

ALLEGHENY COUNTY
HEALTH DEPARTMENT
INTERPREGNANCY
INTERVAL (IPI)
REPORT
2012-2019



ALLEGHENY COUNTY INTERPREGNANCY INTERVAL (IPI) REPORT, 2012-2019

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INTRODUCTION

The purpose of this report is to (1) provide a summary of interpregnancy intervals (IPI), or birth spacing, in Allegheny County, Pennsylvania for the years 2012-2019 among 15 to 44-year-old reproductive age birthing persons who have had at least two live births, (2) identify any associations between IPI with race and age, and (3) recognize and promote the use of local best practice programs in Allegheny County that support family planning. In addition to monitoring trends, surveillance of IPI can provide additional knowledge to inform program planning and needs assessments.

IPI is the time between a live birth and becoming pregnant again. Current recommendations suggest an IPI of at least 18 months ($1\frac{1}{2}$ years) is optimal to give the pregnant person's body time to recover between pregnancies and to decrease the risk of adverse birth outcomes with subsequent births. Likewise, 60 months (5 years) or more between births is associated with increased risk of perinatal complications.

Based on previous research, the optimal birth spacing interval is 18-59 months, where less than 18 months is considered a short interval and 60+ months is considered a long interval. Recent studies using vital records and the National Survey of Family Growth (NSFG) have shown a consistent pattern of approximately 30% of pregnancies being conceived within 18 months of a previous live birth and nearly 5% being conceived within 6 months.^{2,3} The Healthy People 2020 objective was to reduce the proportion of pregnancies conceived in less than 18 months of a previous live birth by 10% (33.1% to 29.8%).⁴ Healthy People 2030 has an IPI objective of reducing short IPIs from the baseline of 33.8% (2015-2017) to 26.9%.^{4,5}

There are several adverse birth outcomes associated with short and long IPIs, however, the complications associated with long intervals are not as well understood as shorter intervals.¹ These birth outcomes include preterm birth (PTB, <37 weeks of gestation), small for gestational age (SGA), low birth weight (LBW), and neonatal morbidity.⁶ These associations are particularly pronounced among very short IPIs of less than 6 months. These adverse birth outcomes are often associated with ongoing health problems such as developmental delays, asthma, and vision and hearing loss.⁶ Additionally, several studies have found an association between autism spectrum disorder (ASD) and both short and long IPIs.⁷ Mechanisms that may contribute to these adverse outcomes include the inability for the birthing person to replenish nutrients such as iron stores, heal from infection and inflammation, lose pregnancy weight, and heal uterine incisions after a caesarean birth.⁶

Literature suggests risk factors that are associated with short birth intervals are unplanned or mistimed pregnancies and sociodemographic factors such as young age and race. A study using NSFG data estimated that 55% of short IPI pregnancies were unintended, and that preventing unintended pregnancies would reduce the proportion of short IPI from 35% to 23%. However, short IPIs among those who initiated childbearing after 30 years old are usually an intended part of their childbearing plan.⁸ Additionally, pregnant people who are 15-19 years old at the time of conception of any second or higher birth are more likely to have a short IPI.⁸ Likewise, very short (< 6 month) IPIs are most common among birthing people under 25 years and those 35 and older at the time of their first pregnancy.³

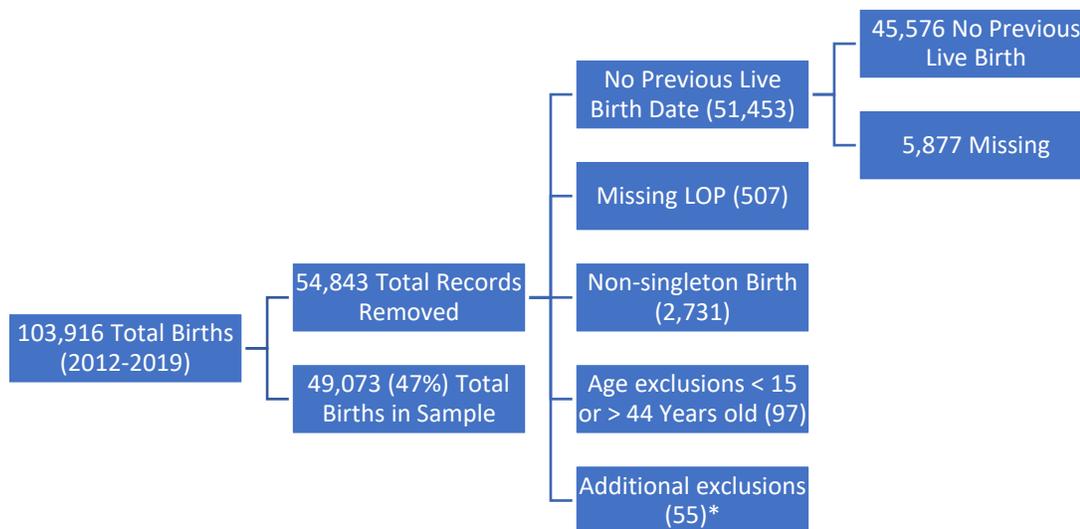
Black birthing people are also more likely to have IPIs of less than 6 months and 6-11 months while White birthing people are more likely to have IPIs of 12-17 months.³ Hogue et al. concluded that an IPI of less than 6 months could explain about 4% of the Black-to-White preterm birth gap.⁹

METHODOLOGY

The Allegheny County Health Department (ACHD) receives Allegheny County resident birth certificate records yearly (approximately 13,000) from the Pennsylvania Department of Health through a cooperative agreement. This agreement 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.” The quality of this report is directly related to the accuracy and completeness of the information collected through hospitals and birthing centers. Therefore, missing data, underreporting, and potential misclassifications may limit the interpretation of these analyses.

SAS 9.4 software was used for this analysis to determine the overall rate of optimal versus non-optimal IPI across the years 2012-2019 and by race and age. Birth records that were excluded from this analysis were first births, pregnant people outside the age range of 15-44 years old, and non-singleton births (e.g. twins, triplets, etc.). Non-singleton births were not analyzed since the last live birth date was information on births within the same pregnancy. Since IPI is the time (in months) between the last live birth date to the conception date of the most recent pregnancy that ended in live birth there are three data items from the birth certificates needed to calculate IPI -- date of the last live birth, date of the most recent live birth, and length of pregnancy (in weeks). Therefore, additional records were excluded if there was missing data for the last live birth date or length of pregnancy, as well as errors in the dataset for calculating IPI. These exclusions and missing data resulted in over half of the birth records from being included in the analysis (Figure 1).

Figure 1: Exclusions of Birth Records for Analysis, 2012-2019



*Additional records were excluded due to date errors in the dataset used to calculate IPI

In this analysis, only the month and year of the last live birth were available, therefore, the day was set to 15 for all last live birth dates.¹⁰ To determine the conception date of the most recent pregnancy, length of pregnancy was converted from weeks to days and then subtracted from the current date of birth. The length of pregnancy variable was used rather than the last menstrual period date due to a lower percentage of missing data. IPI was then determined by calculating the difference (in days) between the conception date and last live birth date; it was then converted into months and categorized by short (< 18 months), optimal (18-60 months), and long (60+ months); short and optimal IPI were broken down further. Short IPI was split into 3 groups; <6 months, 6-11 months, 12-17 months and optimal IPI was split into two groups of 18-23 months and 24-59 months.

A total of 49,073 pregnant people were included in this analysis (Table 1). The age categories between 15-44 years old reflect the age of the pregnant person at the time of the birth indicated on the most recent birth certificate. The race and ethnicity categories included in this analysis are White only, Black only, Asian or Pacific Islander only, Multiracial, and Hispanic. In 2015, the option to identify as more than one race was implemented on birth certificates, therefore, the multiracial variable should be interpreted with caution since this was not available for all years of the analysis (2012-19); overall trends in IPI should also not be compared before and after 2015. Additionally, a majority of the sample had only one prior live birth, but since each year of birth certificates were examined independently, the same pregnant person may be included more than once if they had multiple live births across the 8 years of birth certificates used for this analysis.

Table 1: Characteristics of Birthing People in the Sample, 2012-2019

	N	%
Age of Birthing Person at Delivery (Years)		
15-19	434	0.9%
20-24	5675	11.6%
25-29	12640	25.8%
30-34	18772	38.2%
35-39	9839	20.0%
40-44	1713	3.5%
Race and Ethnicity of Birthing Person		
White	29153	59.4%
Black	9856	20.1%
Asian/PI	1958	4.0%
Multiracial	7348	15.0%
Other	589	1.2%
Unknown	169	0.3%
Hispanic	1028	2.1%
Number of Previous Live Births		
1	29527	60.2%
2	12282	25.0%
3	4422	9.0%
4+	2838	5.8%
Unknown	4	0%
Total Sample	49,073	47%

RESULTS

OVERALL IPI

Approximately 51% of births included in this analysis were conceived in the optimal range of 18-59 months, while 30% were conceived in short intervals (less than 18 months) and 19% were conceived within long intervals (60 or more months) after a previous birth (See Table 2 in Appendix). Among the short IPI groups for all years, roughly 15% of intervals were 12-17 months, 11% were 6-11 months, and 4% were <6 months (See Table 3 in Appendix). Figure 2 and 3 show IPI groupings over time (2012-2019). The proportion of births with short IPI has remained consistent across the years with the lowest rate (29.7%) in 2014 and the highest in 2015 (31.6%). Additionally, the year 2014 reached the Healthy People 2020 target of 29.8% of births conceived in less than 18 months of a previous live birth; while the remainder of the years were within 1-2% of the target. Among the optimal IPI groups for all years, the 24-59 months group had the highest percent of births at roughly 37%.

Figure 2: Interpregnancy Intervals (IPI) in Allegheny County, 2012-2019

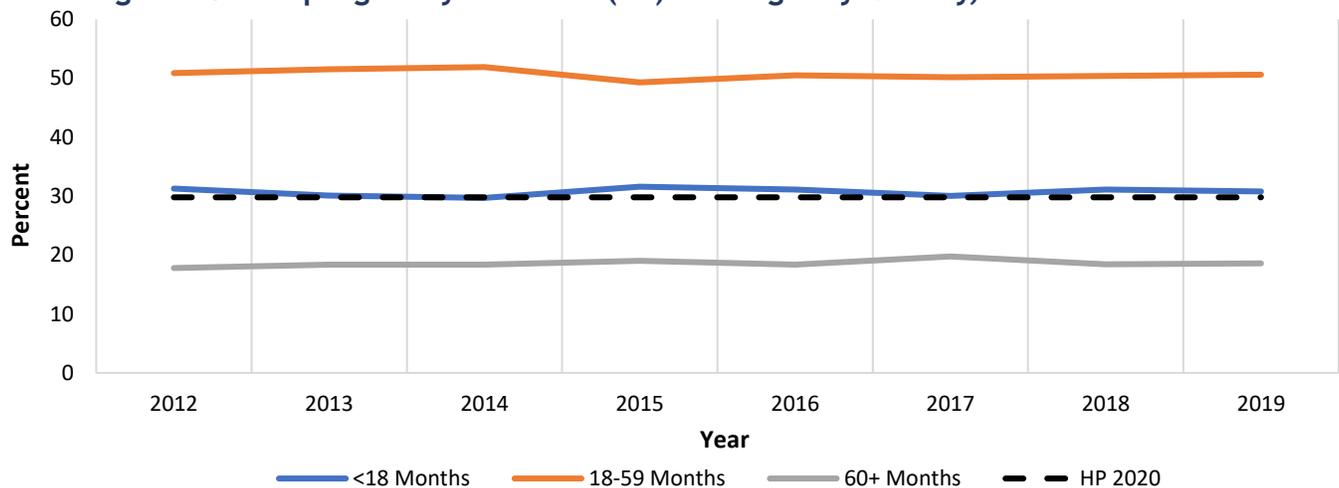
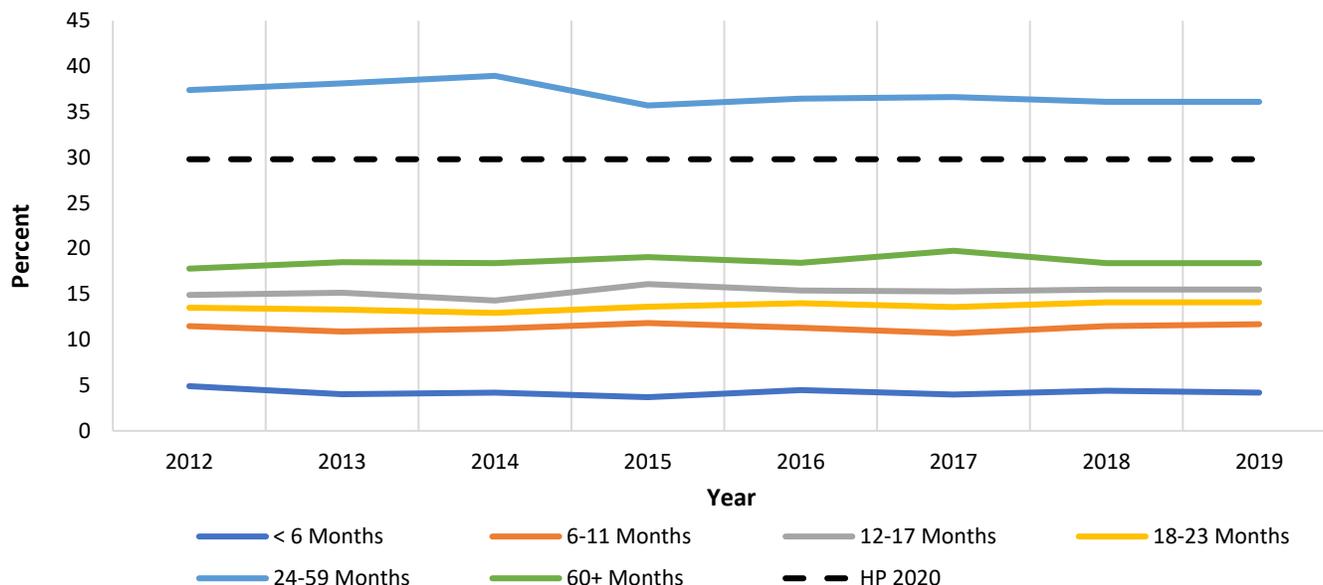


Figure 3: Interpregnancy Intervals (IPI) in Allegheny County, 2012-2019



IPI BY AGE OF BIRTHING PERSON

Table 4 shows the total IPI groups by age for all years (2012-2019) in Allegheny County. Short IPIs declined with age from 65% among the 15-19-year-old group to 17% of the 40-44-year-old group. Likewise, long IPIs became more prominent with increased age with 0% among the 15-19-year-old group to about 40% among the 40-44-year-old group. Aligning with the literature, the 15-19-year-old group had a higher rate of short IPI compared to the other IPI groups; about 25% was 6-11 months and 22% was less than 6 months (Table 5). Among all other age groups, the optimal timeframe had the highest percentage; however, within the 40-44-year-old group there was only a slight increase compared to the long IPI (43% and 40%, respectively).

Table 4: Interpregnancy Intervals (IPI) by age in Allegheny County, 2012-2019

Age	Short IPI n (%)	Optimal IPI n (%)	Long IPI n (%)	Population Proportion (%)
15-19	284 (65.4%)	149 (34.3%)	NA	<1%
20-24	2357 (41.5%)	2920 (51.5%)	398 (7.0%)	12%
25-29	4118 (32.6%)	6175 (48.9%)	2347 (18.6%)	26%
30-34	5729 (30.5%)	9773 (52.1%)	3270 (17.4%)	38%
35-39	2326 (23.6%)	5081 (51.6%)	2432 (24.7%)	20%
40-44	291 (17.0%)	736 (43.0%)	686 (40.1%)	3%

*Row percentages may not total 100% due to rounding

**NA= not available due to counts being less than 10

Table 5: Interpregnancy Intervals (IPI) Groups by Age of Birthing Person, 2012-2019

Age	< 6 Months n (%)	6-11 Months n (%)	12-17 Months n (%)	18-23 Months n (%)	24-59 Months n (%)	60+ Months n (%)
15-19	94 (21.7%)	110 (25.4%)	80 (18.4%)	55 (12.7%)	94 (21.7%)	NA
20-24	586 (10.3%)	903 (15.9%)	868 (15.3%)	753 (13.3%)	2167 (38.2%)	398 (7.0%)
25-29	625 (4.9%)	1634 (12.9%)	1859 (14.7%)	1533 (12.1%)	4642 (36.7%)	2347 (18.6%)
30-34	536 (2.9%)	1983 (10.6%)	3210 (17.1%)	2982 (15.9%)	6791 (36.2%)	3270 (17.4%)
35-39	219 (2.2%)	822 (8.4%)	1285 (13.1%)	1243 (12.6%)	3838 (39.0%)	2432 (24.7%)
40-44	20 (1.2%)	97 (5.7%)	174 (10.2%)	154 (9.0%)	582 (34.0%)	686 (40.1%)

**Row percentages may not total 100% due to rounding*

***NA= not available due to counts being less than 10*

IPI BY RACE OF BIRTHING PERSON

Table 6 shows overall IPI by race across all years (2012-2019). Regardless of self-identified race, optimal IPI was the highest group across all years; Asian/PI birthing people had the highest rate of optimal IPI at roughly 59%, followed by White (52%), Multiracial (50%), Black (44%), and Hispanic (47%). Among the optimal IPI groups, 24-59 months was much higher compared to the 18-23-month group regardless of race for each year (37% and 14%, respectively). White and Multiracial birthing people had a significantly higher rate of short IPIs (33% and 31%, respectively) compared to long IPIs (15% and 18%, respectively). Additionally, birthing people who identified as Hispanic had a slightly higher rate of short IPI compared to long. Likewise, Black and Asian/PI birthing people had higher rates of long IPIs (29% and 22%, respectively) compared to short IPIs (27% and 20%, respectively). Among the short interval groups, less than 6 months had the lowest rate of IPI regardless of race (Table 7).

Table 6: Interpregnancy Intervals (IPI) by Race in Allegheny County, 2012-2019

Self-Identified Race	Short IPI n (%)	Optimal IPI n (%)	Long IPI n (%)	Population Proportion (%)
White	9558 (32.8%)	15278 (52.4%)	4317 (14.8%)	60%
Black	2653 (26.9%)	4359 (44.2%)	2844 (28.9%)	20%
Asian/PI	386 (19.7%)	1148 (58.6%)	424 (21.7%)	4%
Multiracial	2304 (31.4%)	3697 (50.3%)	1347 (18.3%)	15%
Other	149 (25.3%)	271 (46.0%)	169 (28.7%)	<1%
Unknown	55 (32.5%)	81 (47.9%)	33 (19.5%)	<1%
Hispanic	284 (27.6%)	483 (47.0%)	261 (25.4%)	2%

**Row percentages may not total 100% due to rounding*

Table 7: Interpregnancy Interval (IPI) Groups by Race of Birthing Person, 2012-2019

Self-Identified Race	<6 Months n (%)	6-11 Months n (%)	12-17 Months n (%)	18-23 Months n (%)	24-59 Months n (%)	60+ Months n (%)
White	1027 (3.5%)	3419 (11.7%)	5112 (17.5%)	4523 (15.5%)	10755 (36.9%)	4317 (14.8%)
Black	610 (6.2%)	1072 (10.9%)	971 (9.8%)	908 (9.2%)	3451 (35.0%)	2844 (28.9%)
Asian/PI only	40 (2.0%)	135 (6.9%)	211 (10.8%)	226 (11.5%)	922 (47.1%)	424 (21.7%)
Multi-Race	377 (5.1%)	842 (11.5%)	1085 (14.8%)	984 (13.4%)	2713 (36.9%)	1347 (18.3%)
Other	20 (3.4%)	62 (10.5%)	67 (11.4%)	58 (9.8%)	213 (36.2%)	169 (28.7%)
Unknown	NA	19 (11.2%)	30 (17.8%)	21 (12.4%)	60 (35.5%)	33 (19.5%)
Hispanic	41 (4.0%)	102 (9.9%)	141 (13.7%)	126 (12.3%)	357 (34.7%)	261 (25.4%)

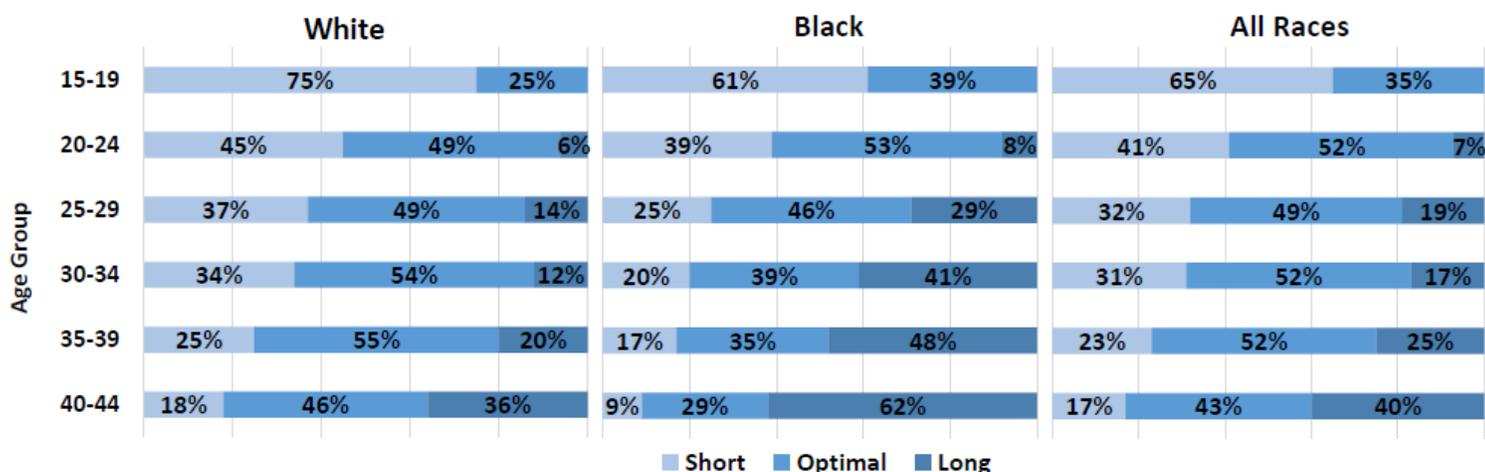
**Row percentages may not total 100% due to rounding*

***NA= not available due to counts being less than 10*

IPI BY RACE AND AGE OF BIRTHING PERSON

Figure 4 represents age and race (White and Black) of the birthing person by IPI and total age for all races. Similar to the age-specific results, 15-19-year old's, regardless of self-identified race, were more likely to have a short IPI compared to an optimal IPI and overall short IPIs decreased with increased age. Additionally, White birthing people had a higher IPI rate of less than 6 months compared to Black birthing people. Among all other age groups, self-identified White, Asian/PI, and Multiracial birthing people had higher optimal IPIs compared to short and long (See Table 8 & 9 in Appendix). Likewise, birthing people who identified as Black and were between 30-44 years old had higher rates of long IPI (41%, 48%, 62%) compared to short and optimal. Additionally, birthing people who identified as Hispanic had higher rates of optimal IPI followed by short IPI for all age groups besides for individuals between 40-44 years old.

Figure 4: Age of Birthing Parent by Interpregnancy Interval and Race, 2012-2019



IPI AND RISK OF PRETERM BIRTH, 2019

In a separate analysis, a statistical model ([logistic regression](#)) was performed to determine the odds of preterm birth (<37 weeks gestation) using known risk factors including non-optimal IPI (<18 months). These data indicated that:

- Birthing people with non-optimal IPI were 20% more likely to deliver preterm
- Compared to people with a previous preterm birth, birthing people with non-optimal IPI had a 40% higher risk of preterm birth if they never had a previous preterm birth.

Additionally, a wide variety of other factors were also associated with preterm birth, including family or personal history of a preterm birth, smoking, race, poverty, birthing parent's education, and neighborhood stressors. These factors work together to increase the risk of an adverse birth outcome.

CONCLUSION

Overall, from 2012 to 2019 in Allegheny County, half of all second or later births each year were conceived within an optimal timeframe after a previous birth, while approximately one-third of pregnancies each year were considered a short IPI, less than 18 months after a previous live birth. The rates of both optimal and short IPI were consistent among race, while Black birthing people had higher rates of long IPI compared to all other races. By age at most recent birth, 30-44-year olds had higher rates of long IPI compared to short and optimal; adjustments for age of first pregnancy must be considered in future reporting. Additionally, consistent with the literature, 15-19-year old's regardless of race had higher rates of short IPIs. In this age group, White birthing people had higher rates of IPI shorter than 6 months compared to Black birthing people.

Additionally, a logistic regression model was completed to estimate the likelihood of preterm birth given a set of circumstances including non-optimal IPI; this analysis concluded that people with non-optimal IPI were more likely to deliver preterm. However, the effect of IPI on preterm birth differed depending on if the birthing person had previously had a preterm birth.

Future analyses using birth certificate data could also examine the relationship between IPI and additional risk and protective factors and behaviors (smoking, gestational diabetes, previous caesarean, breastfeeding intent), sociodemographic factors (income and education of pregnant person) and outcomes (small for gestational age and low birth weight).

While pregnancy intent would also provide valuable information on IPI, other data sources, such as surveys, would need to be incorporated as this information is not captured on the PA birth certificate. Additionally, linking birth certificates across several years to determine the age of the birthing person when childbearing began and to track multiple births to the same birthing person would provide a better understanding of overall IPI and associated birth outcomes.

Allegheny County provides resources and support both during and between pregnancies. Family planning counseling and home visiting programs can support families by reducing unplanned/mistimed pregnancies by discussing contraceptive methods and risks of conceiving subsequent babies within a short or long IPI.

STRATEGIES

In the United States, 1 in 3 women become pregnant within 18 months of a previous birth. The American College of Obstetricians and Gynecologists (ACOG) recommends that the best practice to decrease births with short IPI is to provide patient-centered family planning counseling to discuss the potential health risks of non-optimal IPIs and future childbearing intentions beginning during prenatal care of the first pregnancy.¹¹ ACOG also states that 45% of pregnancies are unplanned which is a risk factor for short IPI, further suggesting the importance of family planning to include education and access to different contraceptive methods, including long-acting reversible contraception (LARC).

Additionally, home visiting programs and enhanced social supports are other interventions that support family planning missions and can potentially improve optimal spacing between pregnancies.¹¹ For example, among three randomized controlled trials, families who received home visits as part of the Nurse-Family Partnership had longer intervals between their first and second pregnancy.¹² There are 36 free home visiting programs in Allegheny County that each have their own guidelines for participation based off income, geography, age of the child, prenatal care, and frequency of visits. There are several avenues that can assist families with getting connected to these services:

- Allegheny Link (<https://www.alleghenycounty.us/Human-Services/About/Contact/Link/About-the-Link.aspx>), connects families to home visiting programs and other services
- The ACHD's Office of Family and Child Health has three home visiting programs (Table 10); families can sign up to be connected to these services by filling out an online form found on the ACHD Office of Family and Child Health website ([Family Child Health \(signupform.info\)](https://www.alleghenycounty.us/Family-Child-Health/Signup-Form)).
- The ACHD partners with the Hello Baby initiative, which is a voluntary and free service to ensure that every family in Allegheny County feels supported and connected as they adjust to life with a new baby. Families can call the United Way PA's Southwest 2-1-1 line or go to the Pittsburgh Hello Baby website (<https://helloworldpgh.org/>) to receive more information and resources.

Table 10: Allegheny County Health Department’s Home Visiting Program Partnerships

Program	Information
<p>Nurse-Family Partnership Allegheny</p>	<p>Partnered with ACHD, they provide home visits to first-time parents during pregnancy through the child’s second birthday. This program has been shown to increase the intervals between the births of the first and second child, especially among those who exhibited multiple risk factors such as unmarried, young maternal age, and low socioeconomic status.</p>
<p>Healthy Families Allegheny</p>	<p>Partnered with ACHD, they provide expecting parents and parents of newborns with in-home child development support, which is free until the baby is 36 months of age.</p>
<p>Healthy Moms & Healthy Babies</p>	<p>A Title V support service that offers home visits or telephone visits during pregnancy and after birth.</p>

**<https://www.alleghenycounty.us/Health-Department/Health-Services/Family-and-Child-Health/Family-and-Child-Health.aspx>*

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APPENDIX

Table 2: Interpregnancy Intervals (IPI) Over Time, 2012-2019

Year	Short IPI n (%)	Optimal IPI n (%)	Long IPI n (%)
2012	1836 (31.32%)	2983 (50.88%)	1044 (17.81%)
2013	1884 (30.1%)	3223 (51.5%)	1153 (18.4%)
2014	1849 (29.7%)**	3233 (51.9%)	1150 (18.4%)
2015	1950 (31.6%)	3044 (49.3%)	1178 (19.1%)
2016	1871 (31.1%)	3036 (50.5%)	1107 (18.4%)
2017	1851 (29.9%)	3106 (50.3%)	1224 (19.8%)
2018	1905 (31.1%)	3083 (50.4%)	1133 (18.5%)
2019	1959 (31.4%)	3128 (50.2%)	1146 (18.4%)
Total	15105 (30.8%)	24834 (50.6%)	9134 (18.6%)

*Row percentages may not total 100% due to rounding

**Meets the Healthy People 2020 goal of < 29.8%

Table 3: Interpregnancy Intervals (IPI) Groups Over Time, 2012-2019

Year	< 6 Months n (%)	6-11 Months n (%)	12-17 Months n (%)	18-23 Months n (%)	24-59 Months n (%)	60+ Months n (%)
2012	292 (4.9%)	672 (11.5%)	872 (14.9%)	791 (13.5%)	2192 (37.4%)	1044 (17.8%)
2013	250 (4.0%)	683 (10.9%)	951 (15.2%)	836 (13.3%)	2387 (38.1%)	1153 (18.5%)
2014	260 (4.2%)	697 (11.2%)	892 (14.3%)	805 (12.9%)	2428 (39.0%)	1150 (18.4%)
2015	229 (3.7%)	729 (11.8%)	992 (16.1%)	837 (13.6%)	2207 (35.7%)	1178 (19.1%)
2016	268 (4.5%)	677 (11.3%)	926 (15.4%)	844 (14.0%)	2192 (36.4%)	1107 (18.4%)
2017	247 (4.0%)	658 (10.7%)	946 (15.3%)	844 (13.6%)	2262 (36.6%)	1224 (19.8%)
2018	270 (4.4%)	705 (11.5%)	930 (15.5%)	883 (14.1%)	2200 (36.1%)	1133 (18.4%)
2019	264 (4.2%)	728 (11.7%)	967 (15.5%)	880 (14.1%)	2248 (36.1%)	1146 (18.4%)
Total	2080 (4.2%)	5549 (11.3%)	7476 (15.2%)	6720 (13.7%)	18114 (37.0%)	9134 (18.6%)

*Row percentages may not total 100% due to rounding

Table 8: Interpregnancy Intervals (IPI) by Age and Controlled for Race and Ethnicity of the Birthing Person, 2012-2019

Self-Identified Race	Mother's Age n (%)	Short IPI n (%)	Optimal IPI n (%)	Long IPI n (%)
White	15-19	76 (75.3%)	25 (24.8%)	NA
	20-24	881 (44.7%)	978 (49.6%)	114 (5.8%)
	25-29	2446 (37.3%)	3210 (49.0%)	897 (13.7%)
	30-34	4243 (33.6%)	6841 (54.1%)	1561 (12.3%)
	35-39	1708 (25.3%)	3704 (54.8%)	1343 (19.9%)
	40-44	204 (18.1%)	520 (46.2%)	402 (35.7%)
Black	15-19	134 (61.2%)	84 (38.4%)	NA
	20-24	960 (39.1%)	1299 (53.0%)	194 (7.9%)
	25-29	868 (24.7%)	1628 (46.3%)	1024 (29.1%)
	30-34	476 (20.2%)	907 (38.6%)	969 (41.2%)
	35-39	196 (17.7%)	381 (34.5%)	529 (47.8%)
	40-44	19 (9.2%)	60 (29.1%)	127 (61.7%)
Asian/PI	15-19	NA	NA	NA
	20-24	38 (39.6%)	52 (54.2%)	NA
	25-29	110 (23.2%)	301 (63.4%)	64 (13.5%)
	30-34	157 (18.2%)	526 (61.0%)	180 (20.9%)
	35-39	69 (15.5%)	235 (52.8%)	141 (31.7%)
	40-44	10 (13.0%)	34 (44.2%)	33 (42.9%)
Multiracial	15-19	69 (65.1%)	37 (34.9%)	NA
	20-24	441 (42.1%)	540 (51.5%)	67 (6.4%)
	25-29	629 (33.6%)	936 (50.0%)	309 (16.5%)
	30-34	792 (29.8%)	1381 (52.0%)	482 (18.2%)
	35-39	324 (23.4%)	689 (49.7%)	373 (26.9%)
	40-44	49 (17.6%)	114 (40.9%)	116 (41.6%)
Hispanic	15-19	NA	NA	NA
	20-24	53 (36.6%)	73 (50.3%)	19 (13.1%)
	25-29	73 (26.6%)	136 (49.7%)	65 (23.7%)
	30-34	98 (27.7%)	156 (44.1%)	100 (28.2%)
	35-39	40 (19.2%)	104 (50%)	64 (30.8%)
	40-44	13 (36.1%)	10 (27.8%)	13 (36.1%)

*Row percentages may not total 100% due to rounding

**NA= not available due to counts being less than 10

Table 9: Interpregnancy Interval Groups by Age and Controlled for Race and Ethnicity of the Birthing Person, 2012-2019

Self-Identified Race	Mother's Age n (%)	< 6 Months n (%)	6-11 Months n (%)	12-17 Months n (%)	18-23 Months n (%)	24-59 Months n (%)	60+ Months n (%)
White	15-19	33 (32.7%)	19 (18.8%)	24 (23.4%)	NA	17 (16.8%)	NA
	20-24	211 (10.7%)	337 (7.1%)	333 (16.9%)	275 (13.9%)	703 (35.6%)	114 (5.8%)
	25-29	306 (4.7%)	935 (14.3%)	1205 (18.4%)	918 (41.0%)	2292 (35.0%)	897 (13.7%)
	30-34	335 (32.6%)	1471 (11.6%)	2437 (19.3%)	2257 (17.9%)	4584 (36.2%)	1561 (12.3%)
	35-39	129 (1.9%)	591 (8.7%)	988 (14.6%)	947 (14.0%)	2757 (40.8%)	1343 (19.9%)
	40-44	13 (1.2%)	66 (5.9%)	125 (11.1%)	118 (10.5%)	402 (35.7%)	402 (35.7%)
Black	15-19	39 (17.8%)	57 (26.0%)	38 (17.3%)	30 (13.7%)	54 (24.7%)	NA
	20-24	236 (9.6%)	379 (15.4%)	345 (14.1%)	318 (13.0%)	981 (40.0%)	194 (7.9%)
	25-29	192 (5.5%)	373 (10.6%)	303 (8.6%)	297 (8.4%)	1331 (37.8%)	1024 (29.1%)
	30-34	101 (4.3%)	166 (7.1%)	209 (8.9%)	173 (7.4%)	734 (31.2%)	969 (41.2%)
	35-39	39 (3.5%)	86 (7.8%)	71 (6.4%)	80 (7.2%)	301 (27.2%)	529 (47.8%)
	40-44	NA	11 (5.3%)	NA	10 (4.9%)	50 (24.3%)	127 (61.7%)
Asian/PI	15-19	NA	NA	NA	NA	NA	NA
	20-24	NA	14 (14.6%)	17 (17.8%)	8 (8.3%)	44 (45.9%)	NA
	25-29	15 (3.2%)	48 (10.1%)	47 (9.9%)	58 (12.2%)	243 (51.2%)	64 (13.5%)
	30-34	12 (1.4%)	46 (5.3%)	99 (11.5%)	102 (11.8%)	424 (21.7%)	180 (20.9%)
	35-39	5 (1.1%)	22 (4.9%)	42 (9.4%)	50 (11.2%)	185 (41.6%)	141 (31.7%)
	40-44	NA	NA	NA	NA	26 (33.8%)	33 (42.9%)
Multiracial	15-19	21 (19.8%)	33 (31.1%)	15 (14.1%)	17 (16.0%)	20 (18.9%)	NA
	20-24	124 (11.8%)	157 (15.0%)	160 (15.3%)	145 (13.8%)	395 (37.7%)	67 (6.4%)
	25-29	106 (5.7%)	248 (13.2%)	275 (14.7%)	238 (12.7%)	698 (37.3%)	309 (16.5%)
	30-34	79 (3.0%)	275 (10.4%)	438 (16.5%)	417 (15.7%)	964 (36.3%)	482 (18.2%)
	35-39	44 (3.2%)	114 (8.2%)	166 (12.0%)	149 (10.8%)	540 (39.0%)	373 (26.9%)
	40-44	NA	15 (5.4%)	31 (11.1%)	18 (6.5%)	96 (34.4%)	116 (41.6%)
Hispanic	15-19	NA	NA	NA	NA	NA	NA
	20-24	11 (7.6%)	18 (12.4%)	24 (16.6%)	17 (11.7%)	56 (38.6%)	19 (13.1%)
	25-29	12 (4.4%)	26 (9.5%)	35 (12.8%)	29 (10.6%)	107 (39.0%)	65 (23.7%)
	30-34	12 (3.4%)	38 (10.7%)	48 (13.6%)	50 (14.1%)	106 (29.9%)	100 (28.2%)
	35-39	NA	15 (7.2%)	21 (10.1%)	29 (13.9%)	75 (36.1%)	64 (30.8%)
	40-44	NA	NA	10 (27.8%)	NA	NA	13 (36.1%)

*Row percentages may not total 100% due to rounding

**NA= not available due to counts being less than 10