

Achievement 2017

Regional Collaborative Database

Southern New Jersey Perinatal Cooperative

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





2017 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

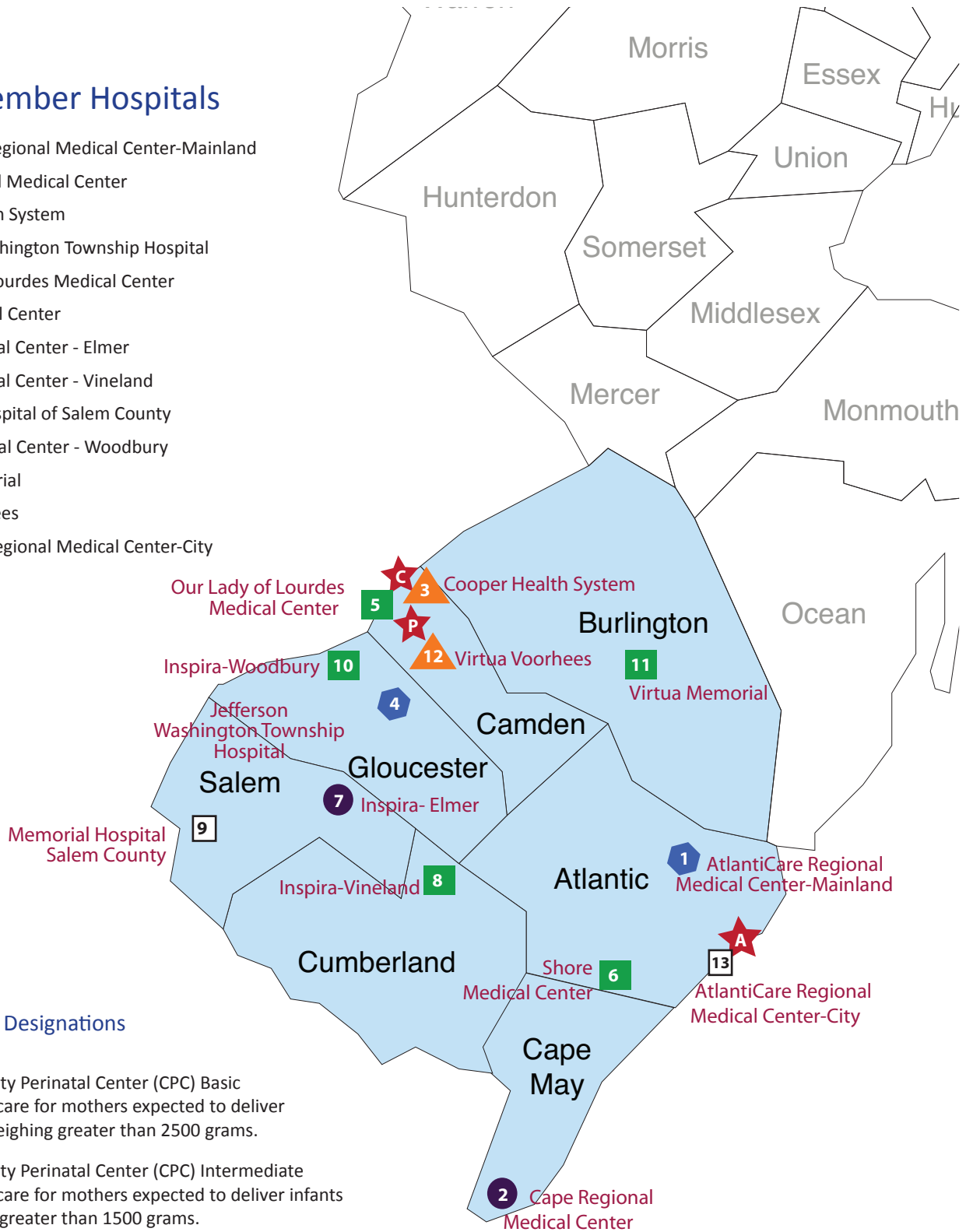
Production of the Regional Collaborative Database report is possible only through the support and assistance of the obstetrical and nursery staffs of our member hospitals. Their contributions are invaluable. We extend our gratitude to these individuals whose consistently high level of professionalism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

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SNJPC Member Hospitals

- 1 AtlantiCare Regional Medical Center-Mainland
- 2 Cape Regional Medical Center
- 3 Cooper Health System
- 4 Jefferson Washington Township Hospital
- 5 Our Lady of Lourdes Medical Center
- 6 Shore Medical Center
- 7 Inspira Medical Center - Elmer
- 8 Inspira Medical Center - Vineland
- 9 Memorial Hospital of Salem County
- 10 Inspira Medical Center - Woodbury
- 11 Virtua Memorial
- 12 Virtua Voorhees
- 13 AtlantiCare Regional Medical Center-City



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 Atlantic City, 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	640		5252		4735		7720		18347	
LIVE BIRTHS IN HOSPITAL	636		5212		4700		7659		18207	
NEONATAL MORTALITY	0	0.000	8	1.535	18	3.830	58	7.573	84	4.614
LBW - LIVE BIRTHS < 2501 GM	17	2.67	374	7.18	445	9.47	779	10.17	1615	8.87
LBW - NEONATAL MORTALITY	0	0.000	7	18.717	15	33.708	55	70.603	77	47.678
VLBW - LIVE BIRTHS < 1501 GM	2	0.31	29	0.56	73	1.55	208	2.72	312	1.71
VLBW - NEONATAL MORTALITY	0	0.000	6	206.897	13	178.082	49	235.577	68	217.949
ELBW - LIVE BIRTHS < 1001 GM	2	0.31	13	0.25	31	0.66	123	1.61	169	0.93
ELBW - NEONATAL MORTALITY	0	0.000	6	461.538	13	419.355	44	357.724	63	372.781
ELBW2 - LIVE BIRTH (500-1000)	2	0.31	11	0.21	21	0.45	92	1.20	126	0.69
ELBW2 - NEONATAL MORTALITY	0	0.000	4	363.636	5	238.095	15	163.043	24	190.476
ELBW3 - LIVE BIRTH (751-1000)	2	0.31	5	0.10	12	0.26	53	0.69	72	0.40
ELBW3 - NEONATAL MORTALITY	0	0.000	2	400.000	1	83.333	2	37.736	5	69.444
FETAL MORTALITY > 499 GM	2	3.135	30	5.725	21	4.458	30	3.917	83	4.549
FETAL MORTALITY > 2500 GM	1	1.613	7	1.445	8	1.877	7	1.016	23	1.384
MATERNAL TRANSPORTS (% of total births + trans)	32	4.76	87	1.63	51	1.07	5	0.06	175	0.94
NEONATAL TRANSPORTS (% of live births)	20	3.14	69	1.32	46	0.98	78	1.02	213	1.17
NEONATAL MORTALITY AFTER TRANSPORTS (% of live births)	0	0.000	2	0.04	3	0.06	3	0.04	8	0.04
LIVE BIRTHS OUTSIDE HOSPITAL	2	0.31	27	0.52	44	0.93	30	0.39	103	0.56



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 is tracked for every birth in New Jersey's hospitals.

Adopted by all NJ birthing hospitals in 2015, the 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 Department of Health 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 18,207 for 2017.

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 18,310 for 2017.

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 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 VIP birth facility

Distribution of Births

Consistent with statewide and national trends, births in southern New Jersey have continued to decline over the past few years with 18,207 births in 2017.

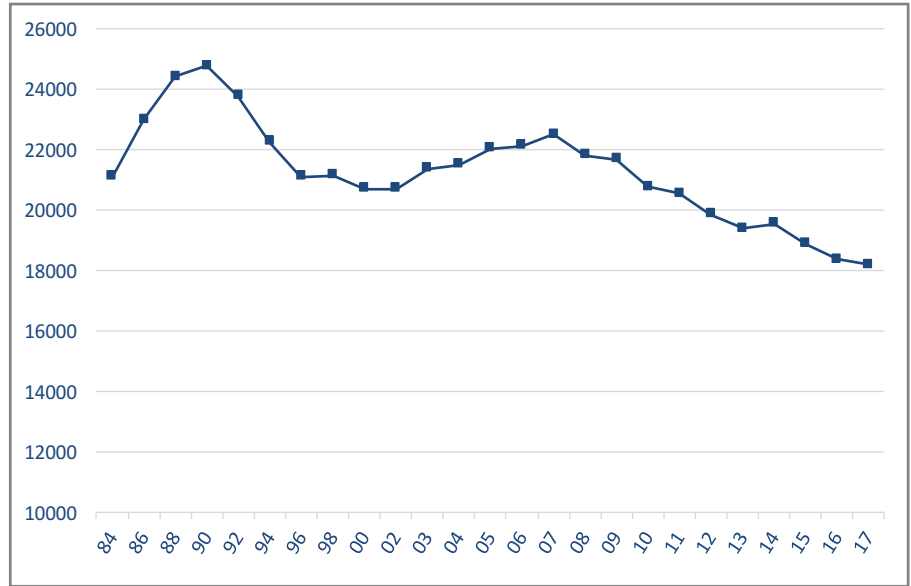
The birth rate for South Jersey is depicted in Figure 1. The annual number of live births peaked in 1990.

NJ births from 1990-2016 (most recently published) are presented in Figure 2. NJ experienced a 17% decrease in total births in this time period. South Jersey contributed to this decline with a 25% decrease in the births to mothers in our region.

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

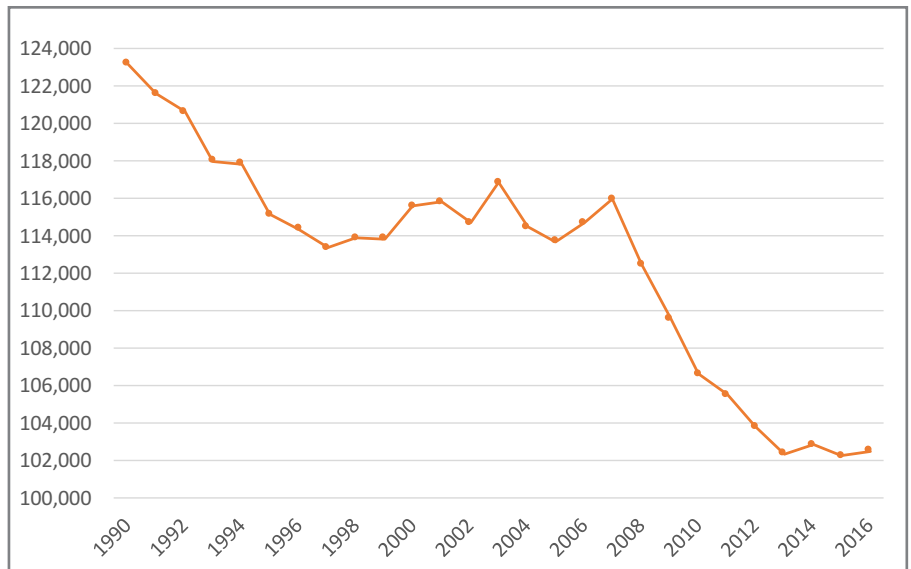
Live Births 1984 - 2017

Figure 1



New Jersey Births 1990-2016

Figure 2



Characteristics of Births

Of the 18,310 births to residents of the southern region in 2017, two-thirds (65.2%) were to residents of the region's northern counties (Burlington, Camden and Gloucester) (Figure 3). Nonresidents accounted for 2.9% of births in South Jersey.

Table I depicts the number of births that occurred in each county, comparing the two time periods of 2008 to 2012 and 2013 to 2017. The decline in live births on average was 9.5% but the distributions of these changes were quite varied. While the number of births decreased in all counties, the largest decrease occurred in Salem County, with the closing of the Memorial Hospital of Salem County in 2014.

While disparity in outcomes exists in all regional counties it is the northern counties, and Atlantic City where the population is highest, that are eligible for consistent state and federal funding to address these concerns.

Interventions designed to engage families likely to experience poor outcomes based on access and resources are often supported by local foundations and charities in the Salem, Cumberland and Cape May communities in need.

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

2017 Births by County of Residence

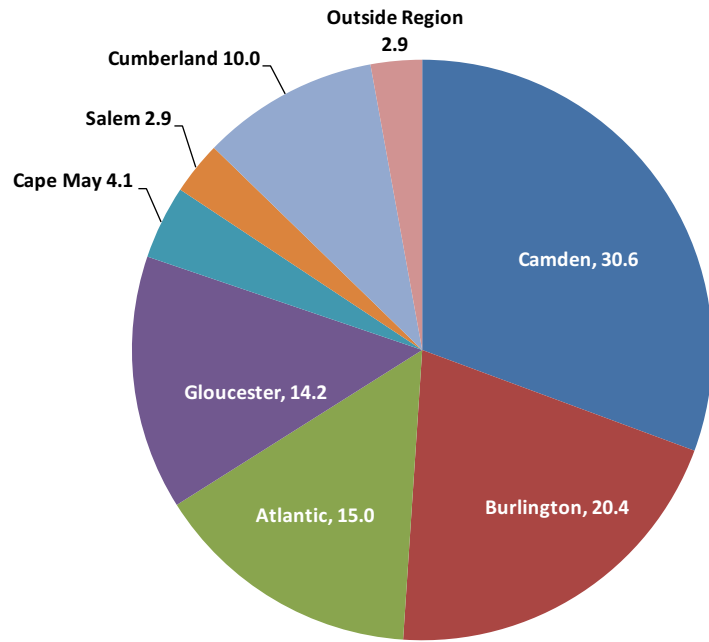


Figure 3

County Birth Totals Five-Year Averages 2008 - 2017

Hospital Births by County	2008-2012	2013-2017	%Change
Atlantic	3679	3210	-12.74%
Burlington	2815	2328	-17.29%
Camden	8952	8788	-1.83%
Cape May	536	418	-21.94%
Cumberland	2143	1927	-10.07%
Gloucester	2257	1908	-15.43%
Salem	555	362	-34.66%
REGION	20936	18943	-9.52%

Table I

Maternal Age

In 2017, the highest percentage of births in the region occurred to mothers aged 30-34 years (31.3%), followed by 25-29 years (27.7%), 20-24 years (16.3%), 35-39 years (17.5%), under 20 years (3.0%), 40-44 years (4.0%) and 45 years and older (0.34%)(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 8.56% to 3.0% a 65% decrease. During the same time period, births to mothers aged 30-34 increased from 26.1% to 31.3%, a 20% increase.

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 percentage of mothers aged 35 and over (25.2%) while Cumberland had the highest percentage of mothers under 20 (6.8%).

2017 Births by Maternal Age

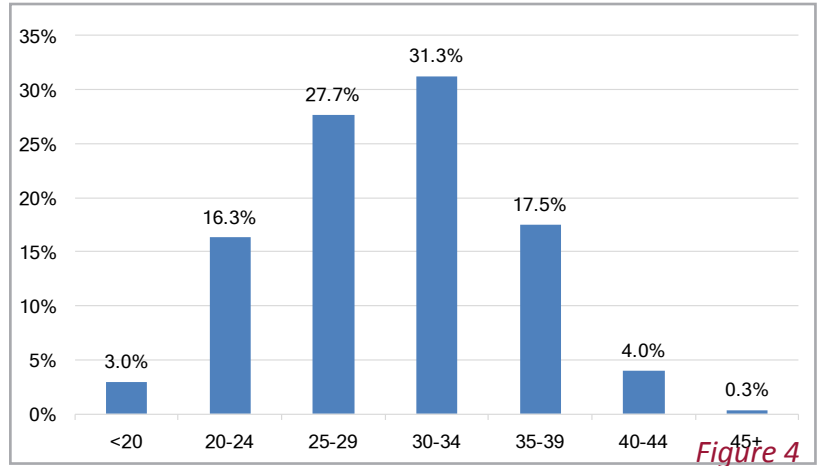


Figure 4

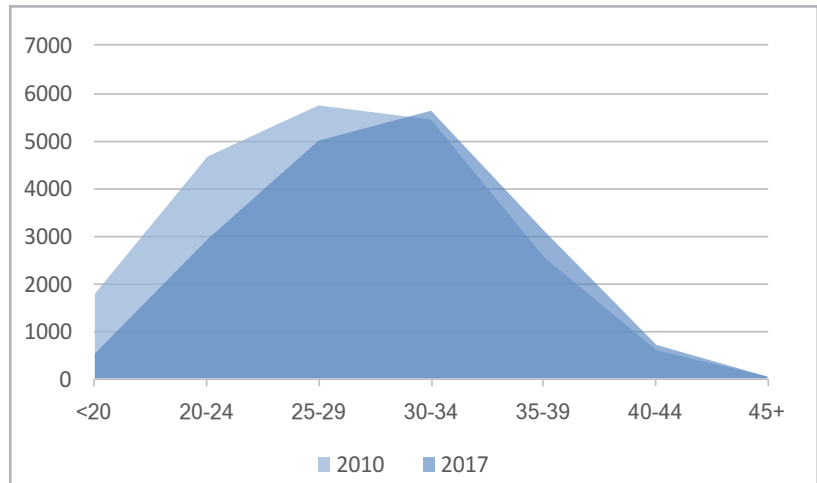


Figure 5

2017 County Births by Maternal Age

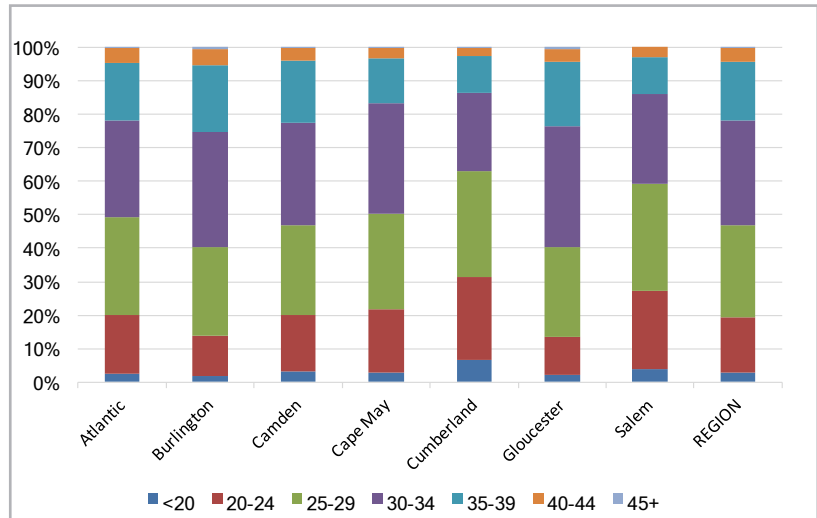


Figure 6

Births to Teens

The percentage of births to teens (aged 19 years and younger) in the southern region has been on the decline in the past 10 years, decreasing 79% from 3.76% in 2001 to .80% in 2017 (Figure 7).

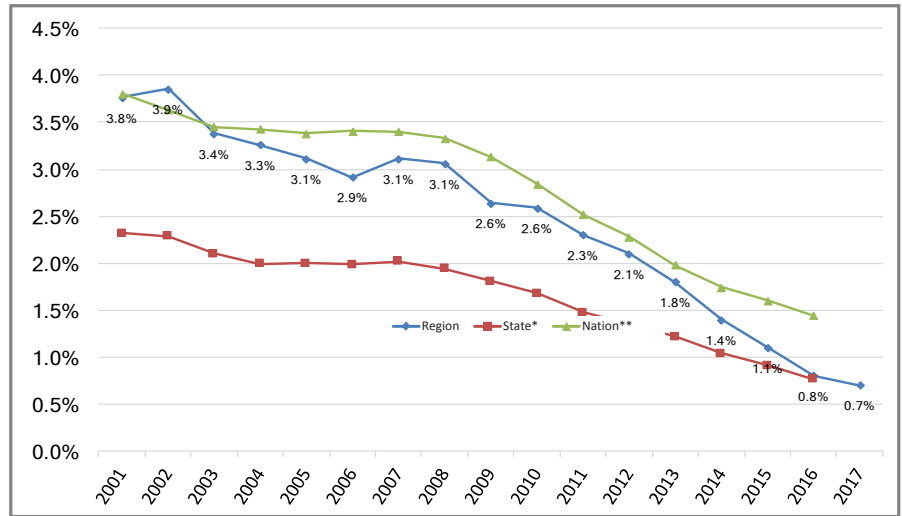
The majority (77.5%) of teens giving birth were 18 and 19 years of age compared with 19.9% to 16 and 17 year-olds, and 2.6% to teens less than 16 years of age (Figure 8).

Cumberland and Salem counties have the highest percent of births to young mothers in New Jersey.

In the summer of 2017, thanks to information from the Youth Summit attended by Salem County teens and professionals, the Salem County Youth Wellness Collaborative created the first Youth Development Leadership Institute (YDLI). With continued funding from the Salem Health and Wellness Foundation, the YDLI outlined a plan for representative county-wide youth to raise awareness amongst their peers about the incidence of teen pregnancy and STDs in Salem County.

An evidence informed youth development curriculum was designed that included reproductive health information, peer education and leadership training. After completing the training, the teens were tasked with creating a public service announcement (PSA) to disseminate factual information and best practice teen pregnancy and STD prevention strategies. The teens were given the opportunity to participate in all phases of creating the PSA, including a field trip to Rutgers University, New Brunswick campus to film the video. The response to the project has been extremely positive and several of the teens have requested the Institute continue once this project has been completed.

Teen Births as Percent of Total Births
17 and Younger



*Source: Center for Health Statistics, New Jersey Department of Health. <http://www26.state.nj.us/doh-shad/query/selection/birth/BirthSelection.html>. 4/18/18.

**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 2007-2016, on CDC WONDER Online Database, February 2018. Accessed at <http://wonder.cdc.gov/natality-current.html> on Apr 18, 2018 3:27:37PM.

Figure 7

2017 Births to Teens by County

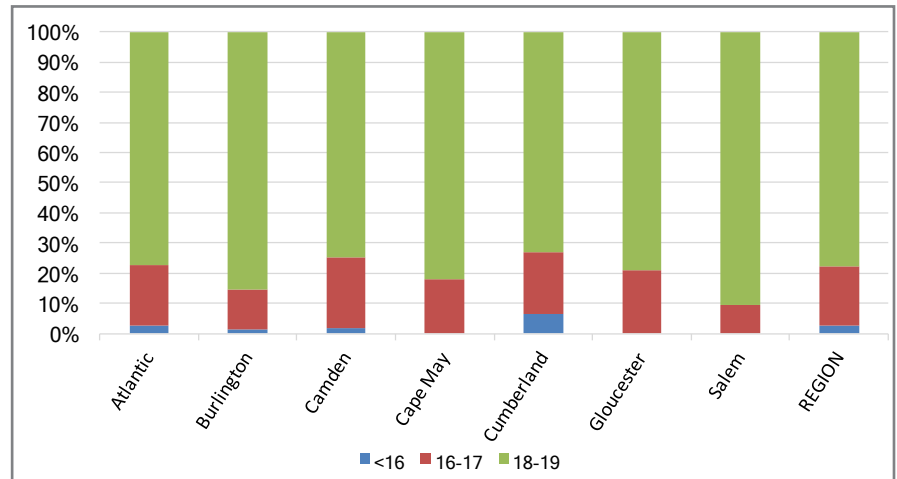


Figure 8

Pregnancy Characteristics

Prenatal Care

Early and regular prenatal care is important strategies 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 remains consistent with statewide numbers at 73% in 2017. No care is very low at only 1%.

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

Plurality

In 2017, singleton births represented 95.9% of all births in the region, twin births represented 3.9%, and triplet births represented 0.13% of all births. There were no quadruplets births in 2017 (Table II).

The decline in higher order multiples is seen after 2005, with only one set of quadruplets born in the past 10 years. These births often result in preterm, extremely low birthweight deliveries and fetal losses; surviving infants often experience lifelong health problems related to prematurity. Improvements in reproductive technologies were critical to the reduction in these high-risk births.

Entry to Prenatal Care by Trimester
SNJPC Member Hospital Births

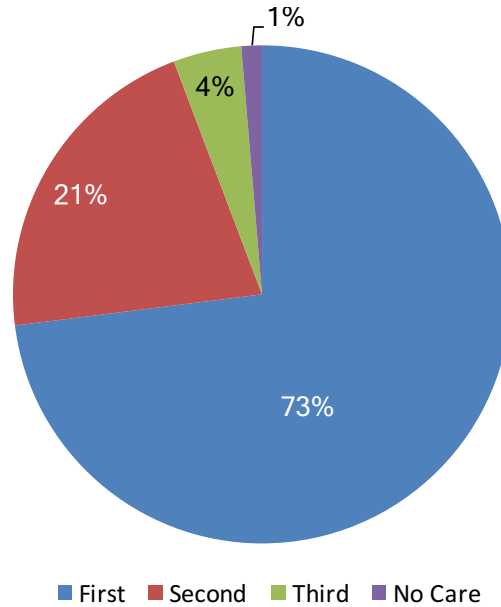


Figure 9

Table II

Year	Singleton		Twin		Triplet		Quadruplet		Total Multiples
	N	%	N	%	N	%	N	%	N
2008	21155	96	834	3.78	48	0.22	0	0	882
2009	21034	95.88	859	3.92	44	0.2	0	0	903
2010	20202	96.16	785	3.74	21	0.1	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	3.941	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	3.9	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

Risk Assessment

Conducting risk assessment during pregnancy identifies women who are at high-risk for fetal or infant death or infant morbidity. Early identification and intervention are keys to prevention. Because of this, risk assessment 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 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.

The association between no prenatal care and late entry to care, and the occurrence of low birthweight is also depicted in

Table III. While 1 percent of all deliveries were to women who did not receive prenatal care, 7 percent of VLBW deliveries were to women who were in the same group.

Table III depicts some of the risk factors that were associated with Very Low Birth Weight (VLBW) births in 2017.

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

The association between no prenatal care and late entry to care, and the occurrence of low birthweight is also depicted in Table III.

In data reflective of national reports, black women in South Jersey continue to have a higher proportion of low birthweight babies. Table III shows that while 19% of the births in the region were to black women, higher proportions (37%) of the VLBW births 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.

Table III

Southern Region	ALL	<1501 grams	>1500 grams
<i>Live Births</i>	18310	317	17993
Mother's race: White	62%	41%	63%
Mother's race: Black	19%	37%	19%
Mother's ethnicity: Hispanic	24%	29%	24%
1st trimester entry to prenatal care	73%	66%	73%
No prenatal care	1%	7%	1%
Used tobacco during pregnancy	9%	14%	9%
Plurality of 2 or more	4%	26%	4%
Mother's age less than 20 years	3%	4%	3%
Mother's age 35 years or greater	22%	26%	22%
Primigravida	28%	27%	28%
Maternal risk: Hypertension in pregnancy	5%	14%	5%
Maternal risk: Pre-eclampsia	0%	2%	0%

Racial Disparity

Racial disparity in birth outcomes are a well-established truth in American public health. Black infants in America are more than twice as likely to die as white infants — 11.3 per 1,000 black babies, compared with 4.9 per 1,000 white babies, according to the most recent government data. Regional data reflect these same patterns of disparity. In South Jersey in 2017 the Neonatal Mortality Rate (NMR) for white babies was 3.1 per 1,000 births and the NMR for black babies was 7.3 per 1,000. Much of the work of SNJPC focuses on eliminating these disparities using evidence based strategies that seek to even the playing field for families across our region.

Some of the most striking data presented on this important topic demonstrate that the impact of some factors, thought to be protective, actually have no positive impact on outcomes. Figure 12 presents information on educational attainment, birth outcome and race for South Jersey mothers. What these data show is that black women with advanced degrees have a higher rate of babies born weighing less than 3.3 lbs (1500 grams) than white women who have less than a high school diploma. While the single year numbers are small (317) this does reflect the national data.

Work on implicit bias, the subconscious assumptions made about individuals based on their race or other demographic factors, may help to reduce the impact of race based disparity in health outcomes. Additional advocacy, like that provided before and during birth by doulas, is also a promising practice to support black women as they interact with the healthcare system.

Neonatal Mortality by Race/Ethnicity

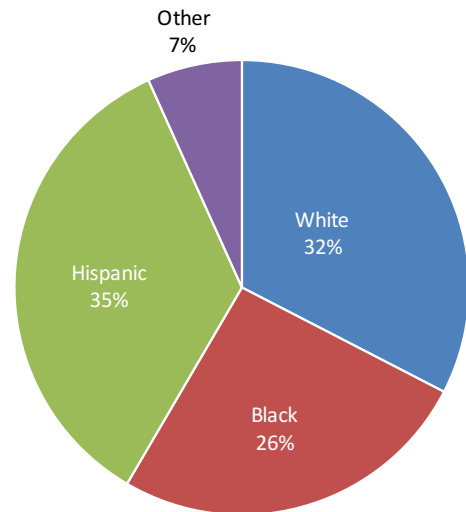


Figure 10

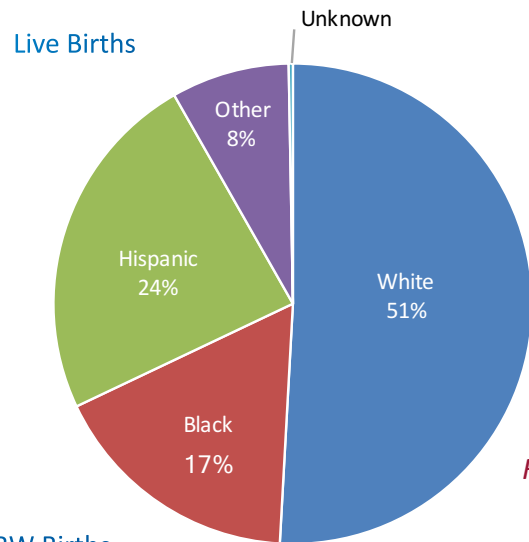


Figure 11

Racial Disparities in VLBW Births

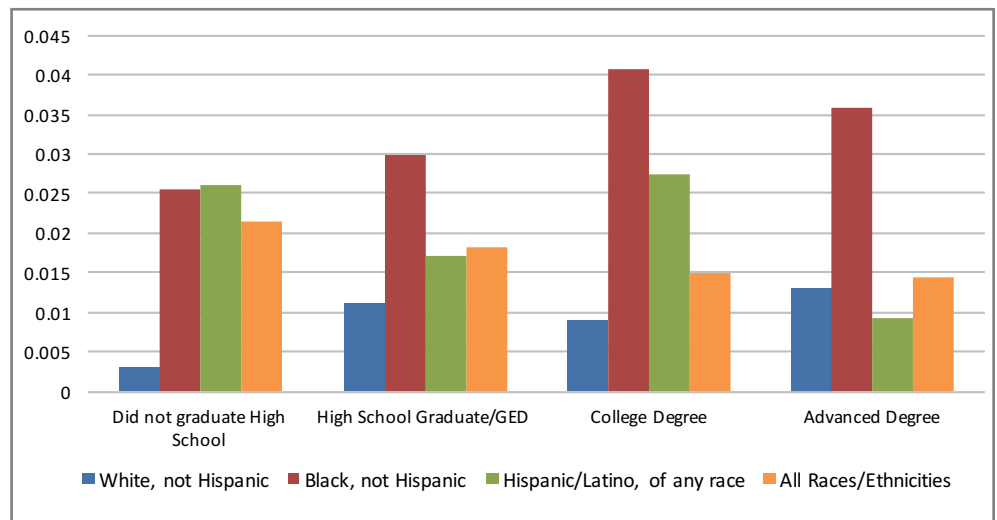


Figure 12



The New York Times Magazine

Why America's Black Mothers and Babies Are in a Life-or-Death Crisis

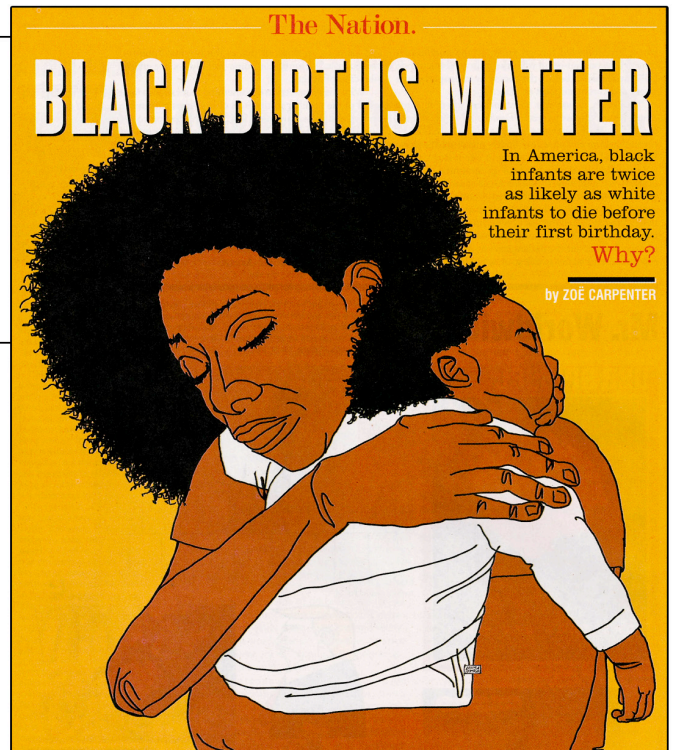
The answer to the disparity in death rates has everything to do with the lived experience of being a black woman in America.



NEW JERSEY POLITICS

Black infants in N.J. are dying at an alarming rate. Leaders say it can be prevented.

Updated Feb 12, 2018; Posted Feb 12, 2018




The Nation.

BLACK BIRTHS MATTER

In America, black infants are twice as likely as white infants to die before their first birthday.

Why?

by ZOE CARPENTER

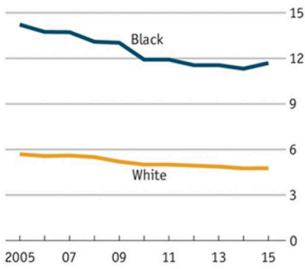


Daily chart

America's gap between black and white infants' mortality has stopped narrowing

And the causes are not fully known

Empty cradles
United States, infant mortality rate
Per 1,000 births



Year	Black	White
2005	~14.5	~5.5
2007	~14.0	~5.2
2009	~13.5	~5.0
2011	~13.0	~4.8
2013	~12.5	~4.6
2015	~12.0	~4.5

Source: JAMA Pediatrics

Economist.com

Per 100,000 births, 2015

- Black
- White



Cause	Black	White
Short gestation/low birthweight	~100	~50
Congenital malformations	~100	~50
Sudden infant death syndrome	~40	~30
Maternal complications	~10	~10

RACISM AND DISCRIMINATION FEATURE MARCH 6, 2017, ISSUE

What's Killing America's Black Infants?

Racism is fueling a national health crisis.

By Zoë Carpenter

FEBRUARY 15, 2017



Method of Delivery

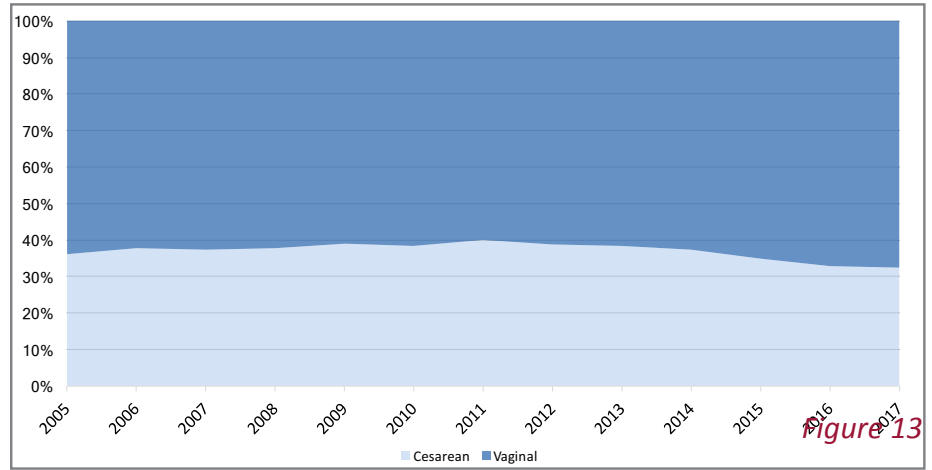
While New Jersey continues to be among the states with the highest Cesarean birth rate, improvements have occurred over the past 5 years. Figure 13 depicts the relationship between Cesarean births and vaginal deliveries in South Jersey.

The reduction of inductions before 39 weeks, accomplished by implementing a 'hard stop' for any non-medically indicated procedure at this stage of pregnancy, is a quality metric that has become the standard of care in NJ and across the US. We now see an improvement in the regional percentage of C-sections for mothers who experience spontaneous labor as well as a reduction in the percentage of mothers who have no trial of labor before a C-section is performed (often referred to as an elective Cesarean).

An examination of the births to mothers in SNJPC member hospitals based on the NJ unified reporting standards can be seen in Table IV.

This examination exposes opportunities to reduce C-sections for low risk mothers and infants. With over 80% of South Jersey mothers who had a prior C-section repeating this method of delivery, the consideration of VBAC by patients and physicians is an area that merits examination. (Table V)

Vaginal - Cesarean Births South Jersey 2005-2017



2008-2017

South Jersey Cesarean Births & Inductions of Women With Prior C-section

Year	Nullipara C-section	No Trial Repeat C-section	Induction <39 wks	Induction 39+ wks	Induction with C-section
2008	34.20%	86.90%	2.70%	8.10%	3.09%
2009	34.50%	84.70%	4.90%	6.80%	1.61%
2010	34.30%	84.50%	5.50%	12.60%	4.41%
2011	36.12%	83.96%	6.70%	13.27%	2.65%
2012	34.15%	83.07%	4.98%	14.93%	4.48%
2013	30.20%	82.97%	7.39%	14.57%	3.64%
2014	30.51%	83.55%	10.11%	16.35%	5.45%
2015	26.42%	83.24%	11.11%	14.71%	3.30%
2016	24.72%	82.21%	9.68%	12.85%	3.35%
2017	24.27%	80.75%	13.17%	13.93%	2.79%
Change over time	-29.04%	-7.08%	387.78%	71.98%	-9.71%

Table IV

VBAC Trends

Year	Failed VBAC	Successful VBAC
2008	45.50%	54.50%
2009	47.40%	52.60%
2010	41.50%	58.50%
2011	48.82%	51.18%
2012	42.51%	57.49%
2013	35.29%	64.71%
2014	27.34%	72.66%
2015	22.32%	77.68%
2016	18.64%	81.36%
2017	23.04%	76.96%
Change over time	-49.36%	41.21%

Table V

ISSUES

South Jersey Cesarean Births, & Inductions

1. *Nullipara Cesareans for standard presenting women. (First-time, live births, baby head down)* In 2017, the percent of Cesarean births to standard presenting women was 24.3%. The percent had been steadily increasing over the previous decade and reached a high point of 36.1% in 2011. Making a change in this group is critical to a statewide reduction in C-section rates (see Figure 14).

2. *Repeat Cesareans without a trial of labor. (Women who have had a previous Cesarean birth who are scheduled for the procedure before the onset of labor)* In 2017, 80.8% 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. 2017 is the 3rd consecutive year of decrease for this group, which is promising for the overall picture of C-section reduction. Since 2008 there has been a 7% decrease in repeat C-sections.

3. *Attempted Vaginal Birth After Cesarean (VBAC) births at 39+ weeks gestation that end in cesarean.* These are defined as “failed” VBACs. In 2017, the rate of failed VBACs was 23.0%. While this represents an increase from 2016, there was a 3% increase in attempted VBACs regionally.

4. *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. In 2017 this rate was 13.2%.

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

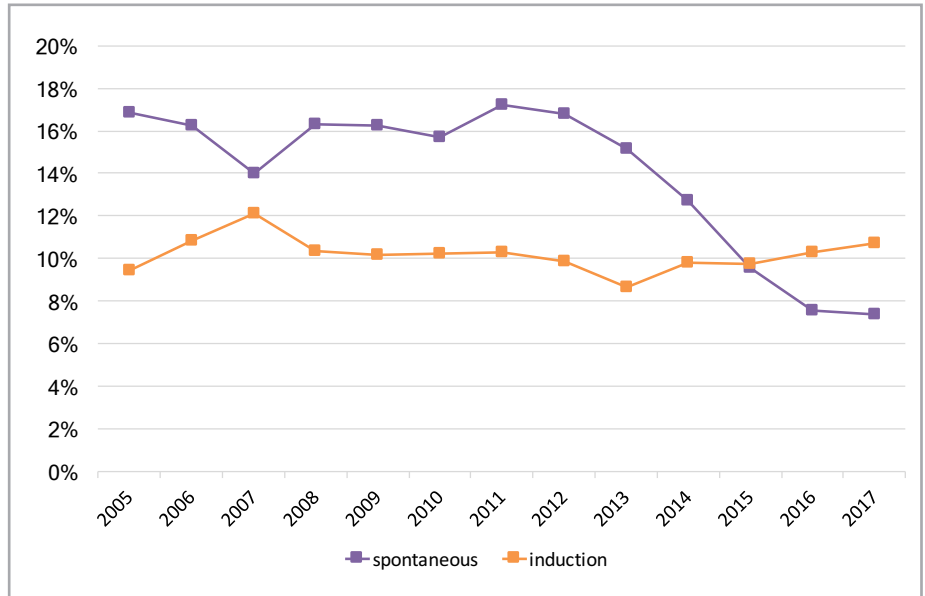


Figure 14

South Jersey Cesarean Births Trends

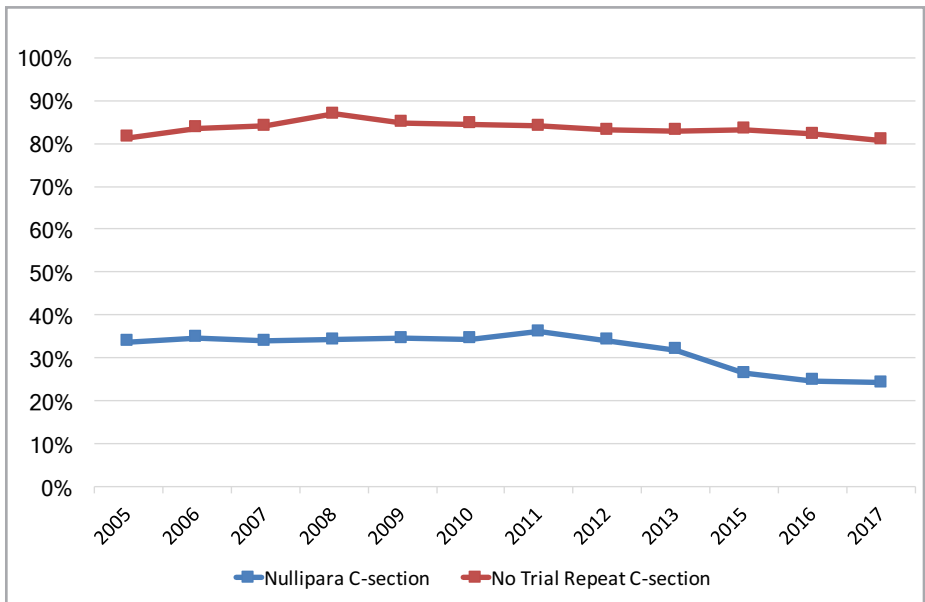


Figure 15

Newborn Feeding Method

Because of the many positive benefits of breastfeeding for child survival, growth, and development, exclusive breastfeeding which means that an infant receives only breast milk with no additional formula or water - is recommended by the World Health Organization for all infants. Despite its many benefits, many women do not breastfeed exclusively.

In 2017, 72.6% of women who gave birth in SNJPC member hospitals breastfed their newborns (based on feeding method at discharge from the hospital). There has been a steady increase in breastfeeding over the past ten years as can be seen in Figure 16.

Using VIP, the questions asked at discharge are consistent with National Center for Health Statistics standards. In past years, the information provided from EBC focused on feeding method 24 hours prior to discharge. The VIP dataset asks about exclusivity of breastfeeding throughout the hospital stay, and includes an additional measure for some breastfeeding at discharge. It has been determined that the feeding method at discharge is reliable information, well understood by mothers and staff when they report. In NJ, differences have been observed by race and ethnicity.

Table VI depicts these trends over time. In 2017, the percentage of breastfeeding at discharge for Black mothers increased nearly 27.4%.

In South Jersey all hospitals support breastfeeding with staff training and lactation consultants. This is evident from the 24.1% increase in breastfeeding since 2000. Three regional hospitals, Atlanticare, Inspira Elmer and Our Lady of Lourdes have achieved Baby Friendly Status, and the remaining hospitals strive to support the importance of breastfeeding by ensuring that supportive messages and resources are integrated into care across the region. This is evident from the 12.74% increase in total breastfeeding in the past 10 years.

Feeding Trends 2002 - 2016

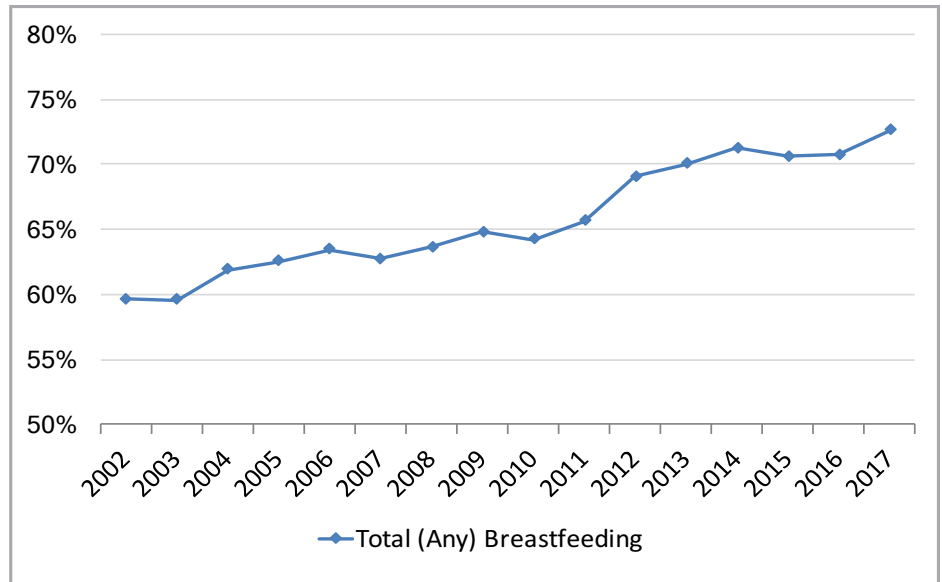


Figure 16

Breastfeeding at Discharge by Race/Ethnicity

Year	Black	White	Hispanic
2008	50.3%	65.3%	69.6%
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%
Change over time	27.4%	13.6%	6.8%

Table VI

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 had remained very low for the past decade, however in 2015 the rate returned to the high levels of the early 1990s (Figure 17).

In 2017 0.57% of births were outside births, the highest percentage ever recorded. As the overall birth rate decreases in the region it is not surprising to see higher percentages even in population level analysis. However, with 103 occurrences in 2017 this is also the highest number recorded.

Changes in VIP for categorization of birth location may have improved identification of births in the hospital outside of labor and delivery. Additional tracking and analysis will be focused on this group of high risk deliveries.

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

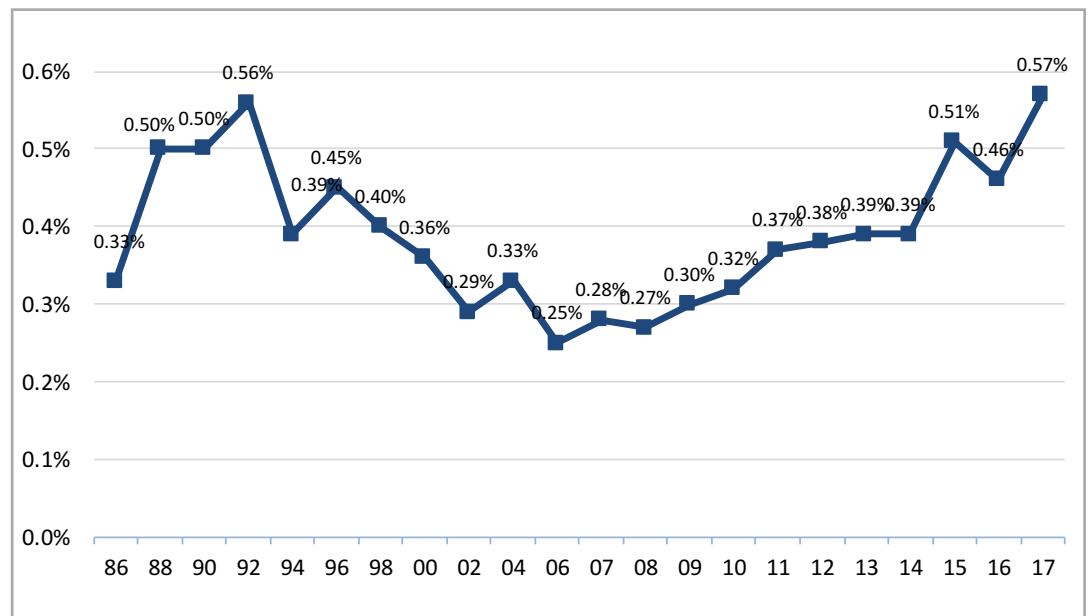


Figure 17

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 seen in Figure 18, a greater percent of infants weighing less than 5.5 lbs. were born in 2017 than in the baseline year of 1984 (8.99%). Table VII depicts five year averages for 2008 – 2017, decreases were seen for every weight group.

In 2017, 312 (1.7%) babies born in member hospitals were categorized as VLBW because they weighed 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 Very Low Birth Weight (VLBW) infants has remained relatively stable since 1999.

In 2017, 169 babies born in member hospitals were categorized as Extremely Low Birth Weight (ELBW) because they weighed less than 1000 grams. Figure 19 shows the birthweight trends for these tiniest of infants from the baseline year to the present. Although there have been changes year to year, an examination of 10 years of data shows the average birth rate of ELBW infants is 0.87%.

Birthrate of LBW Infants 1984-2017

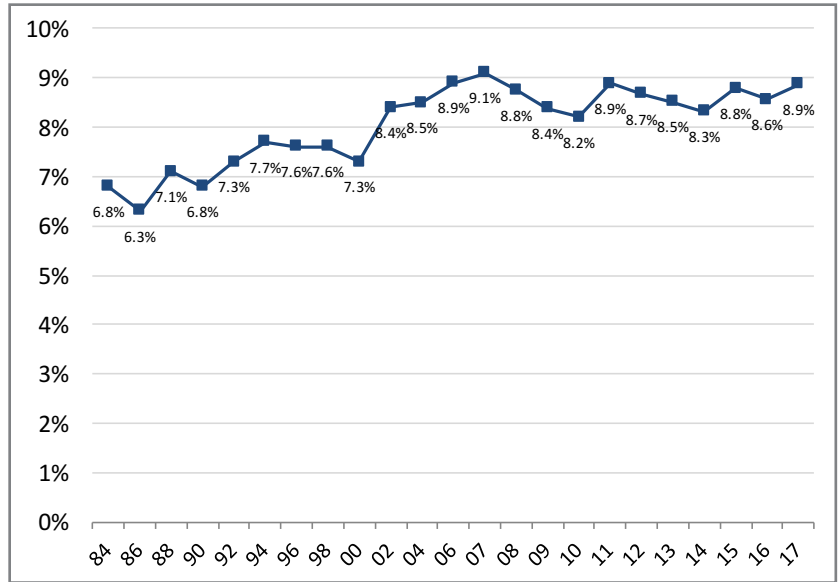


Figure 18

Birthweight Distribution

Weight Group	2008-2012	2013-2017	2017
<2501g (LBW)	8.58	8.61	8.87
<1501 (VLBW)	1.75	1.65	1.71
<1001 (ELBW)	0.93	0.81	0.93

Table VII

ELBW/VLBW Birthrate Comparison

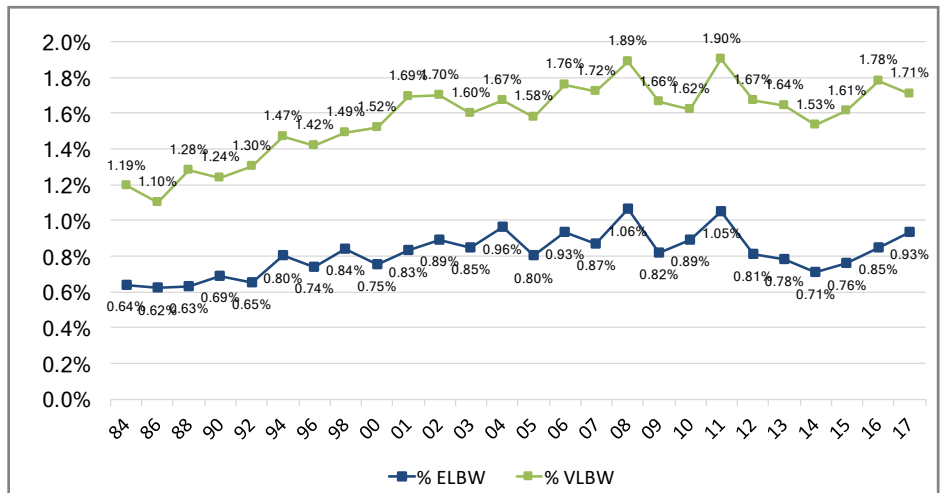


Figure 19

Neonatal Mortality

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

Figure 20 depicts the regional neonatal mortality rate trend from 1986 to present.

At 4.6 deaths per 1000 live births, the 2017 Neonatal Mortality Rate (NMR) is 40% lower than the baseline year of 1984. The average NMR for infants of all weights over the past ten years is approximately 5 deaths per 1000 live births.

Table VIII shows the five year averages for neonatal mortality by weight group for low birthweight babies since 2008. Between 2008 and 2012 the mortality rate for babies born under 2500 grams was 5.1, in the past five years the average rate was 4.2 per 1000 live births. In 2017 there were 4.6 deaths of babies under 2500 grams per 1000 live births. An examination of the distribution of births 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 1984-2017

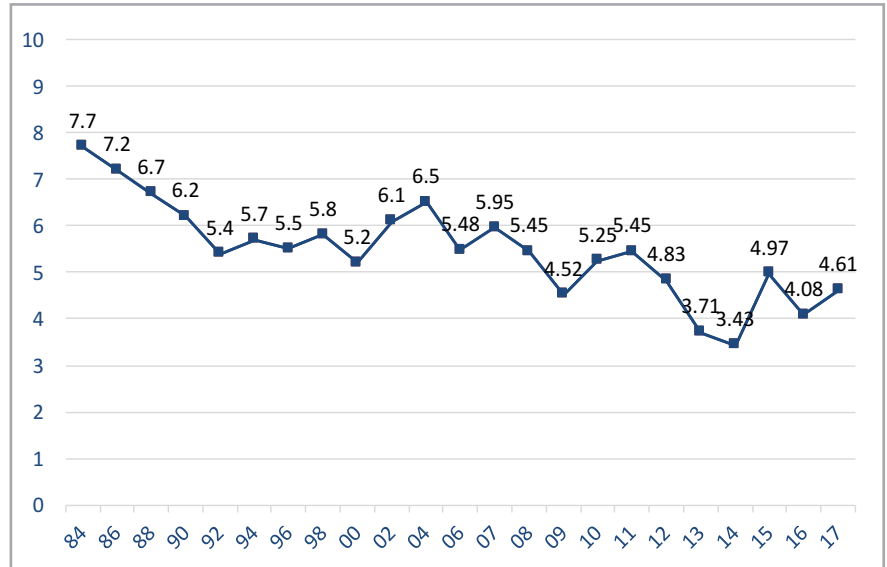


Figure 20

Neonatal Mortality Rate Birthweight Distribution

Weight Group	1984	2017	%Change
All Weights	6.02	4.55	-24.42%
>2500 grams	2.25	1.38	-38.67%

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.

In 2017, the Fetal Mortality Rate for births over 500 grams was 4.55, a decrease of 24% since 1986, but has been fairly stable since 2000. The average FMR since 2000 was 4.29 per 1000 births.

Since 1988, the FMR among infants weighing more than 2500 grams, a marker of late pregnancy complications and management, decreased 38.7%. These cases are uncommon and the small numbers can result in high levels of variability from year to year. In 2017 the rate for this group was 1.38 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

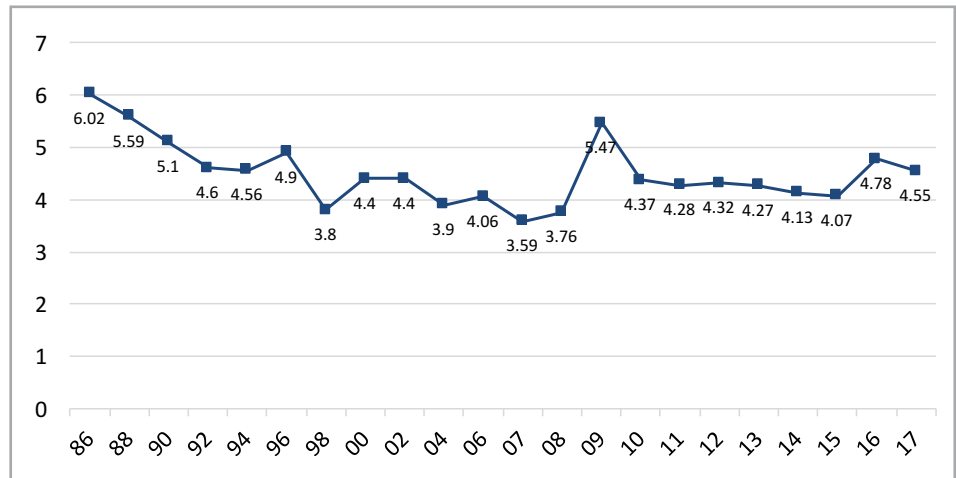


Figure 21

Fetal Mortality Rate >2500

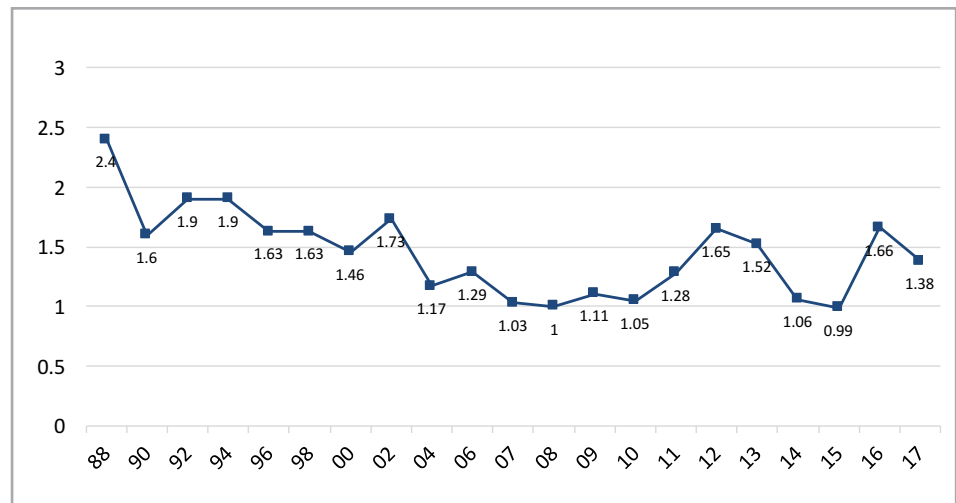


Figure 22

Transport Patterns

Neonatal Transports

The maternal transport system ensures mothers deliver in hospitals prepared to care for their infants at any weight. In 2017, 213 infants were transported from South Jersey hospitals for neonatal intensive care (Figure 23). Of these infants, only 30.9% weighed less than 1500 grams, demonstrating the effectiveness of the maternal transport system in our region. Correspondingly, 49.3% 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

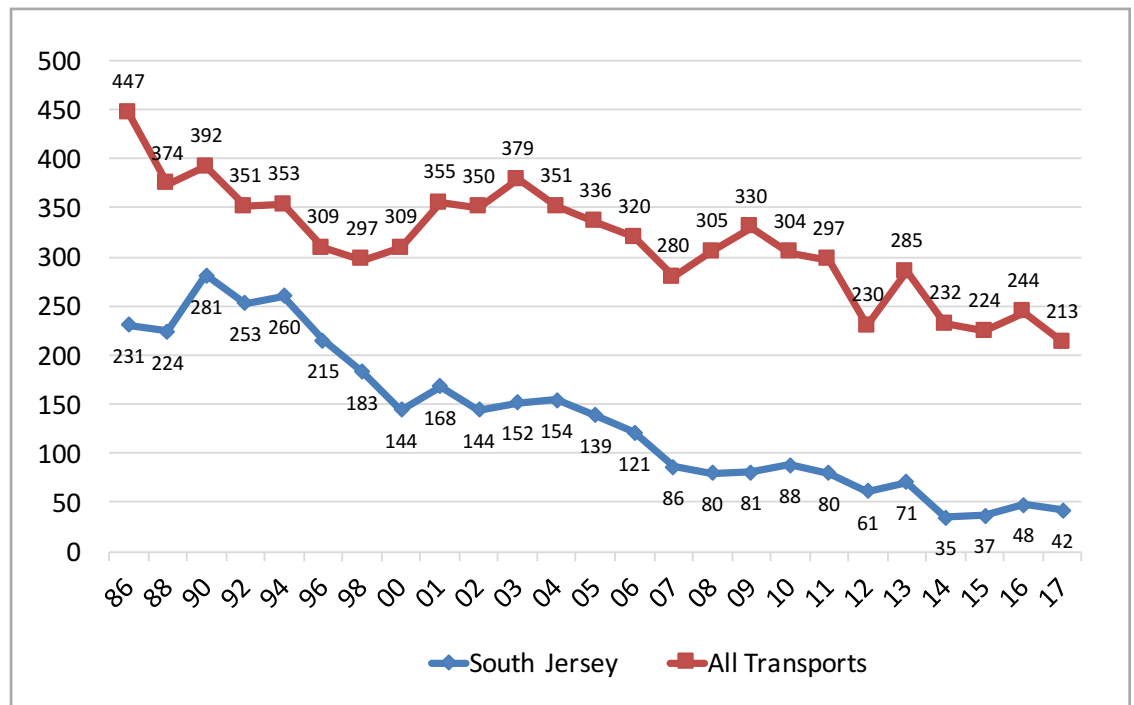


Figure 23

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 2017, 251 pregnant women were transported to high-risk perinatal centers. The proportion of these transports going to South Jersey Regional Perinatal Centers (RPC) has consistently exceeded 89%. (Figure 25). Nearly eighty percent (78.5%) of the mothers transported to

these perinatal 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 2 lbs 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.

Early identification, referral and transport of high-risk mothers helps the majority of the smallest infants, who benefit the most from specialized neonatal care, born at hospitals with these services. Figure 25 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 1 and 2 lbs. were born at hospitals with NICUs. In 2017, 90% of the tiniest infants were born at RPCs and CPCs-Intensive.

Maternal Transports

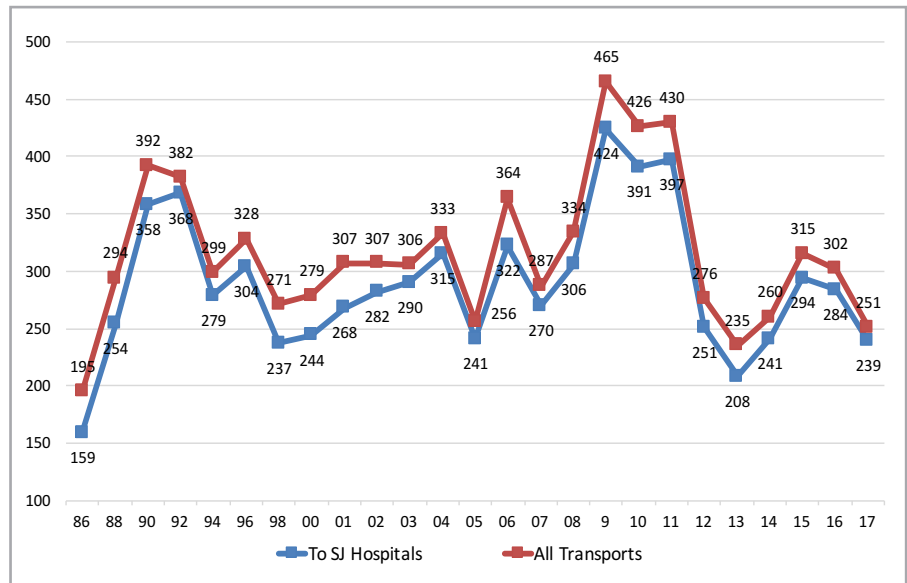


Figure 24

500-1000 gm Born at RPC & Intensive

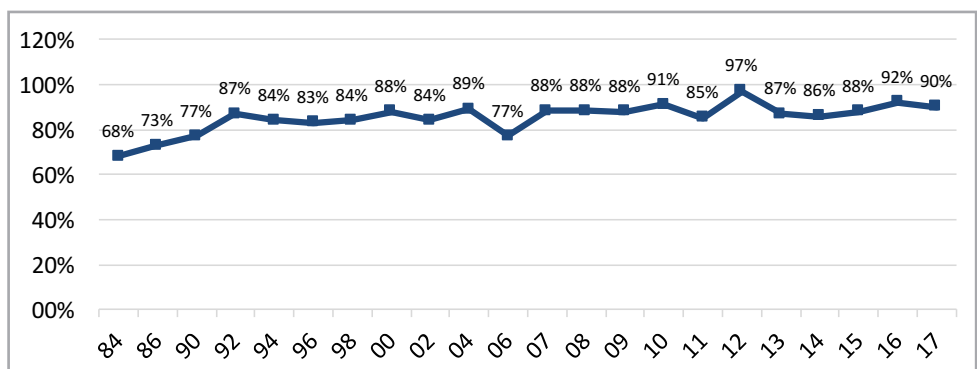


Figure 25

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 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.



2017 Regional Perinatal Database for South Jersey

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



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