

Texas Maternal Mortality and Morbidity Review Committee and Department of State Health Services: 2022 Joint Biennial Report



Presentation Outline

- Background
- Findings
 - Pregnancy-Related Death Case Review Findings
 - Findings from Statewide Rates and Trends
- Recommendations Grouped by Domain of Implementation/Impact
- MMMRC Updates

MMMRC Duties

- Study and review
 - Cases of pregnancy-related death
 - Trends, rates, or disparities in pregnancy-related deaths and severe maternal morbidity (SMM)
 - Health conditions and factors that disproportionately affect the most at-risk populations
 - Best practices and programs operating in other states with reduced pregnancy-related death rates
- Compare pregnancy-related death rates based on the mother's socioeconomic status.
- Determine the feasibility of the review committee studying SMM cases.
- Consult with the Perinatal Advisory Council when making recommendations to help reduce pregnancy-related deaths and SMM incidences in this state.

Updates to Case Cohort Identification

- Identified deaths met the following criteria
 - Texas resident at the time of death and death occurred in the U.S
 - Females between the ages of 5-60 at the time of death
- Identified through
 - Linkage of the death certificate to all birth and fetal death certificates
 - Indication of pregnancy status on the death certificate
 - Underlying cause of death on the death certificate (ICD-10 codes)
- All transportation accidents were excluded. Vehicular homicide and suicide were still included.

Key Questions

For each case, the MMMRC seeks to answer

1. Was the death related to the pregnancy?
2. What caused and contributed to the death?
3. Was the death preventable?
4. What recommendations can be made to prevent future deaths?

Pregnancy-Related Death Case Review Findings 2019 Provisional Cohort



Findings 1 and 2

Finding #1 - 44 percent of the reviewed pregnancy-associated deaths from the 2019 case cohort are pregnancy-related.

- 141 provisionally identified cases in the 2019 cohort
 - 118 were reviewed by the MMMRC
 - 52 pregnancy related (44%)
 - 42 not pregnancy related (36%)
 - 24 unable to determine (20%)

Finding #2 - Most pregnancy-related deaths were preventable.

- 90% of reviewed 2019 case cohort pregnancy-related deaths determined to have at least some chance for preventability.

Findings 3 and 4

Finding #3 –Six underlying causes of death accounted for 79% of all reviewed 2019 case cohort pregnancy-related deaths.

- Obstetric hemorrhage (OBH) (25%)
- Mental health conditions (17%)
- Non-cerebral thrombotic embolism (12%)
- Injury (10%)
- Cardiovascular conditions and infection (tied at 8% each)

Finding #4 - Multiple underlying causes contributed to reviewed pregnancy-related deaths caused by obstetric hemorrhage.

- Ruptured ectopic pregnancy (23%)
- Uterine rupture, placental abruption, and placenta accreta spectrum

Findings 5 and 6

Finding #5 - Obesity, mental disorders, discrimination, and substance use disorder (SUD) each contributed to pregnancy-related death.

- Obesity (21%)
- Mental disorders, other than SUD (21%)
- Discrimination (12%)
- SUD, including SUD associated with mental disorders (8%)

Findings #6 - Violence contributed to pregnancy-related death

- Suicide and homicide (27%)
- The most frequent means of fatal injury were firearms, hanging, strangulation, and suffocation.
- Partners were most likely to be perpetrators of homicide among reviewed homicide cases.

Finding 7

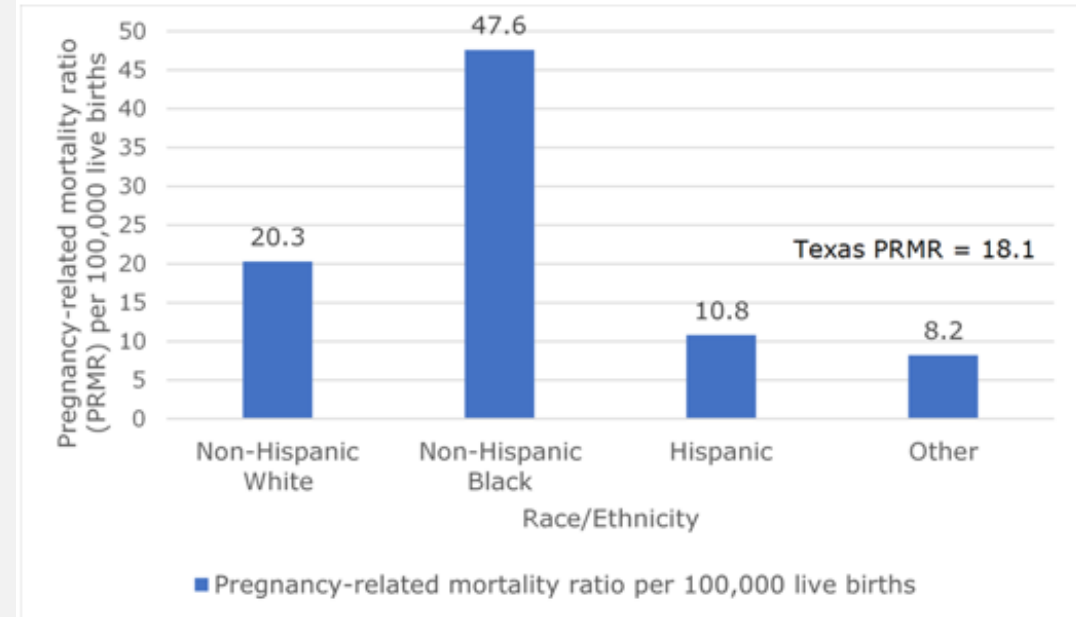
A complex interaction of factors and characteristics contribute to preventable death.

- 390 factors contributed to pregnancy-related preventable cases (~8.3 factors/ case).
- Contributing factors categorizations
 - patient and family (29 %)
 - provider (30 %)
 - facility (14 %)
 - systems of care (12 %)
 - community (15 %)

Finding 8

Disparities persist in maternal mortality with Non-Hispanic Black women being most disproportionately impacted.

Figure E-1. PRMR by Race and Ethnicity, Texas, 2013



PREPARED BY: Maternal and Child Health Unit (MCHU), Healthy Texas Mothers and Babies (HTMB) Branch, Community Health Improvement (CHI) Division, the Department of State Health Services (DSHS).

DATA SOURCE: 2013 Death Files, 2011-2012 Live Birth and Fetal Death Files. Center for Health Statistics (CHS), DSHS.

NOTES: The MMMRC classified deaths as pregnancy-related through the MMMRC review process. For 2013, the MMMRC reviewed 70 pregnancy-related deaths.

Findings from Statewide Rates and Trends 2013-2020



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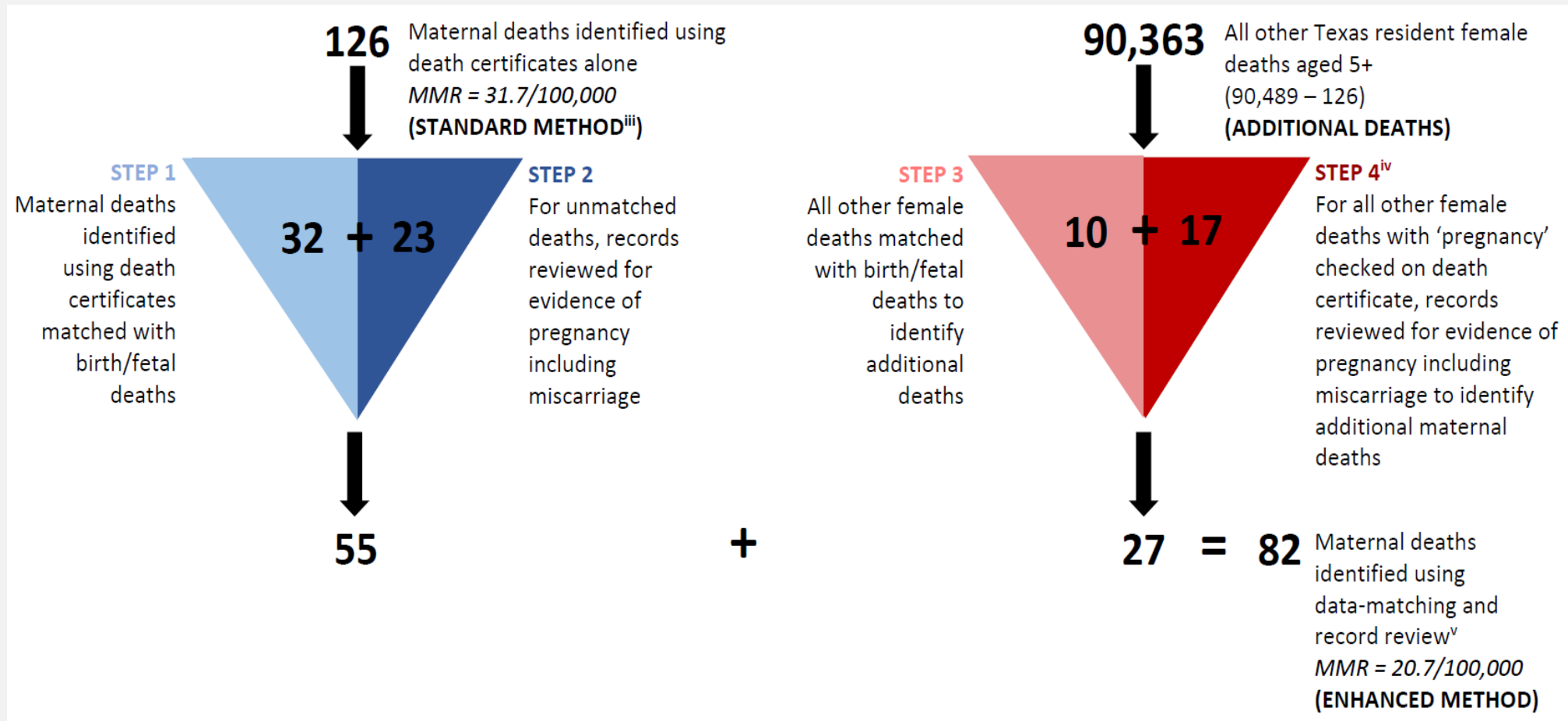
Finding 9

The Enhanced Maternal Mortality Ratio remained relatively stable from 2013-2017.

- 2013: 18.9 maternal deaths/100,000 live births
- 2014: 20.7 maternal deaths/100,000 live births
- 2015: 18.3 maternal deaths/100,000 live births
- 2016: 20.7 maternal deaths/100,000 live births
- 2017: 20.2 maternal deaths/100,000 live births

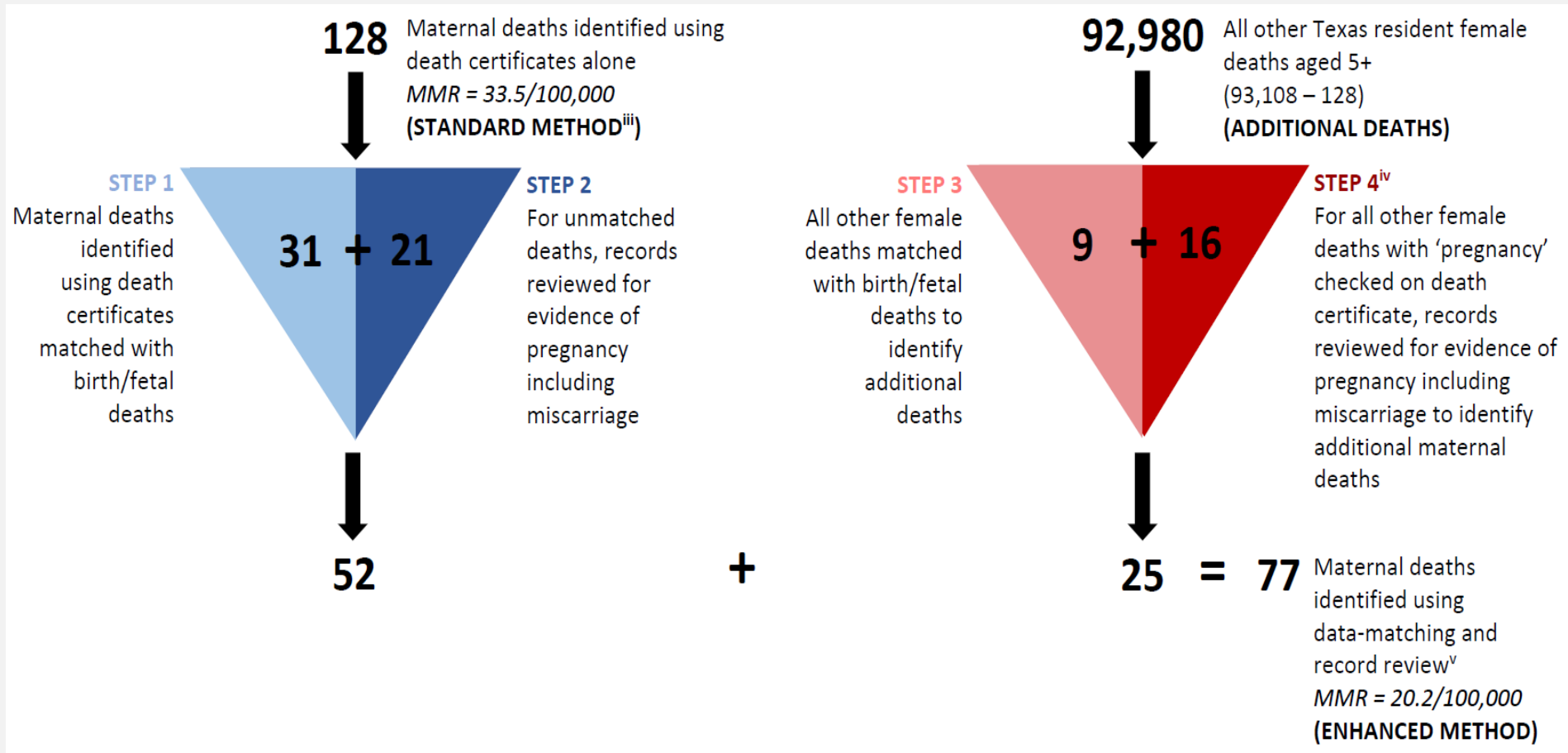
Enhanced MMR 2016

Four-Step Enhanced Method — Number of Maternal Deaths within 42 Days Following End of Pregnancy and Enhanced Maternal Mortality Ratio (MMR) per 100,000 Live Births, Texas, 2016



Enhanced MMR 2017

Four-Step Enhanced Method — Number of Maternal Deaths within 42 Days Following End of Pregnancy and Enhanced Maternal Mortality Ratio (MMR) per 100,000 Live Births, Texas, 2017



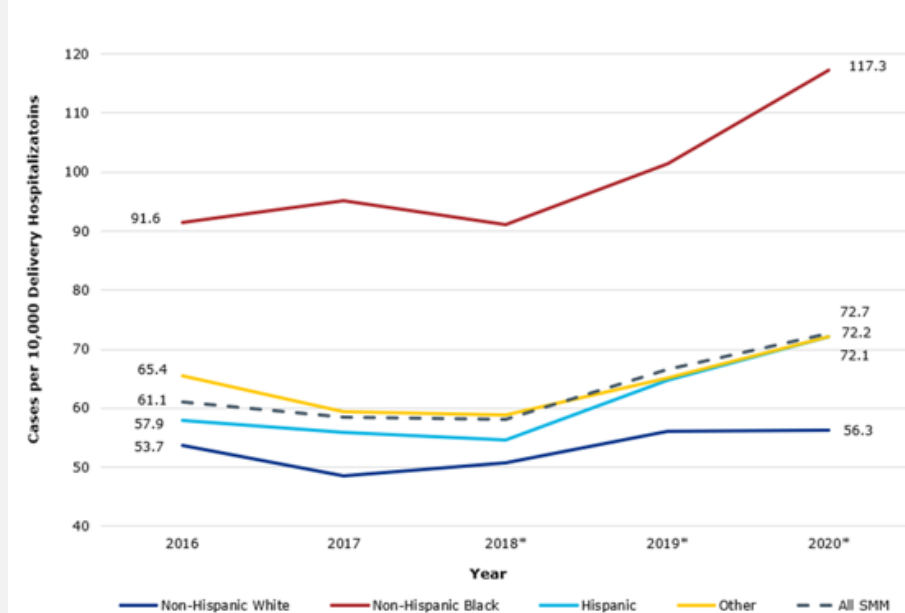
Finding 10

From 2016-2020, demographic and geographic disparities in SMM rates related to in-hospital deliveries persist.

Higher rates of SMM were experienced by

- Non-Hispanic Black women and women of Other races/ethnicities
- Women with advanced maternal age (35 or older)

Figure G-1. Rate of Delivery Hospitalizations Involving Severe Maternal Morbidity (SMM) in Texas per 10,000 Delivery Hospitalizations by Race and Ethnicity, 2016-2020



PREPARED BY: Maternal and Child Health Epidemiologists (MCHE), Community Health Improvement (CHI) Division, DSHS.

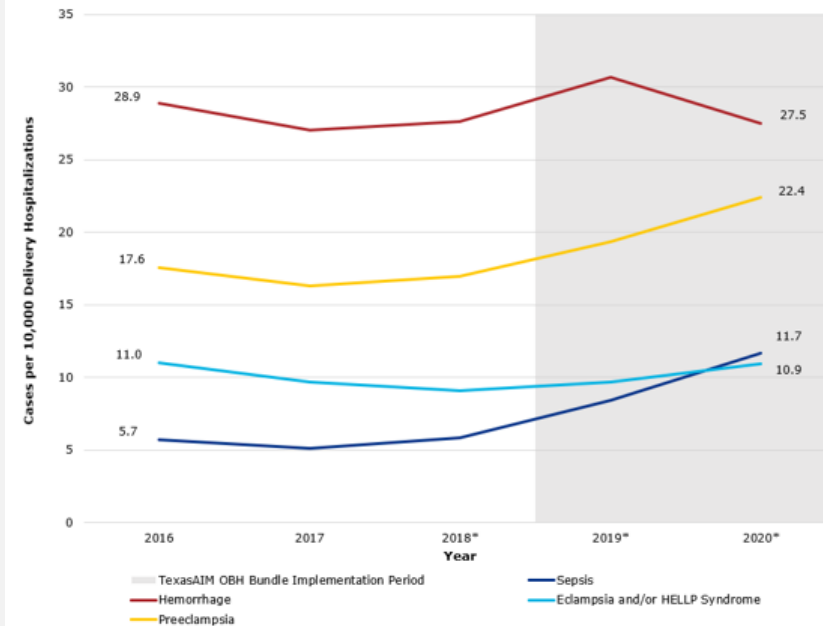
DATA SOURCE: Hospital Inpatient Discharge Research Data File, 2016-2020. Birth Files, 2016-2020. Center for Health Statistics (CHS), DSHS.

*NOTES: 2018-2020 Birth Files are provisional. SMM calculated using the Updated Alliance for Innovation on Maternal Health (AIM) SMM Codes List, v08-09-2021. The SMM National Workgroup recently advised calculating SMM using SMM indicators while excluding blood transfusion-only cases. Previously reported SMM rates may not be comparable. See: saferbirth.org/wp-content/uploads/Updated-AIM-SMM-Code-List_10152021.xlsx.

Finding 11

Overall SMM rates show improvement in obstetric hemorrhage delivery hospitalizations while sepsis and preeclampsia rates increased. Disparities still persist with the SMM rates for Non-Hispanic Black women.

Figure G-4. Rate of Delivery Hospitalizations Involving Severe Maternal Morbidity (SMM) in Texas per 10,000 Delivery Hospitalizations by SMM Indicator, 2016-2020



PREPARED BY: MCHE, CHI Division, DSHS.

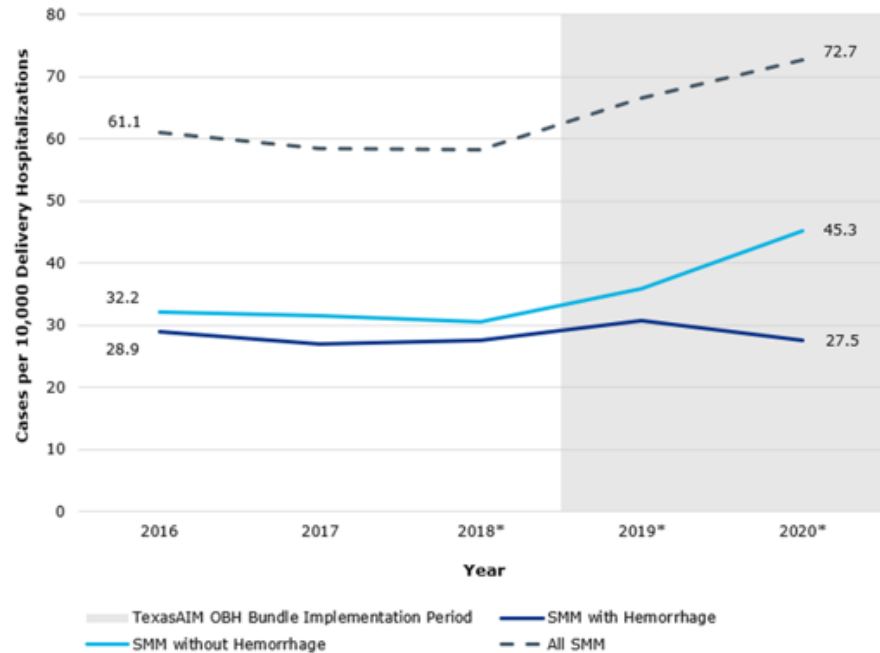
DATA SOURCE: Hospital Inpatient Discharge Research Data File, 2016-2020. Birth Files, 2016-2020. CHS, DSHS.

NOTES: 2018-2020 Birth Files are provisional. SMM calculated using the Updated AIM SMM Codes List, v08-09-2021. The SMM National Workgroup recently advised calculating SMM using SMM indicators while excluding blood transfusion-only cases. Previously reported SMM rates may not be comparable. See: saferbirth.org/wp-content/uploads/Updated-AIM-SMM-Code-List_10152021.xlsx.

Eclampsia is a severe complication of preeclampsia characterized by one or more seizures during pregnancy or postpartum period. HELLP syndrome is one of the most severe forms of preeclampsia. It can lead to liver injury, a breakdown of red blood cells, and lowered platelet count.

SMM and Obstetric Hemorrhage

Figure G-5. Rate of Delivery Hospitalizations Involving SMM in Texas Associated with or without Hemorrhage per 10,000 Delivery Hospitalizations, 2016-2020

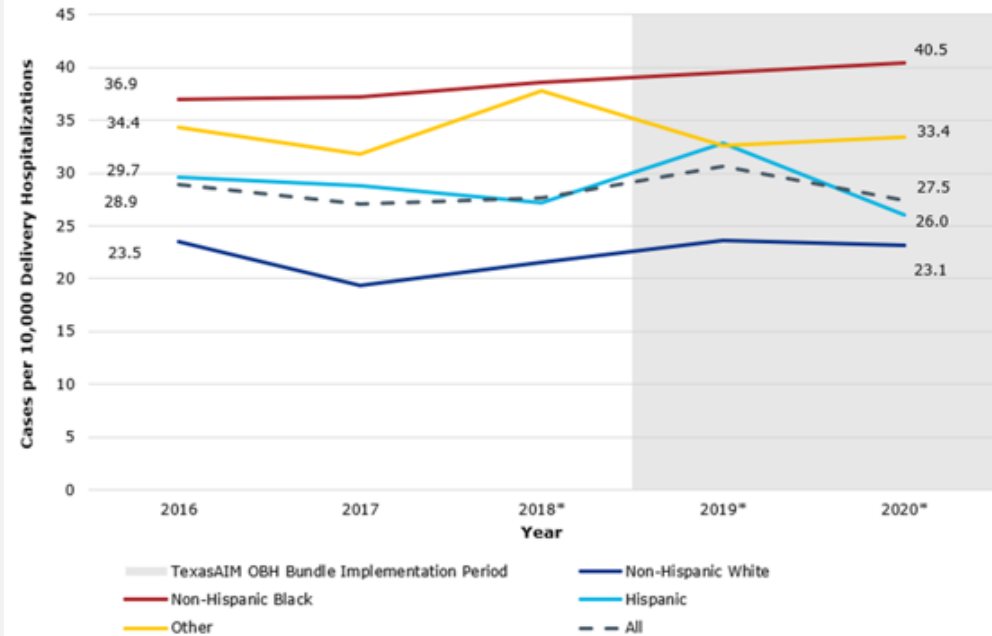


PREPARED BY: MCHE, CHI Division, DSHS.

DATA SOURCE: Hospital Inpatient Discharge Research Data File, 2016-2020. Birth Files, 2016-2020. CHS, DSHS.

NOTES: 2018-2020 Birth Files are provisional. SMM calculated using the Updated AIM SMM Codes List, v08-09-2021. The SMM National Workgroup recently advised calculating SMM using SMM indicators while excluding blood transfusion-only cases. Previously reported SMM rates may not be comparable. See: saferbirth.org/wp-content/uploads/Updated-AIM-SMM-Code-List_10152021.xlsx.

Figure G-6. Rate of Delivery Hospitalizations Involving SMM in Texas Associated with Hemorrhage, by Race and Ethnicity, per 10,000 Delivery Hospitalizations, 2016-2020



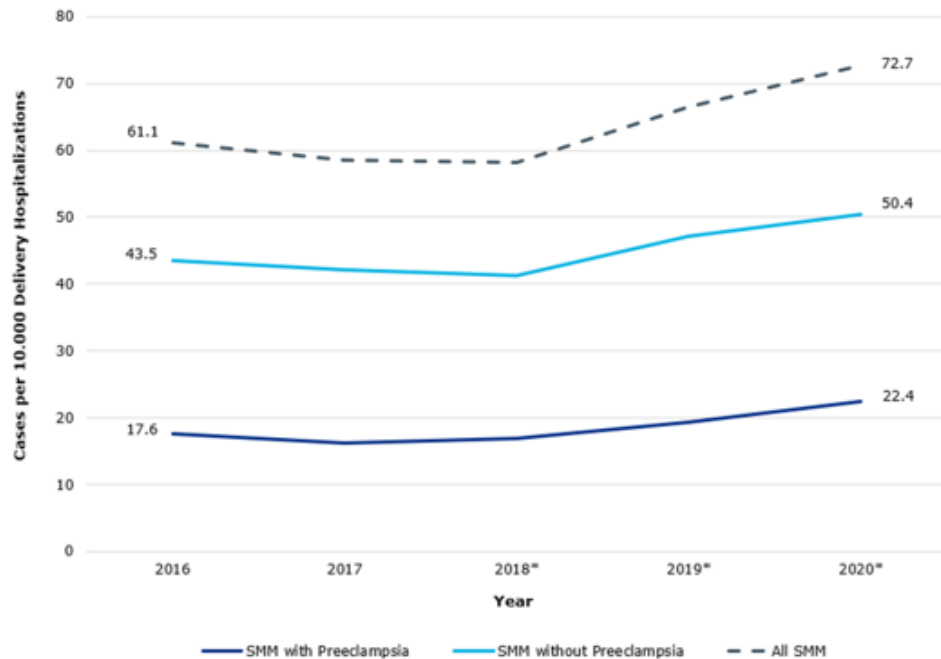
PREPARED BY: MCHE, CHI Division, DSHS.

DATA SOURCE: Hospital Inpatient Discharge Research Data File, 2016-2020. Birth Files, 2016-2020. CHS, DSHS.

*NOTES: 2018-2020 Birth Files are provisional. SMM calculated using the Updated AIM SMM Codes List, v08-09-2021. The SMM National Workgroup recently advised calculating SMM using SMM indicators while excluding blood transfusion-only cases. Previously reported SMM rates may not be comparable. See: saferbirth.org/wp-content/uploads/Updated-AIM-SMM-Code-List_10152021.xlsx.

SMM and Preeclampsia

Figure G-7. Rate of Delivery Hospitalizations Involving SMM in Texas Associated with or without Preeclampsia per 10,000 Delivery Hospitalizations, 2016-2020

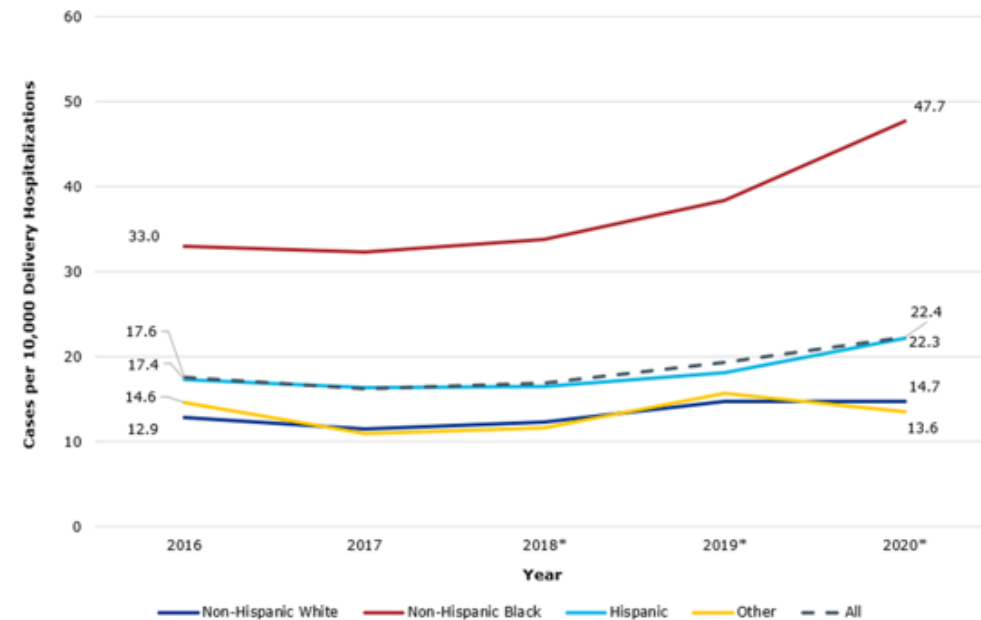


PREPARED BY: MCHE, CHI Division, DSHS.

DATA SOURCE: Hospital Inpatient Discharge Research Data File, 2016-2020. Birth Files, 2016-2020. CHS, DSHS.

NOTES: 2018-2020 Birth Files are provisional. SMM calculated using the Updated AIM SMM Codes List, v08-09-2021. The SMM National Workgroup recently advised calculating SMM using SMM indicators while excluding blood transfusion-only cases. Previously reported SMM rates may not be comparable. See: saferbirth.org/wp-content/uploads/Updated-AIM-SMM-Code-List_10152021.xlsx.

Figure G-8. Rate of Delivery Hospitalizations Involving SMM in Texas Associated with Preeclampsia, by Race and Ethnicity, per 10,000 Delivery Hospitalizations, 2016-2020



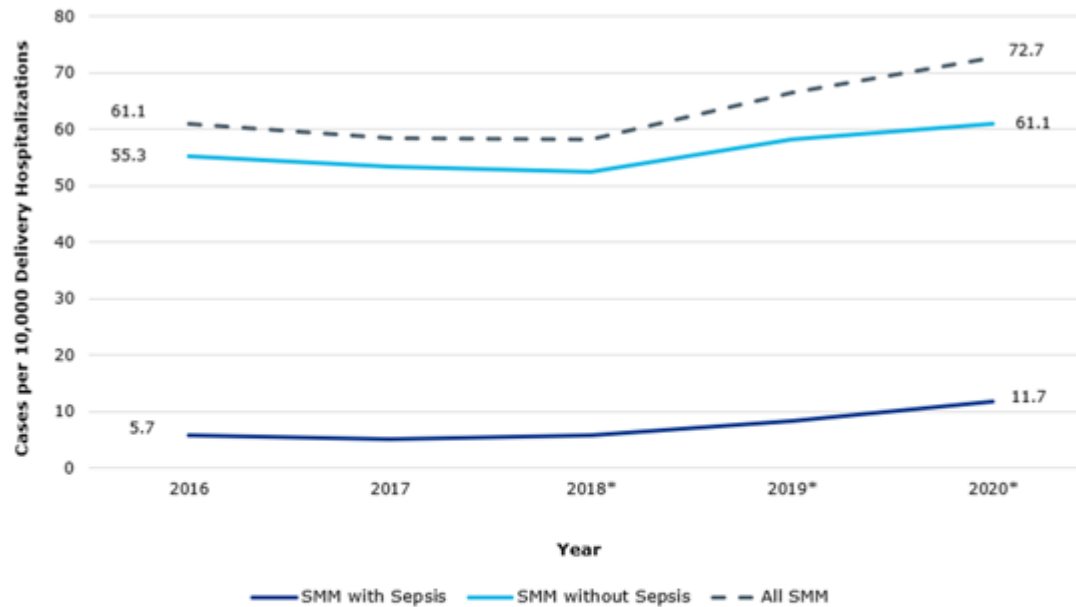
PREPARED BY: MCHE, CHI Division, DSHS.

DATA SOURCE: Hospital Inpatient Discharge Research Data File, 2016-2020. Birth Files, 2016-2020. CHS, DSHS.

*NOTES: 2018-2020 Birth Files are provisional. SMM calculated using the Updated AIM SMM Codes List, v08-09-2021. The SMM National Workgroup recently advised calculating SMM using SMM indicators while excluding blood transfusion-only cases. Previously reported SMM rates may not be comparable. See: saferbirth.org/wp-content/uploads/Updated-AIM-SMM-Code-List_10152021.xlsx.

SMM and Sepsis

Figure G-9. Rate of Delivery Hospitalizations Involving SMM in Texas Associated with or without Sepsis per 10,000 Delivery Hospitalizations, 2016-2020

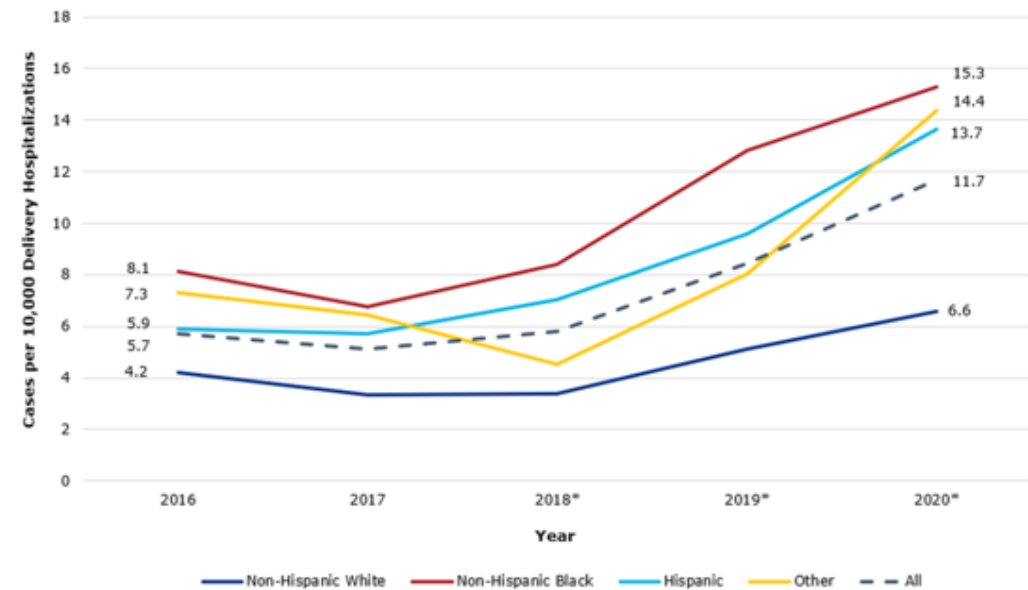


PREPARED BY: MCHE, CHI Division, DSHS.

DATA SOURCE: Hospital Inpatient Discharge Research Data File, 2016-2020. Birth Files, 2016-2020. CHS, DSHS.

*NOTES: 2018-2020 Birth Files are provisional. SMM calculated using the Updated AIM SMM Codes List, v08-09-2021. The SMM National Workgroup recently advised calculating SMM using SMM indicators while excluding blood transfusion-only cases. Previously reported SMM rates may not be comparable. See: saferbirth.org/wp-content/uploads/Updated-AIM-SMM-Code-List_10152021.xlsx.

Figure G-10. Rate of Delivery Hospitalizations Involving SMM in Texas Associated with Sepsis, by Race and Ethnicity, per 10,000 Delivery Hospitalizations, 2016-2020



PREPARED BY: MCHE, CHI Division, DSHS.

DATA SOURCE: Hospital Inpatient Discharge Research Data File, 2016-2020. Birth Files 2016-2020. CHS, DSHS.

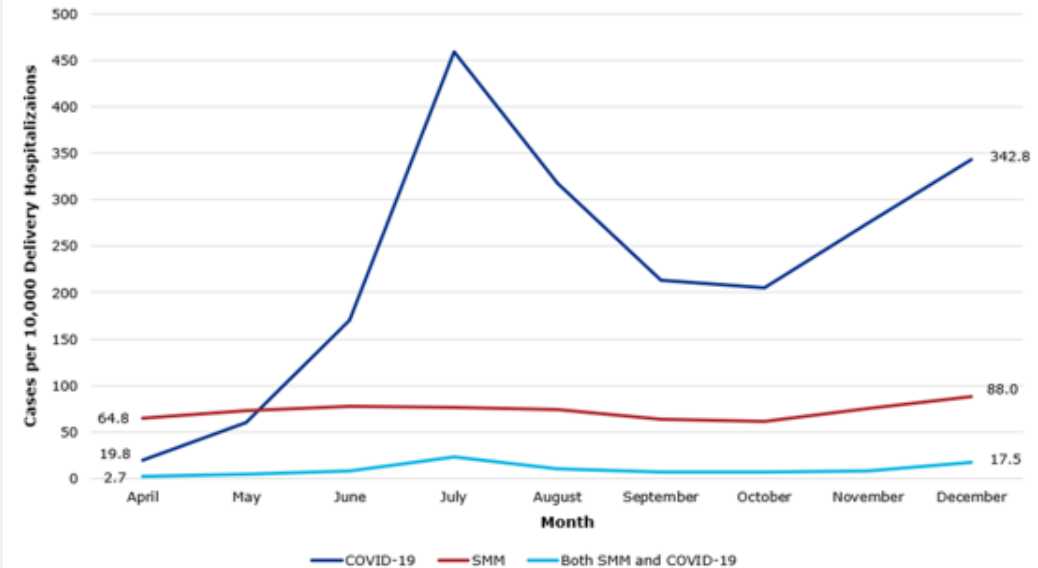
NOTES: 2018-2020 Birth Files are provisional. SMM calculated using the Updated AIM SMM Codes List, v08-09-2021. The SMM National Workgroup recently advised calculating SMM using SMM indicators while excluding blood transfusion-only cases. Previously reported SMM rates may not be comparable. See: saferbirth.org/wp-content/uploads/Updated-AIM-SMM-Code-List_10152021.xlsx.

Finding 12

Beginning in April 2020, SMM associated with COVID-19 showed disproportionate impacts to Hispanic women.

- SMM rates remained stable through the early part of the pandemic.
- The rate of delivery hospitalizations with both SMM and COVID-19 remained low with small increases during COVID-19 waves.
- COVID-19 cases were only determined using one diagnostic code.

Figure H-1. Delivery Hospitalizations Involving SMM and/or COVID-19 Infection in Texas per 10,000 Delivery Hospitalizations from April to December 2020



PREPARED BY: Maternal and Child Health Epidemiologists (MCHE), Community Health Improvement (CHI) Division, DSHS.

DATA SOURCE: Hospital Inpatient Discharge Research Data File, 2020. Provisional Birth File, 2020. Center for Health Statistics (CHS), DSHS.

NOTES: 2018-2020 Birth Files are provisional. SMM calculated using the Updated AIM SMM Codes List, v08-09-2021. The SMM National Workgroup recently advised calculating SMM using SMM indicators while excluding blood transfusion-only cases. Previously reported SMM rates may not be comparable. See: saferbirth.org/wp-content/uploads/Updated-AIM-SMM-Code-List_10152021.xlsx.

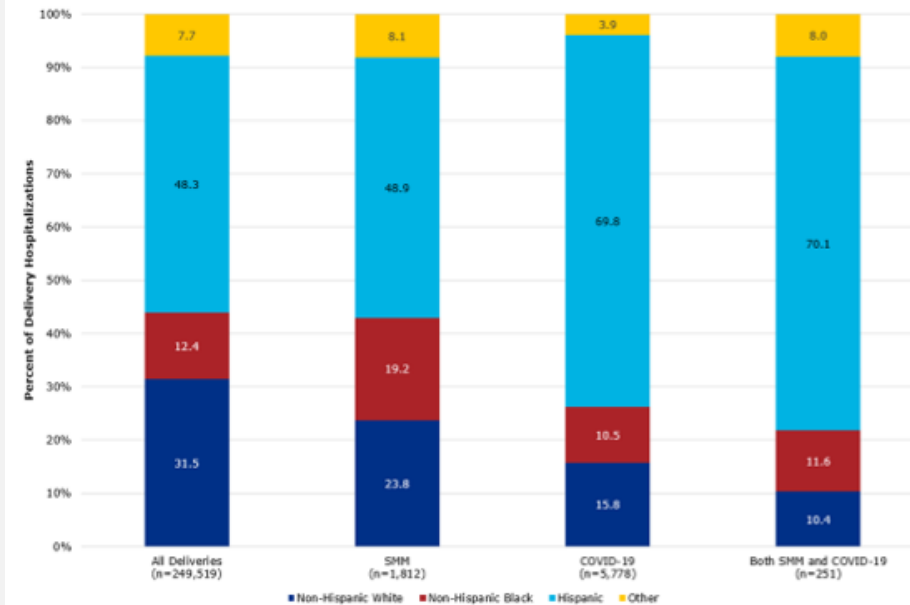
COVID-19 cases were determined by the ICD-10 diagnosis code U07.1 in the Hospital Inpatient Discharge Research Data File.

Finding 12 (Cont)

From April to December 2020, Hispanic women were disproportionately impacted by COVID-associated SMM.

- Represented only 48.3 percent of delivery hospitalizations but 70.1 percent of all delivery hospitalizations involving COVID-19-associated SMM

Figure H-2. Delivery Hospitalizations Involving SMM and/or COVID-19 Infection in Texas per 10,000 Delivery Hospitalizations by Race and Ethnicity from April to December 2020



PREPARED BY: MCHE, CHI Division, DSHS.

DATA SOURCE: Hospital Inpatient Discharge Research Data File, 2020. Provisional Birth File, 2020. CHS, DSHS.

NOTES: 2018-2020 Birth Files are provisional. SMM calculated using the Updated AIM SMM Codes List, v08-09-2021. The SMM National Workgroup recently advised calculating SMM using SMM indicators while excluding blood transfusion-only cases. Previously reported SMM rates may not be comparable. See: saferbirth.org/wp-content/uploads/Updated-AIM-SMM-Code-List_10152021.xlsx.

COVID-19 cases were determined by the ICD-10 diagnosis code U07.1 in the Hospital Inpatient Discharge Research Data File.

Texas Maternal Mortality and Morbidity Review Committee Recommendations 2022 Biennial



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MMMRC Recommendation 1

Increase access to comprehensive health services during pregnancy, the year after pregnancy, and throughout the preconception and interpregnancy periods to facilitate continuity of care, implement effective care transitions, promote safe birth spacing, and improve lifelong health of women.

MMMRC Recommendations 2 and 4

Engage Black communities and those that support them in the development of maternal and women's health programs.

Increase public awareness and community engagement to foster a culture of maternal health, safety, and disease prevention.

MMMRC Recommendations 6 and 7

Improve statewide infrastructure and programs to address violence and intimate partner violence at state and community levels.

Foster safe and supportive community environments to help women achieve their full health potential.

MMMRC Recommendations 3 and 5

Implement statewide maternal health and safety initiatives and incorporate health equity principles to reduce maternal mortality, morbidity, and health disparities.

Improve integrated behavioral health care access from preconception throughout postpartum for women with mental health and substance use disorders.

MMMRC Recommendations 8 and 9

Support emergency and maternal health service coordination and implement evidence-based, standardized protocols to prevent, identify, and manage obstetric and postpartum emergencies.

Improve postpartum care management including education and health care coordination for those with mental health and/or high-risk medical conditions.

MMMRC Recommendations 10 and 11

Prioritize continuing education, diversification, and increasing capacity of the maternal health workforce. Apply continuous process improvement strategies for maternal mortality review protocols to support and increase case review capacity, quality, and recommendation development.

MMMRC Updates



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Updates-ERASE MM grant

- Health and Safety Code, Section 34.021 requires DSHS to apply to all grants under the federal Preventing Maternal Deaths Act of 2018.
- DSHS awarded the Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) grant.
 - Objective is to identify pregnancy-associated death case cohorts within one year of the death.
 - Required to facilitate case review for all pregnancy-related deaths within two years after the death.
 - Enter those findings and decisions into the CDC Maternal Mortality Review Information Application (MMRIA) system.

Updates (cont)

- Subcommittee on Maternal Health Disparities
- Subcommittee on Covid 19 Related Reviews
- Vacancies
- Review Progress
- Potential Asks

Questions? Thank you!

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