high-quality prevention services or treatment for their conditions.

Providers assure linkage to appropriate services and resources through referral. Reducing the impact of these factors associated with poor pregnancy outcomes is critical to both mother and baby.

Table III depicts some of the risk factors that were associated with Very Low Birth Weight (VLBW) births in 2020.

The association between tobacco use during pregnancy and the occurrence of low birth weight births is clear from this analysis. While 7% of all deliveries were to women who used tobacco in pregnancy, 12% of VLBW deliveries were to women who were in the group.

Lack of prenatal care and multiple births (twins, triplets) are more likely to result in the birth of a VLBW infant. Maternal risks such as hypertension and pre-eclampsia can also be associated with decreased birth weight.

In data reflective of national reports, Black women in South Jersey continue to have a higher proportion of low birth weight babies. Table III shows that while 20% of the births in the region were to Black women, a much higher proportion of the VLBW births (36%) were to Black women.

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

Southern Region	ALL	<1501 grams	>1500 grams
<i>Live Births</i>	17757	261	17493
Mother's race: White	62%	42%	62%
Mother's race: Black	20%	38%	19%
Mother's ethnicity: Hispanic	25%	28%	24%
1st trimester entry to prenatal care	71%	72%	71%
No prenatal care	2%	4%	2%
Used tobacco during pregnancy	7%	13%	7%
Plurality of 2 or more	4%	26%	3%
Mother's age less than 20 years	3%	5%	3%
Mother's age 35 years or greater	24%	23%	24%
Primigravida	28%	28%	28%
Maternal risk: Hypertension in pregnancy	11%	30%	11%
Maternal risk: Eclampsia	*	*	*

Table III

Racial Disparity

In order to make further progress in 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 as white infants— 10.8 deaths per 1,000 births compared with 4.6 per 1,000 births for white babies, according to the most recent government data.

In South Jersey in 2020, the Neonatal Mortality Rate (NMR) for white babies was 2.65 per 1,000 births while the NMR for Black babies was 6.97. As seen in Figures 10 and 11, Black babies made up only 18% of live births in the region in 2020, but accounted for 37% of neonatal mortality cases.

While socio-economic factors play a role, because racial disparities are seen even among college-educated women with private 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. Figure 12 shows that in South Jersey, Black women with advanced degrees are more than twice as likely to have babies born weighing less than 3.3 lbs. (1500 gms) as white women who have less than a high school diploma. While the single year numbers for VLBW are small (254), this does parallel the national data.

On January 23, 2020, Nurture NJ, a statewide campaign to reduce maternal and infant mortality and morbidity, announced the development of a comprehensive, actionable strategic plan focused on improving outcomes and achieving equity in maternal and infant health.

SNJPC is working with all the regional hospitals, the NJ Department of Health and the NJ Hospital Association on strategic initiatives to meet the challenges set by the plan. Key activities include supporting the training and availability of community doulas, offering implicit bias training to partners in the region, conducting the Black Mamas Voices focus group series and continuing to offer programs designed to target Black infant and maternal mortality, including the Healthy Women, Healthy Families and Healthy Start programs.

Neonatal Mortality by Race/Ethnicity

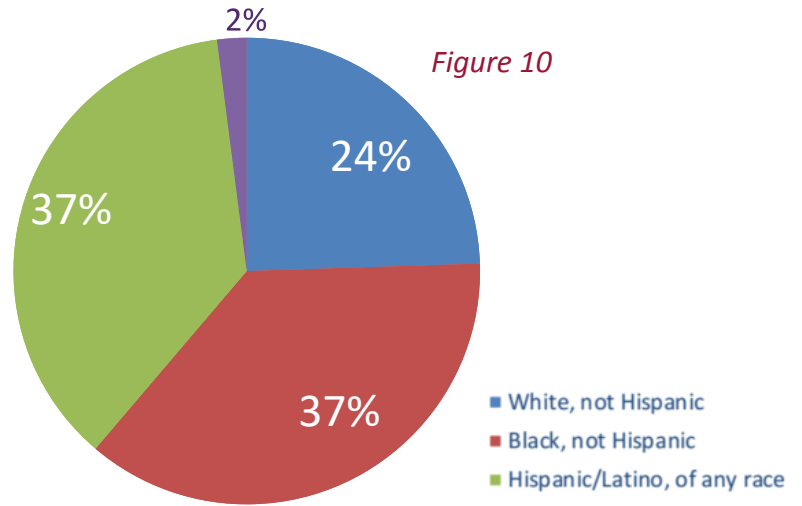


Figure 10

Live Births

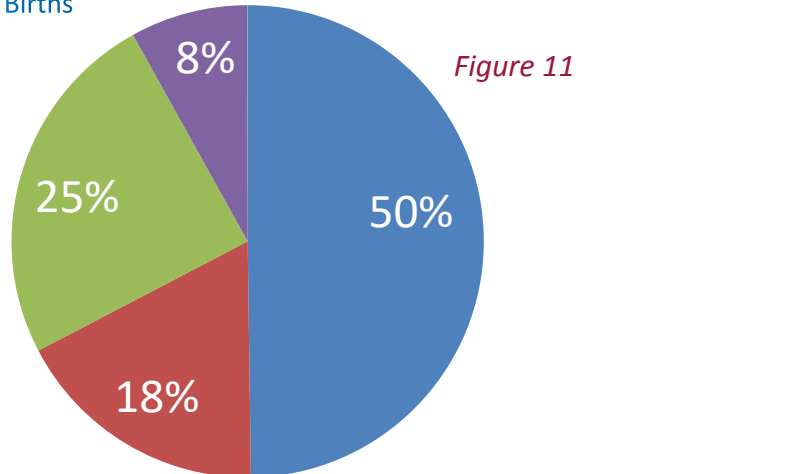
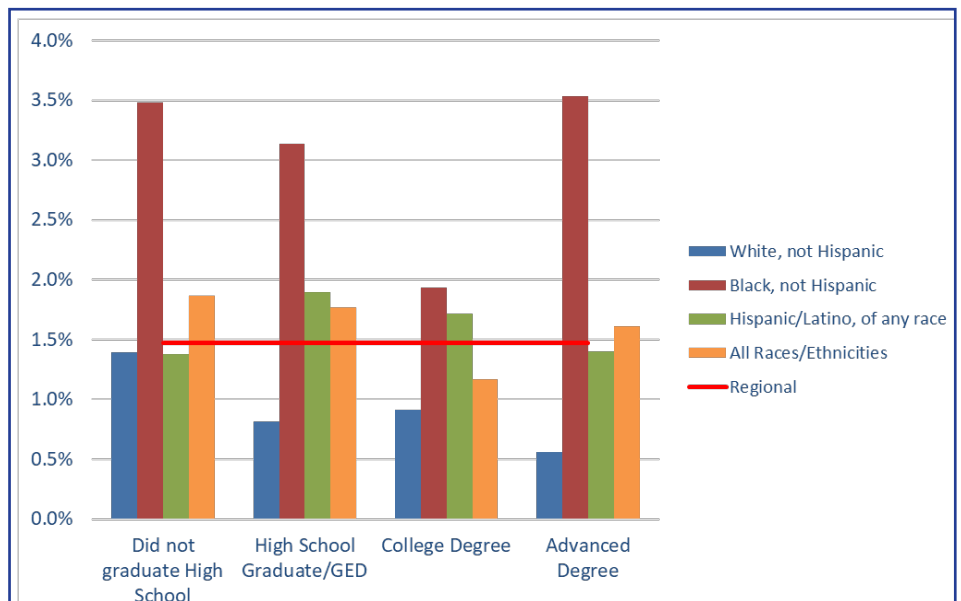


Figure 11

Racial Disparities in VLBW Births

Figure 12



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.

Despite its benefits, many women do not breastfeed exclusively.

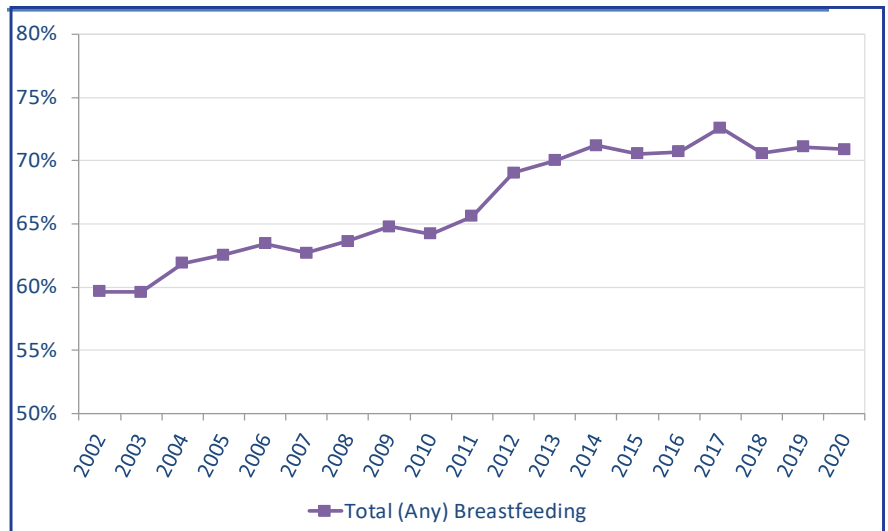
In 2020, 70.9% of women who gave birth in SNJPC member hospitals breastfed their newborns, and 44.0% breastfed exclusively during their hospital stay.

Regional breastfeeding rates have risen sharply since 2000 and have consistently stayed above 70% in recent years (see Figure 13). Since 2013, efforts to improve supportive messages and lactation resources as a part of prenatal delivery and postpartum care have been standardized by most regional providers.

In Southern NJ, as elsewhere in the United States, breastfeeding rates vary by race and ethnicity. Table IV depicts these trends over time. Between 2009 and 2020, the percentage of Black mothers breastfeeding at discharge increased 23.9%, however, white and Hispanic mothers 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 women’s choices, about breastfeeding their infants.

Breastfeeding at Discharge 2000-2020

Figure 13



Breastfeeding at Discharge by Race/Ethnicity

Year	Black	White	Hispanic
2009	51.5%	66.8%	70.4%
2010	50.8%	64.6%	70.6%
2011	53.5%	66.5%	66.8%
2012	57.5%	69.7%	73.0%
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%
Change over time	23.9%	8.9%	-1.4%

Table IV

Method of Delivery

New Jersey remains in the top 10 states for high rates of Cesarean births, however, improvements have been made over the past five years. Figure 14 depicts the relationship between C-section rates in South Jersey and those for the state (most recently published are preliminary.) † The overall trends align since 2005, but C-sections in South Jersey hospitals decreased by 12.6% while the state rate decreased only 9.4% since 2009.

Since 2015, SNJPC member hospitals have reduced the region's overall C-section rate by 10.4% with 8 of 11 member hospitals achieving a 5% or greater decrease.

In 2020, NJDOH released 2018 hospital data for low risk Nulliparous, Term, Singleton, Vertex (NTSV) C-sections, and five southern regional hospitals met or exceeded the national target of 23.9%, an improvement of 1 hospital in the region compared to 2016. †† The regional average NTSV C-section rate of 22.9% was significantly lower than the statewide average of 26.2%, marking a regional improvement towards C-section reduction among South Jersey hospitals.

Recently, the Joint Commission on Accreditation of Hospitals published 2018-2019 hospital data on C-section rates on Quality Check, a public facing website, with a goal of reducing rates to less than 30%. As can be seen in Table V, in 2020, Cooper, Inspira Elmer, Virtua Our Lady of Lourdes and Virtua Voorhees met this criteria with Jefferson Washington Township only just over the goal based on VIP data. With continued focus and planning, most regional hospitals are in strong positions to meet this benchmark in the near future.

Improvements in the regional percentage of C-sections for mothers who experience spontaneous labor as well as an increase in vaginal deliveries is good news.

There was a minor decrease in the percentage of mothers who have no trial of labor before a repeat C-section between 2010 and 2020 (see Table VI).

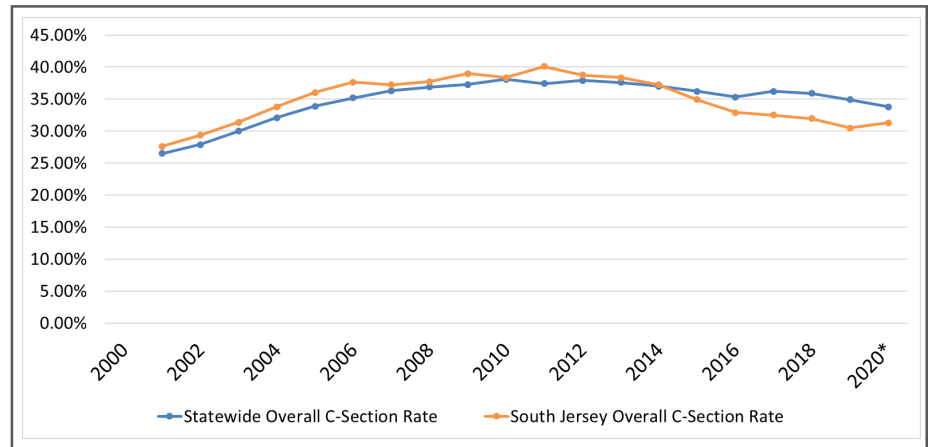
The last five years have seen a decline in these procedures.

† <https://www-doh.state.nj.us/doh-shad/view/sharedstatic/Provisional2020Births.pdf>

†† https://www.state.nj.us/health/maternal/documents/ntsv_hospital_rate_2018.pdf

New Jersey and South Jersey Overall C-Section Trends

Figure 14



Cesarean Section Rates by Hospital: 5-Year Comparisons

Hospital	2015	2020	% Change
AtlantiCare Regional Medical Center	40.0%	38.6%	-3.5%
Cape Regional Medical Center	39.9%	35.5%	-11.0%
Cooper University Hospital	29.2%	26.7%	-8.6%
Inspira Medical Center Elmer	19.5%	19.1%	-2.3%
Inspira Medical Center Vineland	37.7%	32.2%	-14.5%
Inspira Medical Center Mullica Hill (opened Nov. 2019)		34.0%	
Jefferson University Hospital – Washington Township	35.3%	30.2%	-14.4%
Shore Memorial Hospital	46.5%	39.6%	-14.8%
Virtua Our Lady of Lourdes Medical Center	30.5%	26.4%	-13.5%
Virtua Memorial Hospital	36.0%	31.7%	-11.9%
Virtua Voorhees Hospital	32.3%	29.1%	-9.8%
REGION	34.9%	31.3%	-10.4%

Table V

2010-2020 Method of Delivery

Year	Cesarean Rate	Nullipara C-section	No Trial Repeat C-section	Vaginal Birth After C-section
2010	38.37%	34.30%	84.50%	52.60%
2011	40.09%	36.12%	83.96%	58.50%
2012	38.76%	34.15%	83.07%	51.18%
2013	38.35%	30.20%	82.97%	57.49%
2014	37.26%	30.51%	83.55%	64.71%
2015	34.91%	26.42%	83.24%	72.66%
2016	32.91%	24.72%	82.21%	77.68%
2017	32.51%	24.27%	80.75%	81.36%
2018	31.95%	22.92%	80.96%	76.96%
2019	30.48%	23.01%	81.03%	78.87%
2020	31.29%	21.99%	78.55%	81.23%
Change over time	-18.45%	-35.89%	-7.04%	54.43%

Table VI

Key Steps to Reduce Overall Cesarean Rates in the Region

Reduce NTSV Cesarean births.

In 2020, the percent of Cesarean births to standard presenting women was 22.0%. The percent had been steadily increasing over the previous decade and reached a high point of 36.1% in 2011 and is beginning to decline. Making a change in rates for this group is critical to a statewide reduction in C-section rates (see Figure 15).

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

In 2020, 78.5% of deliveries to women who had repeat Cesareans were Cesareans without a trial of labor. This type of delivery has been on the decline overall in South Jersey. Since 2010, there has been a 7.1% decrease in no trial repeat C-sections.

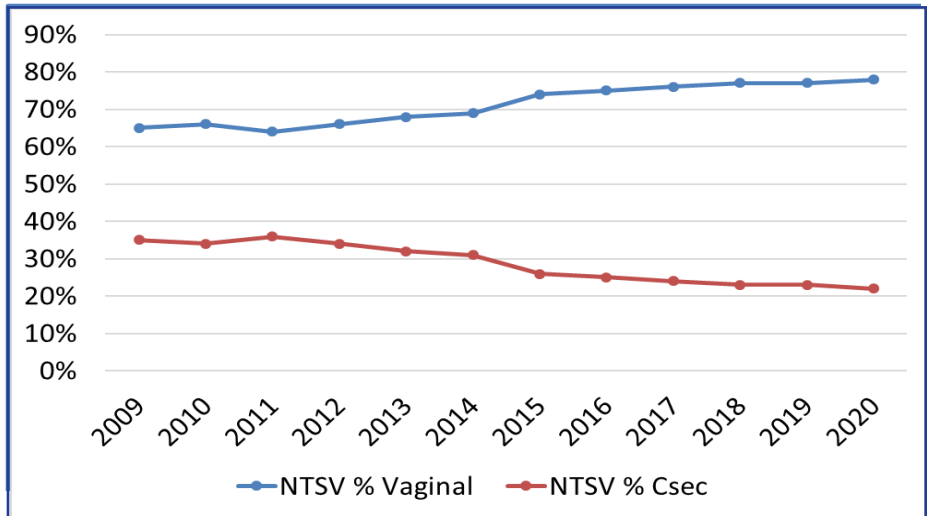
Increase successful VBAC (Vaginal Birth After Cesarean) births at 39+ weeks gestation.

VBACs have increased by 54.4% regionally over the past 10 years, and there was an 11.8% increase over the past 5 years (see Table VI).

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 US.

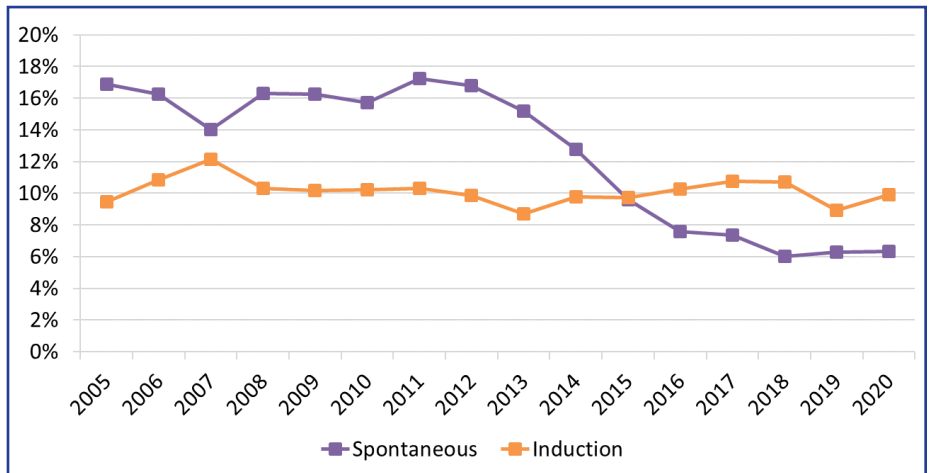
NTSV by Method of Delivery

Figure 15



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

Figure 16



Infants Born Outside the Hospital

The regional database also tracks the number of infants born outside of hospital labor and delivery units. Outside births include emergency births at home, in transit or in the hospital emergency room. This number does not include planned home deliveries.

In 1988, the number of births outside the hospital rose sharply and continued 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 17).

In 2020, 0.57% of births were outside hospital births, a drop from the recent peak in 2018, but still very high. As the overall birth rate decreases in the region, it is not surprising to see higher percentages, even in population level analyses. The highest number of recorded occurrences was 117 in 2018. The number of births outside the hospital decreased 12% since 2018, with 101 births occurring outside the hospital in 2020.

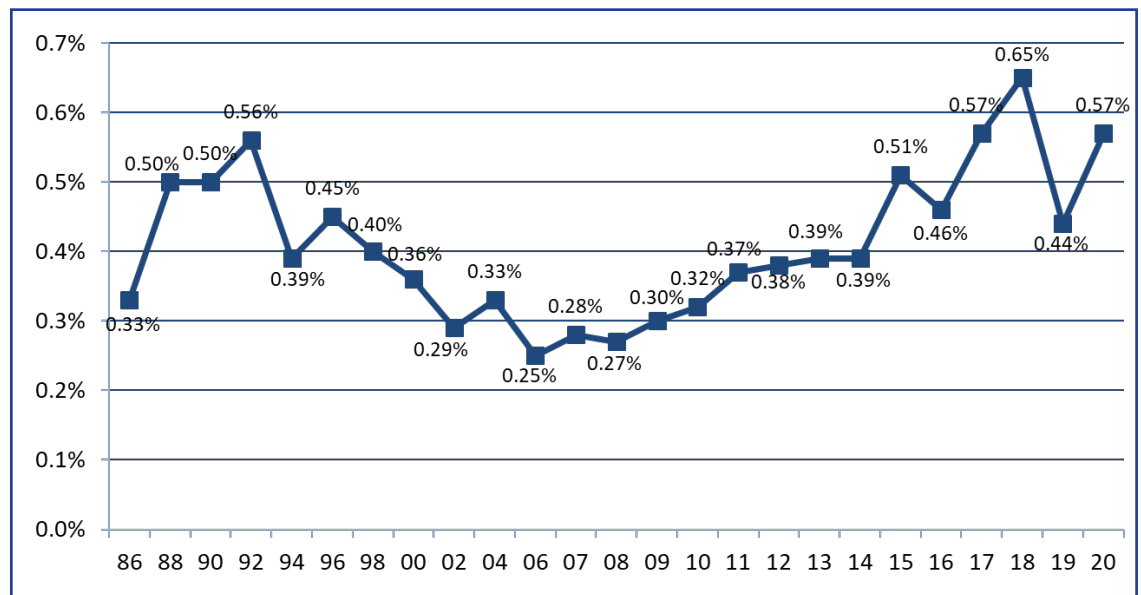
Changes in VIP for categorization of birth location may have improved identification of births in the hospital outside of labor and delivery. In 2020, seven deliveries

occurred in the hospital, but not in Labor and Delivery and 31 were born on the way to the hospital. The majority, 58, 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.

Outside Birth Trend

Figure 17



Birthweight 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 prior to delivery just 15-20 years ago, when the regional database was first developed.

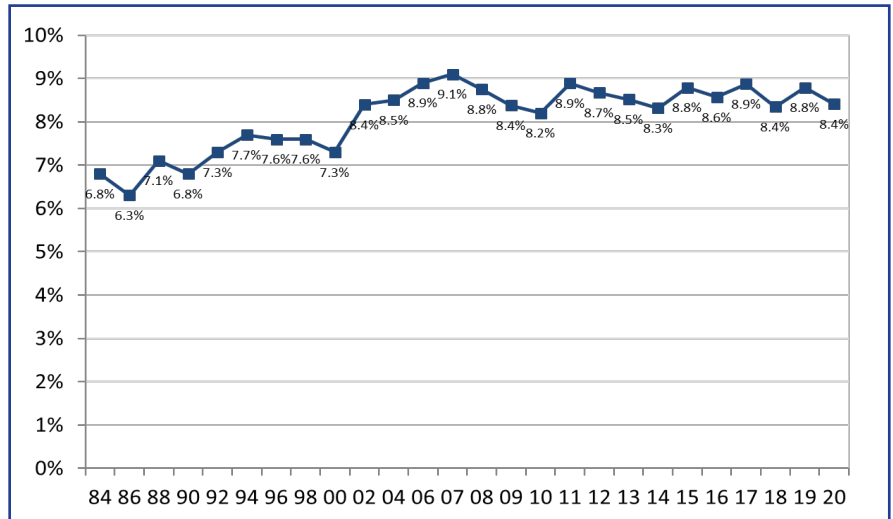
As shown in Figure 18, 8.4 percent of infants born in 2020 weighed less than 2500 grams (5.5 lbs.), an increase of 23.5% from the baseline year of 1984. Table VII depicts five-year averages for 2011–2020; decreases were seen for every weight group in this time period.

In 2020, 254 (1.4%) babies born in member hospitals were Very Low Birth Weight (VLBW) weighing less than 1500 grams (3.3 lbs.). This group of infants are the most vulnerable and have the greatest impact on the neonatal mortality rate. When examined over time, the birth rate of VLBW infants has remained relatively stable since 1999.

In 2020, 109 babies born in member hospitals were Extremely Low Birth Weight (ELBW) weighing less than 1000 grams. Figure 19 shows birth trends for these tiniest of infants over time. Although there have been changes year to year, an examination of the most recent 10 years of data shows the average ELBW birth rate was 0.80%.

Birth Rate of LBW Infants 1984-2020

Figure 18



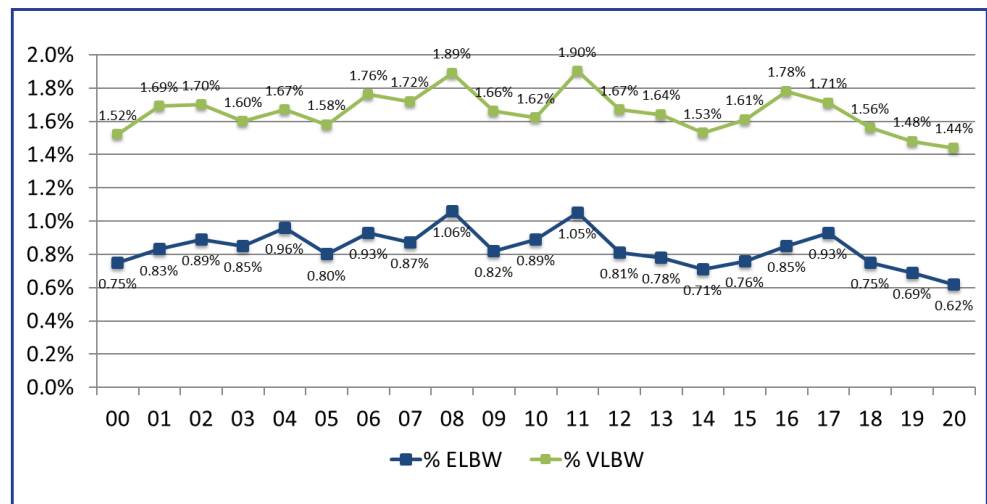
Birthweight Distribution

Weight Group	2011-2015	2016-2020	% Change
<2501g (LBW)	8.64	8.60	-0.46%
<1501 (VLBW)	1.67	1.59	-4.79%
<1001 (ELBW)	0.82	0.77	-6.10%

Table VII

ELBW/VLBW Birth Rate Comparison

Figure 19



Neonatal Mortality

Since low birth weight (LBW) is the single most important factor contributing to neonatal mortality, SNJPC monitors the relationship between the incidence of LBW and neonatal mortality.

Figure 20 depicts the regional neonatal mortality rate trend from 1984 to present. At 2.61 deaths per 1000 live births, the 2020 Neonatal Mortality Rate (NMR) is 66% lower than the baseline year of 1984. The average NMR for infants of all weights over the past 10 years is approximately 4 deaths per 1000 live births.

2020's NMR is the lowest since SNJPC began tracking these data. Reductions in the number of infants born under 1500 grams (24 fewer in 2020 than 2019) is a major reason for the change in this rate. In 2020, 14 fewer infants born under 1500 grams died in the neonatal period. There was a 34% decrease in NMR from 2019 to 2020.

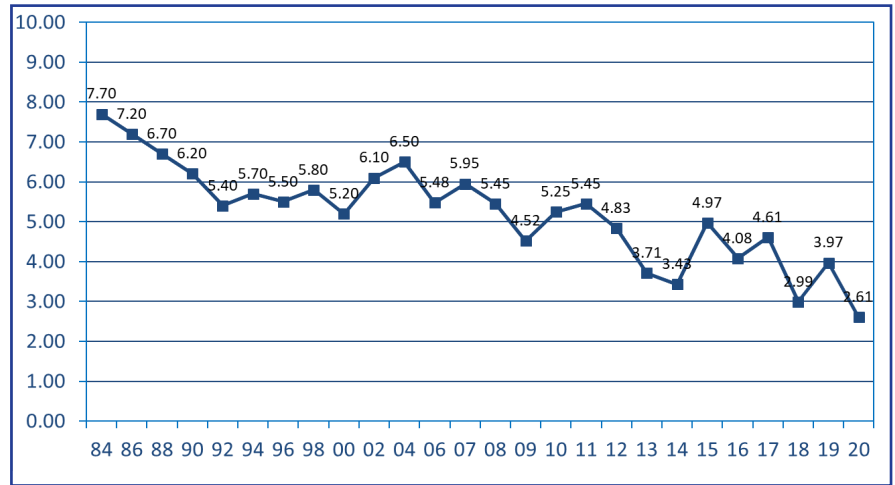
Table VIII shows the five-year averages for neonatal mortality by weight group for low birth weight babies since 2011.

Between 2011 and 2015, the mortality rate for babies born under 2500 grams was 48.02; in the most recent five years, the average rate was 38.32 per 1000 live births. In 2020, there were 24.93 deaths of babies under 2500 grams per 1000 live births.

An examination of the distribution of deaths across categories demonstrates the impact of ELBW on the overall NMR for the region. The ability to take a step back and examine longitudinal trends is a strength of the SNJPC Regional Collaborative Database.

Neonatal Mortality 1984-2020

Figure 20



Neonatal Mortality Rate Birth Weight Distribution

Weight Group	5 Year Average 11-15	5 Year Average 16-20	2020
Overall	4.48	3.65	2.61
<2501 g (LBW)	48.02	38.32	24.93
<1501 g (VLBW)	231.02	186.22	133.86
<1001 g (ELBW)	436.30	351.36	284.40

Table VIII

Fetal Mortality

The Fetal Mortality Rate (FMR) is reported in two ways: deaths of all fetuses weighing more than 500 grams and the subset of fetal deaths in later pregnancy, when the fetus weighs more than 2500 grams. Fetal deaths >20 weeks gestation are collected in VIP as of 2017.

After a steady decrease since 2015, the FMR for births over 500 grams rose to

4.91 in 2020. This was still a decrease of 18% since 1986, however (see Figure 21). The average FMR since 2000 was 4.25 per 1000 births.

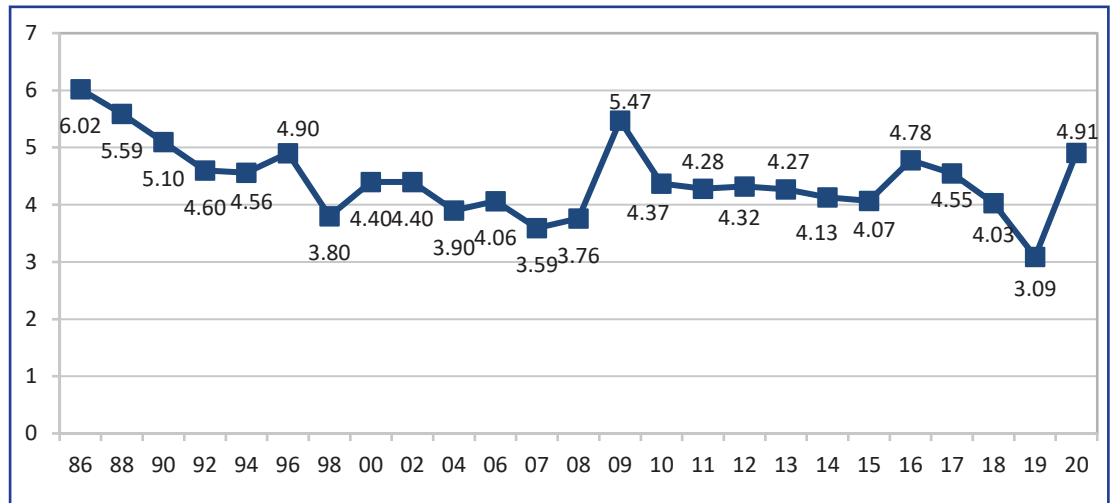
Since 1986, the FMR among infants weighing more than 2500 grams, a marker of late pregnancy complications and management, decreased 18.5%. As shown in Figure 22, these cases are uncommon and

the small numbers can result in high levels of variability from year to year. In 2020, the FMR rate for this group was 1.48 losses per 1000 births.

Complementing programs aimed at reducing neonatal mortality, the Cooperative has coordinated educational and consultation activities directed at reducing the FMR.

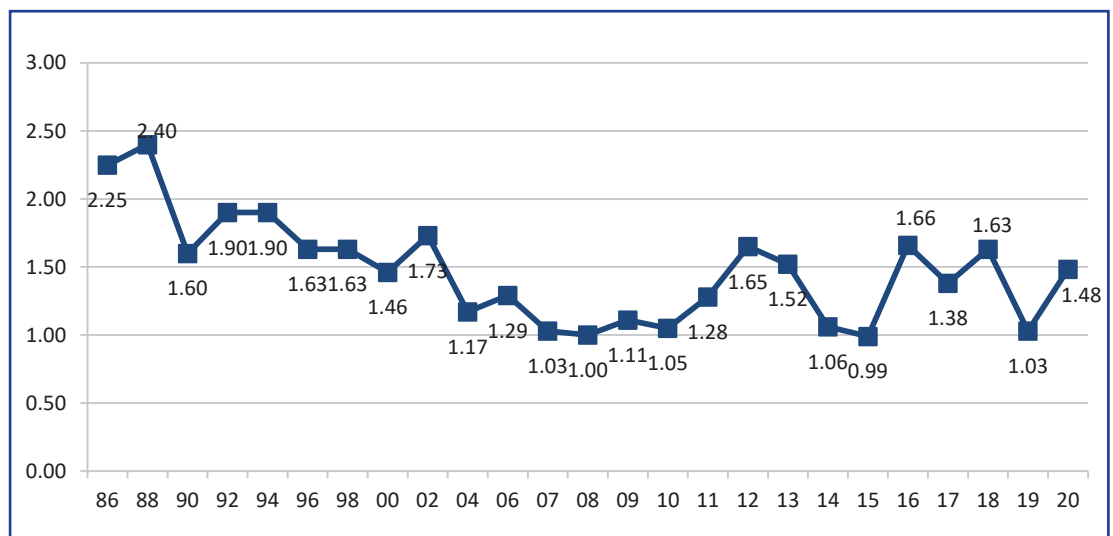
Fetal Mortality Rate 1986-2020

Figure 21



Fetal Mortality Rate >2500 1986-2020

Figure 22



Transport Patterns

Maternal Transports

Maternal transport patterns have contributed to the reduction in the mortality rate for ELBW infants.

Survival rates for tiny infants, those weighing less than 1500 grams, improve when they are born at a hospital with a Neonatal Intensive Care Unit (NICU). In 2020, 213 pregnant women were transported to high-risk perinatal centers (see Figure 23).

The proportion of these transports going to South Jersey Regional Perinatal Centers (RPC) has consistently exceeded 85%. (Figure 24). Almost 80% (78.4%) of the mothers transported to centers were 32 weeks gestation or less.

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

Through the years, the SNJPC Regional 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 NICUs. Although every Community Perinatal Center (CPC) Intermediate and CPC Basic hospital is appropriately staffed and equipped to stabilize and care for tiny infants, having to transport these babies to a hospital with a NICU is a risk that can be

avoided if the mothers can be transported prior to delivery.

A new initiative coordinated by the NJ Hospital Association is engaging hospitals to complete the CDC's Levels of Care Assessment Tool (LOCATE). This effort will build on the success of the current neonatal levels of care established in our hospital regulations and monitored by our collaborations to ensure connected care for women and children in South Jersey.

Maternal Transports

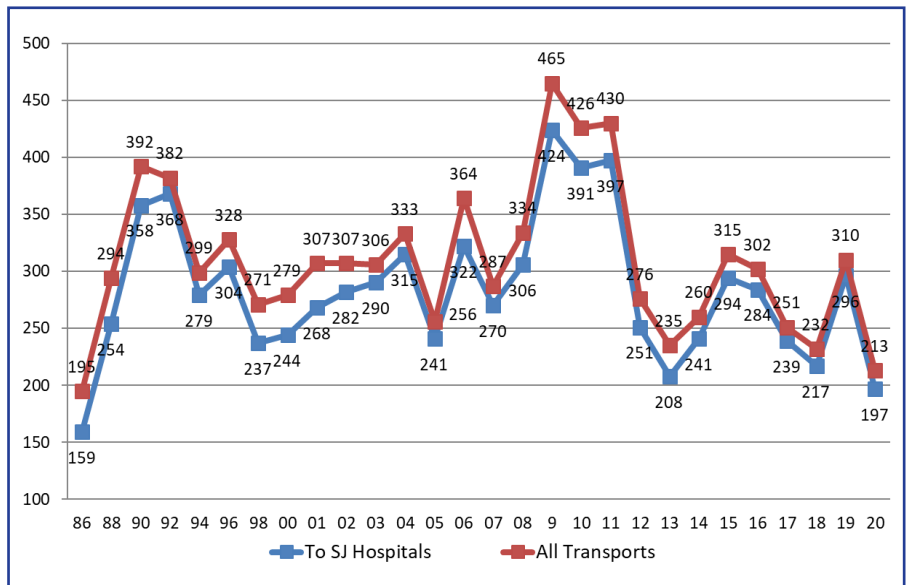


Figure 23

500-1000g Born at RPC & Intensive

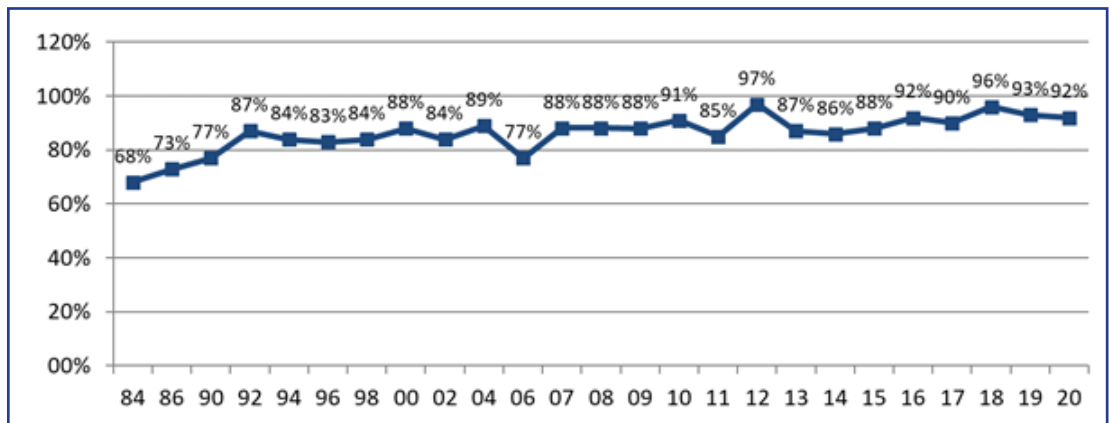


Figure 24

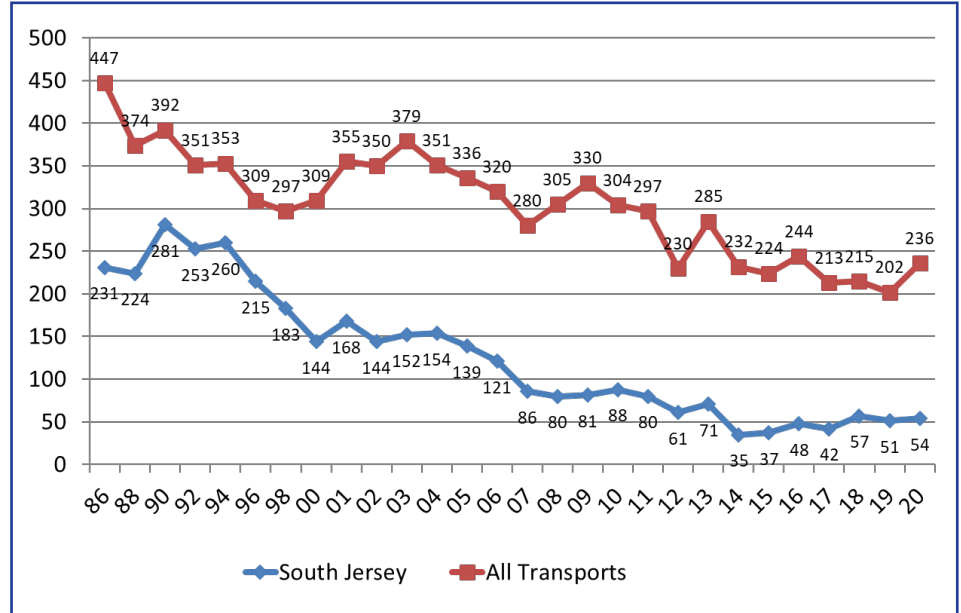
Neonatal Transports

Early identification, referral and transport of high-risk mothers helps ensure that the majority of the smallest infants, who benefit the most from specialized neonatal care, are born at hospitals with these services. Figure 24 depicts the great 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 NICUs. In 2020, 88% of the tiniest infants were born at RPCs and CPCs-Intensive.

The maternal transport system ensures mothers deliver in hospitals prepared to care for their infants at any weight. In 2020, 236 infants were transported from South Jersey hospitals for neonatal intensive care (Figure 25). Of these infants, only 25.4% weighed less than 1500 grams, demonstrating the effectiveness of the maternal transport system in our region. Correspondingly, 57.6% 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.

Neonatal Transports

Figure 25





Health Affairs

Bringing Community-Based Doula Care to New Jersey



Camden and Atlantic City Doulas

NJ Spotlight News

First Lady Spearheading Plan to Reduce NJ's High Maternal Mortality Rate

Experts fear pandemic's impact on maternal mortality rates

NJ Budget 2022: Women's health care to get funding boost

COVID-19 is spreading faster in South Jersey researcher says



How doulas are helping mothers of color in Atlantic City



With Black Women at Highest Risk of Maternal Death, Some States Extending Medicaid



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 to women at SNJPC member hospitals.

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 1,000 grams, which is approximately 2 pounds 3 ounces.

Gestational Age

Clinical estimate of the length of time from the first day of the mother'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 2,500 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 woman who has not previously delivered a live infant.

Teen Birth

Birth to a mother under 20 years of age.

Tobacco, alcohol, and drug use during pregnancy

Use of these substances as self-reported by mother.

Trimester of Pregnancy

The first trimester includes the first 12 weeks of pregnancy, the second trimester encompasses the 13th through the 27th weeks and the third trimester is the period after the 27th week through delivery.

Vaginal Birth After Previous Cesarean (VBAC)

Vaginal delivery of a woman who has previously had a cesarean delivery.

Very Low Birth Weight (VLBW)

Birth weight of less than or equal to 1,500 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 pregnant for the first time.

2020 Regional Perinatal Database for South Jersey

Making possible data-driven interventions to
improve the health status of mothers and babies.



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