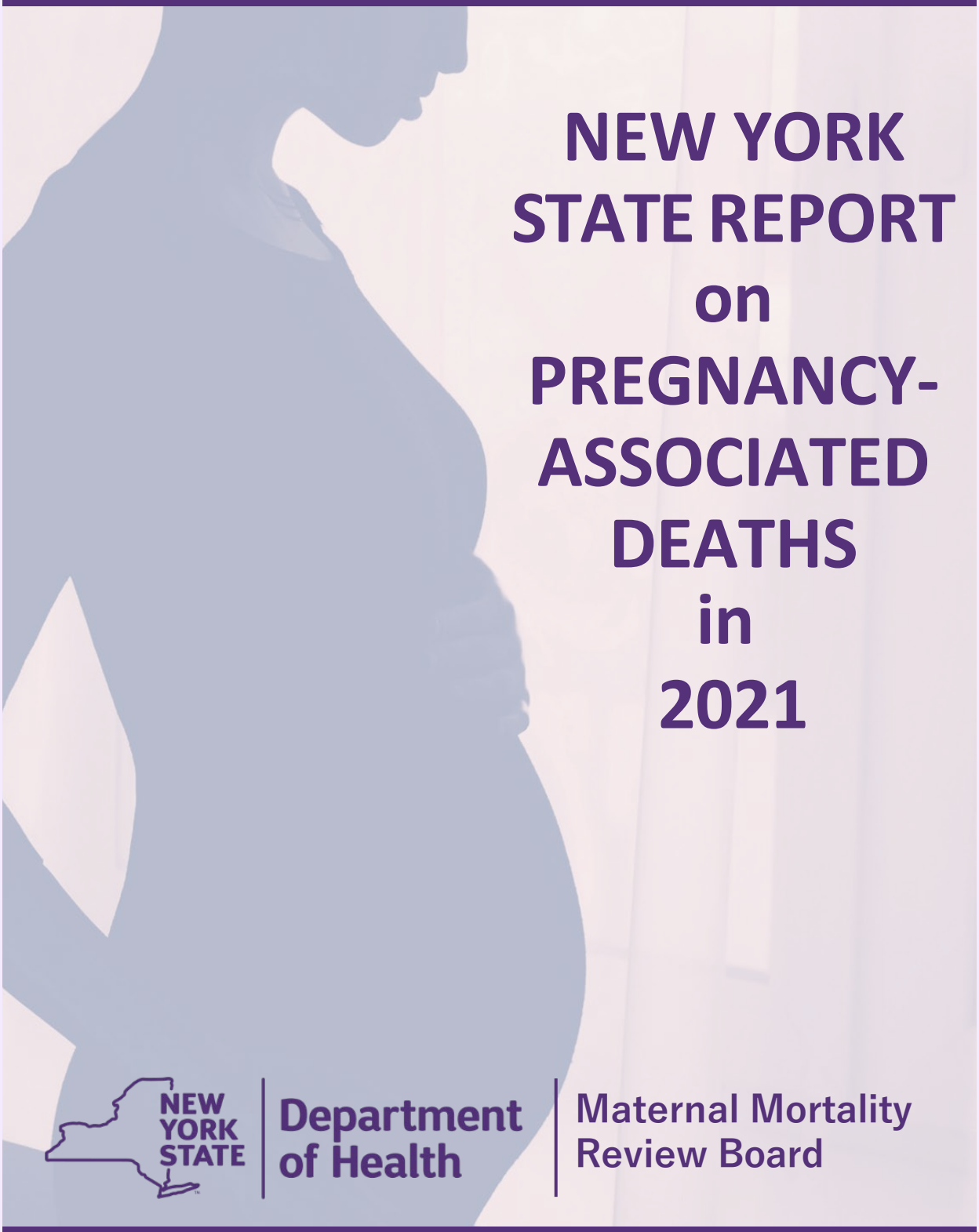

NEW YORK STATE REPORT on PREGNANCY-ASSOCIATED DEATHS in 2021

NEW YORK STATE | Department of Health

Maternal Mortality Review Board

Acknowledgment

The New York State Department of Health (Department) would like to acknowledge the 547 New York women who died in the years 2018, 2019, 2020, and 2021 within one year of being pregnant, forever affecting their families, friends, and communities. The Department is dedicated to learning from their stories and applying the lessons learned to help prevent future deaths for all pregnant women.

New York State (NYS) has two committees that provide a multidisciplinary review of each maternal death through an assessment of multiple factors including the preventability of the death. At the time of this report, New York City (NYC) deaths were reviewed by the Maternal Mortality and Morbidity Review Committee (M3RC), while deaths outside of NYC were reviewed by the Maternal Mortality Review Board (MMRB).

The Department would like to acknowledge the dedication of the committee members, who volunteer their time and expertise to review pregnancy-associated deaths across New York State. The Department would especially like to thank all members of the Maternal Mortality Review Board, including but not limited to the members listed below.

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NEW YORK STATE | Department of Health

Maternal Mortality Review Board

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PURPOSE AND SCOPE

Pregnancy-associated deaths are tragic events that have deep and far-reaching impacts on families and communities, especially those disproportionately experiencing these deaths. The New York State Department of Health publishes comprehensive reports based on Maternal Mortality Review Board reviews of pregnancy-associated deaths every 2 years, the most recent of which is the *New York State Report on Pregnancy-Associated Deaths in 2018-2020*. This report covers pregnancy-associated deaths with special focus on pregnancy-related deaths occurring in 2021, while also presenting some updated trends on these deaths for 2018-2021. Additionally, this report describes the recommendations made by the New York State Maternal Mortality Review Board and work that is underway in the Department to address this public health issue.

DEFINITIONS

- **Pregnancy-related:** The death of a woman during pregnancy or within one year of the end of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.
- **Pregnancy-associated but not related:** The death of a woman during pregnancy or within one year of the end of pregnancy from a cause that is not related to pregnancy.
- **Pregnancy-associated but unable to determine relatedness:** The death during pregnancy or within one year of the end of pregnancy where it cannot be determined from the available information whether the cause of death was related to pregnancy.

Note: The definition of pregnancy-relatedness is based on the Maternal Mortality Review Committee Decisions Form developed by the CDC (Appendix D).

THIS REPORT FOCUSES ON FOUR KEY QUESTIONS CONSIDERED FOR EACH CASE REVIEWED:

1. Was the death **pregnancy-related**?
2. What was the **cause** of death?
3. Was the death **preventable**?
4. What were the **factors** that contributed to the death?

NEW YORK STATE | Department of Health

Maternal Mortality Review Board

Executive Summary

KEY FINDINGS

TRENDING 2018-2021 RESULTS

- Statewide, **547** pregnancy-associated deaths of New York State residents occurring 2018-2021 were identified. Of the 547 pregnancy-associated deaths, **170 (31.1%)** were found to be pregnancy-related, **291 (53.2%)** were found to be pregnancy-associated but not related, and **86 (15.7%)** were found to be pregnancy-associated but unable to determine relatedness.
- The overall 2018-2021 **pregnancy-associated** mortality ratio in New York State was **63.4** deaths per 100,000 live births (**547** deaths over **863,235** live births).
- The total number of **pregnancy-associated** deaths increased **11.8%** from 2020 (N=**144**) to 2021 (N=**161**), largely due to rising numbers of pregnancy-related deaths, from **38 (26.4%)** in 2020 to **49 (30.4%)** in 2021. The increase in pregnancy-related deaths was due to an increase in deaths caused by substance use disorder (from **4** in 2020 to **10** in 2021).
- The overall 2018-2021 **pregnancy-related** mortality ratio in New York State was **19.7** deaths per 100,000 live births (**170** pregnancy-related deaths over **863,235** live births), with the highest yearly rate in 2021: **23.3** deaths per 100,000 live births (**49** pregnancy-related deaths over **209,947** live births).
- **Mental health conditions** (N=**31**) and **hemorrhage** (N=**30**) were consistently leading causes of pregnancy-related deaths each year during 2018-2021. While **embolism** was one of the top-three causes in 2018 (N=**8**) and 2019 (N=**7**), **infection** became a leading cause of death in 2020 (N=**8**) and 2021 (N=**7**). **Six (75%)** of infection deaths in 2020 and **6 (86%)** of infection deaths in 2021 were attributed to **COVID-19**.

NEW YORK STATE | Department of Health

Maternal Mortality Review Board

Executive Summary

KEY FINDINGS

ALL PREGNANCY-ASSOCIATED DEATHS IN 2021

- Statewide, **161** pregnancy-associated deaths of New York State residents occurring in 2021 were identified.
- Of the 161 pregnancy-associated deaths, **49 (30.4%)** were found to be pregnancy-related, **89 (55.3%)** were found to be pregnancy-associated but not related, and **23 (14.3%)** were found to be pregnancy-associated but unable to determine relatedness.
- The pregnancy-associated mortality ratio in New York State was **76.7** deaths per 100,000 live births (**161** deaths over **209,947** live births).

PREGNANCY-RELATED DEATHS IN 2021

- Statewide, **49** pregnancy-related deaths of New York State residents occurring in 2021 were identified.
- The pregnancy-related mortality ratio in New York State was **23.3** deaths per 100,000 live births (**49** pregnancy-related deaths over **209,947** live births).
- Black, non-Hispanic women had a pregnancy-related mortality ratio **5.1 times** that of White, non-Hispanic women (54.0 v. 10.6 deaths per 100,000 live births).
- Over half (**55.1%,** N=**27**) of pregnancy-related deaths occurred within 42 days of the end of pregnancy.
- More than half (**53.1%,** N=**26**) of individuals who died of pregnancy-related causes were obese, and obese individuals who died of a pregnancy-related cause had a pregnancy-related mortality ratio **3.2 times** that of normal weight individuals.
- The leading cause of pregnancy-related deaths was mental health conditions (**26.5%,** N=**13**), followed by hemorrhage (**14.3%,** N=**7**) and infection (**14.3%,** N=**7**).
- **Mental health conditions** was the leading cause of pregnancy-related deaths for decedents under 40 years of age.
- **Infection** was the leading cause of death for those 40 and older.
- **Embolism** was one of the top 3 leading causes of death for all age groups except 35-39-year-olds.

Executive Summary

KEY FINDINGS

PREGNANCY-RELATED DEATHS IN 2021 (CONT'D)

- The Committees determined that **65.3%** (N=**32**) of pregnancy-related deaths were preventable; among which **46.9%** (N=**15**) had good chance to alter the outcome while **53.1%** (N=**17**) had some chance to alter the outcome.
  - **100%** (N=**13**) of pregnancy-related deaths due to mental health conditions were determined to be preventable, among which **69.2%** (N=**9**) had good chance to alter the outcome while **30.8%** (N=**4**) had only some chance to alter the outcome.
  - **100%** (N=**4**) of deaths due to amniotic fluid embolism were not preventable.
  - **83.3%** (N=**5**) of pregnancy-related deaths occurring during pregnancy were determined to be preventable, among which **60%** (N=**3**) had good chance to alter the outcome while **40%** (N=**2**) had only some chance to alter the outcome.
  - **44.4%** (N=**12**) of pregnancy-related deaths occurring within 42 days of the end of pregnancy were preventable, among which **33.3%** (N=**4**) had good chance to alter the outcome while **66.7%** (N=**8**) had only some chance to alter the outcome
  - **93.8%** (N=**15**) of pregnancy-related deaths occurring 43 days to 1 year of the end of pregnancy were determined to be preventable, among which **53.3%** (N=**8**) had good chance to alter the outcome while **46.7%** (N=**7**) had only some chance to alter the outcome
- For every preventable pregnancy-related death, an average of **4.3** factors were identified that contributed to the death.

1. Was the Death Pregnancy-Related?

BACKGROUND

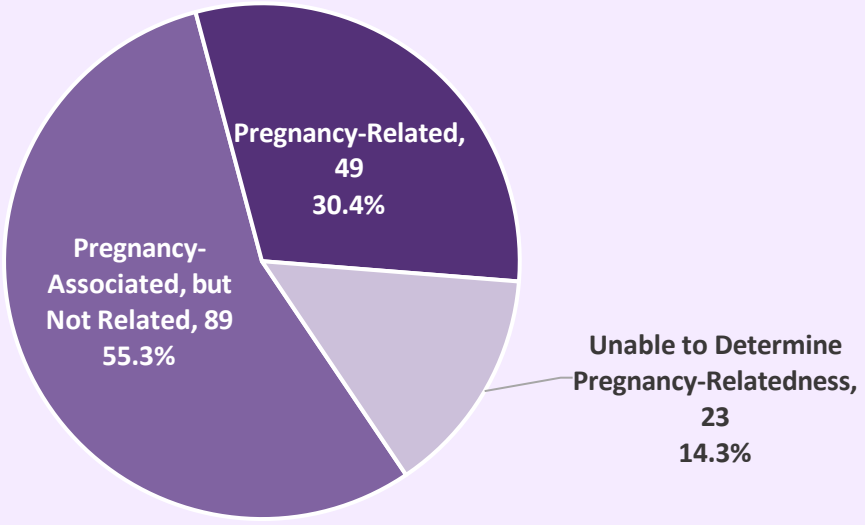
Case information is collected and summarized by abstractors for review by the maternal mortality review committees. Maternal mortality review committees are multidisciplinary groups that convene at the state or local level to comprehensively review deaths that occur during or within 1 year of the end of pregnancy. New York State (NYS) has two committees that provide a multidisciplinary review of each maternal death through an assessment of multiple factors including the preventability of the death. At the meeting, members share their insights and participate in a review of each case. After discussion, the committee answers a series of questions and determines the degree of pregnancy-relatedness based on definitions provided by CDC*. The members also develop actionable recommendations to improve maternal outcomes and prevent future deaths. At the time of this report, New York City (NYC) deaths were reviewed by the Maternal Mortality and Morbidity Review Committee (M3RC), while deaths outside of NYC were reviewed by the Maternal Mortality Review Board (MMRB).

- **Pregnancy-related:** The death of a woman during pregnancy or within one year of the end of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.
- **Pregnancy-associated, but not related:** The death of a woman during pregnancy or within one year of the end of pregnancy from a cause that is not related to pregnancy.
- **Pregnancy-associated, but unable to determine relatedness:** a death during pregnancy or within one year of the end of pregnancy where it cannot be determined from the available information whether the cause of death was related to pregnancy.

* https://www.cdc.gov/maternal-mortality/php/mmrc/index.html

RESULTS

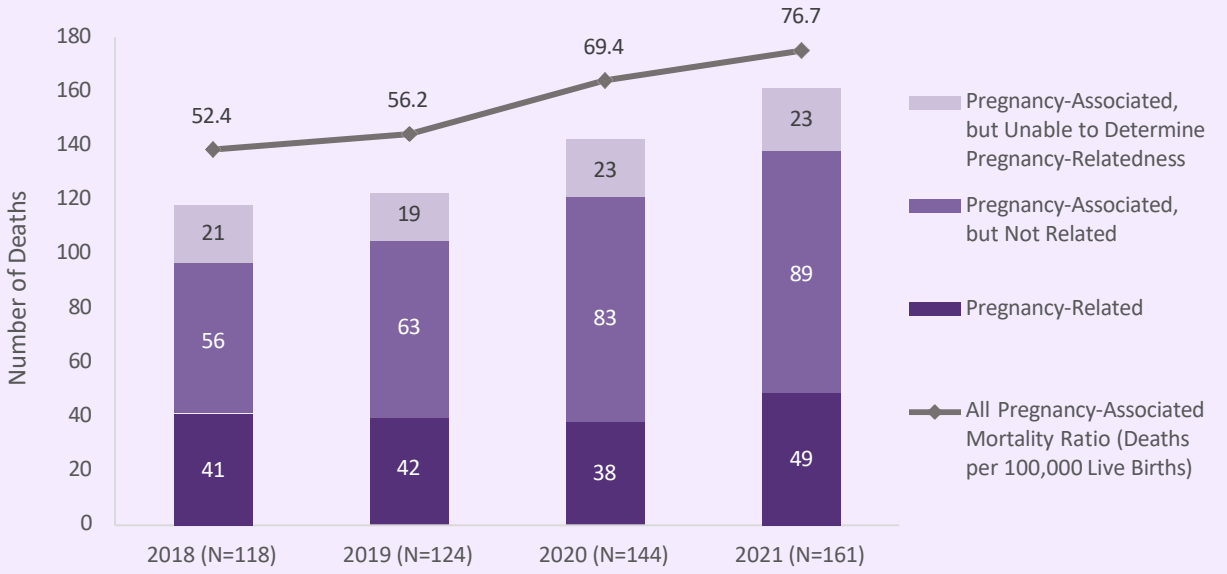
FIGURE 1. DISTRIBUTION OF PREGNANCY-ASSOCIATED DEATHS BY RELATEDNESS, 2021



In 2021, out of **161** total pregnancy-associated deaths, **49 (30.4%)** were determined to be pregnancy-related, **89 (55.3%)** were determined to be unrelated to pregnancy, and the committees were unable to make a relatedness determination for **23 (14.3%)**.

1. Was the Death Pregnancy-Related?

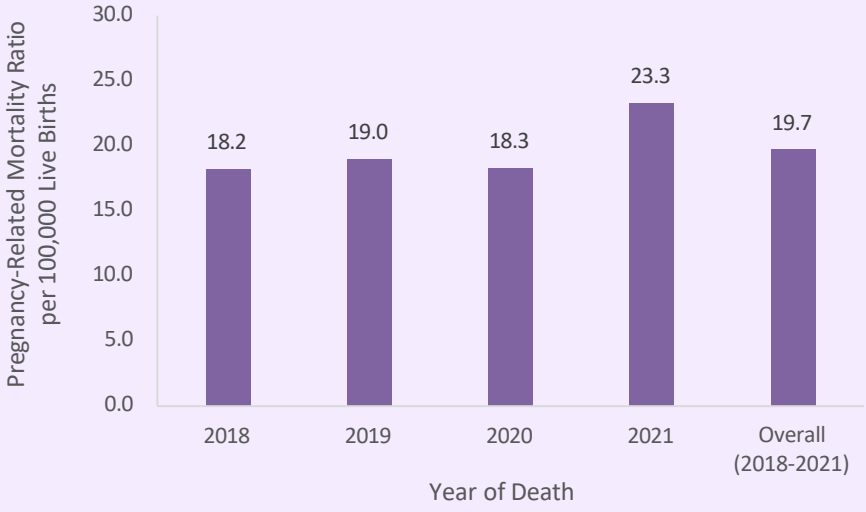
FIGURE 2. YEARLY DISTRIBUTION OF PREGNANCY-ASSOCIATED DEATHS BY RELATEDNESS AND PREGNANCY-ASSOCIATED MORTALITY RATIOS, 2018-2021



The total number of **pregnancy-associated** deaths increased **11.8%** from 2020 (N=**144**) to 2021 (N=**161**), largely due to rising numbers of pregnancy-related deaths, from **38** in 2020 to **49** in 2021. The increase in pregnancy-related deaths was due to an increase in deaths caused by substance use disorder (from **4** in 2020 to **10** in 2021).

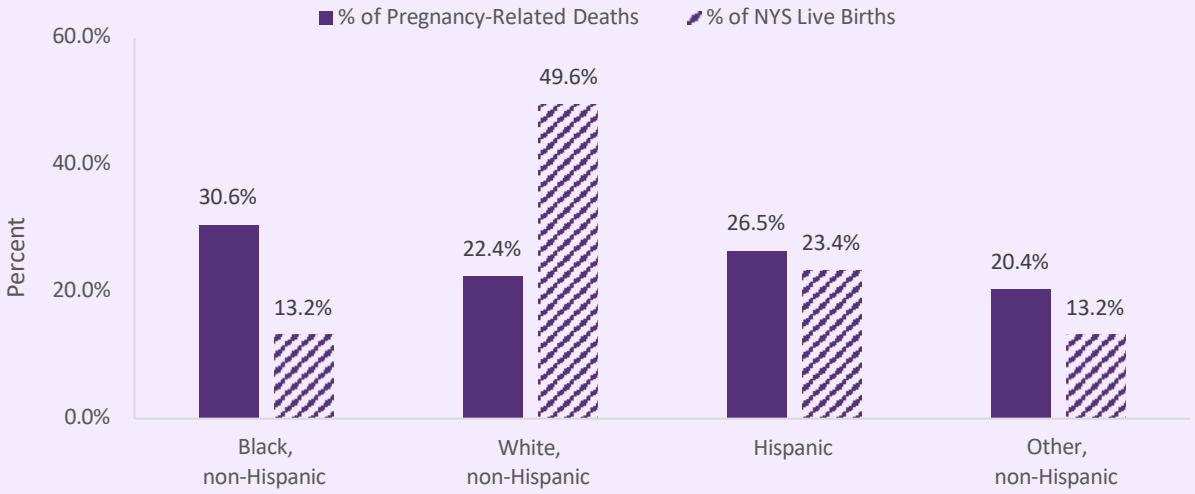
FIGURE 3. PREGNANCY-RELATED MORTALITY RATIO BY YEAR, 2018-2021

During **2018-2021**, the overall **pregnancy-related** mortality ratio in New York State was **19.7** deaths per 100,000 live births (**170** pregnancy-related deaths over **863,235** live births), with the highest yearly rate in 2021: **23.3** deaths per 100,000 live births (**49** pregnancy-related deaths over **209,947** live births).



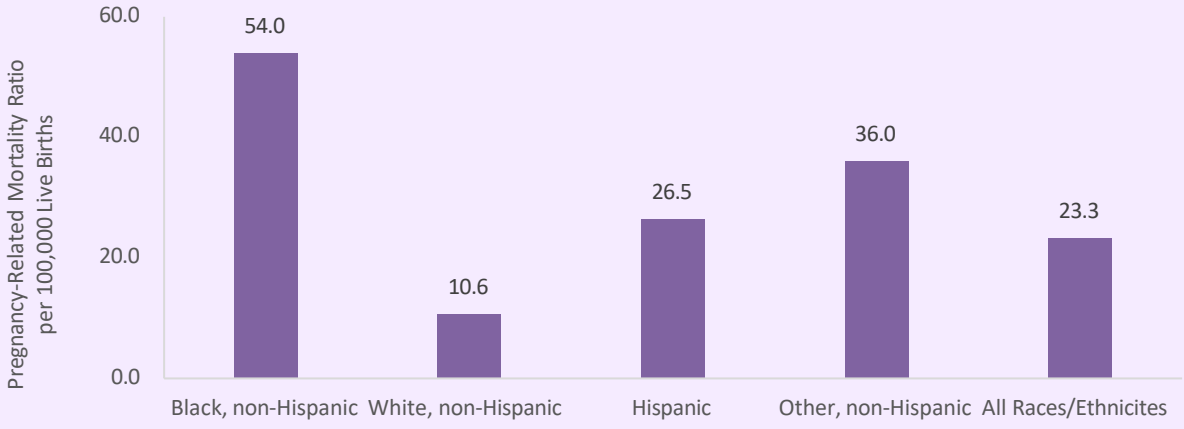
1. Was the Death Pregnancy-Related?

FIGURE 4. PROPORTION OF PREGNANCY-RELATED DEATHS AND LIVE BIRTHS BY RACE/ETHNICITY, 2021



In 2021, Black, non-Hispanic women were overrepresented in the pregnancy-related death cohort, given that Black, non-Hispanic women represented **13.2%** (N=**27,773**) of live births in New York State (N=**209,947**), while they contributed nearly a **third** (N=**15**) of all pregnancy-related deaths (N=**49**). White, non-Hispanic women represented nearly **half** (N=**104,150**) of live births yet contributed **22.4%** (N=**11**) of all pregnancy-related deaths.

FIGURE 5. PREGNANCY-RELATED MORTALITY RATIO BY RACE/ETHNICITY, 2021

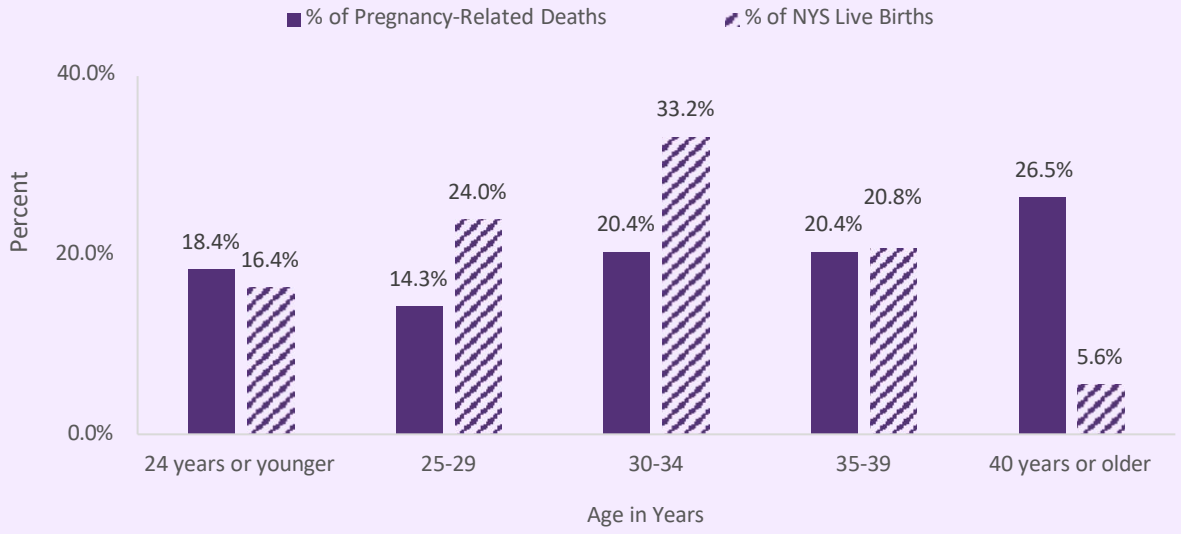


Note: Due to small number of cases in the cohort, rates may be unreliable and must be cautiously interpreted.

In 2021, Black, non-Hispanic women had the highest pregnancy-related mortality ratio (**54.0** per 100,000 live births, i.e., **15** deaths over **27,773** live births) among all racial/ethnic groups, which was **5.1 times** the ratio for White, non-Hispanic women (**10.6** per 100,000 live births, i.e., **11** deaths over **104,150** live births).

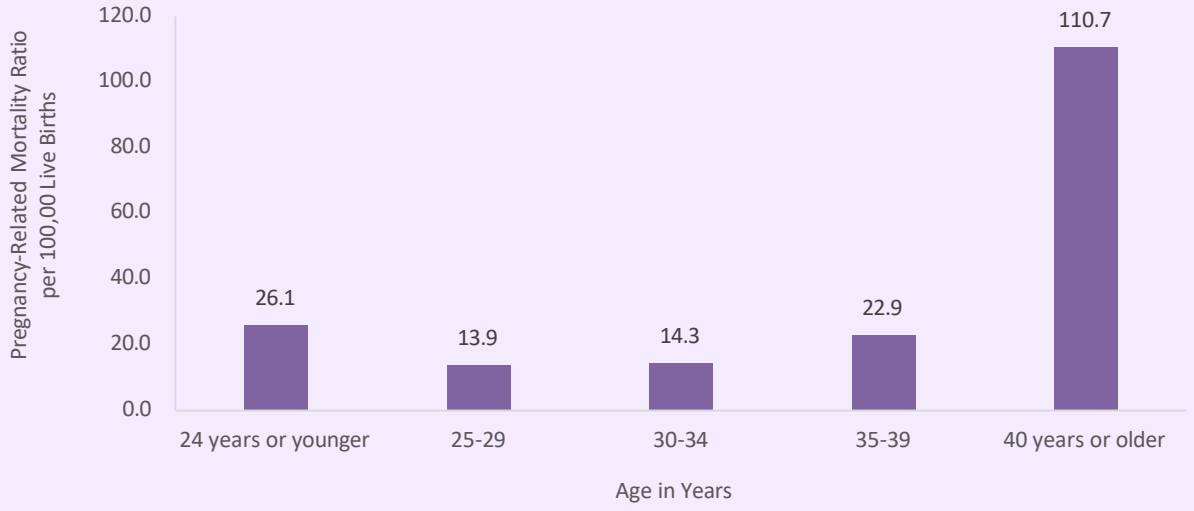
1. Was the Death Pregnancy-Related?

FIGURE 6. PROPORTION OF PREGNANCY-RELATED DEATHS AND LIVE BIRTHS BY AGE AT DEATH (IN YEARS), 2021



In 2021, women ages 40 and older were overrepresented in the pregnancy-related death cohort. **26.5%** (N=**13**) of pregnancy-related deaths were among women 40 years or older, while only **5.6%** (N=**11,745**) of the births were to women in that age group.

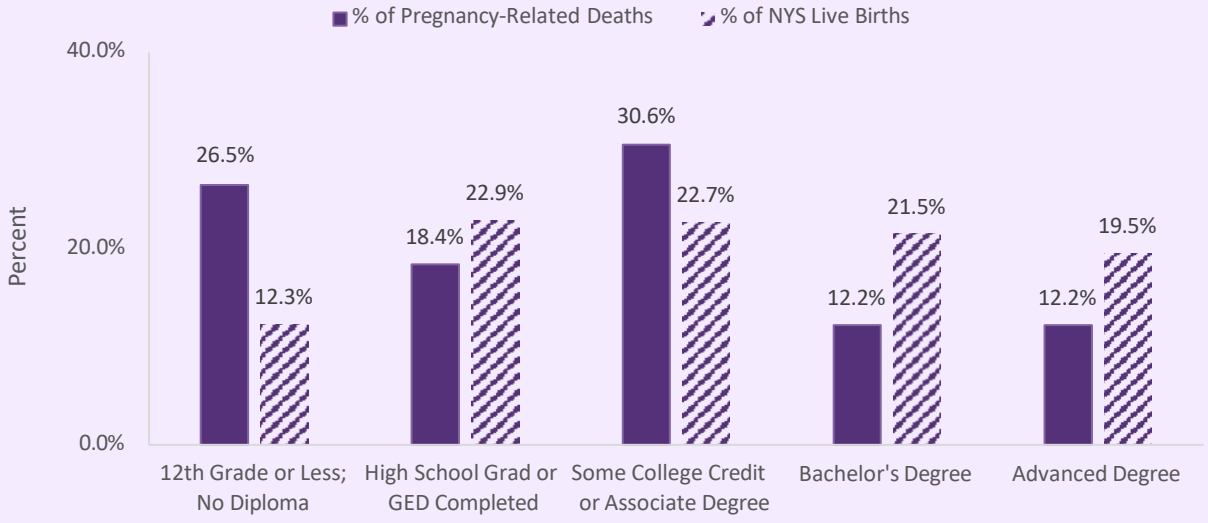
FIGURE 7. PREGNANCY-RELATED MORTALITY RATIO BY AGE AT DEATH (IN YEARS), 2021



In 2021, the pregnancy-related mortality ratio increases as maternal age **exceeds 40 years and older** (**110.7** per 100,000 live births, i.e., **13** pregnancy-related deaths over **11,745** live births).

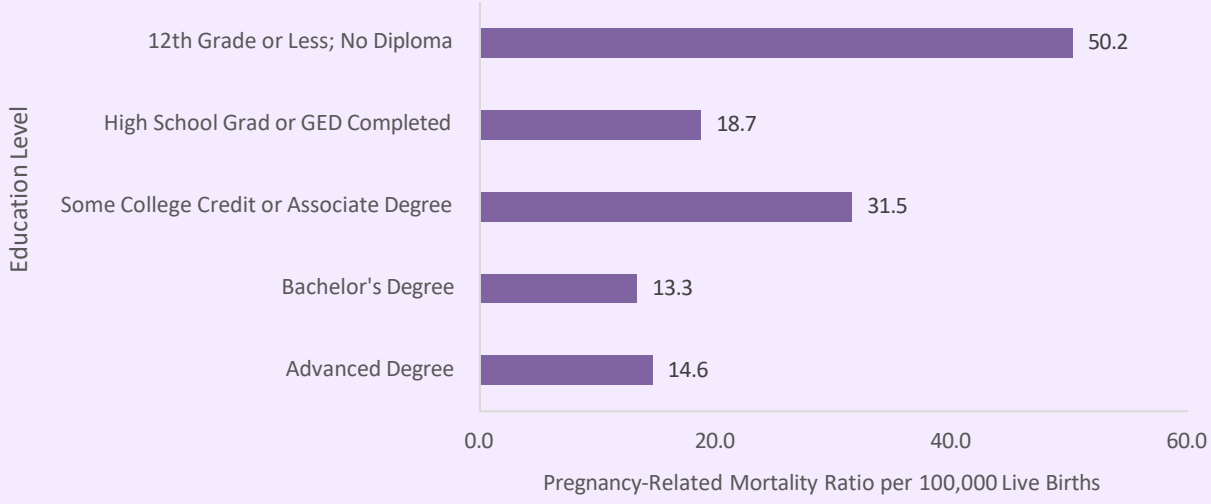
1. Was the Death Pregnancy-Related?

FIGURE 8. PROPORTION OF PREGNANCY-RELATED DEATHS AND LIVE BIRTHS BY EDUCATION LEVEL, 2021



In 2021, women without a high school education were overrepresented in the pregnancy-related death cohort. Almost **27%** (N=**13**) of pregnancy-related deaths were among women without a high school education, while only **12.3%** (N=**25,891**) of live births were to women in that education group.

FIGURE 9. PREGNANCY-RELATED MORTALITY RATIO BY EDUCATION LEVEL, 2021



In 2021, women **without a high school education** had the highest pregnancy-related mortality ratio (**50.2** per 100,000 live births, i.e., **13** pregnancy-related deaths over **25,891** live births).

1. Was the Death Pregnancy-Related?

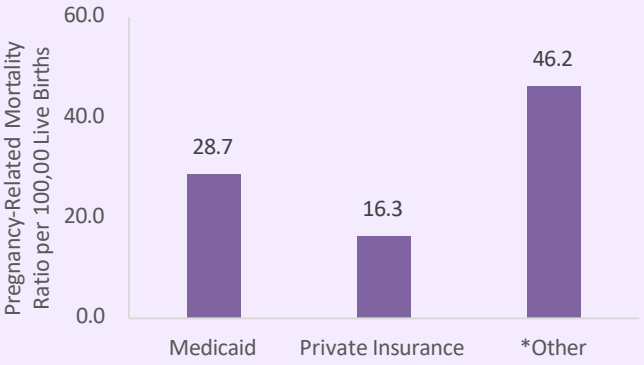
TABLE 1. DISTRIBUTION OF PREGNANCY-RELATED DEATHS BY INSURANCE TYPE, 2021

Health Insurance Type	Count (%)
Medicaid	29 (59.2%)
Private Insurance	16 (32.7%)
*Other	4 (8.2%)
Total	**49 (100%)**

*Includes Self-Pay, Other Government/Child Health Plus, Other Government (Federal, State, Local) and Unknown.

In 2021, more than half of pregnancy-related deaths (**59.2%**, N=**29**) were covered by Medicaid.

FIGURE 10. PREGNANCY-RELATED MORTALITY RATIO BY INSURANCE TYPE, 2021



Note: Due to small number of cases in the cohort, rates may be unreliable and must be cautiously interpreted.

In 2021, women enrolled in Medicaid had a pregnancy-related mortality ratio (**28.7** per 100,000 live births, i.e., **29** deaths over **101,153** live births) **1.8 times** those covered by private insurance (**16.3** per 100,000 live births, i.e., **16** deaths over **98,456** live births).

FIGURE 11. DISTRIBUTION OF PREGNANCY-RELATED DEATHS BY TIMING OF DEATH IN RELATION TO PREGNANCY, 2021

In 2021, the majority of pregnancy-related deaths (**67.3%**, N=**33**) occurred while pregnant (**12.2%**, N=**6**) or within 42 days of the end of pregnancy (**55.1%**, N=**27**).

WHILE PREGNANT (12.2%, N=6)

WITHIN 42 DAYS (55.1%, N=27)

43 DAYS TO 1 YEAR (32.7%, N=16)

TABLE 2. PREGNANCY-RELATED MORTALITY RATIO BY TIMING OF DEATH IN RELATION TO PREGNANCY, 2021

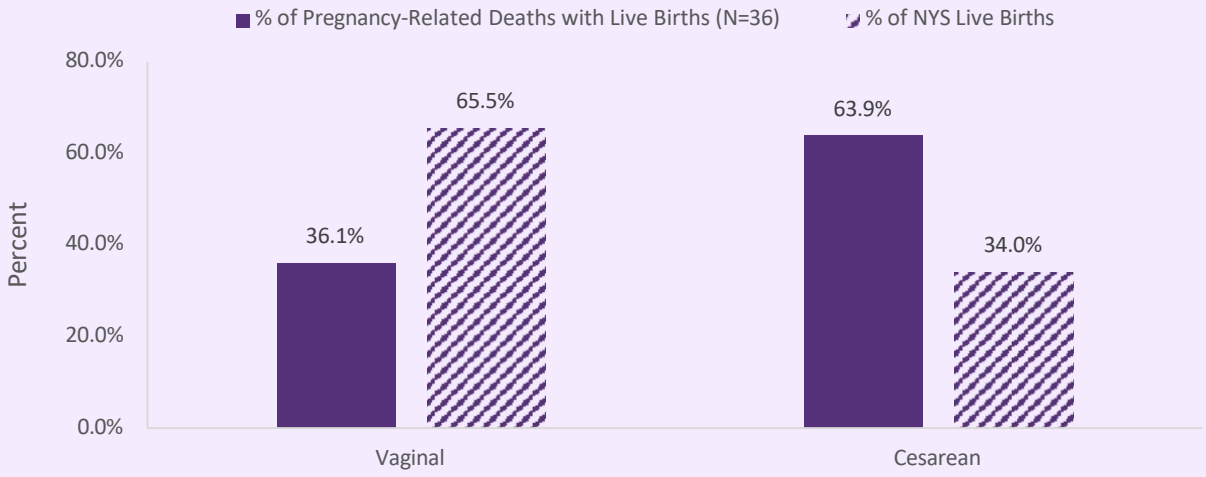
Timing of Death in Relation to Pregnancy	Pregnancy-Related Mortality Ratio per 100,000 Live Births*
While Pregnant	2.9
Within 42 Days	12.9
43 Days to 1 Year	7.6

*Denominator (N=209,947) includes all live births and is not group-specific.

In 2021, women who died **within 42 days** of the end of the pregnancy had the highest pregnancy-related mortality ratio compared to those who died while pregnant and 43 days to 1 year after the end of pregnancy.

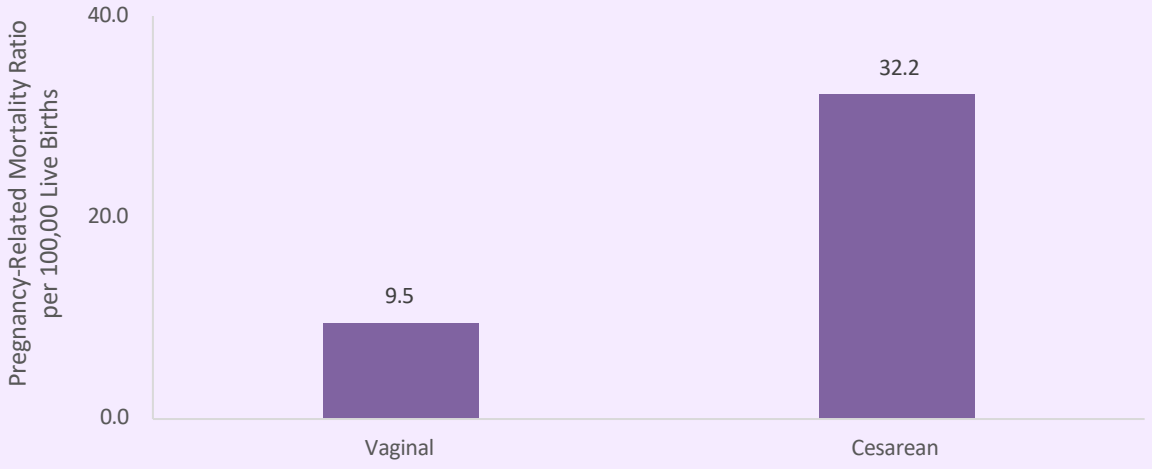
1. Was the Death Pregnancy-Related?

FIGURE 12. PROPORTION OF PREGNANCY-RELATED DEATHS AND LIVE BIRTHS BY TYPE OF DELIVERY, 2021



In 2021, among **49** pregnancy-related deaths, **36** had a live birth. Cesarean deliveries accounted for **one-third** (**34%**, N=**71,350**) of live births (N=**209,947**) but nearly **two-thirds** (**63.9%**, N=**23**) of pregnancy-related deaths with a live birth (N=**36**).

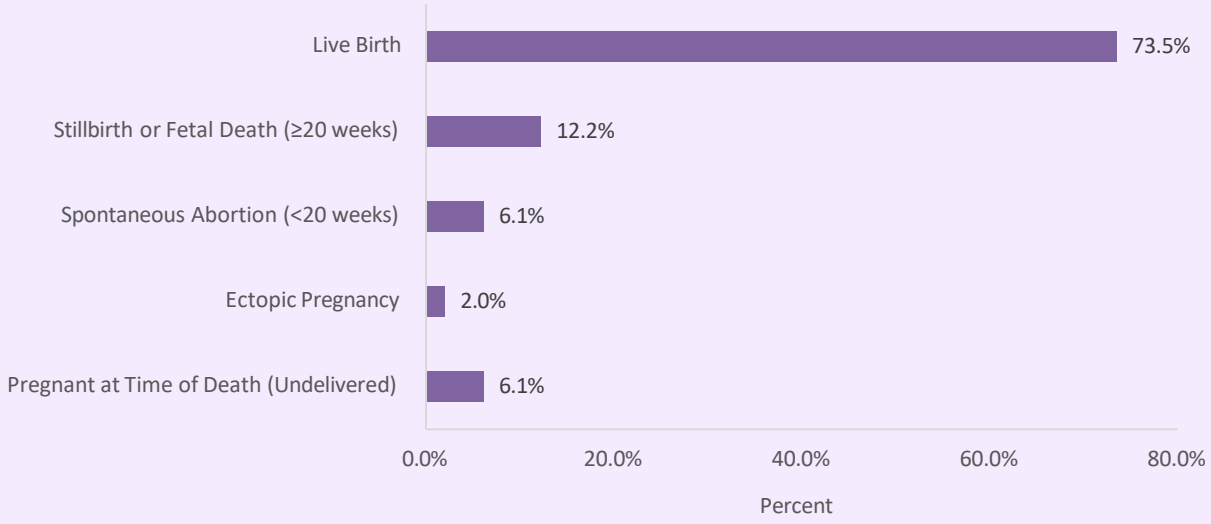
FIGURE 13. PREGNANCY-RELATED MORTALITY RATIO BY TYPE OF DELIVERY, 2021



In 2021, women who had a cesarean delivery had a higher pregnancy-related mortality ratio (**32.2** per 100,000 live births, i.e., **23** deaths over **71,350** live births) compared to those who delivered vaginally. Women who had a cesarean delivery died at a ratio **3.4 times** those who delivered vaginally (**9.5** per 100,000 live births, i.e., **13** deaths over **137,428** live births).

1. Was the Death Pregnancy-Related?

FIGURE 14. DISTRIBUTION OF PREGNANCY-RELATED DEATHS BY PREGNANCY OUTCOME, 2021



In 2021, the majority (**73.5%**, N=**36**) of pregnancy-related deaths occurred after a live birth, the rest included those pregnant at time of death, stillbirth or fetal death, spontaneous abortion, and ectopic pregnancy.

TABLE 3. PREGNANCY-RELATED MORTALITY RATIO BY PREGNANCY OUTCOME, 2021

Pregnancy Outcome	Pregnancy-Related Mortality Ratio per 100,000 Live Births*
Live Birth	17.1
Spontaneous Abortion (<20 weeks)	1.4
Stillbirth or Fetal Death (≥20 weeks)	2.9
Ectopic Pregnancy	0.5
Pregnant at Time of Death (Undelivered)	1.4

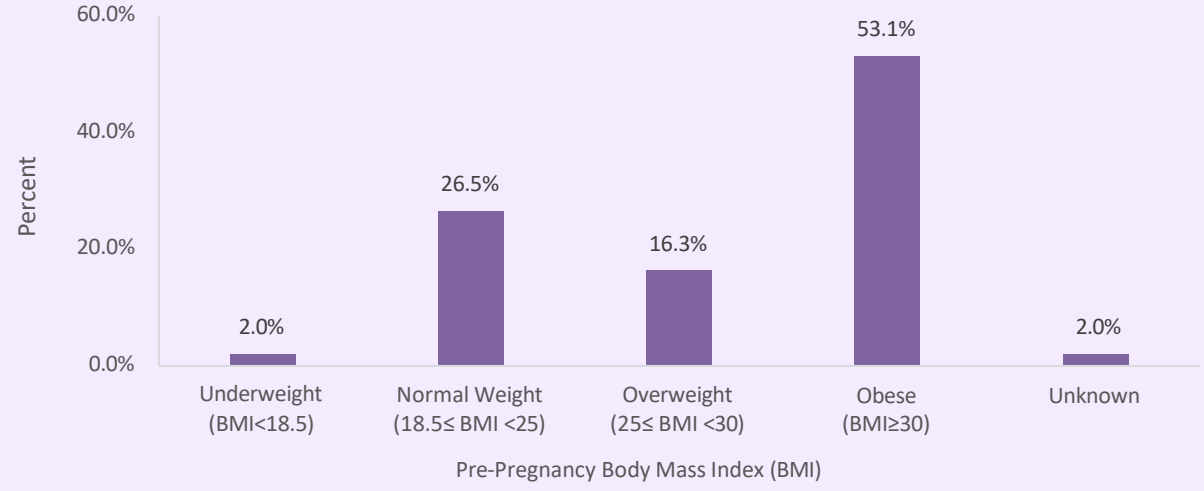
*Denominator includes all live births (N=209,947) and is not group-specific.

Note: Due to small number of cases in the cohort, rates may be unreliable and must be cautiously interpreted.

In 2021, individuals with a **live birth** had the highest pregnancy-related mortality ratio (**17.1** per 100,000 live births, i.e., **36** deaths over **209,947** live births) compared to those with other pregnancy outcomes.

1. Was the Death Pregnancy-Related?

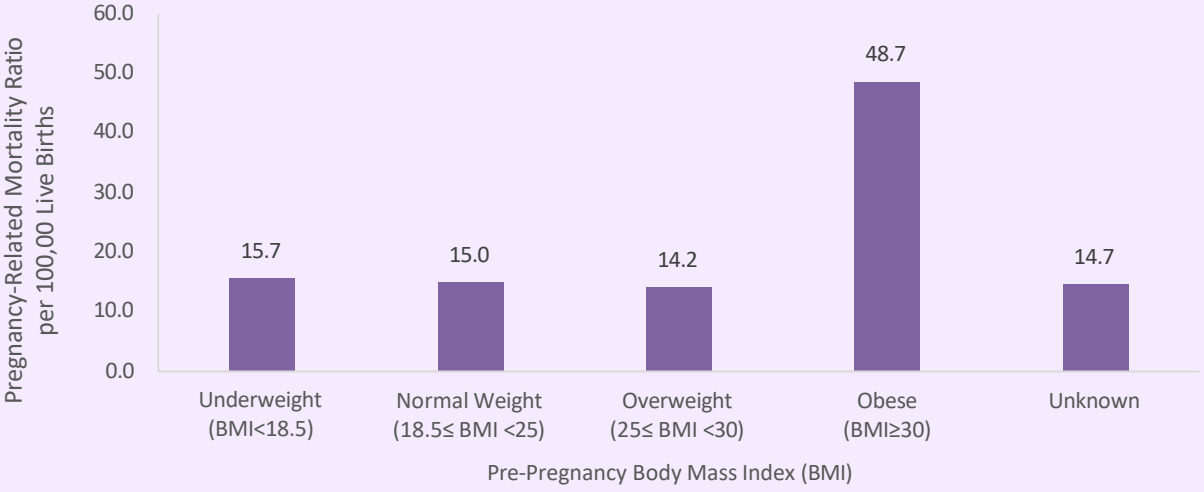
FIGURE 15. DISTRIBUTION OF PREGNANCY-RELATED DEATHS BY PRE-PREGNANCY BODY MASS INDEX (BMI), 2021



Note: The following four body mass indexes are categorized to examine associations between pre-pregnancy weight and pregnancy-related deaths: underweight (BMI<18.5), normal weight (18.5≤BMI<25), overweight (25≤BMI<30), and obese (BMI≥30).

In 2021, more than half of individuals who died of pregnancy-related causes (**53.1%**, N=**26**) were obese based on their documented pre-pregnancy weight.

FIGURE 16. PREGNANCY-RELATED MORTALITY RATIO BY PRE-PREGNANCY BODY MASS INDEX (BMI), 2021



Note: Due to small number of cases in the cohort, rates may be unreliable and must be cautiously interpreted.

In 2021, obese individuals who died of a pregnancy-related cause had a pregnancy-related mortality ratio (**48.7** per 100,000 live births, i.e., **26** deaths over **53,429** live births) **3.2 times** that of normal weight individuals (**15.0** per 100,000 live births, i.e., **13** deaths over **86,922** live births).

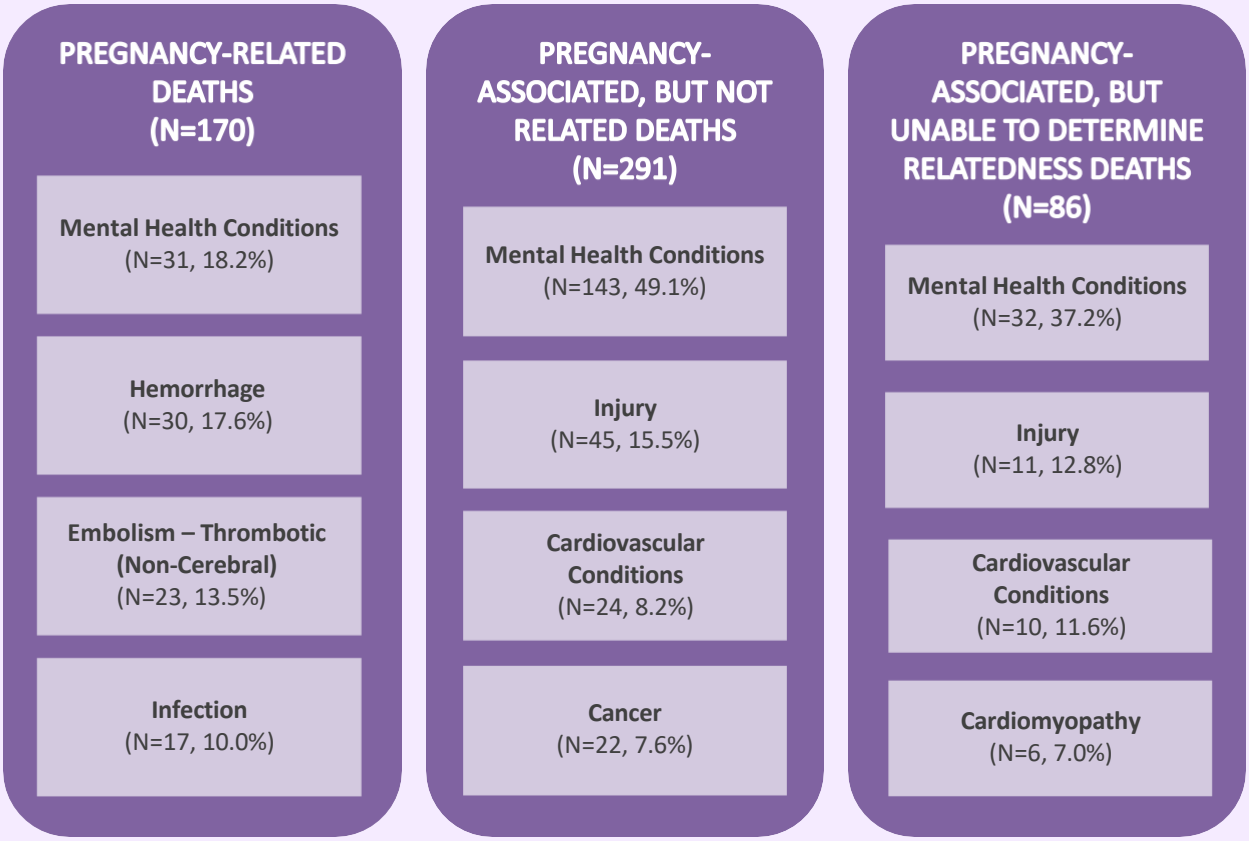
2. What was the Cause of Death?

BACKGROUND AND DEFINITIONS

The underlying cause of death, as defined by the World Health Organization (WHO), is "disease or injury that initiated the train of events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury." For pregnancy-related deaths, Pregnancy Mortality Surveillance System (PMSS-MM) codes are used to standardize the cause of death. The PMSS-MM codes were developed by the Centers for Disease Control and Prevention (CDC) and American College of Obstetricians and Gynecologist (ACOG).

RESULTS

FIGURE 17. DISTRIBUTION OF LEADING CAUSES OF DEATH AMONG PREGNANCY-ASSOCIATED DEATHS BY PREGNANCY RELATEDNESS, 2018-2021



In **2018-2021**, the leading cause of pregnancy-associated deaths in each relationship category was **mental health conditions**. Other leading causes of death among pregnancy-related deaths were **hemorrhage** and **embolism**. For pregnancy-associated, but not related and unable to determine relatedness deaths, **injury** and **cardiovascular conditions** were other leading causes of death.

2. What was the Cause of Death?

FIGURE 18. YEARLY TRENDS OF LEADING CAUSES OF DEATH AMONG PREGNANCY-RELATED DEATHS, 2018-2021

2018 (41 Deaths)	2019 (42 Deaths)	2020 (38 Deaths)	2021 (49 Deaths)
Embolism - Thrombotic (Non-Cerebral) (N=8, 19.5%)	**Hemorrhage** (N=8, 19.0%)	**Infection** (N=8, 21.1%)	**Mental Health Conditions** (N=13, 26.5%)
Hemorrhage (N=8, 19.5%)	**Embolism - Thrombotic (Non-Cerebral)** (N=7, 16.7%)	**Hemorrhage** (N=7, 18.4%)	**Hemorrhage** (N=7, 14.3%)
Mental Health Conditions (N=6, 14.6%)	**Mental Health Conditions** (N=7, 16.7%)	**Mental Health Conditions** (N=5, 13.2%)	**Infection** (N=7, 14.3%)

During **2018-2021**, **mental health conditions** and **hemorrhage** were consistently leading causes of death each year. While **embolism** was one of the top-three causes in 2018 and 2019, **infection** became a leading cause of death in 2020 and 2021. **75%** (N=**6**) of infection deaths in 2020 and **86%** (N=**6**) of infection deaths in 2021 were attributed to **COVID-19**.

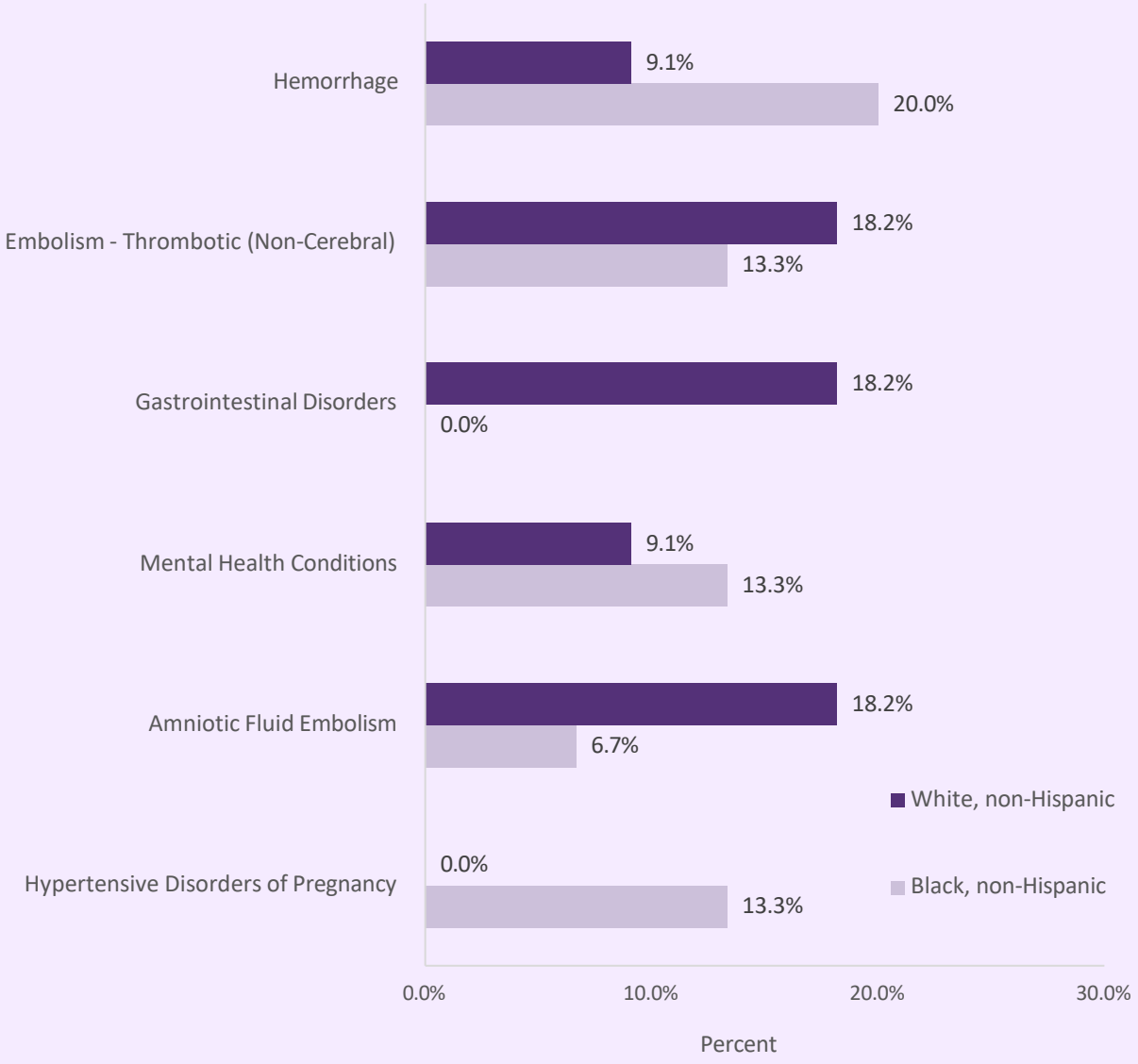
TABLE 4. DISTIRBUTION OF MENTAL HEALTH CONDITIONS AS CAUSE OF DEATH AMONG PREGNANCY-RELATED DEATHS, 2018-2021

Manner of Death	Mental Health (MH) Conditions as Cause of Death		
	MH Deaths Related to Substance Use Disorder	MH Deaths Other than Substance Use Disorder	Total
Suicide	2	11	13
Non-Suicide	16	2	18
Total	**18**	**13**	**31**

During **2018-2021**, mental health conditions was the underlying cause of death for **18.2%** (N=**31**) of pregnancy-related deaths (N=**170**). Most of the pregnancy-related deaths due to mental health conditions were related to **substance use disorder** (N=**18**), followed by **depressive disorder** (N=**8**), and **other mental health conditions** (N=**5**).

2. What was the Cause of Death?

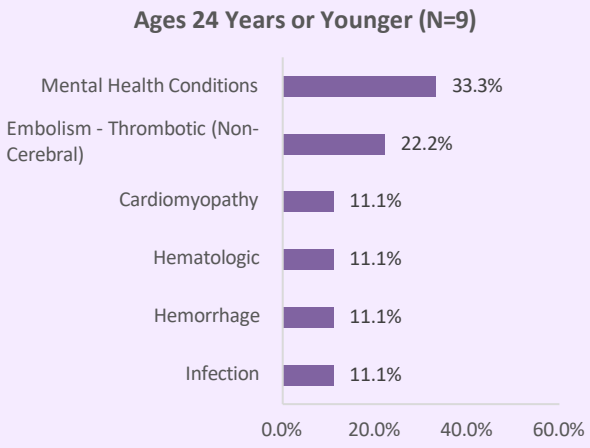
FIGURE 19. DISTRIBUTION OF LEADING CAUSES OF PREGNANCY-RELATED DEATHS BY RACE/ETHNICITY, 2021

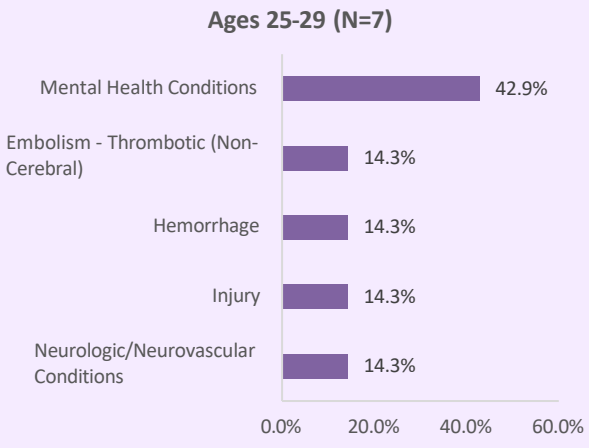


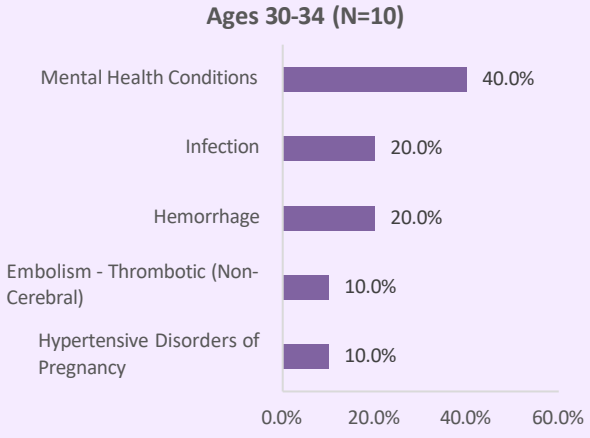
In 2021, the distribution of causes of pregnancy-related deaths varied by race/ethnicity. The percentage of pregnancy-related deaths due to **hemorrhage**, **mental health conditions**, **hypertensive disorders of pregnancy** was higher in Black, non-Hispanic than in White non-Hispanic individuals. The percentage of pregnancy-related deaths due to **embolism**, **amniotic fluid embolism** and **gastrointestinal disorders** was higher in White, non-Hispanic than in Black non-Hispanic individuals.

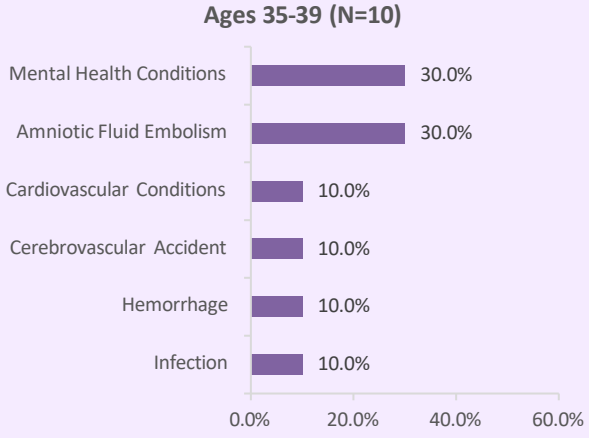
2. What was the Cause of Death?

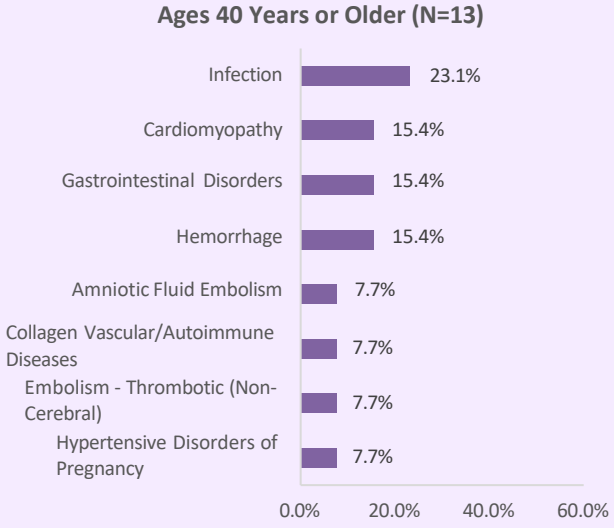
FIGURE 20. DISTRIBUTION OF LEADING CAUSES OF PREGNANCY-RELATED DEATHS BY AGE AT DEATH (IN YEARS), 2021







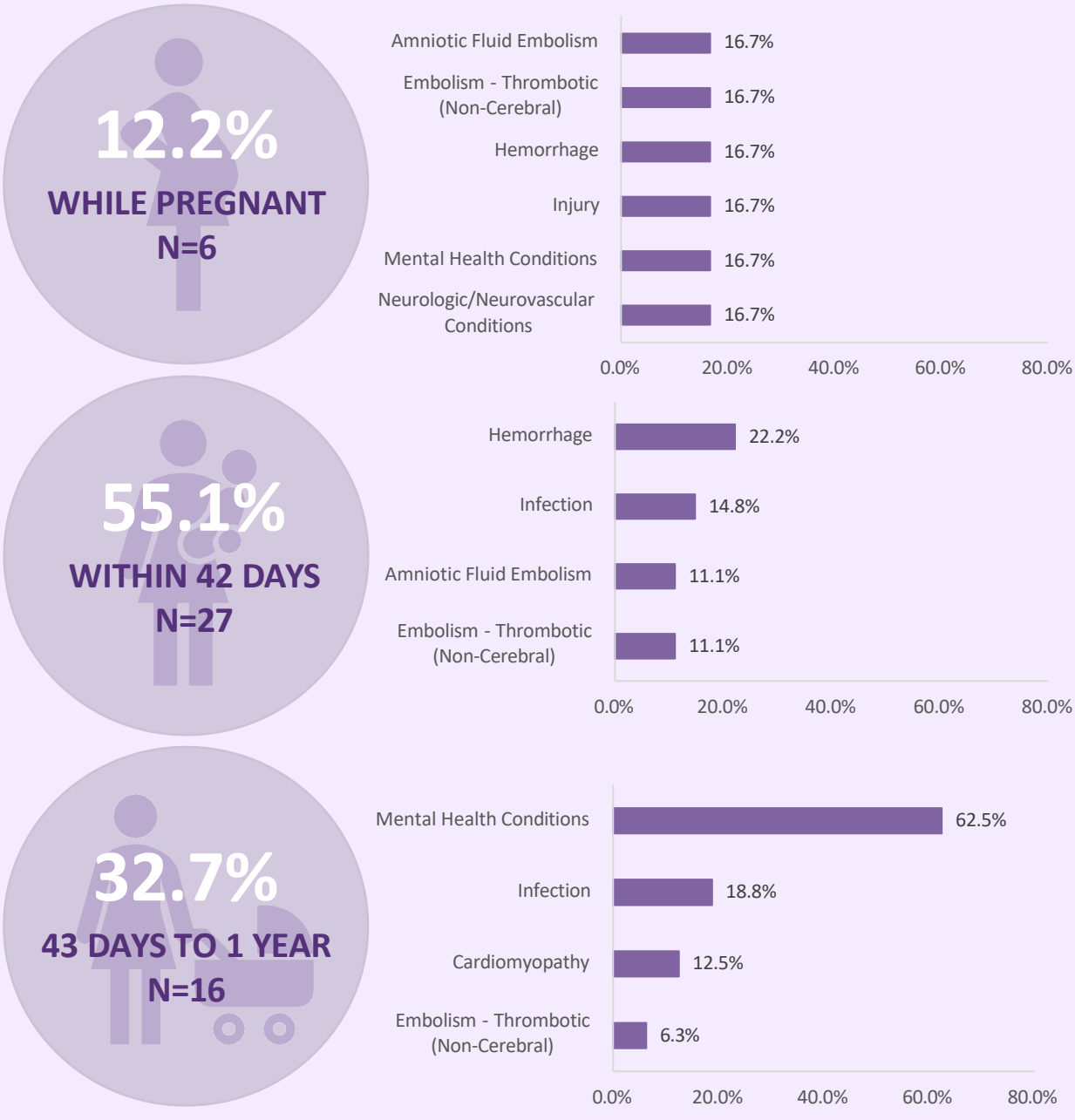




In 2021, the pattern of leading underlying causes of death varied by age group. **Mental health conditions** was the number one leading cause of death for decedents 39 years or younger. **Embolism** was one of the leading causes of death for all age groups except for those 35-39 years old. **Infection** was the top leading cause of death for individuals 40 or older.

2. What was the Cause of Death?

FIGURE 21. DISTRIBUTION OF LEADING UNDERLYING CAUSES OF PREGNANCY-RELATED DEATHS BY TIMING OF DEATH IN RELATION TO PREGNANCY, 2021



In 2021, over half of the pregnancy-related deaths (**55.1%**, N=**27**) occurred within 42 days of the end of pregnancy. Hemorrhage was the leading cause of pregnancy-related deaths occurring within 42 days of the end of pregnancy (**22.2%**, N=**6**), while mental health conditions was the leading cause occurring between 43 days to 1 year after the end of pregnancy (**62.5%**, N=**10**).

3. Was the Death Preventable?

BACKGROUND AND DEFINITIONS

A death is considered preventable if the committees determine that there was at least some chance of the death being averted by one or more reasonable changes to patient, family, provider, facility, system and/or community factors.

During their reviews, the committees must decide:

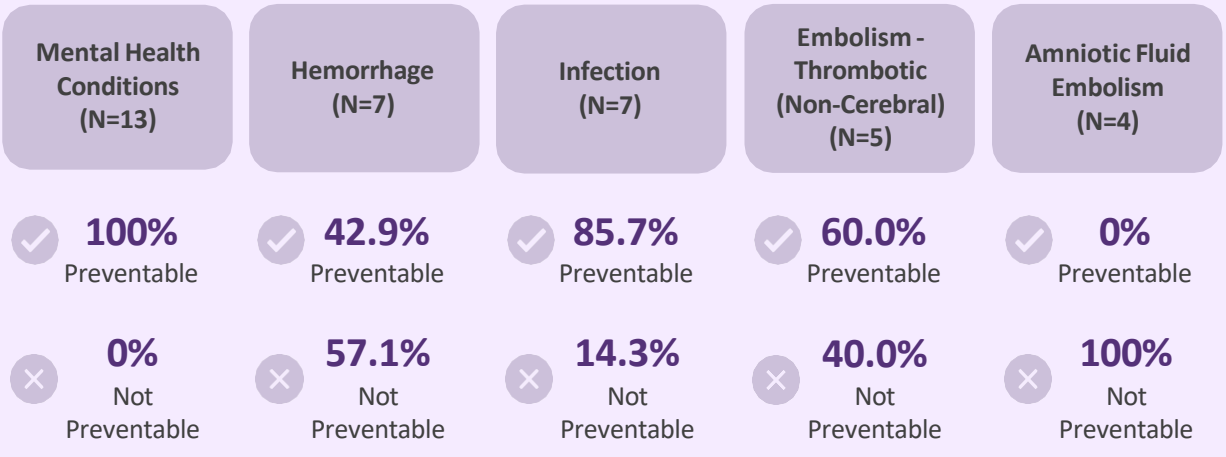
- Was this death preventable?
- What was the chance to alter the outcome? - As indicated on the decision form: "Good Chance", "Some Chance", "No Chance", or "Unable to Determine".

RESULTS

TABLE 5. PREVENTABILITY OF PREGNANCY-RELATED DEATHS AND CHANCE TO ALTER THE OUTCOME, 2021

Preventability	Good Chance	Some Chance	No Chance	Overall
Preventable	15 (46.9%)	17 (53.1%)	0	32 (65.3%)
Not Preventable	0	0	17 (100%)	17 (34.7%)

FIGURE 22. DISTRIBUTION OF PREVENTABILITY AMONG PREGNANCY-RELATED DEATHS BY LEADING CAUSES OF DEATH, 2021



In 2021, **100%** (N=**13**) of pregnancy-related deaths due to mental health conditions were deemed **preventable**. In contrast, **100%** (N=**4**) of pregnancy-related deaths due to amniotic fluid embolism were determined to be **not preventable**.

3. Was the Death Preventable?

FIGURE 23. PREVENTABILITY AMONG PREGNANCY-RELATED DEATHS BY TIMING OF DEATH IN RELATION TO PREGNANCY, 2021

WHILE PREGNANT (N=6, 12.2%)	WITHIN 42 DAYS (N=27, 55.1%)	43 DAYS TO 1 YEAR (N=16, 32.7%)
83.3% Preventable	44.4% Preventable	93.8% Preventable
16.7% Not Preventable	55.6% Not Preventable	6.3% Not Preventable

In 2021, almost all pregnancy-related deaths occurring 43 days to 1 year after the end of pregnancy were determined to be preventable (**93.8%**, N=**15**). In contrast, only **44.4%** (N=**12**) of pregnancy-related deaths occurring within 42 days of the end of pregnancy were deemed preventable.

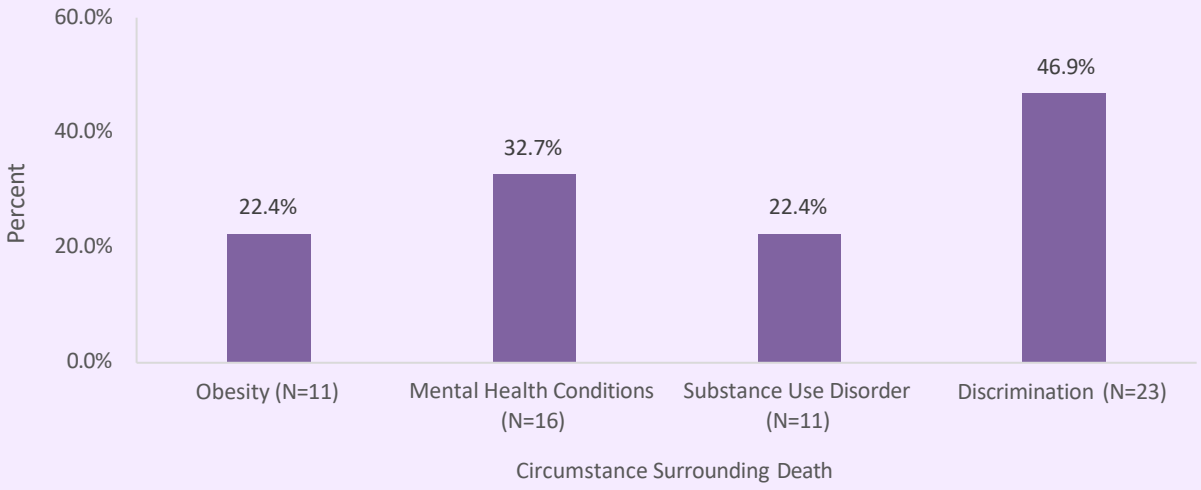
TABLE 6. DISTRIBUTION OF PREVENTABILITY AND CHANCE TO ALTER OUTCOME AMONG PREGNANCY-RELATED DEATHS BY TIMING OF DEATH IN RELATION TO PREGNANCY, 2021

Timing in Relation to Pregnancy	Good Chance	Some Chance	No Chance	Count	% Preventable
While Pregnant	3	2	1	6	83.3%
Within 42 Days	4	8	15	27	44.4%
43 Days to 1 Year	8	7	1	16	93.8%
Total	**15**	**17**	**17**	**49**	**65.3%**

In 2021, the committees determined that most of the pregnancy-related deaths occurring **during pregnancy** and **43 days to 1 year** after the end of pregnancy had either some or good chance to alter the outcome.

3. Was the Death Preventable?

FIGURE 24. DISTRIBUTION OF CIRCUMSTANCES SURROUNDING DEATH FOR PREGNANCY-RELATED DEATHS, 2021



Note: An individual can have multiple circumstances.

The committees determined that discrimination contributed to almost half (**46.9%**, N=**23**) and mental health conditions contributed to approximately a third (**32.7%**, N=**16**) of the pregnancy-related deaths occurring in 2021.

TABLE 7. DISTRIBUTION OF PREVENTABILITY AND CHANCE TO ALTER OUTCOME AMONG PREGNANCY-RELATED DEATHS BY CIRCUMSTANCE SURROUNDING DEATH, 2021

Circumstance Surrounding Death	Good Chance	Some Chance	No Chance	Total	% Preventable
Obesity	1	6	4	11	63.6%
Mental Health Conditions	10	5	1	16	93.8%
Substance Use Disorder	9	2	0	11	100.0%
Discrimination	13	10	0	23	100.0%

Preventability varied across the committees' determinations of circumstances surrounding death. In 2021, for cases with substance use disorder (N=**11**) and discrimination (N=**23**) as a circumstance, **100%** of pregnancy-related deaths were deemed **preventable**, which included cases that were judged to have either some chance or a good chance to alter the outcome.

4. What were the Factors that Contributed to this Death?

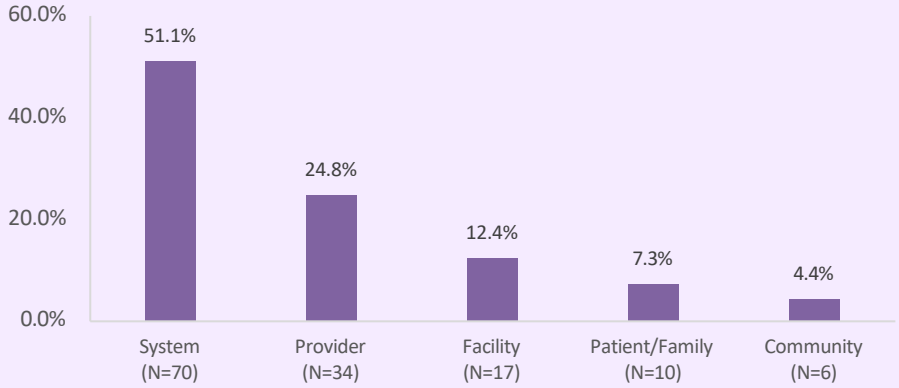
BACKGROUND AND DEFINITIONS

Each contributing factor is categorized into 5 levels:

1. **Patient/Family:** an individual before, during, or after a pregnancy, and their family, internal or external to the household, with influence on the individual
2. **Community:** a grouping based on a shared sense of place or identity - ranges from physical neighborhoods to a community based on common interests and shared circumstances
3. **Provider:** an individual with training and expertise, who provides care, treatment, and/or advice
4. **Facility:** a physical location where direct care is provided - ranges from small clinics and urgent care centers to hospitals with trauma centers
5. **System:** interacting entities that support services before, during, or after a pregnancy - ranges from healthcare systems and payors to public services and programs

RESULTS

FIGURE 25. DISTIRBUTION OF CONTRIBUTING FACTORS AMONG PREGNANCY-RELATED DEATHS, 2021



In 2021, the committees identified **137** contributing factors among 32 preventable pregnancy-related deaths. On average, **4.3** contributing factors were identified for every death.

TABLE 8. DISTRIBUTION OF CONTRIBUTING FACTOR LEVEL BY LEADING CAUSES OF PREGNANCY-RELATED DEATHS, 2021

In 2021, the causes with the most contributing factors per pregnancy-related death were **mental health conditions** (N=**6.0**), **hemorrhage** (N=**3.7**), and **infection** (N=**2.8**).

Cause of Death	Contributing Factors					Number of Pregnancy-Related Deaths	Factors per Death
	System	Provider	Facility	Patient/ Family	Community		
Mental Health Conditions	48	12	9	4	5	13	6.0
Infection	1	9	3	3	1	6	2.8
Hemorrhage	4	4	1	2	0	3	3.7
Embolism – Thrombotic (Non- Cerebral)	4	1	1	0	0	3	2.0
Hypertensive Disorders of Pregnancy	1	0	2	1	0	2	2.0
Total	**58**	**26**	**16**	**10**	**6**	**27**	**4.3**

New York State Recommendations and Actions to Address Maternal Mortality and Reduce Racial Disparities

Following the review of the 2018 pregnancy-associated death cohort, the New York State Maternal Mortality Review Board (MMRB) identified 14 Key Recommendations to reduce the risk of maternal mortality and morbidity, which were published in the New York State Report on Pregnancy-Associated Deaths in 2018. In 2024, the Department released the New York State Report on Pregnancy-Associated Deaths in 2018-2020 which summarizes findings and 18 Key Recommendations from the comprehensive reviews of pregnancy-associated deaths statewide. To make a sustainable impact on maternal mortality and morbidity and reduce racial and ethnic disparities in New York State, the Department has been working with a wide range of partners at the system, facility, provider, and community levels to implement the MMRB recommendations. These partners often work directly with individuals and communities, and serve individuals disproportionately affected by disparities.

Additionally, to assess implementation of the MMRB's four facility-level recommendations, as well as two of the provider-level recommendations, the Department conducted a brief, six-question survey of New York State birthing facilities in February-March 2023. The response rate was 100%, with all 118 birthing hospitals completing a survey. The results of the survey are presented below within the applicable subsections.

1. **Improve Widespread Adoption of Patient Safety Bundles**
    1. Safe Reduction of Cesarean Delivery Rates
    2. Obstetric Hemorrhage
    3. Venous Thromboembolism
    4. Cardiac Conditions in Obstetric Care
2. **Emergency Room Care of Pregnant and Postpartum People**
3. **Coordination of Care for Chronic Care Conditions**
4. **Recognize and Reduce Racism and Discrimination**
5. **Optimize Management of Mental Health Conditions**
6. **Optimize Management of Substance Use Disorders**
7. **Linkage to Community Resources**
8. **Improve Health of Pregnant and Postpartum People**
    1. Home Visiting
    2. Expansion of Medicaid Coverage
    3. Maternal Medical Home
    4. Enhancing Provider Education
    5. Increasing Data Capacity and Analysis
9. **Additional Actions**
    - COVID-19 Response
    - Improve Public Education
    - Maternal Health Task Force
    - Paid Perinatal Leave
10. **Work to be Done**

New York State Recommendations and Actions to Address Maternal Mortality and Reduce Racial Disparities

1. IMPROVE WIDESPREAD ADOPTION OF PATIENT SAFETY BUNDLES

Through the New York State Perinatal Quality Collaborative (NYSPQC), the Department works with birthing facilities to translate evidence-based guidelines into clinical practice via quality improvement projects. NYSPQC projects incorporate the use of patient safety bundles and policies that are available through professional organizations such as the American College of Obstetricians and Gynecologists (ACOG). Patient Safety Bundles (PSBs) are a structured way of creating system change to improve the processes of care and patient outcomes. They are collections of evidence-based and - informed practices, developed by multidisciplinary experts, which address clinically specific conditions in pregnant and postpartum people. The goal of PSBs is to improve the way care is provided to improve outcomes. A bundle includes actionable steps, which include drivers of specific system change, that can be adapted to a variety of facilities and resource levels which include a measurable aim, and activities to address readiness, recognition and prevention, response, reporting and systems learning and respectful, equitable and supportive care.

1.1 SAFE REDUCTION OF CESAREAN DELIVERY RATES

RECOMMENDATIONS

- All birthing hospitals should implement the Alliance for Innovation on Maternal Health (AIM) patient safety bundle, *Safe Reduction of Primary Cesarean Birth*, with a goal of reducing low-risk cesarean deliveries. (2018, Recommendation #1, 2018–2020, Recommendation #7) Level: Facility

ACTIONS

- NYSPQC, with support from the NYS chapter of ACOG (ACOG District II), Healthcare Association of New York State, and Greater New York Hospital Association, is leading a project centered on the Alliance for Innovation on Maternal Health (AIM) patient safety bundle, *Safe Reduction of Primary Cesarean Birt*h. This project is focused on implementation efforts within New York State birthing facilities, providing an educational curriculum, technical and quality improvement assistance, access to clinical and quality improvement faculty, site visits, and consultations on an annual basis. Results of the Department's 2023 birthing facility survey indicated that 32.2% (n=38) of birthing facilities had implemented the AIM bundle to reduce cesarean delivery rates, 55.9% (n=66) were in the process of implementing it, and 11.9% (n=14) had not begun implementation efforts yet.
- In November 2024, the NYSPQC Birth Equity & Safe Reduction of Nulliparous, Term, Singleton, Vertex (NTSV) Cesarean Birth Project was rolled out to all NYS birthing facilities. The project expands on the work of the NYSPQC's New York State Birth Equity Improvement Project (NYSBEIP). The project is designed to enable participating birthing facility teams to safely reduce the NTSV cesarean birth rate, specifically among Black birthing people, building on the foundation set by the NYSBEIP. This project specifically focuses on the AIM's patient safety bundle, *Safe Reduction of Primary Cesarean Birth*. To date, ~70 birthing facilities are participating in this project. Through this project, the NYSPQC participates in AIM, a quality improvement initiative supported by the Health Resource and Services Administration (HRSA) to improve maternal health and safety statewide by increasing access to safe, reliable, and quality care. This nation-wide outcome-oriented approach is collaborative and proactive, and participating birthing facility teams join a broader community of learners from over 40 states.
- In fiscal year 2023, an upstate birthing facility was awarded $500,000 to support the reduction of cesarean deliveries. The birthing facility is using the AIM bundle to implement changes in patient pain management and educating providers. In fiscal year 2024, this facility was awarded an additional $500,000 to continue this work.

New York State Recommendations and Actions to Address Maternal Mortality and Reduce Racial Disparities

1. IMPROVE WIDESPREAD ADOPTION OF PATIENT SAFETY BUNDLES

1.2 OBSTETRIC HEMORRHAGE

RECOMMENDATIONS

- Hospitals should ensure anesthesiologists and obstetricians follow a standard protocol for massive transfusion in hemorrhage during pregnancy, delivery, and postpartum. (2018, Recommendation #2) Level: Facility
- All facilities should implement universal systems for quantification of blood loss and anesthesia during delivery and postpartum. (2018, Recommendation #4) Level: Facility
- All birthing hospitals should ensure full implementation of the ACOG's SMI Hemorrhage Bundle, including: following a standard protocol for massive transfusion; implementing universal system for quantification of blood loss and anesthesia protocols during delivery and postpartum; working with anesthesia teams to follow their facility's emergency management plan for response to hemorrhage during delivery and postpartum; utilizing checklists and algorithms to assist with clinical decision making; and conducting trainings/drills on bundle implementation. (2018-2020, Recommendation #1) Level: Facility

ACTIONS

- As part of NYSPQC's New York *State Obstetric Hemorrhage Project*, which took place from 2017 through 2021, 83 participating birthing facility teams focused on improving the assessment, identification, and management of obstetric hemorrhage. This project incorporated the use of the ACOG District II SMI Safe Motherhood Initiative Obstetric Hemorrhage Bundle. Two of the project's key structure measures focused on implementing a standardized protocol for massive transfusion and implementing a standardized system for the quantification of cumulative blood loss during delivery and postpartum. Both were key strategies for hospitals to improve readiness to manage an obstetric hemorrhage, and both were topics of educational webinars and provider trainings. Additionally, NYSPQC partnered with the Association of Women's Health, Obstetric, and Neonatal Nurses to provide select hospitals with direct technical assistance in implementing and overcoming barriers to blood loss quantification. In March 2023, results of the Department's birthing facility survey indicated that 94.1% (n=111) of birthing facilities had a standard protocol for massive transfusion in place, 5.1% (n=6) were in the process of implementing a standard protocol, and 0.8% (n=1) had not begun implementation efforts yet. Survey results also indicated that 85.6% (n=101) of birthing facilities had implemented a standardized system for the quantification of cumulative blood loss during delivery and postpartum, 12.7% (n=15) were in the process of implementing one, and 1.7% (n=2) had not begun implementation efforts yet. that 85.6% of birthing facilities had implemented a standardized system for the quantification of cumulative blood loss during delivery and postpartum, 12.7% were in the process of implementing one, and 1.7% had not begun implementation efforts yet.
- By the end of the project, 90% (n=69) of participating hospitals reported increased use of quantitative blood loss (QBL) measurement, which is a more accurate measurement of blood loss and can aid with earlier response to hemorrhage. Hospitals also reported a 64% reduction in transfers to intensive care units (ICUs) or higher-level hospitals, and a 29% reduction in hysterectomies among patients that experienced obstetric hemorrhage.

1. IMPROVE WIDESPREAD ADOPTION OF PATIENT SAFETY BUNDLES

1.3 VENOUS THROMBOEMBOLISM

RECOMMENDATIONS

- All facilities should implement screening for venous thromboembolism and chemoprophylaxis during intrapartum and postpartum care. (2018, Recommendation #3) Level: Facility
- All birthing hospitals should adopt the venous thromboembolism bundle, including audits of the quality of implementation and compliance. (2018-2020, Recommendation #9) Level: Facility

ACTIONS

- Venous thromboembolism, which includes deep vein thrombosis and pulmonary embolism, is a leading cause of preventable maternal mortality and severe maternal morbidity in New York State. Research shows that systemic changes in practice can lead to substantial reductions in venous thromboembolism. Consequently, the ACOG District II developed a patient safety bundle on venous thromboembolism, which focuses on risk assessment on admission and pharmacologic prophylaxis for high-risk patients. The venous thromboembolism patient safety bundle is available for use by all New York State birthing facilities. In March 2023, results of the Department's birthing facility survey showed that 74.6% (n=88) of birthing facilities had implemented screening for venous thromboembolism and chemoprophylaxis during the intrapartum and postpartum periods, 20.3% (n=24) were in the process of implementing it, and 5.1% (n=6) had not begun implementation efforts yet.

New York State Recommendations and Actions to Address Maternal Mortality and Reduce Racial Disparities

1. IMPROVE WIDESPREAD ADOPTION OF PATIENT SAFETY BUNDLES

1.4 CARDIAC CONDITIONS IN OBSTETRIC CARE

RECOMMENDATIONS

- The Department, ACOG District II and partners should develop a cardiac bundle to assist with provider education. (2018, Recommendation #5) Level: Provider
- ACOG District II, the Department, and partners should use or modify the Alliance for Innovation on Maternal Health Cardiac Bundle and should assist with provider education. (2018-2020, Recommendation #3) Level: System

ACTIONS

- Two of the causes of pregnancy-related deaths in New York State in 2018-2020 were cardiomyopathy (fifth leading cause) and cardiovascular conditions (seventh leading cause). Currently, the ACOG AIM Cardiac Conditions in Obstetric Care Bundle is available for use by New York State birthing facilities. In 2019, ACOG published Practice Bulletin No. 212: Pregnancy and Heart Disease, which, 1) describes the prevalence and effect of heart disease among pregnant and postpartum women; 2) provides guidance for early antepartum and postpartum risk factor identification and modification; 3) outlines common cardiovascular disorders that cause morbidity and mortality during pregnancy and postpartum; 4) describes recommendations for care for pregnant and postpartum women with preexisting or new-onset acquired heart disease; and 5) presents a comprehensive interpregnancy care plan for women with heart disease.
- On July 24, 2024, the ACOG District II SMI Cardiac Conditions in Obstetric Care Bundle became available. The safety bundle is available on the ACOG website and on the SMI App. A recorded webinar is also available on the website that goes through the entire bundle and its associated tools. The Cardiac Bundle identifies patients with pre-existing cardiac conditions, new cardiac disease in pregnancy or postpartum, and postpartum patients at increased cardiac risk to intervene early and mitigate the risk of preventable maternal mortality and severe maternal morbidity.

New York State Recommendations and Actions to Address Maternal Mortality and Reduce Racial Disparities

2. EMERGENCY ROOM CARE OF PREGNANT AND POSTPARTUM PEOPLE

RECOMMENDATIONS

- The Department, ACOG District II, and partners should develop an emergency room bundle for the care of pregnant women. (2018, Recommendation #13) Level: System
- ACOG District II, the Department, and partners should develop an emergency room bundle for the care of pregnant and postpartum people, including a plan for dissemination and provider education. (2018-2020, Recommendation #2) Level: System

ACTIONS

- In 2023, ACOG and the American College of Emergency Physicians (ACEP) developed resources for obstetric emergencies in non-obstetric settings initiative for emergency department, Emergency Medical Services, and urgent care practitioners. These included Algorithms: *Acute Hypertension in Pregnancy & Postpartum*; *Eclampsia*; and *Cardiovascular Disease in Pregnancy & Postpartum*. Signs and posters on *Pregnancy Status Signs* was developed as well as an EMS information sheet. Obstetric Emergencies in Non-obstetric Settings
- The Department partnered with ACOG District II's SMI and the NY Chapter of ACEP to develop a webinar *Care of Pregnant and Postpartum Patients in the Emergency Department* which took place on January 23, 2025. The presentation highlighted opportunity to enhance care in the Emergency Department to prevent maternal mortality.

3. COORDINATION OF CARE FOR CHRONIC CONDITIONS

RECOMMENDATIONS

- The Department, ACOG District II, and partners should develop an issue brief on the importance of the involvement of multidisciplinary specialists in chronic care management during antenatal, intrapartum, and postpartum care. (2018, Recommendation #6) Level: Provider
- Obstetricians and other providers should utilize a multidisciplinary approach for collaborative chronic care management of obstetrical patients including the postpartum period. (2018, Recommendation #7) Level: Provider
- All birthing hospitals should implement a system to ensure obstetricians and other providers caring for obstetrical patients utilize a multidisciplinary approach for collaborative chronic care management of obstetrical patients including the postpartum period. (2018-2020, Recommendation #4) Level: Facility

ACTIONS

- In 2022, the Department issued updated Medicaid Perinatal Care Standards, effective August 1 (fee-for-service) and October 1 (managed care). These standards include expectations of care coordination, including for chronic disease management, and establishment and implementation of a patient-tailored care plan. Additional information regarding these standards is provided under Item 9 below.
- According to the Department's birthing facility survey implemented in February - March 2023, 95.8% (n=113) of New York State birthing facilities are utilizing a multidisciplinary approach for collaborative chronic care management of obstetrical patients, including during the postpartum period.
- The Department, MMRB members and ACOG District II are currently working on an issue brief on the coordination of care of the pregnant and postpartum person. This issue brief will address involving multidisciplinary specialists in the management of chronic conditions.

New York State Recommendations and Actions to Address Maternal Mortality and Reduce Racial Disparities

4. RECOGNIZE AND REDUCE RACISM AND DISCRIMINATION

RECOMMENDATIONS

- The Department and partners should develop a systemic approach to reduce structural racism. (2018, Recommendation #11) Level: System
- The Department should develop an anti-racism and anti-discrimination framework in health care systems, with a focus on eliminating inequities in maternal mortality among those most impacted by disparities, particularly Black and Native American communities. (2018-2020, Recommendation #6) Level: System

ACTIONS

- Effective June 22, 2023, Public Health Law 2802-b requires health care facilities across New York State to submit a Health Equity Impact Assessment when filing a Certificate of Need application for the establishment, ownership, construction, renovation, or change in service. The assessment will provide information on whether the proposed project impacts the delivery of or access to services, particularly for medically underserved groups, and ensures that community voices are considered as well.
- The Department's Division of Family Health leads the New York State Perinatal Quality Collaborative (NYSPQC) which engages a statewide network of birthing facilities that seek to provide the best, safest, and most equitable care for New York State's birthing people and infants. NYSPQC developed the (New York State Birth Equity Improvement Project (NYSBEIP) which sought to assist New York State birthing facilities in identifying individual and systemic racism and to take action to improve systems of care, as well as the experience of care for Black birthing people. The project, which launched to all New York State birthing facilities in January 2021, included a comprehensive education and training program to raise awareness on and reduce implicit bias in health care institutions. Coaching call webinars and learning sessions featured national experts on equity and focused on such equity topics as the experience of Black birthing people, the impact of racism on perinatal health, staff experience of racism, authentic patient engagement, and shared decision making. NYSPQC engaged multidisciplinary teams in 73 out of 118 birthing facilities (all NYS health service areas and perinatal designations were represented) that are responsible for the delivery of approximately 75% of the state's births.
- One of the project's goals was to utilize the experience of Black birthing people to improve experiences of birthing care relative to five domains of care experience: autonomy in decision-making, communication, dignity and respect, stigma and communication, and supportive care. NYSBEIP measured this goal through routine surveys of Patient-Reported Experiences Measures (PREM surveys), which were integrated into the project in July 2021; this was among the first statewide equity-focused quality improvement initiatives to collect experience data from birthing people.

4. RECOGNIZE AND REDUCE RACISM AND DISCRIMINATION

ACTIONS (CONT'D)

- As of July 2024, NYSBEIP had analyzed over 64,000 PREM surveys of patients discharged from 65 participating facilities. Between July 2021 and July 2024, NYSBEIP had shown progress improving care experiences in every care domain overall (ranging from 15-30% improvement across domains). Care experiences improved among Black birthing people for most domains (ranging from 18-26% improvement across domains) except experiences of stigma and discrimination (there was no evidence of change in this domain).
- In state fiscal year 2024-25, an upstate community hospital was awarded a $1,000,000 legislative appropriation to support health outcomes for birthing people. The hospital is using funding to reduce disparities in maternal health for pregnant people living in poverty by educating hospital staff on tokophobia, poverty awareness, racial equity, implicit bias and trauma-informed care.

New York State Recommendations and Actions to Address Maternal Mortality and Reduce Racial Disparities

5. OPTIMIZE MANAGEMENT OF MENTAL HEALTH CONDITIONS

RECOMMENDATIONS

- The Office of Mental Health, ACOG District II, and partners should develop materials to educate providers on behavioral health evaluation, treatment and understanding of patient barriers to seeking care. (2018, Recommendation #8) Level: Provider
- Perinatal care providers should routinely screen for perinatal or postpartum mood and anxiety disorders at least once during both pregnancy and up to one year postpartum and should make timely referral for positive screens to mental health care providers and/or programs (e.g., Project TEACH, Postpartum Resource Center of New York). (2018-2020, Recommendation #17) Level: Provider

ACTIONS

- The MMRB prioritized perinatal mental health conditions and substance use disorder to develop an issue brief. In 2022, the MMRB published an issue brief entitled, *Spotlight on Perinatal Mental Health*, which underscores the importance of managing mental health conditions in the perinatal period. Three recommendations were identified to improve the management of mental health conditions in the perinatal period: 1) psychiatric medications should not be automatically discontinued due to pregnancy; 2) screening for depression should be conducted during all pregnancies and is considered the standard of care; 3) enhanced care coordination is needed between prenatal and mental health providers. The issue brief was distributed widely, which assisted the MMRB in their efforts to educate providers on the factors that contribute to mental health-related maternal deaths.
- NYSPQC hosted a series of webinars in collaboration with the New York State Office of Mental Health's Project TEACH Maternal Mental Health Initiative and ACOG District II. The four webinars, promoted widely to New York State birthing facilities and perinatal providers, focused on: developing an integrated maternal mental health/obstetric practice in early and late stages; putting maternal mental health into action; integration of maternal mental health into obstetric care using an employee-based insurance model; the impact of social determinants of health on maternal mental health care; and, a collaborative multidisciplinary approach to maternal mental health with a focus on Black and Latinx populations.
- In 2024, Project TEACH's Maternal Mental Health initiative expanded to include support for additional patient-facing professions, such as therapists, lactation consultants, WIC staff, home visiting nurses, and other frontline practitioners so they may receive specialized training and access expert consultation to provide mental health support to the pregnant and postpartum New Yorkers they assist. This initiative is part of an existing training resource aimed at increasing treatment efficacy among prescribers, including general psychiatrists, primary care doctors, nurse practitioners, OB-GYNs, and others who may lack adequate maternal mental health expertise.

New York State Recommendations and Actions to Address Maternal Mortality and Reduce Racial Disparities

5. OPTIMIZE MANAGEMENT OF MENTAL HEALTH CONDITIONS

ACTIONS (CONT'D)

- In state fiscal year 2023-2024, the Postpartum Resource Center of New York received a $175,000 legislative appropriation to support its Maternal Depression Peer Support program. Support continued in state fiscal year 2024-2025 with an appropriation of $100,000.
- Division of Family Health representatives participated in an interdisciplinary Maternal Mental Health Workgroup, convened by the NYS Office of Mental Health (NYSOMH). The purpose of this workgroup was to advise the State by studying and issuing recommendations related to maternal mental health, including Perinatal and Postpartum Mood and Anxiety Disorders. The Maternal Mental Health Workgroup focused on the creation of equity-centered and culturally humble and responsive recommendations for the improvement of mental health and substance use outcomes for birthing persons in New York, with a particular consideration of racial, ethnic, and other health inequities. These recommendations were compiled into a final report that is currently being finalized. Once finalized, it will be submitted via a comprehensive report to the Governor, the Temporary President of the Senate, the Speaker of the Assembly, the Minority Leader of the Senate, and the Minority Leader of the Assembly.

  The findings and recommendations contained in the final report set forth a multidisciplinary strategy through which lawmakers can enact positive change in the maternal mental health care sphere in the State of New York. This report puts forth actionable recommendations to promote equitable behavioral health outcomes among birthing persons and is responsive to the needs of priority areas and populations, including the following: Identification of vulnerable populations; Strategies to improve screening, referral, prevention, and treatment of maternal mental health issues; public education; social support services; modeling of successful initiatives from other states; evidence-based best practices for healthcare providers and public health systems; and potential funding models.

New York State Recommendations and Actions to Address Maternal Mortality and Reduce Racial Disparities

6. OPTIMIZE MANAGEMENT OF SUBSTANCE USE DISORDERS

RECOMMENDATIONS

- New York State Office of Children and Family Services should develop an equitable system for pregnant and postpartum people who use substances that avoids family separation and supports timely reunification of families and their children. (2018-2020, Recommendation #16) Level: System

ACTIONS

- NYSPQC's Opioid Use Disorder (OUD) in Pregnancy & Neonatal Abstinence Syndrome (NAS) Project, which began in 2018 and concluded in 2023, sought to improve early identification of opioid use disorder, standardization of therapy, and coordination of aftercare (i.e., plan of safe care) for infants with neonatal abstinence syndrome. This initiative is based on the Alliance for Innovation on Maternal Health (AIM) patient safety bundle, Care for Pregnant and Postpartum People with Substance Use Disorder | AIM. Forty-one birthing hospitals from diverse geographic areas, and representing all levels of perinatal designations, participated in the project. By the end of the project, 95.1% (n=39) of participating facilities implemented a universal screening protocol for opioid use disorder. New referrals to OUD treatment (medication-assisted treatment [MAT] and behavioral health) at time of discharge increased by 18.8%. The project assisted participating facilities in improving collaborative care management by delivering provider and patient education; implementing universal verbal screening; improving the management of patients during labor, delivery, and immediately postpartum; coordinating discharge care; and collaborating across hospital teams to share and learn. Teams from participating hospitals learned and applied key principles to improve care and implement the core interventions, and associated measures. These core interventions were based on currently available scientific evidence. As part of the improvement process, teams also learned quality improvement strategies and collected data that is sensitive to the changes they tested and implemented, to track performance and results.
- In 2023, the MMRB developed an issue brief entitled, *Spotlight on Perinatal Substance Use Disorder* which is anticipated to be released in 2023. The issue brief highlights the need for providers to ensure patients with a substance use disorder receive enhanced support during the first year postpartum, including warm handoffs and engagement with medical and other providers that treat substance use disorder, including but not limited to New York State Office of Addiction Services and Supports (OASAS) certified providers.
- NYSPQC worked in collaboration with staff from the AIDS Institute (AI), the OASAS, and parent/family partners from the New York State Opioid Use Disorder (OUD) in Pregnancy and Neonatal Abstinence Syndrome (NAS) Project. Collaboration among intra and interagency staff and parent/family partners was essential in developing the naloxone brochure for patient and families. The brochures support the implementation of the board's recommendation by describing naloxone and its use in reversal of overdose, symptoms to watch for, and how to obtain naloxone with no or low copayments through the New York State Naloxone Co-Payment Assistance Program (N-CAP). The brochures were also translated into multiple languages. The brochures have been made available on the Department's website, as well as sent out to all New York State birthing facilities participating in the projects of the NYSPQC. They are available for download, or to order in hard copy at no cost.

New York State Recommendations and Actions to Address Maternal Mortality and Reduce Racial Disparities

7. LINKAGE TO COMMUNITY RESOURCES

RECOMMENDATIONS

- Obstetrical providers and hospitals should engage community resources during prenatal and hospital discharge planning (e.g., doulas, visiting nurses, community health workers/patient navigators, telehealth, and remote monitoring) to help support and link high risk mothers with chronic conditions and difficult access (e.g., rural areas) to follow-up care and community resources. (2018, Recommendation #9) Level: Provider
- Hospital systems and obstetrical providers should engage community resources during prenatal and hospital discharge planning (e.g., doulas, visiting nurses, community health workers/patient navigators, telehealth, and remote monitoring) to help support and link high risk people with chronic conditions (including those with mental conditions or substance use disorders), and those with difficult access (e.g., rural areas) to follow-up care and community resources. (2018-2020, Recommendation #8) Level: System

ACTIONS

- Through the Maternal and Infant Community Health Collaborative program, which ended in 2022 and was replaced with the Perinatal and Infant Community Health Collaborative (PICHC) program, community health workers are focused on educating people on improved birth spacing, adherence to the postpartum visit, and use of an effective contraceptive methods. As per the recommendations of the Task Force on Maternal Mortality and Disparate Racial Outcomes, the scope and breadth of work of the Maternal and Infant Community Health Collaborative program were enhanced via the Community Health Worker Expansion grant. From August 1, 2019 to June 30, 2022, all 23 established Maternal and Infant Community Health Collaborative programs in New York State received additional funding to hire staff to address key disparities, including providing more childbirth education and support, assisting in the development of collaborative childcare and social support networks, assisting with the development of a birth plan, and supporting increased health literacy among communities around the state.
- The Department is currently funding 26 PICHC programs (July 1, 2022 – June 30, 2027) statewide to support the development, implementation, and coordination of collaborative community-based strategies, with a goal of improving perinatal and infant health outcomes (preterm birth, low birth weight, infant/maternal mortality) and eliminating racial, ethnic, and economic disparities in outcomes. PICHC programs utilize community health workers to implement individual-level strategies that address perinatal and infant health behaviors and community-level strategies using a collective impact approach.
- The Department currently contracts with CAI Global, Inc, which, as the Center for Community Action, provides the 26 PICHC programs with ongoing training and technical assistance on perinatal and child health topics.

7. LINKAGE TO COMMUNITY RESOURCES

ACTIONS (CONT'D)

- The Department continues to invest in Nurse-Family Partnership (NFP) programs. NFP is an evidence-based home visiting program which provides education, screening, and referral services to high-risk, low-income pregnant individuals who are enrolled before the 28th week of pregnancy and who will be first time parents. NFP programs utilize registered nurses to improve maternal and child health, increase family self-sufficiency, and reduce child maltreatment. The Department currently supports 8 NFP programs in nine counties (Chemung, Erie, Bronx, Kings, Monroe, Niagara, Nassau, Queens, and Richmond). The Department has identified and shared several promising practices from the field of home visiting programs and intends to further support collaboration and bidirectional referrals between birthing facilities and state-funded home visiting programs. Home visiting programs must collaborate with local birthing hospitals to ensure individuals with a high-risk pregnancy are connected to supportive community services.
- According to the Department's birthing facility survey implemented in February - March 2023, 68.6% (n=81) of birthing facilities are routinely engaging community resources when appropriate, and 31.4% (n=37) are sometimes engaging community resources when appropriate. Facilities that indicated that they engage community resources only sometimes, noted a lack of staff to make referrals and a lack of referral resources in the community as barriers.
- In state fiscal years 2023-24 and 2024-25, several legislative appropriations have been awarded to support activities related to these recommendations, including:
    - Expansion of community doula support (2024-25; $250,000): two doula training agencies will use funds to increase the number of community doulas, promote and encourage newly trained doulas to enroll as a Medicaid provider, and provide support to birthing people before, during and after childbirth.
    - Maternal Health Care initiatives (2023-24: $5M; 2024-25: $2.5M). A total of eight birthing hospitals received funds to improve maternal health outcomes through a variety of interventions. Hospitals will use funds to implement training programs to reduce cesarean section rates; implement and enhance doula programs; train clinicians on labor management, implicit bias, and trauma-informed care; provide prenatal education to birthing people and families through classes, support groups, and patient navigators.
- Additionally, recently enacted Medicaid policies developed to improve and expand access and linkages to supportive services, including:
    - Coverage of support services for pregnant and postpartum people by community health workers and peer family navigators.
    - Expanding nutrition services available for pregnant and postpartum individuals through Registered Dietitians.
    - Expanding the types of providers eligible for lactation support services reimbursement.
    - Statewide implementation and coverage for doula services received by Medicaid-enrolled doula providers (further described in Section 9 below).

8. IMPROVE THE HEALTH OF PREGNANT AND POSTPARTUM PEOPLE

8.1 HOME VISITING

RECOMMENDATIONS

- New York State should offer all families at least one home visit from a nurse or paraprofessional within two weeks postpartum to educate families about signs and symptoms of potential complications. (2018, Recommendation #14 and 2018-2020, Recommendation #10;) Level: System

ACTIONS

- The Department supports this recommendation but has looked into the potential fiscal and workforce needs to support such a program, based on efforts in other jurisdictions' efforts to implement similar initiatives.
    - The Division of Family Health was awarded a five-year *State Maternal Health Innovation* (SMHI) grant, for September 30, 2023 – September 29, 2028. Through this grant, the Department is partnering with a community birthing hospital and an experienced home visiting agency/provider in two rural areas that serve populations with little access to prenatal, obstetrical, and postpartum care. In each rural area, the pair of organizations work together to educate birthing people and families and refer interested families to the home visiting program staff. The staff provide up to three virtual video/phone calls during the first 6-8 weeks post-discharge, with a follow-up call to assess whether the postpartum individual attended their postpartum medical visit, and if there are any additional needs. This pilot program started in late 2024 and will be continuously assessed. Results from this pilot will inform future program planning.
    - The Division of Family Health is also collaborating with Essex County to offer universal home visiting to all county residents; this may be a model for rural counties, as Essex has approximately 300 births annually.
    - A universal light-touch postpartum home visiting program available statewide to all birthing people and their families with limited (up to 3) home visits would have a significant cost to the state in excess of $50M annually and would also require significant investments to support training of paraprofessionals.
    - Nursing-based light-touch home visiting models also previously assessed and have been attempted in other states. There are concerns about the ongoing nursing shortages state- and nation-wide, and the ability for agencies to hire, train, and retain nurse home visitors. We anticipate that staffing and training costs would be far greater to implement universally.
- The Maternal, Infant and Early Childhood Home Visiting (MIECHV) Program provided 37,159 visits between 10/1/23 and 9/30/24 (the latest program year available). Of this, more than 3 in 4 were in-person visits, and less than 1 in 4 visits were virtual. This is a major change from 10/1/2021 when 3 in 4 visits were occurring virtually as a result of the COVID-19 pandemic. Patient satisfaction data are not available.
- The Perinatal and Infant Community Health Collaborative (PICHC) program has served 24,536 encounters between July 1, 2022, and June 12, 2023. 44% were in-person, including 13% as in-person at a location other than the family's home. 56% of visits are virtual (modality not available). Client satisfaction survey completion was recently added to the data management system, but only records whether a survey was completed. Since adding this variable, 483 out of 5,047 (9.6%) of visits have included a completed satisfaction survey. As a new data variable, results should be interpreted with caution.

New York State Recommendations and Actions to Address Maternal Mortality and Reduce Racial Disparities

8. IMPROVE THE HEALTH OF PREGNANT AND POSTPARTUM PEOPLE

8.2 EXPANSION OF MEDICAID COVERAGE

RECOMMENDATIONS

- The Department should expand Medicaid coverage to include one-year postpartum (2018, Recommendation #12) Level: System
- New York State Medicaid should increase Medicaid reimbursements for care of pregnant and postpartum people. (2018-2020, Recommendation #15) Level: System

ACTIONS

- The Department's Office of Public Health (OPH) and Office of Health Insurance Programs (OHIP) revised the Medicaid Perinatal Care Standards. The revised standards became effective August 1, 2022, for Fee-for-Service Medicaid and October 1, 2022, for Medicaid Managed Care. Aspects of care addressed in the updated Medicaid Perinatal Care Standards include access to care, provider training and credentialling, eligibility and coverage, comprehensive prenatal care risk assessment, care plans, care coordination, home visits, initial and comprehensive postpartum visits, and breastfeeding/chest feeding. These standards apply to all Medicaid providers of prenatal/antepartum, intrapartum, and/or postpartum services, all medical care facilities, public and private not-for-profit organizations, physicians, licensed nurse practitioners, licensed midwives practicing on an individual or group basis, and all Medicaid Managed Care plans that contract with these providers.
- Medicaid Perinatal Care Standards require coordination of care by the principal maternity care provider. The principal maternity care provider must ensure the exchange of relevant information with other health care providers, human service and community-based service providers, health plan case managers, and sites of care including the anticipated delivery site. Likewise, the maternity care provider must refer patients to appropriate specialists or community resources.
- Medicaid was expanded to include a new benefit for coverage of community health workers from pregnancy through twelve months postpartum. The Department has completed this allowing people with Medicaid to help connect people to supports, including non-medical needs. Enhancing Medicaid midwife reimbursement rates. Effective June 2022, the Department has increased Medicaid reimbursement rates for midwives from 85% to 95% of the physician fees.
- On March 1, 2023, the Department expanded New York State Medicaid postpartum coverage from 60 days to 12 months for all eligible Medicaid recipients, regardless of immigration status or how the pregnancy ended. It is anticipated that the extension will provide opportunities for connections to treatment for individuals with chronic conditions, including heart disease, hypertension, diabetes, mental health, and substance use disorders; and opportunities for the utilization of preventive services, including screenings and referrals for new or acute conditions. The expansion of Medicaid is a critical step towards preventing maternal deaths and illness and fortifying health equity.

8. IMPROVE THE HEALTH OF PREGNANT AND POSTPARTUM PEOPLE

8.2 EXPANSION OF MEDICAID COVERAGE

ACTIONS (CONT'D)

- All postpartum persons insured by Medicaid are now eligible for one initial postpartum home visit after they give birth. Additional postpartum home visits may be covered depending on the person's unique medical, obstetrical, and/or psychosocial profile. The Medicaid reimbursable visit is a skilled nursing home visit provided by agencies that are certified or licensed under Article 36 of the Public Health Law and are either a Certified Home Health Agency or a Licensed Home Care Service Agency. Other home visiting providers may include, but are not limited to, Nurse-Family Partnership Programs, local health departments, and community health worker programs, which may or may not be covered as a Medicaid benefit. All principal maternity care providers and/or birthing hospitals must offer and arrange for the initial postpartum home visit, which should take place 36 to 72 hours after discharge. Birthing hospitals must have a system in place to arrange and schedule the birthing person's initial postpartum home visit. The postpartum visit must include guidance regarding the identification and treatment of early urgent maternal warning signs that can occur up to one year postpartum.
- A Medicaid Doula Services pilot program was implemented in Erie County (New York State Doula Pilot Program). This program was expanded statewide effective March 2024, for all pregnant, birthing, and postpartum Medicaid-enrolled individuals through 12 months postpartum. To further support access to doula services, in June 2024, the Commissioner of Health issued a statewide non-patient-specific standing order that all New Yorkers who are pregnant, birthing, or postpartum would benefit from receiving doula services. This order is another step in expanding access to doula care and fulfills the requirement for a provider recommendation for services to be covered by Medicaid. The standing order removes the requirement for a Medicaid member to get an individual recommendation for doula services; it is expected to be renewed annually.

8. IMPROVE HEALTH OF PREGNANT AND POSTPARTUM PEOPLE

8.3 MATERNAL MEDICAL HOME

RECOMMENDATIONS

- The Department should implement a maternity medical home model of care and convene a multi-stakeholder group to develop standard guidance about additional psychosocial services and coordination of care which includes trauma and social determinants of health. (2018, Recommendation #10) Level: System
- The Department should convene a multidisciplinary group of key interested parties to develop standard guidance on implementation of a maternity medical home model that prioritizes people with chronic conditions. In addition, New York State should provide funding to support a pilot project of the maternity medical home model. (2018-2020, Recommendation #5) Level: System

ACTIONS

- On January 16, 2025, the Commissioner's Medical Grand Rounds: Preventing Maternal Mortality: Recommendations for Action included a presentation focused on the benefits of embedding the Maternal Home in NYC Health + Hospitals. The hospital system-based, patient-centered program was integrated into the maternal care delivery model at all 11 NYC Health + Hospitals with birthing facilities and provides comprehensive wrap-around support to pregnant people with identified needs in the areas of social determinants of health, behavioral health, or complex clinical needs.

8. IMPROVE HEALTH OF PREGNANT AND POSTPARTUM PEOPLE

8.4 ENHANCING PROVIDER EDUCATION

ACTIONS

- Although there are no recommendations explicitly to increase or enhance provider education, the Department is working with two Regional Perinatal Centers to implement perinatal Project ECHO™ (Extension for Community Healthcare Outcomes) programs. Project ECHO is an evidence-based tele-mentoring model of clinical provider education, designed to expand and enhance capacity with diverse hospital and community-based providers that serve in and around areas that are medically underserved and/or maternity care deserts.
- The Department is partnering with University of Rochester Medical Center and Westchester Medical Center, both of which have extensive and broad experience implementing Project ECHO programs for other clinical areas. While initial cohorts of participants will likely be recruited through networks local to the hospital, we anticipate that the programs will expand their recruitment beyond traditional geographic boundaries and provider types, for a broader reach across New York State.
- Each hospital partner will implement two cycles of a six-month cohort per year, and each cycle will consist of six hour-long session that includes a didactic component followed by case study review and discussion. Cohorts generally include 8-15 participants.
- Topics covered through the perinatal Project ECHO will be supportive of a variety of recommendations already discussed, including safe reduction of primary cesarean births, coordination of chronic care, and optimizing management of care for mental health and substance use disorder.

8. IMPROVE HEALTH OF PREGNANT AND POSTPARTUM PEOPLE

8.5 INCREASING DATA CAPACITY AND ANALYSIS

ACTIONS

- Although there are no recommendations specifically designed to increase data capacity or quality, the Department is taking several steps to build capacity and conduct more comprehensive analyses of available data. This will help the Department and by extension stakeholders better understand and better respond to the complexity of the perinatal and postpartum populations.
- The Department has developed an in-depth analysis of severe maternal morbidity, including identifying associated disparities. A multi-year report is currently in approval and will be posted to the Department's website and shared with stakeholders broadly.
- Additionally, the Department is examining low-risk cesarean births, to better understand characteristics of the patients who give birth through cesarean delivery, and to identify disparities across demographics and other classifications.
- Finally, the Department is working to improve data linkages between administrative maternal health data sets and the Pregnancy Risk Assessment Monitoring System (PRAMS), to better understand the experiences of patients during and after pregnancy.

New York State Recommendations and Actions to Address Maternal Mortality and Reduce Racial Disparities

9. ADDITIONAL ACTIONS

COVID-19 RESPONSE

- The Department issued a Health Advisory to facilities, providers, and stakeholders on the importance of COVID-19 vaccination for people who are pregnant, postpartum, or breastfeeding, or who may become pregnant.
- The Department also developed a brochure and poster explaining the importance of COVID-19 vaccinations and affirming their safety. The brochure was translated into the 10 most common non-English languages spoken in NYS, and the poster was translated into Spanish. All birthing hospitals in NYS were notified of these materials, which were made available for download on the Department's website.

IMPROVE PUBLIC EDUCATION

- The Department has developed a variety of consumer materials related to raising awareness of signs and symptoms of conditions that may lead to maternal morbidity and mortality. This includes a brochure on warning signs of serious events during and after pregnancy; information on preterm labor and premature birth; endometriosis; and perinatal mood and anxiety disorder. Additional materials are in development. These materials are available for download from the Department's website.
- The Department has implemented multiple waves of the CDC's *Hear Her* digital and social media campaigns in Fall 2021, Summer 2022, and September 2024, with a fourth wave in development. The campaign aims to build public awareness of potentially life-threatening warning signs during and after pregnancy and improve communication between patients and their healthcare providers. The Department utilized various digital platforms (Facebook, Instagram, Snapchat) and print media to convey information to pregnant and postpartum people and their partners, friends, and family about pregnancy-related complications and tips for talking about their concerns with health care providers.
- Print media items are translated into the ten most common languages spoken in New York State and are housed on the Department website (www.health.ny.gov/hearher) for downloading and printing.
- The Department leveraged funds from the federal Maternal and Child Health Services Block Grant ("Title V") to expand the September 2024 wave. The Department co-branded and printed two CDC developed *Hear Her* Campaign palm cards on urgent maternal warning signs, one for Native American/Alaskan Native birthing people and one for their family/friends. In addition, the Department co-branded and printed the CDC's *Urgent Maternal Warning Signs* poster (https://www.cdc.gov/hearher/maternal-warning-signs/index.html; in English and Spanish). The campaign also included out-of-Home media, including posters and billboards. All media was county-targeted to reach areas with higher incident rates and proximity targeted around Native American reservations and/or locations with higher concentrations of pregnant persons, such as OB/GYN offices and birthing centers. The media campaign consisting of social media messages, search ads and banner ads ran in September 2024.

9. ADDITIONAL ACTIONS

MATERNAL HEALTH TASK FORCE

- As part of the *State Maternal Health Innovation* grant, the Department is convening a statewide maternal health task force. The task force is comprised of members representing the broad and diverse array of individuals and communities that support pregnant and postpartum individuals. This includes a variety of clinical and community providers, persons with lived experience, insurance providers, and representatives from state agencies and community organizations who work on addressing a variety of social determinants of health most affecting pregnant and postpartum individuals and families.
- The Task Force is charged with collaborating with the Department to assess the current landscape of maternal care and coverage; identify gaps that impact maternal health outcomes; and provide insight and expertise in the development of a statewide strategic plan, as well as work to update the strategic plan annually and support implementation of specific activities identified in the plan.
- The Department anticipates that the strategic plan will be completed in late 2025 and intends to maintain it as a living document that, along with the Department's Prevention Agenda and the Maternal and Child Health Services Block Grant State Action Plan and Needs Assessment, guides the statewide and local public health programming and policy.

PAID PRENATAL LEAVE

- Starting January 1, 2025, all employees working in the private sector are covered by the New York State Paid Prenatal Leave Law (NYS Labor Law Section 196-b). All full time and part time private sector employees, including employees who are overtime exempt, are entitled to 20 hours of Paid Prenatal Leave per year. Federal, state, or local government employees are not covered by New York State's Paid Prenatal Leave Law. However, employees of non-profit organizations are covered by this law. Private sector employers include people or businesses, outside of government, that employ others. These employers include persons, corporations, limited liability companies, or associations in any occupation, industry, trade, business, or service.

10. WORK TO BE DONE

RECOMMENDATIONS

- The American College of Obstetricians and Gynecologists District II and partners should develop an obesity bundle to improve care among birthing people of reproductive age. (2018-2020, Recommendation #13) Level: System
- Facilities should implement the maternal early warning signs (MEWS) protocol to facilitate care escalation following a significant change in patient status. (2018-2020, Recommendation #14) Level: Facility
- The New York State Legislature should require birthing facility participation in New York State Perinatal Quality Collaborative projects and provide funding to birthing facilities to support participation. Project participation should be reported as part of the New York State Maternity Information Scorecard (Hospital Maternity-Related Procedures and Practices Statistics (ny.gov) (2018-2020, Recommendation #18) Level: System
- The New York State Office of Temporary and Disability Assistance (New York State Housing Support Services) should guarantee safe, stable housing for pregnant and post-partum people experiencing homelessness, prioritizing those with chronic health conditions (including mental health conditions). (2018-2020, Recommendation #12) Level: System
- The Office of Mental Health, ACOG District II, and partners should develop materials to educate providers on behavioral health evaluation, treatment and understanding of patient barriers to seeking care. (2018, Recommendation #8) Level: System
- The Department should require hospitals to provide ongoing education, including simulation drills for common obstetric emergencies (e.g., cardiac arrest, obstetric hemorrhage, and preeclampsia) for all providers caring for obstetrical patients. (2018-2020, Recommendation #11) Level: System

NEW YORK STATE Department of Health

Maternal Mortality Review Board

Other Related Reports and Websites

NEW YORK STATE MATERNAL MORTALITY REVIEW REPORTS

- New York State Report on Pregnancy-Associated Deaths in 2018-2020 – March 2024
- New York State Report on Pregnancy-Associated Deaths in 2018 – April 2022
- New York State Maternal Mortality Review Report, 2014 – August 2020
- New York State Maternal Mortality Review Report, 2012-2013 – August 2017
- New York State Maternal Mortality Review Report, 2006-2008 – February 2016

FACTSHEETS

- Factsheet on New York State Pregnancy-Associated Deaths in 2018 – November 2022

ISSUE BRIEFS

- Spotlight on Perinatal Substance Use Disorder – November 2023
- Spotlight on Perinatal Mental Health – November 2022

MATERNAL MORTALITY AND MORBIDITY ADVISORY COUNCIL REPORT

- Maternal Mortality and Morbidity Advisory Council Report, 2023 – March 2024

NEW YORK STATE HEAR HER CAMPAIGN

- www.health.ny.gov/HearHer

LEARN MORE ABOUT MATERNAL MORTALITY IN NEW YORK STATE AT:
https://www.health.ny.gov/MaternalHealthMatters/

Appendix

APPENDIX A – CASE IDENTIFICATION AND ABSTRACTION

Cases are identified on an ongoing basis from information on:

- Maternal death certificates
- Birth certificates or fetal death certificates linked to maternal death certificates
- Hospital discharge records

To be included for review:

- A death must have been pregnancy-associated
- A death must have occurred in New York State
- Or decedent must have been a New York State resident

Additional records (hospital or other medical care records, emergency medical records, law enforcement records, and medical examiner records) are requested to facilitate reviews. Obituaries, social media, and community indicators are also examined to give context for each decedent's life and death. Available information for each case is examined by clinical case abstractors, who then enter relevant details into the MMRIA platform. Once abstraction is complete, MMRIA generates a de-identified case summary that is provided to the committees for review.

APPENDIX B – CASE REVIEW PROCESS

Each committee meets multiple times per year to review and discuss the cases, with the goal of answering these questions:

1. Was this death pregnancy-related?
2. What was the underlying cause of death?
3. Was the death preventable?
4. What chance was there to alter the outcome?
5. What were the critical factors that contributed to this death?
6. What are the recommendations and actions that address those contributing factors?
7. What is the anticipated impact of those actions if implemented?

In accordance with the CDC Review to Action process format, the committees complete a Committee Decisions Form for each case, which is intended to standardize reviews across all participating states (**Appendix D**). Following each meeting, all committee decisions and recommendations are entered into the MMRIA database.

Appendix

APPENDIX C – CALCULATIONS

PREGNANCY-ASSOCIATED MORTALITY RATIO:

(DEATHS PER 100,000 LIVE BIRTHS)

Number of pregnancy-associated deaths / Number of live births * 100,000

PREGNANCY-RELATED MORTALITY RATIO:

(DEATHS PER 100,000 LIVE BIRTHS)

Number of pregnancy-related deaths / Number of live births * 100,000

APPENDIX D – MMRIA COMMITTEE DECISIONS FORM

The CDC periodically updates the MMRIA Committee Decision Form. As a result, several versions of this form were used to review the maternal deaths included in this report, for example Version 22.

CONTACT INFORMATION

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SUGGESTED CITATION

New York State Report on Pregnancy-Associated Deaths in 2021. Albany, NY: New York State Department of Health. 2025.