ALLEGHENY COUNTY HEALTH DEPARTMENT

NATALITY REPORT

2019

ALLEGHENY COUNTY
2019 NATALITY REPORT

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EXECUTIVE SUMMARY

This report is a summary of 2019 trends in Allegheny County natality data. The purpose is to provide summary statistics of time trends, live birth rates, and health indicators from 2019 birth certificates. Data include birth rates, birth outcomes (such as prematurity), and preconception health indicators, such as smoking and entry into prenatal care. The Allegheny County Health Department (ACHD) uses this information to monitor trends and inform program planning and needs assessments. For example, in 2015, ACHD identified Maternal and Child Health as a key priority area in its Plan for a Healthier Allegheny (PHA)[1]. Birth data provide useful metrics to assess parental and child health-related objectives and actionable strategies. These data were provided by the Pennsylvania Department of Health[2].

NATALITY KEY FINDINGS

BIRTH OUTCOMES

- Racial disparities remain for all measures of birth outcomes
  - Low birthweight (LBW): 8.9% of Allegheny County infants overall were born LBW; 15% of Black infants and 7% of White infants were LBW. Preterm birth: 10% of Allegheny County births were preterm; 14.5% of births in the Black population and 8.9% in the White population were preterm. Small for gestational age (SGA) was highest among Black birthing people (19.5%), compared to White birthing people (8.9%) .
  - Large for gestational age (LGA) was highest among White birthing people (9.0%)
- The rate of cesarean delivery in Allegheny County continued to increase from previous years, with roughly 30% of birthing people receiving a C-section in 2019. The rates did not differ by race.

PRECONCEPTION HEALTH

- Nearly 7% of Allegheny County birthing people reported smoking cigarettes during pregnancy; however, smoking during pregnancy significantly decreased over the past decade
- Almost half (49.5%) of Allegheny County birthing people were overweight or obese. Rates of gestational hypertension and diabetes were highest among this group.
- Almost 90% of Allegheny County birthing people received early prenatal care in 2019.
- Nearly half of all Allegheny County multiparous births were within an optimal pregnancy interval.
- Intent to breastfeed increased among all races/ethnicities within the past decade.

More Allegheny County data on socioeconomic, demographic, and health outcomes can be found at:

https://www.alleghenycounty.us/Health-Department/Resources/Data-and-Reporting/Chronic-Disease-Epidemiology/Allegheny-County-Community-Indicators.aspx

NATALITY DATA

2019 BIRTH RATES

- County and Pennsylvania crude birth rate: 10.5 per 1,000 population (Figure 1)
- Allegheny County general fertility rate: 53.8 per 1,000 females aged 15-44. (Pennsylvania rate: 56.3 per 1,000) (Figure 2)
- 98.2% of births took place in a hospital setting
- 87.4% of birthing people in Allegheny County were born in the United States
- 3.6% of births were twins or triplets
- Twins were 3 times more likely when the pregnancy resulted from an infertility treatment[*]

Figure 1. Crude Birth Rate
Allegheny County and Pennsylvania, 2003-2019

Figure 2. General Fertility Rate
Allegheny County and Pennsylvania, 2003-2019
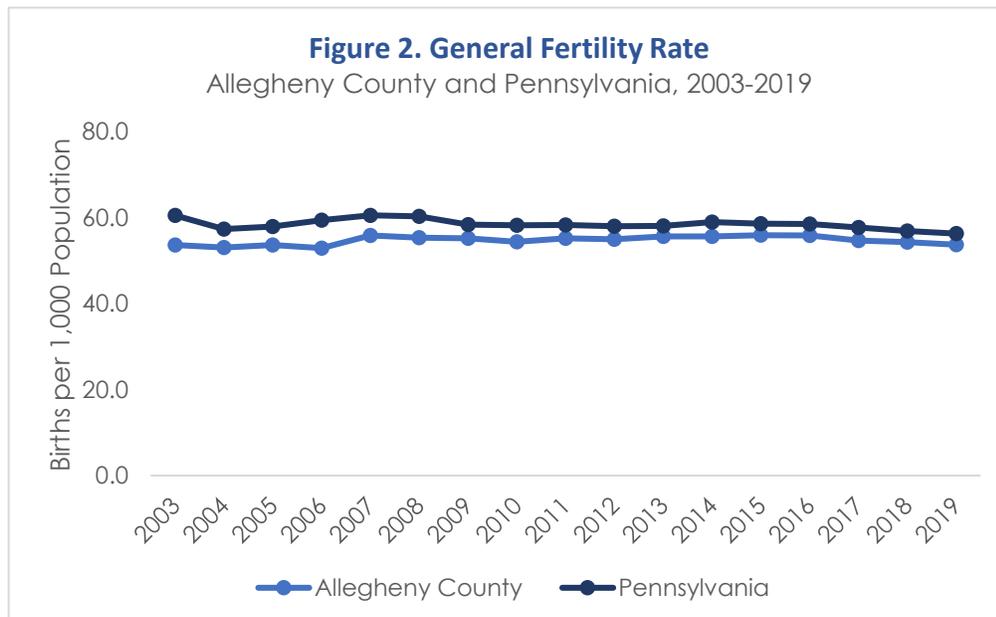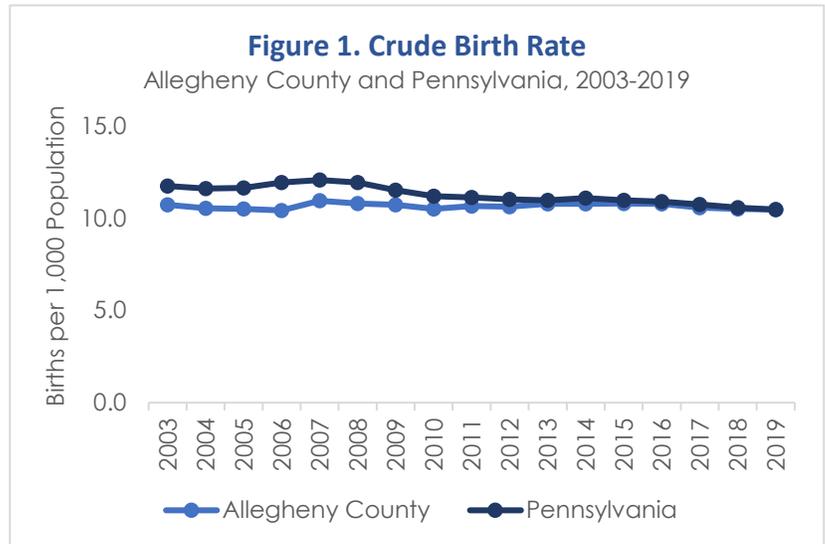
[*] P<0.0001, chi-square test

Figure 3. Birth Rate for Birthing People Aged 15-19 Years
Allegheny County and Pennsylvania, 2003-2019

Figure 4. Crude Age-Specific Birth Rate by Race/Ethnicity
Allegheny County, 2019
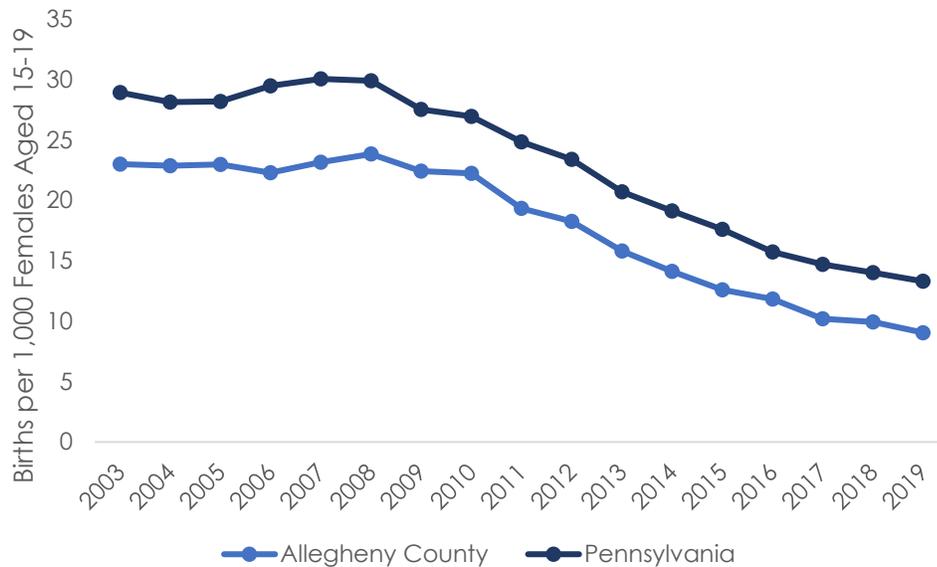
AGE OF BIRTHING PERSON

About 2.5% of Allegheny births in 2019 were among those aged 15-19. The percent of births among this population in Allegheny County and Pennsylvania has decreased by 60% in the past decade (Figure 3).

The highest birthrates overall in both Allegheny County and Pennsylvania were among birthing people aged 30-34 years. For both White and Asian/Pacific Islander birthing people, the highest birthrate was among 30-34 years of age. For Black birthing people, this rate was highest among 25-29 years of age (Figure 4).

BIRTH OUTCOMES

This section of the report addresses natality data related to labor/delivery and birth outcomes of the infant. These include birthweight, length of gestation, and delivery method. These are key indicators for monitoring maternal and infant health due to their connection with morbidity and mortality risk in both a birthing person and their infant. Infants born outside optimal ranges for both birth weight and length of gestation are at a higher risk for serious health issues, while method of delivery may also contribute to maternal complications during delivery.

LENGTH OF GESTATION

Length of gestation refers to the length of the pregnancy in weeks since a birthing person's last menstrual cycle. A preterm, or premature birth is a delivery at less than 37 weeks, while post-term refers to deliveries after 42 weeks[3].

- 10% of Allegheny County births in 2019 were preterm
- Preterm birth rates among Allegheny County and Pennsylvania infants have remained steady over the past 5 years (Figure 8)
- Among birthing people aged 15 to 19, 13.6% of births were preterm and among birthing people aged 40-44, 13.3% of births were preterm (Table 6)
- The occurrence of preterm birth was highest among Black birthing people (14.5%) (Table 6)
- The majority (81.8%) of preterm births were moderate to late preterm (32 to <37 weeks) (Table 7)
- Among the 12,747 Allegheny County residents who gave birth in 2019, 3.7% had a previous preterm birth

Figure 8. Percent Resident Preterm Live Births
(<37 Weeks Gestation)
Allegheny County and Pennsylvania, 2003-2019
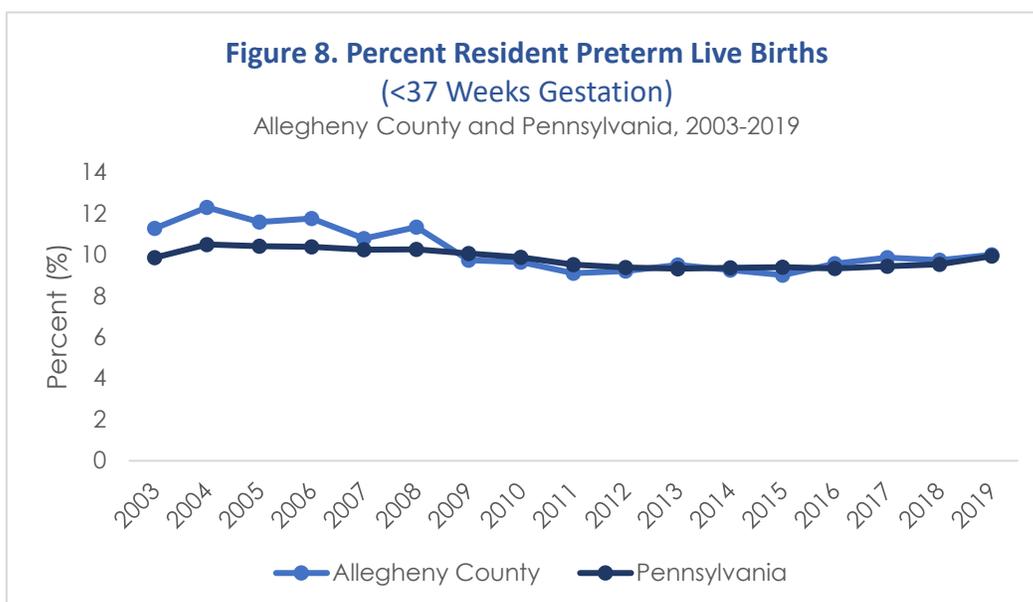
When examining gestational age and birthweight simultaneously, the majority of extremely preterm (<28 weeks) infants were also VLBW (Figure 9). There were no VLBW infants when gestational age was greater than 37 weeks. Additionally, most births greater than 37 weeks gestation were a healthy birthweight (88.5%).

Figure 9. Percent Resident Live Births by Gestational Age Group and Birthweight

Allegheny County, 2019
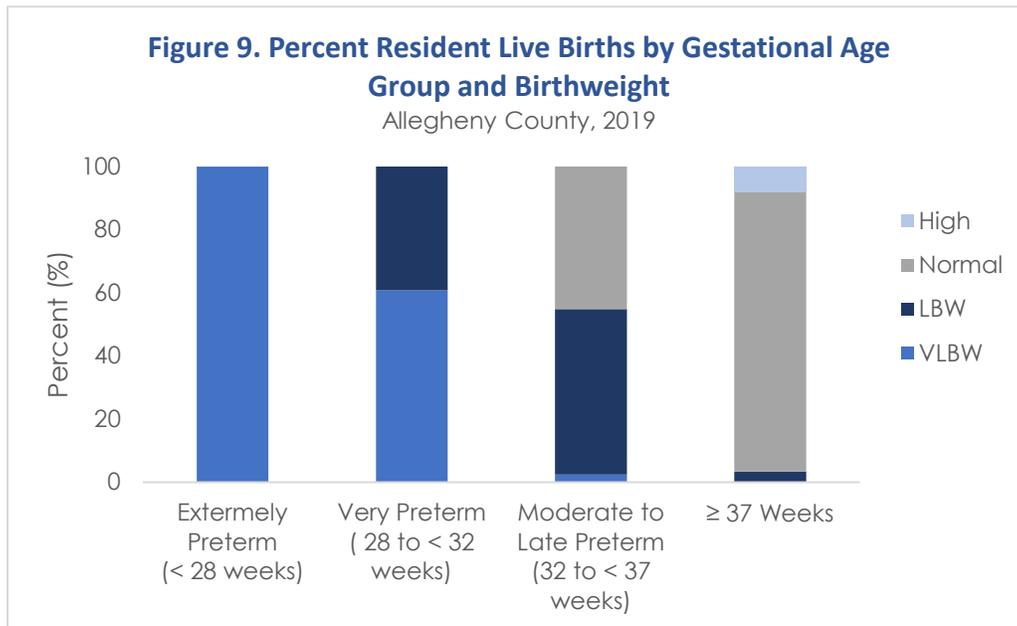
BIRTHWEIGHT

Birthweight refers to the weight of the infant at delivery. A healthy birthweight is between 2,500 and 4,000 grams (~5.5 to 8.8 lbs). Low birthweight is less than 2,500 grams (5.5 lbs), while very low birthweight is less than 1,500 grams (3.3 lbs).

- The majority (83.6%) of Allegheny County births in 2019 were a healthy weight
- There was a significant increase (1.7%) in the occurrence of low birth weight (LBW) from 2012-2019 (Figure 5)
- There was a 1.9% increase in the occurrence of very low birthweight (VLBW) infants from 2012-2019, though not statistically significant
- 15% of Black infants were born LBW, while 7% of White infants were born LBW (Table 5)
- Birthing people with less than high school education had over double the rate of LBW infants compared to birthing people with a college education (Table 5)

Figure 5: Percent Resident Live Births with Low Birth Weight
Allegheny County and Pennsylvania, 2003-2019
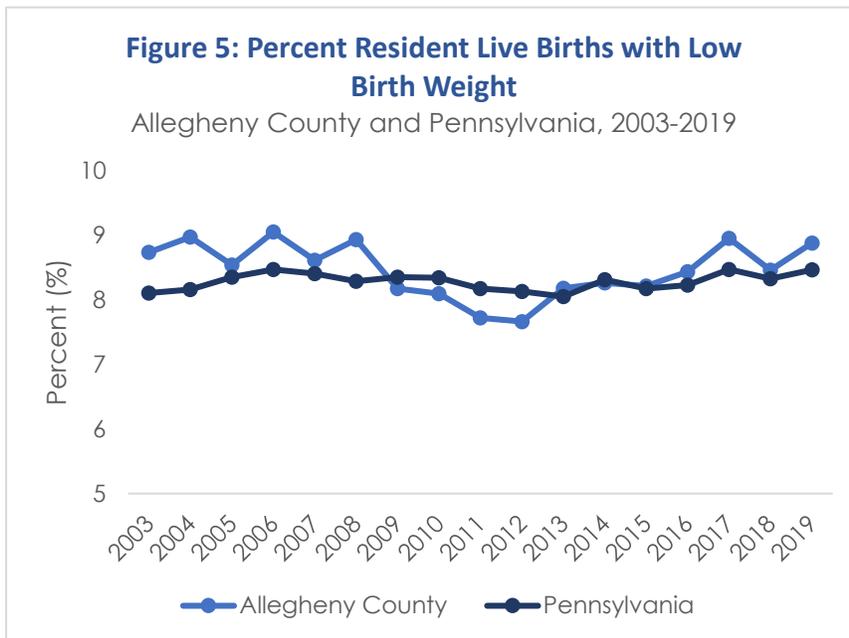
Figure 6. Rates by Birthweight Category: Allegheny County, 2019

Very Low Birthweight	Low Birthweight	High Birthweight
1.6%	8.9%	7.5%

Adjustment of birthweight for gestational age is essential when examining these data. Many small for gestational age (SGA) infants have low birth weight but are not premature and may not develop the same outcomes as a preterm infant[4]. SGA infants have birth weight below the 10th percentile for their gestational age. Similarly, large for gestational age (LGA) infants have a birth weight above the 90th percentile for their gestational age.

Figure 10. Distribution of SGA, AGA, and LGA by length of gestation category: Allegheny County, 2019

Preterm	•Small : 1.4% •Appropriate: 7.2% •Large : 0.7%
Term	•Small : 10.1% •Appropriate : 70.1% •Large : 6.6%
Post-Term	•Small : 0.01% •Appropriate : 0.1% •Large : 3.8%
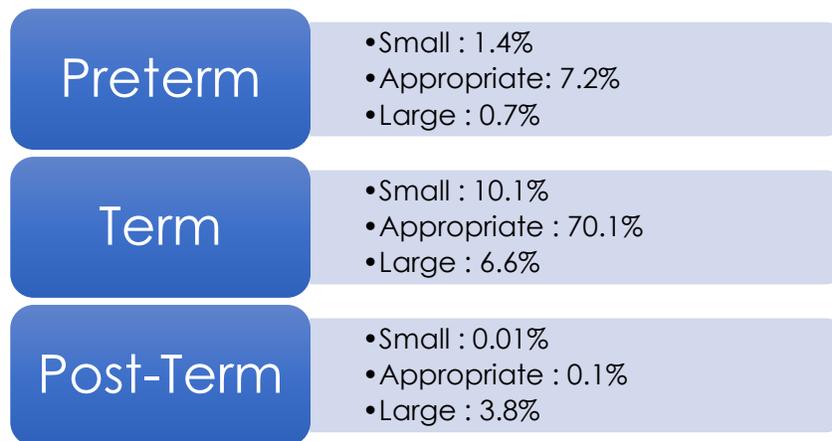
- 80.5% of Allegheny County births in 2019 were an appropriate weight for gestational age (Table 8). However, due to missing gestation category data, Figure 10 reflects 77.4% of births within the top 90% for gestational age

- 12% of births were small for gestational age, while 7.6% were large for gestational age

- SGA was highest among Black birthing people (19.5%), while LGA was highest among White birthing people (9.0%) (Figure 11)

Figure 11. SGA and LGA Status by Race/Ethnicity of Birthing Person
Allegheny County, 2019
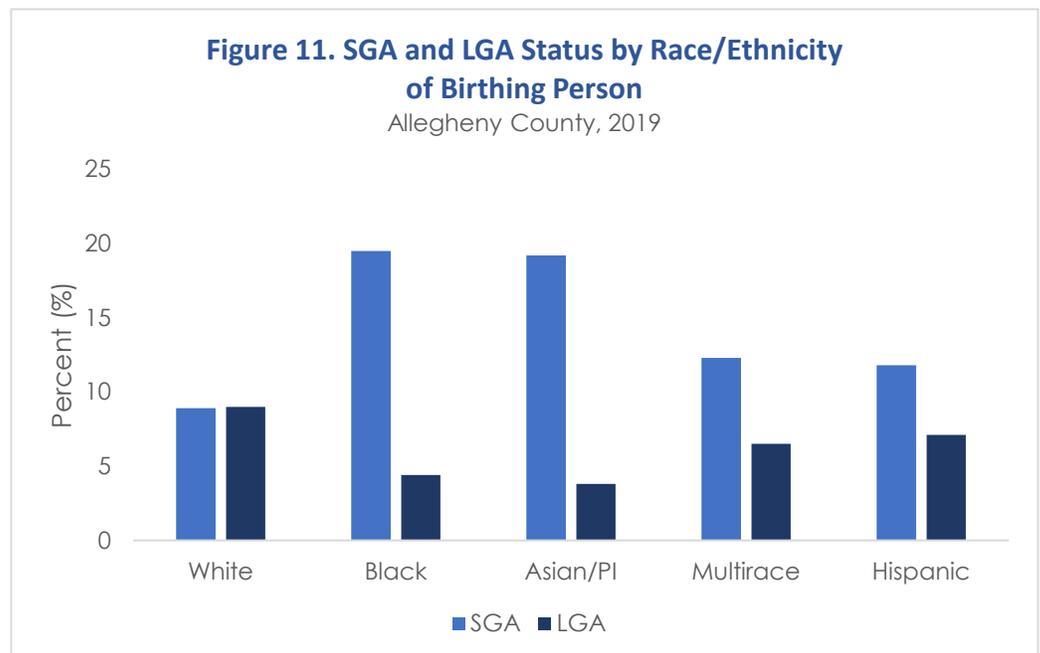
DELIVERY METHOD

Cesarean delivery increased over the past two decades in both Pennsylvania and Allegheny County[5]. Since 2003, the rate of cesarean delivery significantly increased in Allegheny County by an annual average of 0.6% (Figure 12). This increase was most pronounced from 2003 to 2009, where the occurrence of C-sections increased significantly by 3.6%.
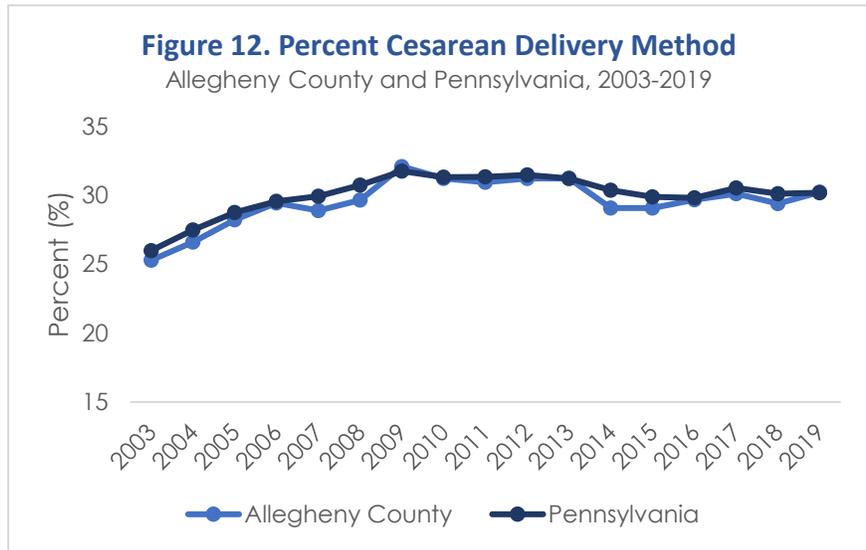
- Cesarean delivery was highest among birthing people over 40 years of age (Figure 13)
- Birthing people over 40 were also more likely to have a repeat cesarean delivery (Figure 13)
- There was no significant difference in method of delivery by race

Figure 12. Percent Cesarean Delivery Method
Allegheny County and Pennsylvania, 2003-2019

Figure 13. Resident Live Births by Cesarean Delivery Method and Age of Birthing Person
Allegheny County and Pennsylvania, 2019
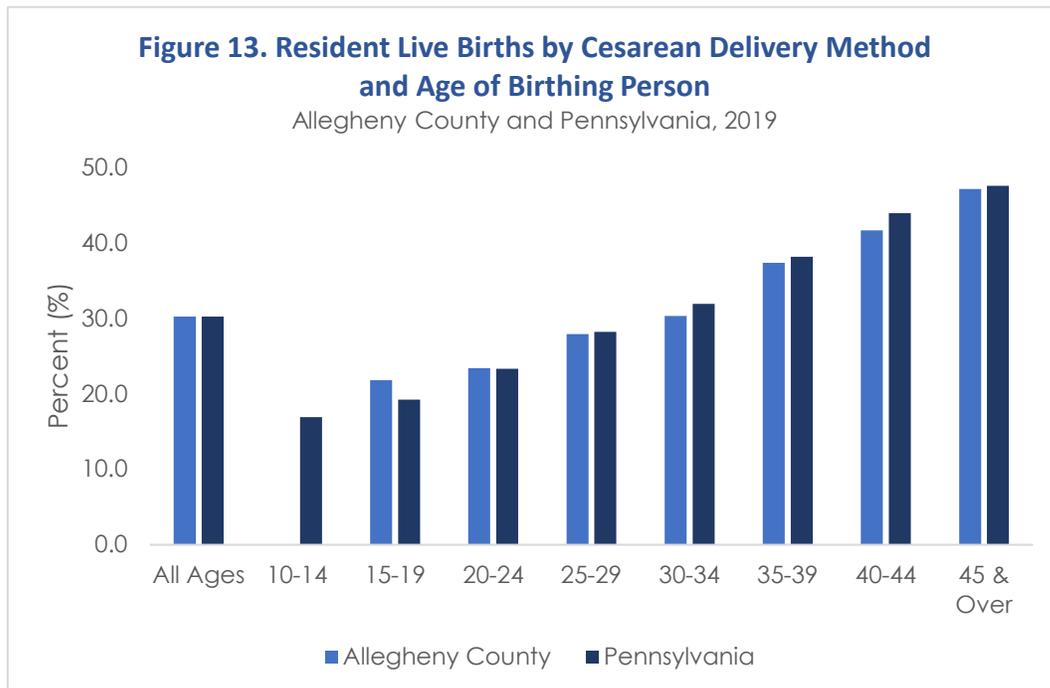
The method of delivery can be further separated based on parity, or number of previous live births. A person giving birth more than once may change their method of delivery after the birth of their previous child or children. Vaginal Birth After Cesarean (VBAC) and repeat cesarean deliveries are thought to have different outcomes for maternal and infant health based on maternal risk factors[6].

- Nearly 70% of all 2019 births in Allegheny County were delivered vaginally without previous cesarean deliveries (Table 13)
- 2% of all births were VBAC, while 8% were repeat cesarean deliveries (Table 13)
- Among birthing people having another birth, over 80% had a repeat cesarean (Table 13)
- Vaginal delivery with no previous cesarean was the most common delivery type among all races/ethnicities (Figure 14)

Figure 14. Delivery Type by Race/Ethnicity of Birthing Person
Allegheny County, 2019
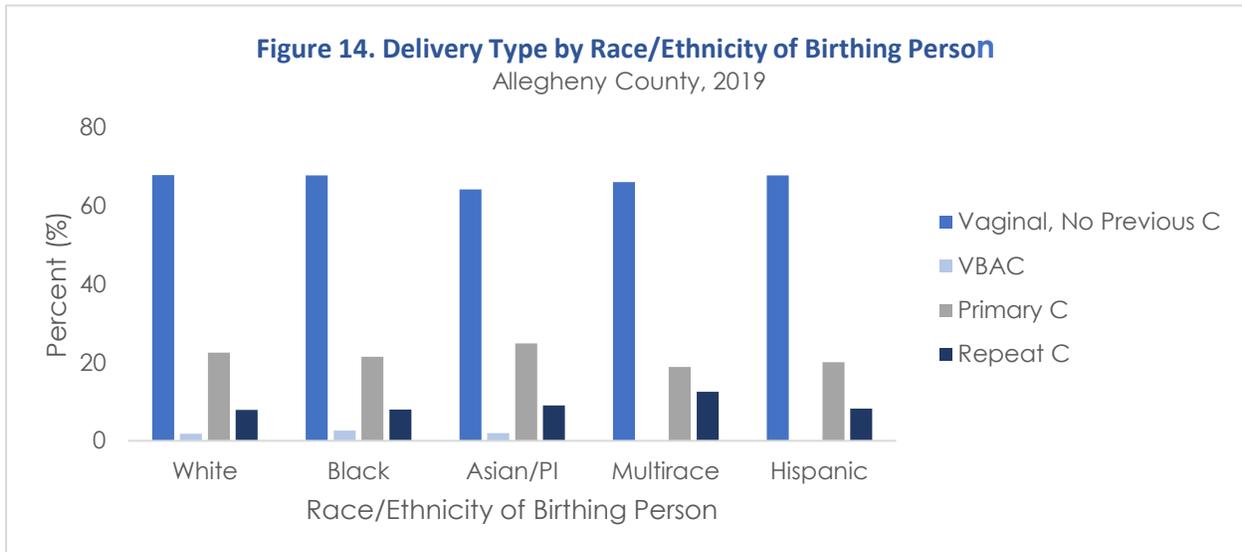
While cesarean deliveries can be life-saving procedures for certain medical indications, they can pose risk for morbidity among low-risk pregnancies. A cesarean delivery is low-risk if a first-time birthing person gives birth to a single infant at full term with a vertex presentation[7]. This is referred to as nulliparous term singleton vertex, or NTSV cesarean. This term, however, does not imply that a cesarean delivery was not medically necessary for low-risk pregnancies, as other factors may necessitate a Cesarean delivery.

- In Allegheny County, 32.9% of cesarean deliveries were low-risk in 2019 (Table 12)
- The occurrence of low-risk cesarean deliveries was highest among Asian/PI birthing people (39.9%) (Table 12)
- The rate of low-risk cesarean deliveries increased with increasing maternal education after stratifying by age (Table 12)

PRECONCEPTION HEALTH

Preconception health refers to the health of a birthing person before they become pregnant. The health of a birthing person prior to pregnancy can affect their health and the health of their baby during pregnancy and at delivery, including LBW and prematurity[8]. According to the CDC, about half of all pregnancies in the United States are not planned. Therefore, preconception health is important to prevent poor pregnancy outcomes. While this report focuses on preconception health behaviors available in natality data, many other factors can affect preconception health and birth outcomes that are not available on the birth certificate, including medical conditions, mental health, vaccinations/screenings, partner/caregiver health, societal stressors, and environmental stressors.

SMOKING

Smoking during pregnancy increases the risk of health problems for the birthing person and is associated with an increased risk of preterm birth, low birthweight, and/or birth defects. Infants are also at an increased risk for respiratory infections, asthma, and childhood obesity[9]. Birthing person smoking status on the birth certificate does not include vaping or e-cigarettes.

- The percent of birthing people in Allegheny County who smoked cigarettes during pregnancy decreased significantly by 7.3% in the past 10 years (Figure 15). A similar trend was seen for Pennsylvania smoking rates.
- 7% of all Allegheny County birthing people reported smoking during pregnancy in 2019 (Table 9)
- Smoking during pregnancy decreased with both increasing maternal age and higher education level (Table 9)

Figure 15. Birthing Parents Who Smoked During Pregnancy
Allegheny County and Pennsylvania, 2003-2019
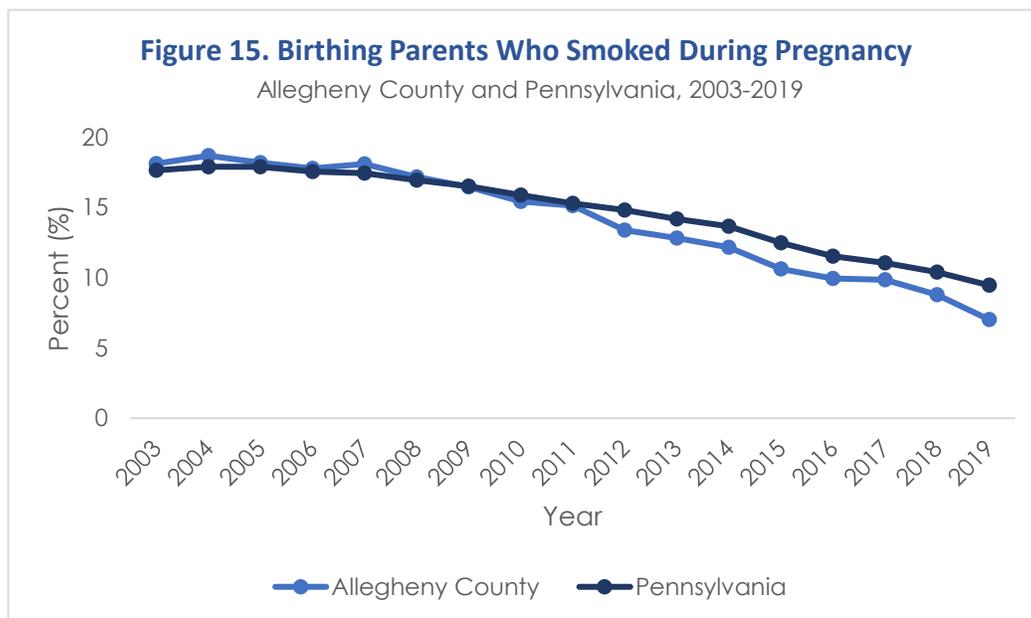
SMOKING CESSATION

Smoking cessation is defined as when a birthing person reported smoking at least 3 months prior to pregnancy, yet they reported not smoking during pregnancy.

- 19.2% of birthing people in 2019 reported smoking cessation during pregnancy (Table 10)

- Among birthing people who smoked during pregnancy, over half with a college education reported smoking cessation during pregnancy compared to 7% cessation among birthing people with less than high school education (Table 10)

Figure 16. Proportion of Smoking Cessation out of Total Smoking by Birthing Parent's Age
Allegheny County, 2019
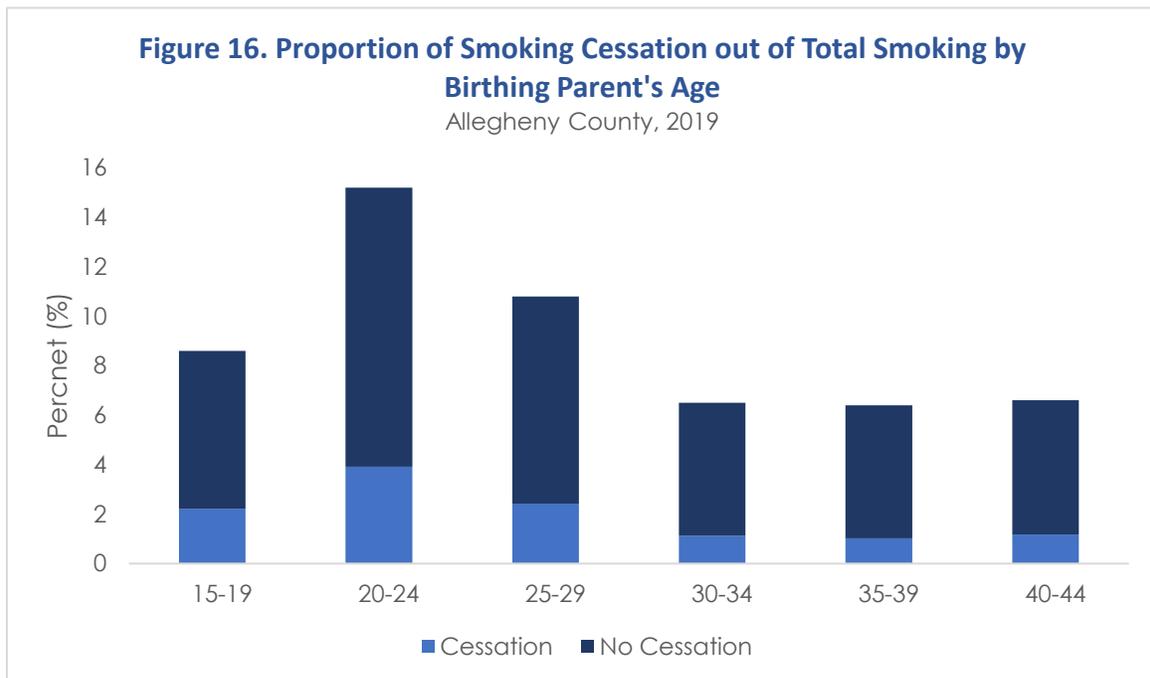
OBESITY/BMI

High pre-pregnancy BMI and weight gain during pregnancy are both associated with increased risks of pregnancy complications and complications for the baby[10]. Due to these risks, surveillance of these data is important. Nearly 48% of information about a birthing person's pre-pregnancy weight was missing from the birth certificate (see appendix for calculation). Given further data quality issues with weight at delivery, weight gain during pregnancy was not calculated for this report. Additionally, reporting bias may exist when reporting maternal weight on the birth certificate[11]. **Therefore, BMI data should be interpreted considering these limitations.**

- 49.5% of Allegheny County birthing people in 2019 were overweight or obese based on BMI
- The percent of LBW and VLBW births was highest among underweight birthing people (3% and 16%, respectively) (Figure 17)
- The percent of high birthweight births was highest among overweight birthing people (10%)

Figure 17. Resident Live Births by Birthing Parent's BMI Group and Infant Birthweight
Allegheny County, 2019
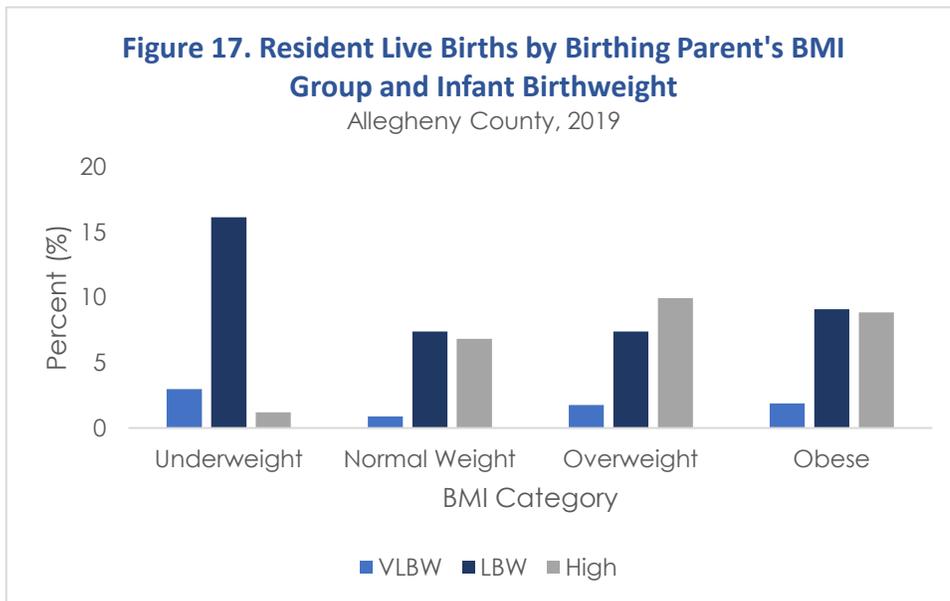
Rates of gestational hypertension and gestational diabetes were also highest among birthing people with obesity (Figure 18).

Figure 18. Percent of Birthing Parents with Gestational Diabetes or Gestational Hypertension by BMI Group
Allegheny County, 2019
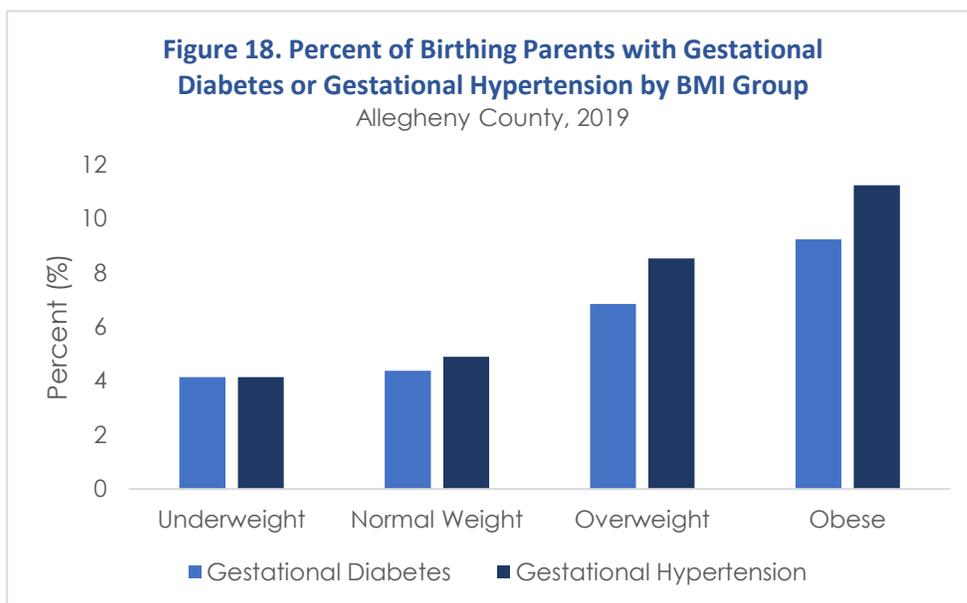
In Allegheny County, the occurrence of both primary and repeat cesarean deliveries was highest among obese birthing people (Figure 19). The literature suggests that obese birthing people undergoing a trial of labor after a previous cesarean delivery may be at an increased risk for failure[12]. This may explain higher rates of repeat cesarean deliveries and clinical recommendations among those with obesity.

Figure 19. Resident Live Births by Delivery Method and Birthing Parent's BMI Group
Allegheny County, 2019
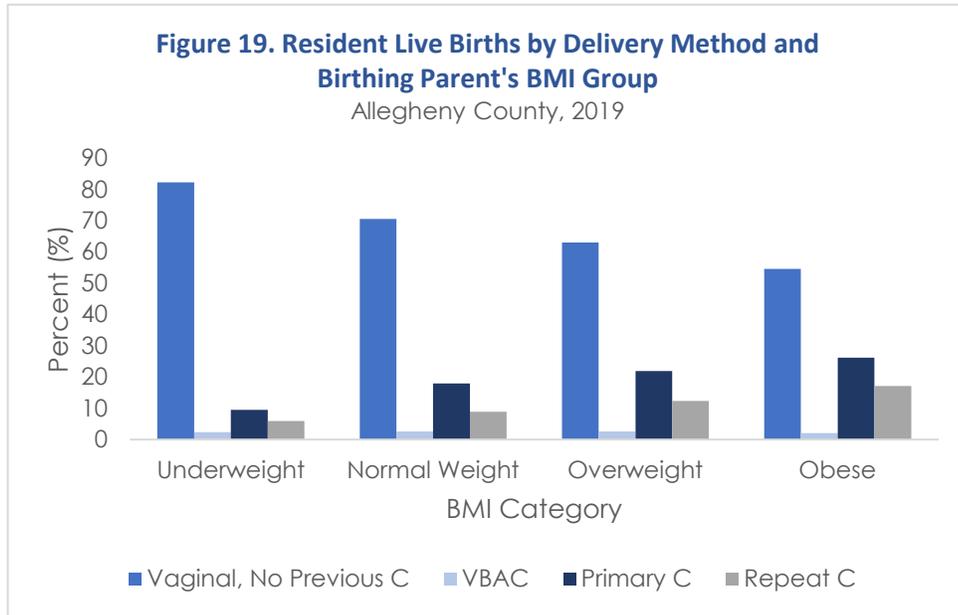
EARLY PRENATAL CARE

Early prenatal care is defined as care received during the first trimester of pregnancy. Infants of birthing people who did not receive prenatal care are more likely to have adverse birth outcomes and pregnancy complications[13]. Prenatal care, especially early, can help prevent complications and inform birthing people about important steps they can take to protect their baby and increase the likelihood of a healthy pregnancy.

- There was a slight but significant 0.3% decrease in early prenatal care in Allegheny County from 2010 to 2019 (Figure 20), with similar trends among Pennsylvania birthing people.
- 88% of Allegheny County birthing people received early prenatal care in 2019.
- Early prenatal care was highest among Asian/PI birthing people (91%) and college educated birthing people (91%).
- Only 0.3% of all Allegheny County birthing people did not receive any prenatal care in 2019.

Figure 20. Early (1st Trimester) Prenatal Care Allegheny County and Pennsylvania, 2003-2019
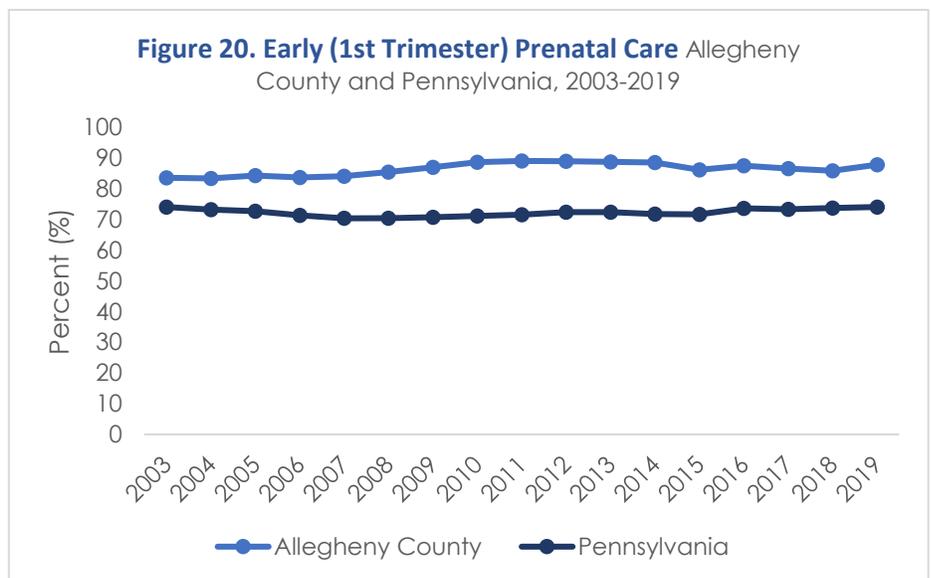
BIRTH SPACING

TABLE 1: INTERPREGNANCY INTERVALS (IPI), 2012-2019

Year	< 18 Months	18-59 Months	60+ Months	Total Birth Records in Analysis
2012	1494 (25.20%)	3299 (55.65%)	1135 (19.15%)	5928
2013	1897 (30.08%)	3244 (51.43%)	1166 (18.49%)	6307
2014	1863 (29.69%)	3256 (51.90%)	1155 (18.41%)	6274
2015	1970 (31.62%)	3074 (49.33%)	1187 (19.05%)	6231
2016	1884 (31.05%)	3066 (50.53%)	1118 (18.42%)	6068
2017	1876 (30.04%)	3134 (50.19%)	1234 (19.76%)	6244
2018	1924 (31.14%)	3115 (50.41%)	1140 (18.45%)	6179
2019	1959 (31.43%)	3128 (50.18%)	1146 (18.39%)	6233

Interpregnancy interval (IPI) is the length of time between a birth and conception of the next pregnancy. It is determined by both the date of a birthing person's last live birth and the length of pregnancy. A short IPI is defined as less than 18 months, while a long IPI is defined as more than 60 months. Multiple years were included to capture previous live births. Both short and long IPI's may increase the risk of adverse pregnancy and perinatal outcomes[14-16].

- From 2012 to 2019, nearly half of all Allegheny County multiparous births were an optimal IPI (Table 1)
- Nearly 30% of all IPI's were short, while nearly 20% were long
- Among short IPIs in 2019, roughly 4% of multiparous births were within less than 6 months of a previous livebirth (Table 2)

TABLE 2: INTERPREGNANCY INTERVALS (IPI) DISAGGREGATED, 2019 N (%)

Year	< 6 months	6-11 months	12-17 months	18-23 months	24-59 months	60+ Months
2019	264 (4.24%)	728 (11.68%)	967 (15.51%)	880 (14.12%)	2248 (36.07%)	1146 (18.39%)

RISK FACTORS

Parental risk factors for morbidity and poor infant outcomes captured on the birth certificate include indicators such as pre-pregnancy and gestational hypertension and diabetes, previous poor pregnancy outcome, or previous preterm birth. While these risk factors may be associated with parental morbidity and poor infant health outcomes, surveillance for chronic risk factors is complex, and natality data from the birth certificate have low sensitivity with indicators such as gestational hypertension compared to medical record data[17]. Therefore, these data should be interpreted with caution.

- About 28% of Allegheny County birthing people in 2019 had a risk factor reported on the birth certificate
- Almost 40% of birthing people age 40-44 had a risk factor present
- Nearly 2% of birthing people had pre-pregnancy hypertension in 2019

BREASTFEEDING

- Intent to breastfeed in Allegheny County significantly increased by 2.2% annually since 2002 (Figure 21)
- Intent to breastfeed rates in Allegheny County remain similar to Pennsylvania rates
- Intent to breastfeed increased for all races/ethnicities (Figure 22)
  - 68% of Black birthing people intended to breastfeed while 96% of Asian/PI birthing people intended to breastfeed in 2019 (Table 13)
- Intent to breastfeed increased with increasing education level (Table 13)

Figure 21. Percent of Birthing Parents who Intend to Breastfeed
Allegheny County and Pennsylvania, 2003-2019

Figure 22. Percent of Birthing Parents who Intend to Breastfeed by Race/Ethnicity
Allegheny County, 2003-2019
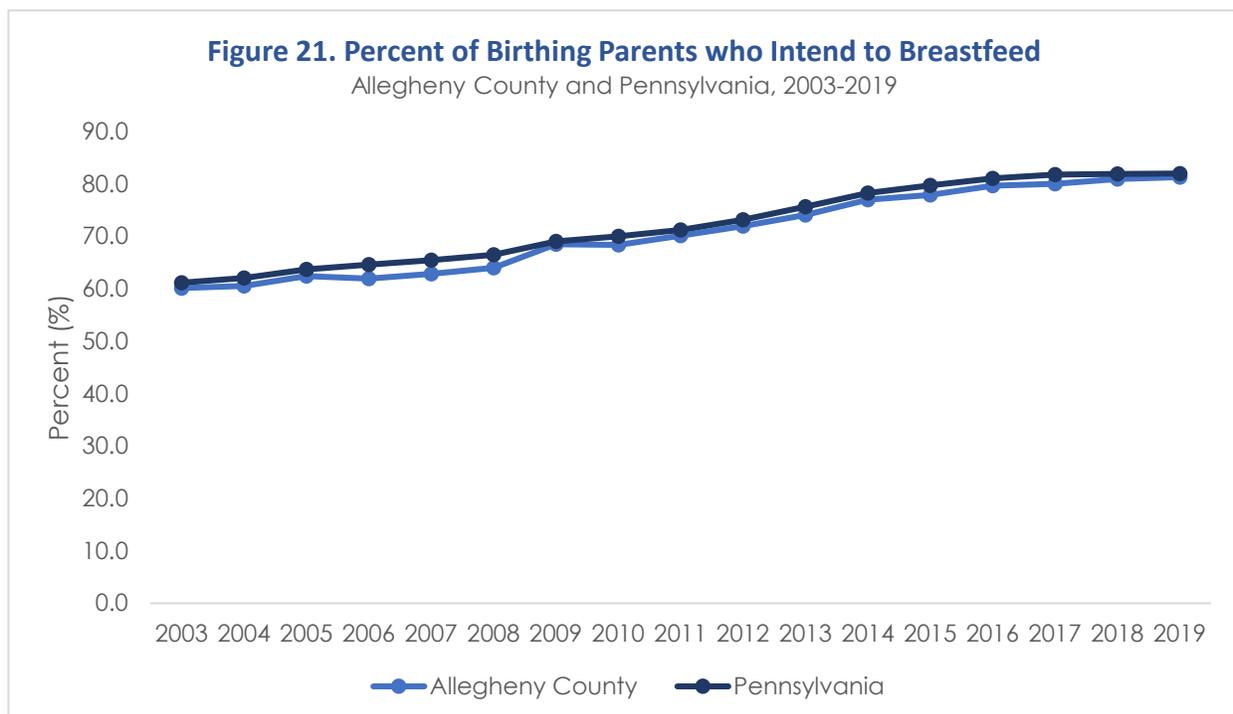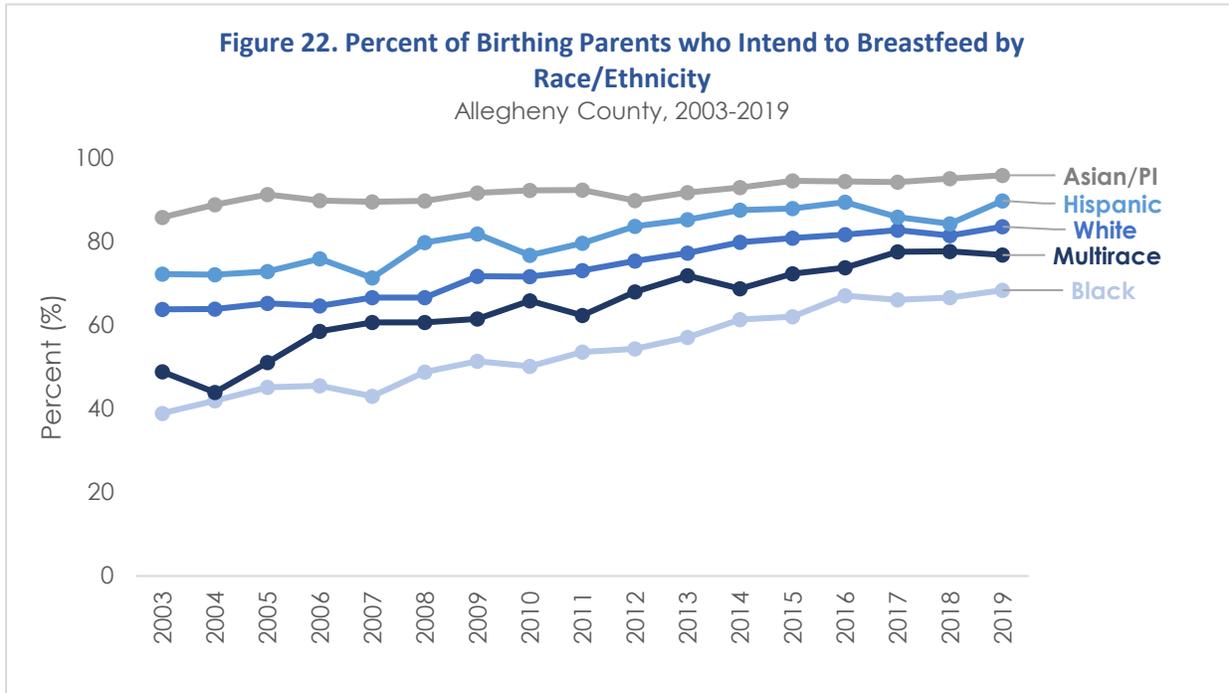
NON-BIRTHING PARENT INVOLVEMENT/MARITAL STATUS

Despite the role of non-birthing parent involvement during pregnancy and delivery, their information is often missing from standard natality reporting. While the birth certificate does not measure partner involvement directly, presence of or missing non-birthing parent data on the birth certificate can serve as a proxy for support. Additionally, marital status* can also be used as a proxy for support. Lack of support (determined by missing non-birthing parent data) is associated with a higher incidence of maternal morbidity and obstetric complications[18-19], though lack of this information does not necessarily mean there was no support during the pregnancy. Furthermore, non-married status does not necessarily indicate a lack of support, as non-married birthing people may have adequate support. Therefore, partner and marital status data should be interpreted considering these limitations.

- 12.4% of 2019 birth records were missing information about the infant's non-birthing parent[24]
- 64.1% of Allegheny birthing people reported being married in 2019
- Among the 87.6% of records that included non-birthing parent information, 23.9% reported not being married

Figure 23. Marital Status by Race/Ethnicity
Allegheny County, 2019
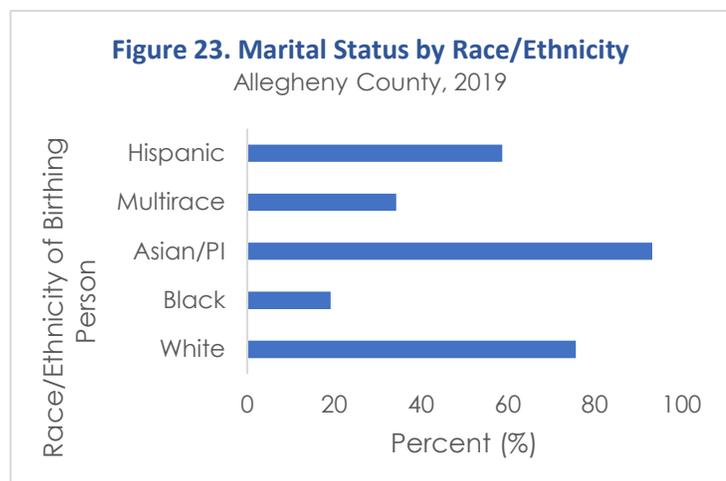
PRINCIPAL SOURCE OF PAYMENT

- 69.2% of Allegheny County birthing people used private insurance as their principal source of payment for birth delivery services in 2019 (Table 14)
- Private insurance use generally increased with age of the birthing person (Figure 24)
- Medicaid use was highest among those with less than college education (Table 14)

Figure 24. Percent Live Births by Principal Source of Payment and Age of Birthing Person
Allegheny County, 2019
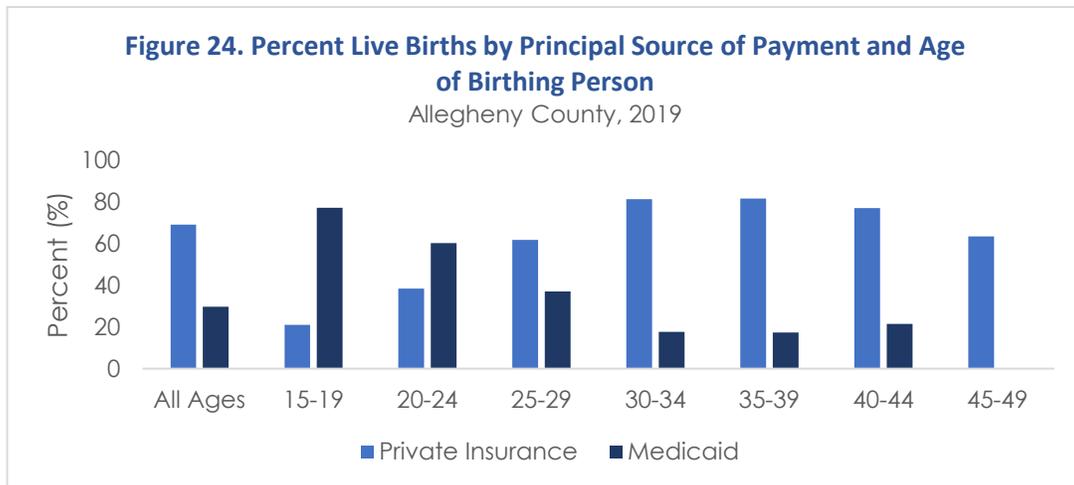
TABLES

The tables presented in this report exclude missing values from calculations and reported totals. Additionally, race categories include both Hispanic and non-Hispanic ethnicity. Therefore, the column totals do not reflect the total sum of race in the county. 'Other' was not included in total race counts. Birthweight categories are also not mutually exclusive, as VLBW is a subset of LBW. Observations with less than 10 events are not statistically reliable and are therefore censored.

TABLE 3. RESIDENT LIVE BIRTHS, CRUDE BIRTH RATE, AND GENERAL FERTILITY RATE: ALLEGHENY COUNTY AND PENNSYLVANIA, 2003-2019

YEAR	ALLEGHENY COUNTY					PENNSYLVANIA				
	NUMBER LIVE BIRTHS	RESIDENT POPULATION	CRUDE BIRTH RATE[A,C]	15-44 POPULATION	GENERAL FERTILITY RATE[B,C]	NUMBER LIVE BIRTHS	RESIDENT POPULATION	CRUDE BIRTH RATE[A,C]	15-44 POPULATION	GENERAL FERTILITY RATE[B,C]
2003	13,561	1,261,303	10.8	252,627	53.7	145,485	12,365,455	11.8	2,517,212	57.8
2004	13,203	1,250,867	10.6	248,702	53.1	144,194	12,406,292	11.6	2,510,986	57.4
2005	13,002	1,235,841	10.5	242,234	53.7	145,033	12,429,616	11.7	2,501,821	58.0
2006	12,774	1,223,411	10.4	241,208	53	148,706	12,440,621	12.o	2,499,979	59.5
2007	13,368	1,219,210	11.0	239,102	55.9	150,322	12,432,792	12.1	2,480,627	60.6
2008	13,140	1,215,103	10.8	237,344	55.4	148,934	12,448,279	12.0	2,468,086	60.3
2009	13,100	1,218,494	10.8	237,041	55.3	145,472	12,604,767	11.5	2,488,188	58.5
2010	12,881	1,223,348	10.5	236,721	54.4	142,370	12,702,379	11.2	2,442,538	58.3
2011	13,098	1,227,066	10.7	237,007	55.3	142,021	12,742,886	11.1	2,433,256	58.4
2012	13,089	1,229,338	10.6	237,924	55.0	140,873	12,763,536	11.0	2,425,630	58.1
2013	13,291	1,231,527	10.8	238,711	55.7	140,424	12,773,801	11.0	2,414,538	58.2
2014	13,289	1,231,255	10.8	238,534	55.7	142,113	12,787,209	11.1	2,407,045	59.0
2015	13,308	1,230,459	10.8	237,807	56.0	140,727	12,802,503	11.0	2,400,883	58.6
2016	13,222	1,225,365	10.8	236,463	55.9	139,536	12,784,227	10.9	2,383,505	58.5
2017	12,958	1,223,048	10.6	236,792	54.7	137,771	12,805,534	10.8	2,383,721	57.8
2018	12,816	1,218,452	10.5	236,920	54.3	135,677	12,807,060	10.6	2,383,378	56.9
2019	12,747	1,216,045	10.5	236,962	53.8	134,247	12,801,989	10.5	2,382,893	56.3

[A]Crude birth rate is per 1,000 population

[B]General fertility rate is per 1,000 women aged 15 through 44 years

[C]See technical notes for calculations of crude birth rate and general fertility rate

TABLE 4. RESIDENT LIVE BIRTHS TO BIRTHING PARENTS AGED 15-19 YEARS AND PARENTS 20 YEARS AND OLDER BY BIRTHING PERSON'S RACE/ETHNICITY: ALLEGHENY COUNTY, 2019

		15-19 YEAR-OLD BIRTHING PARENTS		NON-15-19 YEAR-OLD BIRTHING PARENTS		MISSING[A]
	TOTAL BIRTHS	NUMBER	%	NUMBER	%	NUMBER
COUNTY, TOTAL	12,746	312	2.5	12,434	97.5	1
PA, TOTAL	134,323	5,252	3.9	129,071	96.1	NP[B]
RACE/ETHNICITY[D]						
WHITE	8,678	107	1.2	8,571	98.8	0
BLACK	2,586	167	6.5	2,419	93.5	0
ASIAN/PACIFIC ISLANDER	860	ND[C]	ND	855	99.4	0
MULTIRACE	280	19	6.8	261	93.2	0
HISPANIC[E]	305	17	5.6	288	94.4	0

[A]Missing records for 15-19 year-old births excluded from calculations

[B]NP = not provided information

[C]ND = not displayed; observations with less than 10 events are not statistically reliable so are censored

[D]'Other' not included in total race counts

[E]Hispanic ethnicity includes any race and is therefore separate from total counts by race

TABLE 5. RESIDENT LIVE BIRTHS BY BIRTHWEIGHT CATEGORY AND BIRTHING PERSON'S RACE/ETHNICITY, AND EDUCATION LEVEL: ALLEGHENY COUNTY, 2019

AGE OF BIRTHING PARENT	BIRTHWEIGHT									
		VLBW[A]		LBW[B]		NORMAL[C]		HIGH[D]		MISSING
	TOTAL	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER
ALL AGES[F]	12,368	194	1.6	1,098	8.9	10,343	83.6	928	7.5	378
10-14	ND[G]	ND	ND	ND	ND	ND	ND	ND	ND	0
15-19	303	ND	ND	34	11.2	254	83.8	15	5	9
20-24	1,583	25	1.6	161	10.2	1,351	85.3	71	4.5	33
25-29	3,268	57	1.7	300	9.2	2,725	83.4	243	7.4	90
30-34	4,621	63	1.4	367	7.9	3,876	83.9	378	8.2	157
35-39	2,202	36	1.6	193	8.8	1,816	82.5	193	8.8	71
40-44	363	ND	ND	40	11	298	82.1	25	6.9	17
45-49	21	ND	ND	ND	ND	16	76.2	ND	ND	1
50 & OVER	ND	ND	ND	ND	ND	ND	ND	Nd	ND	0
RACE/ETHNICITY[H]										
WHITE	8,679	91	1.1	591	7	7,066	83.9	769	9.1	252
BLACK	2,517	80	3.2	374	15	2,038	81.6	86	3.4	88
ASIAN/PACIFIC	818	13	1.6	80	9.6	717	86.2	35	4.2	28
MULTIRACE	320	ND	ND	19	6.8	238	85.6	21	7.6	2
HISPANIC[I]	298	10	3.4	28	9.4	250	83.9	20	6.7	7
EDUCATION										
< HIGH SCHOOL	502	11	2.2	70	13.9	415	82.7	17	3.4	13
HIGH SCHOOL	2,346	58	2.5	292	12.5	1,920	81.8	134	5.7	66
SOME COLLEGE	2,634	44	1.7	265	10.1	2,200	83.5	169	6.4	68
COLLEGE	3,452	33	1	234	6.8	2,894	83.8	324	9.4	93
POST BACCALAUREATE	2,828	31	1.1	170	6	2,414	85.4	244	8.6	95

[A]VLBW, very low birthweight, is defined as birthweight < 1,500 grams

[B]LBW, low birthweight, is defined as birthweight < 2,500 grams

[C]2,500 grams ≤ normal birthweight < 4,000 grams

[D]High birthweight is defined as ≥ 4,000 grams

[E]Missing records excluded from calculations

[F]There is 1 missing observation for age of birthing parent

[G]ND = not displayed; observations with less than 10 events are not statistically reliable so are censored

[H]'Other' not included in total race counts

[I]Hispanic ethnicity includes any race and is therefore separate from total counts by race

[J]There are 650 missing observations for education of birthing parent

*Note: LBW is defined as any birth with a birthweight less than 2500g, therefore VLBW births are included among LBW counts

TABLE 6. RESIDENT LIVE BIRTHS BY GESTATIONAL AGE GROUP AND BIRTHING PERSON'S AGE, RACE/ETHNICITY, AND EDUCATION LEVEL DURING PREGNANCY: ALLEGHENY COUNTY, 2019

		PRETERM BIRTH								
		EXTREMELY PRETERM		VERY PRETERM		MODERATE TO LATE PRETERM		FULL-TERM		MISSING GESTATION[A]
		(< 28 WEEKS)		(28 TO < 32 WEEKS)		(32 TO < 37 WEEKS)		(>=37 WEEKS)		
	TOTAL BIRTHS	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER
COUNTY, TOTAL	12,642	100	0.8	130	1	1,034	8.2	11,378	90	105
AGE OF BIRTHING PARENT										
10-14	ND[C]	ND	ND	ND	ND	ND	ND	ND	ND	0
15-19	308	ND	ND	ND	ND	31	10.1	266	86.4	4
20-24	1,601	14	0.9	11	0.7	133	8.3	1,443	90.1	15
25-29	3,334	35	1.1	27	0.8	260	7.8	3,012	90.3	24
30-34	4,742	29	0.6	54	1.1	360	7.6	4,299	90.7	36
35-39	2,252	17	0.8	27	1.2	201	8.9	2,007	89.1	21
40-44	375	ND	ND	ND	ND	45	12	325	86.7	5
45-49	22	ND	ND	ND	ND	ND	ND	19	86.3	0
50 & OVER	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
RACE/ETHNICITY[D]										
WHITE	8,617	37	0.4	76	0.9	651	7.6	7,853	91.1	61
BLACK	2,560	54	2.1	41	1.6	276	10.8	2,189	85.5	26
ASIAN/PACIFIC ISLANDER	850	ND	ND	ND	ND	57	6.7	782	92	10
MULTIRACE	278	ND	ND	ND	ND	18	6.5	256	92.1	2
HISPANIC[E]	293	ND	ND	ND	ND	27	8.9	264	87.4	3
EDUCATION LEVEL[F]										
< HIGH SCHOOL	507	ND	ND	10	2	52	10.3	443	87.4	8
HIGH SCHOOL	2,386	36	1.5	22	0.9	247	10.4	2,081	87.2	26
SOME COLLEGE	2,685	20	0.7	30	1.1	265	9.9	2,370	88.3	17
COLLEGE	3,519	14	0.4	37	1.1	230	6.5	3,238	92	26
POST BACCALEAUREATE	2,904	12	0.4	26	0.9	184	6.3	2,682	92.4	19

[A]Missing gestation records excluded from calculations

[B]There is 1 missing observations for age of birthing parent

[C]ND = not displayed; observations with less than 10 events are not statistically reliable so are censored

[D]'Other' not included in total race counts

[E]Hispanic ethnicity includes any race and is therefore separate from total counts by race

[F]There are 650 missing observations for education of birthing parent

TABLE 7. RESIDENT LIVE BIRTHS BY GESTATIONAL AGE GROUP AND BIRTHING PERSON'S AGE, RACE/ETHNICITY, AND EDUCATION LEVEL DURING PREGNANCY: ALLEGHENY COUNTY, 2019

		BIRTHWEIGHT STATUS CATEGORIES						
		SGA		**AGA**		**LGA**		**MISSING**[A]
	TOTAL BIRTHS	**NUMBER**	**%**[A]	**NUMBER**	**%**	**NUMBER**	**%**	**NUMBER**
COUNTY, TOTAL	12,258	1,465	12	9,863	80.5	930	7.6	489
AGE OF BIRTHING PARENT								
10-14	ND	ND[c]	ND	ND	ND	ND	ND	0
15-19	297	51	17.2	237	79.8	ND	ND	15
20-24	1,566	251	16	1,240	79.2	75	4.8	50
25-29	3,243	422	13	2,587	79.8	234	7.2	115
30-34	4,580	471	10.3	3,748	81.8	361	7.9	198
35-39	2,185	219	10	1,757	80.4	209	9.6	88
40-44	358	46	12.9	274	76.5	38	10.6	22
45-49	21	ND	ND	14	66.7	ND	ND	1
50 & OVER	ND	ND	ND	ND	ND	ND	ND	0
RACE/ETHNICITY[D]								
WHITE	8,368	746	8.9	6,869	82.1	753	9	310
BLACK	2,461	480	19.5	1,873	76.1	108	4.4	125
ASIAN/PACIFIC ISLANDER	823	158	19.2	634	77	31	3.8	37
MULTIRACE	277	34	12.3	225	81.2	18	6.5	3
HISPANIC[E]	296	35	11.8	240	81.1	21	7.1	9
EDUCATION LEVEL[F]								
< HIGH SCHOOL	495	112	22.6	365	73.7	18	3.6	20
HIGH SCHOOL	2,316	383	16.5	1,790	77.3	143	6.2	96
SOME COLLEGE	2,613	320	12.3	2,092	80.1	201	7.7	89
COLLEGE	3,428	314	9.2	2,819	82.2	295	8.6	117
POST BACCALEAUREATE	2,810	261	9.3	2,315	82.4	234	8.3	113

[A]Missing records excluded from calculations

[B]There is 1 missing observations for age of birthing parent

[C]ND = not displayed; observations with less than 10 events are not statistically reliable so are censored

[D]'Other' not included in total race counts

[E]Hispanic ethnicity includes any race and is therefore separate from total counts by race

[F]There are 650 missing observations for education of birthing parent

TABLE 8: RESIDENT LIVE BIRTHS BY BIRTHING PERSON'S SMOKING STATUS, AGE, RACE/ETHNICITY AND EDUCATION LEVEL: ALLEGHENY COUNTY, 2019

| | | SMOKING STATUS DURING PREGNANCY | | | | |
| | | YES | | NO | | MISSING SMOKING[A] |
AGE OF BIRTHING PARENT	TOTAL BIRTHS	NUMBER	%[B]	NUMBER	%	NUMBER
ALL AGES[B]	12,545	882	7	11,663	93	202
10-14	ND	ND	ND[C]	ND	ND	0
15-19	298	26	8.7	272	91.3	14
20-24	1,585	171	10.8	1,414	89.2	31
25-29	3,303	296	9	3,007	91	55
30-34	4,715	227	4.8	4,488	95.2	63
35-39	2,241	141	6.3	2,100	93.7	32
40-44	375	19	5.1	356	94.9	5
45-49	22	ND	ND	20	90.9	0
50 & OVER	ND	ND	ND	ND	ND	1
RACE/ETHNICITY[D]						
WHITE	8,585	581	6.8	8,004	93.2	93
BLACK	2,516	251	10	2,265	90	70
ASIAN/PACIFIC ISLANDER	852	ND	ND	849	99.7	8
MULTIRACE	270	43	15.9	227	84.1	10
HISPANIC[E]	297	ND	ND	290	97.6	11
EDUCATION LEVEL[F]						
< HIGH SCHOOL	501	151	30.1	350	69.9	14
HIGH SCHOOL	2,359	389	16.5	1,970	83.5	53
SOME COLLEGE	2,651	267	10.1	2,384	89.9	51
COLLEGE	3,521	48	1.4	3,473	98.6	24
POST BACCALAUREATE	2,906	ND	ND	2,901	99.8	17

[A]*Missing records excluded from calculations*

[B]*There is 1 missing observations for age of birthing parent*

[C]*ND = not displayed; observations with less than 10 events are not statistically reliable so are censored*

[D]*'Other' not included in total race counts*

[E]*Hispanic ethnicity includes any race and is therefore separate from total counts by race*

[F]*There are 650 missing observations for education of birthing parent*

TABLE 9: RESIDENT LIVE BIRTHS BY SMOKING CESSATION AND BIRTHING PERSON'S AGE, RACE/ETHNICITY, AND EDUCATION: ALLEGHENY COUNTY, 2019

| | | SMOKING CESSATION[A] | | | | |
| | | YES | | NO | | MISSING CESSATION[B] |
AGE OF BIRTHING PARENT	TOTAL BIRTHS[C]	NUMBER	%[C]	NUMBER	%	NUMBER
ALL AGES[D]	1,077	253	19.2	870	80.8	6
10-14	ND	ND[E]	ND	ND	ND	0
15-19	32	ND	ND	26	81.3	0
20-24	203	35	17.2	168	82.3	0
25-29	360	68	18.9	292	81.1	3
30-34	279	56	20.1	223	79.9	3
35-39	177	37	20.9	140	79.1	0
40-44	23	ND	ND	19	82.6	0
45-49	ND	ND	ND	ND	ND	0
50 & OVER	ND	ND	ND	ND	ND	0
RACE/ETHNICITY[F]						
WHITE	725	149	20.6	576	79.5	2
BLACK	290	45	15.5	245	84.5	3
ASIAN/PACIFIC ISLANDER	ND	ND	ND	ND	ND	0
MULTIRACE	50	ND	ND	42	84	1
HISPANIC[G]	12	ND	ND	ND	ND	0
EDUCATION OF BIRTHING PARENT[H]						
< HIGH SCHOOL	162	12	7.4	150	92.6	0
HIGH SCHOOL	460	75	16.3	385	83.7	2
SOME COLLEGE	334	72	21.6	262	78.4	2
COLLEGE	84	38	45.2	46	54.8	2
POST BACCALAUREATE	15	10	66.7	ND	ND	0

[A]Smoking cessation is defined as when a woman changed from reporting smoking at least one cigarette in the three months prior to pregnancy to reporting never smoking during their pregnancy

[B]Missing cessation records were excluded from calculations

[C]1,368 is the number of women who smoked at least one cigarette in the three months prior to pregnancy

[D]There is 1 missing observations for age of birthing parent

[E]ND = not displayed; observations will less than 10 events are not statistically reliable so are censored

[F]'Other' not included in total race counts

TABLE 10: RESIDENT LIVE BIRTHS BY TRIMESTER OF FIRST PRENATAL VISIT AND AGE OF BIRTHING PERSON: ALLEGHENY COUNTY, 2019

AGE OF BIRTHING PARENT	TOTAL BIRTHS	TRIMESTER IN PREGNANCY[A]								
		FIRST TRIMESTER		SECOND TRIMESTER		THIRD TRIMESTER		NO PRENATAL VISITS		MISSING TRIMESTER[B]
		NUMBER	%[B]	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER
ALL AGES[C]	11,855	10,430	88	1,060	8.9	326	2.8	39	0.3	892
10-14	ND[D]	ND	ND	ND	ND	ND	ND	ND	ND	0
15-19	293	242	82.6	37	12.6	13	4.4	ND	ND	19
20-24	1,510	1,267	83.9	179	11.9	58	3.8	ND	ND	106
25-29	3,127	2,729	87.3	302	9.7	80	2.6	16	0.5	231
30-34	4,443	3,992	89.9	243	7.7	103	2.3	ND	ND	335
35-39	2,108	1,879	89.1	160	7.6	62	2.9	ND	ND	165
40-44	347	303	87.3	35	10.1	ND	ND	ND	ND	33
45-49	21	15	71.4	ND	ND	ND	ND	ND	ND	1
50 & OVER	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
RACE/ETHNICITY[E]										
WHITE	8,141	7,257	89.1	679	8.3	185	2.3	20	0.3	537
BLACK	2,398	2,052	85.6	250	10.4	81	3.4	15	0.6	188
ASIAN/PACIFIC ISLANDER	756	688	91	50	6.6	17	2.3	ND	ND	104
MULTIRACE	268	185	69	50	18.7	32	11.9	ND	ND	12
HISPANIC[F]	262	221	84.4	23	8.8	15	5.7	ND	ND	43
EDUCATION OF BIRTHING PARENT[G]										
< HIGH SCHOOL	470	371	78.9	66	14	30	6.4	ND	ND	45
HIGH SCHOOL	2,271	1,903	83.8	263	11.6	87	3.8	18	0.8	141
SOME COLLEGE	2,575	2,179	84.6	290	11.3	93	3.6	13	0.5	127
COLLEGE	3,348	3,031	90.5	256	7.7	59	1.8	ND	ND	197
POST BACCALAUREATE	2,745	2,513	91.6	178	6.5	53	1.9	ND	ND	178

[A]See technical notes for explanation on trimester in pregnancy calculation

[B]Missing trimester records excluded from calculations

[C]There is 1 missing observations for age of birthing parent

[D]ND = not displayed; observations with less than 10 events are not statistically reliable so are censored

[E]'Other' not included in total race counts

[F]Hispanic ethnicity includes any race and is therefore separate from total counts by race

[G]There are 650 missing observations for education of birthing parent

[G]Hispanic ethnicity includes any race and is therefore separate from total counts by race

[H]There are 650 missing observations for education of birthing parent

TABLE 11: RESIDENT LIVE BIRTHS BY LOW RISK CESAREAN DELIVERY AND BIRTHING PERSON'S AGE, RACE/ETHNICITY, AND EDUCATION: ALLEGHENY COUNTY, 2019

		LOW RISK C-SECTION			
		YES		NO	
	TOTAL BIRTHS[A]	NUMBER	%[C]	NUMBER	%
TOTAL, AC	3,853	1,268	32.9	2,585	67.1
AGE OF BIRTHING PARENT[B]					
10-14	ND[C]	ND	ND	ND	ND
15-19	68	40	58.8	28	41.2
20-24	378	174	46	204	54
25-29	938	336	35.8	602	64.2
30-34	1,448	467	32.3	981	67.8
35-39	848	219	25.8	629	74.2
40-44	158	26	16.5	132	83.5
45-49	13	ND	ND	ND	ND
50 & OVER	ND	ND	ND	ND	ND
RACE/ETHNICITY[D]					
WHITE	2,629	898	34.2	1,731	65.8
BLACK	765	205	26.8	560	73.2
ASIAN/PACIFIC ISLANDER	291	116	39.9	175	60.1
MULTIRACE	88	24	27.3	64	72.7
HISPANIC[E]	88	20	22.7	68	77.3
EDUCATION OF BIRTHING PARENT[F]					
< HIGH SCHOOL	137	36	26.3	101	73.7
HIGH SCHOOL	710	197	27.8	513	72.3
SOME COLLEGE	880	263	29.9	617	70.1
COLLEGE	1,070	387	36.2	683	63.8
POST BACCALAUREATE	888	328	36.9	560	63.1

[A]There are 12,747 total births

[B]There is 1 missing observations for age of birthing parent

[C]ND = not displayed; observations will less than 10 events are not statistically reliable so are censored

[D]'Other' not included in total race counts

[E]Hispanic ethnicity includes any race and is therefore separate from total counts by race

[F]There are 650 missing observations for education of birthing parent

TABLE 12: RESIDENT LIVE BIRTHS AMONG PREVIOUS C-SECTIONS BY VBAC AND BIRTHING PERSON'S AGE, RACE/ETHNICITY, AND EDUCATION: ALLEGHENY COUNTY, 2019

| | | VBAC | | | | | | |
| | | VAGINAL, NO PREVIOUS CESAREAN | | VAGINAL, PREVIOUS CESAREAN (VBAC) | | PRIMARY CESAREAN | | REPEAT CESAREAN | |
	TOTAL BIRTHS	NUMBER	%[c]	NUMBER	%[c]	NUMBER	%[c]	NUMBER	%[c]
TOTAL, AC	12,747	8,638	67.8	256	2	2,834	22	1,019	8
AGE OF BIRTHING PARENT[A]									
10-14	ND[B]	ND	ND	ND	ND	ND	ND	ND	ND
15-19	312	244	78.2	ND	ND	65	20.8	ND	ND
20-24	1,616	1,216	75.3	22	1.4	307	19	71	4.4
25-29	3,358	2,355	70.1	65	1.9	736	21.9	202	6
30-34	4,778	3,222	67.4	108	2.3	1,055	22.1	393	8.2
35-39	2,273	1,374	60.5	51	2.2	557	24.5	291	12.8
40-44	380	213	56.1	ND	ND	103	27.1	55	14.5
45-49	22	ND	ND	ND	ND	ND	ND	ND	ND
50 & OVER	ND	ND	ND	ND	ND	ND	ND	ND	ND
RACE/ETHNICITY[C]									
WHITE	8,678	5,891	67.9	158	1.8	1,948	22.5	681	7.9
BLACK	2,586	1,754	67.8	67	2.6	557	21.5	208	8
ASIAN/PACIFIC ISLANDER	860	552	64.2	17	2	214	24.9	77	9
MULTIRACE	280	185	66.1	ND	ND	53	18.9	35	12.5
HISPANIC[D]	305	212	67.8	ND	ND	63	20.1	25	8.2
EDUCATION OF BIRTHING PARENT[E]									
< HIGH SCHOOL	515	368	71.5	10	1.9	97	18.8	40	7.8
HIGH SCHOOL	2,412	1,658	68.7	44	1.8	512	21.2	198	8.2
SOME COLLEGE	2,702	1,765	65.3	57	2.1	633	23.4	247	9.1
COLLEGE	3,545	2,401	67.7	74	2.1	802	22.6	268	7.6
POST BACCALAUREATE	2,923	1,977	67.6	58	2	651	22.3	237	8.1

[A]There is 1 missing observations for age of birthing parent

[B]ND = not displayed; observations will less than 10 events are not statistically reliable so are censored

[C]'Other' not included in total race counts

[D]Hispanic ethnicity includes any race and is therefore separate from total counts by race

[E]There are 650 missing observations for education of birthing parent

Allegheny County Health Department

TABLE 13. BIRTHING PERSONS WHO INTEND TO BREASTFEED BY BIRTHING PERSON'S AGE, RACE/ETHNICITY, AND EDUCATION: ALLEGHENY COUNTY, 2019

| | | INTEND TO BREASTFEED | | | | |
| | | YES | | NO | | MISSING BREASTFEEDING[A] |
	TOTAL BIRTHS	NUMBER	%[A]	NUMBER	%	NUMBER
COUNTY, TOTAL	12,510	10,171	81.3	2,339	18.7	237
PA, TOTAL	130,025	106,601	82	NP[B]	NP	NP
AGE OF BIRTHING PARENT[C]						
10-14	ND[D]	ND	ND	ND	ND	0
15-19	304	176	57.9	128	42.1	8
20-24	1,585	1,111	70.1	474	29.9	31
25-29	3,298	2,633	79.8	665	20.2	60
30-34	4,692	4,045	86.2	647	13.8	86
35-39	2,233	1,882	84.3	351	15.7	40
40-44	370	306	82.7	64	17.3	10
45-49	20	14	70	ND	ND	2
50 & OVER	ND	ND	ND	ND	ND	0
RACE/ETHNICITY[E]						
WHITE	8,505	7,110	83.6	1,395	16.4	173
BLACK	2,557	1,748	68.4	809	31.6	29
ASIAN/PACIFIC ISLANDER	843	808	95.9	35	4.2	17
MULTIRACE	272	209	76.8	63	23.2	8
HISPANIC[F]	294	264	89.8	30	10.2	11
EDUCATION OF BIRTHING PARENT[G]						
< HIGH SCHOOL	504	281	55.8	223	44.2	11
HIGH SCHOOL	2,368	1,495	63.1	873	36.9	44
SOME COLLEGE	2,655	2,054	77.4	601	22.6	47
COLLEGE	3,477	3,156	90.8	321	9.2	68
POST BACCALAUREATE	2,883	2,687	93.2	196	6.8	40

[A] Missing breastfeeding records excluded from calculations

[B] NP = not provided information

[C] There is 1 missing observations for age of birthing parent

[D] ND = not displayed; observations with less than 10 events are not statistically reliable so are censored

[E] 'Other' not included in total race counts

[F] Hispanic ethnicity includes any race and is therefore separate from total counts by race

[G] There are 650 missing observations for education of birthing parent

TABLE 14. RESIDENT LIVE BIRTHS BY PRINCIPAL SOURCE OF PAYMENT AND AGE, RACE/ETHNICITY, AND EDUCATION LEVEL OF BIRTHING PERSON: ALLEGHENY COUNTY, 2019

		PRINCIPAL SOURCE OF PAYMENT						
		PRIVATE INSURANCE		MEDICAID		SELF-PAY AND OTHER		MISSING PAYMENT[A]
	TOTAL BIRTHS	NUMBER	%[A]	NUMBER	%	NUMBER	%	NUMBER
ALL AGES[B]	12,491	8,649	69.2	3,717	29.8	125	1	256
10-14	ND[C]	ND	ND	ND	ND	ND	ND	0
15-19	299	63	21.1	231	77.3	ND	ND	13
20-24	1,593	614	38.5	962	60.4	17	1.1	23
25-29	3,288	2,034	61.9	1,219	37.1	35	1.1	70
30-34	4,677	3,806	81.4	828	17.7	43	0.9	101
35-39	2,232	1,826	81.8	386	17.3	20	0.9	41
40-44	373	288	77.2	80	21.5	ND	ND	7
45-49	22	14	63.6	ND	ND	ND	ND	0
50 & OVER	ND	ND	ND	ND	ND	ND	ND	0
RACE/ETHNICITY[D]								
WHITE	8,481	6,864	80.9	1,543	18.2	74	0.9	197
BLACK	2,566	793	30.9	1,746	68	27	1.1	20
ASIAN/PACIFIC ISLANDER	844	677	80.2	162	19.2	ND	ND	16
MULTIRACE	273	138	50.6	129	47.3	ND	ND	7
HISPANIC[E]	287	156	54.4	123	42.9	ND	ND	18
EDUCATION OF BIRTHING PARENT[F]								
< HIGH SCHOOL	497	81	16.3	408	82.1	ND	ND	18
HIGH SCHOOL	2,377	768	32.3	1,584	66.6	25	1.1	35
SOME COLLEGE	2,645	1,528	57.8	1,082	40.9	35	1.3	57
COLLEGE	3,464	3,130	90.4	304	8.8	30	0.9	81
POST BACCALAUREATE	2,870	2,769	96.5	81	2.8	20	0.7	53

[A]Missing source of payment records were excluded from calculations

[B]There is 1 missing observations for age of birthing parent

[C]ND = not displayed; observations with less than 10 events are not statistically reliable so are censored

[D]'Other' not included in total race counts

[E]Hispanic ethnicity includes any race and is therefore separate from total counts by race

[F]There are 650 missing observations for education of birthing parent

APPENDIX

This report includes summary statistics and describes statistically significant differences and other associations. SAS 9.4 software was used to calculate frequencies and conduct chi-square tests for categorical variables, where p<0.05. Joinpoint statistical software was used for temporal trend analysis, which tests significance using Monte Carlo Permutation[20]. ArcGIS Pro 2.3.2 was used to determine resident status and summarize data by geography.

SOURCES OF DATA

BIRTH RECORDS

The registration of birth records is the responsibility of the Pennsylvania Department of Health. Birth registrars at the state's hospitals and birthing centers obtain information to populate the birth certificate, including demographic and medical information, which are reported to the state through PADOH's electronic birth registration system. The Allegheny County Health Department then receives birth record data through a cooperative agreement with the state, which requires the following statement to be included: "These data were supplied by the Bureau of Health Statistics and Research, Pennsylvania Department of Health, Harrisburg, Pennsylvania. The Pennsylvania Department of Health specifically disclaims responsibility for any analysis, interpretations or conclusions." (See Appendix on page 41 for more information). Births that occurred in Allegheny county among those who are not Allegheny residents are not included in this report. Pennsylvania summary statistics are provided by the Pennsylvania Department of Health's Enterprise Data Dissemination Informatics Exchange (EDDIE)[21].

The latest revision of the U.S. Standard Certificate of Live Birth was implemented by Pennsylvania in 2003. The following indicates which items were changed to the 2003 birth certificate that are pertinent to this 2018 Allegheny County Birth Report:

> *Race of the parents.* These race items were changed from an open-ended question to a check box format that allows multiple races to be reported. The certificate used by Pennsylvania was also revised to collect self-designated single race data. This report used the multiple race data. Birth records prior to 2003 utilized write-ins of Hispanic for race and were coded as white. Beginning in 2003, these records were coded as other.

Prenatal care visits. Beginning in 2003, exact dates of first and last prenatal visit replaced only the reported month of pregnancy in which the birthing parent began prenatal care. Since 2003, the month prenatal care began is being calculated from the last normal menses date and the date of the first prenatal care visit.

Tobacco use. Prior to 2003, a yes/no question and average number of cigarettes smoked per day were asked. Since 2003, this item was revised to collect the average number of cigarettes smoked per day during the three months before pregnancy and by trimester (first three months, second three months, and last three months) during pregnancy.

Method of delivery. Beginning in 2003, this section was revised so that the provider reports only the final route and method of delivery. Before 2003, several questions were asked including the fetal presentation at birth, whether a delivery with forceps or vacuum extraction was attempted but unsuccessful, and whether a trial of labor was attempted.

Education. The education item was changed from the birthing parent being asked to report the highest grade completed to having a series of check boxes to report the highest level of education completed at the time of delivery. These check boxes include degrees completed rather than years of schooling.

New data items. Other new data items include infant being breastfed, principal source of payment for delivery, and WIC food received.

ALLEGHENY COUNTY RESIDENCE

The Pennsylvania Department of Health provides all birth certificates containing addresses to determine maternal residence. To determine whether the residence is within Allegheny County, ACHD uses a composite geocoder, which uses a multi-step algorithm based on the street address, city, state, and zip code provided in the birth file. The process of geocoding accounts for missing or less accurate data than those provided in the birth certificate. All geocoding was done using ArcGIS Pro 2.3.2 software.

The quality of the birth data presented in this report is directly related to the accuracy and completeness of the information collected through hospital and birthing centers. Therefore, missing data, underreporting, and potential misclassification may limit the interpretation of these analyses. Studies have verified the underreporting of items on the birth certificate[22-25] and suggested that the magnitude of underreporting may differ for birthing parents at the highest sociodemographic risk for adverse pregnancy outcomes. Additionally, data quality may vary by birthing facility. Thus, data should be interpreted considering these limitations.

POPULATION DATA

Population estimates for the state and county were provided by the Division of Health Informatics, Pennsylvania Department of Health. These data were used to compute rates and were produced jointly by the United States Bureau of the census and the Pennsylvania State Data Center of the Pennsylvania State University at Harrisburg under the Federal-State Cooperative Program for Local Population Estimates.

Pennsylvania birth data used throughout the report were obtained from the Enterprise Data Dissemination Informatics Exchange (EDDIE), which is a health statistics query system that can provide data at various levels of geography and topics. Pennsylvania 2018 data were used for comparison to Allegheny County in this report.

DEFINITIONS OF TERMS

LIVE BIRTH: According to Pennsylvania law, is the expulsion or extraction from its birthing parent of a product of conception, irrespective of the period of gestations, which shows any evidence of life at any moment after such expulsion or extraction.

BIRTHWEIGHT: The first weight of the fetus or newborn after birth.

VERY LOW BIRTHWEIGHT (VLBW): Birthweight is under 1,500 grams.

LOW BIRTHWEIGHT (LBW): Birthweight is under 2,500 grams.

NORMAL BIRTHWEIGHT: Birthweight is greater than 2,499 and less than 4,000 grams.

HIGH BIRTHWEIGHT (HBW): Birthweight is 4,000 grams or greater.

PRETERM: A birth that occurred at less than 37 completed weeks of obstetric gestation.

FULL TERM: A birth that occurred from 36-42 weeks obstetric gestation.

POST TERM: A birth that occurred at more than 42 weeks obstetric gestation.

MEDIAN AGE: The age that falls exactly in the middle of the entire range of ages ranked in order from low to high such that 50% of the ages fall above it and 50% fall below it.

RACE: All data in this report are based on the race of the birthing parent, as recommended by the National Center for Health Statistics.

ASIAN/PACIFIC ISLANDER: Parents were Asian/Pacific Islander if she or he identified as any combination of Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Other Asian or as any combination of Native Hawaiian, Guamanian or Chamorro, Samoan, or Other Pacific Islander.

MULTIRACE: Parents are multirace if they identified as any combination of White, Black or African American, American Indian and Alaskan Native, Chinese, Filipino, Japanese, Korean,

Vietnamese, Other Asian, Native Hawaiian, Guamanian or Chamorro, Samoan, or Other Pacific Islander that would not have her or him fall into another race category.

HISPANIC: Parents are Hispanic if she or he identified as Mexican, Mexican American, Chicana, Puerto Rican, Cuban, or Other Hispanic.

SMOKING: Smoking status was defined as cigarette use. A birthing parent smoked if they smoked at least one cigarette during any trimester of her pregnancy.

SMOKING CESSATION: Smoking cessation occurred when the birthing parent reported smoking at least one cigarette in the three months prior to pregnancy to reporting smoking zero cigarettes during the length of her pregnancy.

PLURALITY: Plurality refers to the numbers of infants delivered regardless of gestational age. Plurality in this report refers to twins or triplets

MULTIPAROUS: A birthing person who has given at least one previous birth

NULLIPAROUS: A birthing person having no previous births

VERTEX PRESENTATION: In a vertex presentation at birth, the top of the infant's head emerges first

LOW-RISK CESAREAN: A cesarean delivery is low-risk if a single infant is delivered in a vertex position at full-term to a nulliparous birthing person

VBAC: Vaginal birth after cesarean; if a birthing person delivers vaginally after having had a previous cesarean delivery

IPI: the time between a live birth and becoming pregnant again

RATES/METHODS

Rates are used to make comparisons between different groups, locations, or times. Rates are calculated by converting the absolute number of events to a relative number. This conversion is made by relating the actual count of events to the population at risk in a particular area at a specific time. All rates defined in this report are computed for a one-year period.

All trend analyses were conducted using Joinpoint[9] software, which tests for significant trends over time. It also identifies points in time where changes in trends have occurred.

References to differences or trends being statistically significant are at the p<0.05 level. Chi-square tests were used to determine statistically significant differences. These analyses, along with summary statistics, were performed in SAS 9.4.

FORMULAS

Crude Birth Rate =
$$\frac{\text{Number of Resident Live Births}}{\text{Total Resident Population}} \times 1{,}000$$

General Fertility Rate =
$$\frac{\text{Number of Resident Live Births}}{\text{Total Female Resident Population Aged 15-44 Years}} \times 1{,}000$$

Age-Specific Birth Rate =
$$\frac{\text{Number of Resident Live Births to Mothers in a Specific Age Group}}{\text{Total Female Population in Specific Age Group}} \times 1{,}000$$

BMI =
$$\frac{\text{Pre-pregnancy weight (lbs)} \times 703}{\text{Height (inches)}^2}$$

IPI = Conception data of recent pregnancy - Date of last live birth

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