Improving outcomes:

Maternal Mortality

IN PHILADELPHIA

We dedicate this report to the memory of the mothers who have been lost, with sympathy and respect for their families and loved ones.

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EXECUTIVE SUMMARY

Maternal mortality has gradually increased in the United States over the past 30 years, and has more recently become a focus of national attention. Philadelphia has been a leader in addressing maternal mortality by creating the nation's first non-state-based Maternal Mortality Review Committee (MMRC) in 2010. The Philadelphia MMRC gathers multidisciplinary stakeholders from across the city in order to better understand the causes of maternal mortality and to provide recommendations for policy and programmatic change.

The Philadelphia MMRC's current report is based on aggregated data from 110 deaths that occurred between 2013 and 2018. The aim of this report is to describe the current state of maternal mortality in Philadelphia and to highlight the Philadelphia MMRC's recommendations to reduce it.

In this report, maternal mortality will be referred to as either "pregnancy-associated" or "pregnancy-related" deaths. Pregnancy-associated deaths are any deaths that occur during or within one year of the end of a pregnancy. Pregnancy-related deaths are a subset of those deaths which are caused by, related to, or aggravated by the pregnancy or its management.

Consistent with how the cases self-identified, this report refers to the population studied as "pregnant and postpartum women." **However, we acknowledge not all pregnant people identify as women, and transgender and nonbinary birthing people may face unique barriers in accessing quality health care.**

KEY FINDINGS

PREGNANCY-RELATED DEATHS

Of the 110 pregnancy-associated deaths that occurred from 2013 to 2018, 26 (or 23.6%) were determined by the Philadelphia MMRC to be pregnancy-related deaths.

HIGHER THAN AVERAGE

Philadelphia's rate of pregnancy-related deaths from 2013 to 2018 was approximately 20 per 100,000 live births, which is higher than the 2018 national rate of 17.4 per 100,000 live births.

CAUSES

Forty-six percent of the pregnancy-related deaths were due to cardiomyopathies or other cardiovascular conditions, 23% to embolisms (either amniotic or thrombotic), 12% to infectious processes, 8% to hemorrhage, and 12% to other causes.

RACIAL INEQUITY

Racial inequities exist among pregnancy-related deaths in Philadelphia. Non-Hispanic Black women made up 43% of births in Philadelphia from 2013-2018 but accounted for 73% of the pregnancy-related deaths.

BEHAVIORAL HEALTH

Mental and behavioral health issues played an important role among the pregnancy-associated deaths. Forty-five percent of the pregnancy-associated deaths had a history of mental health issues and 58% had a history of a substance use disorder.

PRENATAL CARE

Twenty-one percent of women who had a pregnancy-associated death did not any prenatal care. This is about 4 times higher than the general pregnant population.

ACCIDENTAL OVERDOSES

Accidental drug-related deaths, which have risen dramatically in Philadelphia, have also increased greatly among pregnant and postpartum women. Deaths due to accidental drug overdoses increased from 25% of Philadelphia's pregnancy-associated deaths (from 2010 to 2016) to 39% (from 2017 to 2018).

The pregnancy-associated deaths described in this report are just the tip of the iceberg when looking at the overall state of maternal health in Philadelphia. Significant racial inequities in maternal health outcomes demand attention to the underlying issues, which could be accomplished by addressing implicit bias and systemic racism. Making sure that pregnant and postpartum women with cardiovascular conditions and substance use disorders are engaged in comprehensive care is important to reducing maternal mortality and morbidity in our city.

Focus on these and other contributing factors is key to improving the maternal health outcomes for Philadelphia's women.

ABOUT MATERNAL MORTALITY REVIEW COMMITTEES

Traditionally, maternal mortality surveillance uses vital statistics data, such as birth and death certificates, to look at trends and disparities in maternal mortality. While this method is generally effective in identifying deaths, it can lack context and adequate details of the events surrounding the woman's death. State and local Maternal Mortality Review Committees (MMRCs) were developed to improve maternal mortality surveillance.

Through a process of obtaining medical and social service records, conducting family interviews (when possible), and gathering multidisciplinary members to discuss deaths, MMRCs can better identify and understand pregnancy-associated and pregnancy-related deaths as well as develop policy and programmatic interventions to prevent future deaths.

The Case for a Maternal Mortality Review Committee in Philadelphia

Pregnancy-associated deaths:

Deaths that occur during or within one year of the end of a pregnancy, regardless of the outcome of the pregnancy or the cause or manner of the birthing person's death.

Pregnancy-related deaths:

A subset of pregnancy-associated deaths and are "caused by, related to, or aggravated by the pregnancy or its management."

Philadelphia is the poorest of the nation's ten largest cities, with about 26% of its 1.58 million people living in poverty. About 22,000 Philadelphia women give birth annually, with an average of four to five pregnancy-related deaths each year. Despite having some of the finest academic medical centers in the nation, the city's pregnancy-related death rate is above the national average. Philadelphia sought to address this problem by creating its own county-level MMRC. In October 2010, the Philadelphia MMRC brought together representatives from the six-remaining labor-and-delivery hospitals in the city, along with members from city agencies and non-governmental organizations, in order to identify, track, and review its pregnancy-associated deaths. This, in turn, has helped Philadelphia identify gaps in local healthcare systems and community resources that have contributed to pregnancy-associated deaths. The process has helped focus limited resources to address these issues, with a goal of reducing maternal mortality and improving overall maternal health and well-being.

Since the creation of the Philadelphia MMRC, Philadelphia has gained knowledge and insight into the contributing factors of maternal mortality through its review of 185 pregnancy-associated deaths. Philadelphia's MMRC processes continue to be refined: from better and timelier identification of pregnancy-associated deaths, to obtaining new sources of data and records, to better methods for obtaining family interviews, and adding new team members with different perspectives and backgrounds.

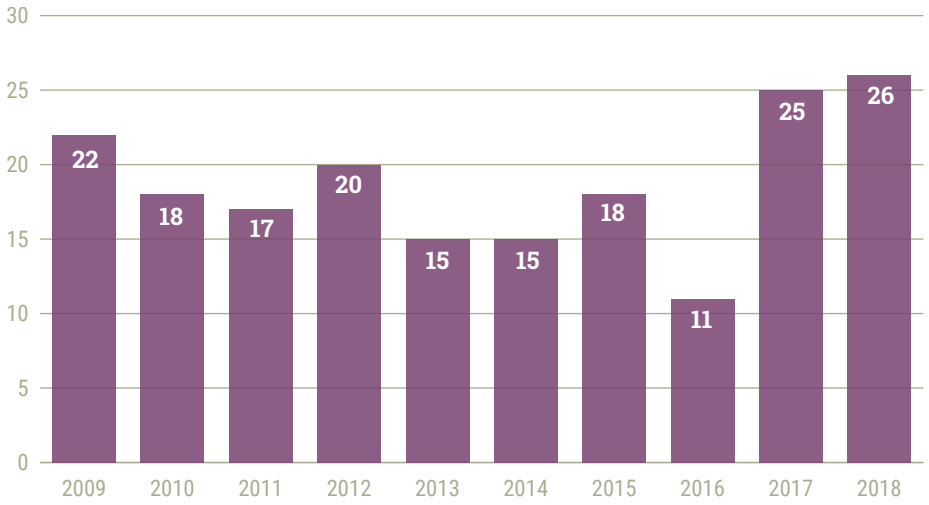
The Philadelphia MMRC commits to further improving its maternal mortality surveillance through the implementation of the Maternal Mortality Review Information Application (MMRIA), a data collection system developed by the Centers of Disease Control and Prevention (CDC), that standardizes data collection from MMRCs across the country and to translating recommendations into action through the development of a coordinated action team.

Pregnancy-associated Deaths

The Philadelphia MMRC was formed in 2010, and it began by reviewing pregnancy-associated deaths that occurred in 2009.

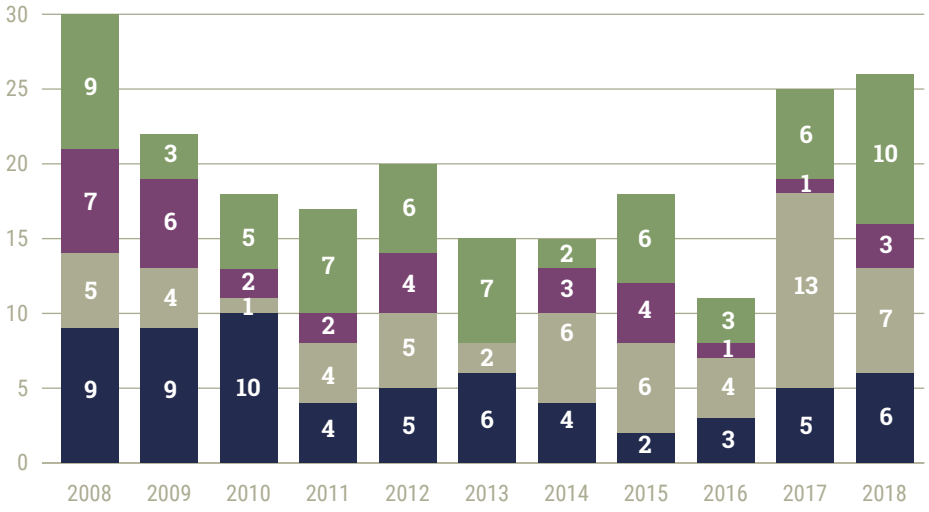
Between 2013-2018, there were 110 pregnancy-associated deaths of Philadelphia residents — an average of 18 deaths per year.

Figure 1.1 Pregnancy-Associated Deaths of Philadelphia Residents, 2009–2018



An average of 4.3 deaths per year from 2013-2018 were determined to be pregnancy-related. The Philadelphia MMRC limited the discussion of 'pregnancy relatedness' to the natural deaths (i.e. the medical cases), opting not to postulate whether deaths associated with drug use, suicide, or homicide were directly or indirectly linked to the pregnancy.)

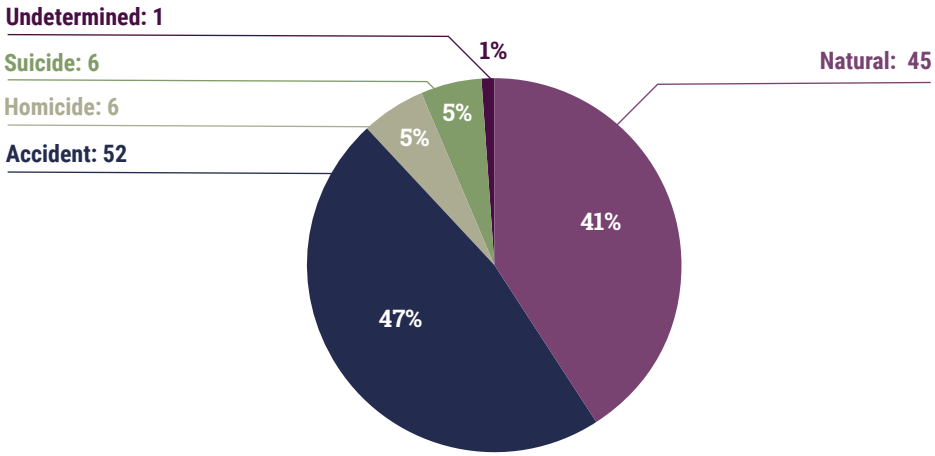
Figure 1.2 General Categories of Pregnancy-Associated Deaths, 2009–2018



PREGNANCY-ASSOCIATED DEATHS

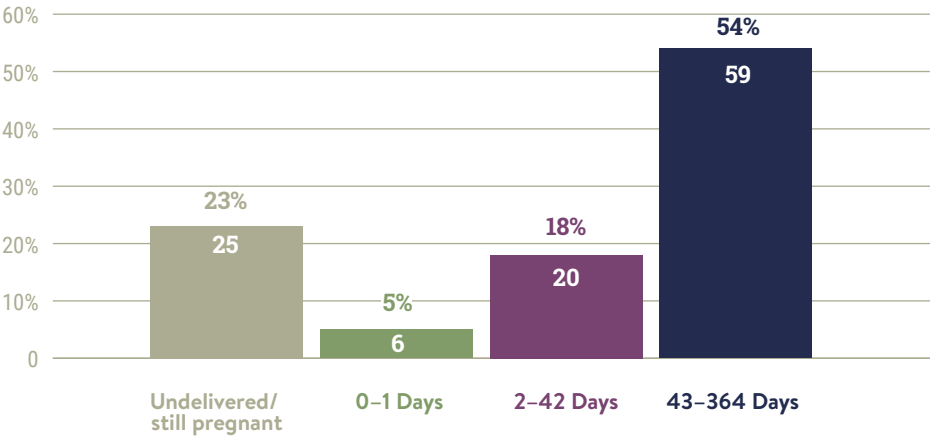
Accidental deaths are currently the most common manner for Philadelphia's pregnancy-associated deaths. Of the 52 accidental deaths from 2013-2018 (not depicted), 71% were due to drug intoxication, 21% were due to motor vehicle crashes, 4% were due to fire, and 4% were due to other accidents. Natural deaths, which include all non-injurious deaths due to a disease or medical condition (e.g. all infectious disease processes, all cancers, all cardiovascular diseases), are the second most common manner for Philadelphia's pregnancy-associated deaths.

Figure 1.3 Manner of Death for Pregnancy-Associated Deaths, 2013–2018 (n=110)



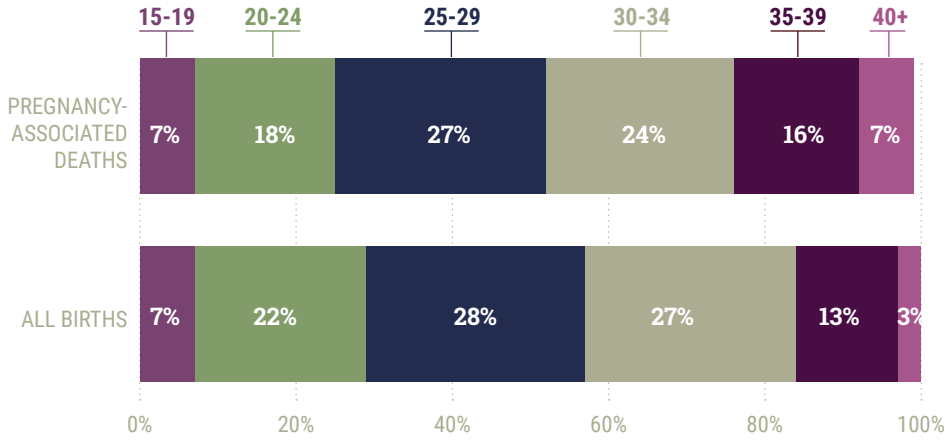
Fifty-four percent of the pregnancy-associated deaths from 2013 to 2018 occurred more than six weeks after the end of pregnancy.

Figure 1.4 Time from End of Pregnancy until Death for Pregnancy-Associated Deaths, 2013–2018 (n=110)



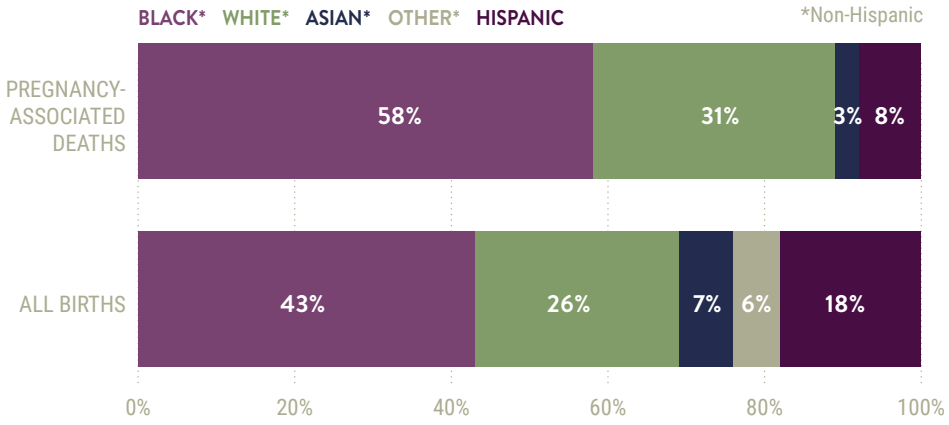
Fifty-two percent of the pregnancy-associated deaths occurred in women younger than 30. Seven percent of the pregnancy-associated deaths occurred in women 40 years and older, with none occurring in women over 44 years.

Figure 1.5 Age Categories for Pregnancy-Associated Deaths, 2013–2018 (n=110)



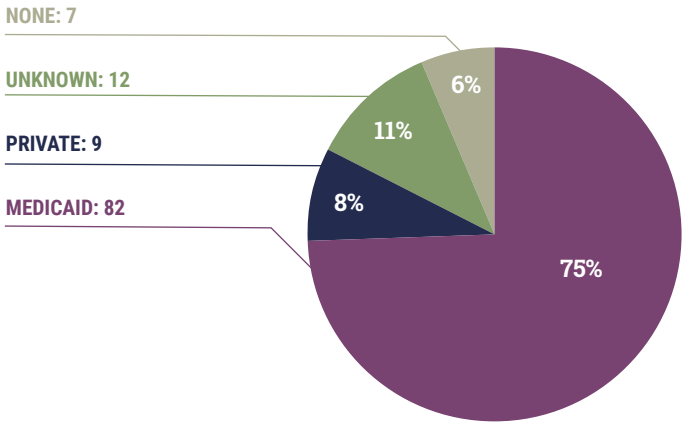
Non-Hispanic Black women accounted for 58% of the pregnancy-associated deaths from 2013 to 2018, even though they accounted for approximately 43% of Philadelphia births during this same time period.

Figure 1.6 Race/Ethnicity of Pregnancy-Associated Deaths, 2013–2018 (n=110)



Seventy-five percent of women with pregnancy-associated deaths were known to have Medicaid at the time of their pregnancy. It is important to note that for those women who died in the postpartum period (especially after 6 weeks postpartum), their insurance status may have changed.

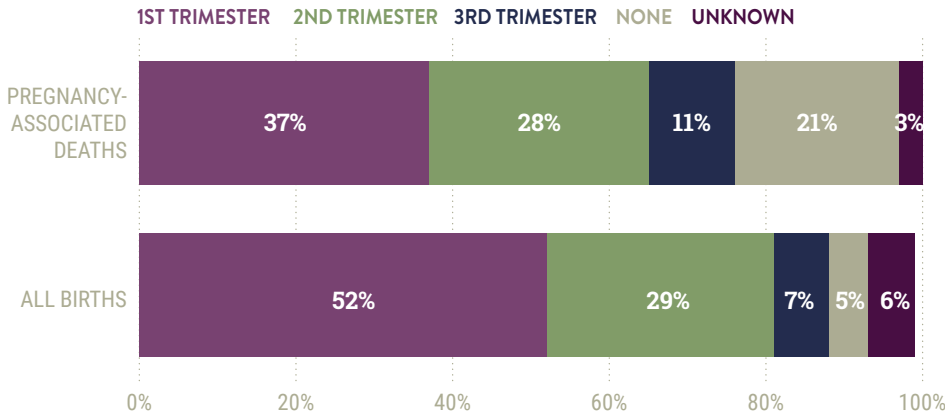
Figure 1.7 Insurance Status during Pregnancy of Pregnancy-Associated Deaths, 2013–2018 (n=110)



PREGNANCY-ASSOCIATED DEATHS

Thirty-two percent of all pregnancy-associated deaths (≥28 weeks gestation) occurred in women who started prenatal care late (third trimester) or not at all. This compares to 14% of all women who had a live birth in Philadelphia and had late or no prenatal care.

Figure 1.8 Timing of Prenatal Care Initiation of Pregnancy-Associated Deaths, 2013-2018 (n=76)



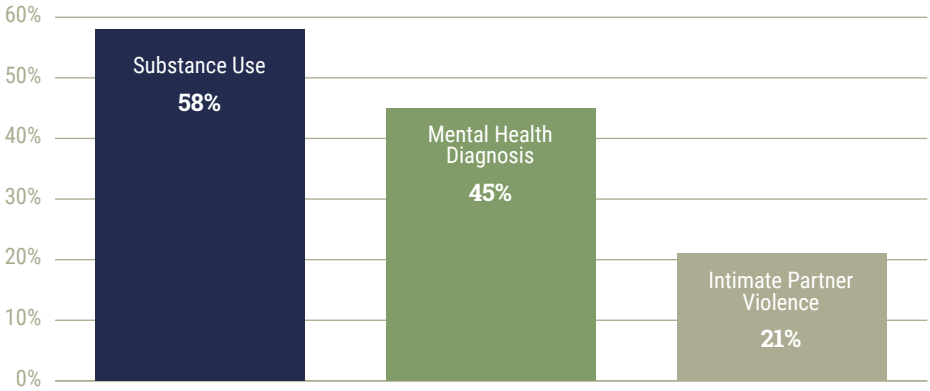
Fifty-eight percent of the women who suffered a pregnancy-associated death had a documented history of substance use excluding tobacco.

Forty-five percent of the women who suffered a pregnancy-associated death had a documented history of mental health diagnosis.

In 21% of the pregnancy-associated deaths, there was some form of documentation that the woman had experienced intimate partner violence in her lifetime.

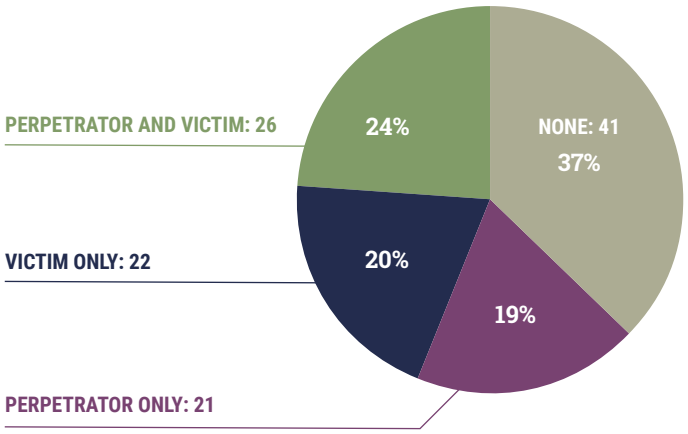
Information on substance use history, mental health diagnosis, and intimate partner violence is often missing or underreported so these numbers are likely an underestimation of the true extent.

Figure 1.9 Reported History of Maternal Substance Use, Mental Health Diagnosis and Intimate Partner Violence in Pregnancy-Associated Deaths, 2013-2018 (n=110)



Sixty-three percent of the pregnancy-associated deaths occurred in women who had a documented history with Philadelphia's child protection services – either as an alleged victim of child abuse or neglect, as an alleged perpetrator of child abuse or neglect, or both. This information is mostly limited to non-expunged records known to Philadelphia's Department of Human Services, so these numbers are likely an underestimation of the true extent.

Figure 1.10 History with Child Protection Services, 2013-2018 (n=110)



Pregnancy-related Deaths

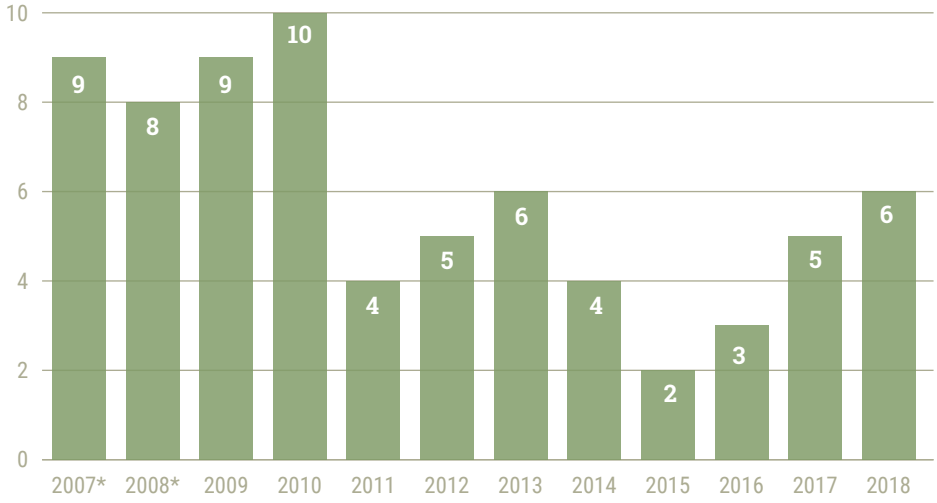
Among the 110 pregnancy-associated deaths that occurred during 2013-2018, 26 were determined to be pregnancy-related.

Pregnancy-related deaths are determined by an advisory team that is part of the Philadelphia MMRC. The Advisory Team is comprised of ten current MMRC members, most of whom are health care providers working in the field of Obstetrics and Gynecology. The Advisory Team members were asked to look at each natural death (i.e., medical deaths or deaths not due to an injury) and rank on a scale of 1 to 5 how likely they felt the death to be related to the pregnancy (1=very likely, 3=equivocal, 5=very unlikely). Scores from each Advisory Team member were added together, and deaths with an average score of less than 3 got recorded as pregnancy-related.

Pregnancy-related deaths decreased from an estimated average of 9 per year (2007 to 2010) to 4.3 per year (2011 to 2018).

*2007 and 2008 numbers are estimates based on initial surveillance and death certificate information. The pregnancy-associated deaths from these years were never reviewed by the Philadelphia MMRC.

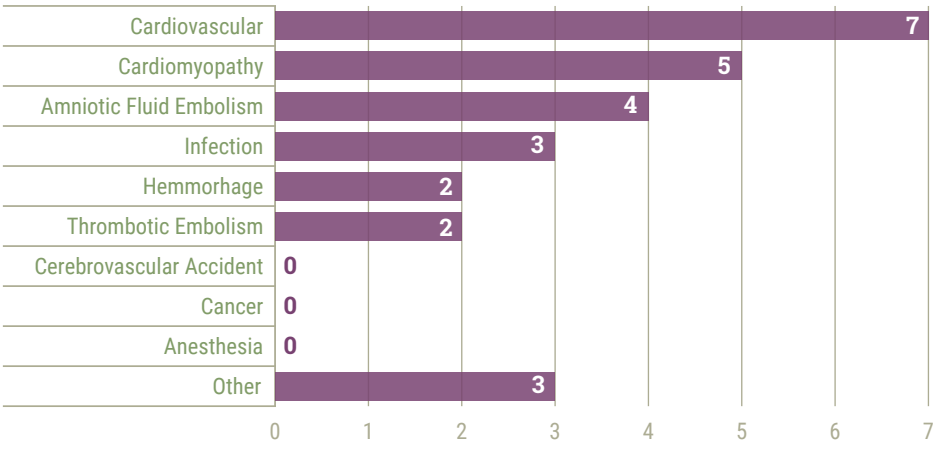
Figure 2.1 Pregnancy-Related Deaths of Philadelphia Women, 2007–2018



Forty-six percent of pregnancy-related deaths were due to cardiomyopathies or other cardiovascular conditions, 23% to embolisms (either amniotic or embolic), 12% to infectious processes, 8% to hemorrhage and 12% to other causes.

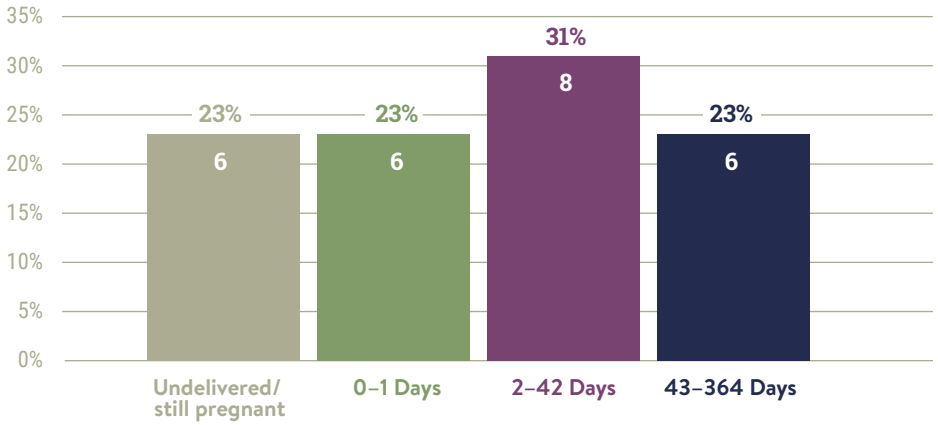
Only one of the hemorrhage deaths was a peripartum hemorrhage, and this occurred to a woman who belonged to a faith-healing group (two separate churches of a total of approximately 3,000 adherents in Philadelphia who do not believe in any medical care whatsoever).

Figure 12.2 Causes of Death for Pregnancy-Related Deaths, 2013-2018 (n=26)



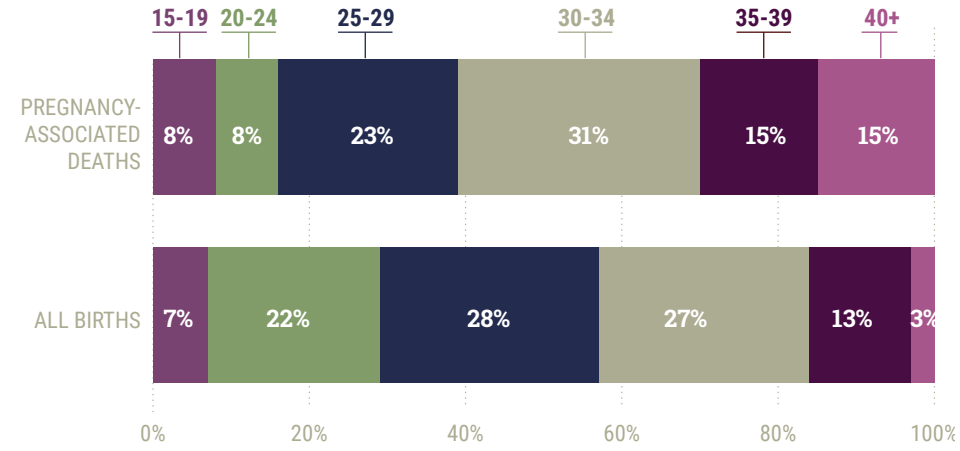
Seventy-seven percent of pregnancy-related deaths occurred after delivery, with 23% occurring more than six weeks after the end of the pregnancy.

Figure 2.3 Time from End of Pregnancy Until Death for Pregnancy-Related Deaths, 2013-2018 (n=26)



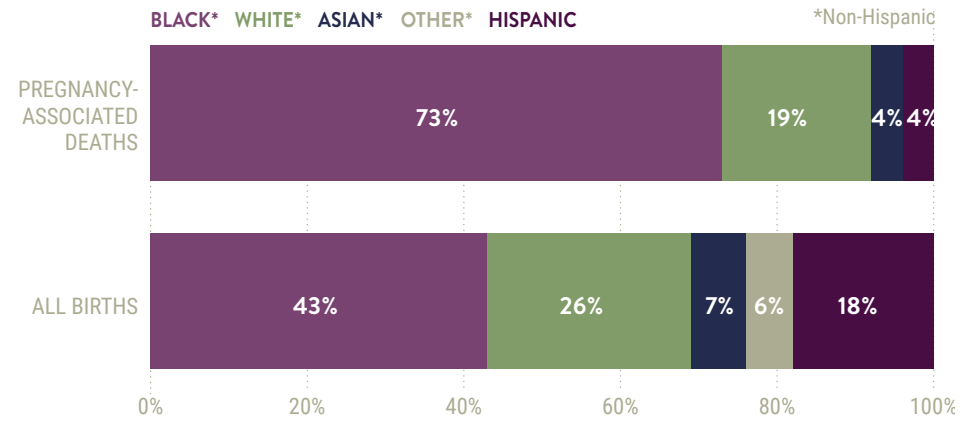
Thirty percent of pregnancy-related deaths occurred in women who were of advanced maternal age (i.e. 35 years old or greater).

Figure 2.4 Age Categories of Pregnancy-Related Deaths, 2013–2018 (n=26)



Significant racial inequities exist among pregnancy-related deaths in Philadelphia—Black women are 4 times more likely to die from pregnancy related causes than White women. Non-Hispanic Black women made up for 43% of live births in Philadelphia but accounted for 73% of the pregnancy-related deaths from 2013 to 2018, as compared to non-Hispanic White women who made up 26% of Philadelphia births and accounted for 19% of pregnancy-related deaths.

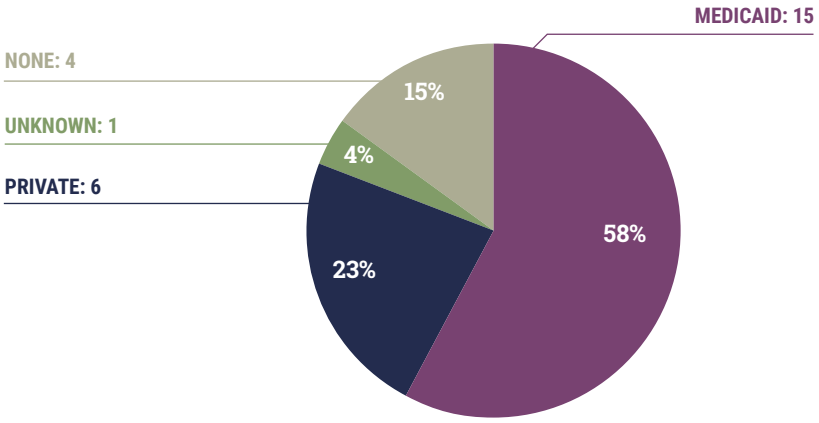
Figure 2.5 Race/Ethnicity of Pregnancy-Related Deaths, 2013-2018 (n=26)



PREGNANCY-RELATED DEATHS

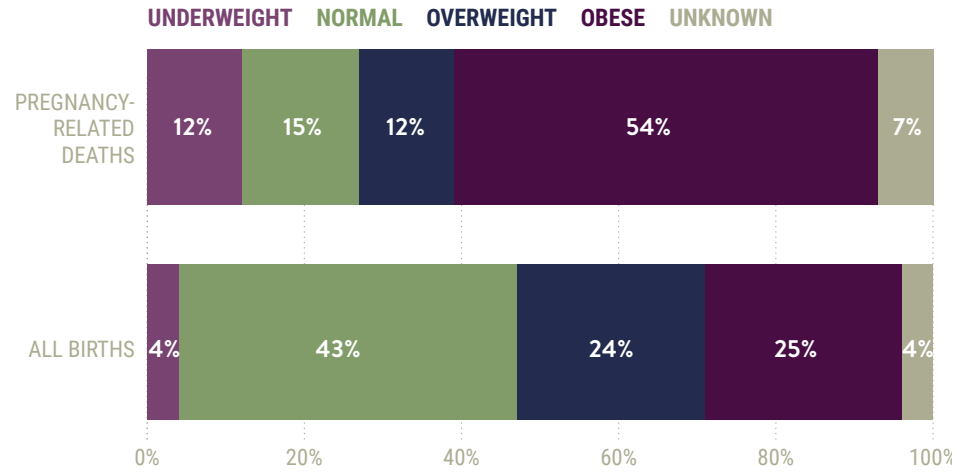
Fifty-eight percent of women with pregnancy-related deaths had Medicaid insurance, and another 15% had no insurance at the time of their pregnancy. It is important to note that for those women who died in the postpartum period (especially after 6 weeks postpartum), their insurance status may have changed.

Figure 2.6 Insurance Status of Pregnancy-Related Deaths, 2013-2018 (n=26)



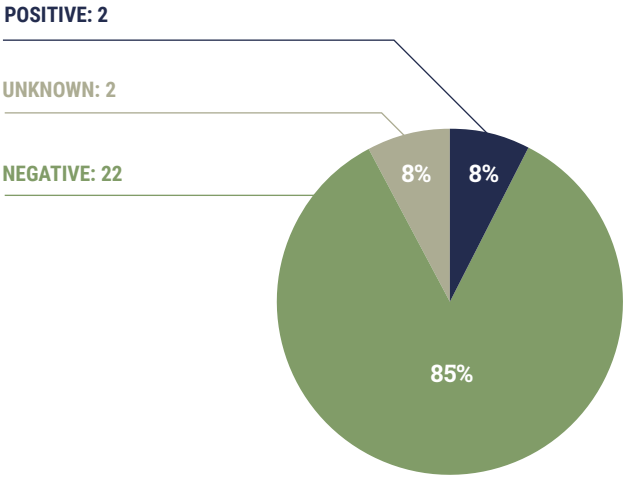
Fifty-four percent of the pregnancy-related deaths occurred in women who were documented as obese in their pre-pregnancy BMI, as compared to 25% of women who had a live delivery in Philadelphia from 2013 to 2018.

Figure 2.7 Pre-Pregnancy Body Mass Index Status of Pregnancy-Related Deaths, 2013-2018 (n=26)



Eight percent of the Philadelphia women who experienced a pregnancy-related death were known to be HIV+. This is multiple times more than the overall perinatal HIV rate in Philadelphia (0.03% of live births from 2013 to 2017).

Figure 2.8 HIV Status of Pregnancy-Related Deaths, 2013-2018 (n=26)

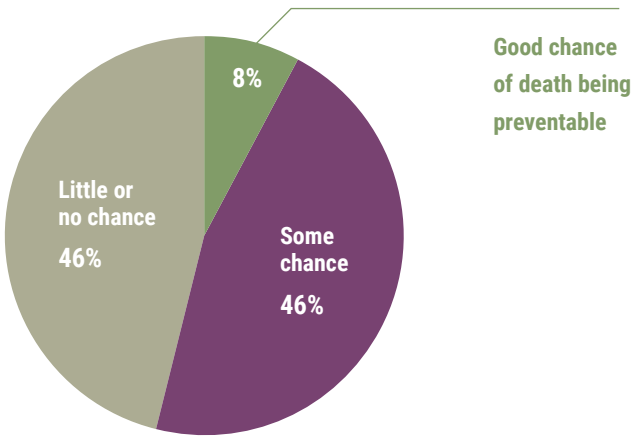


Preventability of Pregnancy-Related Deaths

A critical role of the MMRC is determining the preventability of each pregnancy-related death. Understanding which deaths could have been prevented allows for the gaps in care and community resources to be addressed. The Philadelphia MMRC determines if a pregnancy-related death could have been prevented through its Advisory Team. The Advisory Team members are asked to look at each pregnancy-related death and rank on a scale of 1 to 3 their opinion about the likelihood that the health care system could have altered the outcome of death (1= good chance, 2=some chance, and 3=little to no chance). Scores from each Advisory Team member are added together, and the average score determines the team's opinion about the degree of preventability for each pregnancy-related death.

Based on the comprehensive review of the 26 pregnancy-related deaths between 2013-2018, the Philadelphia MMRC determined that 46% of the deaths had little or no chance of having the outcome altered, 46% were deemed as having some chance of preventability, and 8% had a good chance of the death being preventable by the health care system.

Figure 2.9 Preventability of Pregnancy-Related Deaths, 2013-2018 (n=26)



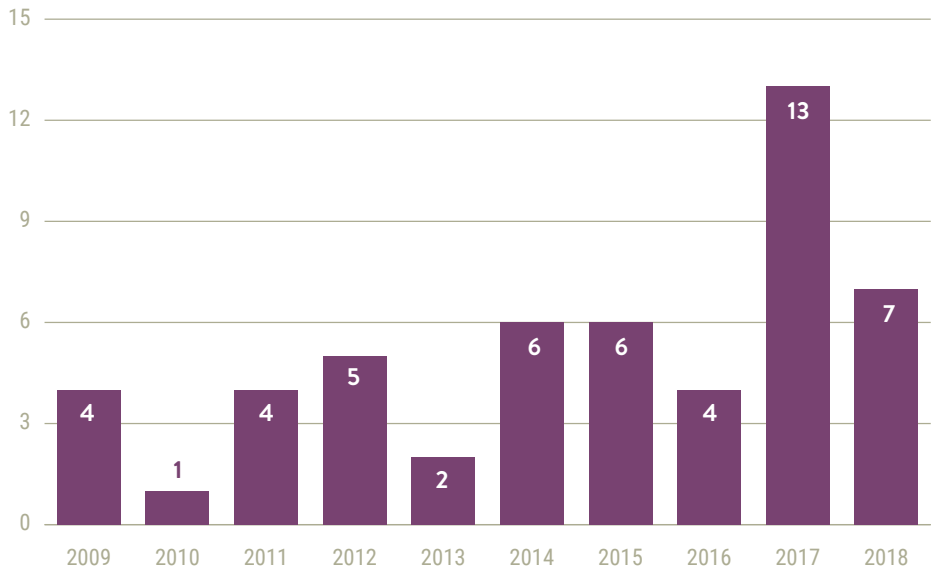
Drug-related Deaths

The Philadelphia MMRC considers drug-related deaths to be a subset of pregnancy-associated deaths, but one in which 'pregnancy-relatedness' is not determined. Drug-related deaths include all deaths that were caused directly by drug use – whether due to the sequelae of drug use (e.g. endocarditis) or the result of an acute, accidental overdose.

Philadelphia has been one of several epicenters of the nation's opioid epidemic. Accidental drug-related deaths have risen dramatically in Philadelphia over the past decade (from 387 in 2010 to 1150 in 2019) and have also increased greatly among pregnant and postpartum women.

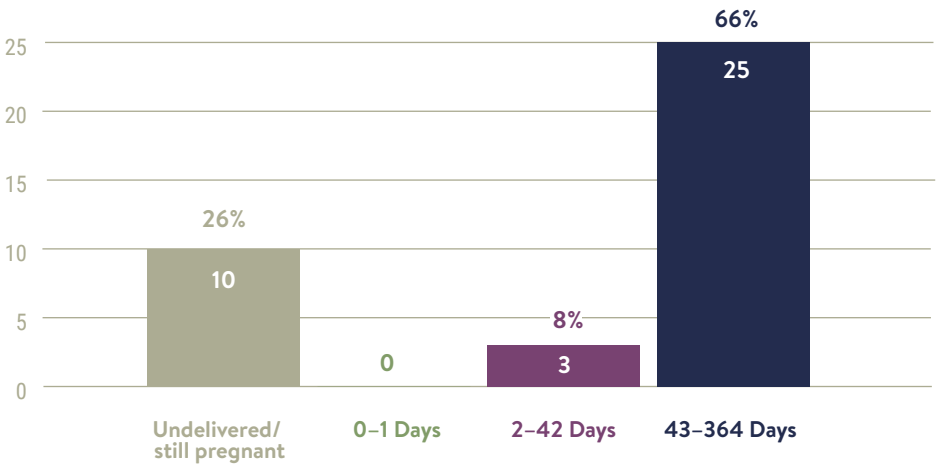
Between 2009 and 2016, accidental drug overdoses accounted for 25% of pregnancy-associated deaths. This increased to 39% between 2017-18. Preliminary data from 2019 and early 2020 suggest that this upward trend is continuing persistently.

Figure 3.1 Drug-Related, Pregnancy-Associated Deaths of Philadelphia Women, 2009–2018



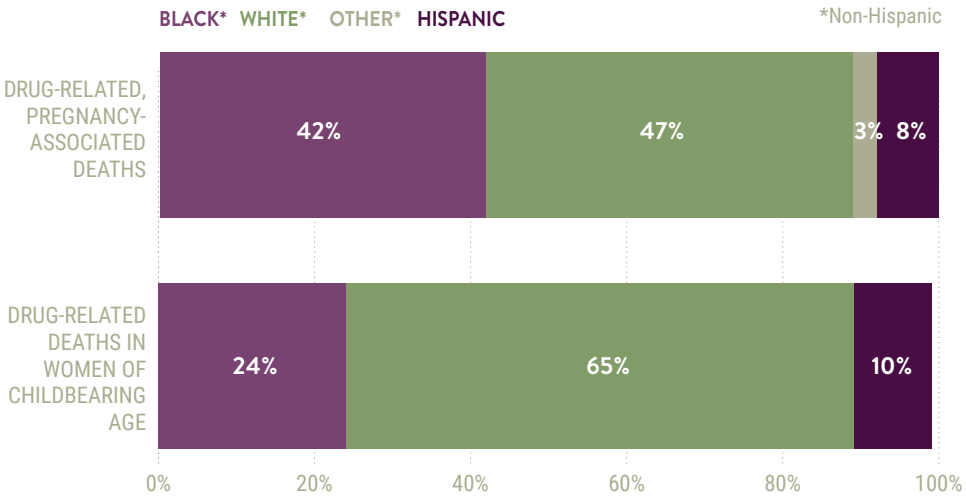
Sixty-six percent of drug-related deaths occurred after the traditional 6 weeks postpartum period.

Figure 3.2 Time from End of Pregnancy Until Death for Drug-Related, Pregnancy-Associated Deaths, 2013-2018 (n=38)



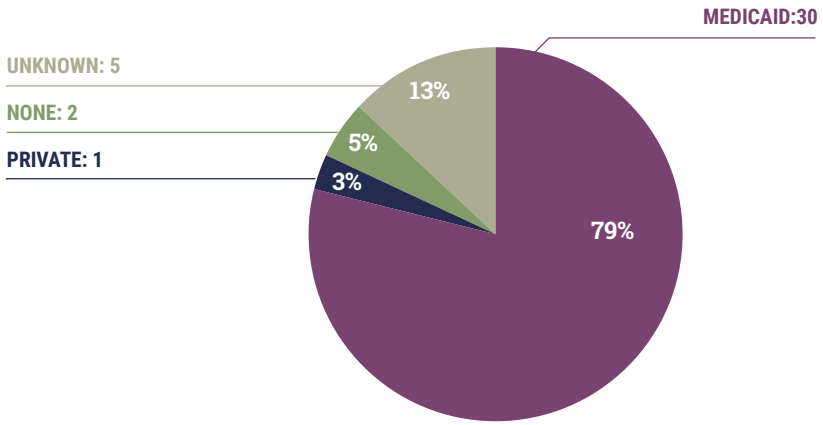
From 2013 to 2018, non-Hispanic White women ages 15 to 49 (women of childbearing age) were more than 2.5 times more likely to die from accidental drug overdoses in Philadelphia than non-Hispanic Black women of childbearing age. However, among the drug-related, pregnancy-associated deaths during this same time period, non-Hispanic White and Black women died in nearly equal proportions.

Figure 3.3 Race/Ethnicity of Drug-Related, Pregnancy-Associated Deaths, 2013-2018



Seventy-nine percent of the women who experienced a drug-related death had Medicaid at the time of their pregnancy. It is important to note that for those women who died in the postpartum period (especially after 6 weeks postpartum), their insurance status may have changed.

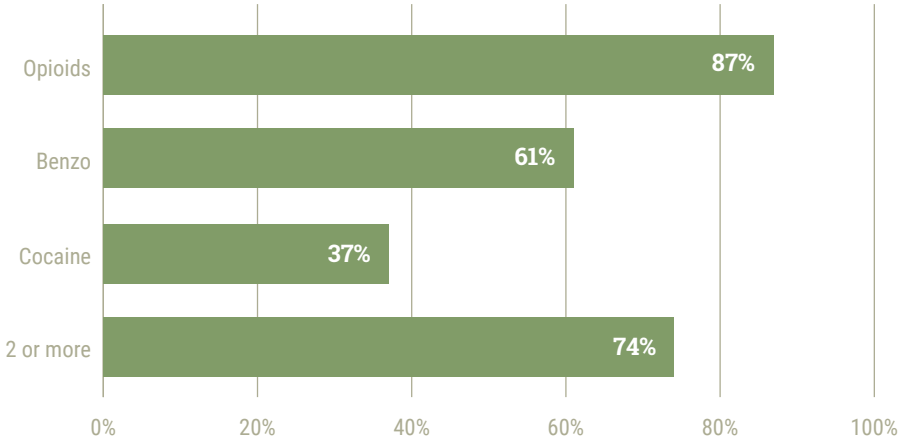
Figure 3.4 Insurance Status of Pregnancy-Associated, Drug-Related Deaths of Philadelphia Women, 2009–2018 (n=38)



DRUG-RELATED DEATHS

Among the 38 drug-related deaths between 2013-2018, toxicology reports showed 74% of the women had two or more drug classes (opioids, benzodiazepines, cocaine) detected concurrently in their post-mortem toxicology.

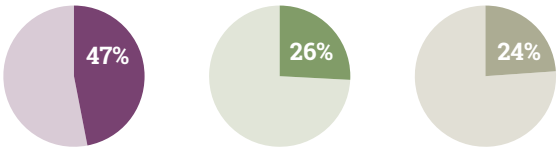
Figure 3.5 Toxicology Results of Drug-Related, Pregnancy-Associated Deaths, 2013-2018 (n=38)



87%
of these women had at least one opioid in their system at the time of their death.

61%
of these women had at least one benzodiazepine in their post-mortem toxicology

37%
of these women had cocaine in their post-mortem toxicology



When looking more specifically at the different types of opioids found in women who died from a drug-related death (not depicted in the graph above), 47% of these women had fentanyl in their system at the time of death, 26% had heroin, and 24% had oxycodone (18% had more than one type of opioid found concurrently in the toxicology results).

Maternal Mortality
PROGRESS REPORT

The Philadelphia MMRC proposed multiple recommendations to address maternal mortality and morbidity in its first report (released in 2015), even though there was no dedicated funding or formal system in place at the time to drive these recommendations. Since then, both well-established and newly developed maternal child health collaboratives have been addressing the 2015 MMRC report's recommendations. Numerous successful initiatives have resulted from these collaboratives, including the creation of a centralized referral system for home visiting services; a prenatal lab-sharing agreement to facilitate health information exchange between all delivery hospitals; Medicaid reimbursement for immediate postpartum long-acting reversible contraception (LARC); and a citywide educational program focused on screening, brief intervention, and referral to treatment (SBIRT) for substance use disorders in pregnancy. Greater investment in collaborative preventive initiatives are needed to further develop innovative interventions that can improve how women are cared for during pregnancy and postpartum.

The Philadelphia Maternal and Infant Community Action Network, a collective impact network led by the three Healthy Start programs in Philadelphia, secured $1.3 million in funding from the William Penn Foundation to create a centralized intake and referral system to streamline access to home visiting services for pregnant women and infants.

The Pennsylvania Maternal Mortality Review Committee was established in 2018 due to the collective efforts and assistance from the Philadelphia MMRC, the Pennsylvania Section of the American College of Obstetricians and Gynecologists (ACOG) and state legislators. Five members of the Philadelphia MMRC are represented on the Pennsylvania MMRC.

The Check and Connect Opiate Education Work Group, which includes the Health Federation of Philadelphia, the Perinatal Centers of Excellence (state-funded medication-assisted treatment programs for pregnant and postpartum women led by Jefferson's MATER program, Penn's Mothers Matter and Temple's WEDGE program), and the Philadelphia MMRC, developed a citywide educational program focused on screening and brief intervention for perinatal substance use for all Philadelphia delivery hospitals and their perinatal care providers. Providers have reported that they are learning to more effectively screen pregnant women for behavioral health concerns and substance use disorders, provide brief interventions, and ensure warm handoffs to behavioral health and medication-assisted treatment services.

The Philadelphia Labor and Delivery Leadership Group (PLDLG), a work group developed as a result of the 2015 MMRC report, is comprised of labor and delivery directors, nurse managers, and patient safety officers from each delivery hospital. The PLDLG convenes monthly to improve delivery-related maternal care in Philadelphia, and the collaborative receives organizational support from the PDPH to help carry out its goals, which include: facilitating health information exchange through a prenatal lab sharing agreement, reducing maternal morbidity by sharing best practices related to labor, and supporting implementation of immediate postpartum LARC programs.

The Philadelphia LARC Coalition was prompted by the 2015 Philadelphia MMRC report recommendation to remove financial barriers to access of long acting reversible contraception (LARC) in the immediate postpartum period. Title X providers, local medical schools, and public advocates facilitated changes in Pennsylvania Medicaid reimbursement in 2016 to remove barriers and increase access to immediate postpartum LARC insertion for Medicaid-insured women.

RECOMMENDATIONS

While maternal mortality surveillance using vital statistics data captures trends and disparities, state and local MMRCs comprehensively examine a full range of contributing factors across many sectors.

Examining how to address these contributing factors is a relatively new area of scientific inquiry and oftentimes, there are no established evidence-based practices or guidelines to implement. Rather, MMRCs are tasked to use the review process and their subject matter expertise and experience to develop new recommendations.

During each MMRC meeting, PDPH staff recorded recommendations developed in response to each case, and several themes emerged from this extensive case review process. Based on these themes coupled with surveillance data and relevant peer-reviewed research, the MMRC recommends the following:

1 Address root causes of health inequity in the health care system.

Non-Hispanic Black women are about four times more likely to die of pregnancy related causes than non-Hispanic White women in Philadelphia. Racial inequity in maternal deaths is multifactorial and is influenced by systemic racism and discrimination for Black women who access systems of healthcare. Equipping the health care system to build a culture of equity will improve the quality of care being offered to all pregnant and postpartum women, especially Black women, and thus improve maternal health overall.

» PDPH plans to continue to invest in women of color-led community-based organizations focused on promoting maternal health issues such as mental health awareness and treatment and breastfeeding.

Specifically, the Philadelphia MMRC recommends:

» Hospitals should implement the Alliance for Innovation on Maternal Health (AIM) safety bundle focused on reduction of Peripartum Racial/Ethnic Disparities.[1]

» The Commonwealth of Pennsylvania should expand support to perinatal quality improvement entities, including the Pennsylvania Quality Care Collaborative, for statewide education, training, and technical assistance addressing racial and ethnic inequities in maternal mortality.

2 Tailor behavioral and mental health services to meet the specific needs of pregnant and postpartum women.

Since 2017, accidental drug overdoses have risen to nearly half of all pregnancy-associated deaths of Philadelphia women. Furthermore, almost half of women who died had a history of mental illness. During MMRC discussions of these deaths, it was noted that the current health care delivery model for mental and behavioral health services does not meet the unique needs of pregnant women and those with young families. Specifically, MMRC members often noted that there is a lack of mental and substance use programs that are easily-accessible, trauma-informed, and gender-specific in Philadelphia.

Specifically, the Philadelphia MMRC recommends:

» Health care providers and hospital systems should:

- Universally screen women using a validated questionnaire for substance use disorder at the initial prenatal visit and upon presentation to labor and delivery.[2,3]
- Create streamlined care coordination for pregnant women with substance use disorders, including the development of standardized protocols to facilitate referral for pain management and medication-assisted treatment.[3]
- Adopt PDPH recommendations for safe prescribing of opioids to prevent new addiction.[4]

» The Commonwealth should:

- Revise privacy laws to remove communication barriers between physical health and mental and behavioral health providers.
- Reduce barriers to integration of physical and behavioral health along with social services for pregnant and parenting women.

3 Improve access to preventive, preconception and prenatal care.

Thirty-two percent of all pregnancy associated deaths (≥28 weeks gestation) occurred in women who started prenatal care late (third trimester) or not at all. Of all pregnancy-related deaths, 69% had multiple medical co-morbidities including obesity, HIV, hypertension and other cardiovascular conditions, renal disease, and diabetes that contributed to pregnancy and postpartum complications (data not depicted).

The MMRC medical advisory committee determined that up to 54% of pregnancy related deaths could have been prevented by the health care system to some extent. Optimization of chronic medical conditions prior to pregnancy through regular preventive care visits and early diagnosis of pregnancy complications through consistent access to prenatal care are essential in preventing similar deaths and reducing severe maternal morbidity. Studies[5,6] have demonstrated that barriers to accessing prenatal care include lack of access to transportation, health insurance, and childcare, as well as perceived discrimination and poor social supports.

» PDPH plans to establish a cardiology task force to make city-wide recommendations on enhanced care for women identified to be at high risk of cardiomyopathy or infarction.

The Philadelphia MMRC also recommends:

» The Commonwealth should simplify enrollment into Medicaid once pregnancy is established.

» Managed Care Organizations should:

- Provide transportation and facilitate childcare services for pregnant women to reduce barriers for women seeking care.
- Reimburse for doula and community health worker services to support women in the perinatal period.[7]

» Health care providers should:

- Adopt a patient centered framework such as "One Key Question" to routinely assess pregnancy intention and goals and offer personalized counseling and care based on response[8]
- Follow best practices in engaging women in effective gestational weight gain counseling and tobacco cessation during pregnancy.

» Prenatal care sites should modify policies so that women can initiate prenatal care at any gestational age.

4 Direct more attention to the postpartum period.

Fifty-four percent of pregnancy-associated deaths occurred after the traditional six-week postpartum period, a time when women of limited resources often lose access to services such as housing, health insurance, family support programs and subspecialty medical care. This percentage was even higher (66%) with the drug related deaths.

Currently, women with Medicaid lose their insurance 60 days after delivery. Of all pregnancy associated deaths, 75% of women had Medicaid and 6% had no insurance at the time of their pregnancy. An analysis of the 2005–13 Medical Expenditure Panel Survey found that prior to implementation of the Affordable Care Act (ACA), nearly 60 percent of pregnant women experienced a month-to-month change in insurance type in the nine months leading to delivery, and half were uninsured at some point in the six months following birth.[9]

Therefore, it's possible that many women who died more than 60 days after delivery did not have access health insurance. It is important for the health care and health insurance fields to redefine the postpartum period as a continuum rather than as a defined six-week period. Supporting policy changes, including continued access to health insurance, medication-assisted treatment programs and other support services will allow this clinical shift to occur.

Specifically, the Philadelphia MMRC recommends:

» The Commonwealth should:

- Extend Medicaid eligibility for the postpartum period from 60 days to one year after delivery. [10]
- Pass legislation establishing paid parental leave, including maintenance of full benefits and 100% pay for at least 6 weeks after delivery.[11]

» Managed Care Organizations should:

- Reimburse for home visiting and community health worker services in order to engage women with family support programs and medical care with increased frequency in the first year following delivery.
- Reimburse for remote hypertension monitoring programs such as Heart Safe Motherhood.[12]

» Health care providers should:

- Individualize postpartum care timing and content based on medical and social determinants of health.[13]
- Establish at a minimum, a six-month postpartum visit for women to include substance use disorder and depression screening, weight management, contraception counseling, and medical follow-up of any pregnancy complications (e.g. diabetes and hypertension).[13]

5 Heighten awareness of high-risk pregnancy and postpartum complications in non-obstetric care settings

Thirty-seven percent of the women who suffered a pregnancy-associated death interacted with the medical system in the month prior to their death (data not depicted). Unclear policies and practices for identifying and treating pregnant and postpartum women for substance use, depression, domestic violence, and well-established pregnancy and post-partum complications can also contribute to poor health outcomes. Postpartum complications, such as peripartum cardiomyopathy, are not well understood by the general public—leading to missed opportunities for prevention during the key "fourth trimester" period.

» PDPH plans to educate community-based home-visiting and family-support programs on early warning signs of maternal morbidity to ensure timely referral for clinical treatment.

Additionally, the Philadelphia MMRC recommends:

» Hospitals should establish clear policies for emergency departments to seek immediate Obstetric consultation for pregnant and postpartum women (up to a year post-pregnancy) who present with specific symptoms that may suggest complications.

» Non-obstetric care providers should address family planning considerations associated with high-risk pregnancy and provide timely referral to family planning services.

6 Strengthen coordination of services between health care and social service settings.

Many opportunities exist for preventing maternal mortality through strengthened care coordination between health care and social service settings, specifically in the postpartum period. Improved care coordination between the inpatient and outpatient setting will allow for reduction in uncoordinated services and improved health across a woman's life course. There is an agreement amongst MMRC members that a lack coordination of services for pregnant and postpartum women considerably undermine efforts to reduce maternal mortality and morbidity in the Philadelphia community. This observation is consistent with other MMRCs across the country.[14]

Specifically, the Philadelphia MMRC recommends:

» **Health care providers** should:

- ensure that postpartum and primary care visits as well as appointments for relevant specialties (for example, cardiology, psychiatry) are scheduled prior to discharge from the hospital.[13]
- universally screen women for unmet social needs during prenatal care.[15]

» **Hospitals, clinics, and community health centers** should work with **community based home visiting programs** and **mental and behavioral health centers** to ensure that comprehensive follow-up and care coordination occurs—particularly for those women at high risk for complications due to chronic medical health conditions and behavioral health issues.

» **Hospitals and Managed Care Organizations** should work together to offer collaborative prenatal and postpartum care coordination and case management services.

» **The Commonwealth** should develop infrastructure so that all women are offered short-term home visiting services in the postpartum period.[16]

7

Build infrastructure to identify and support women with history of intimate partner violence.

Twenty-one percent of pregnancy-associated deaths had a history of intimate partner violence (IPV). IPV is a pattern of behaviors used to gain power and control over a partner or ex-partner. IPV, also called domestic violence, can occur in all dating/romantic relationship, regardless of the race, age, or income status of the individual. Intimate partner violence is a gender- based crime, as studies widely identify women as victimized more often.[17] Research has found that pregnant women with histories of IPV are less likely than other pregnant women to report having had discussions with a provider about IPV during their prenatal care and are more likely to be late to prenatal care.

They are also at greater risk for further violence, death due to abuse compared to non-pregnant women, and are more likely to report substance abuse, depression, and other adverse pregnancy outcomes. Furthermore, women who experience IPV are also at high risk for reproductive coercion and unintended pregnancy.[18] Notably, survivors are more likely to disclose IPV to a provider after being asked repeatedly. Therefore, maternal and child health clinical providers are uniquely positioned to identify IPV because they come into regular contact with women during pregnancy and the postpartum period.[19]

Additionally, there is a long-standing history of intimate partner violence nonprofits partnering with medical providers to provide counseling, advocacy and crisis intervention in medical settings. This can reduce the burden on the medical staff and ensure a higher level of confidentiality for the survivor by providing a supportive person that would not be required to document in the medical chart. Governmental, educational, and health care institutions along with community-based organizations should support Philadelphia's citywide, coordinated systems' response to relationship violence.

Specifically, the Philadelphia MMRC recommends:

» Hospitals and health care providers should partner with local IPV agencies to:
  - implement annual trainings for all staff in contact with pregnant and postpartum women in best practices in IPV screening, appropriate Philadelphia-specific referrals and counseling options
  - implement a coordinated response to IPV focused on obstetric triage services and emergency rooms.[19]

» Women's health providers should have an annual training on reproductive coercion, stealth birth control, human trafficking, and how to support individuals affected by these issues.

» Child health providers should complete additional training in intimate partner violence and screen at all well child visits.

» City departments and non-profit organizations focused on housing should provide increased access to safe and affordable emergency and transitional housing services for victims of intimate partner violence.

MOVING FORWARD

Creation of the Philadelphia Maternal Mortality Community Action Team (The OVA)

THE OVA
BIRTH JUSTICE PHILLY

In September 2019, the Merck for Mothers organization, through its Safer Childbirth Cities Initiative, awarded a three-year grant to the Health Federation of Philadelphia in support of Philadelphia's MMRC and the formation of a structured community action team to be known as The OVA: Organizing Voices for Action. This grant enabled the formation of a coalition to implement and support innovative citywide interventions that specifically address the leading contributors to maternal mortality in Philadelphia as identified by the Philadelphia MMRC. In addition to strengthening the Philadelphia maternal mortality surveillance process through adoption of CDC recommended data collection, specific recommendations emerging from this report will drive collaborative efforts.

The OVA will build upon existing collaboratives focused on these goals, infuse funding into pilot projects with the potential to improve maternal health, and work across sectors to integrate community voices and solutions into policies and programs. It will work as a strong partnership to promote safe pregnancies, childbirth, and postpartum periods for all women in Philadelphia.

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