Achievement 2014

Regional Collaborative Database

Southern New Jersey Perinatal Cooperative

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

2014 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 assures 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
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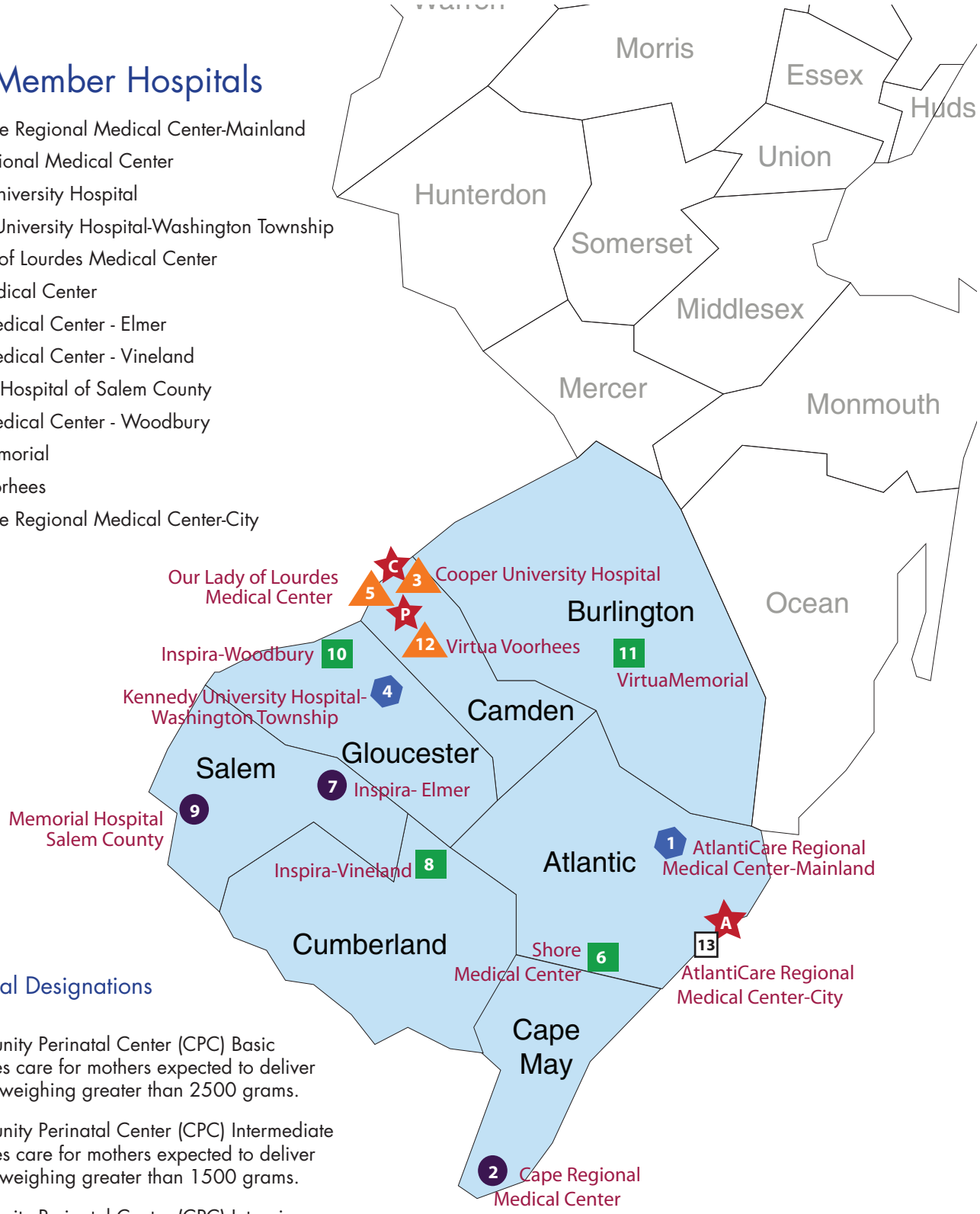
8 Inspira Medical Center - Vineland
9 Memorial Hospital of Salem County
10 Inspira Medical Center - Woodbury
11 Virtua Memorial
12 Virtua Voorhees
13 AtlantiCare Regional Medical Center-City



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 %
(live + still births)	869		4574		5284		8965		19692	
LIVE BIRTHS IN HOSPITAL	867		4550		5240		8904		19561	
NEONATAL MORTALITY	2	2.307	6	1.319	18	3.435	41	4.605	67	3.4
LBW - LIVE BIRTHS <2501 GM	31	3.58%	297	6.53%	470	8.97%	829	9.31%	1627	8.32%
LBW - NEONATAL MORTALITY	2	64.516	5	16.835	16	34.043	38	45.838	61	37.5
VLBW - LIVE BIRTHS<1501 GM	4	0.46%	21	0.46%	83	1.58%	192	2.16%	300	1.53%
VLBW - NEONATAL MORTALITY	2	500.000	5	238.095	15	180.723	37	192.708	59	196.667
ELBW - LIVE BIRTHS<1001GM	4	0.46%	10	0.22%	37	0.71%	87	0.98%	138	0.71%
ELBW - NEONATAL MORTALITY	2	500.000	5	500.000	14	378.378	36	413.793	57	413.0
ELBW2-LIVE BIRTH(500-1000)	4	0.46%	7	0.15%	29	0.55%	68	0.76%	108	0.55%
ELBW2 - NEONATAL MORTALITY	2	285.714	2	285.714	6	206.897	20	294.118	30	277.8
ELBW3-LIVE BIRTH(751-1000)	1	0.12%	2	0.04%	15	0.29%	33	0.37%	51	0.26%
ELBW3 - NEONATAL MORTALITY	0	0.000	0	0.000	0	0.000	3	90.909	3	58.8
FETAL MORTALITY > 499 GM	2	2.301	16	3.762	30	5.701	29	3.509	77	4.1
FETAL MORTALITY > 2500 GM	2	2.387	4	1.013	5	1.047	7	0.942	18	1.1
MATERNAL TRANSPORT (% of total births and trans)	44	4.82%	71	1.53%	41	0.77%	8	0.09%	164	0.83%
NEONATAL TRANSPORTS (% of live births)	29	3.34%	46	1.01%	82	1.56%	75	0.84%	232	1.19%
NEONATAL MORTALITY AFTER TRANSPORTS (% of live births)	1	0.12%	1	0.02%	4	0.08%	0	0.00%	6	0.03%
LIVE BIRTHS OUTSIDE HOSP	9	1.03%	16	0.35%	29	0.55%	23	0.26%	77	0.39%

Electronic Birth Certificate

The New Jersey Electronic Birth Certificate (EBC) system is one of the most comprehensive perinatal data systems in the country. It contains birth record information and perinatal data for each birth that occurs in the birthing facilities in New Jersey.

The current EBC resides on each hospital's network and is voluntarily reported to the Cooperative for regional analysis. This analysis focuses on key risk factors and outcomes from more than 250 individual pieces of data on each delivery. The partnership between SNJPC and its member hospitals has led to improved use of EBC in internal QI systems and the development of needed programs region-wide.

In August of 2014 a new version of the EBC began implementation in six pilot NJ hospitals including the Virtua hospitals in South Jersey. Working closely with the Department of Health, SNJPC, FHI, and staff from the hospitals have made the transition to VIP and contributed to needed improvements and changes during the pilot phase. The new Vital Information Platform (VIP) is the first major update to the birth data set since its implementation in 1992. By July 2015 all NJ hospitals will have transitioned onto the VIP system and EBC will be retired.

VIP will bring the NJ electronic birth system into compliance with federal standards and as a web-based system, will reduce technological burdens on hospital IT.

SNJPC staff will continue to support quality improvement and provide technical assistance to regional hospitals in the use of VIP. It is anticipated that the implementation of VIP will have an impact on the data used for this report in 2015. As hospitals work to implement the new system, data completeness, accuracy and reliability will be compromised. SNJPC and FHI will work closely with regional hospitals to implement quality improvement strategies as VIP is rolled out statewide.

Except where noted, for 2014 VIP information was integrated into EBC analysis for births between August and January at Virtua Memorial and Virtua Voorhees.

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 birthweight trends), we use Live Births in Hospitals. This number excludes outside births and was 19,561 for 2014. For population and patient behavior based data (birth and pregnancy characteristics, delivery and feeding method), SNJPC uses Total Live Births. This number includes outside births and was 19,638 for 2014.

Disclaimer

The EBC/VIP data in the following charts represents births that occur in Cooperative member facilities. Information is limited to those who delivered in 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 EBC/VIP birth facility.

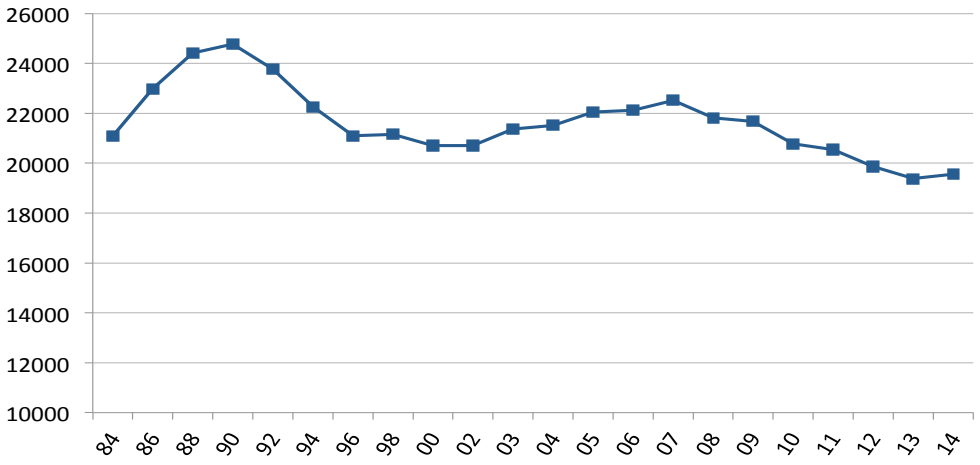
Distribution of Births

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

Consistent with statewide and national trends, births in southern New Jersey have steadily declined over the past few years with 19,561 births in 2014. These reductions have been linked to the recession and the trend has been led by a decrease in births to immigrant women, a group which continues to account for a disproportionate share of births nationally.

Although the number of births in the region fluctuated very little over the past 12 years, demographic shifts have precipitated changes in the perinatal healthcare delivery system. The regional consortia system supports the stakeholders in the hospitals and community to examine these changes and use data to support systemic changes and enhancements that reflect the needs of the community.

Live Births 1984 - 2014



Figure

Characteristics of Births

Of the 19,095 births that occurred to residents of the Southern Region in 2014, two thirds (66%) were to residents of the region's northern counties (Burlington, Camden and Gloucester) (Figure 2). Non-residents accounted for 2.8% (n=543) of births in South Jersey.

Table I depicts the number of births in each county, comparing the two time periods of 2005 to 2009 and 2010 to 2014. The decline in live births on average was 9% but the distributions of these changes were quite varied. While the numbers

of births decreased in all counties, the largest decrease occurred in Salem County; there were also significant decreases in Burlington and Gloucester counties.

2014 Births by County of Residence

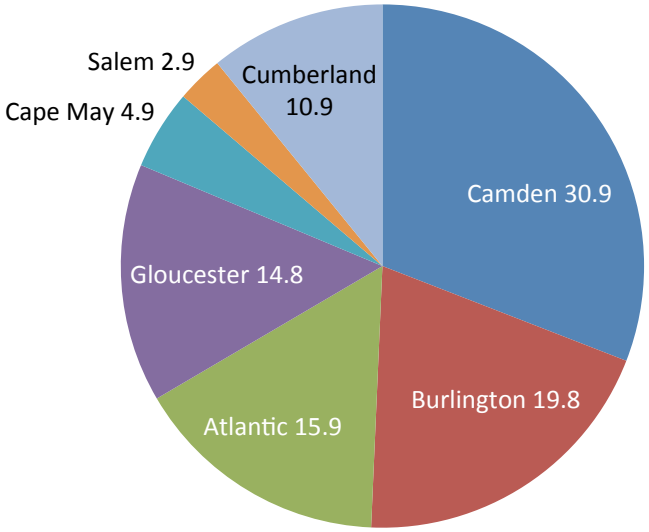


Figure 2

County Birth Totals Five-Year Averages 2005 - 2014

Hospital Births by County	2005-2009	2010-2014	%Change
Atlantic	3814	3487	-8.57%
Burlington	3122	2577	-17.46%
Camden	9146	8905	-2.64%
Cape May	541	499	-7.73%
Cumberland	2218	2052	-7.48%
Gloucester	2499	2011	-19.54%
Salem	671	495	-26.21%
REGION	22011	20025	-9.02%

Table I

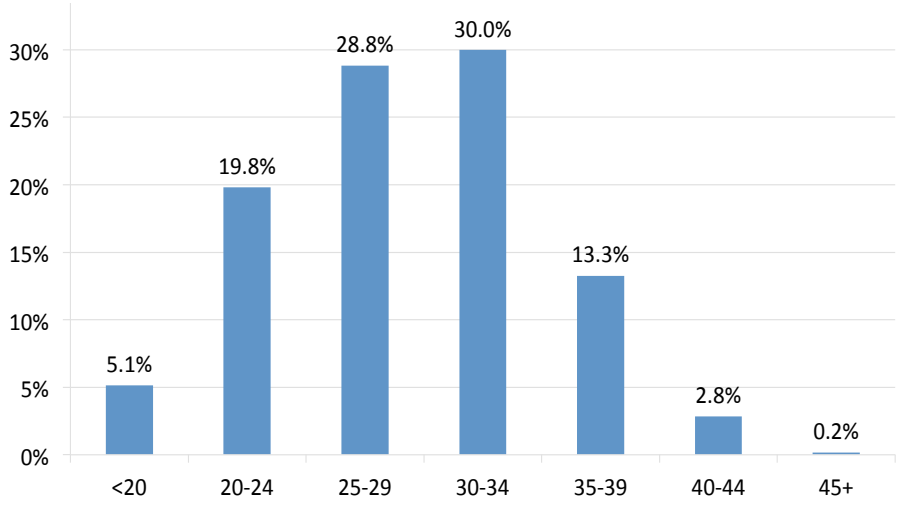
Maternal Age

In 2014, the highest percentage of births in the region occurred to mothers aged 30-34 years (30%), followed by 25-29 years (28.8%), 20-24 years (19.8%), 35-39 years (13.3%), under 20 years (5.1%), 40-44 years (2.8%) and 45 years and older (0.2%). (Figure 3)

Variation in the distribution of births by age group can be seen at the county level in Figure 4. Burlington County had the highest percentage of mothers over 35 (19.1%) while Cumberland County had the highest percentage of mothers under 20 (8.5%). Camden County had the most births in these two categories with 983 births to mothers over 35 and 340 births to mothers under 20.

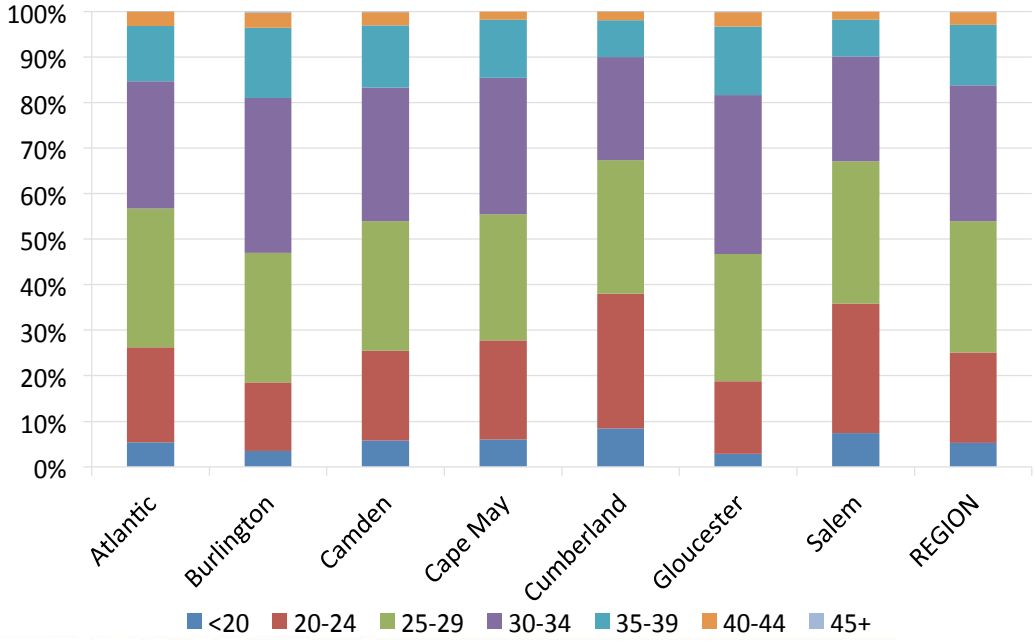
2014 Births by Maternal Age

Figure



2014 County Births by Maternal Age

Figure



Births to Teens

The percentage of births to teens (under age 18) in the southern region has been on the decline in the past 10 years, decreasing 53% from 3.8% in 2001 to 1.4% in 2014. (Figure 5)

The majority (73.2%) of teens giving birth were 18 and 19 years of age compared with 23.1% to 16 and 17 year-olds, and 3.7% to teens less than 16 years of age. (Figure 6)

Nationally there has been a decrease in teen births which is reflected in the data for southern New Jersey. Cumberland and

Salem counties have the highest rates of births to young mothers in New Jersey.

In partnership with regional, state and federal initiatives the number and capacity of programs for young mothers and teen pregnancy prevention activities are increasing in these areas.

In 2014 community engagement was a primary focus in these counties. Educational sessions and community based services are working collaboratively to help all adults recognize the opportunities they have to make a positive impact in the lives of young people.

Teen Births as Percent of Total Births 17 and Younger

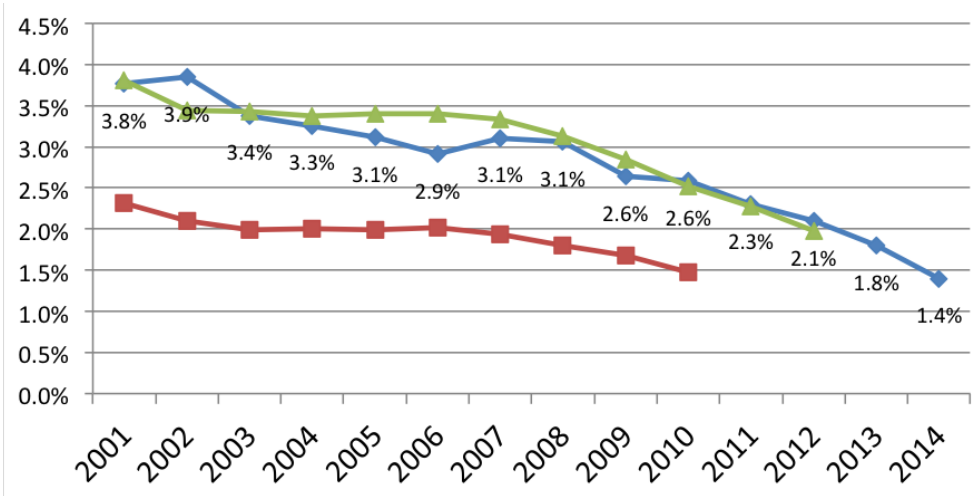


Figure 5

State Source: Center for Health Statistics, New Jersey Department of Health. http://www4.state.nj.us/dhss-shad. 4/28/14.

Nation Source: Centers for Disease Control and Prevention. National Center for Health Statistics. VitalStats./nchs/vitalstats.htm. 4/28/14.

2014 Births to Teens by County

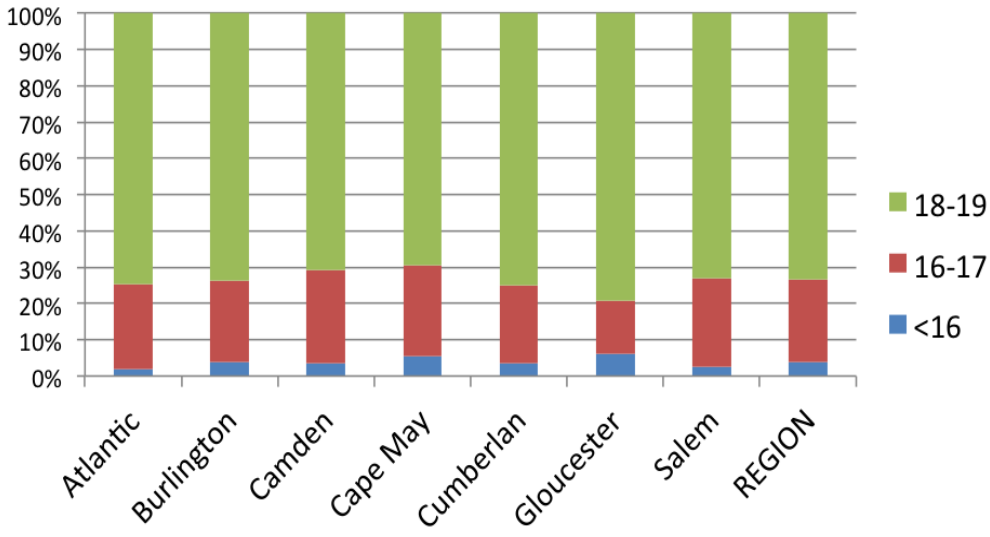


Figure 6

Pregnancy Characteristics

Prenatal Care

In 2014, 82% of all births were to women who began prenatal care in the first trimester, 14% were to women who began prenatal care in the second trimester, 3% were to women who began prenatal care in the third trimester, and 1% received no prenatal care (Figure 7). The Healthy People 2020 objective for First Trimester Entry to Prenatal Care is 77.9%. While the region has exceeded this objective, cities throughout the region continue to fail on this measure. SNJPC programs work with mothers, care providers, and community stakeholders to overcome barriers to access for all women in South Jersey.

Entry to Prenatal Care by Trimester
SNJPC Member Hospital Births

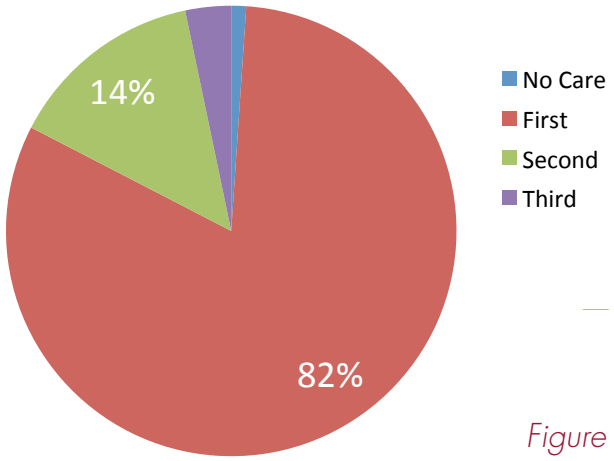


Figure 7

Plurality

In 2014, singleton births represented 96% of all births in the region, twin births represented 3.8%, and triplet births represented 0.14% of all births. There were fewer than five quadruplet births in 2014. (Table II)

The decline in higher order multiples is seen after 2005, with no births greater than triplets in the region until this year. 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.

Table II

Year	Singleton		Twin		Triplet		Quadruplet		Total Multiples		
	N	%	N	%	N	%	N	%	N	%	Change in % from Baseline
2005	21352	96.21	810	3.65	27	0.12	4	0.02	841	3.79	
2006	21340	95.79	881	3.95	56	0.25	0	0	937	4.21	11%
2007	21834	96.04	870	3.83	30	0.13	0	0	900	3.96	4%
2008	21155	96	834	3.78	48	0.22	0	0	882	4	6%
2009	21034	95.88	859	3.92	44	0.2	0	0	903	4.12	9%
2010	20202	96.16	785	3.74	21	0.1	0	0	806	3.84	1%
2011	19844	95.51	888	4.27	45	0.22	0	0	933	4.49	18%
2012	19276	95.99	787	3.92	19	0.09	0	0	806	4.01	6%
2013	18662	95.89	767	3.941	33	0.17	0	0	800	4.11	8%
2014	18865	96.06	745	3.79	27	0.14	1	0.01	773	3.94	4%

Risk Assessment

Risk assessment is conducted during pregnancy to identify 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 is conducted at the first prenatal visit and updated throughout the course of prenatal care.

The goal of risk assessment is to prevent or treat conditions associated with poor pregnancy outcomes and to assure linkage to appropriate services and resources through referral.

Table III depicts some of the risk factors that were associated with VLBW births in 2014. Inadequate prenatal care, substance abuse, 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.

The association between no prenatal care and late entry to care, and the occurrence of low birthweight is also depicted in Table III. Although only 1% of pregnant women did not receive prenatal care, the no prenatal care rate for women delivering VLBW infants was 3%.

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 20% of the births in the region were to black women, higher proportions (34%) of the VLBW births were black. 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
Live Births	***19638***	*304*	*19334*
Mother's race: White	**62%**	48%	62%
Mother's race: Black	**20%**	34%	19%
Mother's ethnicity: Hispanic	**21%**	21%	21%
1st trimester entry to prenatal care	**81%**	81%	81%
No prenatal care	**1%**	3%	1%
Used tobacco during pregnancy	**12%**	17%	12%
Plurality of 2 or more	**4%**	27%	4%
Mother's age less than 20 years	**5%**	8%	5%
Mother's age 35 years or greater	**16%**	22%	16%
Primigravida	**30%**	33%	30%

Source: EBC/VIP 2014

Method of Delivery

Unfortunately, New Jersey continues to be among the states with the highest cesarean birth rate. Figure 8 depicts the relationship between cesarean births and vaginal deliveries in South Jersey in the past years.

For the past several years, the New Jersey Hospital Association has sponsored a Perinatal Collaborative working to identify quality improvement strategies for perinatal health. Hospitals participating in this Collaborative have had the opportunity to share best practices across the spectrum of perinatal care. The reduction of inductions before 39 weeks was selected as a best practice in this initiative and many hospitals across the state have instituted "hard stops" for this procedure.

An examination of the births to mothers in SNJPC member hospitals based on the unified reporting standards in *Cesarean Delivery: Comparing New Jersey Hospitals* can be seen in Table IV.

The examination of these deliveries 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 2005-2014

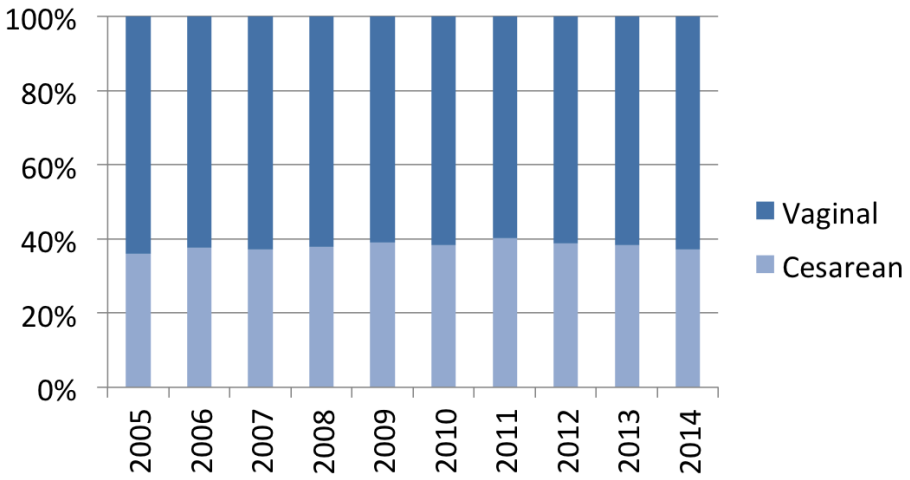


Figure 8

2005-2014

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
2005	33.70%	81.40%	6.00%	9.70%	4.33%
2006	34.80%	83.60%	6.90%	9.20%	2.30%
2007	33.90%	84.00%	4.40%	7.60%	3.29%
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%
Change over time	**-9.47%**	**2.64%**	**68.50%**	**68.56%**	**25.87%**

Table IV

VBAC Trends

Year	Failed VBAC	Successful VBAC
2005	44.80%	55.20%
2006	42.20%	57.80%
2007	40.90%	59.10%
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	32.54%*	67.46%*
Change over time	**-27.37%**	**22.21%**

Table V

ISSUES

South Jersey Cesarean Births, & Inductions

1. Nullipara cesareans for standard presenting women. *(First-time, live births, baby head down)* In 2014, the rate of these cesarean births was 30.5%. This rate had been steadily increasing over the previous decade and reached a high point of 36.1% in 2011.

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 2014, 83.5% of deliveries to women who had a prior cesarean were cesareans without a trial of labor. This type of delivery has been on the decline overall in South Jersey. 2014 saw a slight increase over 2013, however, since 2008 there has been a 4% decrease in repeat c-sections.

3. Attempted vaginal births after cesarean births (VBACs) at 39+ weeks gestation that end in cesarean. These are defined as "failed" VBACs. In 2014, the rate of failed VBACs was 27.34%. This rate has been decreasing since 2011.

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 will be the focus of quality improvement activities in future years. In 2014 this rate was 10.11%.

5. Inductions that end in cesarean. In 2014, the rate of c-section after induction among women who had a prior c-section was 5.45%.

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

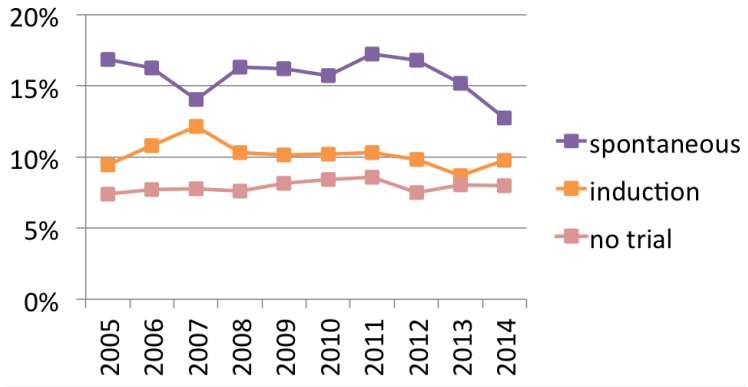


Figure 9

South Jersey Cesarean Births Trends

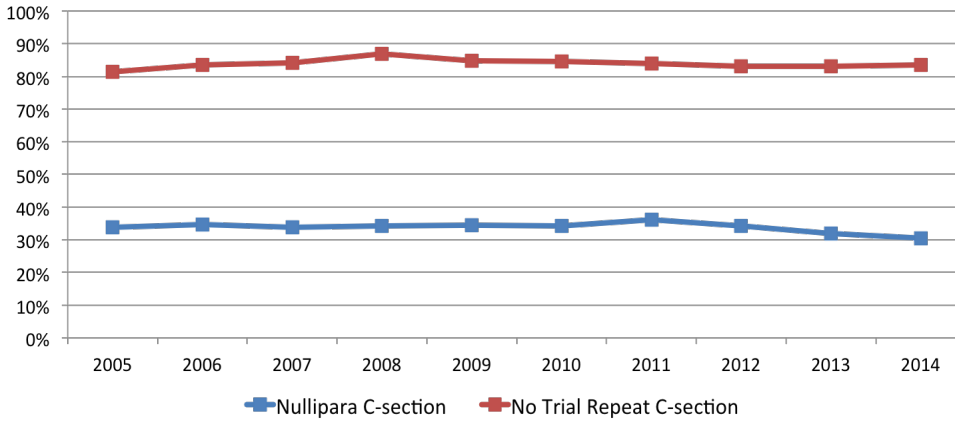


Figure 10

Newborn Feeding Method

Newborn feeding method refers to the type of feedings given to the newborn in the 24 hours prior to discharge from the hospital. Table VI and Figure 11 below show the trends in feeding methods for infants born in SNJPC member hospitals since 2004.

In 2013, 70% of women who gave birth in the SNJPC member hospitals breastfed their newborns (either exclusively or in combination with formula); 50.5% exclusively breastfed; 26.9% used formula; and 19.5% used a combination of breastfeeding and formula. There has been a steady increase in breastfeeding and a decrease in the number of newborns who were fed exclusively with infant formula.

Feeding Method At Discharge

Year	Total Breastfeeding	Exclusive Breastfeeding	Formula	Combination
2005	62.5%	46.4%	35.5%	16.1%
2006	63.4%	45.8%	34.4%	17.7%
2007	62.7%	43.9%	34.8%	18.8%
2008	63.6%	44.3%	33.8%	19.3%
2009	64.8%	43.5%	32.6%	21.3%
2010	64.2%	39.7%	33.0%	24.5%
2011	65.6%	43.9%	30.6%	21.7%
2012	69.0%	47.5%	28.3%	21.5%
2013	70.0%	50.5%	26.9%	19.5%
2014	71.2%	50.2%	26.9%	21.0%
Change over time	**13.92%**	**8.19%**	**-24.23%**	**30.43%**

Table VI

Feeding Trends 2005 - 2014

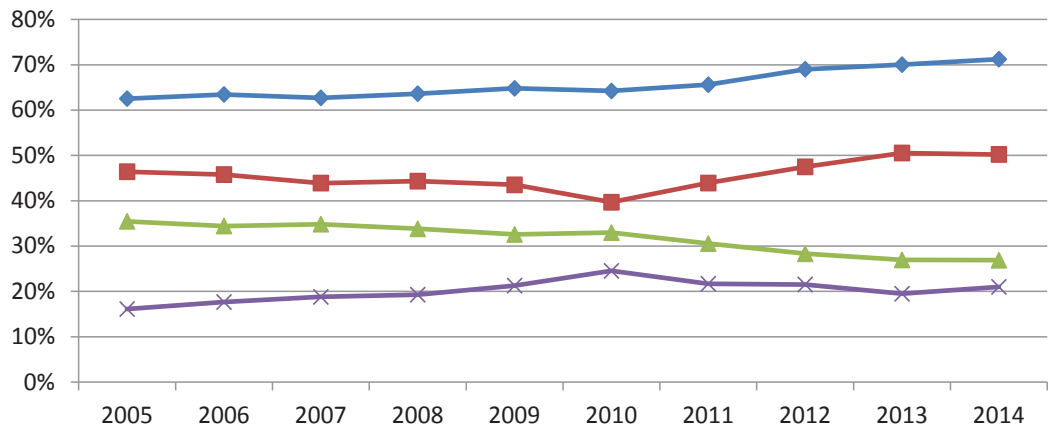


Figure 11

Exclusive Breastfeeding

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.

Over the last ten years the percentage of infants exclusively breast fed has increased. There have however been differences by race and ethnicity. Table VII depicts these trends over time. In 2014, the percentage of exclusive breastfeeding was highest for births to White mothers (56.2%). Increases in exclusive breastfeeding were seen in all race groups, with Black mothers increasing over 20% since 2005.

Some of the obstacles to exclusive breastfeeding can be overcome in the following ways:

- Prevent and treat early problems. Most breastfeeding problems occur in the first 2 weeks of life. These problems all too often lead to very early infant supplementation and abandonment of exclusive breastfeeding.
- Restrict commercial pressures. Aggressive marketing of infant formula often gives new mothers and families the impression that human milk is less modern and thus less healthy for infants than infant formula.
- Provide timely and accurate information. Ensuring that women receive complete, accurate, timely, and consistent information is fundamental for any program promoting exclusive breastfeeding.
- Establish good practices in health facilities. Distribution of free samples of infant formula, the use of glucose water, and separation of mother from newborn are obstacles to the establishment of good feeding in health services.
- Adopting the Baby-friendly Hospital Initiative's "Ten Steps to Successful Breastfeeding" and enhancing the skills of healthcare providers to support exclusive breastfeeding would help to ensure the best start for infants. (http://www.babyfriendlyusa.org)

While Elmer Hospital remains the region's only officially designated Baby Friendly Hospital, the importance of breastfeeding has been integrated into care across the region. This is evident from the nearly 14% increase in total breastfeeding in the past 10 years.

Exclusive Breastfeeding by Race and Ethnicity

Table VII

Year	Black	White	Hispanic
2005	31.6%	53.0%	36.0%
2006	32.9%	52.0%	34.5%
2007	31.6%	49.4%	33.6%
2008	29.8%	49.6%	37.0%
2009	28.6%	49.2%	33.6%
2010	26.5%	43.5%	26.7%
2011	32.1%	47.9%	34.7%
2012	34.4%	51.8%	39.0%
2013	37.1%	54.6%	42.8%
2014	38.9%	56.2%	41.5%
Change over time	**23.10%**	**6.04%**	**15.28%**

Infants Born Outside the Hospital

The regional database also tracks the number of infants born outside of hospitals. These are emergency births and include 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 was reversed. This rate has remained very low for the past decade (Figure12).

Although the majority of these infants are full-term, they are, as a group, at increased risk. The fetal and neonatal mortality risk is higher for these infants than those born in the hospital with appropriate care and support. Because of this, surveillance continues to determine preventable causes of these occurrences.

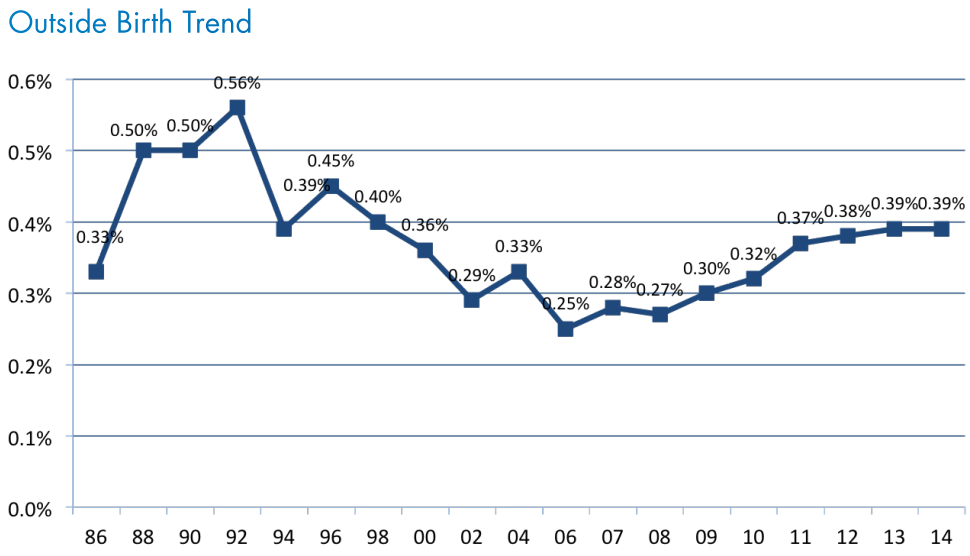


Figure 12

Birthweight Trends

As seen in Figure 13, a greater proportion of infants weighing less than 5.5 lbs. were born in 2014 than in the baseline year of 1984, (8.3% vs. 6.8%). Table VIII depicts the increased birth rates of the last 25 years for infants weighing 1501-2500 grams, 1001-1500 grams and those infants weighing less than 1000 grams at birth. Although we continue to depict regional progress since SNJPC's inception, a more relevant comparison is one that examines our current experience to that of the late 1990's.

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

In 2014, 300 (1.5%) of the babies born in member hospitals were categorized as VLBW (Very Low Birth Weight) because they weighed less than 1500 grams (3.3 lbs). This group of infants are the most vulnerable and have the most influence on the neonatal mortality rate. When examined over time, the birth rate of small infants has remained relatively stable since 1999.

Of particular interest is the subset of the tiniest infants who weigh under 1000 grams (just under 2lbs). These babies are referred to as Extremely Low Birth Weight (ELBW). Figure 14 shows the birthweight trends for these small 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 birthrate of ELBW infants is 0.97%. In 2014, 138 infants, (.7% of the total births in the region) weighed less than 1000 grams.

Figure 14

Birthrate of LBW Infants 1984-2013

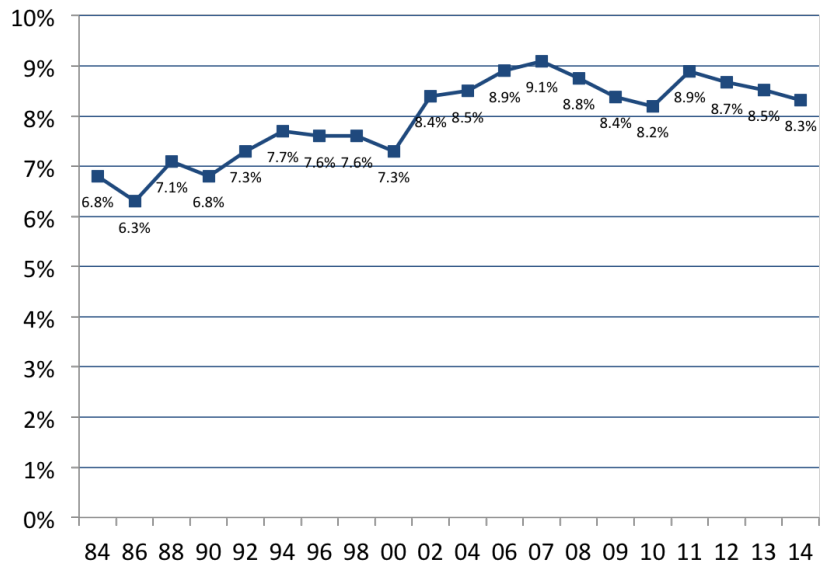


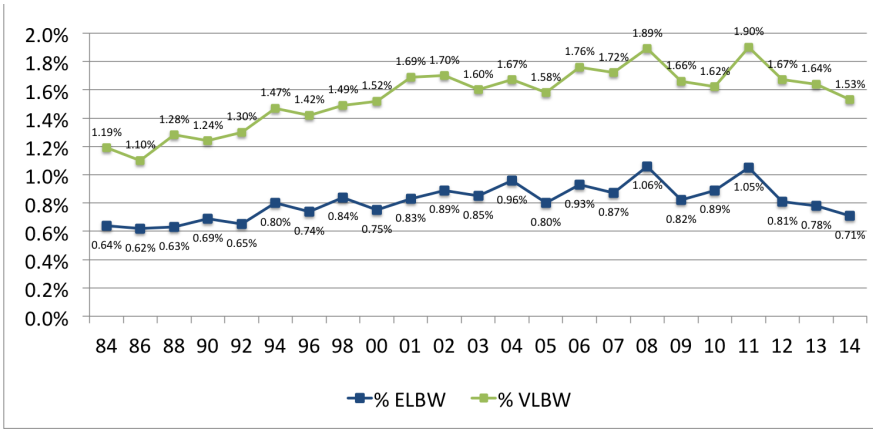
Figure 13

Birthweight Distribution

Weight Group	Baseline	2014	%Change
All Weights	21102	19561	-7.30%
<2501 g (LBW)	6.80%	8.32%	22.35%
<1501 g (VLBW)	1.19%	1.53%	28.57%
<1001 g (ELBW)	0.64%	0.71%	10.94%

Table VIII

ELBW/VLBW Birthrate Comparison



Neonatal Mortality

The regional neonatal mortality rate trend since 1984 can be seen in Figure 15.

At 3.43 deaths per 1000 live births, the 2014 neonatal mortality rate (NMR) is the lowest NMR for the region since we have been tracking these data and 55% lower than the baseline year of 1984. The average NMR for infants of all weights over the past ten years is 5% deaths per 1000 live births.

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. Despite the increase in the incidence of low birth weight infants since 1984, the neonatal mortality has decreased for every birth weight category above 500 grams. Several categories exhibit dramatic decreases.

As can be seen in Table IX, the mortality rate for LBW, VLBW and ELBW infants has decreased on average by 51%.

The information concerning specific subsets of tiny infants helps explain these trends. 2014 saw a 40% reduction in the mortality rate for smaller infants weighing between 1 and 1.5 lbs. (500-750g), when compared to the baseline year. During the same period, the mortality rate for the subgroup of infants weighing between 1.5 and 2 lbs (750-1000g) decreased 83% from 351 to 59 per 1000 live births from 1984 to 2014. (Table X)

Neonatal Mortality 1984-2014

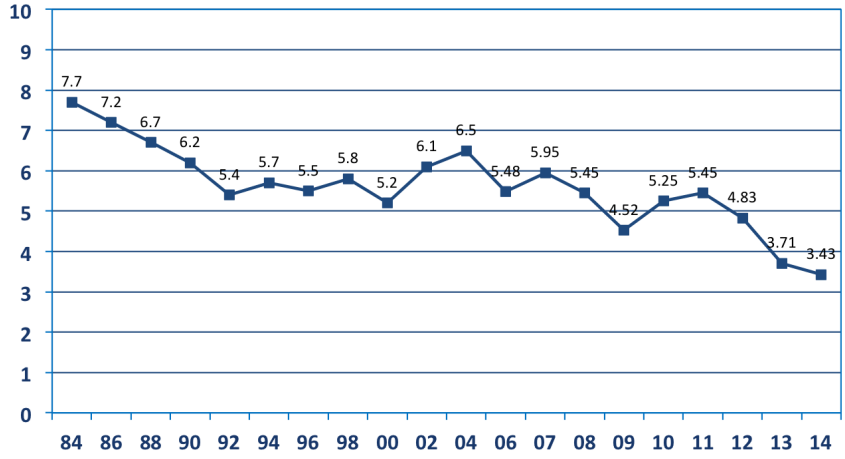


Figure 15

Neonatal Mortality Rate Birthweight Distribution

Weight Group	Baseline	2014	%Change
Overall	7.68	3.43	-55.34%
<2501 g (LBW)	86.53	37.49	-56.67%
<1501 g (VLBW)	424.6	196.67	-53.68%
<1001 g (ELBW)	666.67	413.04	-38.04%

Table IX

Neonatal Mortality Rate Trends

Weight Group	1984	2014	%Change
Overall	7.68	3.43	-55.34%
1501 -2500 g	15.24	1.51	-90.09%
1001-1500 g	145.3	12.35	-91.50%
751-1000 g	350.88	58.82	-83.24%
500-750 g	785.71	473.68	-39.71%

Table X

Fetal Mortality

In addition to programs aimed at reducing neonatal mortality, the Cooperative has also coordinated educational and consultation activities directed at reducing the fetal mortality rate (FMR).

The 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.

In 2014 the fetal mortality rate for births over 500 grams was 4.13, a decrease of 31% since 1984, but has been fairly stable since 2000. 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 53%. In 2014 the rate for this group was 1.06 losses per 1000 births,

Fetal Mortality Rate

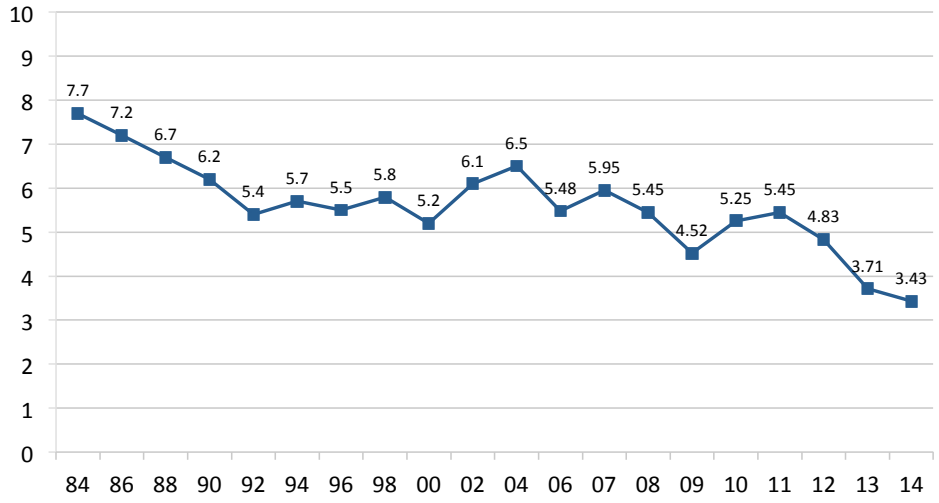


Figure 16

Fetal Mortality Rate >2500 1986-2014

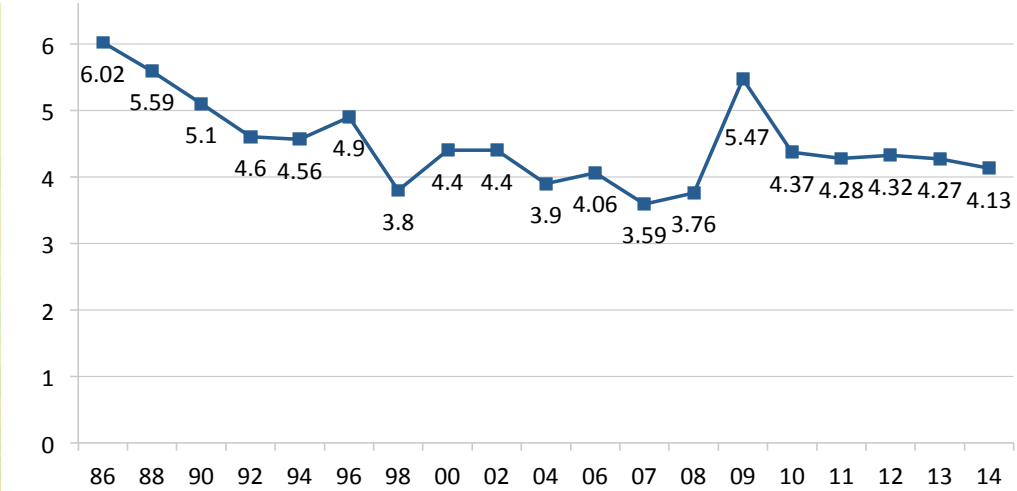


Figure 17

Transport Patterns

Neonatal Transports

In 2014, 232 infants were transported from South Jersey hospitals for neonatal intensive care (Figure 18). The effectiveness of the maternal transport system, which ensures that mothers deliver in hospitals prepared to care for their infants at any weight, is seen in the fact that only 27% of these transported infants weighed less than 1500 grams. Additionally 54% of the transported infants weighed more than 2500 grams. Many of the larger term or close to term infants who were transported required surgery or other specialized care in New Jersey and neighboring states.

Neonatal Transports

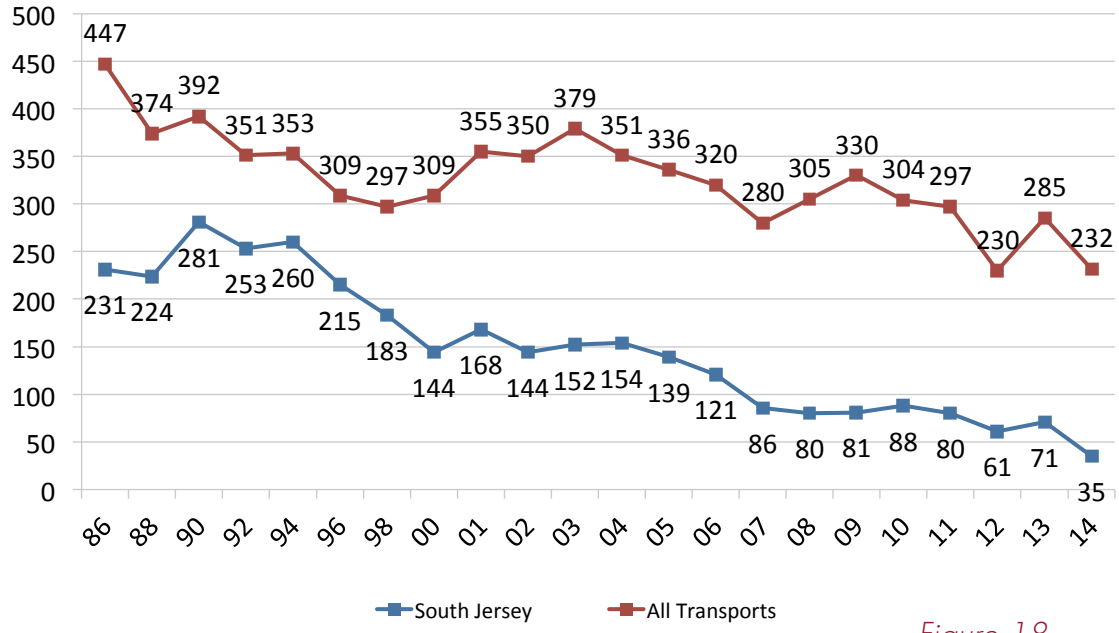


Figure 18

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 2014, 260 pregnant women were transported to high-risk perinatal centers. The proportion of these transports going to South Jersey RPCs has consistently exceeded 89%. (Figure 19). Seventy five percent (75%) 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.

One of the consistent findings in the SNJPC Regional Database Report is the effectiveness of the regional maternal transport system in assuring that few infants weighing less than 2 lbs are born at community hospitals without NICUs. Although every CPC (Community Perinatal Center) 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 helped to insure the majority of the smallest infants who benefit the most from specialized neonatal care are born at hospitals with these services. Figure 20 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 2014, 86% of the tiniest infants were born at Regional Perinatal Centers (RPCs) and CPCs-Intensive.

Maternal Transports

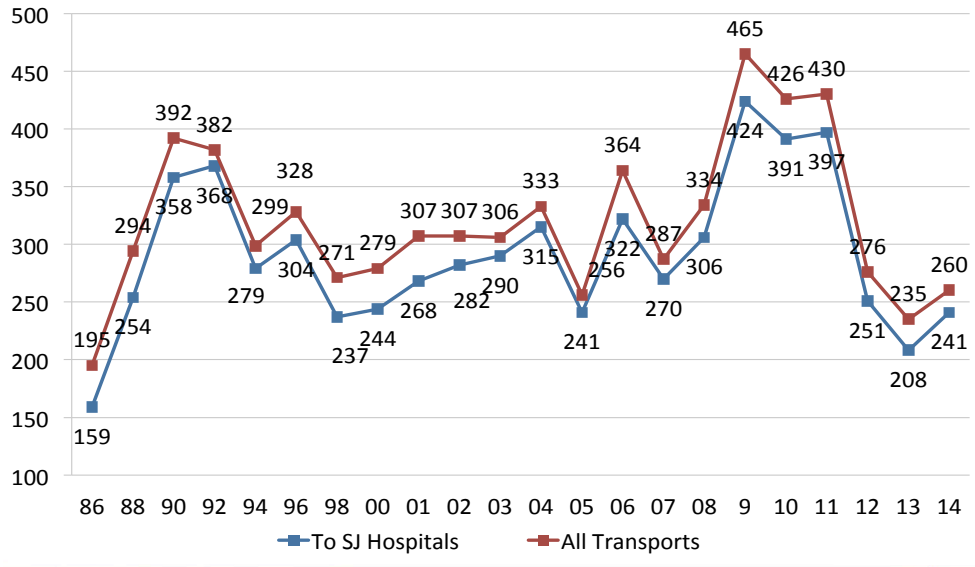


Figure 19

500-1000 gm Born at RPC & Intensive

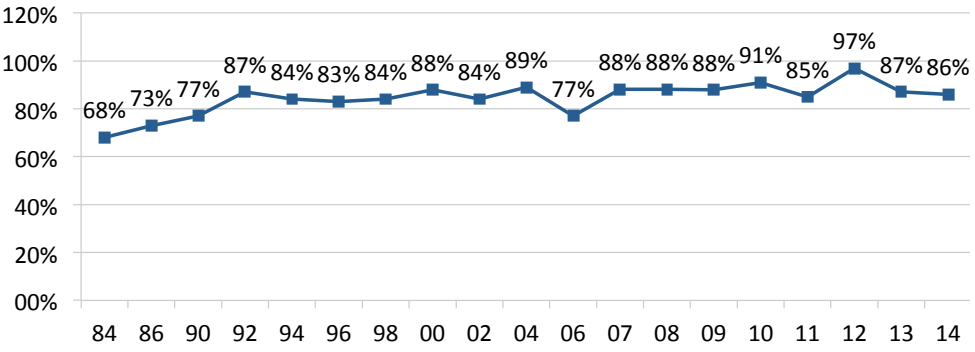


Figure 20

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 than1,000 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.

Southern New Jersey Perinatal Cooperative

2014 Regional Perinatal Database for South Jersey

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

Southern New Jersey
PERINATAL COOPERATIVE

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