PERINATAL HEALTH AND INFANT MORTALITY REPORT

Summary of the District of Columbia's Resident Maternal and Infant Health Data and Perinatal Health Agenda

2019–2020 REPORT

2017–2018 SUPPLEMENTAL REPORT

PREPARED BY:

Center for Policy Planning and Evaluation

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DC | HEALTH
GOVERNMENT OF THE DISTRICT OF COLUMBIA

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CONTENTS

DEFINITIONS OF TERMS 5
PREFACE 7

SECTION 1: 2019/2020 12

DEMOGRAPHIC AND HEALTH CHARACTERISTICS OF PREGNANT WOMEN 13

Live Births to District of Columbia Residents 14

Live births to District of Columbia residents, 2011–2020 14

Changes in the demographic and socioeconomic profile of mothers who had live births between 2014–2016 and 2017–2020 20

Sociodemographic characteristics of women who had live births, District of Columbia 2019–2020 20

Health Characteristics of District Women Prior to Pregnancy 23

Maternal pre-pregnancy health characteristics and behaviors of women who had live births, District of Columbia 2019–2020 23

Health Characteristics of District Women During Pregnancy 25

Maternal pregnancy health characteristics and behaviors of women who had live births, District of Columbia 2019–2020 25

BIRTH OUTCOMES 27

Preterm Live Births, District of Columbia 2019–2020 28

Preterm live births by sociodemographic characteristics of the mother, District of Columbia 2019–2020. 31

Preterm live births by pre-pregnancy health characteristics and behaviors of the mother, District of Columbia 2019–2020 34

Preterm live births by health characteristics and behaviors of the mother during pregnancy, District of Columbia 2019–2020 37

Low Birthweight Births, District of Columbia 2019–2020 41

Low birthweight live births by sociodemographic characteristics of the mother, District of Columbia 2019–2020 43

Low birthweight live births by pre-pregnancy health characteristics and behaviors of the mother 2019–2020 46

Low birthweight live births by health characteristics and behaviors of the mother during pregnancy 49

Infant Mortality, District of Columbia 2016–2020 53

Infant mortality by sociodemographic characteristics of the mother, District of Columbia 2016–2020 55

Infant mortality by pre-pregnancy health characteristics and behaviors of the mother, District of Columbia 2016–2020 58

Infant mortality pregnancy health characteristics and behaviors of the mother, 2016–2020 59

Leading causes of infant death, District of Columbia 2019–2020 60

CONTENTS

Neonatal Mortality, District of Columbia 2016–2020 62
Neonatal mortality by sociodemographic characteristics of the mother, 2016–2020 63
Leading causes of neonatal death, District of Columbia 2019–2020 64

DC HEALTH'S APPROACH TO IMPROVE PERINATAL HEALTH 66
Improving Preconception Health 66
Assuring High Quality Provision of Health Services 67
COVID-19 Impact on Perinatal Programs 68
Strengthening Families 69
Promoting Healthy Environments 69
Data Surveillance 70
Addressing Barriers to Care 71
Preventing Preterm Births 71
Policy 71
Future 71

APPENDIX TECHNICAL NOTES 73
Data Sources 73
Birth Data 73
Death Data 73
Birth record linked to death records 73
Population Estimates 74
Thematic Maps 74
Statistical Methods 74
Computing percentages 74
Comparing percentages and rates 74
Random variation in infant mortality rates 74
Rate and Ratio Definitions 75
Birth rate 75
Infant mortality rate 75
Infant Mortality Disparity Ratio 75
Neonatal mortality rate 76

REFERENCES 76

APPENDIX TABLES

SECTION 2: 2017/2018 96

TABLES (2017–2018) 97

APPENDIX TABLES (2017–2018) 109

SECTION 1: 2019/2020

LIST OF TABLES

Table 1. Distribution of payer type by birth order and maternal age, District of Columbia 2019–2020 21
Table 2. Pre-pregnancy characteristics of women who had live births overall and by maternal race and ethnicity, District of Columbia, 2019–2020 23
Table 3. Pregnancy characteristics of women who had live births overall and by maternal race and ethnicity, District of Columbia, 2019–2020 25
Table 4. Percentage of preterm births by maternal characteristics among live births in District of Columbia, 2019–2020 31
Table 5. Percentage of low birthweight live births by maternal characteristics among live births in District of Columbia, 2019–2020 44
Table 6. Infant mortality rate by maternal characteristics, 2016–2020 56
Table 7. Infant mortality rate by pre-pregnancy characteristics, 2016–2020 58
Table 8. Infant mortality rate by pregnancy characteristics, 2016–2020 59
Table 9. Infant mortality rate by birthweight and preterm status, 2016–2020 60
Table 10. Ten leading causes of infant death, 2019–2020 61
Table 11. Neonatal mortality rate by infant age and maternal characteristics, 2016–2020 63
Table 12. Ten leading causes of neonatal deaths, District of Columbia, 2019–2020 64
Table 13. Outcome metrics used by DC Health in the 5-year framework to improve community health 72

LIST OF FIGURES

Figure 1. Crude Birth Rate, United States and District of Columbia, 2011–2020 14
Figure 2. Birth Rates by Maternal Age Group, District of Columbia, 2011–2020 15
Figure 3. General Fertility Rate (GFR*) by Maternal Race/Ethnicity, District of Columbia, 2011–2020 16
Figure 4. Teen (15–19 years) Birth Rates by Maternal Age Groups, District of Columbia & United States, 2011–2020 17
Figure 5. Birth Rates for Teens (15–19 years) Overall by Maternal Race/Ethnicity, District of Columbia, 2011–2020 18
Figure 6. Percent Distribution of Live Birthday by Neighborhood, District of Columbia, 2019–2020 19
Figure 7. Distribution of Birth Order by Maternal Residence (Ward), District of Columbia, 2019–2020 21
Figure 8. Percent of Preterm Live Births, District of Columbia, 2011–2020 28
Figure 9. Percent of Preterm Live Births by Maternal Race/Ethnicity, District of Columbia, 2011–2020 29
Figure 10. Percent of Preterm Live Births Across Wards, District of Columbia, 2011 and 2020 30

Figure 11. Percentage of Preterm Live Births by Neighborhood Cluster, District of Columbia, 2016–2020 33
Figure 12. Percent of Preterm Live Births by Previous Preterm Birth, District of Columbia, 2019–2020 34
Figure 13. Percent of Preterm Live Births by Pre-pregnancy Weight, District of Columbia, 2019–2020 35
Figure 14. Percent of Preterm Live Births by Pre-pregnancy Smoking Status and Maternal Race and Ethnicity, District of Columbia, 2019–2020 36
Figure 15. Percent of Preterm Live Births by Prenatal Care Initiation, District of Columbia, 2011–2020 37
Figure 16. Percent of Preterm Live Births by Plurality, District of Columbia, 2019–2020 38
Figure 17. Percent of Preterm Live Births by Smoking Status During Pregnancy, District of Columbia, 2019–2020 39
Figure 18. Percent of Low Birthweight Live Births, District of Columbia, 2011–2020 41
Figure 19. Percent of Low Birthweight Live Births by Maternal Race/Ethnicity, District of Columbia, 2011–2020 42
Figure 20. Percent of Low Birthweight Live Births Across Wards, District of Columbia, 2011 and 2020 43
Figure 21. Percentage of Low Birthweight Births, District of Columbia, 2016–2020 45
Figure 22. Percent of Low Birthweight Births by Pre-pregnancy Weight, District of Columbia, 2011–2020 46
Figure 23. Percent of Low Birthweight Live Births by Pre-pregnancy Smoking Status and Maternal Race and Ethnicity, District of Columbia, 2019–2020 47
Figure 24. Percent of Low Birthweight Live Births by Prenatal Care Initiation, District of Columbia, 2019–2020 49
Figure 25. Percent of Low Birthweight Live Births by Plurality, District of Columbia, 2019–2020 50
Figure 26. Percent of Low Birthweight Live Births by Smoking Status During Pregnancy, District of Columbia, 2019–2020 51
Figure 27. Infant Mortality Rate, United States and District of Columbia, 2011–2020 53
Figure 28. Infant Mortality Disparity Ratio (IMDR), District of Columbia, 2011–2020 54
Figure 29. Infant Mortality Rate by Ward, District of Columbia, 2016–2020 57
Figure 30. Leading Cause of Infant Mortality, District of Columbia 2019–2020 and the United States 2019 60
Figure 31. Infant Age at Time of Death, District of Columbia, 2019–2020 62

LIST OF APPENDIX TABLES

Appendix Table 1. Maternal characteristics of live births, District of Columbia 2014–2016 and 2017–2020 77
Appendix Table 2. Maternal characteristics of live births, District of Columbia 2019–2020 78
Appendix Table 3. Maternal characteristics of live births by ward, District of Columbia 2019–2020 79
Appendix Table 4. Pre-pregnancy characteristics of women who had live births by ward, District of Columbia 2019–2020 80
Appendix Table 5. Pregnancy characteristics of women who had live births by ward, District of Columbia 2019–2020 81

Appendix Table 6. Percentage of preterm and full term births by pre-pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2019–2020 82
Appendix Table 7. Percentage of preterm and full term births by pre-pregnancy characteristics of mothers who had live births and ward, District of Columbia 2019–2020 83
Appendix Table 8. Percentage of preterm births by pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2019–2020 ... 85
Appendix Table 9. Percentage of preterm births by pregnancy characteristics of mothers who had live births and ward, District of Columbia 2019–2020 86
Appendix Table 10. Percentage of low birthweight births by pre-pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2019–2020 88
Appendix Table 11. Percentage of low birthweight births by pre-pregnancy characteristics of mothers who had live births and ward, District of Columbia 2019–2020..... 89
Appendix Table 12. Percentage of low birthweight births by pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2019–2020 91
Appendix Table 13. Percentage of low birthweight births by pregnancy characteristics of mothers who had live births and ward, District of Columbia 2019–2020..... 92
Appendix Table 14. Annual infant mortality rates by maternal race and ethnicity, District of Columbia 2014–2020 94

SECTION 2: 2017/2018

TABLES (2017-2018)

Table 1. Distribution of payer type by birth order and maternal age, District of Columbia 2017–2018 97
Table 2. Pre-pregnancy characteristics of women who had live births overall and by maternal race and ethnicity, District of Columbia, 2017–2018 98
Table 3. Pregnancy characteristics of women who had live births overall and by maternal race and ethnicity, District of Columbia, 2017–2018 99
Table 4. Percentage of preterm births by maternal characteristics among live births in District of Columbia, 2017–2018 100
Table 5. Percentage of low birthweight live births by maternal characteristics among live births in District of Columbia, 2017–2018 101
Table 6. Infant mortality rate by maternal characteristics, 2014–2018..... 102
Table 7. Infant mortality rate by pre-pregnancy characteristics, 2014–2018 103
Table 8. Infant mortality rate by pregnancy characteristics, 2014–2018..... 104
Table 9. Infant mortality rate by birthweight and preterm status, 2014–2018 105
Table 10. Ten leading causes of infant death, 2017–2018 106
Table 11. Neonatal mortality rate by infant age and maternal characteristics, 2014–2018..... 107
Table 12. Ten leading causes of neonatal deaths, District of Columbia, 2017–2018..... 108

APPENDIX TABLES (2017–2018)

Appendix Table 1. Maternal characteristics of live births, District of Columbia 2012–2014 and 2015–2018 109
Appendix Table 2. Maternal characteristics of live births, District of Columbia 2017–2018 110
Appendix Table 3. Maternal characteristics of live births by ward, District of Columbia 2017–2018 ... 111
Appendix Table 4. Pre-pregnancy characteristics of women who had live births by ward, District of Columbia 2017–2018 112
Appendix Table 5. Pregnancy characteristics of women who had live births by ward, District of Columbia 2017–2018 113
Appendix Table 6. Percentage of preterm and full term births by pre-pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2017–2018 114
Appendix Table 7. Percentage of preterm and full term births by pre-pregnancy characteristics of mothers who had live births and ward, District of Columbia 2017–2018 115
Appendix Table 8. Percentage of preterm births by pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2017–2018 117
Appendix Table 9. Percentage of preterm births by pregnancy characteristics of mothers who had live births and ward, District of Columbia 2017–2018 118
Appendix Table 10. Percentage of low birthweight births by pre-pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2017–2018 120
Appendix Table 11. Percentage of low birthweight births by pre-pregnancy characteristics of mothers who had live births and ward, District of Columbia 2017–2018..... 121
Appendix Table 12. Percentage of low birthweight births by pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2017–2018 123
Appendix Table 13. Percentage of low birthweight births by pregnancy characteristics of mothers who had live births and ward, District of Columbia 2017–2018..... 124
Appendix Table 13. Percentage of low birthweight births by pregnancy characteristics of mothers who had live births and ward, District of Columbia 2017–2018..... 125
Appendix Table 13. Percentage of low birthweight births by pregnancy characteristics of mothers who had live births and ward, District of Columbia 2017–2018..... 125
Appendix Table 14. Annual infant mortality rates by maternal race and ethnicity, District of Columbia 2012–2018 126

DEFINITIONS OF TERMS

Birthweight	Weight of the newborn at the time of birth.
Eclampsia	Eclampsia is defined as the presence of new-onset grand mal seizures in a woman with pre-eclampsia. Eclampsia is documented on the birth certificate.[1]
Gestational hypertension	Gestational hypertension is a condition characterized by high blood pressure during pregnancy. This type of hypertension is first diagnosed during pregnancy and is documented on the birth certificate (category includes pregnancy-induced hypertension and preeclampsia).[2]
Gestational diabetes	Gestational diabetes is a type of diabetes that develops or is first recognized during pregnancy and is documented on the birth certificate (CDC factsheet).[3]
Higher-order birth	A multiple birth of 3 or more infants
Initiation into prenatal care	The time at which the mother has her first prenatal care visit. The trimester during which prenatal care was initiated was determined using the obstetric estimate for gestational age, date of birth, and date of first prenatal care visit. Initiation into prenatal is determined using the date of birth, the date of the first prenatal care visit, and the obstetric estimate of gestational age of the newborn at the time of birth.
Low birthweight	Birth of a newborn weighing less than 2,500 grams.
Neonatal period	The period between birth and 27 days of age.
Plurality	The number of live births or by the number of fetuses that remain in utero at 20 weeks gestation and that are subsequently born separately.

DEFINITIONS OF TERMS

Post-neonatal period	The period between 28 days and one year of age.
Pre-pregnancy weight of mother:	The pre-pregnancy weight status of the mother is determined using Body Mass Index (BMI), which is calculated using mother's height and pre-pregnancy weight, as documented on the birth certificate. A BMI less than 18.5 is considered **underweight**; between 18.5 and 24.9 is **normal weight**; between 25 and 29.9 is **overweight**; 30 or above is considered **obese**.
Pre-pregnancy diabetes	The presence of pre-pregnancy diabetes indicates that the mother was diagnosed with diabetes prior to her pregnancy.
Pre-pregnancy hypertension	The presence of pre-pregnancy hypertension indicates that the mother was diagnosed with chronic hypertension prior to her pregnancy.
Pre-pregnancy smoking status	Mother smoked at least 1 cigarette during the three months prior to pregnancy.
Preterm birth	Birth prior to 37 weeks gestation.
Previous preterm birth	Having had a previous preterm birth prior to current birth.
Smoking status during pregnancy	Smoking during pregnancy is defined as smoking at least 1 cigarette during pregnancy.
Very low birthweight birth	Birth of a newborn weighing less than 1,500 grams.

1. American College of Obstetricians and Gynecologists, Gestational Hypertension and Preeclampsia (2020). *URL: https://www.acog.org/clinical/clinical-guidance/practice-bulletin/articles/2020/06/gestational-hypertension-and-preeclampsia*

2. American College of Obstetricians and Gynecologists, Gestational Hypertension and Preeclampsia (2020). *URL: https://www.acog.org/clinical/clinical-guidance/practice-bulletin/articles/2020/06/gestational-hypertension-and-preeclampsia*

3. Centers for Disease Control and Prevention. Fact sheet on gestational diabetes, *https://www.cdc.gov/pregnancy/documents/Diabetes_and_Pregnancy508.pdf*

PREFACE

The health of a society has long been measured by the health of its mothers and children. Infant mortality is a key indicator of population health; healthy mothers tend to give birth to healthy babies and are best positioned to fully nurture them; and health during infancy and early childhood establishes a positive trajectory for health throughout the life course.

Perinatal health is the health and well-being of mothers and babies before, during, and after childbirth. Reflecting the importance of the health of mothers and children to the District of Columbia, DC Health has developed and is implementing a focused strategy for perinatal health. The strategy is built on a framework of seven elements:

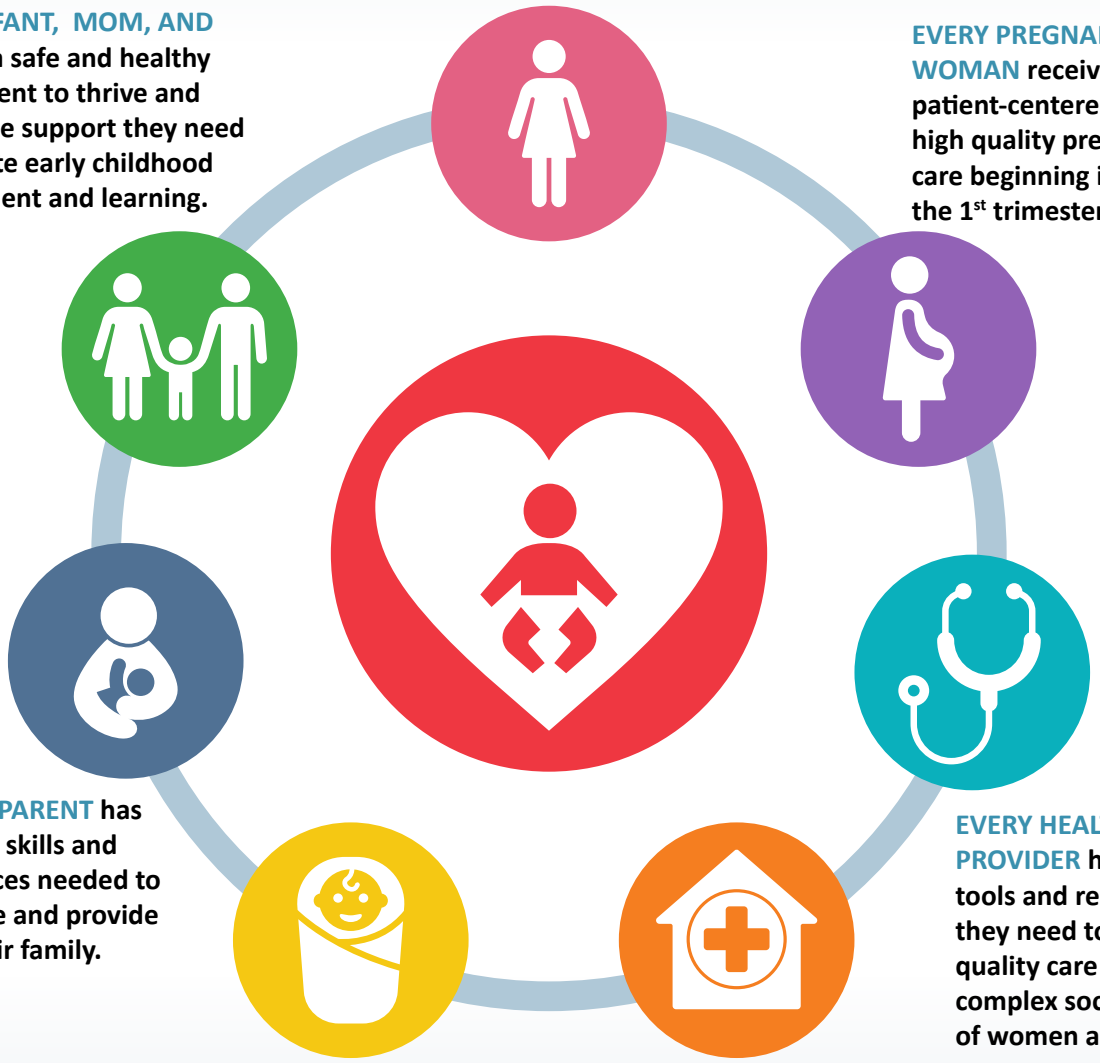
- **Every teenage girl and woman in DC is in control of her reproductive health**
- **Every pregnant woman receives patient-centered, high-quality prenatal care beginning in the 1st trimester**
- **Every newborn receives high-quality neonatal care in the hospital and outpatient setting**
- **Every parent has the life skills and resources needed to nurture and provide for their family**
- **Every healthcare provider has the tools and resources they need to provide quality care and manage complex social needs of women and infants**
- **Every infant, mom, and dad has a safe and healthy environment to thrive and receive the support they need to promote early childhood development and learning**
- **Every healthcare facility and organization providing maternal and infant care has the tools and resources to practice evidence-based health care, care coordination and support services, and document QI/QA activities**

In 2018, DC Health published the inaugural Perinatal Health and Infant Mortality (PHIM) Report, which provided a comprehensive data summary of the health of mothers and infants in the District of Columbia through 2016 and summarized DC Health's activities to improve perinatal health. This report is an update of that report, including data from 2017 through 2020 and a summary of DC Health's activities to improve perinatal health through 2021.

Data are presented in the main body of the report and in appendices. The data demonstrate meaningful improvements in key perinatal health indicators in recent years. In particular, the District of Columbia is experiencing decreases in rates of teen births, preterm births, low birth weight, and — most notably — infant mortality. Nonetheless, significant racial and ethnic disparities in these health indicators persist, and the District must make additional progress to meet the targets it set for preterm births and for low birth weight births for 2020.

DC Health's approach to improve perinatal health includes efforts to: improve preconception health, assure high-quality health services and care, strengthen families, and promote healthy environments. A summary of these efforts is provided in a section at the end of this report.

OUR FRAMEWORK to improve perinatal health outcomes is based on the overarching goal to ensure every community understands its health risks and role in improving perinatal health outcomes. DC Health identified seven core priorities that drive our programmatic efforts.



EVERY TEENAGE GIRL AND WOMAN in DC is in control of her reproductive health.

EVERY PREGNANT WOMAN receives patient-centered, high quality prenatal care beginning in the 1st trimester.

EVERY HEALTHCARE PROVIDER has the tools and resources they need to provide quality care and manage complex social needs of women and infants.

EVERY HEALTHCARE FACILITY AND ORGANIZATION providing maternal and infant care has the tools and resources to practice evidence based health care, care coordination and support services, and to document QI/QA activities.

EVERY NEWBORN receives high-quality neonatal care in the hospital and outpatient setting.

EVERY PARENT has the life skills and resources needed to nurture and provide for their family.

EVERY INFANT, MOM, AND DAD has a safe and healthy environment to thrive and receive the support they need to promote early childhood development and learning.

Data on District of Columbia Resident Births

In order to implement the most effective strategies to improve perinatal health and reduce infant mortality, we need to understand our local data. Insight into the health status of pregnant women and infants in the District of Columbia can be gained by analyzing data from birth and death certificates, known as vital statistics. Using vital statistics, we describe trends in maternal health and demographic characteristics as well as birth outcomes for years 2019–2020.

The Perinatal Health and Infant Mortality report for 2017–2018 was not released due to the interruption caused by the COVID-19 pandemic. Thus, 2017–2018 data tables are presented in Section II of this report. The COVID-19 pandemic assuredly impacted the perinatal health of DC residents, however, the effect of the pandemic will not be assessed in this report.

SECTION 1

2019/2020

DEMOGRAPHIC AND HEALTH CHARACTERISTICS OF PREGNANT WOMEN

In order to implement the most effective strategies to improve perinatal health and reduce infant mortality, we need to understand our local data. Insight into the health status of pregnant women and infants in the District of Columbia can be gained by analyzing data from birth and death certificates, known as vital statistics. Using vital statistics, we describe trends in maternal health and demographic characteristics as well as birth outcomes for years 2019–2020.

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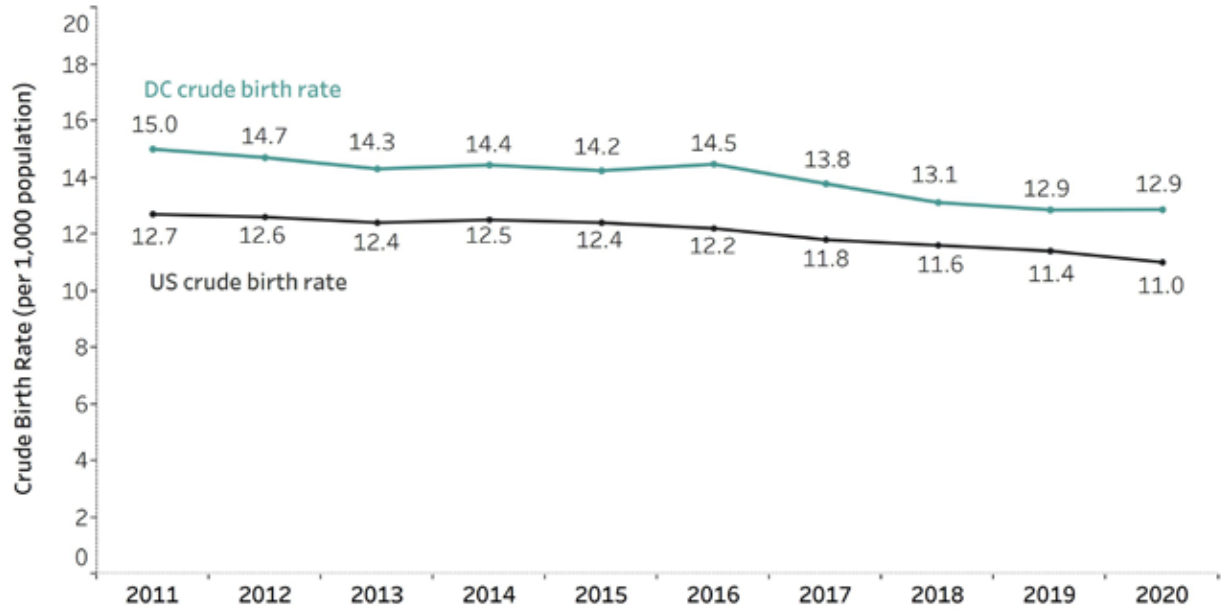
Using vital statistics, we describe 10-year trends in live births, overall and by maternal age, compare the distribution of maternal characteristics before and during pregnancy between two time periods, and provide a current profile of maternal health characteristics, pre-pregnancy and pregnancy characteristics for years 2019–2020.

Live Births to District of Columbia Residents

Live births to District of Columbia residents, 2011–2020

Birth rate, presented below as a crude birth rate, is defined as the number of resident live births per 1,000 resident population (see Appendix: Rate and Ratio Definitions for more information). Birth rates have decreased from 15.0 per 1,000 population in 2011 to 12.9 per 1,000 population in 2020. This decline follows national trends in birth rates which dropped from 12.7 per 1,000 population in 2011 to 11.0 per 1,000 population in 2020 (Figure 1). For information on how crude birth rates were defined and calculated, see Appendix Technical Notes: Rate and Ratios Definitions.

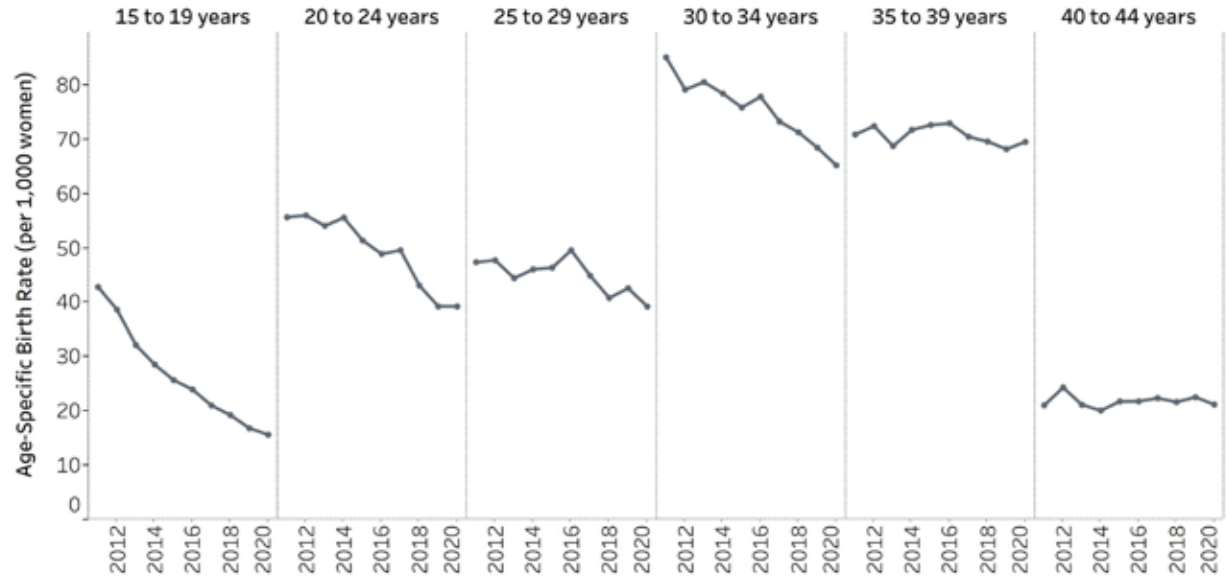
Figure 1. Crude Birth Rate, United States and District of Columbia, 2011-2020



Data Source: US crude birth rate, 2011-2020: National Center for Health Statistics. Health, United States, 2020: Table 001. Hyattsville, MD. 2022. Available from: https://www.cdc.gov/nchs/data/nvsr/nvsr70/nvsr70-17.pdf.
2011-2020 DC crude birth rate: 2011-2020 DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.
2011-2020 DC population estimates: Annual State Resident Populations for 5 Race Groups (5 Race Alone or in Combination Groups) by Age, Sex, and Hispanic Origin: July 1st, Source U.S. Census Bureau, Population Division.

During the same period, the age-specific birth rates (as defined as the number of resident live births per 1,000 resident female population in that age-group; see Appendix: Rate and Ratio Definitions for more information) to DC residents also changed (Figure 2).

Figure 2. Birth Rates by Maternal Age Group, District of Columbia, 2011-2020



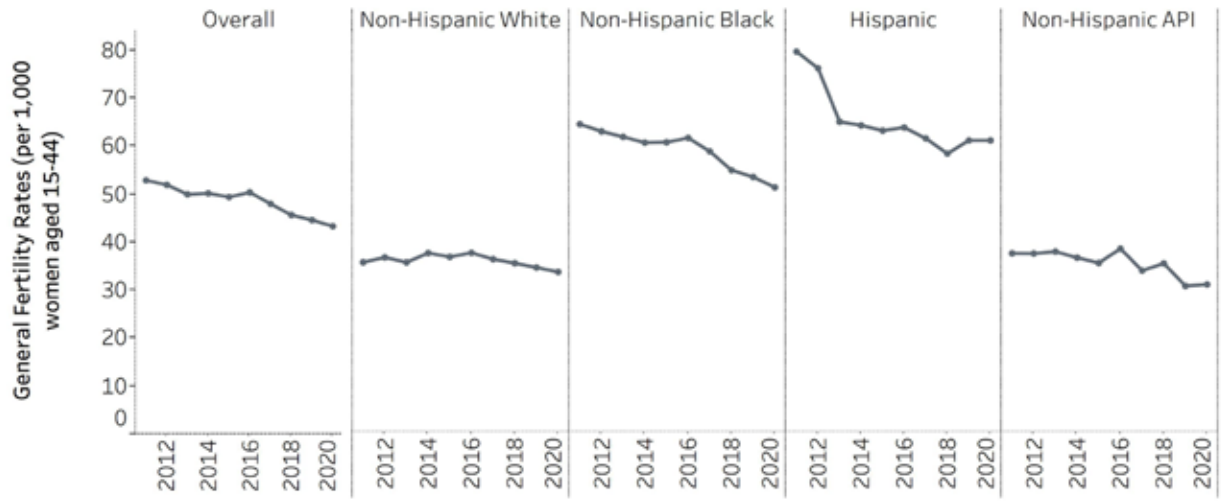
Birth Rates	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
15 to 19 years	42.8	38.7	32.1	28.5	25.7	24.0	21.0	19.3	16.8	15.6
20 to 24 years	55.6	56.0	54.1	55.6	51.4	48.9	49.6	43.1	39.3	39.3
25 to 29 years	47.4	47.7	44.4	46.1	46.4	49.6	44.9	40.8	42.6	39.2
30 to 34 years	85.1	79.1	80.5	78.4	75.9	77.8	73.2	71.3	68.5	65.2
35 to 39 years	70.9	72.4	68.7	71.7	72.6	72.9	70.4	69.6	68.2	69.5
40 to 44 years	21.1	24.3	21.1	20.1	21.8	21.8	22.4	21.6	22.5	21.2

Data Source: 2011-2020 DC crude birth rate: DC Birth Rate Data, Vital Records Division, Center for Policy, Planning and Evaluation, DC Department of Health; 2011-2020 DC population estimates: Annual State Resident Populations for 5 Race Groups (5 Race Alone or in Combination Groups) by Age, Sex, and Hispanic Origin: July 1st, Source U.S. Census Bureau, Population Division.

Between 2011 and 2020, birth rates across all age-groups of women younger than 35 years-of-age decreased, while birth rates of those women 35 and older remained constant (Figure 3). More specifically, birth rates decreased for women aged: 15–19 years from 42.8 to 15.6 per 1,000 women; 20-24 years from 55.6 to 39.3 per 1,000 women; and 25–29 years from 47.4 to 39.2 per 1,000 women. Between 2011 and 2020, birth rates for women aged 35–39 (70.9 vs 69.5 per 1,000 women of the same age) and 40–44 (21.1 vs 21.2 per 1,000 women of the same age) mostly remained constant. Between 2011 and 2020, birth rates for women aged 15–19 and 30–34 had the largest absolute decreases compared to other age groups. Birth rates for women aged 15–19 were significantly lower than birth rates for any other age group during the ten-year period (except mothers aged 40+ between 2011 and 2017 and mothers aged 25–29 years in 2011). For each year during this period, birth rates for women aged 35–39 were significantly higher than that of women aged 40–44.

General fertility rate (GFR) is the number of resident live births per 1,000 resident female population in the reproductive age range of 15–44 (see Appendix: Rate and Ratio Definitions for more information). The GFR reflects the annual rate at which the resident female population of childbearing age (and any further grouping) are having babies.

Figure 3. General Fertility Rate (GFR*) by Maternal Race/Ethnicity, District of Columbia, 2011-2020



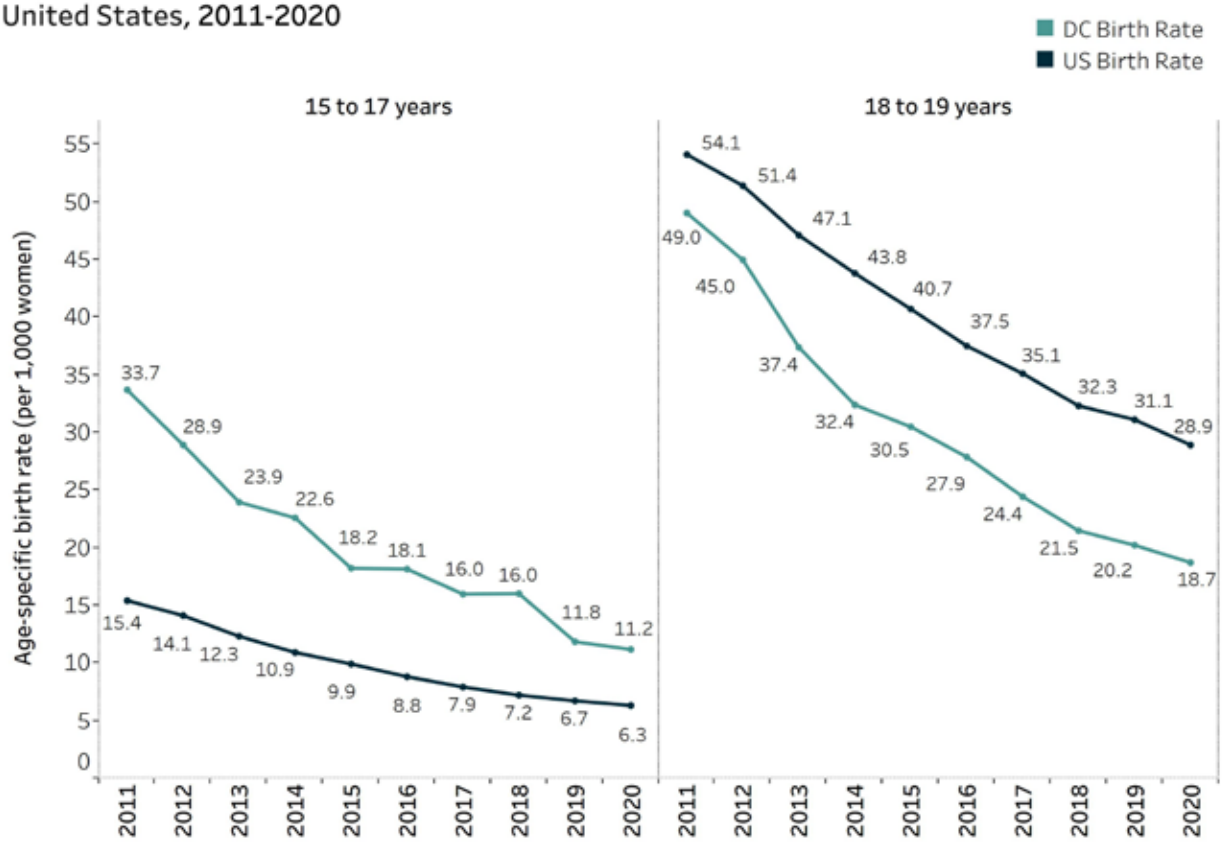
GFR	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Overall	52.8	51.9	49.9	50.1	49.4	50.3	48.0	45.6	44.6	43.3
Non-Hispanic White	35.4	36.4	35.4	37.3	36.6	37.4	36.1	35.2	34.3	33.4
Non-Hispanic Black	64.3	62.8	61.7	60.4	60.5	61.4	58.6	54.7	53.3	51.1
Hispanic	79.5	76.0	64.8	64.1	63.0	63.6	61.3	58.2	60.9	60.9
Non-Hispanic API	37.3	37.2	37.7	36.4	35.3	38.3	33.7	35.2	30.5	30.8

*GFR = total number of live births (for a specific area and time period) divided by the female population ages 15-44 (for that same area and time) multiplied by 1,000.
Data Source: 2011-2020 DC birth rate: DC Birth Rate Data, Vital Records Division, Center for Policy, Planning and Evaluation, DC Department of Health.
2011-2020 DC population estimates: Annual State Resident Populations for 5 Race Groups (5 Race Alone or in Combination Groups) by Age, Sex, and Hispanic Origin: July 1st, Source U.S. Census Bureau, Population Division.

From 2011 to 2020, the DC general fertility rate declined 22% from 52.8 to 43.3 births per 1,000 women aged 15–44. This decline between 2011 and 2020 was also apparent within maternal race and ethnicity groupings, even though rates differed between maternal race and ethnic groups (Figure 3). For example, Hispanic mothers, followed by non-Hispanic black mothers, had the highest GFRs overall. Between 2011 and 2020, there were small declines in GFRs for non-Hispanic white mothers (6% decline from 35.4 to 33.4 per 1,000 women), but larger declines among non-Hispanic API mothers (21% decline from 37.3 to 30.8 per 1,000 women), non-Hispanic black mothers (26% decline from 64.3 to 51.1 per 1,000 women) and Hispanic mothers (31% decline from 79.5 to 60.9 per 1,000 women).

Teen birth rates, defined as births to mothers aged 15–19 years, were previously described as having decreased between 2011 and 2020 from 42.8 to 15.6 per 1,000 women. Teen birth rates disaggregated into smaller age groups (15–17 years v. 18–19 years) also differed (Figure 4). For information on how age-specific birth rates were calculated, see Appendix Technical Notes: Rate and Ratios Definitions.

Figure 4. Teen (15-19 years) Birth Rates by Maternal Age Groups, District of Columbia & United States, 2011-2020



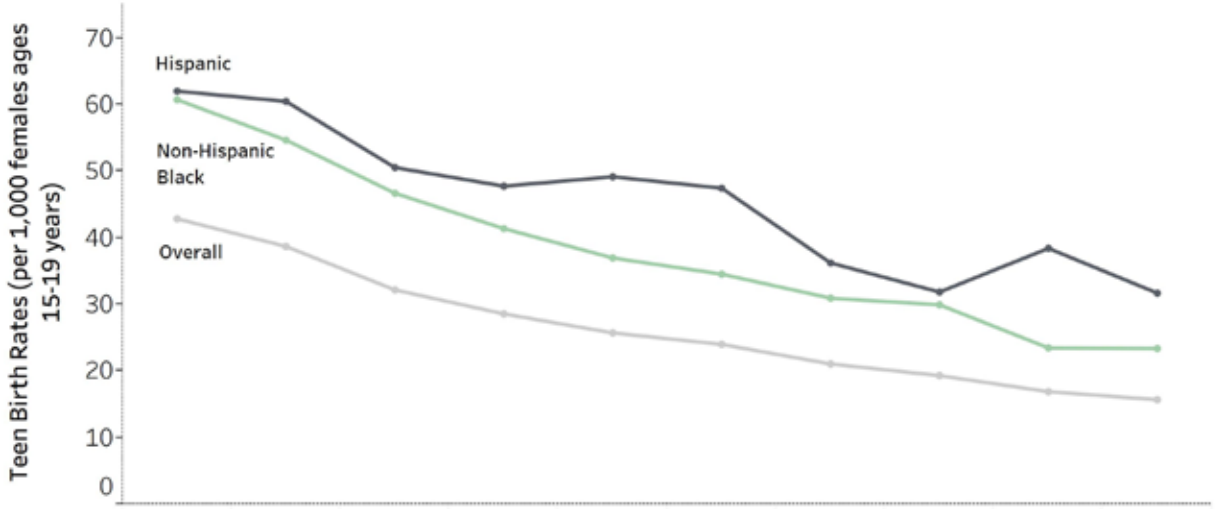
Number of DC Births	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
15 to 17 years	280	238	185	176	141	140	125	125	91	87
18 to 19 years	599	552	452	391	360	320	283	248	232	214

Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.
2010-2020 DC population estimates: Annual State Resident Populations for 5 Race Groups (5 Race Alone or in Combination Groups) by Age, Sex, and Hispanic Origin: April 1, 2010 to July 1, 2020, Source U.S. Census Bureau, Population Division.
US teen birth rates, 2011-2020: Osterman, MK et al., Births: Final Data for 2020. National Vital Statistics Report; vol 70 no 17. Hyattsville, MD: National Center for Health Statistics. February 2022. Available from: https://www.cdc.gov/nchs/data/nvsr/nvsr70/nvsr70-17.pdf

DC birth rates for both groups (15–17 years and 18–19 years) followed national trends of meaningfully decreasing between 2011 to 2020. DC birth rates were consistently higher among mothers aged 18–19 years compared to mothers aged 15–17 years. However, DC birth rates for 18–19-year-olds were lower than national rates for the same age grouping, while DC birth rates for 15–17-years-olds were consistently higher than national rates for the same age grouping.

Teen birth rates (mothers aged 15–19 years) between 2011 and 2020 also differed by maternal race and ethnicity (Figure 5; data for non-Hispanic white teen mothers were suppressed since numbers were small).

Figure 5. Birth rates for teens (15-19 years) overall and by maternal race/ethnicity, District of Columbia, 2011-2020



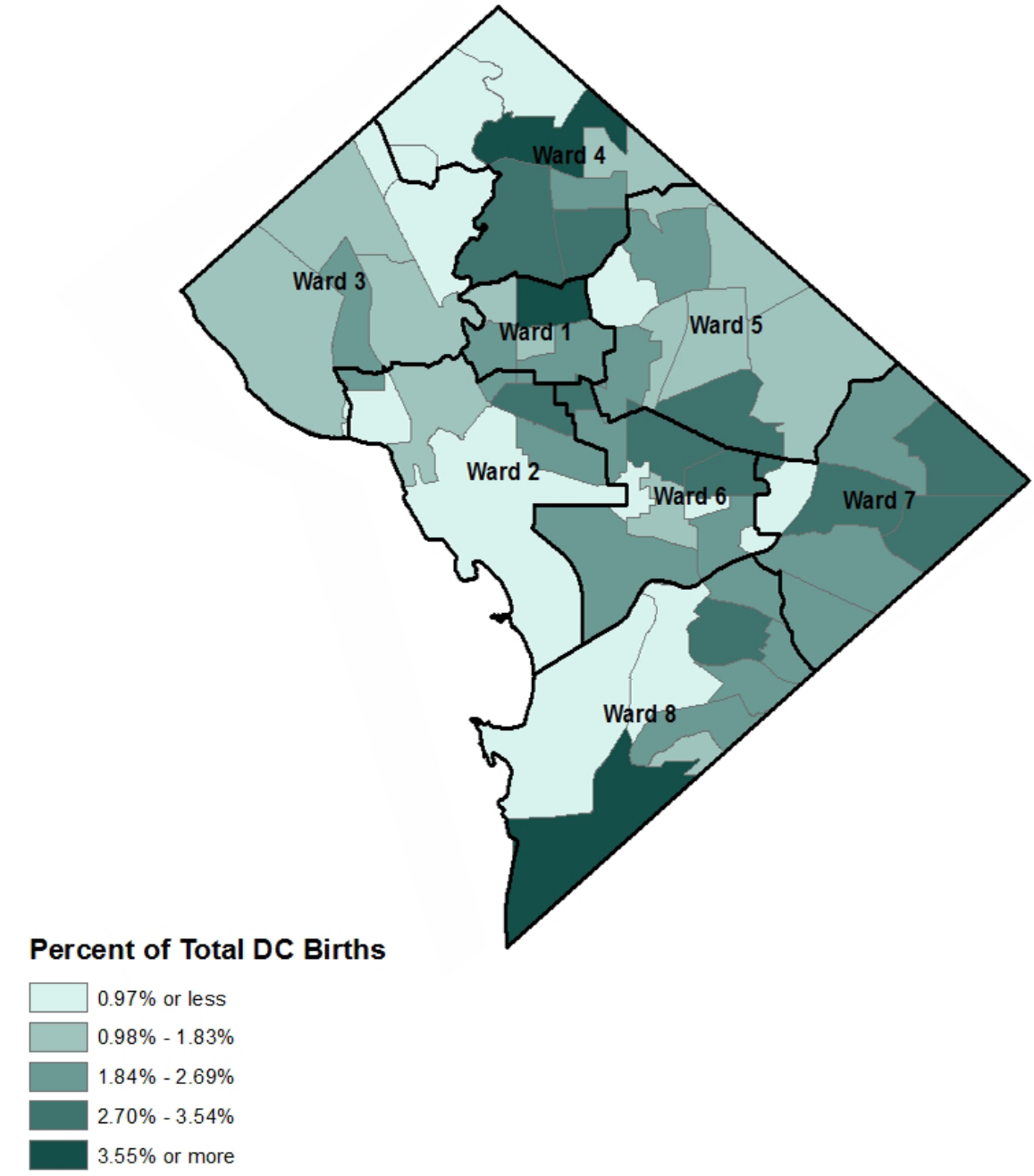
Teen Birth Rates	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
non-Hispanic Black	60.7	54.6	46.7	41.3	36.9	34.5	30.9	29.9	23.4	23.3
Hispanic	62.0	60.4	50.5	47.7	49.1	47.4	36.2	31.8	38.4	31.7
Overall	42.8	38.7	32.1	28.5	25.7	24.0	21.0	19.3	16.8	15.6

Data Source: 2011-2020 DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.
2011-2020 DC population estimates: Annual State Resident Populations for 5 Race Groups (5 Race Alone or in Combination Groups) by Age, Sex, and Hispanic Origin: July 1st, Source U.S. Census Bureau, Population Division.

From 2011 to 2020, both Hispanic and non-Hispanic black teen mothers saw significant decreases in birth rates (62.0 to 31.7 for Hispanic teen mothers; 60.7 to 23.3 for non-Hispanic black teen mothers). Hispanic teen mothers, however, had the highest birth rates in DC across the 10-year period.

The distribution of live births by neighborhood from 2019–2020 is presented in Figure 6. Neighborhoods with the highest percentage of DC resident births are populated in Wards 4, 7, and 8.

Figure 6. Percent Distribution of Live Births by Neighborhood, District of Columbia 2019-2020



Neighborhood clusters were created within the Center for Policy, Planning and Evaluation by spatially joining contiguous census tracts.
Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health

Changes in the demographic and socioeconomic profile of mothers who had live births between 2014–2016 and 2017–2020

Demographic characteristics of District of Columbia female residents changed over the last 5 years. We examine differences in maternal demographics and health characteristics and behaviors between two time periods: 2014–2016 and 2017–2020.

The demographic profile of mothers who had live births in 2014–2016 differed from those who had live births during 2017–2020 (Appendix Table 1). The majority of births to District of Columbia residents were to non-Hispanic black mothers, though this percentage decreased from 49.8% to 47.0% between the two time periods. Non-Hispanic white mothers represented a larger percent of women giving birth in 2017–2020 than in 2014–2016 (33.0% vs 31.1%).

The percentage of live births to mothers aged less than 20 years as well as 20–24 years decreased during these two time periods from 5.4% to 3.9% and 17.3% to 13.4%, respectively. The percentage of live births to women aged 30–39 years was higher in 2017–2020 compared to 2014–2016 (56.4% vs 51.6%).

A higher percentage of births were to married women in 2017–2020 compared to 2014–2016 (53.1% vs. 51.6%).

Maternal educational attainment also differed between the two time periods. The percentage of births to mothers with less than a high school education decreased from 14.4% to 12.0% from 2014–2016 to 2017–2020, whereas the percentage of births to mothers with more than a high school education increased from 63.0% to 65.4%.

The percentage of live births that were financed by Medicaid increased from 39.5% to 44.4% from 2014–2016 to 2017–2020. The percentage of live births financed by private insurance also increased from 47.1% to 49.9% during these two time periods. There were no differences in the percentage of live births by mother's residential ward between 2014–2016 and 2017–2020. In both time periods, Ward 8 had the highest percentage of live births (although it decreased slightly from 17.5% to 16.7% from 2014–2016 to 2017–2020).

Sociodemographic characteristics of women who had live births, District of Columbia 2019–2020

The current profile of DC mothers giving birth in the District of Columbia is based on the most recent years of birth data (2019–2020). The overall distribution of maternal sociodemographic characteristics during 2019–2020 is provided in Appendix Table 2 and by ward in Appendix Table 3.

Nearly one-half of births during 2019–2020 were to first-time mothers (44.6%) and the majority of births among first-time mothers were aged 20 years and older (93.4%) (Table 1). Thirty percent of births to first-time mothers (31.6%) and nearly 60% of higher order births (57.5%) were financed by Medicaid. The majority of births among mothers 20 years or younger were insured by Medicaid (almost 90%), whereas among mothers aged 20 years and older, the percentage of births financed by Medicaid differed between first-time mothers and mothers with higher-order births. For mothers 20 years and older, a little more than one-quarter of first-time mothers were insured by Medicaid (27.7%) while more than half of mothers of higher order births were insured by Medicaid (57.2%).

Table 1. Distribution of payer type by birth order and maternal age, District of Columbia 2019–2020

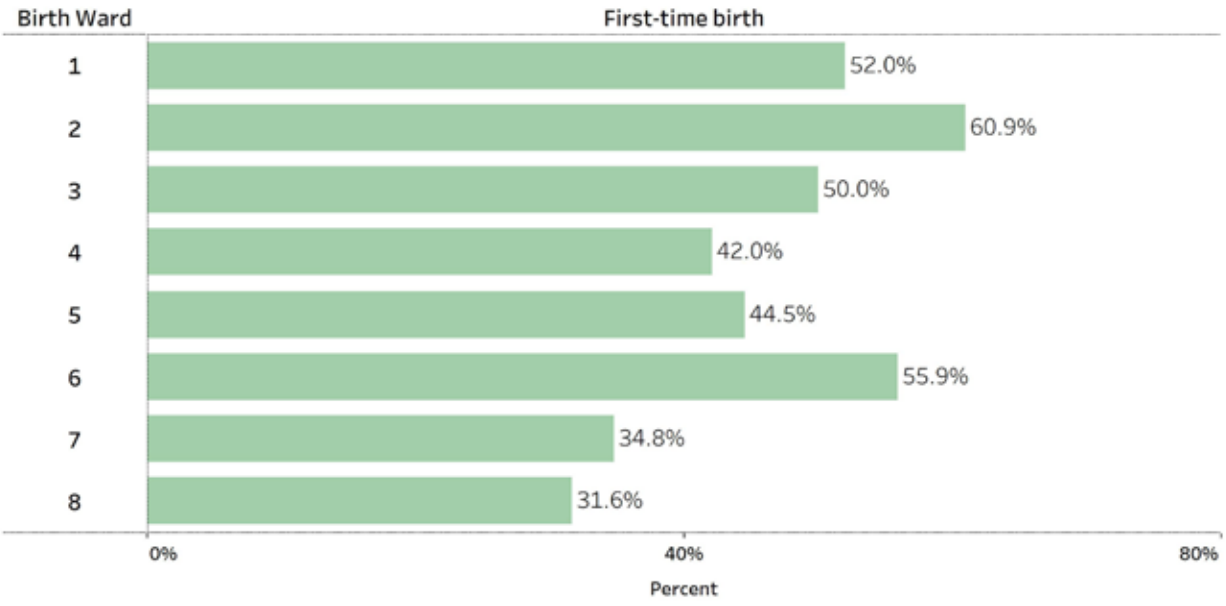
Characteristic	Total Births		Maternal Age			
			Less than 20 years		20 years and older	
	N	%	N	%	N	%
Total Births by birth order [a]						
Total births to first-time mothers	8,001	44.6	527	83.1	7,469	43.2
Total births to mothers of higher order births	9,930	55.4	107	16.9	9,820	56.8
Payer type among mothers by birth order						
Total births to first-time mothers:						
Medicaid	2,531	31.6	462	87.7	2,067	27.7
Private Insurance	5,195	64.9	43	8.2	5,150	69.0
Other	263	3.3	21	4.0	241	3.2
Total births to mothers of higher order births:						
Medicaid	5,710	57.5	93	86.9	5,616	57.2
Private Insurance	3,879	39.1	8	7.5	3,870	39.4
Other	327	3.3	6	5.6	321	3.3

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Percent is based on a denominator including first-time and higher order births.

The percentage of first-time births exceeded 50% in three wards: Ward 1 (52.0%), Ward 2 (60.9%), and Ward 6 (55.9%) (Figure 7). The percentage of first-time births was lowest in Ward 8 (31.6%).

Figure 7. Distribution of First-Time Births by Maternal Residence (Ward), District of Columbia, 2019-2020



Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

SECTION HIGHLIGHTS

- From 2014–2016 to 2017–2020, DC experienced an increase in births to non-Hispanic white women, women aged 30–39 years, women who were married, and women with more than a high school education. Births to mothers aged less than 20 years as well as 20–24 years continued to decline. Births that were financed by Medicaid as well as private insurance increased.
- Birth rates to mothers aged 15–19 years decreased by nearly 65% from 2011–2020. Among those births to mothers aged 15–19, Hispanic mothers had the highest birth rates throughout the 10-year period. The birth rate to mothers aged 18–19 years is higher than the birth rate to mothers aged 15–17 years in DC. However, compared to national rates, the birth rate for mothers aged 15–17 was higher in DC than in the US, while the birth rate for mothers aged 18–19 was lower in DC than in the US.

DC HEALTH PROGRAMS TO SUPPORT THE HEALTH OF WOMEN BEFORE PREGNANCY (PRECONCEPTION AND INTERCONCEPTION HEALTH)

- To help improve preconception health, DC Health and partner agencies work to promote healthy eating and physical activity, as well as avoidance of tobacco, alcohol, and other drugs.
  - DC Health operates several programs to increase access to healthy foods, including the Produce Plus program providing low-income residents benefits to use at farmers' markets, Joyful Food Markets at more than 50 elementary schools, and the Healthy Corner Store Initiative.
  - The Supplemental Nutrition Assistance Program (SNAP) helps individuals and families with low incomes by providing monthly benefits to purchase food.
  - The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides healthy food and nutritional counseling for low-income women and their children.
  - The DC Health Chronic Disease Division works with health care providers to identify and treat adults with high blood pressure, diabetes, and high blood cholesterol and to enroll adults with pre-diabetes in programs that promote healthy eating and physical activity.
  - DC Health's Tobacco Control Program works to reduce smoking initiation and promote cessation for current smokers. In particular, DC Health provides DCQuitNow, which offers counseling and nicotine replacement therapy at no cost to the participant.

Health Characteristics of District Women Prior to Pregnancy

Maternal pre-pregnancy health characteristics and behaviors of women who had live births, District of Columbia 2019–2020

During 2019–2020, there were significant differences with respect to pre-pregnancy health characteristics and health behaviors by race and ethnicity (Table 2).

Table 2. Pre-pregnancy characteristics of women who had live births overall and by maternal race and ethnicity, District of Columbia, 2019–2020

Characteristic	Total Births		Maternal Race/Ethnicity [a]							
			non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander	
	N	%	N	%	N	%	N	%	N	%
Total Births	17,939	100.0	5,998	100.0	8,290	100.0	2,701	100.0	830	100.0
Previous Preterm Birth										
No, no previous preterm birth	17,043	95.0	5,879	98.0	7,653	92.3	2,577	95.4	819	98.7
Yes, previous preterm birth	877	4.9	115	1.9	627	7.6	121	4.5	10	1.2
Pre-pregnancy weight										
Underweight	598	3.3	180	3.0	306	3.7	63	2.3	46	5.5
Normal weight	8,696	48.5	4,131	68.9	2,855	34.4	1,059	39.2	595	71.7
Overweight	4,405	24.6	1,185	19.8	2,237	27.0	804	29.8	148	17.8
Obese	3,981	22.2	446	7.4	2,799	33.8	679	25.1	34	4.1
Smoking prior to pregnancy										
Did not smoke prior to pregnancy	17,097	95.3	5,937	99.0	7,577	91.4	2,645	97.9	826	99.5
Smoked prior to pregnancy	645	3.6	57	1.0	559	6.7	23	0.9	4	0.5
Pre-pregnancy diabetes										
Absent	17,704	98.7	5,968	99.5	8,145	98.3	2,652	98.2	819	98.7
Present	226	1.3	29	0.5	137	1.7	49	1.8	11	1.3
Pre-pregnancy hypertension										
Absent	17,365	96.8	5,929	98.9	7,848	94.7	2,648	98.0	823	99.2
Present	565	3.2	68	1.1	434	5.2	53	2.0	7	0.8

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Other non-Hispanic race-ethnic categories are not presented due to small sample size.

Less than 5% of all mothers who gave birth during 2019–2020 had previously had a preterm birth. The percentage of mothers who had previously had a preterm birth was significantly higher among non-Hispanic black mothers (7.6%) than Hispanic mothers (4.5%) as well as non-Hispanic white mothers (1.9%).

Around half of all mothers giving birth in 2019 and 2020 were of normal weight prior to pregnancy (48.5%). However, the percentage of women with normal pre-pregnancy weight was significantly higher among non-Hispanic white mothers (68.9%) than both non-Hispanic black mothers (34.4%) and Hispanic mothers (39.2%). The percentage of overweight or obese mothers prior to pregnancy for all births was around half (46.8%), the highest percentage of overweight or obese pre-pregnancy weight was among non-Hispanic black mothers (60.8%), which was significantly higher than non-Hispanic white mothers (27.2%) and Hispanic mothers (54.9%).

The percentage of mothers who smoked prior to pregnancy overall was 3.6%. The percentage of mothers who smoked prior to pregnancy was significantly higher among non-Hispanic black mothers (6.7%) compared to Hispanic mothers (0.9%) and non-Hispanic white mothers (1.0%). The percentage

of mothers with pre-pregnancy diabetes was a little over 1% (1.3%), with significantly higher levels among Hispanic mothers (1.8%) compared to non-Hispanic white mothers (0.5%), but not significantly different than non-Hispanic black (1.7%) mothers. The percentage of mothers overall with pre-pregnancy hypertension was around 3% (3.2%), with significantly higher levels among non-Hispanic black mothers (5.2%) compared to non-Hispanic white mothers (1.1%) and Hispanic mothers (2.0%).

The distribution of pre-pregnancy characteristics and behaviors is presented by Ward in Appendix Table 4.

SECTION HIGHLIGHTS

- During 2019–2020, compared to non-Hispanic white mothers, non-Hispanic black mothers had higher percentages of having: had a previous preterm birth, been overweight or obese, smoked prior to pregnancy, and had a history of diabetes as well as hypertension prior to pregnancy
- During 2019–2020, compared to non-Hispanic white mothers, Hispanic mothers had higher percentages of having: had previous preterm births, been overweight or obese, and had a history of diabetes as well as hypertension prior to pregnancy.

DC HEALTH PROGRAMS TO SUPPORT HEALTHY PREGNANCY

- The DC Calling All Sectors Initiative is a multi-sector collaborative effort, led by the DC Health Office of Health Equity, aimed at addressing housing insecurity among pregnant residents.
- DC Health funds Mamatoto Village's Mothers Rising Home Visitation Program, which provides women with health education, support with social service needs, care coordination, advocacy, and parenting support during their pregnancy and throughout the infants' first three months of life.
- The Maternal, Infant Early Childhood Home Visitation is a federally-funded program that provides evidence-based home visiting services for at-risk pregnant women and parents with young children.
- The DC Perinatal Quality Collaborative convenes a team of perinatal care providers and public health professionals to reduce pregnancy-related morbidity and mortality among women in the District.

Health Characteristics of District Women During Pregnancy

Maternal pregnancy health characteristics and behaviors of women who had live births, District of Columbia 2019–2020

Several maternal health characteristics and health behaviors during pregnancy are known to contribute to birth outcomes.

The distribution of characteristics and behaviors of women during pregnancy is presented by race and ethnicity in Table 3.

Table 3. Pregnancy characteristics of women who had live births overall and by maternal race and ethnicity, District of Columbia, 2019–2020

Characteristic	DC Overall		Maternal Race/Ethnicity [a]							
			non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander	
	N	%	N	%	N	%	N	%	N	%
Total Births	17,939	100.0	5,998	100.0	8,290	100.0	2,701	100.0	830	100.0
Trimester Prenatal Care Initiated										
First Trimester	12,274	68.4	5,117	85.3	4,576	55.2	1,830	67.8	674	81.2
Second Trimester	3,823	21.3	683	11.4	2,393	28.9	608	22.5	115	13.9
Third Trimester	874	4.9	128	2.1	573	6.9	138	5.1	27	3.3
No Prenatal Care	329	1.8	17	0.3	282	3.4	20	0.7	5	0.6
Plurality of birth										
Singleton	17,366	96.8	5,808	96.8	7,985	96.3	2,636	97.6	817	98.4
Twin	539	3.0	172	2.9	292	3.5	62	2.3	13	1.6
Triplet	33	0.2	18	0.3	12	0.1	3	0.1	0	0.0
Smoked during pregnancy										
Did not smoke during pregnancy	17,353	96.7	5,965	99.5	7,793	94.0	2,655	98.3	828	99.8
Smoked during pregnancy	381	2.1	28	0.5	337	4.1	12	0.4	2	0.2
Gestational diabetes										
Absent	17,005	94.8	5,792	96.6	7,857	94.8	2,493	92.3	745	89.8
Present	923	5.2	205	3.4	423	5.1	208	7.7	85	10.2
Gestational hypertension										
Absent	16,419	91.5	5,531	92.2	7,456	89.9	2,530	93.7	788	94.9
Present	1,509	8.4	466	7.8	824	9.9	171	6.3	42	5.1
Eclampsia										
Absent	17,869	99.6	5,986	99.8	8,248	99.5	2,690	99.6	826	99.5
Present	48	0.3	8	0.1	29	0.4	8	0.3	3	0.4

Data Source: DC Birth, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Other non-Hispanic race-ethnic categories are not presented due to small sample size.

The majority of live births (68.4%) were to women who initiated prenatal care during the first trimester of pregnancy; 1.8% of live births received no prenatal care. Eighty-five percent of non-Hispanic white mothers, 81% of non-Hispanic Asian/Pacific Islanders mothers, nearly 70% of Hispanic mothers (67.8%), and only a little more than half of non-Hispanic black mothers (55.2%) initiated prenatal care during their first trimester.

Most live births were singleton births (96.8%), while 3% were twin births and less than 0.5% were to higher order multiple births. Twin and higher order multiple births occurred at a significantly higher proportion among non-Hispanic black (3.6%) and non-Hispanic white (3.2%) mothers compared to both non-Hispanic Asian/Pacific Islander (2.4%) and Hispanic (1.6%) mothers, respectively.

The majority of mothers did not smoke during pregnancy (96.7%), but this also varied by maternal race and ethnicity. Four percent of non-Hispanic black mothers smoked during pregnancy, which is significantly higher than levels of smoking during pregnancy for non-Hispanic white (0.5%) and Hispanic mothers (0.4%).

Around 5% of mothers experienced gestational diabetes during pregnancy (5.2%). The percentage of mothers with gestational diabetes was significantly higher among Hispanic mothers (7.7%) compared to non-Hispanic black mothers (5.1%) and non-Hispanic white mothers (3.4%). Nearly eight and a half percent of mothers had gestational hypertension during pregnancy (8.4%). The percentage of mothers with gestational hypertension was significantly higher among non-Hispanic black mothers (9.9%) compared to non-Hispanic white mothers (7.8%) and Hispanic mothers (6.3%).

The distribution of pregnancy characteristics and behaviors is presented by Ward in Appendix Table 5.

SECTION HIGHLIGHTS

- Only fifty-five percent of non-Hispanic black mothers entered prenatal care in the first trimester, whereas roughly 80% of non-Hispanic white mothers and non-Hispanic Asian/Pacific Islander mothers, and nearly 70% of Hispanic mothers entered prenatal care in the first trimester.
- A little less than 3% of non-Hispanic white mothers initiated prenatal care late or did not initiate care at all, whereas 10% of non-Hispanic black mothers and almost 6% of Hispanic mothers initiated prenatal care late or did not initiate care at all.
- Nearly one in twenty-five non-Hispanic black mothers smoked during pregnancy, which was significantly higher than of non-Hispanic white and Hispanic mothers.
- One in thirteen Hispanic mothers had gestational diabetes which was significantly higher than that of non-Hispanic black and non-Hispanic white mothers.
- One in ten non-Hispanic black mothers had gestational hypertension which was significantly higher than that of non-Hispanic white and Hispanic mothers.

BIRTH OUTCOMES

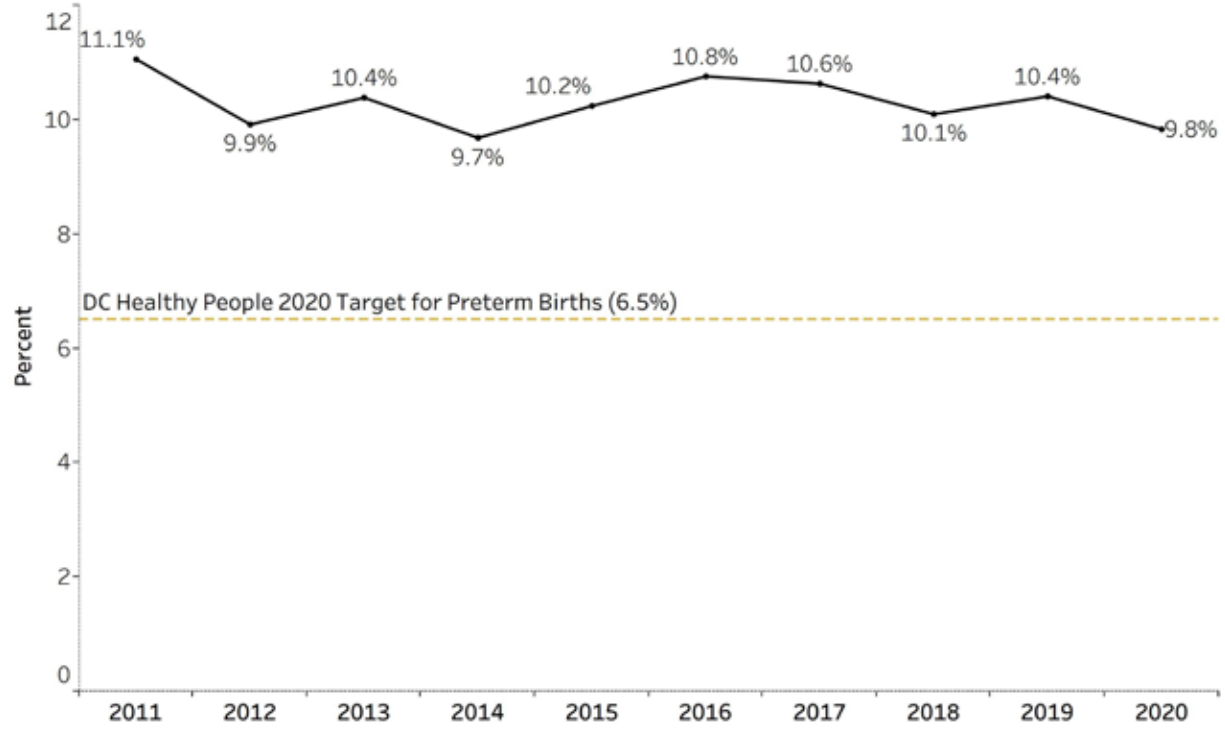
Key outcomes affecting the health of newborns and infants are preterm birth, low birthweight, and infant death. Ten-year trends of preterm births are provided in this section. The percentage of preterm births and low birthweight births by pre-pregnancy and pregnancy characteristics and behaviors are presented by maternal race and ethnicity for combined years 2019–2020 birth data. The latest two years of data are combined so that most percentages presented are based on at least 20 events. Rates and percentages based on less than 20 events may yield statistically unreliable estimates. Neighborhood-level maps are presented for the combined years 2016–2020 to similarly improve the reliability of preterm birth and low birthweight estimates.

Infant mortality rates are presented by sociodemographic characteristics, pre-pregnancy and pregnancy characteristics and behaviors for combined years 2016–2020. While annual rates are provided, five years of data are combined to improve the reliability of estimates and detect differences by select characteristics. Ward-level maps are presented for the combined years 2016–2020, due to the number of infant deaths in most DC neighborhoods. The ten leading causes of infant deaths and neonatal deaths are provided for the two latest years of data, 2019–2020.

Preterm Live Births, District of Columbia 2019–2020

A preterm birth is defined as a live birth occurring prior to 37 weeks gestation. The percentage of preterm births among all DC resident live births varied from year to year but overall decreased significantly between 2011 and 2020 from 11.1% to 9.8% (Figure 8).

Figure 8. Percent of Preterm Live Births, District of Columbia, 2011-2020

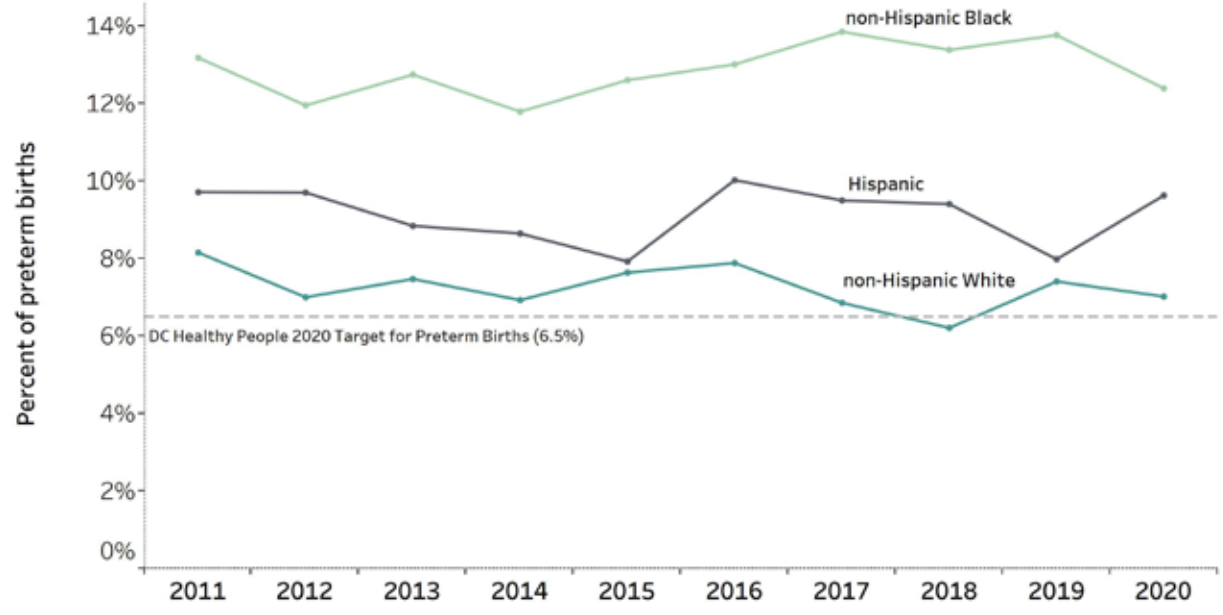


Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

The percent of preterm births by maternal race and ethnicity largely remained the same across 2011–2020, with non-Hispanic black mothers having higher levels of preterm births (13.2% in 2011 and 12.4% in 2020) than non-Hispanic white mothers (8.2% in 2011 and 7.0% in 2020) and Hispanic mothers (9.7% in 2011 to 9.6% in 2020; Figure 9). The DC Healthy People 2020 target of 6.5% preterm births by the year 2020 was not met. This metric will be prioritized for the next decade and efforts redoubled to decrease

the percentage of preterm births, especially among non-Hispanic black and Hispanic communities.

Figure 9. Percent of Preterm Live Births by Maternal Race/Ethnicity, District of Columbia 2011-2020

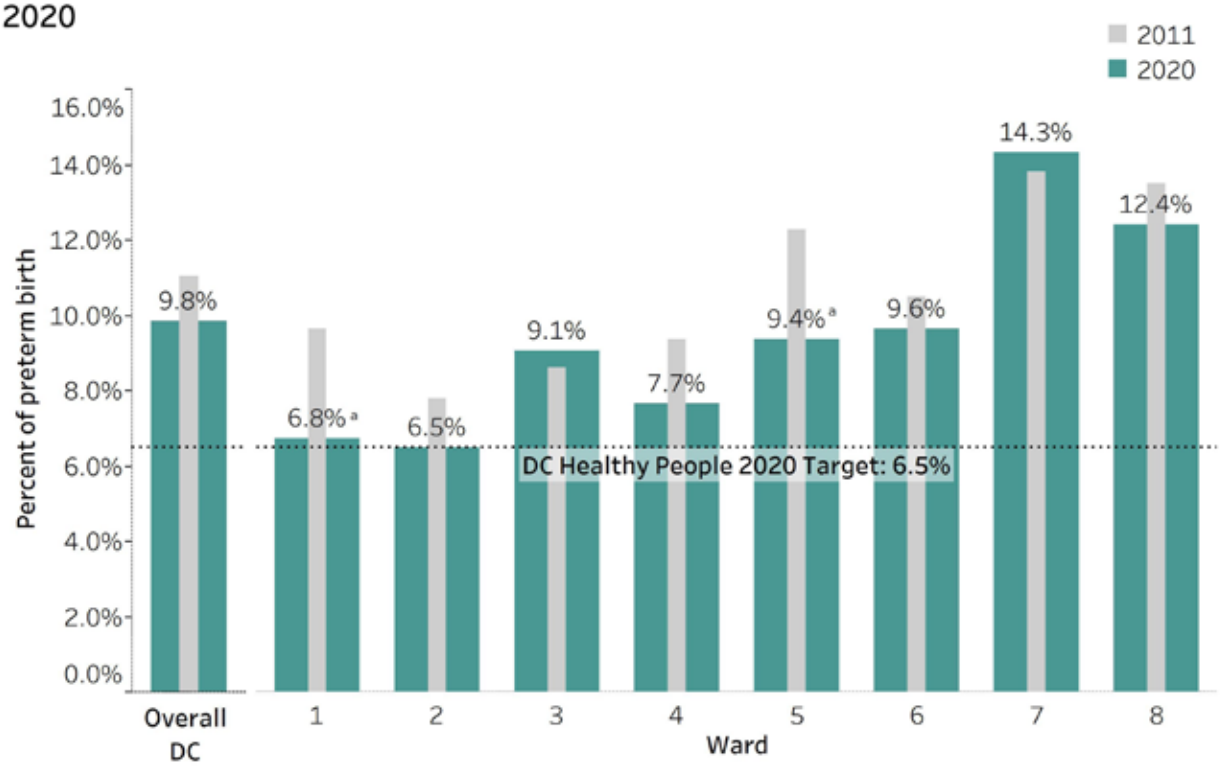


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
non-Hispanic, Black	13.2%	12.0%	12.8%	11.8%	12.6%	13.0%	13.9%	13.4%	13.8%	12.4%
Hispanic	9.7%	9.7%	8.8%	8.7%	7.9%	10.0%	9.5%	9.4%	8.0%	9.6%
non-Hispanic, White	8.2%	7.0%	7.5%	6.9%	7.6%	7.9%	6.9%	6.2%	7.4%	7.0%

Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

The percentage of preterm births decreased between 2011 and 2020 in all wards, except Wards 3 and 7 (Figure 10). Significant decreases in percent of preterm births occurred in wards 1 and 5 from 2011 to 2020.

Figure 10. Percent of Preterm Live Births by Ward, District of Columbia, 2011 and 2020



Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health; DC Health 2020 Healthy People target: Putzer, E., DC Healthy People 2020 Framework, 2016, D.C. Department of Health: Washington, DC.
NOTE: Wards for 2011 and 2020 were based on 2012 Ward boundaries.
[a] The percentage of pre-term births was significantly higher in 2020 compared to the percentage of pre-term births in 2011 ($p<0.05$).

Preterm live births by sociodemographic characteristics of the mother, District of Columbia 2019–2020.

During 2019–2020, there were differences in the percentage of preterm live births by demographic characteristics (Table 4).

Table 4. Percentage of preterm births by maternal characteristics among live births in District of Columbia, 2019–2020

Characteristic	Total Births	Gestational Age			
		Preterm (<37 weeks gestation)		Not preterm (37 and more weeks of gestation)	
	N	N	%	N	%
Total Births	17,939	1,816	10.1	16,116	89.8
Maternal Race and Ethnicity [a]					
non-Hispanic, White	5,998	433	7.2	5,565	92.8
non-Hispanic, Black [b]	8,290	1,086	13.1	7,197	86.8
Hispanic	2,701	238	8.8	2,463	91.2
non-Hispanic, Asian/Pacific Islander	830	50	6.0	780	94.0
Age of Mother (years)					
Less than 20 years	634	64	10.1	569	89.8
20-24 years	2,224	261	11.7	1,959	88.1
25-29 years [c]	3,634	428	11.8	3,206	88.2
30-34 years	5,719	526	9.2	5,192	90.8
35-39 years	4,575	408	8.9	4,167	91.1
40 years and older	1,145	127	11.1	1,018	88.9
Marital Status					
Not Married [d]	8,311	1,078	13.0	7,228	87.0
Married	9,586	734	7.7	8,852	92.3
Mother's Education Level					
Less than High School	2,082	278	13.4	1,803	86.6
High School Graduate	3,868	506	13.1	3,358	86.8
More than High School Education [e]	11,810	1,005	8.5	10,805	91.5
Insurance Type					
Medicaid [f]	8,242	1,038	12.6	7,200	87.4
Private Insurance	9,078	728	8.0	8,350	92.0
Other Government (Fed, State, Local)	78	10	12.8	68	87.2
Self-pay	151	12	8.0	139	92.1
CHAMPUS/TRICARE	250	15	6.0	235	94.0
Other	111	11	9.9	100	90.1
Maternal Residence					
Ward 1	2,077	162	7.8	1,915	92.2
Ward 2	1,016	71	7.0	945	93.0
Ward 3	1,429	137	9.6	1,292	90.4
Ward 4	2,766	225	8.1	2,541	91.9
Ward 5	2,587	256	9.9	2,327	90.0
Ward 6	2,647	231	8.7	2,416	91.3
Ward 7	2,448	327	13.4	2,119	86.6
Ward 8 [g]	2,959	407	13.8	2,551	86.2

Data Source: DC Birth, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Other non-Hispanic race-ethnic categories are not presented due to small sample size.

[b] Percentage of preterm births is significantly higher among births of non-Hispanic black mother compared to all other race and ethnic categories ($p<0.05$). The same is true for Hispanic mothers, except when compared to non-Hispanic black mothers.

[c] Percentage of preterm births is significantly higher among infants of mothers aged 25-29 compared to mothers aged 30-34 years ($p<0.05$) and 35-39 years ($p<0.05$) but not significantly different than mothers aged 40 years or older.

[d] Percentage of preterm births is significantly higher among births of unmarried mothers compared to married mothers ($p<0.05$).

[e] Percentage of preterm births is significantly higher among infants of mothers with less than a high school education as well a high school education compared to those with more than a high school education ($p<0.05$).

[f] Percentage of preterm births is significantly higher among infants of mothers with Medicaid coverage compared to mothers with private insurance ($p<0.05$), self-pay ($p<0.05$), CHAMPUS/TRICARE ($p<0.05$), but not significantly different than mothers with other government insurance or other coverage.

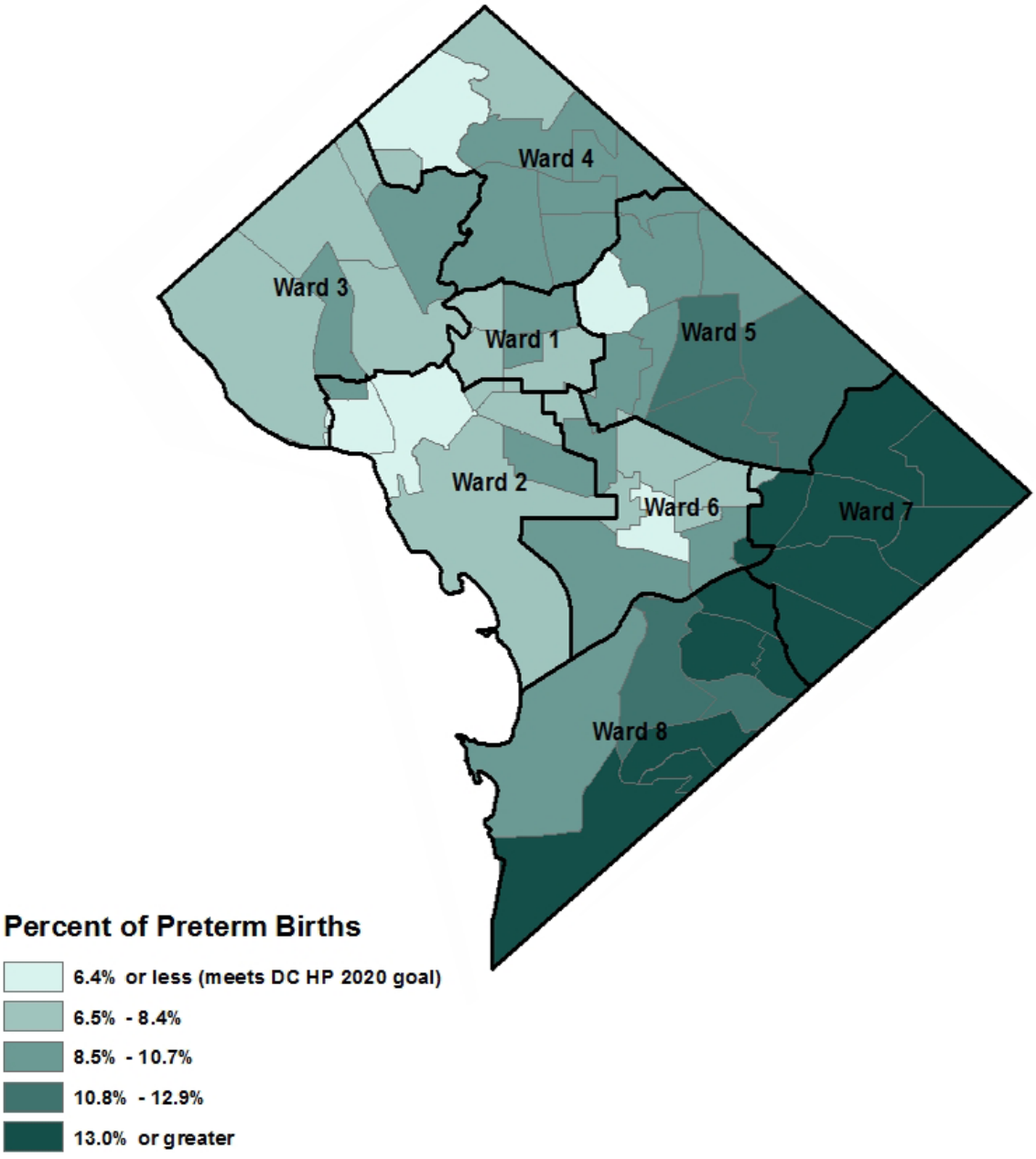
[g] Percentage of preterm births is significantly higher among infants of mothers residing in Ward 8 compared to all other wards ($p<0.05$ for six comparisons) except Ward 7.

During 2019–2020, the percentage of preterm live births among non-Hispanic black mothers (13.1%) was significantly higher than the percentage of preterm live births among non-Hispanic white (7.2%), Hispanic (8.8%) and non-Hispanic Asian/Pacific Islander (6.0%) mothers (Table 4).

The percentage of preterm live births among mothers aged 25–29 years (11.8%) was significantly higher than the percentage of preterm live births among mothers aged 30–34 years (9.2%) and 35–39 years (8.9%). Almost thirteen percent of births to unmarried mothers were preterm, which was significantly higher than the percent of preterm births among married mothers (7.7%). The percentage of preterm live births was significantly higher among mothers without and with a high school diploma (13.4% and 13.1%, respectively) compared to mothers with more than a high school education (8.5%). The percentage of preterm births among all Medicaid financed births in the District of Columbia was 12.6%, which was significantly higher than the percentage of preterm births financed by private insurance (8.0%), self-pay (8.0%), and CHAMPUS/TRICARE (6.0%). The percentage of preterm births differed by ward. Across the eight wards, the highest percentage of preterm births was in Ward 8 (13.8%), which was significantly higher than the percentage of preterm births in all other wards except Ward 7 (13.4%).

To examine the geographic distribution of preterm births at a local level, we combine the five most recent years of birth data (2016–2020) and present the percentage of preterm births by neighborhood cluster (Figure 11).

Figure 11. Percentage of Preterm Live Births by Neighborhood Cluster, District of Columbia 2016-2020



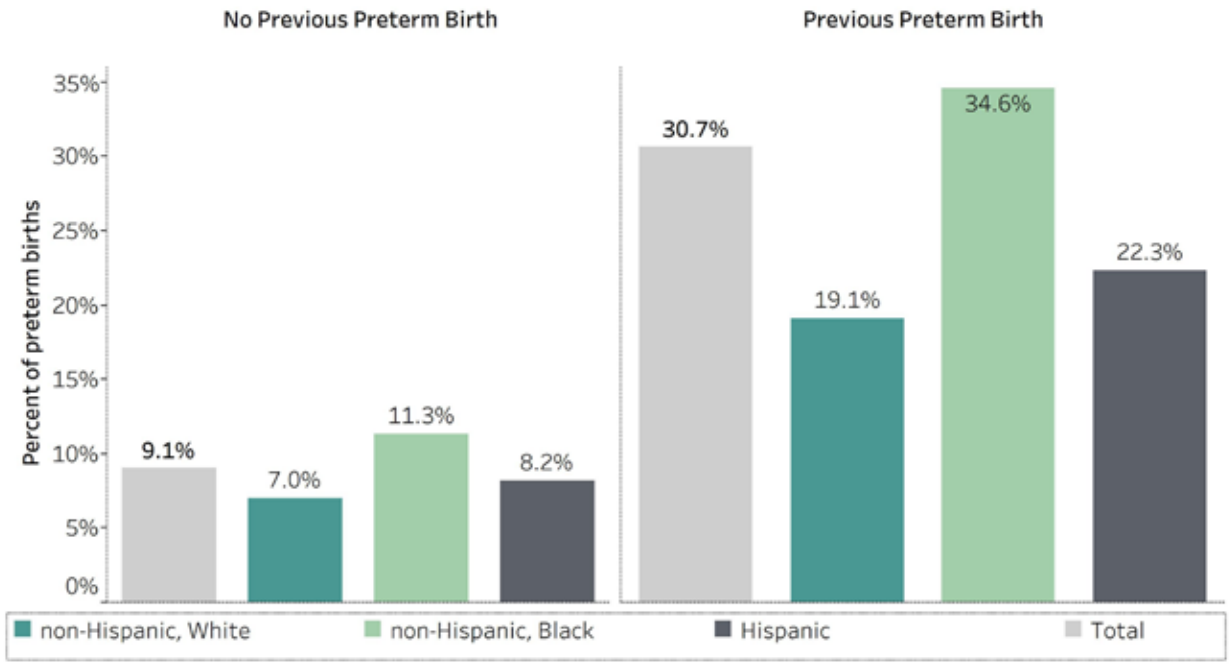
Neighborhood clusters were created within the Center for Policy, Planning and Evaluation by spatially joining contiguous census tracts.
Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health

Preterm live births by pre-pregnancy health characteristics and behaviors of the mother, District of Columbia 2019–2020

The percentage of preterm live births also differed by health characteristics and behaviors prior to pregnancy, such as: previous preterm birth, pre-pregnancy weight, pre-pregnancy smoking, pre-pregnancy diabetes, and pre-pregnancy hypertension. The percentage of preterm births by pre-pregnancy characteristics is presented by maternal race and ethnicity (Appendix Table 6) as well as by ward (Appendix Table 7).

The percentage of mothers who had preterm births was significantly higher (30.7%) among mothers who had a previous preterm birth compared to mothers who did not have a previous preterm birth (9.1%). The percentage of preterm births among non-Hispanic black mothers who had a previous preterm birth (34.6%) was significantly higher than among Hispanic (22.3%) and non-Hispanic white (19.1%) mothers who had a previous preterm birth (Figure 12; Appendix Table 6).

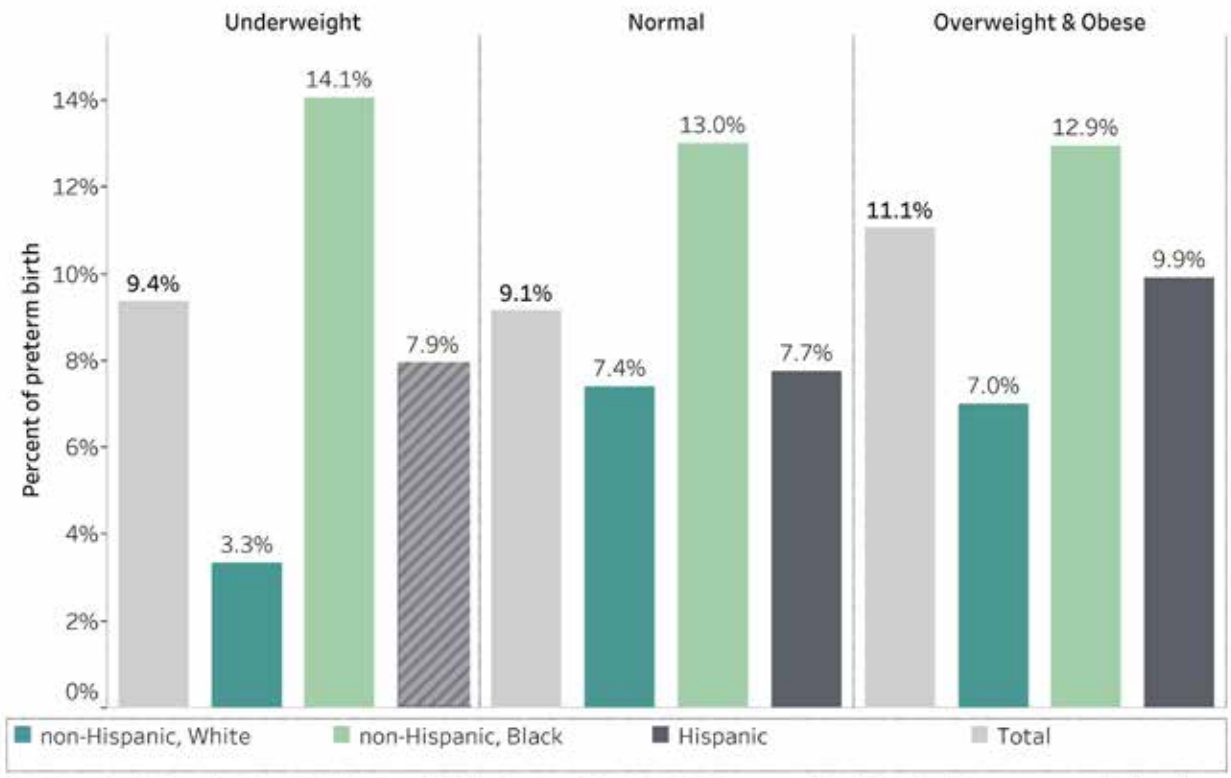
Figure 12. Percent of Preterm Live Births by Previous Preterm Birth, District of Columbia, 2019-2020



Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health; Data for the figure are presented in Appendix 6.

Overall, the percentage of mothers who had preterm births was highest (11.1%) among overweight and obese mothers, but the pattern differed by race/ethnicity (Figure 13; Appendix Table 6). Mothers with normal pre-pregnancy weight had a lower percentage of preterm births (9.1%) compared to mothers who were underweight (9.4%), overweight (9.3%), and obese (13.0%; this was the only significant comparison). For each category (underweight, normal, overweight/obese) of pre-pregnancy weight, the percentage of preterm births among non-Hispanic black mothers was significantly higher than the percent of preterm births among non-Hispanic white mothers (Figure 13; Appendix Table 6).

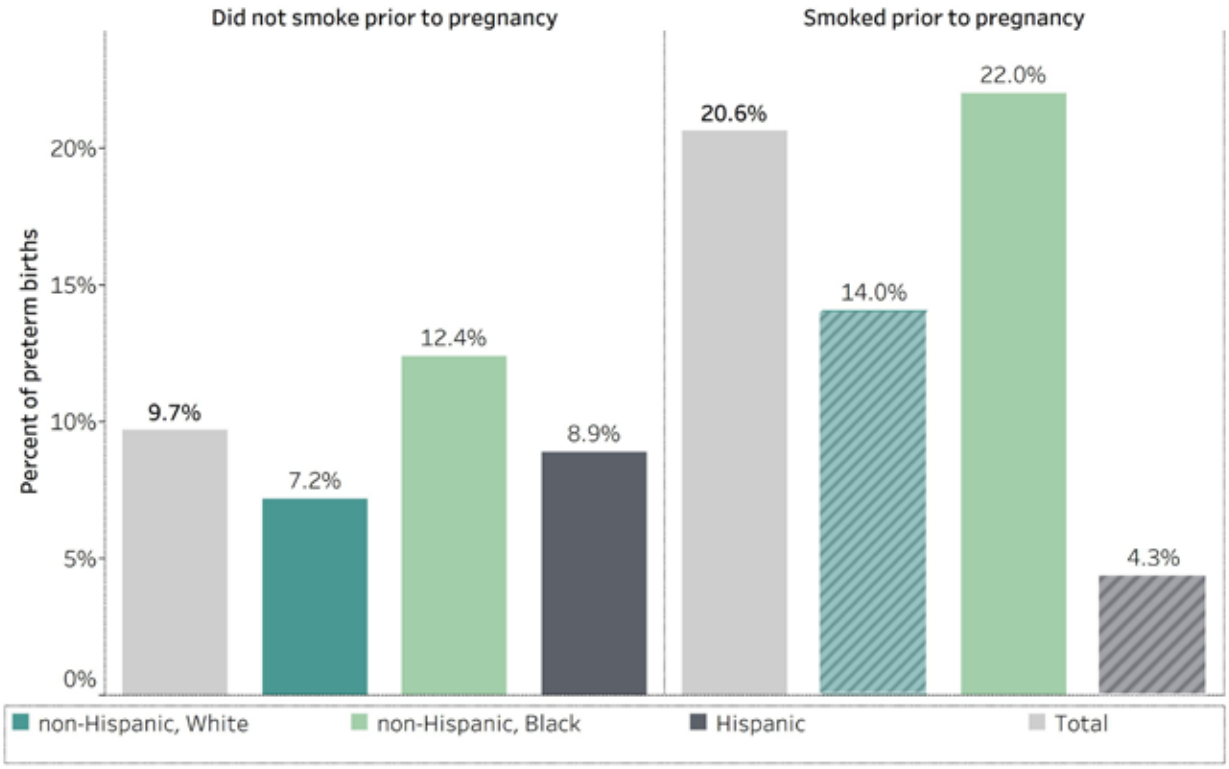
Figure 13. Percent of Preterm Live Births by Pre-pregnancy Weight, District of Columbia, 2019-2020



Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health; Data for the figure are presented in Appendix Table 6.
NOTE: Hatched pattern indicates that percent is based on less than 20 preterm births and may not be statisitically reliable.

Nearly one in five mothers (20.6%) who smoked prior to pregnancy had preterm births, which was significantly higher than the percentage of mothers who did not smoke (9.7%; Figure 14, Appendix Table 6). The percentage of preterm births among non-Hispanic black mothers who smoked prior to pregnancy (22.0%) was significantly higher than among non-Hispanic black mothers who did not smoke (12.4%) prior to pregnancy (Figure 14, Appendix Table 6).

Figure 14. Percent of Preterm Live Births by Pre-Pregnancy Smoking Status and Maternal Race and Ethnicity, District of Columbia, 2019-2020



Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health; Data for the figure are presented in Appendix Table 6.
NOTE: Hatched pattern indicates that percent is based on less than 20 preterm births and may not be statisitically reliable.

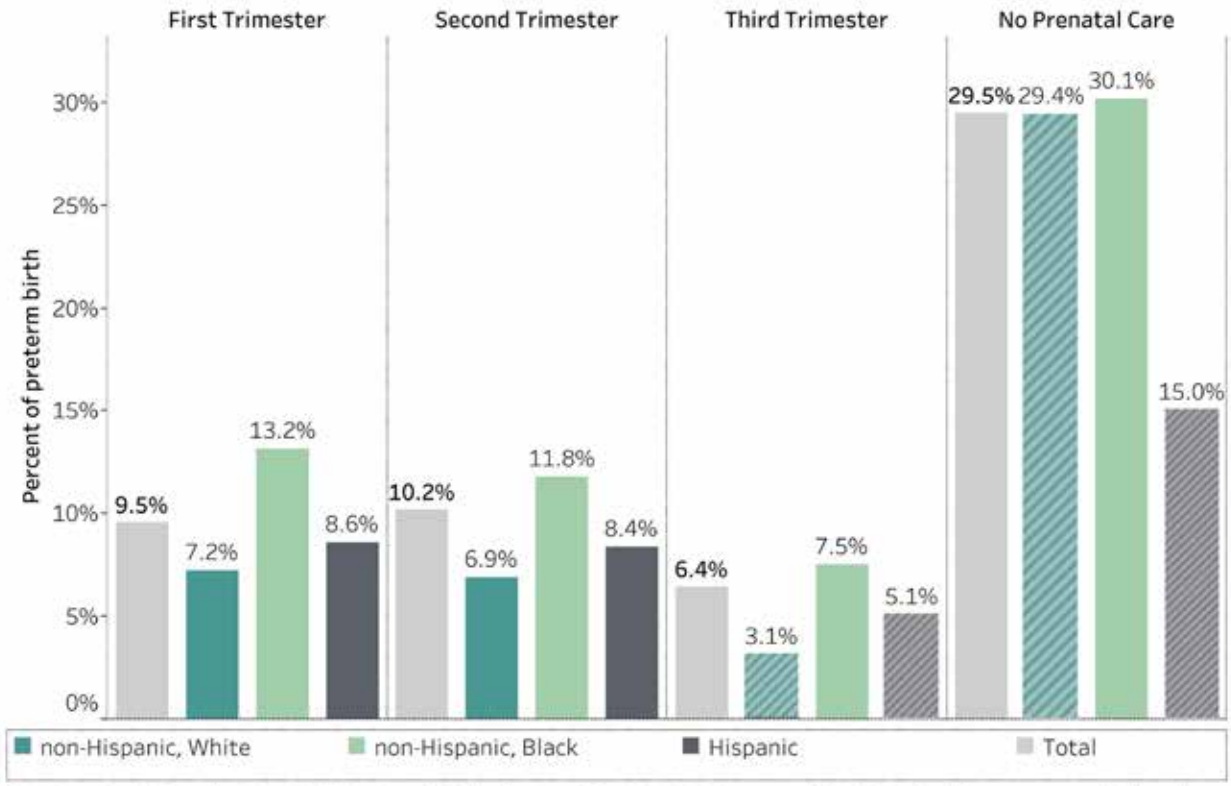
The percentage of mothers who had preterm births was significantly higher among mothers with pre-pregnancy diabetes (19.9%) compared to mothers without pre-pregnancy diabetes (10.0%; Appendix Table 6). The percentage of preterm births among non-Hispanic black mothers who were diagnosed with pre-pregnancy diabetes (21.9%) was significantly higher than among non-Hispanic black mothers who were not diagnosed with pre-pregnancy diabetes (13.0%) (Appendix Table 6). The percentage of mothers who had preterm births was significantly higher among mothers with pre-pregnancy hypertension (23.4%) compared to mothers without pre-pregnancy hypertension (9.7%; Appendix Table 6). The percentage of preterm births among non-Hispanic black mothers who were diagnosed with pre-pregnancy hypertension (22.6%) was significantly higher than among non-Hispanic black mothers who were not diagnosed with pre-pregnancy hypertension (12.6%) (Appendix Table 6).

Preterm live births by health characteristics and behaviors of the mother during pregnancy, District of Columbia 2019–2020

The percentage of preterm live births also differed by health characteristics and behaviors during pregnancy, such as: initiation of prenatal care, smoking during pregnancy, diagnosis of gestational diabetes, diagnosis of gestational hypertension, and diagnosis of eclampsia. The percentage of preterm births by health characteristics and behaviors during pregnancy is presented by maternal race and ethnicity (Appendix Table 8) and by ward (Appendix Table 9).

The percentage of preterm births was significantly higher (29.5%) among births to mothers who did not initiate prenatal care compared to mothers who initiated prenatal care during their first trimester (9.5%) (Figure 15). This was observed for births across all maternal race and ethnic categories; however, the absolute percent difference was largest for non-Hispanic black mothers.

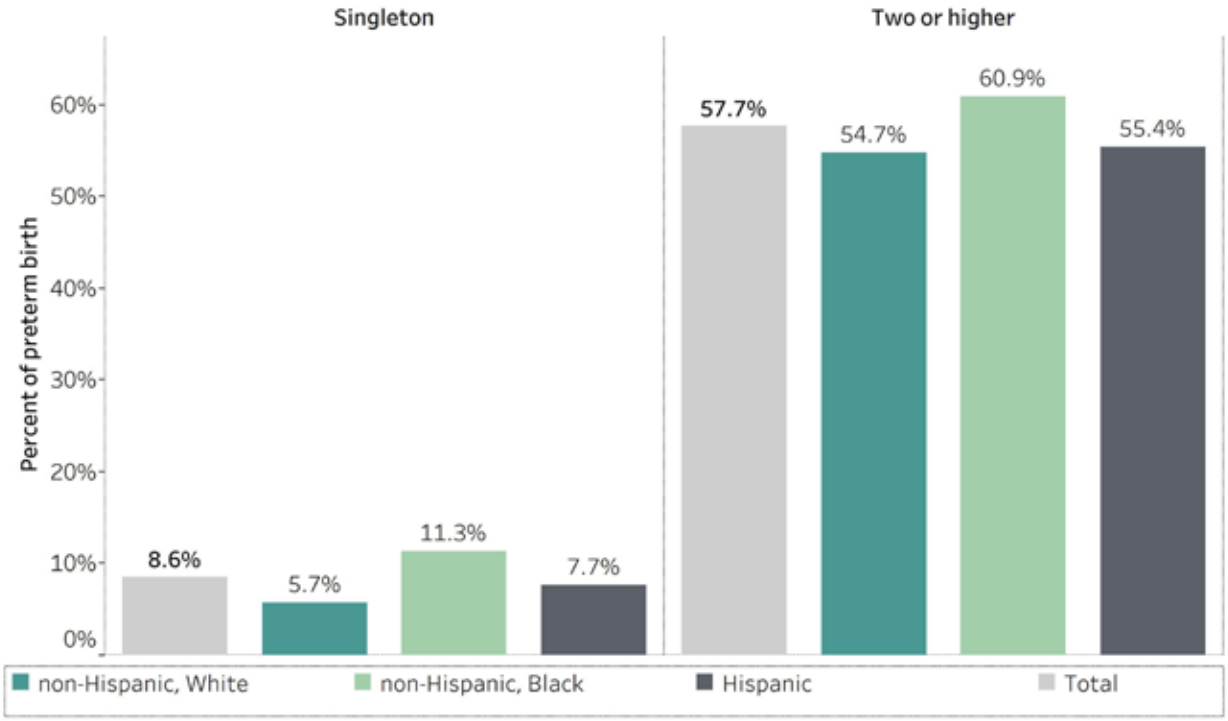
Figure 15. Percent of Preterm Live Births by Prenatal Care Initiation, District of Columbia, 2019-2020



Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health. Data for the figure are presented in Appendix Table 8.
NOTE: Hatched pattern indicates that percent is based on less than 20 preterm births and may not be statisitically reliable.

The percentage of preterm births among twin and higher order multiple births was significantly higher (57.7%) compared to singleton births (8.6%). The percentage of preterm births among non-Hispanic black mothers who gave birth to twins or higher order multiple births (60.9%) was not significantly different than the percentage of preterm births among Hispanic mothers (55.4%) or non-Hispanic white mothers who gave birth to twins or higher order multiple births (54.7%). Among mothers who had singleton births, the percentage of preterm births was significantly higher among non-Hispanic black mothers (11.3%) than Hispanic mothers (7.7%) as well as non-Hispanic white mothers (5.7%) (Figure 16, Appendix Table 8).

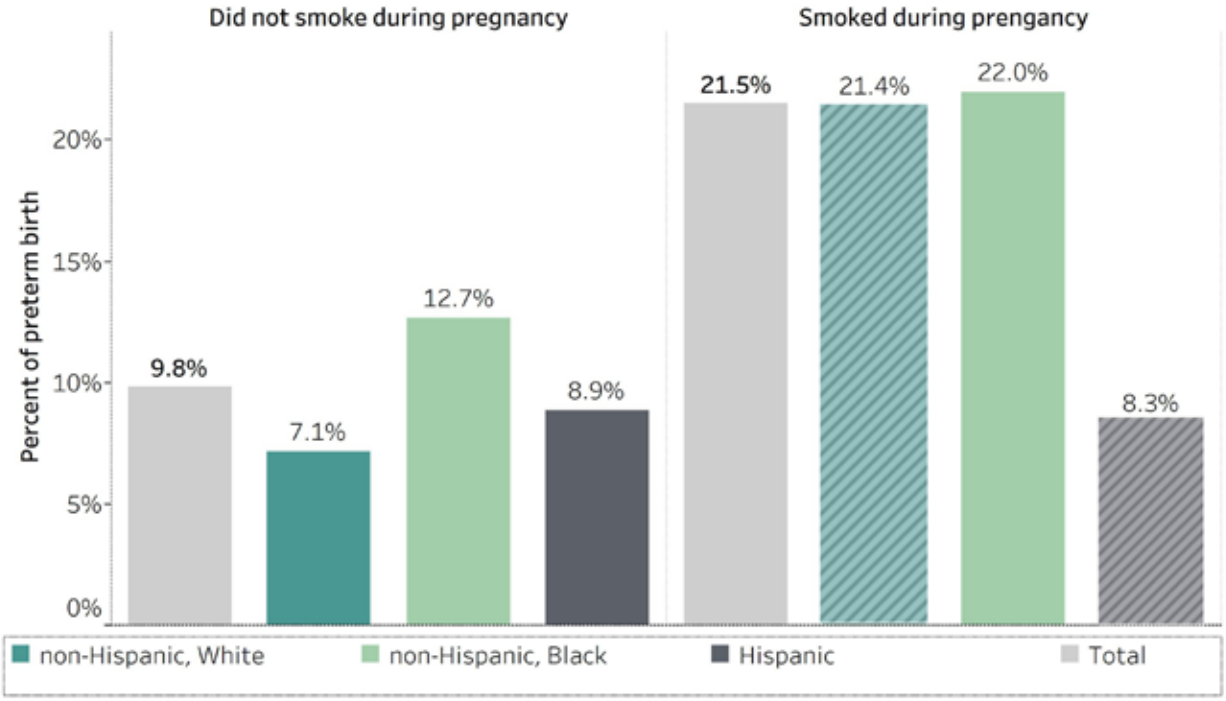
Figure 16. Percent of Preterm Live Births by Plurality, District of Columbia, 2019-2020



Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health; Data for the figure are presented in Appendix Table 8.

The percentage of preterm births was significantly higher among mothers who smoked during pregnancy (21.5%) compared to mothers who did not smoke during pregnancy (9.8%). Among non-smokers during pregnancy, the percentage of preterm births was significantly higher among non-Hispanic black mothers (12.7%) compared to non-Hispanic white mothers (7.1%) and Hispanic mothers (8.9%). The percentage of preterm births among non-smokers during pregnancy was also significantly higher among Hispanic mothers compared to non-Hispanic white mothers. The percentage of preterm births among non-Hispanic black mothers who smoked during pregnancy (22.0%) was significantly higher than among non-Hispanic black mothers who did not smoke (12.7%) during pregnancy (Appendix Table 8, Figure 17).

Figure 17. Percent of Preterm Live Births by Smoking Status during Pregnancy, District of Columbia, 2019-2020



Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health
NOTE: Hatched pattern indicates that percent is based on less than 20 births and may not be statistically reliable.

The percentage of preterm births was significantly higher among mothers with gestational diabetes (13.5%) compared to mothers without gestational diabetes (9.9%) (Appendix Table 8). The percentages of preterm births among mothers with gestational diabetes were not significantly different across maternal race/ethnicity. However, among mothers without gestational diabetes, non-Hispanic black mothers (13.0%) had significantly higher levels of preterm births than non-Hispanic white (7.0%) and Hispanic mothers (8.4%); also, among those without gestational diabetes, Hispanic mothers had significantly higher levels of preterm birth than non-Hispanic white mothers. While the percentage of gestational diabetes was similar across the wards, ranging from 4.1% in Ward 3 to 6.2% in Ward 4 (Appendix Table 5), the percentage of preterm births among mothers with gestational diabetes ranged between 7.4% in Ward 1 to 18.8% in Ward 8 (Appendix Table 9).

The percentage of preterm births was significantly higher among mothers with gestational hypertension (19.6%) compared to mothers without gestational hypertension (9.3%) (Appendix Table 8). The percentage of preterm births was significantly higher among non-Hispanic black mothers with gestational hypertension (22.2%) compared to non-Hispanic white mothers (17.2%) and Hispanic mothers (15.8%).

The percentage of preterm births was significantly higher among mothers with eclampsia (31.3%) compared to mothers without eclampsia (10.1%).

SECTION HIGHLIGHTS

- The percentage of preterm births in the District decreased significantly from 2011 to 2020.
- The percentage of preterm births was between 1.5 and 2 times higher for:
  - non-Hispanic black mothers compared to non-Hispanic white mothers;
  - unmarried mothers versus married mothers;
  - births covered by Medicaid versus private insurance;
  - births to mothers with less than a high school education compared to mothers with more than high school education;
  - births occurring to women who resided in ward 7 and 8 compared to wards 1, 2, 4 and 6, respectively.
- The percentage of preterm births was 2 times higher for:
  - mothers with diabetes or hypertension prior to pregnancy compared to mothers without diabetes or hypertension prior to pregnancy, respectively;
  - women who smoked during pregnancy compared to women who did not smoke during pregnancy;
  - mothers with gestational hypertension compared to mothers without gestational hypertension.
- The percentage of preterm births was 3 times higher for:
  - women who had had a previous preterm birth compared to those who did not;
  - mothers who did not receive prenatal care during pregnancy compared to women who entered prenatal care in their 1st trimester.
- The percentage of preterm births was nearly seven times higher among twin or higher births compared to singleton births.

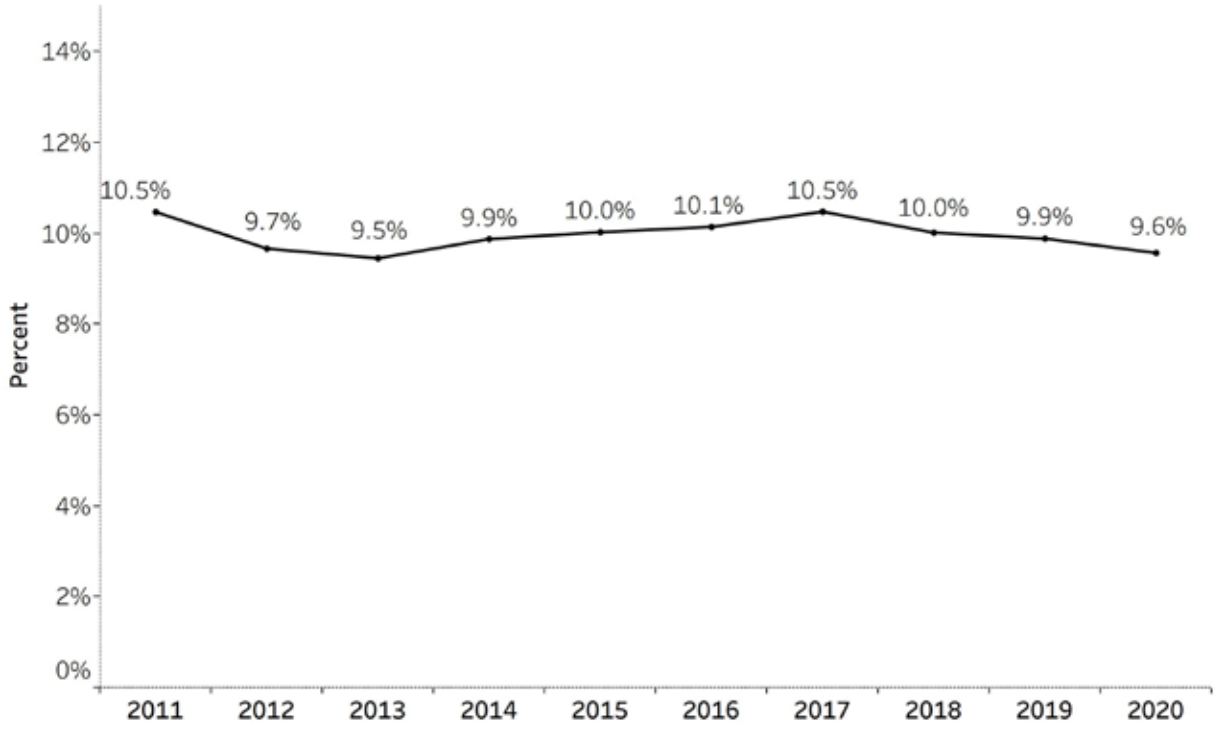
DC HEALTH PROGRAMS TO SUPPORT HEALTHY PREGNANCY

- Through the Preterm Birth Pilot Program, four organizations (Medstar Washington Hospital Center, Unity Health Center, Community of Hope and Howard University) are implementing multipronged approaches to reduce preterm birth.
- DC Health and prenatal care providers are supporting “centering pregnancy” programs that provide group prenatal care and education.

Low Birthweight Births, District of Columbia 2019–2020

Low birthweight infants are at high risk for health problems. A low birthweight birth is the birth of a newborn with weight below 2,500 grams. The percentage of low birthweight births among all DC resident live births decreased significantly between 2011 and 2020 from 10.5% to 9.6% (Figure 18).

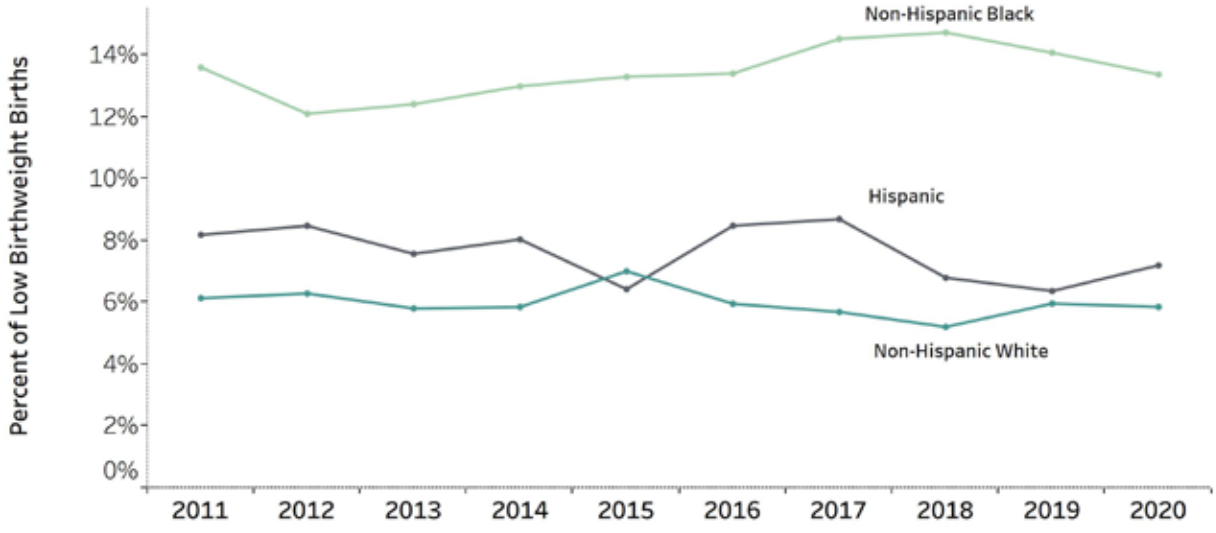
Figure 18. Percent of Low Birthweight Live Births, District of Columbia, 2011-2020



Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health

From 2011–2020, the percentage of low birthweight live births largely remained constant across the different maternal race/ethnicity groupings, with non-Hispanic black mothers having nearly double the percentage of low birthweight births (13.6% in 2011 to 13.4% in 2020) than non-Hispanic white mothers (6.1% in 2011 to 5.8% in 2020; Figure 19).

Figure 19. Percent of Low Birthweight Live Births by Maternal Race/Ethnicity, District of Columbia, 2011-2020

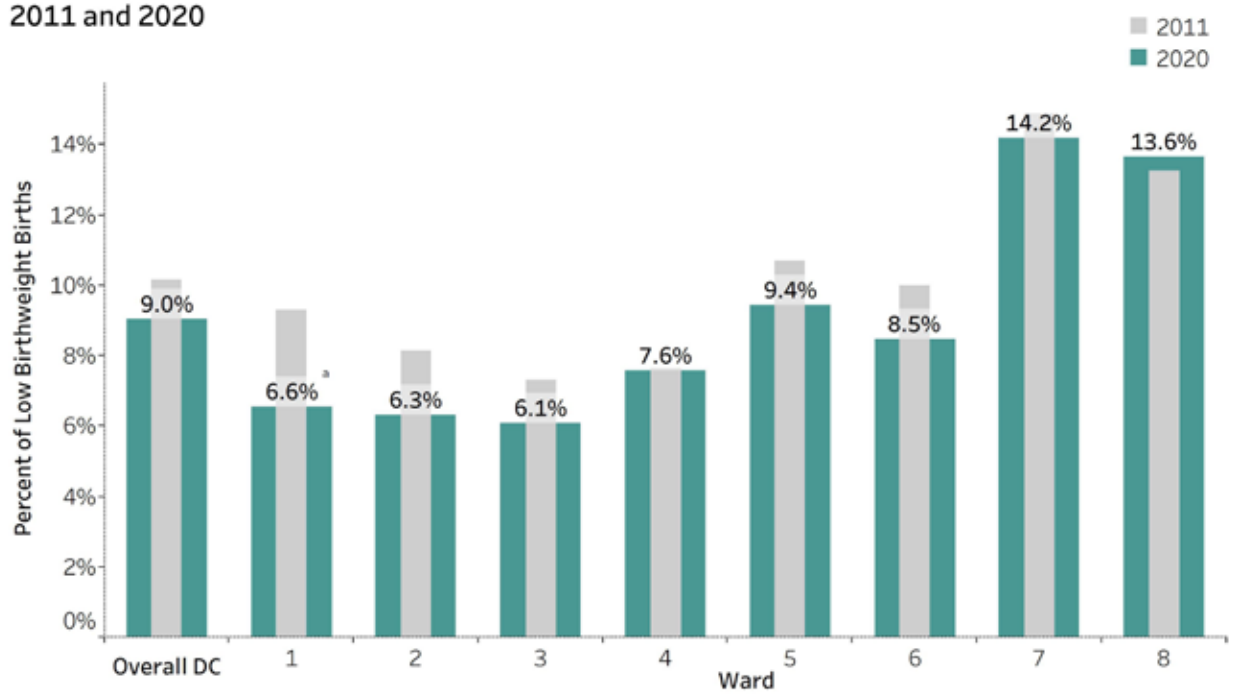


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
non-Hispanic, Black	13.6%	12.1%	12.4%	13.0%	13.3%	13.4%	14.5%	14.7%	14.1%	13.4%
Hispanic	8.2%	8.5%	7.6%	8.0%	6.4%	8.5%	8.7%	6.8%	6.4%	7.2%
non-Hispanic, White	6.1%	6.3%	5.8%	5.8%	7.0%	5.9%	5.7%	5.2%	6.0%	5.8%

Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

As mentioned previously, the percentage of low birthweight births was lower in 2020 than in 2011, this decrease was also seen across all maternal residence wards, except Ward 7 (Figure 20). Ward 1, however, was the only ward where the percentage of preterm births in 2020 was significantly lower than in 2011.

Figure 20. Percent of Low Birthweight Live Births by Ward, District of Columbia, 2011 and 2020



Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health
Note: Wards for 2011 as well as 2020 are based on 2012 boundaries.
[a] The percentage of low birthweight births was significantly different in 2020 compared to the percentage of low birthweight births in 2011 ($p<0.05$).

Low birthweight live births by sociodemographic characteristics of the mother, District of Columbia 2019–2020

During 2019–2020, the percentage of low birthweight live births differed by demographic characteristics (Table 5). The percentage of low birthweight live births among non-Hispanic black mothers (13.7%) was significantly higher than the percentage of low birthweight live births among non-Hispanic white (5.9%) and Hispanic mothers (6.8%).

The percentage of low birthweight live births was significantly higher among mothers aged 20–24 years (13.5%) compared to mothers in all other age groups (except those younger than 20 years of age). The percentage of low birthweight live births was also significantly lower among mothers aged 35–39 years (7.6%) compared to mothers in all other age groups (except mothers aged 30–34 years). A significantly higher percentage of live births to unmarried mothers (13.3%) were low birthweight, compared to married mothers (6.6%). Compared to mothers with more than a high school education (7.9%), the percentage of low birthweight live births was significantly higher for both mothers with a high school diploma (13.5%) as well as for mothers without a high school diploma (12.7%). The percentage of low birthweight births among all Medicaid financed births in the District was 12.6%, which was significantly higher than the percentage of low birthweight births financed by private insurance (7.2%) and CHAMPUS/TRICARE (4.8%).

Table 5. Percentage of low birthweight live births by maternal characteristics among live births in District of Columbia, 2019–2020

Characteristic	Overall (Less than 2,500 grams)		Low birth weight: Less than 1,500 grams		Low birth weight: 1,500-2,499 grams		Normal birthweight: 2,500 grams or more	
	N	%	N	%	N	%	N	%
DC Overall	1,746	9.7	337	1.9	1,409	7.9	16,191	90.3
Maternal Race and Ethnicity [a]								
non-Hispanic, White	354	5.9	45	0.8	309	5.2	5,644	94.1
non-Hispanic, Black [b]	1,137	13.7	252	3.0	885	10.7	7,151	86.3
Hispanic	183	6.8	32	1.2	151	5.6	2,518	93.2
non-Hispanic, Asian/Pacific Islander	62	7.5	6	0.7	56	6.8	768	92.5
Maternal age (years)								
Less than 20 years	73	11.5	13	2.1	60	9.5	561	88.5
20-24 years [c]	301	13.5	53	2.4	248	11.2	1,923	86.5
25-29 years	437	12.0	83	2.3	354	9.7	3,196	88.0
30-34 years	468	8.2	90	1.6	378	6.6	5,250	91.8
35-39 years	346	7.6	69	1.5	277	6.1	4,229	92.4
40 years and older	118	10.3	26	2.3	92	8.0	1,027	89.7
Marital Status								
Not Married [d]	1,106	13.3	233	2.8	873	10.5	7,204	86.7
Married	635	6.6	101	1.1	534	5.6	8,950	93.4
Maternal Education Level								
Less than High School	265	12.7	45	2.2	220	10.6	1,817	87.3
High School Graduate [e]	522	13.5	119	3.1	403	10.4	3,345	86.5
More than High School Education	930	7.9	161	1.4	769	6.5	10,879	92.1
Insurance Type								
Medicaid [f]	1,041	12.6	204	2.5	837	10.2	7,201	87.4
Private Insurance	649	7.2	117	1.3	532	5.9	8,427	92.8
Other Government (Fed, State, Local)	12	15.4	4	5.1	8	10.3	66	84.6
Self-pay	15	9.9	2	1.3	13	8.6	136	90.1
CHAMPUS/TRICARE	12	4.8	1	0.4	11	4.4	238	95.2
Other	12	10.8	4	3.6	8	7.2	99	89.2
Maternal Residence								
Ward 1	152	7.3	28	1.4	124	6.0	1,925	92.7
Ward 2	65	6.4	6	0.6	59	5.8	951	93.6
Ward 3	94	6.6	13	0.9	81	5.7	1,335	93.4
Ward 4	218	7.9	37	1.3	181	6.5	2,548	92.1
Ward 5	252	9.7	36	1.4	216	8.4	2,335	90.3
Ward 6	216	8.2	39	1.5	177	6.7	2,430	91.8
Ward 7	332	13.6	74	3.0	258	10.5	2,115	86.4
Ward 8 [g]	417	14.1	104	3.5	313	10.6	2,542	85.9

Data Source: DC Birth, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Note: A low birthweight live birth is defined as a birth of an infant weighing less than 2,500 grams.

Missing values for the characteristics are included in the denominator but are not presented in the table.

[a] Other non-Hispanic race-ethnic categories are not presented due to small sample size.

[b] Percentage of low birthweight births is significantly higher among non-Hispanic black mothers compared to non-Hispanic white mothers ($p<0.05$), Hispanic mothers($p<0.05$), and non-Hispanic Asian/Pacific Islander mothers ($p<0.05$).

[c] Percentage of low birthweight births is significantly higher among infants of mothers aged 20-24 years compared to mothers aged 25-29 years ($p<0.05$), 30-34 years ($p<0.05$), 35-39 years ($p<0.05$), and 40 years and older ($p<0.05$).

[d] Percentage of low birthweight births is significantly higher among unmarried mothers compared to married mothers ($p<0.05$).

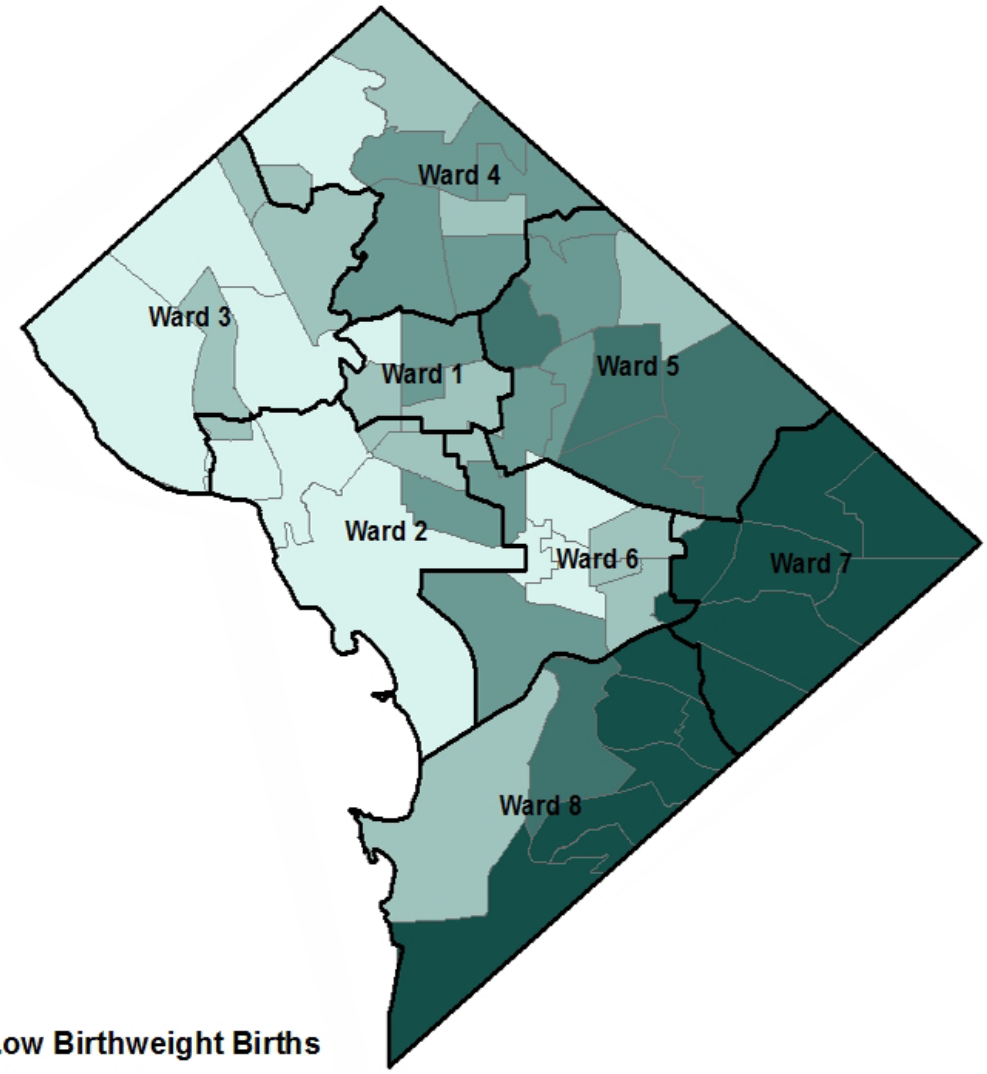
[e] Percentage of low birthweight births is significantly higher among mothers with a high school diploma compared to mothers with more than a high school education ($p<0.05$), but not significantly different than mothers with less than a high school education.

[f] Percentage of preterm births is significantly higher among infants of mothers with Medicaid coverage compared to mothers with private insurance ($p<0.05$) and CHAMPUS/TRICARE ($p<0.05$), but not significantly different than mothers with and self-pay, other government coverage, or other coverage.

[g] Percentage of low birthweight births is significantly higher among mothers residing in Ward 8 compared to all other wards ($p<0.05$ for six comparisons) except Ward 7.

The percentage of low birthweight births combining the five most recent years of birth data (2016–2020) is presented at the neighborhood-level (Figure 21).

Figure 21. Percentage of Low Birthweight Births by Neighborhood Cluster, District of Columbia 2016-2020



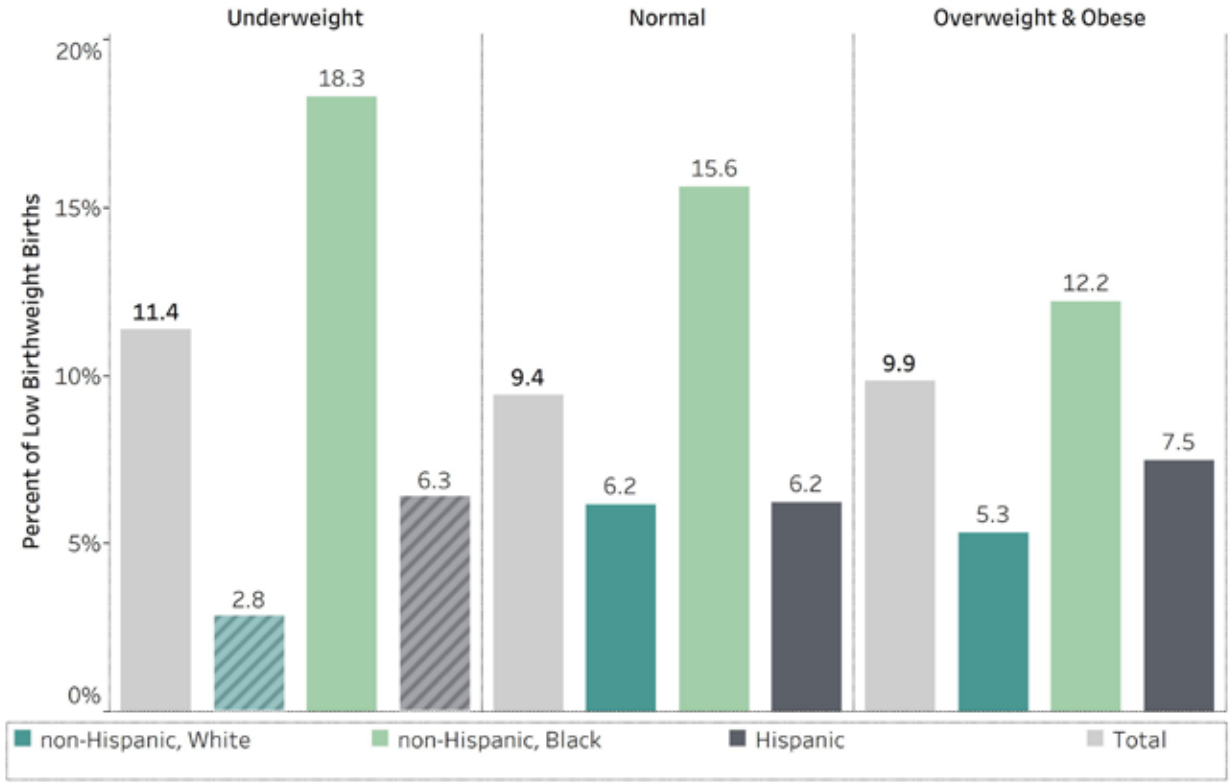
Neighborhood clusters were created within the Center for Policy, Planning and Evaluation by spatially joining contiguous census tracts.
Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health

Low birthweight live births by pre-pregnancy health characteristics and behaviors of the mother 2019–2020

The percentage of low birthweight live births by health characteristics and behaviors of the mother before pregnancy is presented by maternal race and ethnicity in Appendix Table 10 and by mother's residential Ward in Appendix Table 11.

The percentage of low birthweight live births was highest among mothers that were either underweight (11.4%) or overweight or obese (9.9%) prior to pregnancy, and lowest among mothers who were normal weight prior to pregnancy (9.4%). For each pre-pregnancy weight category, the percentage of low birthweight births was significantly higher for non-Hispanic black mothers compared to non-Hispanic white mothers and Hispanic mothers (except for the underweight category) (Figure 22, Appendix Table 10). For non-Hispanic black mothers, the percentage of low birthweight live births was significantly higher among underweight mothers (18.3%) compared to overweight mothers (11.0%) and obese mothers (13.2%).

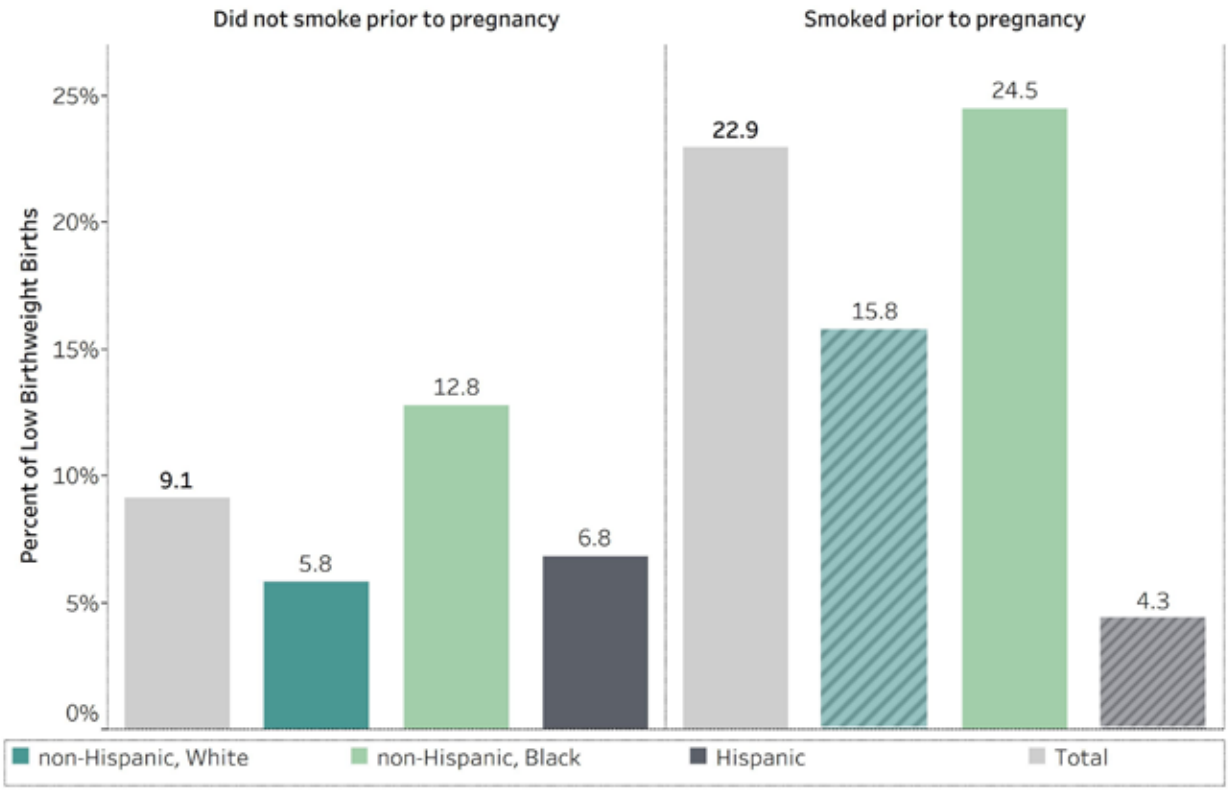
Figure 22. Percent of Low Birthweight Births by Pre-pregnancy Weight, District of Columbia, 2019-2020



Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health. Data for figure are presented in Appendix 10.
NOTE: Hatched pattern indicates that percent is based on less than 20 births and may not be statistically reliable.

The percentage of low birthweight live births among mothers who smoked prior to pregnancy was significantly higher (22.9%) than the percentage of low birthweight live births among mothers who did not smoke prior to pregnancy (9.1%). For non-Hispanic black mothers, the percentage of low birthweight births was significantly higher among mothers who smoked prior to pregnancy (24.5%) compared to mothers who did not smoke (12.8%) (Figure 23, Appendix Table 10).

Figure 23. Percent of Low Birthweight Live Births by Pre-Pregnancy Smoking Status and Maternal Race and Ethnicity, District of Columbia, 2019-2020



Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health; Data in the figure are presented in Appendix Table 10.
NOTE: Hatched pattern indicates that percent is based on less than 20 births and may not be statistically reliable.

The percentage of low birthweight live births among mothers who had a history of pre-pregnancy diabetes (11.5%) was not significantly higher than the percentage of low birthweight live births among mothers who did not have a history of pre-pregnancy diabetes (9.7%) (Appendix Table 10). For non-Hispanic black mothers, the percentage of low birthweight births was significantly higher among mothers who had a diagnosis of diabetes prior to pregnancy (14.6%) compared to mothers who did not have a history of diabetes (13.7%).

A little more than one-fifth of all live births to mothers with a history of pre-pregnancy hypertension were low birthweight (22.5%), which was significantly higher than the percentage of low birthweight births born to mothers with no history of pre-pregnancy hypertension (9.3%) (Appendix Table 10). For Hispanic mothers, the percentage of low birthweight births was significantly higher among mothers who had a diagnosis of hypertension prior to pregnancy (37.7%) compared to mothers who did not have a history of hypertension prior to pregnancy (6.2%). The same relationship was observed among non-Hispanic black and white mothers. The percentage of low birthweight live births by pre-pregnancy characteristics and behaviors is presented by Ward in Appendix Table 11.

SECTION HIGHLIGHTS

- The percentage of low birthweight births significantly decreased from 2011 to 2020.
- Non-Hispanic black mothers were two times more likely than Hispanic and non-Hispanic white mothers to have a low birthweight baby.
- Mothers aged 20-24 years were more likely than any other age groups to have a baby that was low birthweight.
- Mothers who were unmarried or had a high school diploma were two times more likely to have a low birthweight baby compared to mothers who were unmarried or had more than a high school education, respectively.
- Mothers whose births were Medicaid financed were almost two times more likely than mothers with private insurance to have a low birthweight baby.
- Mothers who resided in Wards 7 and 8 were 1.5 to 2 times more likely to have low birthweight births than mothers residing in any other ward, except Ward 5.
- Mothers who smoked prior to pregnancy were two times more likely than mothers who did not smoke prior to pregnancy to have a baby that was low birthweight.
- One-fifth of live births to mothers with a history of pre-pregnancy hypertension were low birthweight, which was twice the level of mothers with no history of pre-pregnancy hypertension

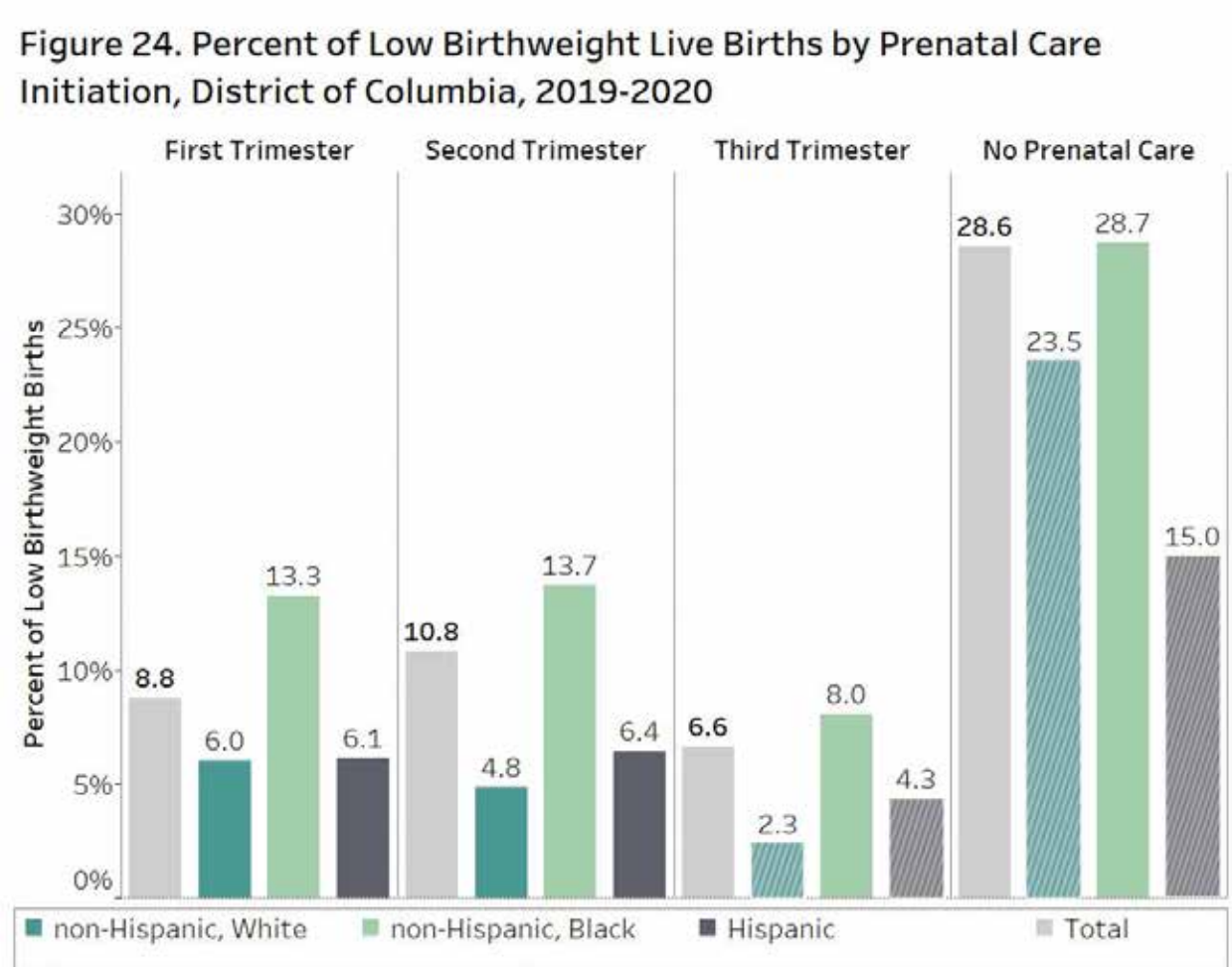
DC HEALTH PROGRAMS TO SUPPORT HEALTHY PREGNANCY

- To promote reproductive planning and support teenage girls and women in managing their reproductive health, DC Health implements One Key Question® (OKQ) in all school-based health centers (SBHCs).
- The Adolescent Health Program works with community partners and teens in the District to reduce unintended pregnancies, improve prenatal and postnatal maternal health, improve parenting practices, develop positive social skills, and reduce delinquency among adolescents.
- Highlights of programs to reduce smoking and promote healthy eating among pregnant women and women who may become pregnant are included on page 22.

Low birthweight live births by health characteristics and behaviors of the mother during pregnancy

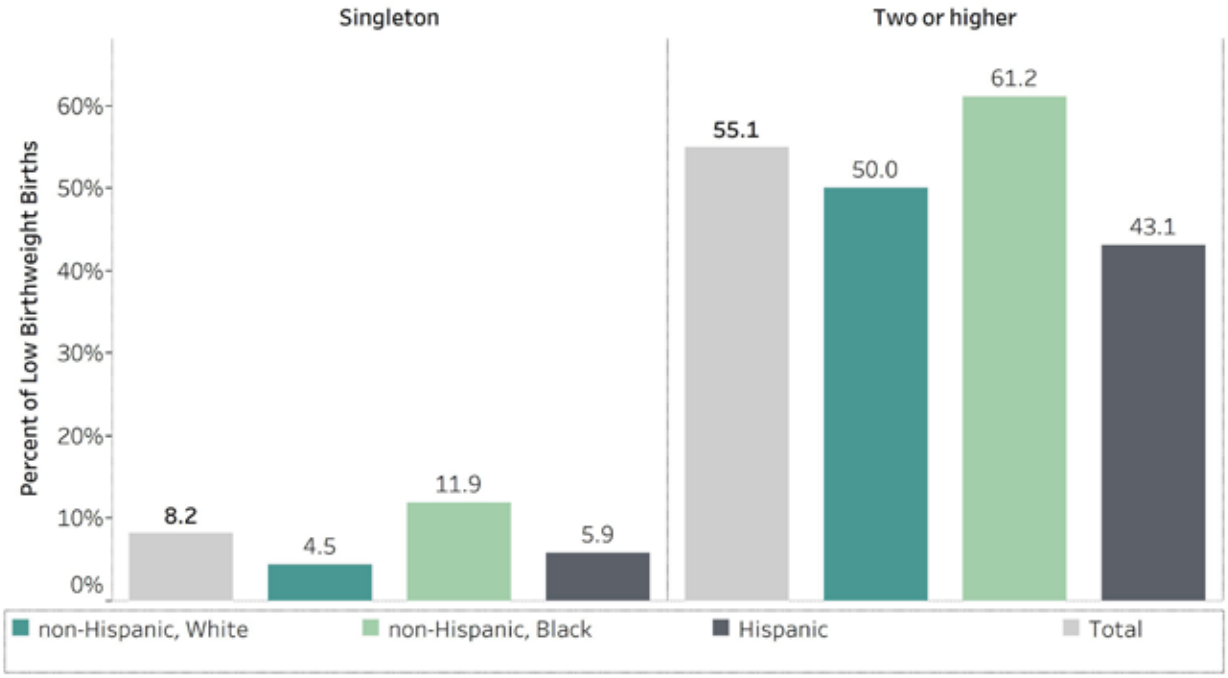
The percentage of low birthweight live births by health characteristics and behaviors of the mother during pregnancy is presented by maternal race and ethnicity in Appendix Table 12 and by mother's residential Ward in Appendix Table 13 2019–2020.

A higher percentage of low birthweight births were observed among newborns of mothers that did not initiate prenatal care (28.6%) compared to newborns born to mothers who initiated prenatal care during the first trimester (8.8%). For each prenatal care initiation category, the percentage of low birthweight births was highest in absolute numbers among non-Hispanic black mothers compared to non-Hispanic white mothers and Hispanic mothers. Among non-Hispanic black mothers, the percentage of low birthweight live births was significantly higher among mothers with no prenatal care compared to mothers who initiated prenatal care during the first, second, and third trimester (Figure 24).



The percentage of low birthweight births was significantly higher among twin or higher order multiple births (55.1%) compared to singleton births (8.2%). Among singleton live births, the percentage of low birthweight live births was significantly higher among non-Hispanic black mothers (11.9%) compared to non-Hispanic white mothers (4.5%) and Hispanic mothers (5.9%); the percentage of low birthweight live births was also significantly higher among Hispanic mothers who gave birth to singletons compared to non-Hispanic white mothers (Figure 25; Appendix Table 12).

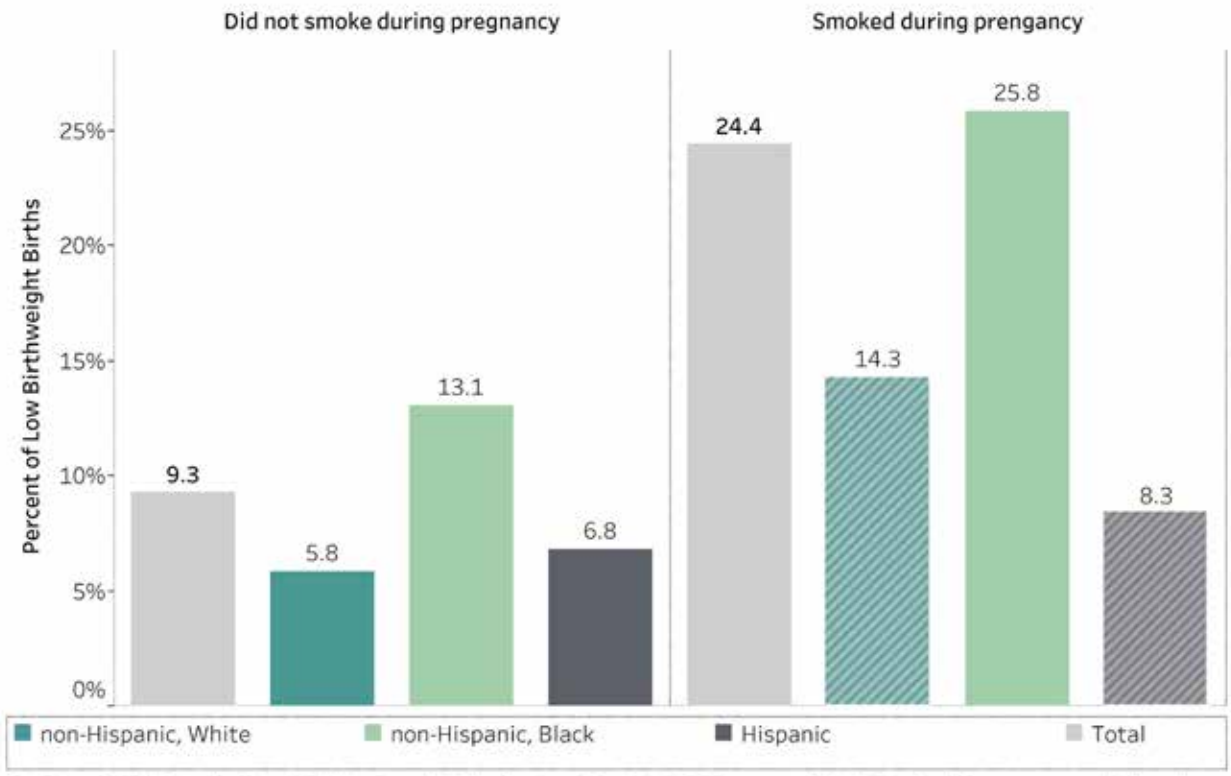
Figure 25. Percent of Low Birthweight Live Births by Plurality, District of Columbia, 2019-2020



Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health; Data for the figure are presented in Appendix Table 12.

A significantly higher percentage of infants born to mothers who smoked during pregnancy were low birthweight (24.4%) compared to infants born to mothers who did not smoke during pregnancy (9.3%). For mothers who did not smoke during pregnancy, the percentage of low birthweight live births was significantly higher among non-Hispanic black mothers (13.1%) compared non-Hispanic white mothers (5.8%) and Hispanic mothers (6.8%); the percentage of low birthweight births, among mothers who did not smoke during pregnancy, was also significantly higher among Hispanic mothers compared to non-Hispanic white mothers (Figure 26; Appendix Table 12).

Figure 26. Percent of Low Birthweight Live Births by Smoking Status during Pregnancy, District of Columbia, 2019-2020



Data Source: DC Birth Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health; Data for the figure are presented in Appendix Table 12.
NOTE: Hatched pattern indicates that percent is based on less than 20 births and may not be statistically reliable.

The percentage of low birthweight live births was not significantly higher among mothers with gestational diabetes (10.6%) compared to mothers with no history of gestational diabetes (9.7%) (Appendix Table 12). However, only among non-Hispanic white mothers was the percentage of low birthweight births significantly higher among mothers with gestational diabetes (12.2%) compared to mothers with no history of gestational diabetes (5.7%). The percentage of low birthweight live births was significantly higher among mothers with gestational hypertension (20.3%) compared to those with no history of gestational hypertension (8.7%); this relationship was observed for non-Hispanic white, non-Hispanic black, and Hispanic mothers. For mothers with gestational hypertension, the percentage of low birthweight live births was significantly higher among non-Hispanic black mothers (24.5%) compared non-Hispanic white mothers (15.2%) and Hispanic mothers (15.8%).

SECTION HIGHLIGHTS

- Mothers who had no prenatal care were almost three to four times more likely to have a low birthweight baby than mothers who initiated prenatal care at any time during pregnancy.
- Mothers who had a multiple infant birth were nearly seven times more likely than mothers who had a singleton birth to have a low birthweight baby.
- Mothers who smoked during pregnancy were almost three times more likely than mothers who did not smoke during pregnancy to have a baby that was low birthweight.
- The percentage of low birthweight babies was nearly double that for mothers who had gestational hypertension compared to those mothers who did not have gestational hypertension

DC HEALTH PROGRAMS TO SUPPORT HEALTHY PREGNANCY

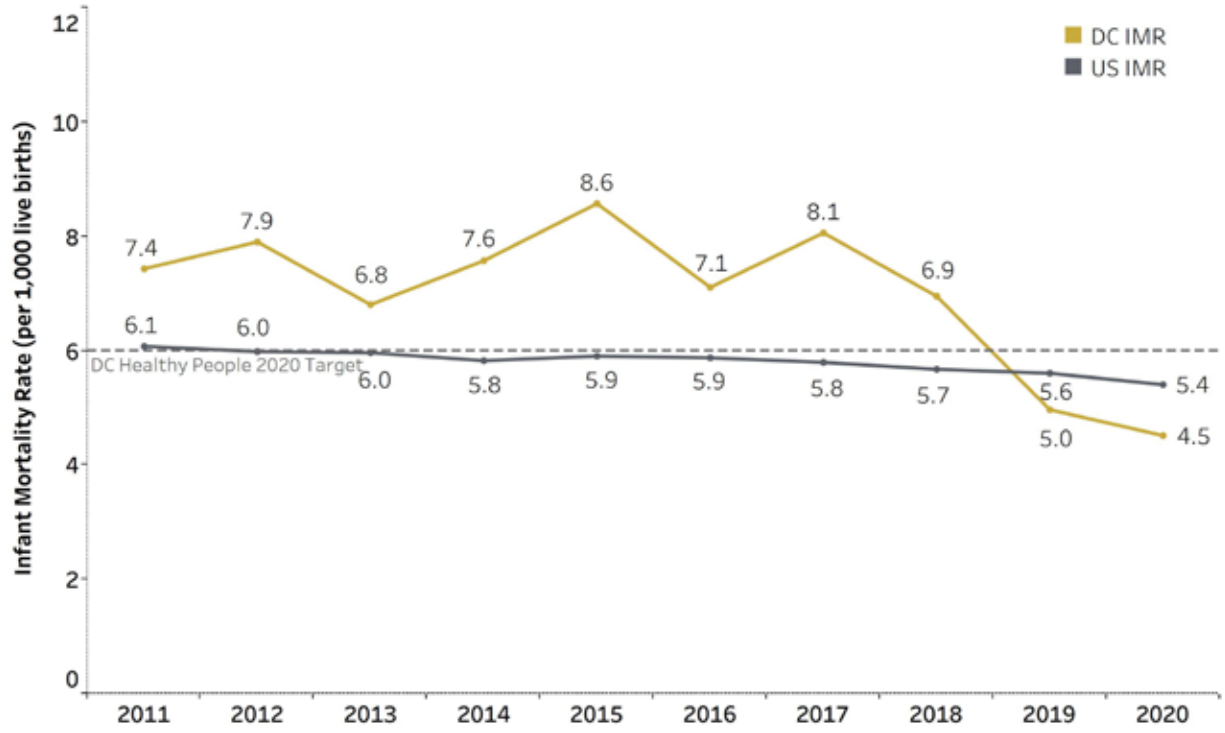
- Highlights of programs to promote health during pregnancy, reduce preterm birth and reduce low birthweight are included on pages 24, 40 and 48.

Infant Mortality, District of Columbia 2016–2020

Infant mortality is often viewed as a marker of the health of women and girls in a society. Infant mortality is defined as an infant who died before one year of age. The infant mortality rate is defined as the number of resident infants who died before the age of one per 1,000 resident live births (see Appendix: Rate and Ratio Definitions for more information). The DC infant mortality rate decreased by nearly half from 7.4 per 1,000 live births in 2011 to 4.5 per 1,000 live births in 2020 (Figure 27).

Per guidance from the National Center for Health Statistics (NCHS), when the number of infant deaths is small (less than 100), great care should be taken in the interpretation of the data. As a result, for most analyses of infant mortality, we present estimates based on combined years of data. Infant mortality rates by maternal demographic characteristics, pre-pregnancy and pregnancy characteristics and behaviors are presented for the latest five years (2016–2020) to improve the reliability of the estimates.

Figure 27. Infant Mortality Rate, United States and District of Columbia, 2011-2020

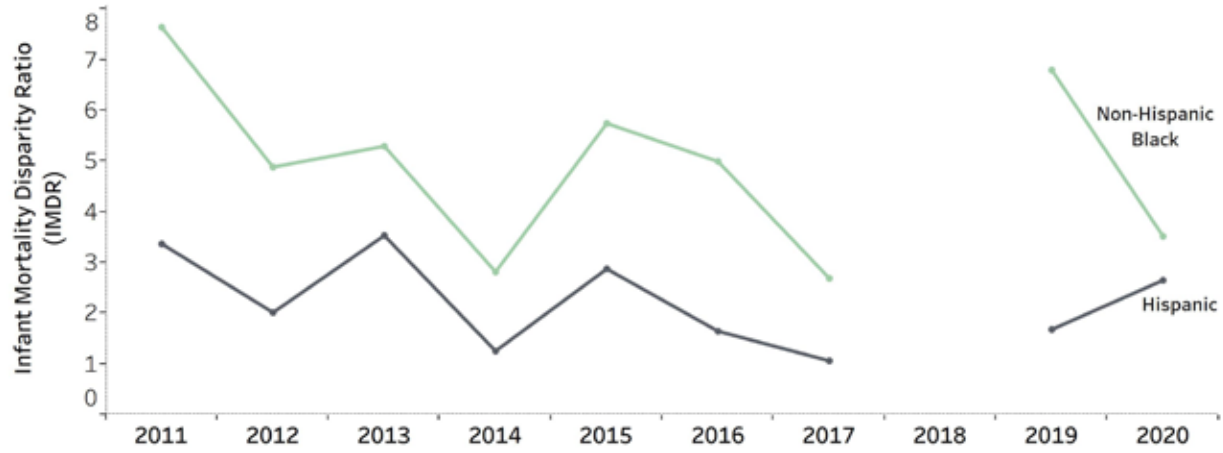


Data Source: DC Birth and Death Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.
US Infant Death Data, 2010-2018: National Center for Health Statistics. Health, United States, 2022. Hyattsville, MD. 2021. Available from: https://www.cdc.gov/nchs/hus/contents2019.htm.
US Infant Death Data, 2019-2020: Murphy SL, Kochanek KD, Xu JQ, Arias E. Mortality in the United States, 2020. NCHS Data Brief, no 427. Hyattsville, MD: National Center for Health Statistics. 2021. DOI: https://dx.doi.org/10.15620/cdc:112079

The overall infant mortality rate during 2016–2020 was 6.4 per 1,000 live births, on average, (based on n=296 infant deaths; Table 6). However, analysis of the last 2 years of data (2019 and 2020) highlighted the meaningful decline in infant mortality in these more recent years with an infant mortality rate of 4.7 per 1,000 live births. Infant mortality rates previously exceeded the DC Healthy People 2020 Target of 6.0 infant deaths per 1,000 live births, but in 2019 and 2020 rates began to drastically decline, finally dipping below this benchmark (Figure 27).

The annual infant mortality disparity ratios for 2011–2020 are presented in Figure 28 (data were suppressed for 2018 since denominator values were below 1). The ratio comparing the infant mortality rate among infants of non-Hispanic black and non-Hispanic white mothers ranged from 2.6 to 7.6 during 2011 to 2020 and was 3.5 in 2020. The 2011 non-Hispanic black:non-Hispanic white disparity ratio of 7.6 indicates that the infant mortality among infants of non-Hispanic black mothers was almost 8 times higher than that of non-Hispanic white mothers in 2011. The ratio comparing the infant mortality rate among infants of Hispanic and non-Hispanic white mothers ranged from 2.6 to 3.5 during 2011 to 2020 and was 2.6 in 2020. The annual infant mortality rates for the calendar years 2014–2020 by maternal race and ethnicity are reported in Appendix Table 14.

Figure 28. Infant Mortality Disparity Ratio (IMDR), District of Columbia, 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Non-Hispanic Black IMDR	7.6	4.9	5.3	2.8	5.7	5.0	2.7	*	6.8	3.5
Hispanic IMDR	3.4	2.0	3.5	1.3	2.9	1.6	1.1	*	1.7	2.6

Data Source: DC Birth and Death Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.
NOTE: The infant mortality rate for infants of non-Hispanic white mothers is used as the reference group. The non-HIspanic black infant mortality ratio is defined as the infant mortality rate for infants of non-Hispanic black mothers divded by the infant mortality rate for infants of non-Hispanic white mothers. The Hispanic infant mortality ratio is defined as the infant mortality rate for infants of Hispanic mothers divided by the infant moratlity for for infants of non-Hispanic white mothers.
*2018 data suppressed due to denominator values less than 1.

Infant mortality by sociodemographic characteristics of the mother, District of Columbia 2016–2020

Infant mortality rates by sociodemographic characteristics of the mother are presented in Table 6. The infant mortality rate was significantly higher for infants of non-Hispanic black mothers (10.0 per 1,000 live births) compared to infants of Hispanic mothers (3.6 per 1,000 live births) and infants of non-Hispanic white mothers (2.0 per 1,000 live births).

The infant mortality rates were significantly higher among infants of mothers aged 20–24 years (10.8 per 1,000 live births) as well as 25–29 years (8.2 per 1,000 live births) compared to those of mothers aged 30–34 years (4.6 per 1,000 live births) and 35–39 years (3.6 per 1,000 live births), respectively. The infant mortality rate among infants whose mothers were unmarried was significantly higher than the rate among infants whose mothers were married (9.4 vs. 2.9 per 1,000 live births). The infant mortality rate was significantly lower among mothers who had more than a high school diploma (3.5 per 1,000 live births) compared to mothers who had a high school diploma (9.9 per 1,000 live births) and those who did not have a high school diploma (9.5 per 1,000).

Table 6. Infant mortality rate by maternal characteristics, 2016–2020

Characteristic	Births	Deaths	Rate (per 1,000 live births)
DC Overall	46,564	296	6.4
Maternal Race and Ethnicity [a]			
non-Hispanic, White	15,210	30	2.0
non-Hispanic, Black [b]	22,128	221	10.0
Hispanic	6,679	24	3.6
Maternal age (years)			
Less than 20 years	1,900	14	7.4
20-24 years [c]	6,514	70	10.8
25-29 years	9,545	78	8.2
30-34 years	14,862	68	4.6
35-39 years	11,032	40	3.6
40 years and older	2,699	10	3.7
Marital Status			
Married	24,566	72	2.9
Not Married [d]	21,852	205	9.4
Maternal Education Level			
Less than High School	5,713	54	9.5
High School Graduate	10,183	101	9.9
More than High School Education [e]	30,271	105	3.5
Insurance Type			
Medicaid [f]	20,072	188	9.4
Private Insurance	22,989	66	2.9
Other Government (Fed, State, Local)	1,208	6	5.0
Self-pay	423	0	0.0
CHAMPUS/TRICARE	479	1	2.1
Other	1,308	15	11.5
Maternal Residence			
Ward 1	5,370	20	3.7
Ward 2	2,845	6	2.1
Ward 3	3,640	11	3.0
Ward 4	7,231	28	3.9
Ward 5	6,543	39	6.0
Ward 6	6,777	27	4.0
Ward 7	6,282	62	9.9
Ward 8 [g]	7,837	101	12.9

Data Source: DC Birth and Death Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Non-Hispanic, Asian/Pacific Islander and Other non-Hispanic race-ethnicity categories are not presented due to small sample size.

[b] Infant mortality rate is significantly higher among non-Hispanic black mothers compared to non-Hispanic white mothers ($p<0.05$), and Hispanic mothers ($p<0.05$).

[c] Infant mortality rate is significantly higher among infants of mothers aged 20-24 years compared to mothers aged 30-34 years ($p<0.05$) and 35-39 years ($p<0.05$).

[d] Infant mortality rate is significantly higher among unmarried mothers compared to married mothers ($p<0.05$).

[e] Infant mortality rate is significantly lower among mothers with more than a high school diploma compared to mothers with less than a high school education ($p<0.05$) and mothers with a high school diploma ($p<0.05$).

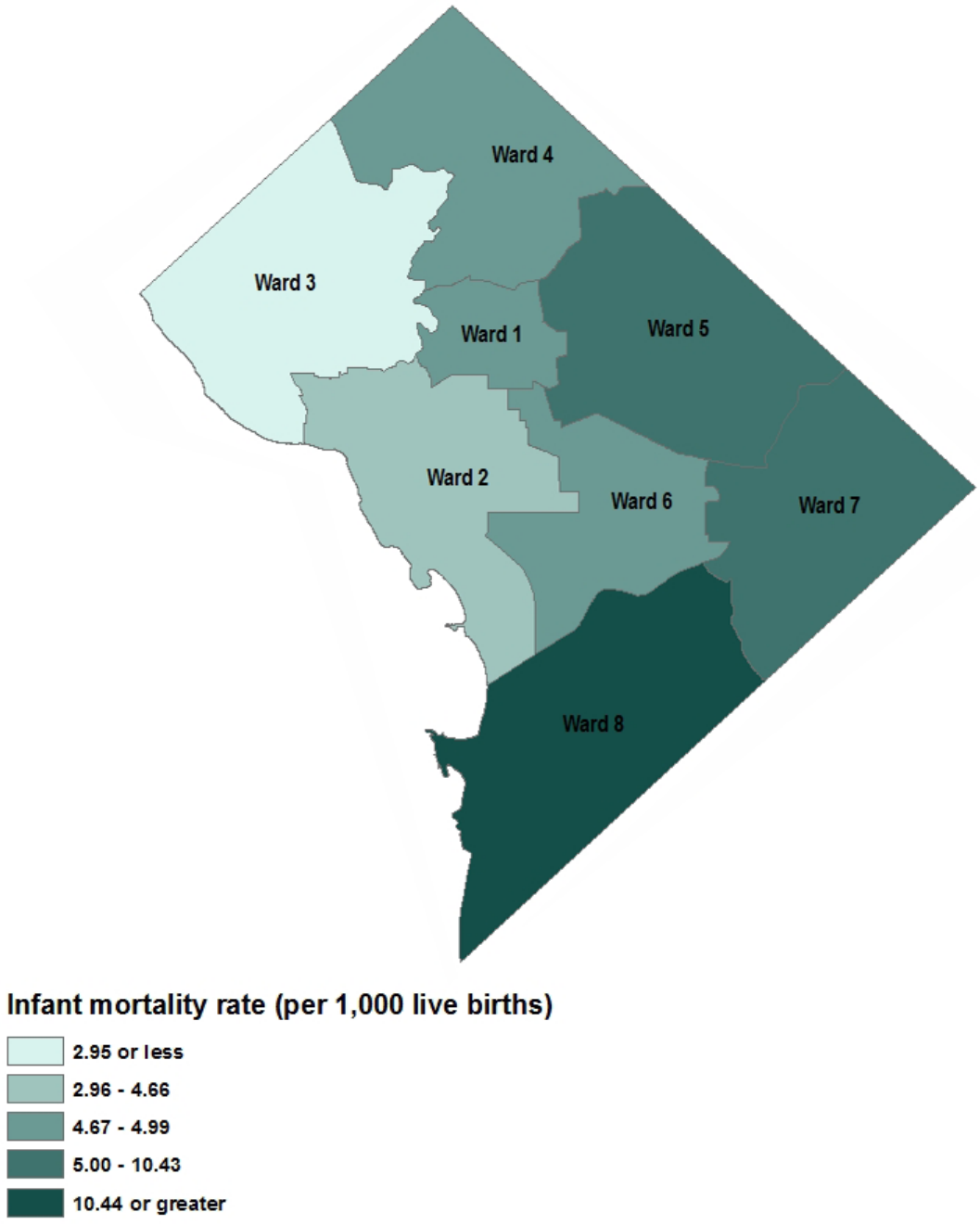
[f] Infant mortality rate is significantly higher among mothers with Medicaid coverage compared to mothers with private insurance ($p<0.05$).

[g] Percentage of low birthweight births is significantly higher among mothers residing in Ward 8 compared to all other wards ($p<0.05$ for six comparisons), except Ward 7

The infant mortality rate was significantly higher among infants whose births were financed by Medicaid (9.4 per 1,000 live births) compared to infants whose births were financed by private insurance (2.9 per 1,000 live births). During the five-year period between 2016 and 2020, Wards 5, 7, and 8 had the highest infant mortality rates of 6.0, 9.9 and 12.9 per 1,000 live births, respectively, with ward 8 having a significantly higher rate than all other wards, except Ward 7. During 2019–2020, Wards 5, 7, and 8 accounted for 45% of all live births, yet 61% of all infant deaths.

Infant mortality rates for 2016–2020 are presented by ward in Figure 29.

Figure 29. Infant Mortality Rate by Ward, District of Columbia 2016-2020



Data Source: DC Death Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health

Infant mortality by pre-pregnancy health characteristics and behaviors of the mother, District of Columbia 2016–2020

Infant mortality rates by pre-pregnancy health characteristics and behaviors of the mother are presented in Table 7. The rate of infant mortality was significantly higher among women with a previous preterm birth compared to those without a previous preterm birth (18.4 vs. 5.5 per 1,000 live births). The infant mortality rate was highest among mothers who were obese prior to pregnancy (10.2 per 1,000 live births) compared to underweight (3.2 per 1,000), normal weight (4.1 per 1,000), and overweight (6.6 per 1,000) mothers. The infant mortality rate among infants of mothers with pre-pregnancy diabetes was not significantly higher than that of mothers without pre-pregnancy diabetes (6.1 vs 2.1 per 1,000 live births), however this was based on only one infant death. The infant mortality rate among infants of mothers with pre-pregnancy hypertension was also not significantly higher than that of mothers without pre-pregnancy hypertension (10.5 vs 5.9 per 1,000 live births).

Table 7. Infant mortality rate by pre-pregnancy characteristics, 2016–2020

Characteristic	Births	Deaths	Rate (per 1,000 live births)
Total Births	46,564	296	6.4
Previous Preterm Birth			
No, no previous preterm birth	44,593	245	5.5
Yes, previous preterm birth [a]	1,903	35	18.4
Pre-pregnancy weight			
Underweight	1,865	6	3.2
Normal Weight	23,312	96	4.1
Overweight	10,837	71	6.6
Obese [b]	9,704	99	10.2
Smoking prior to pregnancy			
Did not smoke prior to pregnancy	44,187	244	5.5
Smoked prior to pregnancy [c]	1,847	28	15.2
Pre-pregnancy diabetes			
Absent	46,050	279	6.1
Present [d]	486	1	2.1
Pre-pregnancy hypertension			
Absent	45,299	267	5.9
Present [e]	1,235	13	10.5

Data Source: DC Birth and Death Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Infant mortality rate is significantly higher among mothers with a previous preterm birth compared to mothers without a previous preterm ($p<0.05$).

[b] Infant mortality rate is significantly higher among mothers who were obese prior to pregnancy compared to mothers who were underweight ($p<0.05$), normal weight ($p<0.05$), and overweight ($p<0.05$).

[c] Infant mortality rate is significantly higher among mothers who smoked prior to pregnancy compared to mothers who did not smoke prior to pregnancy ($p<0.05$).

[d] Infant mortality rate is not significantly higher among mothers who had pre-pregnancy diabetes compared to mothers who did not have pre-pregnancy diabetes.

[e] Infant mortality rate is not significantly higher among mothers who had pre-pregnancy hypertension compared to mothers who did not have pre-pregnancy hypertension ($p<0.05$).

Infant mortality pregnancy health characteristics and behaviors of the mother, 2016–2020

Infant mortality rates by pregnancy health characteristics and behaviors of the mother are presented in Table 8. The infant mortality rate among mothers who did not initiate prenatal care was significantly higher (40.4 per 1,000) than those who initiated prenatal care in the first trimester (4.3 per 1,000), second trimester (7.3 per 1,000), and third trimester (5.5 per 1,000). The infant mortality rate for singleton births (5.3 per 1,000) was significantly lower than that for multiple births (twin or higher: 26.7 per 1,000 live births). The infant mortality rate among mothers who smoked during pregnancy (15.1 per 1,000) was significantly higher than the rate among mothers who did not smoke during pregnancy (5.7 per 1,000). The infant mortality rate among mothers who had gestational diabetes did not significantly differ from those without gestational diabetes (4.6 vs 6.1 per 1,000); similarly, the infant mortality rate among mothers with gestational hypertension was not significantly different than mothers without gestational hypertension (7.1 vs 6.0 per 1,000), however this was based on only 1 infant death. The infant mortality rate among mothers with eclampsia was not significantly higher than those without eclampsia (7.0 v. 6.0 per 1,000).

Table 8. Infant mortality rate by pregnancy characteristics, 2016–2020

Characteristic	Births	Deaths	Rate (per 1,000 live births)
Total Births	46,564	296	6.4
Trimester prenatal care initiated			
First Trimester	31,353	136	4.3
Second Trimester	10,163	74	7.3
Third Trimester	2,540	14	5.5
No Prenatal Care[a]	990	40	40.4
Plurality of birth			
Singleton	44,916	239	5.3
Twin[b]	1,599	42	26.3
Triplet	46	1	21.7
Quadruplet	0	1	0.0
Smoked during pregnancy			
Did not smoke during pregnancy	44,906	256	5.7
Smoked during pregnancy[c]	1,129	17	15.1
Gestational diabetes			
Absent	44,558	271	6.1
Present[d]	1,976	9	4.6
Gestational hypertension			
Absent	46,359	279	6.0
Present[d]	141	1	7.1
Eclampsia			
Absent	43,394	258	6.0
Present[d]	3,139	22	7.0

Data Source: DC Birth and Death Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Infant mortality rate is significantly higher among mothers with who did not initiate prenatal care compared to mothers who initiated care during the first trimester ($p<0.05$), second trimester ($p<0.05$), or third trimester ($p<0.05$).

[b] Infant mortality rate is significantly higher among twin births compared to singleton births ($p<0.05$).

[c] Infant mortality rate is significantly higher among mothers who smoked during pregnancy compared to mothers who did not smoke during pregnancy ($p<0.05$).

[d] Infant mortality rate is not significantly different between mothers without this characteristic compared to mothers with this characteristic ($p<0.05$).

Infants with a low birthweight and born preterm had higher rates of infant mortality (Table 9). The infant mortality rates were highest among very low birthweight births (174.8 per 1,000 live births) compared to normal birthweight live births (1.9 per 1,000 live births) and births of newborns weighing between 1,500 and 2,499 grams (12.0 per 1,000 live births). The infant mortality rate was 20 times higher among infants who were born preterm compared to infants born full term.

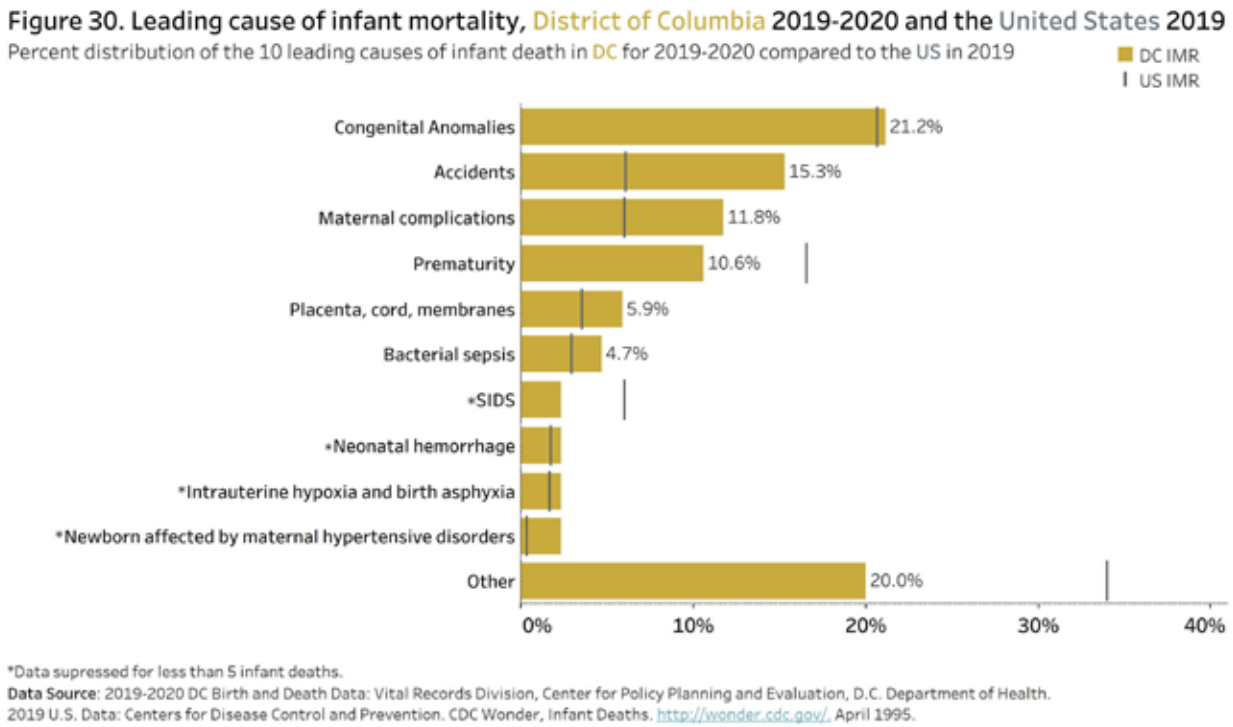
Table 9. Infant mortality rate by birthweight and preterm status, 2016–2020

Characteristic	Births	Deaths	Rate (per 1,000 live births)
Total Births	46,564	296	6.4
Birthweight			
Less than 1,500 grams	904	158	174.8
1,500-2,499 grams	3,767	45	12.0
Normal birthweight (2,500 grams and greater)	41,891	80	1.9
Gestational age			
Preterm (<37 weeks gestation)	4,821	196	40.7
Not preterm (37 and more weeks of gestation)	41,713	84	2.0

Data Source: DC Birth and Death Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Leading causes of infant death, District of Columbia 2019–2020

The 10 leading causes of death are presented for 2019–2020. The 10 leading causes of infant death in 2019–2020 accounted for 74% of all infant deaths in DC (Figure 30).



The leading cause of infant death during this period was congenital anomalies of pregnancy, which accounted for 21.2% of infant deaths in DC (Table 10). For every 10,000 live births to DC residents, 10 infants died due to congenital anomalies. In 2019, congenital anomalies of pregnancy were also the leading cause of infant death in the US and accounted for 20.6% of infant deaths; the rate of infant mortality from congenital anomalies in the US was approximately 12 per 10,000 live births[1]. Accidents accounted for 15.3% of infant deaths in DC and ranked as the second leading cause of death. For every 10,000 live births to DC residents, approximately 7 infants died due to accidents. It is worth noting that all infant deaths that occurred in 2019 and 2020 in DC that were categorized as accidents had a single cause of death code attributed to them—accidental suffocation and strangulation in bed (ASSB; ICD-10: W75). In 2019, deaths related to accidents was the third ranked leading cause of infant death in the US and accounted for 6.0% of infant deaths. The rate of infant mortality related to accidents in the US was approximately 3 per 10,000 live births[2]. Maternal complications accounted for 11.8% of infant deaths in DC and ranked as the third leading cause of death. For every 10,000 live births to DC residents, approximately 6 infants died due to maternal complications. Maternal complications ranked as the fifth leading cause of infant death in the US in 2019 and accounted for 6.0% of infant deaths; the rate of infant mortality related to maternal complications in the US was approximately 3 per 10,000 live births[3].

Table 10. Ten leading causes of infant death, 2019–2020

Leading Cause of Death Category	ICD-10 codes	Total Infant Deaths	Percent	Infant Mortality Rate (per 10,000 live births)
Total infant deaths		85	100.0	47.4
Congenital Anomalies	Q00-Q99	18	21.2	10.0
Accidents	V01-X59	13	15.3	7.3
Maternal complications	P01	10	11.8	5.6
Prematurity	P07	9	10.6	5.0
Placenta, cord, membranes	P02	5	5.9	2.8
Bacterial sepsis	P36	4	4.7	2.2
Intrauterine hypoxia and birth asphyxia	P20-P21	*	*	*
Neonatal hemorrhage	P50–P52,P54	*	*	*
Newborn affected by maternal hypertensive disorders	P00.0	*	*	*
SIDS	R95	*	*	*
Other		17	20.0	9.5

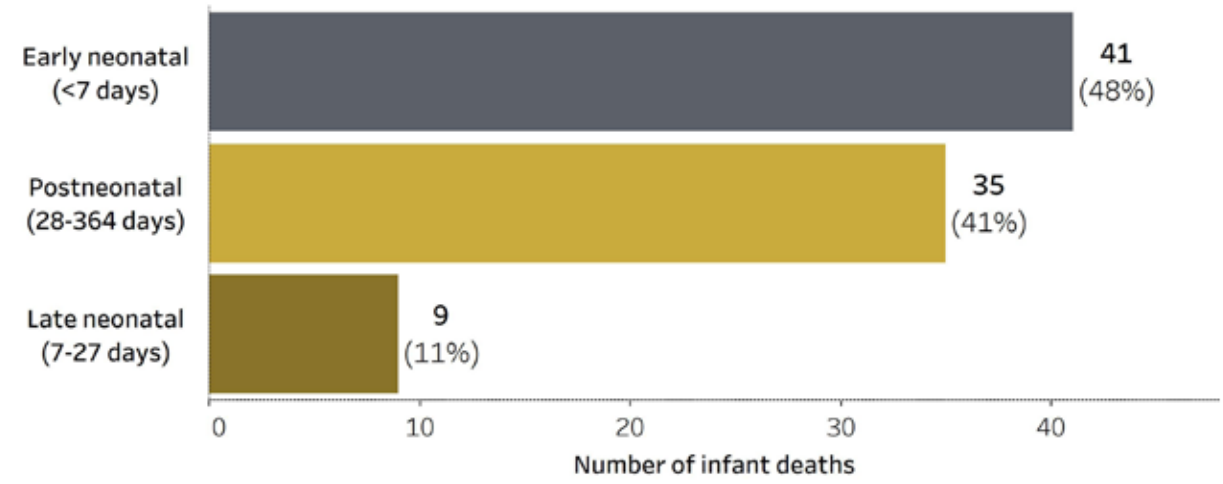
Data Source: DC Birth and Death Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

*Data suppressed for less than 4 infant deaths.

Neonatal Mortality, District of Columbia 2016–2020

Among all 85 infant deaths that occurred in 2019–2020, more than half (59%, n = 50) of all deaths occurred among neonates (newborns aged less than 28 days), resulting in a neonatal mortality rate of 2.9 per 1,000 live births. Nearly half of infant deaths occurred during the first six days following birth, known as the early neonatal period (48%, n = 41) (Figure 31). Eleven percent (n = 9) of infant deaths occurred between 7–27 days after birth, known as the late neonatal period. A little less than half (41%, n = 35) of infant deaths occurred in the postneonatal period, which is 28–364 days after birth.

Figure 31. Infant Age at Time of Death, District of Columbia, 2019-2020



Data Source: DC Birth and Death Data: Vital Records Division, Center for Policy Planning and Evaluation, D.C. Department of Health.
NOTE: An early neonatal death is a death that occurs when the infant is less than 7 days old; a late neonatal death occurs when the infant is aged 7-27 days; a postneonatal death is a death that occurs when the infant is aged 28 -364 days old.

Neonatal mortality by sociodemographic characteristics of the mother, 2016–2020

To examine characteristics of neonatal mortality by maternal characteristics, we examine neonatal rates over the 5-year period, 2016–2020. During this time, the neonatal mortality rate was 4.2 per 1,000 live births (Table 11).

Table 11. Neonatal mortality rate by infant age and maternal characteristics, 2016–2020

Characteristic	All Infants			Neonatal		Post Neonatal	
	Births	Total deaths	Rate (per 1,000 live births)	Total deaths	Rate (per 1,000 live births)	Total deaths	Rate (per 1,000 live births)
DC Overall	46,564	296	6.4	197	4.2	99	2.1
Maternal Race and Ethnicity [a]							
non-Hispanic, White	15,210	30	2.0	23	1.5	7	0.5
non-Hispanic, Black	22,128	221	10.0	139	6.3	82	3.7
Hispanic	6,679	24	3.6	19	2.8	5	0.8
Maternal age (years)							
Less than 20 years	1,900	14	7.4	9	4.7	5	2.6
20-24 years	6,514	70	10.8	40	6.1	30	4.6
25-29 years	9,545	78	8.2	46	4.8	32	3.4
30-34 years	14,862	68	4.6	47	3.2	21	1.4
35-39 years	11,032	40	3.6	34	3.1	6	0.5
40 years and older	2,699	10	3.7	8	3.0	2	0.7
Marital Status							
Married	24,566	72	2.9	54	2.2	18	0.7
Not Married	21,852	205	9.4	128	5.9	77	3.5
Maternal Education Level							
Less than High School	5,713	54	9.5	35	6.1	19	3.3
High School Graduate	10,183	101	9.9	54	5.3	47	4.6
More than High School Education	30,271	105	3.5	79	2.6	26	0.9
Insurance Type							
Medicaid	20,072	188	9.4	115	5.7	73	3.6
Private Insurance	22,989	66	2.9	48	2.1	18	0.8
Other Government (Fed, State, Local)	1,208	6	5.0	4	3.3	2	1.7
Self-pay	423	0	0.0	0	0.0	0	0.0
CHAMPUS/TRICARE	479	1	2.1	1	2.1	0	0.0
Other	1,308	15	11.5	12	9.2	3	2.3
Maternal Residence							
Ward 1	5,370	20	3.7	12	2.2	8	1.5
Ward 2	2,845	6	2.1	6	2.1	0	0.0
Ward 3	3,640	11	3.0	10	2.8	1	0.3
Ward 4	7,231	28	3.9	22	3.0	6	0.8
Ward 5	6,543	39	6.0	33	5.0	6	0.9
Ward 6	6,777	27	4.0	19	2.8	8	1.2
Ward 7	6,282	62	9.9	36	5.7	26	4.1
Ward 8	7,837	101	12.9	58	7.4	43	5.5

Data Source: DC Birth and Death Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Non-Hispanic, Asian/Pacific Islander and Other non-Hispanic race-ethnicity categories are not presented due to small sample size.

The neonatal mortality rate was significantly higher among non-Hispanic black infants (6.3 per 1,000 live births) compared to Hispanic infants (2.8 per 1,000 live births) and non-Hispanic white infants (1.5 per 1,000 live births). The neonatal infant mortality rate among infants of Hispanic mothers was not significantly higher than that of infants of non-Hispanic white mothers.

The neonatal mortality rate was significantly higher among infants of mothers aged 20–24 years (6.1 per 1,000 live births) compared to infants of mothers aged 30–34 years (3.2 per 1,000 live births) and 35–39 years (3.1 per 1,000 live births). The neonatal mortality rate among infants whose mothers were

unmarried was significantly higher than the rate among infants whose mothers were married (5.9 vs. 2.2 per 1,000 live births). The neonatal mortality rate was significantly higher among infants of mothers who had less than a high school diploma (6.1 per 1,000 live births) compared to infants of mothers who had more than a high school education (2.6 per 1,000 live births). The neonatal mortality rate among infants of mothers who had a high school diploma (5.3 per 1,000 live births) was also significantly higher than the rate among those with more than a high school education. The neonatal mortality rate was significantly higher for those infants whose births were financed by Medicaid (5.7 per 1,000 live births) compared to infants whose births were financed by private insurance (2.1 per 1,000 live births). During the five-year period from 2016–2020, Wards 5, 7, and 8 had the highest neonatal mortality rates of 5.0, 5.7, and 7.4 per 1,000 live births, respectively. The neonatal mortality rate was significantly higher in Ward 8 than in all other wards, except wards 5 and 7.

Leading causes of neonatal death, District of Columbia 2019–2020

The 10 leading causes of neonatal deaths in 2019–2020 accounted for 84% of all neonatal deaths in DC (Table 12). The leading cause of neonatal death during this period was due to congenital anomalies, which accounted for 20% (n = 10) of neonatal deaths in DC. For every 10,000 live births to DC residents, nearly 6 infants died within the first 28 days due to congenital anomalies. Maternal complications during pregnancy accounted for 20% (n=10) of neonatal deaths and was the second leading cause of neonatal death; for every 10,000 live births to DC residents, nearly 6 infants died to maternal complications during pregnancy within the first 28 days of birth. Prematurity accounted for 18% (n=9) of neonatal deaths and was the third leading cause of neonatal death. For every 10,000 live births to DC residents, nearly 5 infants died due to prematurity within the first 28 days of births.

Table 12. Ten leading causes of neonatal deaths, District of Columbia, 2019–2020

Cause of Death Category	ICD-10 Codes	Total neonatal deaths	Percent	Neonatal Mortality Rate (per 10,000 live births)
Total neonatal deaths		50	100.0	27.9
Congenital Anomalies	Q00-Q99	10	20.0	5.6
Maternal complications	P01	10	20.0	5.6
Prematurity	P07	9	18.0	5.0
Placenta, cord, membranes	P02	4	8.0	2.2
Bacterial sepsis	P36	*	*	*
Intrauterine hypoxia and birth asphyxia	P20-P21	*	*	*
Neonatal hemorrhage	P50–P52,P54	*	*	*
Newborn affected by maternal hypertensive disorders	P00.0	*	*	*
Accidents	V01-X59	0	0.0	0.0
SIDS	R95	0	0.0	0.0
Other		8	16.0	4.5

Data Source: DC Birth and Death Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health

*Data suppressed for less than 4 infant deaths

SECTION HIGHLIGHTS

- From 2011–2020, the infant mortality rate nearly halved from 7.4 to 4.5 per 1,000 live births

For 2016–2020:

- The infant mortality rate was nearly three to five times higher among non-Hispanic black infants compared to Hispanic and non-Hispanic white infants, respectively.
- The infant mortality rate was nearly two to three times higher for mothers aged 20–24 years than mothers aged 30–39 years.
- The infant mortality rate was more than triple the rate for Medicaid financed births to those births financed by private insurance.
- The infant mortality rate was nearly 2.5 times higher among infants of mothers who were obese prior to pregnancy compared to mothers with normal weight prior to pregnancy.
- The infant mortality rate was 10 times higher among infants whose mothers did not initiate prenatal care compared to infants whose mothers initiated prenatal care in the first trimester.
- The infant mortality rate was 20 times higher among infants who were born preterm compared to infants born full term.
- More than half of all infant deaths (59%) occured during the neonatal period.
- Congenital anomalies were the leading cause of infant and neonatal deaths, accounting for nearly 21% of all infant deaths and 20% of all neonatal deaths.

DC HEALTH PROGRAMS TO SUPPORT HEALTHY PREGNANCY

- Reducing infant mortality depends in large part on promoting the health of women of childbearing age, promoting health of women during pregnancy, reducing preterm birth, and reducing low birth weight, the highlights of which are on pages 22, 24, 40 and 48.
- DC Health operates Healthy Start, a federally-funded program targeted to residents of Wards 5, 7 and 8 that provides case management and social support for mothers, infants up to 18 months and their families. In addition, Healthy Start increases support in the perinatal period using group prenatal care and doula services, and has an initiative to increase engagement of fathers.
- DC Health oversees the Newborn Metabolic Screening program for early identification of children with treatable inborn metabolic conditions and a program for early diagnosis of congenital heart disease.

DC HEALTH'S APPROACH TO IMPROVE PERINATAL HEALTH

Improving Preconception Health

Health characteristics and behaviors of women prior to pregnancy play important roles in birth outcomes. To help improve preconception health, DC Health and partner agencies work to promote healthy eating and physical activity, as well as avoidance of tobacco, alcohol, and other drugs. The **District of Columbia's Supplemental Nutrition Assistance Program (SNAP)** helps individuals and families with low incomes by providing monthly benefits to purchase food. These benefits are accepted at most grocery stores, some farmers' markets, convenience, big box stores, and some online stores. SNAP is the largest federal nutrition assistance program in the United States and the District with an aim to reduce food insecurity. **DC Health's Tobacco Control Program** works with community stakeholders to reduce tobacco initiation and promote cessation for current smokers. DC Health provides **DCQuitNow**, a cessation support program offering one-on-one and group counseling as well as responsive text messaging, web-based chats, and nicotine replacement therapy at no cost to the participant. **DCQuitNow** offers enhanced behavioral support through additional engagements to pregnant and breastfeeding residents. Nicotine replacement therapy is available to pregnant and breastfeeding residents with physician approval.

To promote reproductive planning and support teenage girls and women in managing their reproductive health, DC Health continues to implement **One Key Question® (OKQ)** in all **school-based health centers (SBHCs)**. In addition, DC Healthy Start encourages the use of OKQ to ensure participants have reproductive life plans. Family support workers assist clients with developing these plans. In FY20, 82% of Healthy Start female participants had a documented reproductive life plan. The Health Care Access Bureau at DC Health houses the **DC Primary Care Office** which works to improve access to high-quality, patient-centered primary healthcare.

DC **Healthy Start** is a federally-funded program targeted to residents of Wards 5, 7 and 8 of the District of Columbia. Healthy Start provides services and support for mothers, infants up to 18 months and their families (fathers/partners) through comprehensive case management and care coordination to address health and social service needs. Community health centers serve as medical homes for program participants; Currently, two community health centers serve as medical homes for program participants. Additionally, to work toward more equitable birth outcomes and target women who are at high risk for adverse perinatal outcomes, Healthy Start increases social supports in the perinatal period using group prenatal care and doula services. Healthy Start also includes a **Fatherhood Initiative** aimed at increasing fatherhood engagement through an evidence-based fatherhood curriculum.

The Adolescent Health Program is a consortium of community-based organizations, school-based programs, and place-based care funded by DC Health to deliver evidence-based programs to help adolescents thrive in the transition from childhood to adulthood. For example, the **Pregnancy Prevention in Adolescents Program** administered by Crittenton Services of Greater Washington, promotes educational success and wellness to reduce unintended pregnancies; improve prenatal and postnatal maternal health; improve parenting practices among parents of infants and young children; develop positive social skills; and reduce delinquency among adolescents.

Assuring High Quality Provision of Health Services

The **DC Perinatal Quality Collaborative (DC-PQC)**, implemented by the District of Columbia Hospital Association, convenes a team of perinatal care providers and public health professionals working to improve health outcomes for women and newborns through continuous quality improvement. The goals of the DC-PQC are to 1) reduce pregnancy-related morbidity and mortality among women in the District; 2) reduce racial, geographic, and social economic disparities; and 3) reduce the impact of policies and practices that reflect systematic racism. The committee consists of representatives from District hospitals, payors (private/MCOs), community representatives (including patient and family representatives), community-based organizations, federally qualified health centers, university-based partners, and subject matter experts. The DC-PQC is currently a part of the National Network of Perinatal Quality Collaboratives.It is enrolled in the Alliance for Innovation on Maternal Health (AIM) and is implementing the Severe Hypertension in Pregnancy bundle. The bundle will be implemented in all five birthing hospitals in the District: 1) George Washington Hospital; 2) Georgetown University Hospital; 3) Howard University Hospital; 4) Medstar Washington Hospital Center; and, 5) Sibley Memorial Hospital. The DC-PQC currently serves as the **Community Action Network (CAN)** for DC Healthy Start. The CAN aims to engage stakeholders and community members through activities that help to benefit both the DC-PQC and Healthy Start programs, including opportunities to provide feedback on initiatives, such as the development of resource guides and tools, sharing of lived experiences, and identification of barriers and challenges to access and care.

The DC Health **Newborn Metabolic Screening** program ensures that all newborns born in the District of Columbia are screened for 44 inherited metabolic and genetic disorders that are treatable by diet, vitamins and/or medication, or by anticipatory measures to prevent attacks. Screening takes place between 24 and 48 hours of life any abnormal results shared with the ordering practitioner/facility, the newborn's primary care provider (if indicated), and the DC Health Newborn Metabolic Screening Program.

DC Health houses the District of Columbia's **Universal Newborn Hearing Screening Program** also known as the **DC Early Hearing Detection and Intervention Program**. The overarching goal of this program is to ensure that children who are deaf or hard of hearing are identified through newborn, infant, and early childhood hearing screening and receive diagnosis and appropriate early intervention to optimize language, literacy, and cognitive, social, and emotional development. The Early Hearing Detection and Intervention Program adheres to the national hearing loss intervention guidelines of 1-3-6. The 1-3-6 guidelines are: every newborn will receive a hearing screening by one month of age; every infant that did not pass the initial hearing screening and rescreening will have completed a diagnostic audiological exam by three months of age; and all infants confirmed as having hearing loss will be enrolled into early intervention services by six months of age.

The **DC Critical Congenital Heart Disease Program** works with birthing hospitals and pediatric facilities to ensure all newborns in the District are screened at birth for critical congenital heart disease and that diagnostic treatment services are provided to babies with a failed screen prior to discharge.

DC Health funds the **DC Breastfeeding Coalition** to provide lactation support, peer counseling and lactation certification preparation to District residents. There is a particular focus on underserved populations and residents of Ward 5, 7 and 8. DC Health also provides funding to support **The Baby-Friendly Hospital Initiative** which implements evidenced-based maternity care in District hospitals and birthing centers to achieve optimal infant feeding outcomes and mother/baby bonding. This initiative assists hospitals in giving mothers the information, confidence, and skills necessary to successfully initiate and continue breastfeeding their babies. It also gives special recognition to hospitals that do so with a specific designation.

COVID-19 Impact on Perinatal Programs

As is the case across the nation, the COVID-19 pandemic had a profound impact on planning, implementation and evaluation of perinatal health programs across the District. Many programs had to make necessary, unprecedented changes for the continuity of operations to serve District residents, for example, the use of virtual platforms and telehealth services. In addition, many District government staff were detailed to work in the District's COVID-19 response throughout 2020, impacting programming capacity. Throughout the COVID-19 pandemic, DC WIC leveraged federal waivers to safeguard continued food access by delivering WIC services using telehealth technology, making it easier for families to stay engaged in the WIC Program. In addition, breastfeeding families were supported through an enhanced WIC food package, peer counselors, licensed lactation consultants, and free access to Pacify (a 24-7 breastfeeding video support app). Critical services such as the DC Early Hearing and Detection Initiative regularly communicated with partners to address new challenges in providing essential newborn hearing screenings and appropriate follow-ups.

The sudden shift to a virtual posture presented initial challenges for some target populations. The COVID-19 pandemic affected client enrollment and traditional methods of service delivery for the DC Healthy Start Program (DCHS). Despite initial challenges for staff and families, the DCHS Program continued to recruit, enroll, and serve participants. Strategies implemented to increase participant enrollment and serve clients included adjusting recruitment and service delivery through virtual platforms, enhanced marketing strategies and utilization of referral partners. Similarly, while Healthy Steps took necessary steps to pivot to telehealth services, the lack of technology among patients impacted the ability to connect with families in ways that foster engagement and strengthen attachment. In response, the team at Children's National Hospital created a Parent Advisory Council (PAC) to engage parents/families around COVID-19 impacts and the resources needed to provide adequate supports in the areas of parenting, virtual school supports, mental health needs and access and social connectedness. An unintended positive consequence of the pandemic on the Safe Sleep Program was an increase in the ability of partner agencies to provide education due to moving to a virtual training protocol. As of 2022, the District of Columbia continues to respond to the pandemic as well as its longer-term impact and new potential threats.

The District of Columbia's **Child Fatality Review Committee** is a multidisciplinary group inclusive of public and private child servicing agencies, medical providers, academia, legal professionals, and child advocates. The committee includes the **Infant Mortality Review Team,** which reviews the deaths of District infants from birth through 12 months in order to help make recommendations to enhance services and systems to reduce the number of preventable deaths.

Strengthening Families

The **DC Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) Program** is a federal public health nutrition program that provides services for prenatal and postpartum women, infants, and children up to 5 years old. Services include health and nutrition assessments, monthly prescribed food packages targeted to families' dietary needs, breastfeeding promotion and peer counselor support, nutrition education and counseling, and referrals to a range of health and social services.

Home visiting is an important intervention in helping to provided families with the education and tools they need to thrive. The **Maternal, Infant Early Childhood Home Visitation** is a federally funded program that provides evidence-based home visiting services for at-risk pregnant women and parents with young children up to kindergarten entry. DC Health funds **Mamatoto Village's Mothers Rising Home Visitation Program,** which provides women with expansive ancillary services during the prenatal and postpartum periods. Working with a care team, program participants receive health education, support with social service needs, care coordination, advocacy, and parenting support during their pregnancy and throughout the infants' first three months of life. Mamatoto Village's Perinatal Health Worker Training program prepares women to serve within their own communities. Women who receive training through this program are positioned to serve the perinatal community in various capacities including direct perinatal care and support, advocacy and policy engagement, and entry level social work and public health careers.

Help Me Grow is a District-wide system that connects children at risk for developmental delays, disabilities and/or behavioral concerns with appropriate services through utilization of a centralized resource directory. The Help Me Grow program supports optimal development for children by addressing the need for perinatal support and early intervention and detection through screening efforts. **Healthy Steps** is an evidence-based, interdisciplinary pediatric primary care program that aims to provide infants and toddlers with social-emotional and developmental support by strengthening family engagement with the medical home. The Healthy Steps Specialist, a child development expert, joins the pediatric primary care team to ensure universal screening, provide successful interventions, referrals, and follow-up for the whole family. As of June 2022, DC Health funds Children's National Hospital, Children's Health Center – Anacostia as well as Unity Healthcare, Minnesota Avenue Health Center and East of the River Health Center.

Place-Based Initiatives are innovative programs located in neighborhoods or housing communities to improve health outcomes for children ages zero to five and their families. DC Health currently funds **Smart from the Start** and **Resilient Communities**. These programs meet a critical need to provide multi-generational supports for District families in select neighborhoods in Ward 8.

Promoting Healthy Environments

The **DC Health Office of Health Equity** was established to collaborate with other government agencies, community partners, and all DC Health Administrations. The purpose of the office is to ensure a multi-

pronged cohesive strategy is developed to identify and address the social determinants of health, which are key drivers of inequities in health outcomes. The nine key drivers (education, employment, income, housing, transportation, food environment, medical care, outdoor environment and community safety) were explored in the 2018 Health Equity Report, providing a baseline assessment of health equity opportunities in the District.

DC Health has supported the Deputy Mayor for Planning and Economic Development's multi-year strategy to **expand grocery store access** in neighborhoods across the District that have historically lacked access to fresh, affordable food. Through targeted investments, tax incentives, and technical assistance, the District is working to bring more small, medium, and large grocery stores and sit-down restaurants to Wards 7 and 8.

DC Health and partner agencies help to fund and provide oversight for several program aimed at increasing healthy food access and education. **Produce Plus** is an incentive program providing low-income residents monthly benefits during the farmers' market season to purchase fresh fruits and vegetables at markets across the District. The **Healthy Corner Store Initiative** also expands access to fresh fruits and vegetables along with wellness education by working together with small footprint retailers in low resource areas of the District. **Joyful Food Markets** are pop-up, monthly markets held in over 50 elementary schools in Wards 7 and 8 that allow families to shop at no cost for a variety of produce items and pantry staples, and participate in nutrition education activities. Every child receives a 15-pound bag of groceries along with healthy recipes to help families prepare health meals at home.

Through partnerships and collaborations, the **DC Safe Sleep Program** provides infant safe sleep education and portable cribs ("Cribettes") to ensure DC infants are sleeping safely. This program partners with more than 30 government and private agencies. Since the onset of the COVID-19 pandemic, the Safe Sleep Program has also partnered with birthing hospitals and birthing centers along with shelters, Unity Health Care clinics, DC Child and Family Services Agency/Child Protective Services, and COVID-19 isolation centers to bring infant safe sleep education and portable cribs to families across the District.

The District has invested in enhancing the built environment to promote physical activity for children, families, and all residents, visitors and businesspersons in the nation's capital. Driven by the **Sustainable DC 2.0** plan, a group of District agencies have partnered to make neighborhoods more walkable. Through "take back the street" initiatives, District agencies are redesigning infrastructure for pedestrian travel. For example, complete street policies, safe routes to school, and vision zero initiatives use environmental, systems, and policy-based approaches to improve safety and levels of physical activity for residents. **Ready2Play DC** is a plan led by the Department of Parks and Recreation that works to increase equitable access to recreational spaces.

Data Surveillance

The Center for Policy, Planning and Evaluation (CPPE) at DC Health has partnered with the Centers for Disease Control and Prevention (CDC) and Bloustein Center for Survey Research of Rutgers University on the **Pregnancy Risk Assessment and Monitoring System (PRAMS)** surveillance project. PRAMS is an ongoing, population-based survey of residents who delivered a live-born infant two to four months post-partum. PRAMS collects data on maternal behaviors and experiences from preconception to the postpartum period to identify groups of women and infants at high risk for health problems, to monitor changes in health status, and to measure progress towards improving maternal child health. PRAMS data allow DC Health and stakeholders to analyze population-level trends to coordinate efforts to improve health outcomes.

By regulation, all pregnant women living with HIV are to be reported to the health department. The **DC Perinatal HIV Prevention and Surveillance program** assigns a perinatal coordinator, in conjunction with an investigation team, to follow these pregnant individuals throughout their pregnancy and assist with follow up care. Additionally, all infants born to a woman living with HIV are followed until their HIV status is determined. The coordinator can offer guidance regarding appropriate tests to be executed during infant visits.

In 2020, DC Health proposed a rule that would require reporting of cases of **Severe Maternal Morbidity (SMM)**. DC Health hopes to use this high-quality, timely data to better understand and prevent all severe medical conditions that occur during pregnancy.

Addressing Barriers to Care

The **DC Calling All Sectors Initiative** is an example of a multi-sector collaborative effort, led by the DC Health Office of Health Equity, aimed at addressing housing insecurity among pregnant residents to improve birth outcomes in the District. Collaborating partners of the initiative include key District agencies and Community of Hope. The initiative focuses on barriers and opportunities for improvement in access to vital health and social services. As this initiative is at the intersection of housing insecurity and pregnancy, there is emphasis on innovative approaches that create positive systems-level change.

Preventing Preterm Births

The **Preterm Birth Pilot Program** aims to reduce the occurrence of preterm birth among at-risk District residents. In this project, four subcontracted organizations (Medstar Washington Hospital Center, Unity Health Center, Community of Hope and Howard University) are responsible for implementing multi-pronged approaches to reduce preterm birth. This program had an initial focus on increasing the use of progesterone 17P, incorporating the “centering pregnancy” programs, and providing education to high-risk pregnant women within the first trimester. When national evidence questioned the value of progesterone 17P, the project shifted to focus on other evidence-based and promising practices for preterm birth reduction. DC Health will be implementing an early prenatal care campaign, as well as a preventive care campaign focused on annual well-woman visits and pre-conception health. Additionally, DC Health continues to collaborate with community partners and health systems to increase respectful care delivery, reduce implicit bias in care delivery, and improve health literacy and social support for birthing parents and families.

Policy

In 2022, DC Health published rules amending 22-B DCMR § 2101.1 to add Spinal Muscular Atrophy (SMA) to the panel of newborn dried blood spot screening tests that hospitals and birthing centers must make available to parents of newborns. SMA is a genetic disorder that is manifested by weakness and wasting of the muscles that are used for movement. The muscle weakness usually worsens with age and if left untreated can be lethal by age two. On September 16, 2019, the **Better Access for Babies to Integrated Equitable Services Amendment Act (B.A.B.I.E.S. Act)** was introduced. This legislation required health benefit plans to cover required additional newborn screenings and required hospitals and birthing facilities to report on certain quality measures regarding perinatal health. This legislation became DC Law 23-118 effective June 24, 2020 (just months after the beginning of the COVID-19 pandemic.) DC Health is drafting regulations to support implementation of the law. DC Health is also drafting regulations to establish certification process for Doulas and Professional Midwives supporting eligibility for Medicaid reimbursement.

Future

The DC Health Community Health Administration is developing a 5-year framework for improving community health, which will include a specific focus on protecting and promoting the health of mothers and children, especially in Black and African American populations. The metrics listed below will be utilized to prioritize strategies and activities.

Table 13. Outcome metrics used by DC Health in the 5-year framework to improve community health

MEASURE	OBJECTIVE	DATA SOURCE	BASELINE	BASELINE YEAR	TARGET (ALL)	TARGET YEAR	BASELINE (AFRICAN AMERICAN)	TARGET (AFRICAN AMERICAN)
Preventive health visit past 12 months, women age 18-44	Increase	Medicaid[1]	58.0%	2019	63.0%	2026		
Prenatal care in 1st trimester	Increase	Vital Statistics[2]	68.0%	2019-2020	75.0%	2026	55.0%	62.0%
Severe maternal morbidity (per 10,000 deliveries)	Reduce	Vital Statistics[2]	259	2019	233	2026	323	290
Preterm births	Reduce	Vital Statistics[2]	9.8%	2020	9.4%	2026	13.6%	11.4%
Births to teens (per 1,000 women)	Reduce	Vital Statistics[2]	15.6	2020	10.4	2026	23.3	15.5
Unintended pregnancy	Reduce	PRAMS[3]	36.0%	2020	28.0%	2026	53.0%	40.0%
WIC participation by eligible women & children	Increase	WIC[4]	45.0%	2019	60.0%	2026		
Smoking in pregnancy	Reduce	PRAMS[3]	3.5%	2019	1.5%	2026		
Marijuana use in pregnancy	Reduce	PRAMS[3]	5.4%	2019	2.5%	2026		
Breastfeeding at 8 weeks	Increase	PRAMS[3]	78.0%	2020	82.0%	2026		
Follow up after failing initial hearing screening	Increase	OZ[5]	79.0%	2021	90.0%	2026		

1 Medicaid: Medicaid Data

2 Vital Statistics: DC Birth and Death Data, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health

3 PRAMS: Pregnancy Risk Assessment Monitoring System Data

4 WIC: Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) Data

5 OZ: OZ Systems for Hearing Screening (EHDI)

APPENDIX TECHNICAL NOTES

All live births described in the report were to District of Columbia residents at the time of birth. An infant who was a District of Columbia resident at birth (based on the infant's birth certificate) and died less than 1 year of age is included in all analyses of infant mortality. This includes infants who were not District of Columbia residents at birth, but were District of Columbia residents at the time of death (as recorded on the infant's death certificate).

Data Sources

Birth Data

The birth record is based on data collected from the 2003 revision of the U.S. Standard Certificate of live birth, which is described in: https://www.cdc.gov/nchs/data/dvs/birth11-03final-ACC.pdf. All sociodemographic data from the mother is collected on the birth certificate.

Death Data

The death record is based on data collected from the 2003 revision of the U.S. Standard Certificate of live death, which is described in: https://www.cdc.gov/nchs/data/dvs/DEATH11-03final-ACC.pdf.

Birth record linked to death records

The District of Columbia vital statistics linked birth/death dataset is the major source of information for this report. The linked birth/infant death data set is the primary data source for analyzing infant mortality trends and patterns in DC. In the linked birth/infant death data set, information from resident birth certificate is linked to information from resident death certificate for each infant younger than one-year of age. The linked birth/death dataset contains data available from the birth certificate, such as estimated gestational age, race/ethnicity of the mother, type of insurance coverage. In addition, the linked birth/death dataset contains information collected within the death certificate, such as the age of the infant at the time of death, the cause of death, race/ethnicity of the infant. The linked birth/infant death data set is particularly useful for computing infant mortality and neonatal mortality rates by race and ethnicity because the maternal race and ethnicity of the mother from the birth certificate is used to classify infant births and deaths by maternal race and ethnicity. The race and ethnicity from the birth certificate is generally provided by the mother at the time of delivery, and is considered to be more accurate than race and ethnicity from the infant death certificate that is provided by an informant, or in the absence of an informant, by observation. Linked birth/infant death data sets are available from the Data Management and Analysis Division (DMAD), Center for Policy, Planning, and Evaluation (CPPE), D.C. Department of Health.

Population Estimates

Population estimates are used as the denominator to calculate the crude birth rate and age-specific birth rates. The annual estimates of the resident population are released July of each year[4].

Thematic Maps

Infant mortality estimates for each ward are presented in chloropleth or thematic maps. These maps are based on the Ward boundaries from the 2012 election, which can be downloaded from the DC Office of Planning[5].

Estimates for the percentage of preterm and low birthweight live births are presented in neighbhorhood-level chloropleth or thematic maps. The neighborhood groupings were created within CPPE by spatially joining contiguous census tracts.

For both the ward-level and neighborhood-level thematic maps, the percentages and rates were categorized into five groups using the ArcGIS "natural breaks" algorithm, which partitions the data into classes based on natural groups in the data distribution.

Statistical Methods

Computing percentages

Percentages were computed using all events for which the characteristic is reported. The "missing" category is included in the total when calculating the percentage.

Comparing percentages and rates

Differences in maternal characteristics between live births in 2014–2016 and 2017–2020 and differences in the percentage of preterm births and low birthweight births were assessed using two-sided difference in proportions for two independent samples at a 0.05 significance level. No adjustments were made for multiple comparisons. To assess differences between infant mortality rates that are based on fewer than 100 deaths, we compute the 95% confidence intervals for each of the infant mortality rates based on the Poisson distribution and assess for overlap between the two confidence intervals. If the two 95% confidence intervals overlap the difference is not statistically significant at the 95% level. If they do not overlap, the difference is statistically significant. The phrases terms such as "significantly higher" or "significantly lower" indicate that the difference was statistically significant using a significance level of 0.05[6].

Random variation in infant mortality rates

While the number of infant deaths and live births represent complete counts of these events and are not subject to sampling error, they are subject to nonsampling error in the registration process. As described by Mathews et al, when rates are used for analytic purposes, the number of births, deaths, and infant mortality rates are subject to random variation when the rates are being used for analytic purposes [6]. The probably range of values can be estimated from the observed events according to statistical assumptions. The distribution of vital events is assumed to follow the normal distribution when the number of events is large and the relative standard error is small. However, when the number of events is small (i.e., fewer than 100), caution must be taken in interpreting results. Infrequent vital events are then assumed to follow a Poisson probability distribution.

Rate and Ratio Definitions

Birth rate

The *birth rate* presented in this report is the crude birth rate, defined as the number of resident live births in the District of Columbia during a specified calendar year divided by the total population for that area. The rate is multiplied by 1,000 to provide an estimate per 1,000 DC residents.

$$\text{Birth Rate} = \frac{\text{DC resident live births in year X}}{\text{Total DC population in year X}} \times 1{,}000$$

The population estimates from the US Census Bureau are used as denominators in birth rate calculations[7].

This report also presents *general fertility rates (GFR)*, defined as the total number of resident live births for a specific time period divided by the resident female population of reproductive age (15–44) for that same time period. The GFR is calculated:

$$\text{General fertility rate (GFR)} = \frac{\text{DC resident live births in year X}}{\text{Total DC population of females age 15-44 in year X}} \times 1{,}000$$

This report also presents *age-specific birth rates* defined as the number of resident live births for a specific time period divided by the resident female population in a specific age-group for that same time period. The age groupings used in this report include 5-year age groups: 15–19, 20–24, 25–29, 30–34, 35–39, and 40–44. The age-specific birth rate is calculated:

$$\text{Age-specific birth rate} = \frac{\text{DC resident live births to mothers age \& in year X}}{\text{Total DC population of females age Y in year X}} \times 1{,}000$$

Infant mortality rate

The *infant mortality rate* presented in this report is the crude infant mortality rate, defined as the number of DC resident infants who died aged less than one year divided by total live births in the District of Columbia for the specified time period. The rate is multiplied by 1,000 to provide an estimate per 1,000 live births. This is often referred to as the period cohort and includes deaths of infants from the calendar year, some of whom were born in the prior calendar year. The infant mortality rate is calculated:

$$\text{Infant Mortality Rate} = \frac{\text{DC resident infant deaths less than one-year old in year X}}{\text{DC resident births in year X}} \times 1{,}000$$

Infant Mortality Disparity Ratio

The *infant mortality disparity ratio* is the ratio of two infant mortality rates and is used to compare the infant mortality rate in one category group to the rate of another group. In this report, the infant mortality ratio is used to compare the infant mortality rates between non-Hispanic black and Hispanic mothers to that of non-Hispanic white mothers.

Neonatal mortality rate

The *neonatal mortality rate* is the number of infants less than 28-days old that died in the District of Columbia divided by total live births in the District of Columbia for the specified time period. The rate is multiplied by 1,000 to provide an estimate per 1,000 live births.

$$\text{Neonatal Mortality Rate} = \frac{\text{DC resident infant deaths less than 28-days old in year X}}{\text{DC resident births in year X}} \times 1{,}000$$

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4 U.S. Census Bureau Population Division, Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States, States, and Puerto Rico Commonwealth: April 1, 2010 to July 1, 2020. 2021.

5 Open Data DC. Ward boundaries from 2012. http://opendata.dc.gov/datasets/ward-from-2012?selectedAttribute=WEB_URL

6 Mathews, T.J., M.F. MacDorman, and M.E. Thoma, Infant Mortality Statistics From the 2013 Period Linked Birth/Infant Death Data Set. Natl Vital Stat Rep, 2015. 64(9): p. 1-30.

7 U.S. Census Bureau Population Division, Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States, States, and Puerto Rico Commonwealth: April 1, 2010 to July 1, 2020. 2021.

APPENDIX TABLES

2019–2020

Appendix Table 1. Maternal characteristics of live births, District of Columbia 2014–2016 and 2017–2020

Characteristic	Year of Birth			
	2014-2016		2017-2020	
	N	%	N	%
All	28,938	100.0	36,710	100.0
Maternal Race/Ethnicity				
non-Hispanic, White [a]	8,993	31.1	12,117	33.0
non-Hispanic, Black [a]	14,405	49.8	17,259	47.0
Hispanic [a]	3,953	13.7	5,333	14.5
non-Hispanic, Asian/Pacific Islander	1,328	4.6	1,735	4.7
non-Hispanic, All other race-ethnic categories [a]	116	0.4	192	0.5
Maternal Age (years)				
Less than 20 years [a]	1,550	5.4	1,431	3.9
20-24 years [a]	5,007	17.3	4,922	13.4
25-29 years	5,977	20.7	7,461	20.3
30-34 years [a]	8,970	31.0	11,775	32.1
35-39 years [a]	5,952	20.6	8,918	24.3
40 years and older [a]	1,478	5.1	2,191	6.0
Marital Status`				
Married [a]	14,630	50.6	19,488	53.1
Not Married [a]	14,211	49.1	17,124	46.7
Maternal Education Level				
Less than High School [a]	4,163	14.4	4,420	12.0
High School Graduate	6,242	21.6	7,969	21.7
More than High School Education [a]	18,216	63.0	23,990	65.4
Insurance Type				
Medicaid [a]	11,433	39.5	16,297	44.4
Private Insurance [a]	13,632	47.1	18,323	49.9
Other Government (Fed, State, Local) [a]	1,034	3.6	745	2.0
Self-pay [a]	375	1.3	320	0.9
CHAMPUS/TRICARE [a]	265	0.9	398	1.1
Other [a]	1,869	6.5	576	1.6
Maternal Residence				
Ward 1	3,384	11.7	4,258	11.6
Ward 2 [a]	1,846	6.4	2,206	6.0
Ward 3	2,306	8.0	2,860	7.8
Ward 4	4,531	15.7	5,643	15.4
Ward 5 [a]	3,796	13.1	5,247	14.3
Ward 6	4,129	14.3	5,381	14.7
Ward 7	3,825	13.2	4,947	13.5
Ward 8 [a]	5,065	17.5	6,135	16.7

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

[a] Percentage of characteristic is significantly different between 2014-2016 and 2017-2020 time period (p<0.05).

[b] Wards are based on 2012 Ward boundaries.

Appendix Table 2. Maternal characteristics of live births, District of Columbia 2019–2020

Characteristic	DC Overall	
	N	%
All	17,939	100.0
Maternal Race/Ethnicity		
non-Hispanic, White	5,998	33.4
non-Hispanic, Black	8,290	46.2
Hispanic	2,701	15.1
non-Hispanic, Asian/Pacific Islander	830	4.6
non-Hispanic, All other race-ethnic categories	79	0.4
Maternal age (years)		
Less than 20 years	634	3.5
20-24 years	2,224	12.4
25-29 years	3,634	20.3
30-34 years	5,719	31.9
35-39 years	4,575	25.5
40 years and older	1,145	6.4
Marital Status		
Married	9,586	53.4
Not Married	8,311	46.3
Maternal Education Level		
Less than High School	2,082	11.6
High School Graduate	3,868	21.6
More than High School Education	11,810	65.8
Insurance Type		
Medicaid	8,242	45.9
Private Insurance	9,078	50.6
Other Government (Fed, State, Local)	78	0.4
Self-pay	151	0.8
CHAMPUS/TRICARE	250	1.4
Other	111	0.6
Maternal Residence		
Ward 1	2,077	11.6
Ward 2	1,016	5.7
Ward 3	1,429	8.0
Ward 4	2,766	15.4
Ward 5	2,587	14.4
Ward 6	2,647	14.8
Ward 7	2,448	13.7
Ward 8	2,959	16.5

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

Appendix Table 3. Maternal characteristics of live births by ward, District of Columbia 2019–2020

Characteristic	Maternal Residence															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	2,077	100.0	1,016	100.0	1,429	100.0	2,766	100.0	2,587	100.0	2,647	100.0	2,448	100.0	2,959	100.0
Maternal Race/Ethnicity																
non-Hispanic, White	826	39.8	647	63.7	1,036	72.5	827	29.9	770	29.8	1,570	59.3	143	5.8	176	6.0
non-Hispanic, Black	449	21.6	64	6.3	104	7.3	932	33.7	1,284	49.6	691	26.1	2,116	86.4	2,645	89.4
Hispanic	661	31.8	171	16.8	132	9.2	867	31.3	407	15.7	201	7.6	162	6.6	98	3.3
non-Hispanic, Asian/Pacific Islander	130	6.3	126	12.4	142	9.9	124	4.5	109	4.2	162	6.1	11	0.5	26	0.9
Maternal age (years)																
Less than 20 years	68	3.3	5	0.5	7	0.5	99	3.6	83	3.2	51	1.9	142	5.8	179	6.1
20-24 years	192	9.2	26	2.6	24	1.7	287	10.4	306	11.8	142	5.4	545	22.3	699	23.6
25-29 years	327	15.7	91	9.0	113	7.9	481	17.4	500	19.3	361	13.6	729	29.8	1,031	34.8
30-34 years	659	31.7	436	42.9	528	37.0	904	32.7	861	33.3	1,052	39.7	623	25.5	654	22.1
35-39 years	667	32.1	336	33.1	592	41.4	787	28.5	693	26.8	857	32.4	329	13.4	314	10.6
40 years and older	164	7.9	121	11.9	164	11.5	208	7.5	144	5.6	184	7.0	78	3.2	80	2.7
Marital Status																
Married	1,319	63.5	870	85.6	1,285	89.9	1,606	58.1	1,399	54.1	1,982	74.9	560	22.9	559	18.9
Not Married	753	36.3	142	14.0	141	9.9	1,156	41.8	1,179	45.6	660	24.9	1,881	76.8	2,395	80.9
Maternal Education Level																
Less than High School	329	15.8	37	3.6	23	1.6	483	17.5	302	11.7	111	4.2	336	13.7	460	15.6
High School Graduate	330	15.9	48	4.7	26	1.8	498	18.0	513	19.8	253	9.6	889	36.3	1,310	44.3
More than High School Education	1,390	66.9	921	90.7	1,371	95.9	1,751	63.3	1,738	67.2	2,267	85.6	1,208	49.4	1,156	39.1
Insurance Type																
Medicaid	867	41.7	113	11.1	84	5.9	1,393	50.4	1,226	47.4	537	20.3	1,734	70.8	2,285	77.2
Private Insurance	1,163	56.0	872	85.8	1,288	90.1	1,307	47.3	1,300	50.3	2,024	76.5	646	26.4	474	16.0
Other Government (Fed, State, Local)	6	0.3	2	0.2	9	0.6	19	0.7	8	0.3	8	0.3	14	0.6	12	0.4
Self-pay	15	0.7	14	1.4	25	1.8	23	0.8	20	0.8	20	0.8	21	0.9	12	0.4
CHAMPUS/TRICARE	10	0.5	7	0.7	12	0.8	11	0.4	11	0.4	50	1.9	12	0.5	135	4.6
Other	15	0.7	6	0.6	7	0.5	12	0.4	14	0.5	5	0.2	17	0.7	35	1.2

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

Appendix Table 4. Pre-pregnancy characteristics of women who had live births by ward, District of Columbia 2019–2020

Characteristic	Total Births		Maternal Residence															
			Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	17,939	100.0	2,077	100.0	1,016	100.0	1,429	100.0	2,766	100.0	2,587	100.0	2,647	100.0	2,448	100.0	2,959	100.0
Previous Preterm Birth																		
No, no previous preterm birth	17,043	95.0	2,002	96.4	998	98.2	1,399	97.9	2,659	96.1	2,451	94.7	2,565	96.9	2,248	91.8	2,711	91.6
Yes, previous preterm birth	877	4.9	74	3.6	14	1.4	27	1.9	105	3.8	133	5.1	80	3.0	199	8.1	245	8.3
Pre-pregnancy weight																		
Underweight	598	3.3	58	2.8	49	4.8	59	4.1	73	2.6	77	3.0	81	3.1	66	2.7	135	4.6
Normal weight	8,696	48.5	1,169	56.3	701	69.0	1,004	70.3	1,294	46.8	1,158	44.8	1,551	58.6	857	35.0	960	32.4
Overweight	4,405	24.6	477	23.0	181	17.8	256	17.9	794	28.7	703	27.2	616	23.3	632	25.8	742	25.1
Obese	3,981	22.2	338	16.3	73	7.2	98	6.9	548	19.8	612	23.7	368	13.9	863	35.3	1,077	36.4
Smoking prior to pregnancy																		
Did not smoke prior to pregnancy	17,097	95.3	2,025	97.5	1,004	98.8	1,416	99.1	2,702	97.7	2,474	95.6	2,581	97.5	2,225	90.9	2,660	89.9
Smoked prior to pregnancy	645	3.6	36	1.7	8	0.8	9	0.6	44	1.6	80	3.1	51	1.9	178	7.3	239	8.1
Pre-pregnancy diabetes																		
Absent	17,704	98.7	2,041	98.3	1,007	99.1	1,421	99.4	2,731	98.7	2,546	98.4	2,631	99.4	2,410	98.5	2,907	98.2
Present	226	1.3	36	1.7	9	0.9	7	0.5	34	1.2	38	1.5	16	0.6	38	1.6	48	1.6
Pre-pregnancy hypertension																		
Absent	17,365	96.8	2,042	98.3	999	98.3	1,418	99.2	2,686	97.1	2,507	96.9	2,589	97.8	2,333	95.3	2,781	94.0
Present	565	3.2	35	1.7	17	1.7	10	0.7	79	2.9	77	3.0	58	2.2	115	4.7	174	5.9

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

Appendix Table 5. Pregnancy characteristics of women who had live births by ward, District of Columbia 2019–2020

Characteristic	Total Births		Maternal Residence															
			Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	17,939	100.0	2,077	100.0	1,016	100.0	1,429	100.0	2,766	100.0	2,587	100.0	2,647	100.0	2,448	100.0	2,959	100.0
Trimester Prenatal Care Initiated																		
First Trimester	12,274	68.4	1,528	73.6	817	80.4	1,187	83.1	1,924	69.6	1,724	66.6	2,064	78.0	1,419	58.0	1,606	54.3
Second Trimester	3,823	21.3	387	18.6	152	15.0	172	12.0	554	20.0	580	22.4	408	15.4	671	27.4	896	30.3
Third Trimester	874	4.9	89	4.3	24	2.4	42	2.9	152	5.5	133	5.1	96	3.6	160	6.5	178	6.0
No Prenatal Care	329	1.8	18	0.9	16	1.6	7	0.5	34	1.2	38	1.5	21	0.8	75	3.1	120	4.1
Plurality of birth																		
Singleton	17,366	96.8	2,032	97.8	990	97.4	1,372	96.0	2,688	97.2	2,503	96.8	2,546	96.2	2,361	96.5	2,864	96.8
Twin	539	3.0	42	2.0	26	2.6	48	3.4	72	2.6	78	3.0	98	3.7	83	3.4	92	3.1
Triplet	33	0.2	3	0.1	0	0.0	9	0.6	6	0.2	6	0.2	3	0.1	3	0.1	3	0.1
Smoking during pregnancy																		
Did not smoke during pregnancy	17,353	96.7	2,044	98.4	1,007	99.1	1,419	99.3	2,724	98.5	2,512	97.1	2,607	98.5	2,287	93.4	2,743	92.7
Smoked during pregnancy	381	2.1	15	0.7	5	0.5	6	0.4	21	0.8	38	1.5	25	0.9	117	4.8	154	5.2
Gestational diabetes																		
Absent	17,005	94.8	1,956	94.2	956	94.1	1,369	95.8	2,594	93.8	2,450	94.7	2,532	95.7	2,328	95.1	2,811	95.0
Present	923	5.2	121	5.8	60	5.9	59	4.1	171	6.2	133	5.1	115	4.3	119	4.9	144	4.9
Gestational hypertension																		
Absent	16,419	91.5	1,906	91.8	950	93.5	1,328	92.9	2,554	92.3	2,376	91.8	2,435	92.0	2,218	90.6	2,642	89.3
Present	1,509	8.4	171	8.2	66	6.5	100	7.0	211	7.6	207	8.0	212	8.0	229	9.4	313	10.6
Eclampsia																		
Absent	17,869	99.6	2,072	99.8	1,009	99.3	1,424	99.7	2,761	99.8	2,579	99.7	2,640	99.7	2,441	99.7	2,935	99.2
Present	48	0.3	4	0.2	3	0.3	2	0.1	3	0.1	5	0.2	5	0.2	7	0.3	19	0.6

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

Appendix Table 6. Percentage of preterm and full term births by pre-pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2019–2020

Characteristic	Preterm (<37 weeks gestation)										Not preterm (37 and more weeks of gestation)									
	Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander		Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,816	10.1	433	7.2	1,086	13.1	238	8.8	50	6.0	16,116	89.8	5,565	92.8	7,197	86.8	2,463	91.2	780	94.0
Previous Preterm Birth																				
No, no previous preterm birth	1,545	9.1	410	7.0	868	11.3	211	8.2	48	5.9	15,492	90.9	5,469	93.0	6,779	88.6	2,366	91.8	771	94.1
Yes, previous preterm birth	269	30.7	22	19.1	217	34.6	27	22.3	2	20.0	608	69.3	93	80.9	410	65.4	94	77.7	8	80.0
Pre-pregnancy weight																				
Underweight	56	9.4	6	3.3	43	14.1	5	7.9	2	4.4	542	90.6	174	96.7	263	86.0	58	92.1	44	95.7
Normal Weight	795	9.1	306	7.4	371	13.0	82	7.7	34	5.7	7,900	90.9	3,825	92.6	2,483	87.0	977	92.3	561	94.3
Overweight	411	9.3	78	6.6	258	11.5	63	7.8	9	6.1	3,990	90.6	1,107	93.4	1,975	88.3	741	92.2	139	93.9
Obese	518	13.0	36	8.1	394	14.1	84	12.4	3	8.8	3,463	87.0	410	91.9	2,405	85.9	595	87.6	31	91.2
Smoking prior to pregnancy																				
Did not smoke prior to pregnancy	1,654	9.7	425	7.2	939	12.4	235	8.9	50	6.1	15,438	90.3	5,512	92.8	6,633	87.5	2,410	91.1	776	94.0
Smoked prior to pregnancy	133	20.6	8	14.0	123	22.0	1	4.4	0	0.0	512	79.4	49	86.0	436	78.0	22	95.7	4	100.0
Pre-pregnancy diabetes																				
Absent	1,770	10.0	431	7.2	1,055	13.0	225	8.5	50	6.1	15,928	90.0	5,537	92.8	7,084	87.0	2,427	91.5	769	93.9
Present	45	19.9	2	6.9	30	21.9	13	26.5	0	0.0	181	80.1	27	93.1	107	78.1	36	73.5	11	100.0
Pre-pregnancy hypertension																				
Absent	1,683	9.7	419	7.1	987	12.6	219	8.3	50	6.1	15,676	90.3	5,510	92.9	6,855	87.4	2,429	91.7	773	93.9
Present	132	23.4	14	20.6	98	22.6	19	35.9	0	0.0	433	76.6	54	79.4	336	77.4	34	64.2	7	100.0

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

[a] Percentage of preterm births is significantly higher among mothers who had previous preterm births compared to mothers who did not have previous preterm births (p<0.05).

[b] Percentage of preterm births is significantly higher among normal, overweight, and obese mothers compared to underweight weight mothers (p<0.05).

[c] Percentage of preterm births is significantly higher among obese mothers compared to overweight mothers (p<0.05).

[d] Percentage of preterm births is significantly higher among obese mothers compared to normal weight mothers (p<0.05).

[e] Percentage of preterm births is significantly higher among mothers who smoked prior to pregnancy compared to mothers who did not smoke prior to pregnancy (p<0.05).

[f] Percentage of preterm births is significantly higher among mothers with pre-pregnancy diabetes compared to mothers did not have pre-pregnancy diabetes (p<0.05).

[g] Percentage of preterm births is significantly higher among mothers with pre-pregnancy hypertension compared to mothers did not have pre-pregnancy hypertension (p<0.05).

Appendix Table 7. Percentage of preterm and full term births by pre-pregnancy characteristics of mothers who had live births and ward, District of Columbia 2019–2020

Characteristic	Preterm (<37 weeks gestation)															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	162	7.8	71	7.0	137	9.6	225	8.1	256	9.9	231	8.7	327	13.4	407	13.8
Previous Preterm Birth																
No, no previous preterm birth	145	7.2	66	6.6	131	9.4	204	7.7	217	8.9	209	8.2	258	11.5	315	11.6
Yes, previous preterm birth	17	23.0	5	35.7	5	18.5	21	20.0	39	29.3	22	27.5	69	34.7	91	37.1
Pre-pregnancy weight																
Underweight	3	5.2	2	4.1	5	8.5	3	4.1	11	14.3	7	8.6	9	13.6	16	11.9
Normal Weight	87	7.4	48	6.9	94	9.4	94	7.3	108	9.3	113	7.3	111	13.0	140	14.6
Overweight	38	8.0	12	6.6	20	7.8	61	7.7	65	9.3	58	9.4	73	11.6	84	11.3
Obese	32	9.5	6	8.2	14	14.3	61	11.1	69	11.3	50	13.6	132	15.3	154	14.3
Smoking prior to pregnancy																
Did not smoke prior to pregnancy	153	7.6	68	6.8	133	9.4	218	8.1	235	9.5	217	8.4	278	12.5	352	13.2
Smoked prior to pregnancy	7	19.4	2	25.0	2	22.2	5	11.4	19	23.8	10	19.6	44	24.7	44	18.4
Pre-pregnancy diabetes																
Absent	157	7.7	70	7.0	135	9.5	216	7.9	250	9.8	230	8.7	318	13.2	394	13.6
Present	5	13.9	1	11.1	2	28.6	9	26.5	6	15.8	1	6.3	9	23.7	12	25.0
Pre-pregnancy hypertension																
Absent	151	7.4	66	6.6	136	9.6	205	7.6	247	9.9	218	8.4	298	12.8	362	13.0
Present	11	31.4	5	29.4	1	10.0	20	25.3	9	11.7	13	22.4	29	25.2	44	25.3

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

Appendix Table 7 (cont). Percentage of preterm and full term births by pre-pregnancy characteristics of mothers who had live births and ward, District of Columbia 2019–2020

Characteristic	Not preterm (37 and more weeks of gestation)															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,915	92.2	945	93.0	1,292	90.4	2,541	91.9	2,327	90.0	2,416	91.3	2,119	86.6	2,551	86.2
Previous Preterm Birth																
No, no previous preterm birth	1,857	92.8	932	93.4	1,268	90.6	2,455	92.3	2,231	91.0	2,356	91.9	1,988	88.4	2,395	88.3
Yes, previous preterm birth	57	77.0	9	64.3	22	81.5	84	80.0	94	70.7	58	72.5	130	65.3	154	62.9
Pre-pregnancy weight																
Underweight	55	94.8	47	95.9	54	91.5	70	95.9	66	85.7	74	91.4	57	86.4	119	88.2
Normal Weight	1,082	92.6	653	93.2	910	90.6	1,200	92.7	1,049	90.6	1,438	92.7	746	87.1	820	85.4
Overweight	439	92.0	169	93.4	236	92.2	733	92.3	636	90.5	558	90.6	558	88.3	657	88.5
Obese	306	90.5	67	91.8	84	85.7	487	88.9	543	88.7	318	86.4	731	84.7	923	85.7
Smoking prior to pregnancy																
Did not smoke prior to pregnancy	1,872	92.4	936	93.2	1,283	90.6	2,484	91.9	2,236	90.4	2,364	91.6	1,946	87.5	2,307	86.7
Smoked prior to pregnancy	29	80.6	6	75.0	7	77.8	39	88.6	61	76.3	41	80.4	134	75.3	195	81.6
Pre-pregnancy diabetes																
Absent	1,884	92.3	937	93.1	1,286	90.5	2,515	92.1	2,293	90.1	2,401	91.3	2,090	86.7	2,512	86.4
Present	31	86.1	8	88.9	5	71.4	25	73.5	32	84.2	15	93.8	29	76.3	36	75.0
Pre-pregnancy hypertension																
Absent	1,891	92.6	933	93.4	1,282	90.4	2,481	92.4	2,257	90.0	2,371	91.6	2,033	87.1	2,418	87.0
Present	24	68.6	12	70.6	9	90.0	59	74.7	68	88.3	45	77.6	86	74.8	130	74.7

Appendix Table 8. Percentage of preterm births by pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2019–2020

Characteristic	Preterm (<37 weeks gestation)										Not preterm (37 and more weeks of gestation)									
	Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander		Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,816	10.1	433	7.2	1,086	13.1	238	8.8	50	6.0	16,116	89.8	5,565	92.8	7,197	86.8	2,463	91.2	780	94.0
Trimester Prenatal Care Initiated																				
First Trimester	1,171	9.5	369	7.2	602	13.2	157	8.6	38	5.6	11,102	90.5	4,748	92.8	3,973	86.8	1,673	91.4	636	94.4
Second Trimester	390	10.2	47	6.9	282	11.8	51	8.4	8	7.0	3,433	89.8	636	93.1	2,111	88.2	557	91.6	107	93.0
Third Trimester	56	6.4	4	3.1	43	7.5	7	5.1	1	3.7	818	93.6	124	96.9	530	92.5	131	94.9	26	96.3
No Prenatal Care	97	29.5	5	29.4	85	30.1	3	15.0	3	60.0	229	69.6	12	70.6	194	68.8	17	85.0	2	40.0
Plurality of birth																				
Singleton	1,486	8.6	329	5.7	901	11.3	202	7.7	45	5.5	15,874	91.4	5,479	94.3	7,078	88.6	2,434	92.3	772	94.5
Twin	297	55.1	86	50.0	173	59.3	33	53.2	5	38.5	242	44.9	86	50.0	119	40.8	29	46.8	8	61.5
Triplet	33	100.0	18	100.0	12	100.0	3	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Smoking during pregnancy																				
Did not smoke during pregnancy	1,704	9.8	426	7.1	988	12.7	235	8.9	50	6.0	15,644	90.2	5,539	92.9	6,800	87.3	2,420	91.2	778	94.0
Smoked during pregnancy	82	21.5	6	21.4	74	22.0	1	8.3	0	0.0	299	78.5	22	78.6	263	78.0	11	91.7	2	100.0
Gestational diabetes																				
Absent	1,689	9.9	408	7.0	1,021	13.0	209	8.4	43	5.8	15,310	90.0	5,384	93.0	6,830	86.9	2,284	91.6	702	94.2
Present	125	13.5	25	12.2	63	14.9	29	13.9	7	8.2	798	86.5	180	87.8	360	85.1	179	86.1	78	91.8
Gestational hypertension																				
Absent	1,518	9.3	353	6.4	901	12.1	211	8.3	44	5.6	14,895	90.7	5,178	93.6	6,549	87.8	2,319	91.7	744	94.4
Present	296	19.6	80	17.2	183	22.2	27	15.8	6	14.3	1,213	80.4	386	82.8	641	77.8	144	84.2	36	85.7
Eclampsia																				
Absent	1,799	10.1	430	7.2	1,075	13.0	236	8.8	49	5.9	16,064	89.9	5,556	92.8	7,167	86.9	2,454	91.2	777	94.1
Present	15	31.3	2	25.0	10	34.5	2	25.0	1	33.3	33	68.8	6	75.0	19	65.5	6	75.0	2	66.7

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Percentage of preterm births is significantly higher among mothers who had no prenatal care compared to mothers who initiated prenatal care in the first ($p<0.05$), second ($p<0.05$), and third trimester ($p<0.05$).

[b] Percentage of preterm births is significantly higher among mothers who had initiated prenatal care during the first trimester or second trimester compared to mothers who initiated prenatal care in the third trimester ($p<0.05$ for all comparisons).

[c] Percentage of preterm births is significantly higher among twin births compared to singleton births ($p<0.05$).

[d] Percentage of preterm births is significantly higher among mothers who smoked during pregnancy compared to mothers who did not smoke during pregnancy ($p<0.05$).

[e] Percentage of preterm births is significantly higher among mothers who had gestational diabetes compared to mothers who did not have gestational diabetes ($p<0.05$).

[f] Percentage of preterm births is significantly higher among mothers who had gestational hypertension compared to mothers who did not have gestational hypertension ($p<0.05$).

[g] Percentage of preterm births is significantly higher among mothers who had eclampsia compared to mothers who did not have eclampsia ($p<0.05$).

Appendix Table 9. Percentage of preterm births by pregnancy characteristics of mothers who had live births and ward, District of Columbia 2019–2020

Characteristic	Preterm (<37 weeks gestation)															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	162	7.8	71	7.0	137	9.6	225	8.1	256	9.9	231	8.7	327	13.4	407	13.8
Trimester Prenatal Care Initiated																
First Trimester	119	7.8	56	6.9	112	9.4	153	8.0	146	8.5	172	8.3	192	13.5	221	13.8
Second Trimester	26	6.7	9	5.9	15	8.7	44	7.9	72	12.4	35	8.6	84	12.5	105	11.7
Third Trimester	6	6.7	1	4.2	1	2.4	9	5.9	9	6.8	5	5.2	13	8.1	12	6.7
No Prenatal Care	3	16.7	5	31.3	5	71.4	7	20.6	12	31.6	8	38.1	20	26.7	37	30.8
Plurality of birth																
Singleton	138	6.8	57	5.8	96	7.0	193	7.2	198	7.9	186	7.3	276	11.7	342	11.9
Twin	21	50.0	14	53.9	32	66.7	26	36.1	52	66.7	42	42.9	48	57.8	62	67.4
Triplet	3	100.0	0	0.0	9	100.0	6	100.0	6	100.0	3	100.0	3	100.0	3	100.0
Smoking during pregnancy																
Did not smoke during pregnancy	156	7.6	69	6.9	133	9.4	220	8.1	246	9.8	224	8.6	289	12.6	367	13.4
Smoked during pregnancy	4	26.7	1	20.0	2	33.3	3	14.3	9	23.7	3	12.0	32	27.4	28	18.2
Gestational diabetes																
Absent	153	7.8	64	6.7	130	9.5	206	7.9	234	9.6	215	8.5	308	13.2	379	13.5
Present	9	7.4	7	11.7	7	11.9	19	11.1	21	15.8	16	13.9	19	16.0	27	18.8
Gestational hypertension																
Absent	131	6.9	61	6.4	116	8.7	186	7.3	216	9.1	197	8.1	278	12.5	333	12.6
Present	31	18.1	10	15.2	21	21.0	39	18.5	39	18.8	34	16.0	49	21.4	73	23.3
Eclampsia																
Absent	160	7.7	70	6.9	135	9.5	225	8.2	256	9.9	229	8.7	322	13.2	402	13.7
Present	2	50.0	1	33.3	1	50.0	0	0.0	0	0.0	2	40.0	5	71.4	4	21.1

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

Appendix Table 9 (cont). Percentage of preterm births by pregnancy characteristics of mothers who had live births and ward, District of Columbia 2019–2020

Characteristic	Not preterm (37 and more weeks of gestation)															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,915	92.2	945	93.0	1,292	90.4	2,541	91.9	2,327	90.0	2,416	91.3	2,119	86.6	2,551	86.2
Trimester Prenatal Care Initiated																
First Trimester	1,409	92.2	761	93.2	1,075	90.6	1,771	92.1	1,578	91.5	1,892	91.7	1,227	86.5	1,384	86.2
Second Trimester	361	93.3	143	94.1	157	91.3	510	92.1	508	87.6	373	91.4	587	87.5	791	88.3
Third Trimester	83	93.3	23	95.8	41	97.6	143	94.1	124	93.2	91	94.8	147	91.9	166	93.3
No Prenatal Care	15	83.3	11	68.8	2	28.6	27	79.4	24	63.2	13	61.9	54	72.0	83	69.2
Plurality of birth																
Singleton	1,894	93.2	933	94.2	1,276	93.0	2,495	92.8	2,301	91.9	2,360	92.7	2,084	88.3	2,521	88.0
Twin	21	50.0	12	46.2	16	33.3	46	63.9	26	33.3	56	57.1	35	42.2	30	32.6
Triplet	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Smoking during pregnancy																
Did not smoke during pregnancy	1,888	92.4	938	93.2	1,286	90.6	2,504	91.9	2,263	90.1	2,383	91.4	1,997	87.3	2,375	86.6
Smoked during pregnancy	11	73.3	4	80.0	4	66.7	18	85.7	29	76.3	22	88.0	85	72.7	126	81.8
Gestational diabetes																
Absent	1,803	92.2	892	93.3	1,239	90.5	2,388	92.1	2,213	90.3	2,317	91.5	2,018	86.7	2,431	86.5
Present	112	92.6	53	88.3	52	88.1	152	88.9	112	84.2	99	86.1	100	84.0	117	81.3
Gestational hypertension																
Absent	1,775	93.1	889	93.6	1,212	91.3	2,368	92.7	2,157	90.8	2,238	91.9	1,938	87.4	2,308	87.4
Present	140	81.9	56	84.9	79	79.0	172	81.5	168	81.2	178	84.0	180	78.6	240	76.7
Eclampsia																
Absent	1,912	92.3	939	93.1	1,289	90.5	2,536	91.9	2,320	90.0	2,411	91.3	2,117	86.7	2,532	86.3
Present	2	50.0	2	66.7	1	50.0	3	100.0	5	100.0	3	60.0	2	28.6	15	79.0

Appendix Table 10. Percentage of low birthweight births by pre-pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2019–2020

Characteristic	Low Birthweight Births										Normal Birthweight Births									
	Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander		Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,746	9.7	354	5.9	1,137	13.7	183	6.8	62	7.5	16,191	90.3	5,644	94.1	7,151	86.3	2,518	93.2	768	92.5
Previous Preterm Birth																				
No, no previous preterm birth	1,531	9.0	342	5.8	953	12.5	165	6.4	61	7.4	15,510	91.0	5,537	94.2	6,698	87.5	2,412	93.6	758	92.6
Yes, previous preterm birth	212	24.2	12	10.4	181	28.9	18	14.9	1	10.0	665	75.8	103	89.6	446	71.1	103	85.1	9	90.0
Pre-pregnancy weight																				
Underweight	68	11.4	5	2.8	56	18.3	4	6.3	2	4.3	530	88.6	175	97.2	250	81.7	59	93.7	44	95.7
Normal Weight	820	9.4	255	6.2	446	15.6	66	6.2	50	8.4	7,875	90.6	3,876	93.8	2,408	84.3	993	93.8	545	91.6
Overweight	370	8.4	56	4.7	246	11.0	57	7.1	7	4.7	4,035	91.6	1,129	95.3	1,991	89.0	747	92.9	141	95.3
Obese	457	11.5	31	7.0	370	13.2	54	8.0	1	2.9	3,523	88.5	415	93.0	2,428	86.7	625	92.0	33	97.1
Smoking prior to pregnancy																				
Did not smoke prior pregnancy	1,560	9.1	345	5.8	967	12.8	180	6.8	62	7.5	15,535	90.9	5,592	94.2	6,608	87.2	2,465	93.2	764	92.5
Smoked prior to pregnancy	148	22.9	9	15.8	137	24.5	1	4.3	0	0.0	497	77.1	48	84.2	422	75.5	22	95.7	4	100.0
Pre-pregnancy diabetes																				
Absent	1,716	9.7	354	5.9	1,113	13.7	177	6.7	62	7.6	15,987	90.3	5,614	94.1	7,031	86.3	2,475	93.3	757	92.4
Present	26	11.5	0	0.0	20	14.6	6	12.2	0	0.0	199	88.1	29	100.0	116	84.7	43	87.8	11	100.0
Pre-pregnancy hypertension																				
Absent	1,615	9.3	343	5.8	1,040	13.3	163	6.2	60	7.3	15,748	90.7	5,586	94.2	6,806	86.7	2,485	93.8	763	92.7
Present	127	22.5	11	16.2	93	21.4	20	37.7	2	28.6	438	77.5	57	83.8	341	78.6	33	62.3	5	71.4

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Note: A low birthweight live birth is defined as a birth of an infant less than 2500 grams. Underweight is defined as a BMI<18.5; Normal weight is defined as a BMI between 18.5 and 24.9; overweight is defined as a BMI between 25 and 29.9; obese is defined as BMI of 30 and greater.

[a] The percentage of low birthweight live births was greater among mothers with previous preterm births compared to mothers with no preterm births (p<0.05).

[b] The percentage of low birthweight live births was greater among underweight mothers compared to mothers in this category of weight (p<0.05).

[c] The percentage of low birthweight live births was greater among normal weight mothers compared to mothers in this weight category (p<0.05).

[d] The percentage of low birthweight live births was greater among obese mothers compared to mothers in this category (p<0.05).

[e] The percentage of low birthweight live births was greater among overweight mothers compared to mothers in this category (p<0.05).

[f] The percentage of low birthweight live births was greater among mothers who smoked prior to pregnancy compared to those mothers who did not (p<0.05).

[g] The percentage of low birthweight live births was greater among mothers with pre-pregnancy diabetes than those without pre-pregnancy diabetes (p<0.05).

[h] The percentage of low birthweight live births was greater among mothers with pre-pregnancy hypertension than those without pre-pregnancy hypertension (p<0.05).

Appendix Table 11. Percentage of low birthweight births by pre-pregnancy characteristics of mothers who had live births and ward, District of Columbia 2019–2020

Characteristic	Low Birthweight Births															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	152	7.3	65	6.4	94	6.6	218	7.9	252	9.7	216	8.2	332	13.6	417	14.1
Previous Preterm Birth																
No, no previous preterm birth	138	6.9	62	6.2	91	6.5	201	7.6	222	9.1	200	7.8	277	12.3	340	12.5
Yes, previous preterm birth	14	18.9	3	21.4	3	11.1	16	15.2	29	21.8	16	20.0	55	27.6	76	31.0
Pre-pregnancy weight																
Underweight	4	6.9	2	4.1	1	1.7	2	2.7	16	20.8	10	12.3	9	13.6	24	17.8
Normal Weight	85	7.3	42	6.0	73	7.3	104	8.0	107	9.2	123	7.9	133	15.5	153	15.9
Overweight	35	7.3	15	8.3	8	3.1	59	7.4	61	8.7	45	7.3	67	10.6	80	10.8
Obese	26	7.7	3	4.1	9	9.2	50	9.1	64	10.5	36	9.8	119	13.8	150	13.9
Smoking prior to pregnancy																
Did not smoke prior to pregnancy	142	7.0	62	6.2	92	6.5	210	7.8	226	9.1	201	7.8	272	12.2	355	13.3
Smoked prior to pregnancy	7	19.4	2	25.0	1	11.1	7	15.9	22	27.5	12	23.5	50	28.1	47	19.7
Pre-pregnancy diabetes																
Absent	149	7.3	64	6.4	94	6.6	210	7.7	248	9.7	216	8.2	328	13.6	407	14.0
Present	3	8.3	1	11.1	0	0.0	7	20.6	3	7.9	0	0.0	4	10.5	8	16.7
Pre-pregnancy hypertension																
Absent	140	6.9	60	6.0	93	6.6	198	7.4	237	9.5	204	7.9	307	13.2	376	13.5
Present	12	34.3	5	29.4	1	10.0	19	24.1	14	18.2	12	20.7	25	21.7	39	22.4

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Note: A low birthweight live birth is defined as a birth of an infant less than 2500 grams. Underweight is defined as a BMI<18.5; Normal weight is defined as a BMI between 18.5 and 24.9; overweight is defined as a BMI between 25 and 29.9; obese is defined as BMI of 30 and greater.

Appendix Table 11 (cont). Percentage of low birthweight births by pre-pregnancy characteristics of mothers who had live births and ward, District of Columbia 2019–2020

Characteristic	Normal Birthweight Births															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,925	92.7	951	93.6	1,335	93.4	2,548	92.1	2,335	90.3	2,430	91.8	2,115	86.4	2,542	85.9
Previous Preterm Birth																
No, no previous preterm birth	1,864	93.1	936	93.8	1,308	93.5	2,458	92.4	2,229	90.9	2,364	92.2	1,970	87.6	2,371	87.5
Yes, previous preterm birth	60	81.1	11	78.6	24	88.9	89	84.8	104	78.2	64	80.0	144	72.4	169	69.0
Pre-pregnancy weight																
Underweight	54	93.1	47	95.9	58	98.3	71	97.3	61	79.2	71	87.7	57	86.4	111	82.2
Normal Weight	1,084	92.7	659	94.0	931	92.7	1,190	92.0	1,051	90.8	1,427	92.0	724	84.5	807	84.1
Overweight	442	92.7	166	91.7	248	96.9	735	92.6	642	91.3	571	92.7	565	89.4	662	89.2
Obese	312	92.3	70	95.9	89	90.8	498	90.9	548	89.5	332	90.2	743	86.1	927	86.1
Smoking prior to pregnancy																
Did not smoke prior to pregnancy	1,883	93.0	942	93.8	1,324	93.5	2,492	92.2	2,248	90.9	2,379	92.2	1,952	87.7	2,305	86.7
Smoked prior to pregnancy	29	80.6	6	75.0	8	88.9	37	84.1	58	72.5	39	76.5	128	71.9	192	80.3
Pre-pregnancy diabetes																
Absent	1,892	92.7	943	93.6	1,327	93.4	2,521	92.3	2,298	90.3	2,414	91.8	2,082	86.4	2,500	86.0
Present	33	91.7	8	88.9	7	100.0	27	79.4	35	92.1	16	100.0	33	86.8	40	83.3
Pre-pregnancy hypertension																
Absent	1,902	93.1	939	94.0	1,325	93.4	2,488	92.6	2,270	90.5	2,384	92.1	2,025	86.8	2,405	86.5
Present	23	65.7	12	70.6	9	90.0	60	75.9	63	81.8	46	79.3	90	78.3	135	77.6

Appendix Table 12. Percentage of low birthweight births by pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2019–2020

Characteristic	Low Birthweight Births										Normal Birthweight Births									
	Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander		Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,746	9.7	354	5.9	1,137	13.7	183	6.8	62	7.5	16,191	90.3	5,644	94.1	7,151	86.3	2,518	93.2	768	92.5
Trimester Prenatal Care Initiated																				
First Trimester	1,076	8.8	307	6.0	607	13.3	112	6.1	45	6.7	11,198	91.2	4,810	94.0	3,969	86.7	1,718	93.9	629	93.3
Second Trimester	412	10.8	33	4.8	328	13.7	39	6.4	10	8.7	3,410	89.2	650	95.2	2,064	86.3	569	93.6	105	91.3
Third Trimester	58	6.6	3	2.3	46	8.0	6	4.3	3	11.1	816	93.4	125	97.7	527	92.0	132	95.7	24	88.9
No Prenatal Care	94	28.6	4	23.5	81	28.7	3	15.0	3	60.0	235	71.4	13	76.5	201	71.3	17	85.0	2	40.0
Plurality of birth																				
Singleton	1,431	8.2	259	4.5	951	11.9	155	5.9	56	6.9	15,934	91.8	5,549	95.5	7,033	88.1	2,481	94.1	761	93.1
Twin	284	52.7	78	45.3	175	59.9	25	40.3	6	46.2	254	47.1	94	54.7	116	39.7	37	59.7	7	53.8
Triplet	31	93.9	17	94.4	11	91.7	3	100.0	0	0.0	2	6.1	1	5.6	1	8.3	0	0.0	0	0.0
Smoking during pregnancy																				
Did not smoke during pregnancy	1,613	9.3	348	5.8	1,017	13.1	180	6.8	62	7.5	15,738	90.7	5,617	94.2	6,774	86.9	2,475	93.2	766	92.5
Smoked during pregnancy	93	24.4	4	14.3	87	25.8	1	8.3	0	0.0	288	75.6	24	85.7	250	74.2	11	91.7	2	100.0
Gestational diabetes																				
Absent	1,643	9.7	329	5.7	1,082	13.8	164	6.6	58	7.8	15,360	90.3	5,463	94.3	6,773	86.2	2,329	93.4	687	92.2
Present	98	10.6	25	12.2	50	11.8	19	9.1	4	4.7	825	89.4	180	87.8	373	88.2	189	90.9	81	95.3
Gestational hypertension																				
Absent	1,434	8.7	283	5.1	930	12.5	156	6.2	55	7.0	14,984	91.3	5,248	94.9	6,525	87.5	2,374	93.8	733	93.0
Present	307	20.3	71	15.2	202	24.5	27	15.8	7	16.7	1,201	79.6	395	84.8	621	75.4	144	84.2	35	83.3
Eclampsia																				
Absent	1,725	9.7	350	5.8	1,125	13.6	180	6.7	60	7.3	16,143	90.3	5,636	94.2	7,122	86.3	2,510	93.3	766	92.7
Present	17	35.4	4	50.0	8	27.6	3	37.5	2	66.7	31	64.6	4	50.0	21	72.4	5	62.5	1	33.3

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Note: A low birthweight live birth is defined as a birth of an infant less than 2500 grams.

[a] The percentage of low birthweight live births was greater among mothers with no prenatal care compared to mothers who initiated prenatal care during the first trimester ($p<0.05$), second trimester ($p<0.05$), and third trimester ($p<0.05$).

[b] The percentage of low birthweight live births was greater among mothers who initiated prenatal care during this specific trimester compared to mothers who initiated prenatal care during the third trimester ($p<0.05$ for all comparisons).

[c] The percentage of low birthweight live births was greater among twin births compared to singleton births ($p<0.05$).

[d] The percentage of low birthweight live births was greater among mothers who smoked during pregnancy compared to mothers who did not smoke during ($p<0.05$).

[e] The percentage of low birthweight live births was greater among mothers with gestational diabetes compared to those without gestational diabetes ($p<0.05$).

[f] The percentage of low birthweight live births was greater among mothers with gestational hypertension compared to those without gestational hypertension ($p<0.05$).

[g] The percentage of low birthweight live births was greater among mothers with eclampsia compared to those without eclampsia ($p<0.05$).

Appendix Table 13. Percentage of low birthweight births by pregnancy characteristics of mothers who had live births and ward, District of Columbia 2019–2020

Characteristic	Low Birthweight Births															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	152	7.3	65	6.4	94	6.6	218	7.9	252	9.7	216	8.2	332	13.6	417	14.1
Trimester Prenatal Care Initated																
First Trimester	105	6.9	51	6.2	78	6.6	140	7.3	149	8.6	151	7.3	183	12.9	219	13.6
Second Trimester	32	8.3	7	4.6	8	4.7	45	8.1	66	11.4	45	11.0	92	13.7	117	13.1
Third Trimester	3	3.4	1	4.2	2	4.8	10	6.6	12	9.0	5	5.2	13	8.1	12	6.7
No Prenatal Care	3	16.7	5	31.3	4	57.1	5	14.7	8	21.1	5	23.8	27	36.0	37	30.8
Plurality of birth																
Singleton	130	6.4	51	5.2	65	4.7	182	6.8	197	7.9	172	6.8	281	11.9	353	12.3
Twin	19	45.2	14	53.8	21	43.8	31	43.1	49	62.8	41	41.8	48	57.8	61	66.3
Triplet	3	100.0	0	0.0	8	88.9	5	83.3	6	100.0	3	100.0	3	100.0	3	100.0
Smoking during pregnancy																
Did not smoke during pregnancy	143	7.0	63	6.3	92	6.5	213	7.8	239	9.5	208	8.0	285	12.5	370	13.5
Smoked during pregnancy	5	33.3	1	20.0	1	16.7	3	14.3	10	26.3	5	20.0	36	30.8	32	20.8
Gestational diabetes																
Absent	142	7.3	58	6.1	89	6.5	205	7.9	232	9.5	204	8.1	319	13.7	394	14.0
Present	10	8.3	7	11.7	5	8.5	12	7.0	18	13.5	12	10.4	13	10.9	21	14.6
Gestational hypertension																
Absent	121	6.3	53	5.6	74	5.6	181	7.1	209	8.8	184	7.6	280	12.6	332	12.6
Present	31	18.1	12	18.2	20	20.0	36	17.1	41	19.8	32	15.1	52	22.7	83	26.5
Eclampsia																
Absent	149	7.2	64	6.3	93	6.5	217	7.9	250	9.7	213	8.1	329	13.5	410	14.0
Present	3	75.0	1	33.3	1	50.0	0	0.0	1	20.0	3	60.0	3	42.9	5	26.3

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.
Note: A low birthweight live birth is defined as a birth of an infant less than 2500 grams.

Appendix Table 13. (cont). Percentage of low birthweight births by pregnancy characteristics of mothers who had live births and ward, District of Columbia 2019–2020

Characteristic	Normal Birthweight Births															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,925	92.7	951	93.6	1,335	93.4	2,548	92.1	2,335	90.3	2,430	91.8	2,115	86.4	2,542	85.9
Trimester Prenatal Care Initated																
First Trimester	1,423	93.1	766	93.8	1,109	93.4	1,784	92.7	1,575	91.4	1,913	92.7	1,236	87.1	1,387	86.4
Second Trimester	355	91.7	145	95.4	164	95.3	509	91.9	514	88.6	362	88.7	579	86.3	779	86.9
Third Trimester	86	96.6	23	95.8	40	95.2	142	93.4	121	91.0	91	94.8	147	91.9	166	93.3
No Prenatal Care	15	83.3	11	68.8	3	42.9	29	85.3	30	78.9	16	76.2	48	64.0	83	69.2
Plurality of birth																
Singleton	1,902	93.6	939	94.8	1,307	95.3	2,506	93.2	2,306	92.1	2,373	93.2	2,080	88.1	2,511	87.7
Twin	23	54.8	12	46.2	27	56.3	41	56.9	29	37.2	57	58.2	34	41.0	31	33.7
Triplet	0	0.0	0	0.0	1	11.1	1	16.7	0	0.0	0	0.0	0	0.0	0	0.0
Smoking during pregnancy																
Did not smoke during pregnancy	1,901	93.0	944	93.7	1,327	93.5	2,511	92.2	2,273	90.5	2,398	92.0	2,001	87.5	2,373	86.5
Smoked during pregnancy	10	66.7	4	80.0	5	83.3	18	85.7	28	73.7	20	80.0	81	69.2	122	79.2
Gestational diabetes																
Absent	1,814	92.7	898	93.9	1,280	93.5	2,389	92.1	2,218	90.5	2,327	91.9	2,008	86.3	2,417	86.0
Present	111	91.7	53	88.3	54	91.5	159	93.0	115	86.5	103	89.6	106	89.1	123	85.4
Gestational hypertension																
Absent	1,785	93.7	897	94.4	1,254	94.4	2,373	92.9	2,167	91.2	2,251	92.4	1,937	87.3	2,310	87.4
Present	140	81.9	54	81.8	80	80.0	175	82.9	166	80.2	179	84.4	177	77.3	230	73.5
Eclampsia																
Absent	1,923	92.8	945	93.7	1,331	93.5	2,544	92.1	2,329	90.3	2,427	91.9	2,111	86.5	2,525	86.0
Present	1	25.0	2	66.7	1	50.0	3	100.0	4	80.0	2	40.0	4	57.1	14	73.7

Appendix Table 14. Annual infant mortality rates by maternal race and ethnicity, District of Columbia 2014–2020

Year	Overall			non-Hispanic, White			non-Hispanic, Black			Hispanic		
	Number of Births	Number of Deaths	Infant Mortality Rate (per 1,000 persons)	Number of Births	Number of Deaths	Infant Mortality Rate (per 1,000 persons)	Number of Births	Number of Deaths	Infant Mortality Rate (per 1,000 persons)	Number of Births	Number of Deaths	Infant Mortality Rate (per 1,000 persons)
2014	9,513	72	7.6	2,943	11	3.7	4,755	50	10.5	1,283	6	4.7
2015	9,571	82	8.6	2,957	7	2.4	4,781	65	13.6	1,324	9	6.8
2016	9,854	70	7.1	3,093	7	2.3	4,869	55	11.3	1,346	5	3.7
2017	9,559	77	8.1	3,061	13	4.2	4,646	53	11.4	1,336	6	4.5
2018	9,212	64	6.9	3,058	1	0.3	4,323	51	11.8	1,296	4	3.1
2019	9,070	45	5.0	3,022	4	1.3	4,225	38	9.0	1,352	3	2.2
2020	8,869	40	4.5	2,976	4	1.3	4,065	22	5.4	1,349	5	3.7

Data Source: DC Births and Deaths, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

SECTION 2

2017/2018

TABLES

2017–2018

Table 1. Distribution of payer type by birth order and maternal age, District of Columbia 2017–2018

	Total Births		Maternal Age			
			Less than 20 years		20 years and older	
	N	%	N	%	N	%
Total births by birth order [a]						
Total births to first-time mothers	8,524	45.4	651	81.7	7,871	43.8
Total births to mothers of higher order births	10,236	54.5	144	18.1	10,090	56.2
Payer type among mothers by birth order						
Total births to first-time mothers:						
Medicaid	2,587	30.4	553	85.0	2,034	25.8
Private Insurance	5,409	63.5	48	7.4	5,359	68.1
Other	522	6.1	49	7.5	473	6.0
Total births to mothers of higher order births:						
Medicaid	5,464	53.4	119	82.6	5,344	53.0
Private Insurance	3,831	37.4	9	6.3	3,822	37.9
Other	926	9.1	16	11.1	910	9.0

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Percent is based on a denominator including first-time and higher order births.

Table 2. Pre-pregnancy characteristics of women who had live births overall and by maternal race and ethnicity, District of Columbia, 2017–2018

Characteristic	Total Births		Maternal Race/Ethnicity [a]							
			non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander	
	N	%	N	%	N	%	N	%	N	%
Total Births	18,771	100.0	6,119	100.0	8,969	100.0	2,632	100.0	905	100.0
Previous Preterm Birth										
No, no previous preterm birth	18,013	96.0	6,013	98.3	8,448	94.2	2,517	95.6	891	98.5
Yes, previous preterm birth	730	3.9	88	1.4	515	5.7	113	4.3	12	1.3
Pre-pregnancy weight										
Underweight	851	4.5	300	4.9	388	4.3	81	3.1	73	8.1
Normal Weight	9,546	50.9	4,271	69.8	3,425	38.2	1,104	42.0	671	74.1
Overweight	4,218	22.5	1,051	17.2	2,259	25.2	773	29.4	107	11.8
Obese	3,792	20.2	381	6.2	2,769	30.9	578	22.0	38	4.2
Smoking prior to pregnancy										
Did not smoke prior to pregnancy	17,870	95.2	6,054	98.9	8,200	91.4	2,586	98.3	894	98.8
Smoked prior to pregnancy	794	4.2	55	0.9	679	7.6	41	1.6	11	1.2
Pre-pregnancy diabetes										
Absent	18,608	99.1	6,099	99.7	8,863	98.8	2,603	98.9	898	99.2
Present	158	0.8	19	0.3	102	1.1	29	1.1	7	0.8
Pre-pregnancy hypertension										
Absent	18,326	97.6	6,043	98.8	8,654	96.5	2,588	98.3	898	99.2
Present	438	2.3	75	1.2	309	3.5	44	1.7	7	0.8

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Other non-Hispanic race-ethnic categories are not presented due to small sample size.

Table 3. Pregnancy characteristics of women who had live births overall and by maternal race and ethnicity, District of Columbia, 2017–2018

Characteristic	DC Overall		Maternal Race/Ethnicity [a]							
			non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander	
	N	%	N	%	N	%	N	%	N	%
Total Births	18,771	100.0	6,119	100.0	8,969	100.0	2,632	100.0	905	100.0
Trimester Prenatal Care Initiated										
First Trimester	12,727	67.8	5,261	86.0	4,811	53.6	1,826	69.4	734	81.1
Second Trimester	4,222	22.5	694	11.3	2,757	30.7	600	22.8	135	14.9
Third Trimester	1,019	5.4	90	1.5	775	8.6	124	4.7	21	2.3
No Prenatal Care	449	2.4	25	0.4	392	4.4	28	1.1	1	0.1
Plurality of birth										
Singleton	18,085	96.4	5,898	96.4	8,601	95.9	2,565	97.5	881	97.4
Twin	672	3.6	216	3.5	359	4.0	67	2.6	24	2.7
Triplet	13	0.1	5	0.1	8	0.1	0	0.0	0	0.0
Smoked during pregnancy										
Did not smoke during pregnancy	18,179	96.9	6,088	99.5	8,433	94.0	2,615	99.4	902	99.7
Smoked during pregnancy	489	2.6	20	0.3	452	5.0	12	0.5	3	0.3
Gestational diabetes										
Absent	18,085	96.4	5,954	97.3	8,636	96.3	2,486	94.5	870	96.1
Present	681	3.6	164	2.7	329	3.7	146	5.6	35	3.9
Gestational hypertension										
Absent	17,717	94.4	5,812	95.0	8,399	93.6	2,503	95.1	865	95.6
Present	1,048	5.6	306	5.0	565	6.3	129	4.9	40	4.4
Eclampsia										
Absent	18,693	99.6	6,098	99.7	8,925	99.5	2,624	99.7	902	99.7
Present	57	0.3	15	0.3	34	0.4	6	0.2	1	0.1

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Other non-Hispanic race-ethnic categories are not presented due to small sample size.

Table 4. Percentage of preterm births by maternal characteristics among live births in District of Columbia, 2017–2018

Characteristic	Total Births	Gestational Age			
		Preterm (<37 weeks gestation)		Not preterm (37 and more weeks of gestation)	
	N	N	%	N	%
Total Births	18,771	1,946	10.4	16,809	89.6
Maternal Race and Ethnicity [a]					
non-Hispanic, White	6,119	400	6.5	5,715	93.4
non-Hispanic, Black [b]	8,969	1,223	13.6	7,735	86.2
Hispanic	2,632	249	9.5	2,382	90.5
non-Hispanic, Asian/Pacific Islander	905	55	6.1	850	93.9
Age of Mother (years)					
Less than 20 years [c]	797	102	12.8	694	87.1
20-24 years	2,698	290	10.8	2,403	89.1
25-29 years	3,827	449	11.7	3,376	88.2
30-34 years	6,056	570	9.4	5,484	90.6
35-39 years	4,343	424	9.8	3,914	90.1
40 years and older	1,046	110	10.5	935	89.4
Marital Status					
Not Married [d]	8,813	1,175	13.3	7,630	86.6
Married	9,902	764	7.7	9,132	92.2
Mother's Education Level					
Less than High School	2,338	300	12.8	2,036	87.1
High School Graduate [e]	4,101	558	13.6	3,538	86.3
More than High School Education	12,180	1,053	8.7	11,118	91.3
Insurance Type					
Medicaid [f]	8,055	1,091	13.5	6,957	86.4
Private Insurance	9,245	685	7.4	8,554	92.5
Other Government (Fed, State, Local)	667	61	9.2	605	90.7
Self-pay	169	20	11.8	147	87.0
CHAMPUS/TRICARE	148	20	13.5	128	86.5
Other	465	64	13.8	401	86.2
Maternal Residence					
Ward 1	2,181	181	8.3	1,996	91.5
Ward 2	1,190	82	6.9	1,108	93.1
Ward 3	1,431	102	7.1	1,327	92.7
Ward 4	2,877	288	10.0	2,588	90.0
Ward 5	2,660	264	9.9	2,394	90.0
Ward 6	2,734	211	7.7	2,522	92.3
Ward 7 [g]	2,499	376	15.1	2,120	84.8
Ward 8	3,176	439	13.8	2,734	86.1

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Other non-Hispanic race-ethnic categories are not presented due to small sample size.

[b] Percentage of preterm births is significantly higher among births of non-Hispanic black mother compared to all other race and ethnic categories ($p<0.05$). The same is true for Hispanic mothers.

[c] Percentage of preterm births is significantly higher among infants of mothers aged 20 years or younger compared to mothers aged 30-34 years ($p<0.05$) and 35-39 years ($p<0.05$) but not significantly different than mothers aged 40 years or older.

[d] Percentage of preterm births is significantly higher among births of unmarried mothers compared to married mothers ($p<0.05$).

[e] Percentage of preterm births is significantly higher among infants of mothers with a high school education compared to those with more than a high school education ($p<0.05$), but not significantly different than mothers with less than a high school education.

[f] Percentage of preterm births is significantly higher among infants of mothers with Medicaid coverage compared to mothers with private insurance ($p<0.05$), and other government coverage ($p<0.05$), but not significantly different than mothers with self-pay, CHAMPUS/TRICARE, or other coverage.

[g] Percentage of preterm births is significantly higher among infants of mothers residing in Ward 7 compared to all other wards ($p<0.05$ for six comparisons) except Ward 8.

Table 5. Percentage of low birthweight live births by maternal characteristics among live births in District of Columbia, 2017–2018

Characteristic	Overall (Less than 2,500 grams)		Low birth weight: Less than 1,500 grams		1,500-2,499 grams		Normal birthweight: 2,500 grams or more	
	N	%	N	%	N	%	N	%
DC Overall	1,925	10.3	378	2.0	1,547	8.2	16,846	89.7
Maternal Race and Ethnicity [a]								
non-Hispanic, White	333	5.4	30	0.5	303	5.0	5,786	94.6
non-Hispanic, Black [b]	1,310	14.6	300	3.3	1,010	11.3	7,659	85.4
Hispanic	204	7.8	34	1.3	170	6.5	2,428	92.3
non-Hispanic, Asian/Pacific Islander	62	6.9	10	1.1	52	5.8	843	93.2
Maternal age (years)								
Less than 20 years [c]	114	14.3	23	2.9	91	11.4	683	85.7
20-24 years	347	12.9	64	2.4	283	10.5	2,351	87.1
25-29 years	455	11.9	97	2.5	358	9.4	3,372	88.1
30-34 years	503	8.3	103	1.7	400	6.6	5,553	91.7
35-39 years	396	9.1	72	1.7	324	7.5	3,947	90.9
40 years and older	109	10.4	18	1.7	91	8.7	937	89.6
Marital Status								
Not Married [d]	1,234	14.0	279	3.2	955	10.8	7,579	86.0
Married	684	6.9	93	0.9	591	6.0	9,218	93.1
Maternal Education Level								
Less than High School	313	13.4	63	2.7	250	10.7	2,025	86.6
High School Graduate [e]	562	13.7	122	3.0	440	10.7	3,539	86.3
More than High School Education	1,016	8.3	176	1.4	840	6.9	11,164	91.7
Insurance Type								
Medicaid [f]	1,134	14.1	242	3.0	892	11.1	6,921	85.9
Private Insurance	638	6.9	104	1.1	534	5.8	8,607	93.1
Other Government (Fed, State, Local)	50	7.5	11	1.7	39	5.9	617	92.5
Self-pay	24	14.2	4	2.4	20	11.8	145	85.8
CHAMPUS/TRICARE	19	12.8	3	2.0	16	10.8	129	87.2
Other	54	11.6	11	2.4	43	9.3	411	88.4
Maternal Residence (Ward)								
Ward 1	183	8.4	37	1.7	146	6.7	1,998	91.6
Ward 2	69	5.8	5	0.4	64	5.4	1,121	94.2
Ward 3	77	5.4	10	0.7	67	4.7	1,354	94.6
Ward 4	240	8.3	41	1.4	199	6.9	2,637	91.7
Ward 5	270	10.2	54	2.0	216	8.1	2,390	89.9
Ward 6	204	7.5	35	1.3	169	6.2	2,530	92.5
Ward 7 [g]	388	15.5	93	3.7	295	11.8	2,111	84.5
Ward 8	492	15.5	102	3.2	390	12.3	2,684	84.5

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Note: A low birthweight live birth is defined as a birth of an infant weighing less than 2,500 grams.

Missing values for the characteristics are included in the denominator but are not presented in the table.

[a] Other non-Hispanic race-ethnic categories are not presented due to small sample size.

[b] Percentage of low birthweight births is significantly higher among non-Hispanic black mothers compared to non-Hispanic white mothers ($p<0.05$), Hispanic mothers($p<0.05$), and non-Hispanic mothers, Asian/Pacific Islander mothers ($p<0.05$).

[c] Percentage of low birthweight births is significantly higher among infants of mothers aged 20 years and younger compared to mothers aged 25-29 years ($p<0.05$), 30-34 years ($p<0.05$), 35-39 years ($p<0.05$), and 40 years and older ($p<0.05$).

[d] Percentage of low birthweight births is significantly higher among unmarried mothers compared to married mothers ($p<0.05$).

[e] Percentage of low birthweight births is significantly higher among mothers with a high school diploma compared to mothers with more than a high school education ($p<0.05$), but not significantly different than mothers with less than a high school education.

[f] Percentage of preterm births is significantly higher among infants of mothers with Medicaid coverage compared to mothers with private insurance ($p<0.05$), and other government coverage ($p<0.05$), but not significantly different than mothers with and self-pay, CHAMPUS/TRICARE, or other coverage.

[g] Percentage of low birthweight births is significantly higher among mothers residing in Ward 7 compared to all other wards ($p<0.05$ for six comparisons) except Ward 8.

Table 6. Infant mortality rate by maternal characteristics, 2014–2018

Characteristic	Births	Deaths	Rate (per 1,000 live births)
DC Overall	47,709	365	7.7
Maternal Race and Ethnicity [a]			
non-Hispanic, White	15,112	39	2.6
non-Hispanic, Black [b]	23,374	274	11.7
Hispanic	6,585	30	4.6
Maternal age (years)			
Less than 20 years	2,347	15	6.4
20-24 years [c]	7,705	90	11.7
25-29 years	9,804	94	9.6
30-34 years	15,026	83	5.5
35-39 years	10,295	57	5.5
40 years and older	2,524	14	5.6
Marital Status	.	.	.
Married	24,532	84	3.4
Not Married [d]	23,024	266	11.6
Maternal Education Level			
Less than High School	6,501	65	10.0
High School Graduate [e]	10,343	116	11.2
More than High School Education	30,396	135	4.4
Insurance Type			
Medicaid [f]	19,488	224	11.5
Private Insurance	22,877	78	3.4
Other Government (Fed, State, Local)	1,701	6	3.5
Self-pay	544	2	3.7
CHAMPUS/TRICARE	413	2	4.8
Other	2,334	27	11.6
Maternal Residence			
Ward 1	5,565	26	4.7
Ward 2	3,036	9	3.0
Ward 3	3,737	9	2.4
Ward 4	7,408	37	5.0
Ward 5	6,456	52	8.1
Ward 6	6,863	34	5.0
Ward 7	6,324	66	10.4
Ward 8 [g]	8,241	131	15.9

Data Source: DC Births and Deaths, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Non-Hispanic Asian/Pacific Islander and Other non-Hispanic race-ethnicity categories are not presented due to small sample size.

[b] Infant mortality rate is significantly higher among non-Hispanic black mothers compared to non-Hispanic white mothers ($p<0.05$), and Hispanic mothers ($p<0.05$).

[c] Infant mortality rate is significantly higher among infants of mothers aged 20-24 years compared to mothers aged 30-34 years ($p<0.05$), 35-39 years ($p<0.05$), and 40 years or older ($p<0.05$).

[d] Infant mortality rate is significantly higher among unmarried mothers compared to married mothers ($p<0.05$).

[e] Infant mortality rate is significantly higher among mothers with a high school diploma compared to mothers with more than a high school education ($p<0.05$).

[f] Infant mortality rate is significantly higher among mothers with Medicaid coverage compared to mothers with private insurance ($p<0.05$) and other government coverage ($p<0.05$).

[e] Percentage of low birthweight births is significantly higher among mothers residing in Ward 8 compared to all other wards ($p<0.05$ for seven comparisons)

Table 7. Infant mortality rate by pre-pregnancy characteristics, 2014–2018

Characteristic	Births	Deaths	Rate (per 1,000 live births)
Total Births	47,709	365	7.7
Previous Preterm Birth			
No, no previous preterm birth	45,861	310	6.8
Yes, previous preterm birth [a]	1,631	40	24.5
Pre-pregnancy weight			
Underweight	2,049	9	4.4
Normal Weight	24,287	115	4.7
Overweight	10,571	83	7.9
Obese [b]	9,383	126	13.4
Smoking prior to pregnancy			
Did not smoke prior to pregnancy	44,928	303	6.7
Smoked prior to pregnancy [c]	1,967	33	16.8
Pre-pregnancy diabetes			
Absent	47,106	346	7.4
Present [d]	416	6	14.4
Pre-pregnancy hypertension			
Absent	46,423	332	7.2
Present [e]	1,097	20	18.2

Data Source: DC Births and Deaths, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Infant mortality rate is significantly higher among mothers with a previous preterm birth compared to mothers without a previous preterm ($p<0.05$).

[b] Infant mortality rate is significantly higher among mothers who were obese prior to pregnancy compared to mothers who were underweight ($p<0.05$), normal weight ($p<0.05$), and overweight ($p<0.05$).

[c] Infant mortality rate is significantly higher among mothers who smoked prior to pregnancy compared to mothers who did not smoke prior to pregnancy ($p<0.05$).

[d] Infant mortality rate is not significantly higher among mothers who had pre-pregnancy diabetes compared to mothers who did not have pre-pregnancy diabetes.

[e] Infant mortality rate is significantly higher among mothers who had pre-pregnancy hypertension compared to mothers who did not have pre-pregnancy hypertension ($p<0.05$).

Table 8. Infant mortality rate by pregnancy characteristics, 2014–2018

Characteristic	Births	Deaths	Rate (per 1,000 live births)
Total Births	47,709	365	7.7
Trimester prenatal care initiated			
First Trimester	32,418	163	5.0
Second Trimester	10,759	85	7.9
Third Trimester	2,949	16	5.4
No Prenatal Care[a]	1,229	49	39.9
Plurality of birth			
Singleton	45,823	293	6.4
Twin[b]	1,843	58	31.5
Triplet	34	0	0.0
Quadruplet	4	2	500.0
Smoked during pregnancy			
Did not smoke during pregnancy	45,675	313	6.9
Smoked during pregnancy[c]	1,231	24	19.5
Gestational diabetes			
Absent	45,914	342	7.5
Present[d]	1,608	10	6.2
Gestational hypertension			
Absent	45,024	335	7.4
Present[d]	2,497	17	6.8
Eclampsia			
Absent	47,290	350	7.4
Present	204	2	9.8

Data Source: DC Births and Deaths, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Infant mortality rate is significantly higher among mothers with who did not initiate prenatal care compared to mothers who initiated care during the first trimester ($p<0.05$), second trimester ($p<0.05$), or third trimester ($p<0.05$).

[b] Infant mortality rate is significantly higher among twin births compared to singleton births ($p<0.05$).

[c] Infant mortality rate is significantly higher among mothers who smoked during pregnancy compared to mothers who did not smoke during pregnancy ($p<0.05$).

[d] Infant mortality rate is not significantly different between mothers without this characteristic compared to mothers with this characteristic ($p<0.05$).

Table 9. Infant mortality rate by birthweight and preterm status, 2014–2018

Characteristic	Births	Deaths	Rate (per 1,000 live births)
Total Births	47,709	365	7.7
Birthweight			
Less than 1,500 grams	977	205	209.8
1,500-2,499 grams	3,848	49	12.7
Normal birthweight (2,500 grams and greater)	42,874	100	2.3
Gestational age			
Preterm (<37 weeks gestation)	4,904	246	50.2
Not preterm (37 and more weeks of gestation)	42,764	108	2.5

Data Source: DC Births and Deaths, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Table 10. Ten leading causes of infant death, 2017–2018

Leading Cause of Death Category	ICD-10 codes	Total Infant Deaths	Percent	Infant Mortality Rate (per 10,000 live births)
Total infant deaths		141	100.0	75.1
Congenital Anomalies	Q00-Q99	25	17.7	13.3
Maternal complications	P01	21	14.9	11.2
Prematurity	P07	19	13.5	10.1
Accidents	V01-X59	17	12.1	9.1
Placenta, cord, membranes	P02	7	5.0	3.7
Neonatal hemorrhage	P50–P52,P54	4	2.8	2.1
Newborn affected by maternal hypertensive disorders	P00.0	4	2.8	2.1
Bacterial sepsis	P36	*	*	*
Intrauterine hypoxia and birth asphyxia	P20-P21	*	*	*
SIDS	R95	*	*	*
Other		34	24.1	22.4

Data Source: DC Births and Deaths, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

*Data suppressed for less than 4 infant deaths.

Table 11. Neonatal mortality rate by infant age and maternal characteristics, 2014–2018

Characteristic	All Infants			Neonatal		Post Neonatal	
	Births	Total deaths	Rate (per 1,000 live births)	Total deaths	Rate (per 1,000 live births)	Total deaths	Rate (per 1,000 live births)
DC Overall	47,709	365	7.7	253	5.3	112	2.4
Maternal Race and Ethnicity [a]							
non-Hispanic, White	15,112	39	2.6	26	1.7	13	0.9
non-Hispanic, Black	23,374	274	11.7	184	7.9	90	3.9
Hispanic	6,585	30	4.6	25	3.8	5	0.8
Maternal age (years)							
Less than 20 years	2,347	15	6.4	11	4.7	4	1.7
20-24 years	7,705	90	11.7	51	6.6	39	5.1
25-29 years	9,804	94	9.6	60	6.1	34	3.5
30-34 years	15,026	83	5.5	62	4.1	21	1.4
35-39 years	10,295	57	5.5	45	4.4	12	1.2
40 years and older	2,524	14	5.6	13	5.2	1	0.4
Marital Status							
Married	24,532	84	3.4	66	2.7	18	0.7
Not Married	23,024	266	11.6	173	7.5	93	4.0
Maternal Education Level							
Less than High School	6,501	65	10.0	43	6.6	22	3.4
High School Graduate	10,343	116	11.2	67	6.5	49	4.7
More than High School Education	30,396	135	4.4	98	3.2	37	1.2
Insurance Type							
Medicaid	19,488	224	11.5	146	7.5	78	4.0
Private Insurance	22,877	78	3.4	58	2.5	20	0.9
Other Government (Fed, State, Local)	1,701	6	3.5	5	2.9	1	0.6
Self-pay	544	2	3.7	0	0.0	2	3.7
CHAMPUS/TRICARE	413	2	4.8	2	4.8	0	0.0
Other	2,334	27	11.6	19	8.1	8	3.4
Maternal Residence							
Ward 1	5,565	26	4.7	16	2.9	10	1.8
Ward 2	3,036	9	3.0	8	2.6	1	0.3
Ward 3	3,737	9	2.4	8	2.1	1	0.3
Ward 4	7,408	37	5.0	25	3.4	12	1.6
Ward 5	6,456	52	8.1	43	6.7	9	1.4
Ward 6	6,863	34	5.0	25	3.6	9	1.3
Ward 7	6,324	66	10.4	43	6.8	23	3.6
Ward 8	8,241	131	15.9	85	10.3	46	5.6

Data Source: DC Births and Deaths, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Non-Hispanic, Asian/Pacific Islander and Other non-Hispanic race-ethnicity categories are not presented due to small sample size.

Table 12. Ten leading causes of neonatal deaths, District of Columbia, 2017–2018

Cause of Death Category	ICD-10 Codes	Total neonatal deaths	Percent	Neonatal Mortality Rate (per 10,000 live births)
Total neonatal deaths		96	100	51.1
Maternal complications	P01	21	21.9	11.2
Congenital Anomalies	Q00-Q99	18	18.8	9.6
Prematurity	P07	17	17.7	9.1
Placenta, cord, membranes	P02	7	7.3	3.7
Neonatal hemorrhage	P50–P52,P54	4	4.2	2.1
Accidents	V01-X59	*	*	*
Bacterial sepsis	P36	*	*	*
Newborn affected by maternal hypertensive disorders	P00.0	0	0.0	0.0
Intrauterine hypoxia and birth asphyxia	P20-P21	0	0.0	0.0
SIDS	R95	0	0.0	0.0
Other		25	26	13.3

Data Source: DC Births and Deaths, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

*Data suppressed for less than 4 infant deaths

APPENDIX TABLES

2017–2018

Appendix Table 1. Maternal characteristics of live births, District of Columbia 2012–2014 and 2015–2018

Characteristic	Year of Birth			
	2014-2016		2017-2020	
	N	%	N	%
All	28,147	100.0	38,196	100.0
Maternal Race/Ethnicity				
non-Hispanic, White [a]	8,440	30.0	12,169	31.9
non-Hispanic, Black [a]	14,279	50.7	18,619	48.8
Hispanic	3,896	13.8	5,302	13.9
non-Hispanic, Asian/Pacific Islander [a]	1,237	4.4	1,808	4.7
non-Hispanic, All other race-ethnic categories [a]	96	0.3	195	0.5
Maternal Age (years)				
Less than 20 years [a]	2,028	7.2	1,772	4.6
20-24 years [a]	5,278	18.8	5,966	15.6
25-29 years	5,773	20.5	7,858	20.6
30-34 years [a]	8,428	29.9	12,088	31.7
35-39 years [a]	5,166	18.4	8,450	22.1
40 years and older	1,468	5.2	2,056	5.4
Marital Status				
Married [a]	13,785	49.0	19,807	51.9
Not Married [a]	14,246	50.6	18,256	47.8
Maternal Education Level				
Less than High School [a]	5,534	19.7	5,024	13.2
High School Graduate [a]	5,841	20.8	8,347	21.9
More than High School Education [a]	16,434	58.4	24,461	64.0
Insurance Type				
Medicaid [a]	11,006	39.1	15,925	41.7
Private Insurance [a]	12,085	42.9	18,424	48.2
Other Government (Fed, State, Local) [a]	784	2.8	1,458	3.8
Self-pay	309	1.1	390	1.0
CHAMPUS/TRICARE	267	1.0	319	0.8
Other [a]	2,447	8.7	1,535	4.0
Maternal Residence				
Ward 1 [a]	3,400	12.1	4,442	11.6
Ward 2 [a]	1,937	6.9	2,412	6.3
Ward 3 [a]	2,423	8.6	2,968	7.8
Ward 4	4,313	15.3	5,946	15.6
Ward 5 [a]	3,517	12.5	5,237	13.7
Ward 6 [a]	3,901	13.9	5,486	14.4
Ward 7	3,638	12.9	5,074	13.3
Ward 8 [a]	4,984	17.7	6,563	17.2

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

[a] Percentage of characteristic is significantly different between 2012-2014 and 2015-2018 time period ($p<0.05$).

[b] Wards are based on 2012 Ward boundaries.

Appendix Table 2. Maternal characteristics of live births, District of Columbia 2017–2018

Characteristic	DC Overall	
	N	%
All	18,771	100.0
Maternal Race/Ethnicity		
non-Hispanic, White	6,119	32.6
non-Hispanic, Black	8,969	47.8
Hispanic	2,632	14.0
non-Hispanic, Asian/Pacific Islander	905	4.8
non-Hispanic, All other race-ethnic categories	113	0.6
Maternal age (years)		
Less than 20 years	797	4.3
20-24 years	2,698	14.4
25-29 years	3,827	20.4
30-34 years	6,056	32.3
35-39 years	4,343	23.1
40 years and older	1,046	5.6
Marital Status		
Married	9,902	52.8
Not Married	8,813	47.0
Maternal Education Level		
Less than High School	2,338	12.5
High School Graduate	4,101	21.9
More than High School Education	12,180	64.9
Insurance Type		
Medicaid	8,055	42.9
Private Insurance	9,245	49.3
Other Government (Fed, State, Local)	667	3.6
Self-pay	169	0.9
CHAMPUS/TRICARE	148	0.8
Other	465	2.5
Maternal Residence		
Ward 1	2,181	11.6
Ward 2	1,190	6.3
Ward 3	1,431	7.6
Ward 4	2,877	15.3
Ward 5	2,660	14.2
Ward 6	2,734	14.6
Ward 7	2,499	13.3
Ward 8	3,176	16.9

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

Appendix Table 3. Maternal characteristics of live births by ward, District of Columbia 2017–2018

Characteristic	Maternal Residence															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	2,181	100.0	1,190	100.0	1,431	100.0	2,877	100.0	2,660	100.0	2,734	100.0	2,499	100.0	3,176	100.0
Maternal Race/Ethnicity																
non-Hispanic, White	854	39.2	737	61.9	1,065	74.4	820	28.5	726	27.3	1,615	59.1	105	4.2	188	5.9
non-Hispanic, Black	543	24.9	83	7.0	85	5.9	1,018	35.4	1,435	54.0	716	26.2	2,233	89.4	2,847	89.6
Hispanic	616	28.2	178	15.0	121	8.5	909	31.6	388	14.6	193	7.1	134	5.4	90	2.8
non-Hispanic, Asian/Pacific Islander	146	6.7	174	14.6	145	10.1	107	3.7	99	3.7	191	7.0	11	0.4	30	0.9
Maternal age (years)																
Less than 20 years	74	3.4	10	0.8	2	0.1	97	3.4	100	3.8	60	2.2	198	7.9	256	8.1
20-24 years	227	10.4	40	3.4	17	1.2	349	12.1	381	14.3	194	7.1	633	25.3	854	26.9
25-29 years	328	15.0	124	10.4	124	8.7	505	17.6	566	21.3	364	13.3	753	30.1	1,059	33.3
30-34 years	781	35.8	533	44.8	549	38.4	979	34.0	885	33.3	1,115	40.8	556	22.3	651	20.5
35-39 years	597	27.4	377	31.7	556	38.9	771	26.8	594	22.3	835	30.5	311	12.4	297	9.4
40 years and older	174	8.0	106	8.9	183	12.8	176	6.1	134	5.0	166	6.1	46	1.8	58	1.8
Marital Status																
Married	1,369	62.8	1,021	85.8	1,327	92.7	1,631	56.7	1,392	52.3	2,052	75.1	516	20.7	578	18.2
Not Married	802	36.8	167	14.0	103	7.2	1,237	43.0	1,258	47.3	680	24.9	1,974	79.0	2,585	81.4
Maternal Education Level																
Less than High School	361	16.6	58	4.9	6	0.4	534	18.6	318	12.0	117	4.3	384	15.4	559	17.6
High School Graduate	344	15.8	48	4.0	39	2.7	528	18.4	573	21.5	284	10.4	947	37.9	1,336	42.1
More than High School Education	1,452	66.6	1,077	90.5	1,379	96.4	1,788	62.2	1,744	65.6	2,324	85.0	1,139	45.6	1,257	39.6
Insurance Type																
Medicaid	747	34.3	130	10.9	54	3.8	1,228	42.7	1,182	44.4	554	20.3	1,784	71.4	2,370	74.6
Private Insurance	1,182	54.2	996	83.7	1,324	92.5	1,268	44.1	1,267	47.6	2,059	75.3	584	23.4	550	17.3
Other Government (Fed, State, Local)	162	7.4	16	1.3	11	0.8	255	8.9	109	4.1	22	0.8	51	2.0	41	1.3
Self-pay	12	0.6	31	2.6	22	1.5	18	0.6	17	0.6	23	0.8	22	0.9	23	0.7
CHAMPUS/TRICARE	14	0.6	6	0.5	10	0.7	12	0.4	10	0.4	38	1.4	4	0.2	54	1.7
Other	61	2.8	10	0.8	9	0.6	95	3.3	70	2.6	35	1.3	53	2.1	131	4.1

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

Appendix Table 4. Pre-pregnancy characteristics of women who had live births by ward, District of Columbia 2017–2018

Characteristic	Total Births		Maternal Residence															
			Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	18,771	100.0	2,181	100.0	1,190	100.0	1,431	100.0	2,877	100.0	2,660	100.0	2,734	100.0	2,499	100.0	3,176	100.0
Previous Preterm Birth																		
No, no previous preterm birth	18,013	96.0	2,121	97.3	1,174	98.7	1,402	98.0	2,770	96.3	2,555	96.1	2,661	97.3	2,360	94.4	2,958	93.1
Yes, previous preterm birth	730	3.9	59	2.7	15	1.3	28	2.0	107	3.7	102	3.8	65	2.4	137	5.5	216	6.8
Pre-pregnancy weight																		
Underweight	851	4.5	108	5.0	85	7.1	79	5.5	109	3.8	87	3.3	137	5.0	96	3.8	150	4.7
Normal weight	9,546	50.9	1,244	57.0	819	68.8	982	68.6	1,405	48.8	1,328	49.9	1,654	60.5	925	37.0	1,179	37.1
Overweight	4,218	22.5	482	22.1	174	14.6	239	16.7	743	25.8	608	22.9	567	20.7	610	24.4	790	24.9
Obese	3,792	20.2	294	13.5	81	6.8	92	6.4	542	18.8	596	22.4	339	12.4	825	33.0	1,015	32.0
Smoking prior to pregnancy																		
Did not smoke prior to pregnancy	17,870	95.2	2,114	96.9	1,182	99.3	1,419	99.2	2,813	97.8	2,506	94.2	2,669	97.6	2,273	91.0	2,873	90.5
Smoked prior to pregnancy	794	4.2	63	2.9	5	0.4	11	0.8	55	1.9	136	5.1	58	2.1	197	7.9	267	8.4
Pre-pregnancy diabetes																		
Absent	18,608	99.1	2,168	99.4	1,186	99.7	1,423	99.4	2,848	99.0	2,638	99.2	2,719	99.5	2,469	98.8	3,134	98.7
Present	158	0.8	13	0.6	3	0.3	8	0.6	29	1.0	22	0.8	15	0.6	29	1.2	39	1.2
Pre-pregnancy hypertension																		
Absent	18,326	97.6	2,137	98.0	1,177	98.9	1,414	98.8	2,822	98.1	2,580	97.0	2,700	98.8	2,406	96.3	3,067	96.6
Present	438	2.3	44	2.0	12	1.0	17	1.2	55	1.9	80	3.0	34	1.2	92	3.7	104	3.3

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

Appendix Table 5. Pregnancy characteristics of women who had live births by ward, District of Columbia 2017–2018

Characteristic	Total Births		Maternal Residence															
			Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	18,771	100.0	2,181	100.0	1,190	100.0	1,431	100.0	2,877	100.0	2,660	100.0	2,734	100.0	2,499	100.0	3,176	100.0
Trimester Prenatal Care Initiated																		
First Trimester	12,727	67.8	1,535	70.4	966	81.2	1,229	85.9	1,956	68.0	1,799	67.6	2,107	77.1	1,435	57.4	1,685	53.1
Second Trimester	4,222	22.5	431	19.8	163	13.7	151	10.6	658	22.9	583	21.9	469	17.2	742	29.7	1,019	32.1
Third Trimester	1,019	5.4	129	5.9	38	3.2	24	1.7	160	5.6	160	6.0	96	3.5	172	6.9	240	7.6
No Prenatal Care	449	2.4	50	2.3	11	0.9	6	0.4	37	1.3	59	2.2	34	1.2	101	4.0	151	4.8
Plurality of birth																		
Singleton	18,085	96.4	2,098	96.2	1,152	96.8	1,372	95.9	2,779	96.6	2,559	96.2	2,645	96.7	2,389	95.6	3,068	96.6
Twin	672	3.6	83	3.8	38	3.2	54	3.8	98	3.4	98	3.7	89	3.3	107	4.3	105	3.3
Triplet	13	0.1	0	0.0	0	0.0	5	0.4	0	0.0	3	0.1	0	0.0	3	0.1	2	0.1
Smoking during pregnancy																		
Did not smoke during pregnancy	18,179	96.9	2,151	98.6	1,185	99.6	1,429	99.9	2,850	99.1	2,555	96.1	2,688	98.3	2,337	93.5	2,961	93.2
Smoked during pregnancy	489	2.6	26	1.2	2	0.2	1	0.1	19	0.7	86	3.2	38	1.4	136	5.4	181	5.7
Gestational diabetes																		
Absent	18,085	96.4	2,101	96.3	1,145	96.2	1,395	97.5	2,737	95.1	2,548	95.8	2,671	97.7	2,394	95.8	3,072	96.7
Present	681	3.6	80	3.7	44	3.7	36	2.5	140	4.9	112	4.2	63	2.3	104	4.2	101	3.2
Gestational hypertension																		
Absent	17,717	94.4	2,082	95.5	1,122	94.3	1,352	94.5	2,746	95.5	2,518	94.7	2,579	94.3	2,320	92.8	2,977	93.7
Present	1,048	5.6	99	4.5	67	5.6	79	5.5	130	4.5	142	5.3	155	5.7	178	7.1	196	6.2
Eclampsia																		
Absent	18,693	99.6	2,173	99.6	1,188	99.8	1,428	99.8	2,868	99.7	2,655	99.8	2,728	99.8	2,490	99.6	3,153	99.3
Present	57	0.3	8	0.4	0	0.0	3	0.2	9	0.3	5	0.2	6	0.2	7	0.3	19	0.6

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

Appendix Table 6. Percentage of preterm and full term births by pre-pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2017–2018

Characterstic	Preterm (<37 weeks gestation)										Not preterm (37 and more weeks of gestation)									
	Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander		Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,946	10.4	400	6.5	1,223	13.6	249	9.5	55	6.1	16,809	89.6	5,715	93.4	7,735	86.2	2,382	90.5	850	93.9
Previous Preterm Birth																				
No, no previous preterm birth	1,732	9.6	377	6.3	1,054	12.5	227	9.0	55	6.2	16,265	90.3	5,632	93.7	7,383	87.4	2,289	90.9	836	93.8
Yes, previous preterm birth	209	28.6	21	23.9[a]	167	32.4[a]	21	18.6[a]	0	0.0	521	71.4	67	76.1	348	67.6	92	81.4	12	100.0
Pre-pregnancy weight																				
Underweight	96	11.3	28	9.3[b]	55	14.2	7	8.6	5	6.9	755	88.7	272	90.7	333	85.8	74	91.4	68	93.2
Normal Weight	845	8.9	257	6.0	447	13.1	95	8.6	39	5.8	8,694	91.1	4,010	93.9	2,976	86.9	1,008	91.3	632	94.2
Overweight	446	10.6	80	7.6[b]	288	12.8	69	8.9	6	5.6	3,770	89.4	971	92.4	1,969	87.2	704	91.1	101	94.4
Obese	526	13.9	31	8.1	416	15.0[c]	69	11.9[c]	5	13.2[d]	3,262	86.0	350	91.9	2,349	84.8	509	88.1	33	86.8
Smoking prior to pregnancy																				
Did not smoke prior to pregnancy	1,770	9.9	392	6.5	1,063	13.0	244	9.4	55	6.2	16,086	90.0	5,658	93.5	7,128	86.9	2,341	90.5	839	93.9
Smoked prior to pregnancy	144	18.1	6	10.9	131	19.3	5	12.2	0	0.0	648	81.6	49	89.1	546	80.4	36	87.8	11	100.0
Pre-pregnancy diabetes																				
Absent	1,901	10.2	397	6.5	1,189	13.4	242	9.3	54	6.0	16,691	89.7	5,698	93.4	7,663	86.5	2,360	90.7	844	94.0
Present	43	27.2	3	15.8	32	31.4[e]	7	24.1[e]	1	14.3	115	72.8	16	84.2	70	68.6	22	75.9	6	85.7
Pre-pregnancy hypertension																				
Absent	1,837	10.0	387	6.4	1,137	13.1	240	9.3	54	6.0	16,473	89.9	5,652	93.5	7,506	86.7	2,347	90.7	844	94.0
Present	107	24.4	13	17.3[f]	84	27.2[f]	9	20.5[f]	1	14.3	331	75.6	62	82.7	225	72.8	35	79.6	6	85.7

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

[a] Percentage of preterm births is significantly higher among mothers who had previous preterm births compared to mothers who did not have previous preterm births (p<0.05).

[b] Percentage of preterm births is significantly higher among underweight and overweight mothers compared to normal weight mothers (p<0.05).

[c] Percentage of preterm births is significantly higher among obese mothers compared to normal and overweight mothers (p<0.05).

[d] Percentage of preterm births is significantly higher among obese mothers compared to normal weight mothers (p<0.05 for all comparisons).

[e] Percentage of preterm births is significantly higher among mothers with pre-pregnancy diabetes compared to mothers did not have pre-pregnancy diabetes (p<0.05).

[f] Percentage of preterm births is significantly higher among mothers with pre-pregnancy hypertension compared to mothers did not have pre-pregnancy hypertension (p<0.05).

Appendix Table 7. Percentage of preterm and full term births by pre-pregnancy characteristics of mothers who had live births and ward, District of Columbia 2017–2018

Characteristic	Preterm (<37 weeks gestation)															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	181	8.3	82	6.9	102	7.1	288	10.0	264	9.9	211	7.7	376	15.1	439	13.8
Previous Preterm Birth																
No, no previous preterm birth	171	8.1	80	6.8	96	6.9	256	9.2	229	9.0	192	7.2	332	14.1	375	12.7
Yes, previous preterm birth	9	15.3	2	13.3	6	21.4	32	29.9	34	33.3	19	29.2	43	31.4	64	29.6
Pre-pregnancy weight																
Underweight	11	10.2	4	4.7	6	7.6	10	9.2	6	6.9	25	18.3	15	15.6	19	12.7
Normal Weight	93	7.5	50	6.1	59	6.0	118	8.4	117	8.8	108	6.5	132	14.3	165	14.0
Overweight	41	8.5	20	11.5	23	9.6	67	9.0	62	10.2	33	5.8	87	14.3	113	14.3
Obese	33	11.2	7	8.6	12	13.0	84	15.5	74	12.4	45	13.3	138	16.7	133	13.1
Smoking prior to pregnancy																
Did not smoke prior to pregnancy	171	8.1	82	6.9	100	7.1	277	9.9	236	9.4	202	7.6	325	14.3	374	13.0
Smoked prior to pregnancy	9	14.3	0	0.0	2	18.2	9	16.4	24	17.7	6	10.3	43	21.8	51	19.1
Pre-pregnancy diabetes																
Absent	175	8.1	81	6.8	98	6.9	281	9.9	261	9.9	209	7.7	369	15.0	424	13.5
Present	6	46.2	1	33.3	4	50.0	7	24.1	3	13.6	2	13.3	6	20.7	14	35.9
Pre-pregnancy hypertension																
Absent	174	8.1	79	6.7	99	7.0	271	9.6	246	9.5	203	7.5	350	14.6	412	13.4
Present	7	15.9	3	25.0	3	17.7	17	30.9	18	22.5	8	23.5	25	27.2	26	25.0

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

Appendix Table 7 (cont). Percentage of preterm and full term births by pre-pregnancy characteristics of mothers who had live births and ward, District of Columbia 2017–2018

Characteristic	Not preterm (37 and more weeks of gestation)															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,996	91.5	1,108	93.1	1,327	92.7	2,588	90.0	2,394	90.0	2,522	92.3	2,120	84.8	2,734	86.1
Previous Preterm Birth																
No, no previous preterm birth	1,946	91.8	1,094	93.2	1,304	93.0	2,513	90.7	2,324	91.0	2,468	92.8	2,025	85.8	2,580	87.2
Yes, previous preterm birth	50	84.8	13	86.7	22	78.6	75	70.1	68	66.7	46	70.8	94	68.6	152	70.4
Pre-pregnancy weight																
Underweight	97	89.8	81	95.3	73	92.4	99	90.8	81	93.1	112	81.8	81	84.4	131	87.3
Normal Weight	1,149	92.4	769	93.9	921	93.8	1,286	91.5	1,211	91.2	1,545	93.4	793	85.7	1,013	85.9
Overweight	441	91.5	154	88.5	216	90.4	676	91.0	545	89.6	534	94.2	522	85.6	677	85.7
Obese	260	88.4	74	91.4	80	87.0	458	84.5	521	87.4	294	86.7	686	83.2	881	86.8
Smoking prior to pregnancy																
Did not smoke prior to pregnancy	1,940	91.8	1,100	93.1	1,317	92.8	2,535	90.1	2,268	90.5	2,466	92.4	1,945	85.6	2,497	86.9
Smoked prior to pregnancy	53	84.1	5	100.0	9	81.8	46	83.6	112	82.4	52	89.7	154	78.2	215	80.5
Pre-pregnancy diabetes																
Absent	1,989	91.7	1,105	93.2	1,323	93.0	2,566	90.1	2,375	90.0	2,509	92.3	2,097	84.9	2,707	86.4
Present	7	53.9	2	66.7	4	50.0	22	75.9	19	86.4	13	86.7	23	79.3	25	64.1
Pre-pregnancy hypertension																
Absent	1,959	91.7	1,098	93.3	1,313	92.9	2,550	90.4	2,332	90.4	2,496	92.4	2,053	85.3	2,652	86.5
Present	37	84.1	9	75.0	14	82.4	38	69.1	62	77.5	26	76.5	67	72.8	78	75.0

Appendix Table 8. Percentage of preterm births by pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2017–2018

Characteristic	Preterm (<37 weeks gestation)										Not preterm (37 and more weeks of gestation)									
	Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander		Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,946	10.4	400	6.5	1,223	13.6	249	9.5	55	6.1	16,809	89.6	5,715	93.4	7,735	86.2	2,382	90.5	850	93.9
Trimester Prenatal Care Initiated																				
First Trimester	1,244	9.8	356	6.8[d]	663	13.8[c]	168	9.2[c]	47	6.4	11,479	90.2	4,904	93.2	4,145	86.2	1,658	90.8	687	93.6
Second Trimester	450	10.7	32	4.6	345	12.5[c]	59	9.8[c]	7	5.2	3,772	89.3	662	95.4	2,412	87.5	541	90.2	128	94.8
Third Trimester	68	6.7	4	4.4	57	7.4	6	4.8	0	0.0	948	93.0	86	95.6	716	92.4	117	94.4	21	100.0
No Prenatal Care	133	29.6	3	12.0[b]	121	30.9[a]	8	28.6[a]	1	100.0	310	69.0	20	80.0	267	68.1	20	71.4	0	0.0
Plurality of birth																				
Singleton	1,547	8.6	287	4.9	1,003	11.7	204	8.0	40	4.5	16,524	91.4	5,608	95.1	7,588	88.2	2,360	92.0	841	95.5
Twin	386	57.4	108	50.0[e]	212	59.0[e]	45	67.2[e]	15	62.5[e]	285	42.4	107	49.5	147	41.0	22	32.8	9	37.5
Triplet	13	100.0	5	100.0	8	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Smoking during pregnancy																				
Did not smoke during pregnancy	1,813	10.0	397	6.5	1,096	13.0	248	9.5	55	6.1	16,352	90.0	5,687	93.4	7,328	86.9	2,366	90.5	847	93.9
Smoked during pregnancy	103	21.1	1	5.0	100	22.1	1	8.3	0	0.0	384	78.5	19	95.0	350	77.4	11	91.7	3	100.0
Gestational diabetes																				
Absent	1,839	10.2	383	6.4	1,156	13.4	230	9.3	51	5.9	16,230	89.7	5,567	93.5	7,469	86.5	2,255	90.7	819	94.1
Present	105	15.4	17	10.4[f]	65	19.8[f]	19	13.0	4	11.4	576	84.6	147	89.6	264	80.2	127	87.0	31	88.6
Gestational hypertension																				
Absent	1,736	9.8	367	6.3	1,079	12.9	223	8.9	50	5.8	15,965	90.1	5,441	93.6	7,309	87.0	2,279	91.1	815	94.2
Present	208	19.9	33	10.8[g]	142	25.1[g]	26	20.2[g]	5	12.5[g]	840	80.2	273	89.2	423	74.9	103	79.8	35	87.5
Eclampsia																				
Absent	1,913	10.2	394	6.5	1,201	13.5	244	9.3	55	6.1	16,764	89.7	5,700	93.5	7,713	86.4	2,379	90.7	847	93.9
Present	28	49.1	6	40.0[h]	18	52.9[h]	4	66.7[h]	0	0.0	29	50.9	9	60.0	16	47.1	2	33.3	1	100.0

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

[a] Percentage of preterm births is significantly higher among mothers who had no prenatal care compared to mothers who initiated prenatal care in the first ($p<0.05$), second ($p<0.05$), and third trimester ($p<0.05$).

[b] Percentage of preterm births is significantly higher among mothers who had no prenatal care compared to mothers who initiated prenatal care in the second trimester ($p<0.05$).

[c] Percentage of preterm births is significantly higher among mothers who had initiated prenatal care during the first or second trimester compared to mothers who initiated prenatal care in the third trimester ($p<0.05$ for all comparisons).

[d] Percentage of preterm births is significantly higher among mothers who had initiated prenatal care during the first trimester compared to mothers who initiated prenatal care in the second trimester ($p<0.05$).

[e] Percentage of preterm births is significantly higher among twin births compared to singleton births ($p<0.05$).

[f] Percentage of preterm births is significantly higher among mothers who had gestational diabetes compared to mothers who did not have gestational diabetes ($p<0.05$).

[g] Percentage of preterm births is significantly higher among mothers who had gestational hypertension compared to mothers who did not have gestational hypertension ($p<0.05$).

[h] Percentage of preterm births is significantly higher among mothers who had eclampsia compared to mothers who did not have eclampsia ($p<0.05$).

Appendix Table 9. Percentage of preterm births by pregnancy characteristics of mothers who had live births and ward, District of Columbia 2017–2018

Characteristic	Preterm (<37 weeks gestation)															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	181	8.3	82	6.9	102	7.1	288	10.0	264	9.9	211	7.7	376	15.1	439	13.8
Trimester Prenatal Care Initiated																
First Trimester	116	7.6	68	7.0	85	6.9	189	9.7	179	10.0	150	7.1	223	15.5	233	13.8
Second Trimester	40	9.3	10	6.1	13	8.6	64	9.7	53	9.1	39	8.3	104	14.0	126	12.4
Third Trimester	8	6.2	1	2.6	0	0.0	9	5.6	9	5.6	6	6.3	10	5.8	25	10.4
No Prenatal Care	12	24.0	3	27.3	1	16.7	15	40.5	14	23.7	11	32.4	31	30.7	46	30.5
Plurality of birth																
Singleton	139	6.6	63	5.5	69	5.0	222	8.0	210	8.2	161	6.1	306	12.8	374	12.2
Twin	42	50.6	19	50.0	28	51.9	66	67.4	51	52.0	50	56.2	67	62.6	63	60.0
Triplet	0	0.0	0	0.0	5	100.0	0	0.0	3	100.0	0	0.0	3	100.0	2	100.0
Smoking during pregnancy																
Did not smoke during pregnancy	176	8.2	81	6.8	102	7.1	283	9.9	246	9.6	203	7.6	333	14.3	386	13.0
Smoked during pregnancy	4	15.4	1	50.0	0	0.0	3	15.8	14	16.3	5	13.2	35	25.7	41	22.7
Gestational diabetes																
Absent	170	8.1	80	7.0	99	7.1	267	9.8	245	9.6	205	7.7	350	14.6	420	13.7
Present	11	13.8	2	4.6	3	8.3	21	15.0	19	17.0	6	9.5	25	24.0	18	17.8
Gestational hypertension																
Absent	161	7.7	75	6.7	93	6.9	268	9.8	235	9.3	184	7.1	327	14.1	390	13.1
Present	20	20.2	7	10.5	9	11.4	20	15.4	29	20.4	27	17.4	48	27.0	48	24.5
Eclampsia																
Absent	178	8.2	82	6.9	101	7.1	285	9.9	262	9.9	208	7.6	370	14.9	426	13.5
Present	3	37.5	0	0.0	1	33.3	3	33.3	2	40.0	3	50.0	4	57.1	12	63.2

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Totals and percentages may not sum to 100 due to missing values

Appendix Table 9 (cont). Percentage of preterm births by pregnancy characteristics of mothers who had live births and ward, District of Columbia 2017–2018

Characteristic	Not preterm (37 and more weeks of gestation)															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,996	91.5	1,108	93.1	1,327	92.7	2,588	90.0	2,394	90.0	2,522	92.3	2,120	84.8	2,734	86.1
Trimester Prenatal Care Initiated																
First Trimester	1,419	92.4	898	93.0	1,143	93.0	1,767	90.3	1,620	90.1	1,956	92.8	1,212	84.5	1,450	86.1
Second Trimester	391	90.7	153	93.9	138	91.4	594	90.3	530	90.9	430	91.7	638	86.0	893	87.6
Third Trimester	121	93.8	37	97.4	24	100.0	150	93.8	151	94.4	90	93.8	160	93.0	215	89.6
No Prenatal Care	35	70.0	8	72.7	4	66.7	22	59.5	45	76.3	23	67.7	69	68.3	104	68.9
Plurality of birth																
Singleton	1,956	93.2	1,089	94.5	1,301	94.8	2,556	92.0	2,347	91.7	2,483	93.9	2,080	87.1	2,692	87.7
Twin	40	48.2	19	50.0	26	48.2	32	32.7	47	48.0	39	43.8	40	37.4	42	40.0
Triplet	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Smoking during pregnancy																
Did not smoke during pregnancy	1,972	91.7	1,104	93.2	1,325	92.7	2,566	90.0	2,307	90.3	2,484	92.4	2,001	85.6	2,573	86.9
Smoked during pregnancy	21	80.8	1	50.0	1	100.0	16	84.2	72	83.7	33	86.8	101	74.3	139	76.8
Gestational diabetes																
Absent	1,927	91.7	1,065	93.0	1,294	92.8	2,469	90.2	2,301	90.3	2,465	92.3	2,041	85.3	2,649	86.2
Present	69	86.3	42	95.5	33	91.7	119	85.0	93	83.0	57	90.5	79	76.0	83	82.2
Gestational hypertension																
Absent	1,917	92.1	1,047	93.3	1,257	93.0	2,477	90.2	2,281	90.6	2,394	92.8	1,990	85.8	2,584	86.8
Present	79	79.8	60	89.6	70	88.6	110	84.6	113	79.6	128	82.6	130	73.0	148	75.5
Eclampsia																
Absent	1,991	91.6	1,106	93.1	1,325	92.8	2,582	90.0	2,391	90.1	2,519	92.3	2,117	85.0	2,724	86.4
Present	5	62.5	0	0.0	2	66.7	6	66.7	3	60.0	3	50.0	3	42.9	7	36.8

Appendix Table 10. Percentage of low birthweight births by pre-pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2017–2018

Characteristic	Low Birthweight Births										Normal Birthweight Births									
	Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander		Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,925	10.3	333	5.4	1,310	14.6	204	7.8	62	6.9	16,846	89.7	5,786	94.6	7,659	85.4	2,428	92.3	843	93.2
Previous Preterm Birth																				
No, no previous preterm birth	1,716	9.5	311	5.2	1,140	13.5	187	7.4	62	7.0	16,297	90.5	5,702	94.8	7,308	86.5	2,330	92.6	829	93.0
Yes, previous preterm birth	207	28.4	22	25.0[a]	168	32.6[a]	17	15.0[a]	0	0.0	523	71.6	66	75.0	347	67.4	96	85.0	12	100.0
Pre-pregnancy weight																				
Underweight	126	14.8	34	11.3[b]	78	20.1[b]	6	7.4	7	9.6	725	85.2	266	88.7	310	79.9	75	92.6	66	90.4
Normal Weight	891	9.3	213	5.0	526	15.4[c]	103	9.3[ce]	44	6.6	8,655	90.7	4,058	95.0	2,899	84.6	1,001	90.7	627	93.4
Overweight	404	9.6	58	5.5	286	12.7[d]	51	6.6	6	5.6	3,814	90.4	993	94.5	1,973	87.3	722	93.4	101	94.4
Obese	472	12.5	26	6.8	402	14.5	37	6.4	4	10.5	3,320	87.6	355	93.2	2,367	85.5	541	93.6	34	89.5
Smoking prior to pregnancy																				
Did not smoke prior to pregnancy	1,723	9.6	328	5.4	1,118	13.6	201	7.8	61	6.8	16,147	90.4	5,726	94.6	7,082	86.4	2,385	92.2	833	93.2
Smoked prior to pregnancy	169	21.3	3	5.5	161	23.7	3	7.3	1	9.1	625	78.7	52	94.6	518	76.3	38	92.7	10	90.9
Pre-pregnancy diabetes																				
Absent	1,891	10.2	332	5.4	1,282	14.5	200	7.7	61	6.8	16,717	89.8	5,767	94.6	7,581	85.5	2,403	92.3	837	93.2
Present	32	20.3	1	5.3	26	25.5[f]	4	13.8	1	14.3	126	79.8	18	94.7	76	74.5	25	86.2	6	85.7
Pre-pregnancy hypertension																				
Absent	1,810	9.9	322	5.3	1,214	14.0	197	7.6	61	6.8	16,516	90.1	5,721	94.7	7,440	86.0	2,391	92.4	837	93.2
Present	112	25.6	11	14.7[g]	93	30.1[g]	7	15.9[g]	1	14.3	326	74.4	64	85.3	216	69.9	37	84.1	6	85.7

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Note: A low birthweight live birth is defined as a birth of an infant less than 2500 grams. Underweight is defined as a BMI<18.5; Normal weight is defined as a BMI between 18.5 and 24.9; overweight is defined as a BMI between 25 and 29.9; obese is defined as BMI of 30 and greater.

[a] The percentage of low birthweight live births was greater among mothers with previous preterm births compared to mothers with no preterm births (p<0.05).

[b] The percentage of low birthweight live births was greater among underweight mothers compared to normal weight mothers (p<0.05), overweight mothers (p<0.05), and obese mothers (p<0.05).

[c] The percentage of low birthweight live births was greater among normal weight mothers compared to overweight mothers (p<0.05).

[d] The percentage of low birthweight live births was greater among over weight mothers compared to obese mothers (p<0.05).

[e] The percentage of low birthweight live births was greater among normal weight mothers compared to obese mothers (p<0.05).

[f] The percentage of low birthweight live births was greater among mothers with pre-pregnancy diabetes than those without pre-pregnancy diabetes (p<0.05).

[g] The percentage of low birthweight live births was greater among mothers with pre-pregnancy hypertension than those without pre-pregnancy hypertension (p<0.05).

Appendix Table 11. Percentage of low birthweight births by pre-pregnancy characteristics of mothers who had live births and ward, District of Columbia 2017–2018

Characteristic	Low Birthweight Births															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	183	8.4	69	5.8	77	5.4	240	8.3	270	10.2	204	7.5	388	15.5	492	15.5
Previous Preterm Birth																
No, no previous preterm birth	171	8.1	66	5.6	71	5.1	213	7.7	240	9.4	187	7.0	337	14.3	430	14.5
Yes, previous preterm birth	12	20.3	3	20.0	6	21.4	27	25.2	30	29.4	17	26.2	50	36.5	62	28.7
Pre-pregnancy weight																
Underweight	13	12.0	4	4.7	6	7.6	11	10.1	10	11.5	31	22.6	19	19.8	32	21.3
Normal Weight	106	8.5	50	6.1	45	4.6	103	7.3	122	9.2	106	6.4	157	17.0	200	17.0
Overweight	32	6.6	10	5.8	14	5.9	59	7.9	61	10.0	33	5.8	80	13.1	115	14.6
Obese	27	9.2	5	6.2	9	9.8	61	11.3	73	12.3	33	9.7	126	15.3	138	13.6
Smoking prior to pregnancy																
Did not smoke prior to pregnancy	170	8.0	69	5.8	77	5.4	233	8.3	241	9.6	192	7.2	323	14.2	416	14.5
Smoked prior to pregnancy	12	19.1	0	0.0	0	0.0	5	9.1	25	18.4	9	15.5	55	27.9	63	23.6
Pre-pregnancy diabetes																
Absent	178	8.2	69	5.8	74	5.2	235	8.3	269	10.2	203	7.5	382	15.5	479	15.3
Present	5	38.5	0	0.0	3	37.5	5	17.2	1	4.6	1	6.7	5	17.2	12	30.8
Pre-pregnancy hypertension																
Absent	174	8.1	67	5.7	73	5.2	224	7.9	252	9.8	199	7.4	356	14.8	463	15.1
Present	9	20.5	2	16.7	4	23.5	16	29.1	18	22.5	5	14.7	31	33.7	27	26.0

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Note: A low birthweight live birth is defined as a birth of an infant less than 2500 grams. Underweight is defined as a BMI<18.5; Normal weight is defined as a BMI between 18.5 and 24.9; overweight is defined as a BMI between 25 and 29.9; obese is defined as BMI of 30 and greater.

Appendix Table 11 (cont). Percentage of low birthweight births by pre-pregnancy characteristics of mothers who had live births and ward, District of Columbia 2017–2018

Characteristic	Normal Birthweight Births															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,998	91.6	1,121	94.2	1,354	94.6	2,637	91.7	2,390	89.9	2,530	92.5	2,111	84.5	2,684	84.5
Previous Preterm Birth																
No, no previous preterm birth	1,950	91.9	1,108	94.4	1,331	94.9	2,557	92.3	2,315	90.6	2,474	93.0	2,023	85.7	2,528	85.5
Yes, previous preterm birth	47	79.7	12	80.0	22	78.6	80	74.8	72	70.6	48	73.9	87	63.5	154	71.3
Pre-pregnancy weight																
Underweight	95	88.0	81	95.3	73	92.4	98	89.9	77	88.5	106	77.4	77	80.2	118	78.7
Normal Weight	1,138	91.5	769	93.9	937	95.4	1,302	92.7	1,206	90.8	1,548	93.6	768	83.0	979	83.0
Overweight	450	93.4	164	94.3	225	94.1	684	92.1	547	90.0	534	94.2	530	86.9	675	85.4
Obese	267	90.8	76	93.8	83	90.2	481	88.8	523	87.8	306	90.3	699	84.7	877	86.4
Smoking prior to pregnancy																
Did not smoke prior to pregnancy	1,944	92.0	1,113	94.2	1,342	94.6	2,580	91.7	2,265	90.4	2,477	92.8	1,950	85.8	2,457	85.5
Smoked prior to pregnancy	51	81.0	5	100.0	11	100.0	50	90.9	111	81.6	49	84.5	142	72.1	204	76.4
Pre-pregnancy diabetes																
Absent	1,990	91.8	1,117	94.2	1,349	94.8	2,613	91.8	2,369	89.8	2,516	92.5	2,087	84.5	2,655	84.7
Present	8	61.5	3	100.0	5	62.5	24	82.8	21	95.5	14	93.3	24	82.8	27	69.2
Pre-pregnancy hypertension																
Absent	1,963	91.9	1,110	94.3	1,341	94.8	2,598	92.1	2,328	90.2	2,501	92.6	2,050	85.2	2,604	84.9
Present	35	79.6	10	83.3	13	76.5	39	70.9	62	77.5	29	85.3	61	66.3	77	74.0

Appendix Table 12. Percentage of low birthweight births by pregnancy characteristics of mothers who had live births and maternal race and ethnicity, District of Columbia 2017–2018

Characteristic	Low Birthweight Births										Normal Birthweight Births									
	Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander		Overall		non-Hispanic, White		non-Hispanic, Black		Hispanic		non-Hispanic, Asian/Pacific Islander	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,925	10.3	333	5.4	1,310	14.6	204	7.8	62	6.9	16,846	89.7	5,786	94.6	7,659	85.4	2,428	92.3	843	93.2
Trimester Prenatal Care Initiated																				
First Trimester	1,185	9.3	294	5.6	689	14.3[b]	142	7.8[b]	50	6.8	11,542	90.7	4,967	94.4	4,122	85.7	1,684	92.2	684	93.2
Second Trimester	474	11.2	27	3.9	383	13.9[b]	50	8.3[b]	9	6.7	3,748	88.8	667	96.1	2,374	86.1	550	91.7	126	93.3
Third Trimester	91	8.9	5	5.6	80	10.3	4	3.2	2	9.5	928	91.1	85	94.4	695	89.7	120	96.8	19	90.5
No Prenatal Care	123	27.4	3	12.0[c]	115	29.3[a]	4	14.3[d]	1	100.0	326	72.6	22	88.0	277	70.7	24	85.7	0	0.0
Plurality of birth																				
Singleton	1,532	8.5	229	3.9	1,072	12.5	170	6.6	49	5.6	16,553	91.5	5,669	96.1	7,529	87.5	2,395	93.4	832	94.4
Twin	383	57.0	99	45.8[e]	233	64.9[e]	34	50.8[e]	13	54.2[e]	289	43.0	117	54.2	126	35.1	33	49.3	11	45.8
Triplet	10	76.9	5	100.0	5	62.5	0	0.0	0	0.0	3	23.1	0	0.0	3	37.5	0	0.0	0	0.0
Smoking during pregnancy																				
Did not smoke during pregnancy	1,766	9.7	329	5.4	1,158	13.7	202	7.7	61	6.8	16,413	90.3	5,759	94.6	7,275	86.3	2,413	92.3	841	93.2
Smoked during pregnancy	129	26.4	2	10.0	124	27.4	2	16.7	1	33.3	360	73.6	18	90.0	328	72.6	10	83.3	2	66.7
Gestational diabetes																				
Absent	1,846	10.2	318	5.3	1,260	14.6	194	7.8	59	6.8	16,239	89.8	5,636	94.7	7,376	85.4	2,292	92.2	811	93.2
Present	77	11.3	15	9.2[f]	48	14.6	10	6.9	3	8.6	604	88.7	149	90.9	281	85.4	136	93.2	32	91.4
Gestational hypertension																				
Absent	1,714	9.7	301	5.2	1,163	13.9	180	7.2	58	6.7	16,003	90.3	5,511	94.8	7,236	86.2	2,323	92.8	807	93.3
Present	209	19.9	32	10.5[g]	145	25.7[g]	24	18.6[g]	4	10.0	839	80.1	274	89.5	420	74.3	105	81.4	36	90.0
Eclampsia																				
Absent	1,894	10.1	327	5.4	1,289	14.4	200	7.6	62	6.9	16,799	89.9	5,771	94.6	7,636	85.6	2,424	92.4	840	93.1
Present	27	47.4	6	40.0[h]	17	50.0[h]	4	66.7[h]	0	0.0	30	52.6	9	60.0	17	50.0	2	33.3	1	100.0

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Note: A low birthweight live birth is defined as a birth of an infant less than 2500 grams.

[a] The percentage of low birthweight live births was greater among mothers with no prenatal care compared to mothers who initiated prenatal care during the first trimester ($p<0.05$), second trimester ($p<0.05$), and third trimester ($p<0.05$).

[b] The percentage of low birthweight live births was greater among mothers who initiated prenatal care during the first trimester care or the second trimester compared to mothers who initiated prenatal care during the third trimester ($p<0.05$ for all comparisons).

[c] The percentage of low birthweight live births was greater among mothers with no prenatal care compared to mothers who initiated prenatal care during the second trimester ($p<0.05$).

[d] The percentage of low birthweight live births was greater among mothers with no prenatal care compared to mothers who initiated prenatal care during the third trimester ($p<0.05$).

[e] The percentage of low birthweight live births was greater among twin births compared to singleton births ($p<0.05$).

[f] The percentage of low birthweight live births was greater among mothers with gestational diabetes compared to those without gestational diabetes ($p<0.05$).

[g] The percentage of low birthweight live births was greater among mothers with gestational hypertension compared to those without gestational hypertension ($p<0.05$).

[h] The percentage of low birthweight live births was greater among mothers with eclampsia compared to those without eclampsia ($p<0.05$).

Appendix Table 13. Percentage of low birthweight births by pregnancy characteristics of mothers who had live births and ward, District of Columbia 2017–2018

Characteristic	Low Birthweight Births															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	183	8.4	69	5.8	77	5.4	240	8.3	270	10.2	204	7.5	388	15.5	492	15.5
Trimester Prenatal Care Initiated																
First Trimester	116	7.6	54	5.6	62	5.0	154	7.9	180	10.0	144	6.8	224	15.6	250	14.8
Second Trimester	40	9.3	10	6.1	11	7.3	60	9.1	56	9.6	40	8.5	110	14.8	147	14.4
Third Trimester	11	8.5	2	5.3	0	0.0	9	5.6	15	9.4	4	4.2	15	8.7	35	14.6
No Prenatal Care	13	26.0	3	27.3	1	16.7	12	32.4	9	15.3	11	32.4	29	28.7	45	29.8
Plurality of birth																
Singleton	135	6.4	57	5.0	54	3.9	182	6.6	216	8.4	154	5.8	314	13.1	418	13.6
Twin	48	57.8	12	31.6	18	33.3	58	59.2	53	54.1	50	56.2	72	67.3	72	68.6
Triplet	0	0.0	0	0.0	5	100.0	0	0.0	1	33.3	0	0.0	2	66.7	2	100.0
Smoking during pregnancy																
Did not smoke during pregnancy	175	8.1	68	5.7	77	5.4	237	8.3	246	9.6	194	7.2	332	14.2	435	14.7
Smoked during pregnancy	7	26.9	1	50.0	0	0.0	1	5.3	20	23.3	7	18.4	47	34.6	46	25.4
Gestational diabetes																
Absent	173	8.2	68	5.9	74	5.3	225	8.2	257	10.1	198	7.4	370	15.5	479	15.6
Present	10	12.5	1	2.3	3	8.3	15	10.7	13	11.6	6	9.5	17	16.4	12	11.9
Gestational hypertension																
Absent	167	8.0	60	5.4	70	5.2	217	7.9	236	9.4	181	7.0	343	14.8	438	14.7
Present	16	16.2	9	13.4	7	8.9	23	17.7	34	23.9	23	14.8	44	24.7	53	27.0
Eclampsia																
Absent	180	8.3	69	5.8	76	5.3	237	8.3	268	10.1	201	7.4	382	15.3	480	15.2
Present	3	37.5	0	0.0	1	33.3	3	33.3	2	40.0	3	50.0	4	57.1	11	57.9

Data Source: DC Births, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

Note: A low birthweight live birth is defined as a birth of an infant less than 2500 grams.

Appendix Table 13 (cont). Percentage of low birthweight births by pregnancy characteristics of mothers who had live births and ward, District of Columbia 2017–2018

Characteristic	Normal Birthweight Births															
	Ward 1		Ward 2		Ward 3		Ward 4		Ward 5		Ward 6		Ward 7		Ward 8	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total Births	1,998	91.6	1,121	94.2	1,354	94.6	2,637	91.7	2,390	89.9	2,530	92.5	2,111	84.5	2,684	84.5
Trimester Prenatal Care Initiated																
First Trimester	1,419	92.4	912	94.4	1,167	95.0	1,802	92.1	1,619	90.0	1,963	93.2	1,211	84.4	1,435	85.2
Second Trimester	391	90.7	153	93.9	140	92.7	598	90.9	527	90.4	429	91.5	632	85.2	872	85.6
Third Trimester	118	91.5	36	94.7	24	100.0	151	94.4	145	90.6	92	95.8	157	91.3	205	85.4
No Prenatal Care	37	74.0	8	72.7	5	83.3	25	67.6	50	84.8	23	67.7	72	71.3	106	70.2
Plurality of birth																
Singleton	1,963	93.6	1,095	95.1	1,318	96.1	2,597	93.5	2,343	91.6	2,491	94.2	2,075	86.9	2,650	86.4
Twin	35	42.2	26	68.4	36	66.7	40	40.8	45	45.9	39	43.8	35	32.7	33	31.4
Triplet	0	0.0	0	0.0	0	0.0	0	0.0	2	66.7	0	0.0	1	33.3	0	0.0
Smoking during pregnancy																
Did not smoke during pregnancy	1,976	91.9	1,117	94.3	1,352	94.6	2,613	91.7	2,309	90.4	2,494	92.8	2,005	85.8	2,526	85.3
Smoked during pregnancy	19	73.1	1	50.0	1	100.0	18	94.7	66	76.7	31	81.6	89	65.4	135	74.6
Gestational diabetes																
Absent	1,928	91.8	1,077	94.1	1,321	94.7	2,512	91.8	2,291	89.9	2,473	92.6	2,024	84.5	2,593	84.4
Present	70	87.5	43	97.7	33	91.7	125	89.3	99	88.4	57	90.5	87	83.7	89	88.1
Gestational hypertension																
Absent	1,915	92.0	1,062	94.7	1,282	94.8	2,529	92.1	2,282	90.6	2,398	93.0	1,977	85.2	2,539	85.3
Present	83	83.8	58	86.6	72	91.1	107	82.3	108	76.1	132	85.2	134	75.3	143	73.0
Edampsia																
Absent	1,993	91.7	1,119	94.2	1,352	94.7	2,631	91.7	2,387	89.9	2,527	92.6	2,108	84.7	2,673	84.8
Present	5	62.5	0	0.0	2	66.7	6	66.7	3	60.0	3	50.0	3	42.9	8	42.1

Appendix Table 14. Annual infant mortality rates by maternal race and ethnicity, District of Columbia 2012–2018

Year	Overall			non-Hispanic, White			non-Hispanic, Black			Hispanic		
	Number of Births	Number of Deaths	Infant Mortality Rate (per 1,000 persons)	Number of Births	Number of Deaths	Infant Mortality Rate (per 1,000 persons)	Number of Births	Number of Deaths	Infant Mortality Rate (per 1,000 persons)	Number of Births	Number of Deaths	Infant Mortality Rate (per 1,000 persons)
2012	9,370	74	7.9	2,755	7	2.5	4,757	59	12.4	1,370	7	5.1
2013	9,264	63	6.8	2,742	5	1.8	4,767	46	9.6	1,243	8	6.4
2014	9,513	72	7.6	2,943	11	3.7	4,755	50	10.5	1,283	6	4.7
2015	9,571	82	8.6	2,957	7	2.4	4,781	65	13.6	1,324	9	6.8
2016	9,854	70	7.1	3,093	7	2.3	4,869	55	11.3	1,346	5	3.7
2017	9,559	77	8.1	3,061	13	4.2	4,646	53	11.4	1,336	6	4.5
2018	9,212	64	6.9	3,058	1	0.3	4,323	51	11.8	1,296	4	3.1

Data Source: DC Births and Deaths, Vital Records Division, Center for Policy, Planning and Evaluation, D.C. Department of Health.

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MURIEL BOWSER, MAYOR