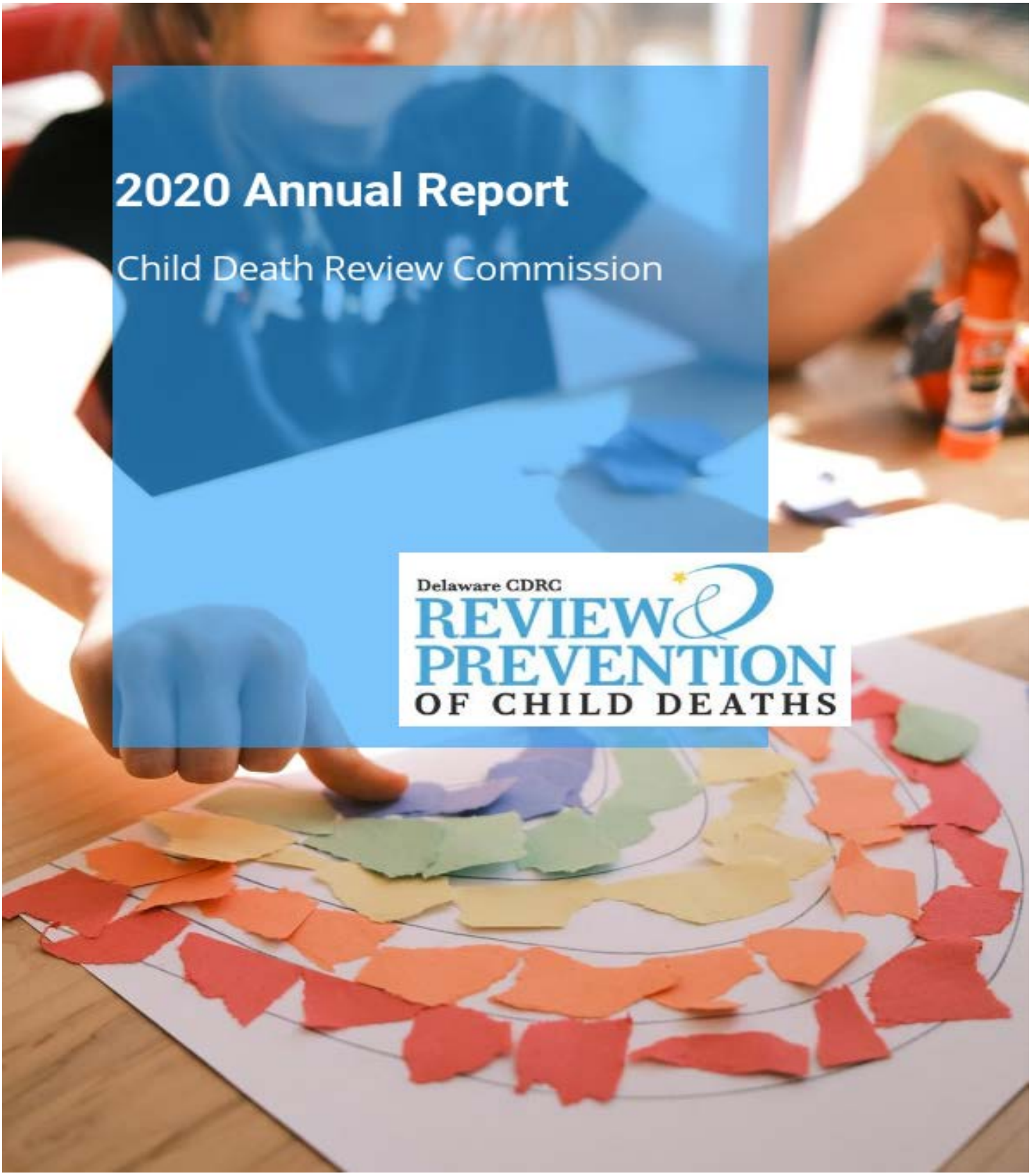
2020 Annual Report
Child Death Review Commission
Delaware CDRC
REVIEW & PREVENTION
OF CHILD DEATHS

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Child Death Review Commission
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♦

The Honorable John Carney, Governor
State of Delaware

♦

Garrett H. C. Colmorgen, M.D., Chair

Mission Statement

The Child Death Review Commission (CDRC) was established "in order to provide its findings or recommendations to alleviate those practices or conditions which impact the mortality of children and pregnant women."

--Child Death Review Commission, Statute 31 Del. C. § 320

Excerpt from the 2020 Equity Statement

As a multidisciplinary committee representing medical, public health, and community partners, the CDRC commits to the following:

- We will continue to review all fatality cases from a health equity lens and commit to engage in the difficult discussions that may arise. Structural racism, interpersonal racism, and discrimination will be noted as findings.
- We will continue to improve diversity at all CDRC meetings to ensure that everyone's voice is at the table. In the next two years, we commit to actively recruit new members who represent communities most affected by maternal and child mortality.
- We will continue to evaluate our own biases and prejudices and engage in ongoing trainings to assure appropriate insight at every level of the CDRC.

For the complete CDRC equity statement, click here.

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Program Highlights

The Child Death Review Commission (CDRC) conducts three types of fatality review programs with a focus on maternal-child health: Child Death Review and Sudden Death in the Young (CDR/SDY), Fetal and Infant Mortality Review (FIMR), and Maternal Mortality Review (MMR). CDRC staff oversee subcommittees and collaborate with partners to implement recommendations based on these multidisciplinary fatality reviews.

CDRC accomplishments and highlights in 2020 include:

- Retrospectively reviewed 49 CDR/SDY cases, 52 FIMR cases—of which eight included a maternal interview—and 7 MMR cases with one family interview obtained.
- Continued efforts to prevent child deaths through the work of the Joint Committee on Substance Exposed Infants/Medically Fragile Children, a collaboration between the CDRC and the Child Protection Accountability Commission (CPAC), the Infant Safe Sleeping Community Action Team, and the Home Visiting Committee.
- Released the final report from the subcommittee on Chronic Health Conditions of School-Age Children incorporating new information and updates based on the COVID-19 situation.
- Continued oversight and reporting for the Centers for Disease Control and Prevention (CDC) Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) grant and the Sudden Death in the Young (SDY) grant. Both SDY and MMR programs had CDC representatives observe meetings as part of virtual site visits.
- Provided 15 trainings to the community, medical providers, and daycares on infant safe sleeping and abusive head trauma prevention. Beginning in January 2020, CDRC staff partnered with the Department of Corrections to provide this training to pregnant women who are incarcerated. Unfortunately, these Delaware Safe Baby trainings had to be paused due to the COVID pandemic. Once restrictions are lifted, these trainings will resume.
- Distributed Pack' n Plays to families in need through the Cribs for Kids® program in collaboration with the Division of Public Health (DPH) to ensure infants have a safe place to sleep.
- Presented at various virtual national conferences on the SDY panel work, a CDC-funded effort in which Delaware has participated since 2014.
- Continued case reviews and meetings during the COVID-19 pandemic with the transition to virtual telecommuting and video conferencing to ensure continuity of CDRC work while maintaining confidentiality and information security.
- Reaffirmed our commitment to increasing transparency, identifying and addressing structural racism and discrimination, and partnering for health equity.
- In the following pages, the key characteristics of cases from each fatality review program are described separately. Findings and recommendations are put forth based on these case reviews.

Child Death Review Commission

Oversees three fatality review programs, each consisting of multidisciplinary teams that delve into the facts surrounding each case, the programs and systems of care with which the child, mother or family interacted and opportunities for improvement. Ultimately the CDRC seeks to eliminate all preventable deaths in childhood and among women during and after pregnancy.

Every child and mother deserves a tomorrow.

Child Death Review

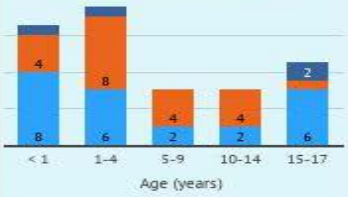
Sudden Death in the Young

Fetal & INFANT MORTALITY Review

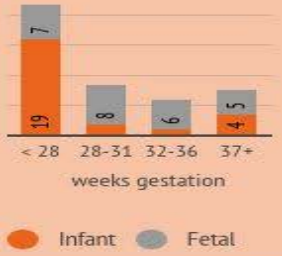
MATERNAL Mortality Review

Program description and Case counts

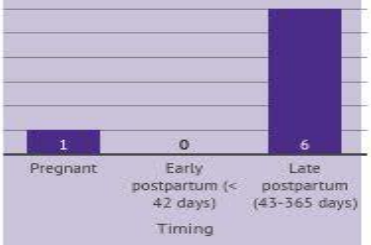
- Reviews deaths of children 1-17 years old due to any cause and infant deaths due to unsafe sleep or suspected child abuse or neglect.
- SDY is supported by a CDC grant to standardize approach and conduct more in-depth medical reviews.



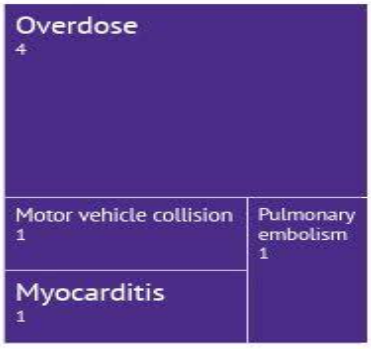
- Reviews stillbirths (fetal deaths) after 20 weeks gestation and infant deaths *nor* due to unsafe sleep or suspected child abuse or neglect.
- Attempts to contact all women with a loss for a maternal interview to get the mother's perspective on her care and access to services.



- Reviews all causes of death of women during pregnancy or up to 1 year after the end of pregnancy.
- Attempts to contact family, partner or friend for an interview.
- MMR is supported by a CDC grant to standardize abstraction, review and reporting of findings nationally.



Underlying causes of death



Program highlights

- Released the report of the Chronic Health Conditions of School-Age Children Committee
- Began partnering with the Department of Corrections to offer Cribs for Kids trainings to pregnant women who are incarcerated
- Developed promotional videos on infant safe sleep to raise public awareness

- Began exploring the impact of COVID-19 on the care and experience of pregnant women with a loss
- Continued work of the Home Visiting Committee to improve access and use of home visiting services by women at high risk for pregnancy complications

- Implemented new guidance from the CDC to identify discrimination, structural racism and interpersonal racism as contributing factors when relevant
- Hosted trainings on implicit bias and improving care for Black women in the peripartum period together with the Delaware Perinatal Quality Collaborative

Child Death Review/Sudden Death in the Young

The Child Death Review and Sudden Death in the Young (CDR/SDY) program reviews all unexpected and sudden deaths in children and youth under 18 years of age in Delaware. In 2020 49 cases were reviewed by two panels: the CDR panel reviewed 26 cases, and 26 cases by the SDY panel. These cases include 13 deaths occurring in infancy that met the criteria for a CDR/SDY review due to possibly being attributed to unsafe sleep, abuse, or neglect. In total, 14 unsafe sleep deaths were reviewed in 2020, including ten among infants and four deaths among children over one year of age.

CDR/SDY cases were equally divided between males (51%, n=25) and females (49%, n=24). Black children were more prevalent among the age subgroups of less than one year and 15-17 years of age. Figure C1 presents the age breakdown of CDR/SDY cases by race and ethnicity, and Figure C2 presents the manner of death by age. Five deaths were suicides, with four of them occurring among older teens. Four deaths were homicides and were spread out between < 1 year of age and 17 years of age. There were eight accidental deaths, including four that were drownings. For additional details on the demographics of CDR/SDY cases, please see the data addendum accompanying this report.

Figure C1: Number of CDR/SDY cases reviewed in 2020 by age, race, and ethnicity

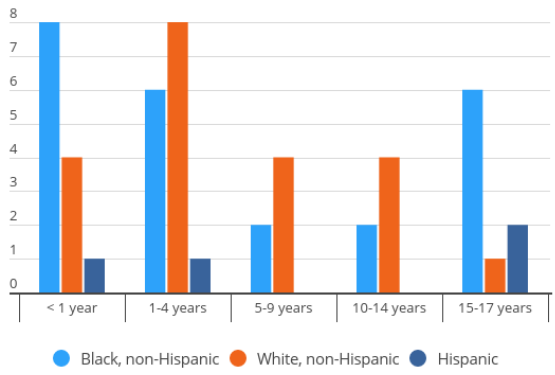
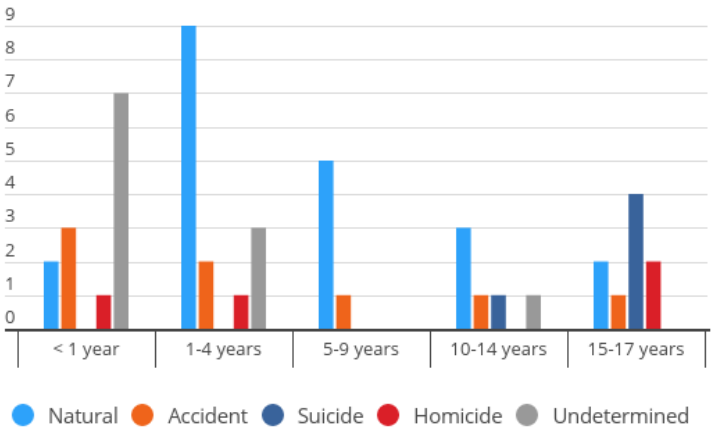


Figure C2: Number of CDR/SDY cases by age and manner of death



Chronic Health Conditions

Chronic health conditions put children at risk of increased morbidity and mortality, and 21 CDR/SDY cases in 2020 (43%) involved children who had a chronic health condition. The majority of these deaths were natural in manner. Two deaths were attributed to asthma, three deaths to unsafe sleep, and one was a suicide. The Chronic Health Conditions of School-age Children Committee began its work in 2016 in response to several deaths of children who were enrolled in Delaware public schools. The committee uncovered several underlying reasons for variations in care, including changes in funding for maintenance and supplies of automatic external defibrillators (AEDs) in schools, the need for clear guidance for public school nurses in caring for children with asthma, and the need for improvement in the coordination of care. While identifying these challenges, the committee was able to recommend processes and guidelines for best practice. The committee's work concluded at the end of 2019, and their report was slated for release in March 2020. However, due to the COVID-19 pandemic, the report was delayed and updated to include modified guidelines for best practices during the pandemic. The final committee report is available here and provides valuable information for all public and private school staff to ensure children's health and safety.

COVID-19 Updates

Updates to the Chronic Conditions of School-age Children report incorporated resources on supporting socio-emotional and behavioral health, considerations for students with special health care needs and a parent letter regarding asthma inhaler vs. nebulizer use

Recommendations from the *Chronic Health Conditions of School-age Children* Committee Report

1. All Delaware public schools should coordinate electronic health records or consider standardization between schools and pediatricians/providers for improved communication.
2. The Division of Public Health (DPH) and the Department of Education (DOE) should consider a state-funded contracted medical consultant to provide oversight of the delivery of healthcare in the school system and disseminate information in the schools and to the DOE School Health Services Education Specialists and lead nurses.
3. DPH and DOE should consider a media campaign related to asthma for laypersons.
4. DOE, in collaboration with local school districts and charter schools, should explore the possibility of implementing school-based telehealth as an additional resource for children.
5. By 2022, the DOE should finalize an asthma management for school nurses document after collaboration and approval from various entities such as the Delaware Asthma Consortium, the DPH, local hospitals, private physicians and the Delaware School Nurse Association.
6. DPH and DOE should make annual educational training mandatory related to chronic health conditions for public school nurses to improve quality of care and develop statewide standardized nursing care.

Unsafe Sleep-related Deaths

In 2020, CDR/SDY panels reviewed 14 cases of unsafe sleep-related deaths dating from 2019-2020. Ten deaths involved infants, and four were in children after infancy. Two children were Cribs for Kids® recipients. In 12 of the 14 cases, there was documented infant safe sleep education in the medical record, including nine of the ten infant unsafe sleep deaths. Figure C3 shows the age and race/ethnicity breakdown of unsafe sleep-related cases reviewed in 2020. Associated risk factors in unsafe sleep deaths are presented in Table 1. The proportion of cases involving certain risk factors--such as not sleeping in a crib, bassinette, or side sleeper and sleeping with other people--was slightly lower in 2020 cases compared to prior years. However, as documented by the responses of women recently delivering in Delaware in the PRAMS (Pregnancy Risk Assessment Monitoring System) survey, there is still room for improvement on practices in the general population related to safer infant sleep. Half of women recently giving birth in the state report having unsafe bedding or toys near their infant, and about one-third of infants are not sleeping in a crib or bassinette. For additional details on unsafe sleep-related cases, see the 2020 Annual Report data addendum.

Figure C3: 2020 CDR/SDY by age at sleep-related death and race/ethnicity (n=14 total)

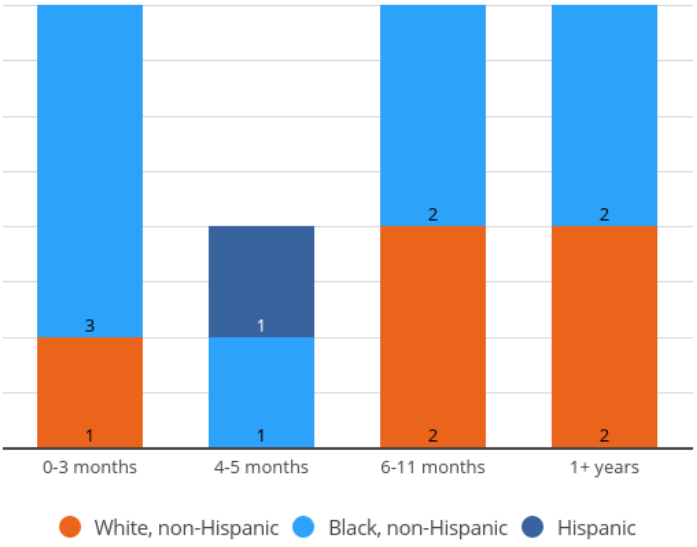


Table 1: Sleep environment risk and associated factors, by year of CDR/SDY review, or in the general population as reported in the PRAMS survey[1] (n=number of total cases)

	2020 infant only (n=10)	2019 (n=12)	2018 (n=12)	PRAMS 2016-2017[1]
Not in a crib or bassinette	80%	100%	100%	34%[2]
Not sleeping on back	40%	50%	75%	17%
Unsafe bedding or toys near infant	70%	92%	100%	50%
Sleeping with other people	40%	75%	67%	20%[3]
Intrauterine drug exposure	30%	42%	33%	--
Tobacco use: mother	25%	67%	58%	24%[4]
Adult was alcohol or drug-impaired	33%	67%	25%	--
Infant ever breastfed	90%	45%	50%	83%[4]
Mother fell asleep while breastfeeding	0%	0%	8%	--

[1]PRAMS=Pregnancy Risk Assessment Monitoring System. John Snow, Inc. Safe sleep practice: findings from Delaware PRAMS, 2016-2017. July 2020.

[2]Usually slept on a mattress, bed, couch, sofa or armchair in past two weeks

[3]Sometimes, rarely or never slept alone in own crib or bed

[4]As reported in PRAMS Consolidated Report 2012-2015. Delaware Dept. of Health and Social Services, Division of Public Health. July 2018.

The Infant Safe Sleeping Program Community Action Team (TISSPCAT)

Started in 2007 to reduce the number of SIDS (Sudden Infant Death Syndrome) and SUID (Sudden Unexplained Infant Death) cases in Delaware through educational awareness campaigns around safe sleeping practices, the TISSPCAT has overseen the Cribs for Kids® program and distribution sites, safe sleeping education in hospitals and community trainings. The group's efforts helped Delaware become the first state to have all birthing hospitals receive national recognition as Cribs for Kids® Certified Hospitals. In addition, sleep sacks were implemented in the largest birthing hospital. As part of the CDRC/CPAC 2020 Joint Action Plan, the TISSPCAT will be revitalized with a new mission statement and objectives:

- Improve the education provided on infant unsafe sleeping to focus on a comprehensive interdisciplinary approach that will ultimately decrease the number of unsafe sleep deaths. Goals include the following:
    1. Revitalize the Infant Safe Sleeping Program Community Action Team (TISSPCAT) by revisiting the name, objectives, and mission and by expanding its membership.
    2. Review current training and educational materials.
    3. Develop or improve prevention messaging to families.

Safe sleep

Environment

Because risk factors such as improper sleep surface or unsafe bedding or toys nearby are found in all cases of sleep-related deaths

Increased efforts were made to educate on safe sleep

Delaware Safe Baby

a YouTube channel features educational videos produced for Delaware residents and featuring local experts

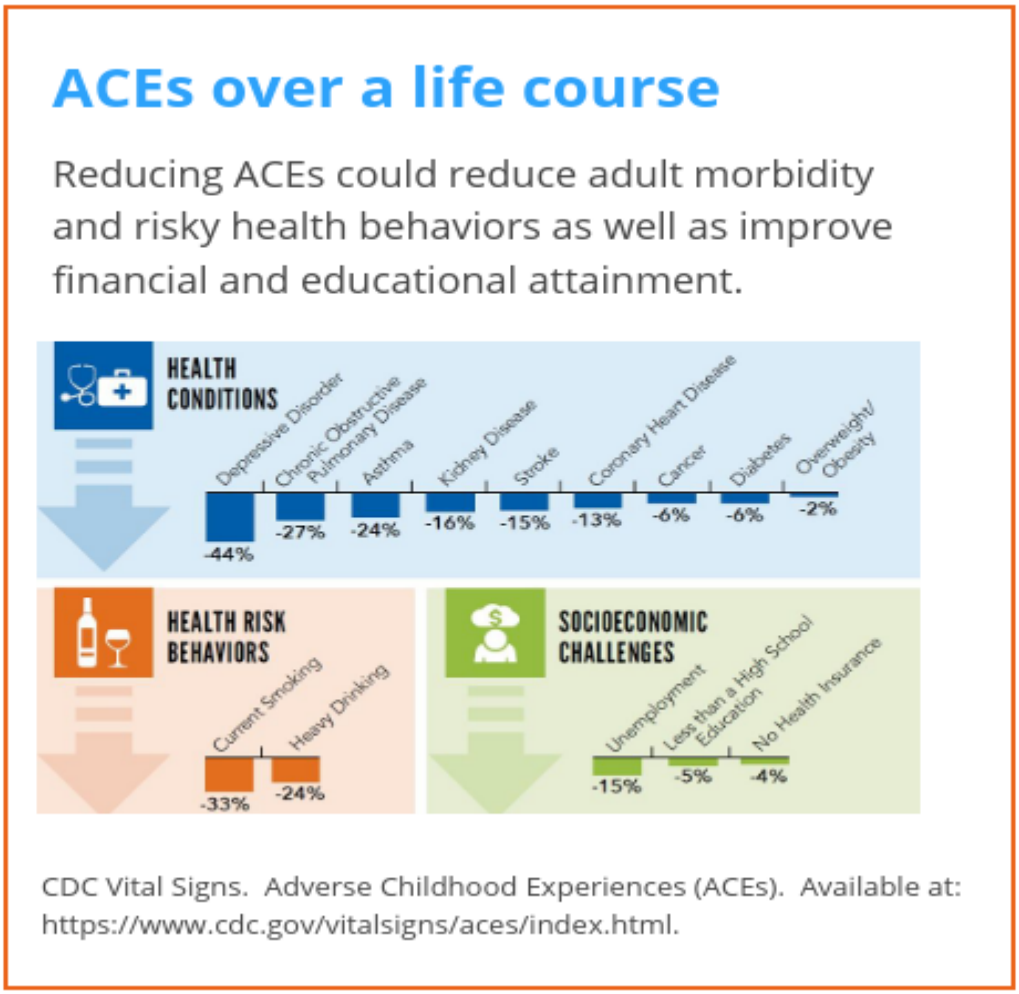
Trainings

Cribs for Kids® started a partnership with Baylor Women's Correctional Facility to educate on safe sleep and provide cribs to pregnant women

Adverse Childhood Events (ACEs)

Family risk factors identified in CDR/SDY cases indicate the importance of addressing adverse childhood events to reduce the impact of intergenerational and social risks. Parental substance use has been found documented in a substantial number of child death cases. In 2020 cases, similar to prior years, 36% (n=4 out of 11) infant CDR/SDY cases had a history of intrauterine drug exposure. One-third of infant deaths reviewed involved a caregiver with substance use at the time of the death. (See data addendum for further details on tracking issues reported on infant cases.)

Many partners throughout the state are working on expanding access to wraparound services for families dealing with substance use disorder. The work of the CDRC/CPAC's Joint Committee on Substance-Exposed Infant/Medically Fragile Children has contributed to these efforts and oversaw the statewide implementation of the Plan of Safe Care. The joint committee's work to standardize referral and care management processes for infants with prenatal substance exposure is reflected in the increased proportion of CDR/SDY infant cases with documented Division of Family Services (DFS) referrals for substance exposure: in 2018 cases, 50% of substance-exposed infants were referred, but by 2019 and 2020, 75% of infants were referred.



CDC Vital Signs. Adverse Childhood Experiences (ACEs). Available at: https://www.cdc.gov/vitalsigns/aces/index.html.

The Joint Committee on Substance-exposed Infant/Medically Fragile Children

The initial charge of the joint committee was to implement the CPAC/CDRC 2015 recommendation of universal drug screening of infants in all state birthing facilities and to revise the Hospital High-risk Medical Discharge Protocol. In 2016-2017, the joint committee was also tasked with developing a template for the required Child Abuse Prevention and Treatment Act (CAPTA) Plan of Safe Care and identifying responsible agencies for initiating and monitoring the plan.

From Fiscal Year (FY)16 through FY18, the committee received In-Depth Technical Assistance for Substance Exposed Infants through the National Center on Substance Abuse and Child Welfare. In FY18, Governor Carney signed Aiden's Law to formalize a uniform, collaborative response protocol to develop a Plan of Safe Care for infants with prenatal substance exposure and their affected families or caregivers.

From FY19 through FY20, the joint committee continued to oversee the implementation of the Regional Partnership Grant award for Delaware's HOPE Model – "Healthy Outcomes with Parent Engagement." This prenatal intervention model serves pregnant women receiving medication for addiction treatment to provide wraparound, multidisciplinary services, including a home visiting nurse, peer recovery coach, and parenting classes.

In 2019 Delaware became one of the first states to implement the Plan of Safe Care statewide. With the necessary collaboration from many stakeholders, this protocol provides protection, services, and support to infants with prenatal substance exposure and their families. The joint committee continues to work with system partners to implement an alternative plan, the Medical Plan of Safe Care, for women and infants meeting specific criteria. The joint committee is also collaborating with Benten Technologies in the development of the mobile application SAFE4BOTH based on the Plan of Safe Care protocol. For additional information, please visit CPAC Annual Report (visme.co)

The CPAC/CDRC Joint Action Plan

The Child Protection Accountability Commission (CPAC) and the CDRC convened their Joint Retreat on September 29, 2020. Recommendations from the 2020 joint retreat stem from the review of 110 child abuse and neglect death and near-death cases approved by CPAC and 611 findings and 478 strengths identified. Thirteen prioritized recommendations for system improvement are below. The Joint Action Plan also contains six ongoing recommendations from prior action plans and two priority areas identified by the CPAC and CDRC. The CPAC Grants Oversight Committee will monitor all the recommendations below, and updates will be provided to the CPAC and CDRC annually. The entire action plan can be accessed on the CDRC website.

CPAC/CDRC Action Plan: 2021-2022

1. System Area: *Medical Response*
   Goal 1: Substantially and significantly improve the medical response to child abuse cases.
   Goal 2: Ensure medical professionals have a dedicated line at the Division of Family Services (DFS) Report Line in order to reduce wait times.
   Goal 3: Provide opportunities for medical professionals to consult with a child abuse medical expert and promote and secure resources for medical child abuse expertise downstate.
   Goal 4: Develop an effective collateral information request for DFS to utilize with medical providers and other professionals and provide training on the same, "how to be a good collateral."

2. System Area: *Multidisciplinary Team (MDT) Response*
   Goal 1: Continuously improve and reinforce Delaware's coordinated, multidisciplinary team (MDT) response to serious child abuse and neglect cases.
   Goal 2: Update the Memorandum of Understanding for the MDT response to child abuse and neglect regularly to incorporate best practices and to address the latest findings from the Child Abuse and Neglect (CAN) panel.
   Goal 3: Develop a crimes against children code and continue to review Delaware's sentencing guidelines as they pertain to criminal child abuse cases, including consideration of the previously recommended legislation.

3. System Area: *Safety & Risk*
   Goal 1: Develop and provide initial and ongoing training on the Structured Decision Making® Safety and Risk Assessment tools to help DFS staff better understand the tools, implement them in the field, and promote safety and risk discussions with all MDT partners from the initial DFS investigation.
   Goal 2: Provide regular coaching and monitoring to DFS staff on child safety agreements.
   Goal 3: Intensify DFS supervisory training and support on child safety agreements.

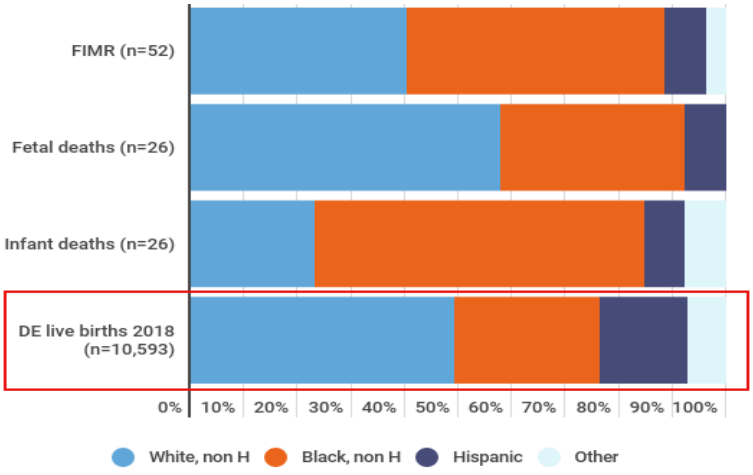
Goal 4: Develop an abbreviated training for MDT partners on safety organized practice, safety and risk assessment and utilization of collaterals to help partner agencies understand the practice models and tools utilized by DFS.
Goal 5: Consider adjusting the DFS home assessment policy based upon the impact of COVID-19.
Goal 6: Utilize the Structured Decision Making® Fidelity Team's quarterly meetings to address findings from the CAN panel and recommendations from the Joint Action Plan with DFS staff.

Since its inception in 2007, FIMR multidisciplinary teams have reviewed fetal deaths occurring after 20 weeks gestation and infant deaths to enhance women, infants, and families' health and well-being by improving the community resources and service delivery systems available to them. These efforts are in keeping with the overarching purpose of FIMR to identify the factors associated with fetal and infant deaths, uncover any systemic issues amenable to change, develop recommendations for change and assist in their implementation.

2020 marked a change in the Delaware FIMR process and an end to randomized triage of cases based on death's date (even or odd). The intent of this change was to include all fetal and infant deaths that meet national FIMR criteria for review. As in prior years, all women experiencing a fetal or infant loss were invited to participate in a maternal interview to share their experience interacting with the systems of care.

Delaware FIMR teams reviewed 52 cases in 2020: 26 infant deaths and 26 fetal deaths. Eight cases (15%) included a maternal interview, with equal representation of White and Black mothers. Figure F1 shows the proportion of FIMR cases by race and ethnicity. Compared to Delaware live births, FIMR cases have a disproportionately high number of Black fetuses and infants. This is particularly striking among infant deaths reviewed in 2020, with non-Hispanic Black infants outnumbering all other races/ethnicities by 2:1.

Figure F1: Race and ethnicity among FIMR cases reviewed in 2020 as percent of total and compared to all 2018 Delaware live births



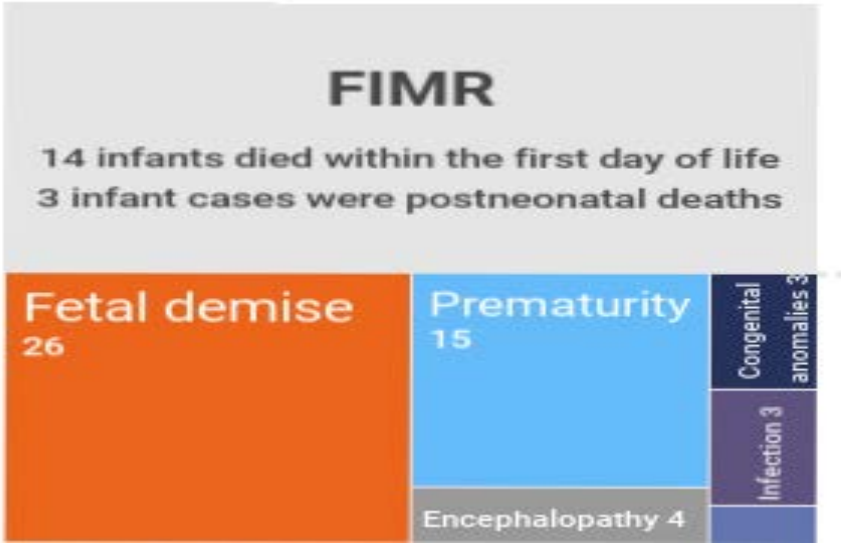
Underlying Causes of Death

Fetal deaths occur on average at a later gestational age and higher birth weight than infant deaths. The average gestational age among 2020 fetal death cases was 30 weeks compared to infant cases that occurred on average at 26 weeks gestation. [See data addendum for more details.] A contributing factor was identified in some fetal deaths, with the most common being congenital anomalies in 15% (4 out of 26 cases) and placental insufficiency in 12% (3 out of 26 cases). Maternal factors contributing to fetal deaths were identified in some cases as well. They

included: infection (3 cases), cord problem (2 cases), preeclampsia (1 case), prolonged premature rupture of membranes (1 case), placental abruption (1 case), and oligo/polyhydramnios (1 case).

Infant deaths were overwhelmingly due to complications of prematurity, accounting for 15 out of 26 cases or 58%, and 65% of infants were born at extremely low birth weight under 750 grams. Encephalopathy was the underlying cause in 15% of cases (n=4). Congenital anomalies and infection each accounted for 3 cases (12%), and respiratory complications (tension pneumothorax) accounted for one case (Figure F2).

Figure F2: Underlying causes of death among FIMR cases reviewed in 2020



Maternal Health

Maternal health significantly impacts pregnancy outcomes, and in 2020 as in previous years, FIMR mothers often had multiple complicating medical and behavioral health issues. Seven women (14%) had a complication constituting severe maternal morbidity, most commonly obstetric hemorrhage (n=6) followed by intensive care unit admission (n=2 cases.) Overweight and obesity were identified in 62% of FIMR cases, and the range of BMI range was 19-58 kg/m^2 among FIMR mothers. The prevalence of obesity (49%) and severe obesity (9%, BMI over 40 kg/m^2) was similar in the FIMR group compared to the overall U.S. population in 2017-2018 based on data from the National Health and Nutrition Examination Survey.[1] Obesity is a known risk factor for pregnancy complications such as gestational diabetes, preeclampsia, miscarriage, and stillbirth.[2] Eight mothers (15%) had pre-existing hypertension, and four (8%) developed preeclampsia as a complication of pregnancy. Three mothers (6%) had pre-existing diabetes, and three (6%) developed gestational diabetes. The data addendum contains more details of medical and obstetric risk factors among FIMR cases reviewed in 2020 compared to the two prior years of review.

[1] Hales CM, Carroll MD, Fryar CD, Ogden CL. Prevalence of obesity and severe obesity among adults: United States, 2017–2018. NCHS Data Brief, no 360. Hyattsville, MD: National Center for Health Statistics. 2020.
[2] ACOG. Obesity and pregnancy. Available at: https://www.acog.org/womens-health/faqs/obesity-and-pregnancy. Accessed on April 21, 2021.

Behavioral health issues significantly impacted the well-being of FIMR mothers during and after their pregnancy. In 88% of cases (n=45), there was documentation of depression screening at some point in the prenatal or postpartum period. However, only 11 cases had documented screening during a prenatal visit. Obstetric triage was the most common site of depression screening documented in 25 cases. One out of three FIMR mothers (33%, n=17) had a mental illness condition documented during pregnancy, and of these four women discontinued their psychotropic medication as a result of becoming pregnant. Discontinuing or changing medicines may put women at risk for a worsening of their behavioral health condition. Forty percent of FIMR mothers (n=21) had evidence of depression or mental illness in the postpartum period, which is three times higher than the 13% of U.S. women reporting postpartum depressive symptoms in a 2018 PRAMS study.[3] In eight cases, providers made a mental health referral for the mother. Nineteen percent of FIMR mothers (n=10) had a current history of illicit drug use, and 25% (n=13) had a positive urine drug test, a proportion similar to previous years (see data addendum for more details). Of the substances detected on urine drug testing, marijuana (n=8) was the most common, followed by prescription medications (n=5), methadone (n=2), and other opioids (n=1).

As a result of their medical and behavioral issues, FIMR mothers often had to process complex medical information to make decisions affecting their care and the care of their sick newborn. Consistent, clear communication between providers and patients is key to optimizing patient care and autonomy. Many FIMR cases documented supportive counseling, especially from palliative care and nursing staff. There were instances of shared decision-making when women and their families led decisions on treatment plans and end-of-life interventions. While these cases demonstrate strengths in involving women in their care and the care of their newborn, there are still opportunities for improvement in engaging women over different sites of care and from the prenatal to postpartum or interconception periods. Ten mothers (19%) had fragmented care that appeared negatively impacted by having multiple providers in different sites. About one in three FIMR mothers (35%) did not return for a postpartum visit, a proportion that has not changed over the last few years. Despite ACOG guidance on the importance of continuous, comprehensive postpartum care in the 4th trimester, there is still an opportunity to improve engaging women and optimizing their health after delivery.[4] Engagement in community-based supports such as evidence-based home visiting continues to be suboptimal, though with some modest improvement in referrals initiated by providers. Among 2020 cases, 14% of mothers (n=7) received a referral to an evidence-based home visiting program. However, no mothers enrolled. In 44% of cases, FIMR mothers were not referred to a home visiting program for which they appeared eligible based on their Medicaid status and medical needs, a proportion comparable to previous years of review (see data addendum).

Social Health

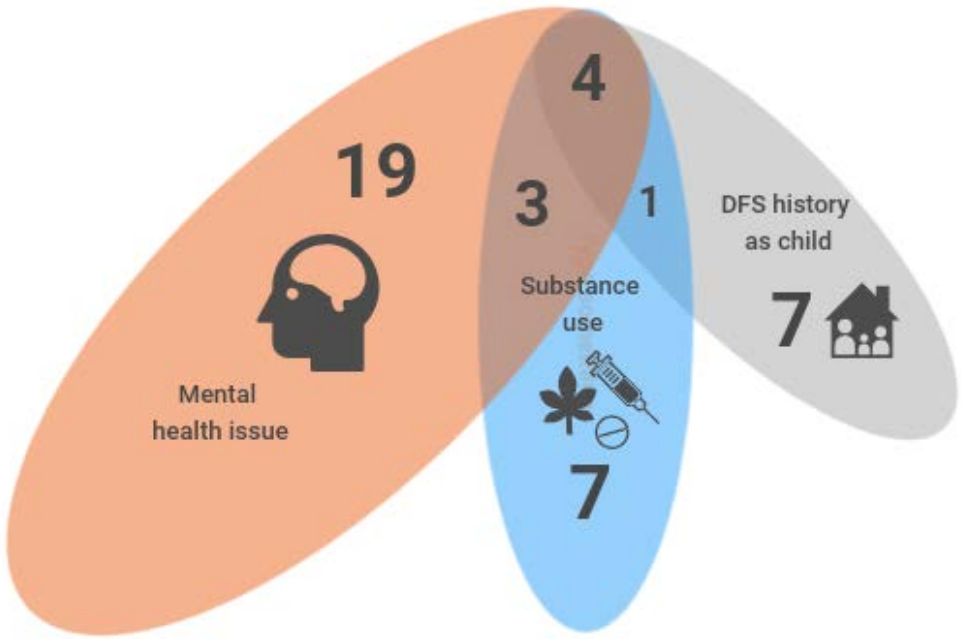
[3] Bauman BL, Ko JY, Cox S, et al. *Vital Signs:* Postpartum Depressive Symptoms and Provider Discussions About Perinatal Depression — United States, 2018. MMWR 2020; 69: 575–581. DOI: http://dx.doi.org/10.15585/mmwr.mm6919a2

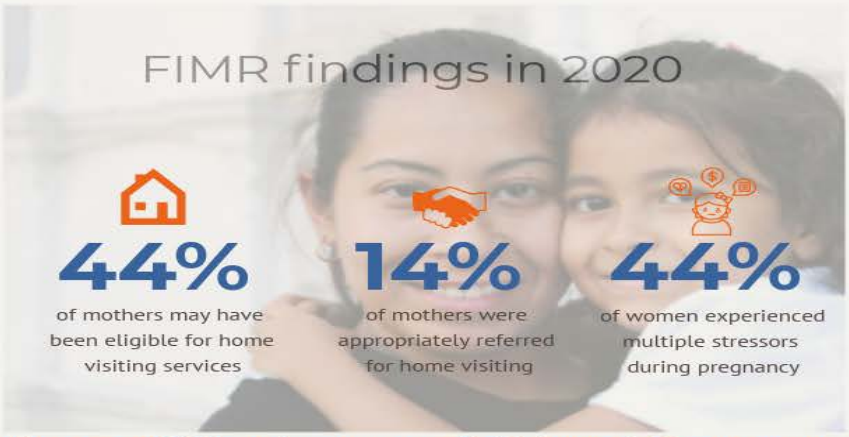
[4] The American College of Obstetricians and Gynecologists. ACOG Committee Opinion Number 736: Presidential Task Force on Redefining the Postpartum Visit Committee on Obstetric Practice. May 2018.

Social and family risk factors reflect the intergenerational component of risk that impacts women and children's health. An increasing proportion of FIMR cases (54%) had a history with the Division of Family Services (DFS), either with a parent as the child or as the adult. One out of four mothers (25%) had a history of abuse, and 44% had multiple stressors as interpreted by the FIMR case review teams. Eight mothers had evidence of multiple adverse childhood experiences, and six mothers had unstable housing. Often cases represent overlapping or multiple layers of risk. Figure F3 depicts some of the overlap found between the history of DFS involvement as a child and substance use as an adult and maternal mental health history. Of 41 cases with at least one of these issues present, eight cases (20%) involve two or more issues, and four of these represent cases with all three risk factors present.

Findings from FIMR cases were reviewed together with MMR findings and form the basis of the FIMR/MMR Action Plan presented below.

Figure F3: The co-occurrence or intersection of multiple psychosocial risk factors uncovered in FIMR cases

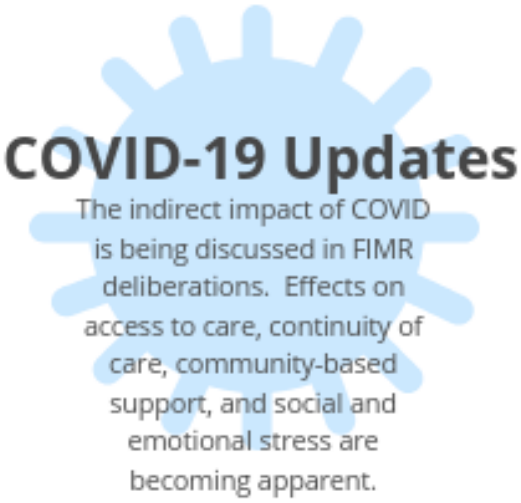




However no FIMR mothers were enrolled in home visiting programs

Uncovering the Impact of COVID in FIMR cases

The National Center for Fatality Review and Prevention (NCFRP) oversees the National FIMR program as well as the National Child Death Review program and disseminated guidance to amend review processes in response to the ongoing COVID-19 pandemic. The intent of these updates was to standardize the review of the impact of COVID-19, if any, on the death. COVID can result in directly causing an infant or child death, though rare, or it may have an indirect impact on children by influencing how and when families seek care, the availability of services and support during periods of shutdown. These indirect impacts were divided into four possible categories: 1) service delivery issues, such as loss or disruption of care; 2) psychosocial issues related to the stress created by the pandemic; 3) economic issues due to financial strain or limited resources; and 4) environmental issues such as overcrowding. Among Delaware FIMR cases, 12 occurred after March 1, 2020 when the pandemic may have affected women's experiences. While no mother was diagnosed with COVID, a few cases reveal its indirect impact with mothers deciding to forgo services, such as home visiting, because of the pandemic. A few mothers also voiced difficulty due to the fact that their partner could not accompany them to some of their visits. In one case, a FIMR mother expressed that coping with her loss in the time of COVID was difficult as support groups were not meeting in-person and she felt she had to be alone in her grief. Other FIMR cases demonstrate the dedicated efforts of hospital staff to accommodate more family visits immediately postpartum in order to spend time with an infant who had a life-limiting condition.



2020 was the first full year the Delaware MMR had a dedicated MMR Coordinator supported by the CDC Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) grant. As part of the grant, Delaware also hosted a CDC virtual visit in August 2020, during which CDC ERASE MM staff provided training to MMR members and observed a committee meeting. The ERASE MM grant funding also enabled the CDRC to sponsor an implicit bias training in November 2020 in partnership with the Delaware Perinatal Quality Collaborative. This training entitled "Blindspot: Hidden Biases of Good People" with Harvard University's Dr. Mahzarin Banaji aimed to address recognizing and working through implicit bias.

Seven cases were reviewed in two virtual MMR Committee meetings convened in 2020, including two re-reviewed cases because of additional details uncovered by the MMR Coordinator. One case included a family interview that presented more details on the deceased mother's life course experiences. Six of the seven MMR deaths were Black women, and one was a White woman. The women's ages ranged from 20 to 35 years old, and the year of death ranged from 2018 to 2020. Acute drug intoxication was the underlying cause in four cases, all deemed pregnancy-associated but not related, meaning that while there was a temporal relation to pregnancy (the woman being either pregnant or up to one year postpartum), the death was not causally linked to her pregnancy (Figure M1). One other death was deemed pregnancy-associated but not related, and that was a death resulting from blunt trauma due to a motor vehicle collision. For the other two deaths reviewed, one due to myocarditis and the other due to pulmonary embolism, pregnancy relation could not be determined. All but one death were considered to be potentially preventable by the MMR Committee.

Pregnancy relatedness: definition of terms[1]

Pregnancy associated

Any death occurring during pregnancy or within one year of the end of pregnancy, irrespective of cause

Pregnancy associated but not related

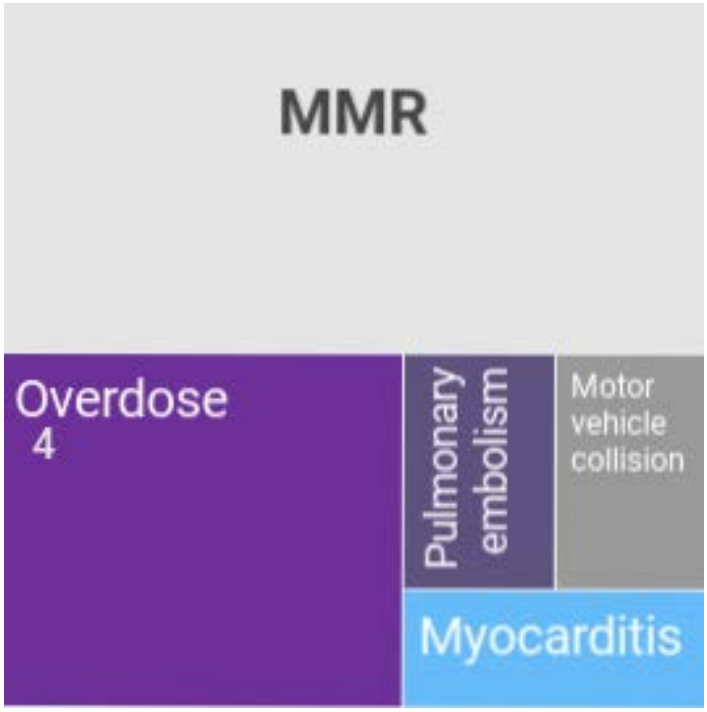
Any death occurring during pregnancy or within one year of the end of pregnancy from a cause that is not related to pregnancy

Pregnancy related

Any death occurring 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

[1]CDC Maternal Mortality Review Committee Decisions Form, v20

Figure M1: Underlying cause of death in 2020 MMR cases (n=7 total cases)



Contributing factors are discussed and identified for each case at the time of committee review. Among the seven cases reviewed in 2020, substance use disorder was determined to be a causal and contributing factor in four cases, obesity in two cases, and a mental health condition in one case. Additional contributing factors were identified in each case, with an average of 6 factors associated with each case. The most common level of contributing factor identified was at the patient/family level. Six out of seven cases had at least one risk factor at this level, with substance use disorder, unstable housing, and violence being the most common (Figures M2 and M3). There was at least one system-level factor in all seven cases, most commonly being a lack of information owing to a limitation of the current MMR process. In one case, structural racism was considered a systemic risk factor. Figure M3 lists the type of risk factor found in two or more cases by level.

Figure M2: Percent of MMR cases with a contributing factor identified by level

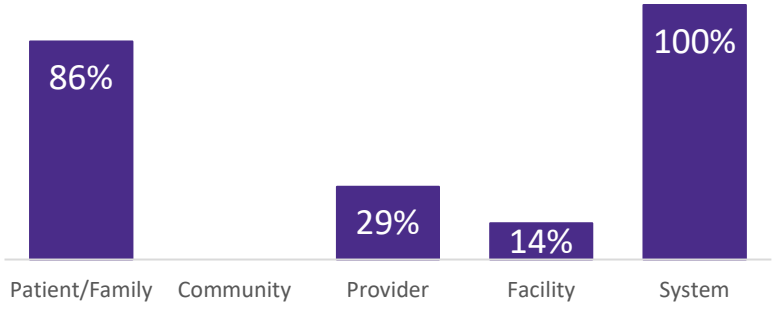
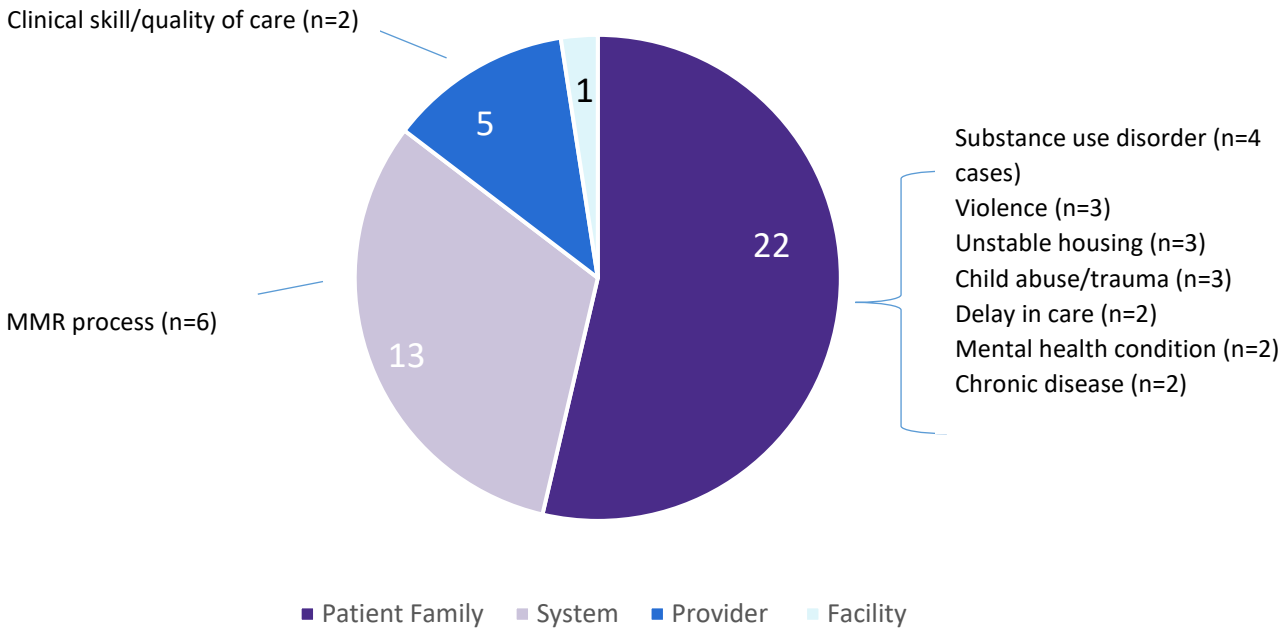


Figure M3: Number of contributing factors identified by level (number of cases out of 7 total)



Findings and contributing factors identified in MMR cases were reviewed together with FIMR findings and form the basis of the FIMR/MMR Action Plan presented below on page 31.

A cumulative review of MMR findings from the prior five years of review, 2015-2019, provides a broader picture of trends among Delaware's pregnancy-associated deaths. From 2015 to 2019, 31 cases were reviewed by the MMR Committee and represent deaths that occurred between calendar years 2010 and 2019. Cases are identified by a positive response to the pregnancy checkbox on the death certificate. Additional means of case identification include an active review of obituaries by CDRC staff and reporting by hospital staff and the Office of the Medical Examiner directly to the CDRC. In 2015, Delaware MMR and the DPH's Office of Vital Statistics initiated a vital statistics linkage process that matches maternal identifiers on birth certificates and fetal death certificates with death certificates of women of reproductive age. The addition of vital statistics linkage has led to increased case ascertainment, particularly pregnancy-associated cases but not related and that occur in the late postpartum period, between 43 and 365 days after the end of pregnancy (Figures M4 and M5).

Figure M4: Number of cases by year of death and pregnancy-relatedness

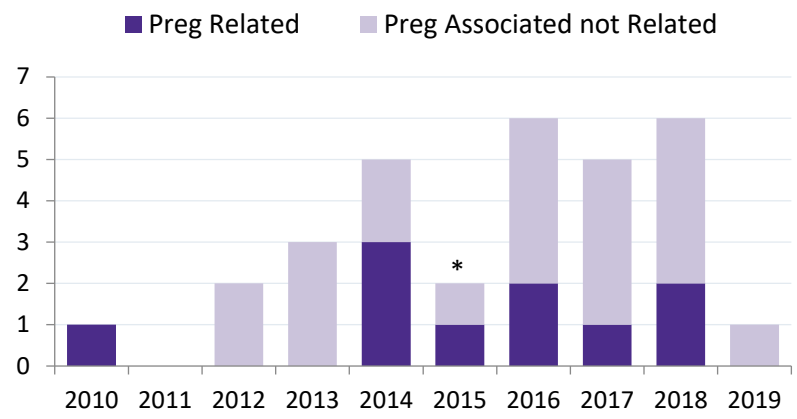
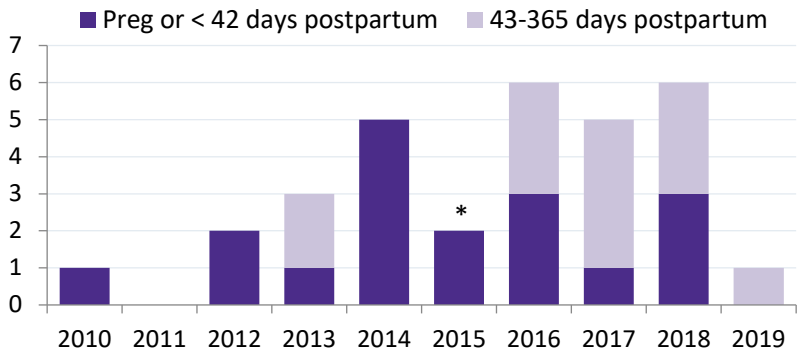


Figure M5: Number of cases by timing of death and year of death



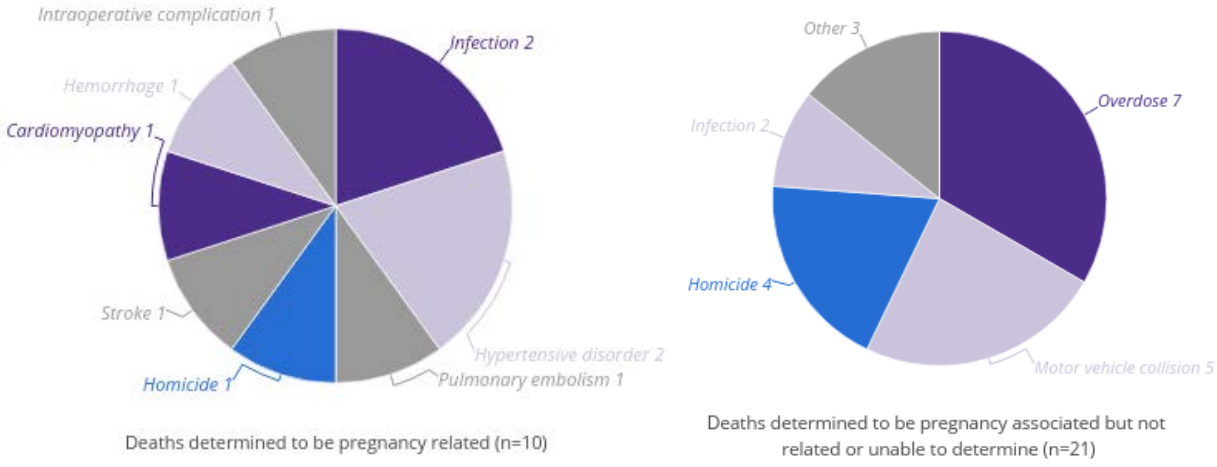
*vital statistics linkage to identify potential cases began in 2015

Vital Statistics Linkage

The number of pregnancy associated but not related cases and late postpartum cases has increased since adding the vital statistics linkage process, yielding more thorough case ascertainment of maternal deaths since 2015.

Of the 31 cases reviewed between 2015 and 2019, 10 cases (32%) were determined to be pregnancy-related, and 21 cases (68%) were either pregnancy-associated and not related (n=18) or unable to determine (UTD) pregnancy-relatedness (n=3). Black women were more likely to have a pregnancy-related cause of death compared to White women. Pregnancy-related deaths made up 46% of the cases reviewed among Black women, but only 20% of cases occurred among White women. The underlying causes of death by pregnancy-relatedness are shown in Figure M6.

Figure M6: Underlying cause of death by pregnancy-relatedness, 2015-2019 MMR cases (n cases)



Black Maternal Health

The health of Black women not only affects their pregnancy outcome but also their risk of surviving pregnancy and the risk of their fetus or infant dying. Black women make up a disproportionately high number of MMR and FIMR cases compared to the rates of their giving birth in Delaware overall.

FIMR and MMR committees are delving deeper into the contributing factors in the deaths of Black women and Black babies and actionable ways to reduce this glaring disparity.

Case Review

Following guidance from the CDC, Delaware MMR is discussing issues of discrimination and racism that may impact the care that Black women are receiving. These conversations are sometimes difficult but are very necessary if we are to change our systems and ourselves.

Action Steps

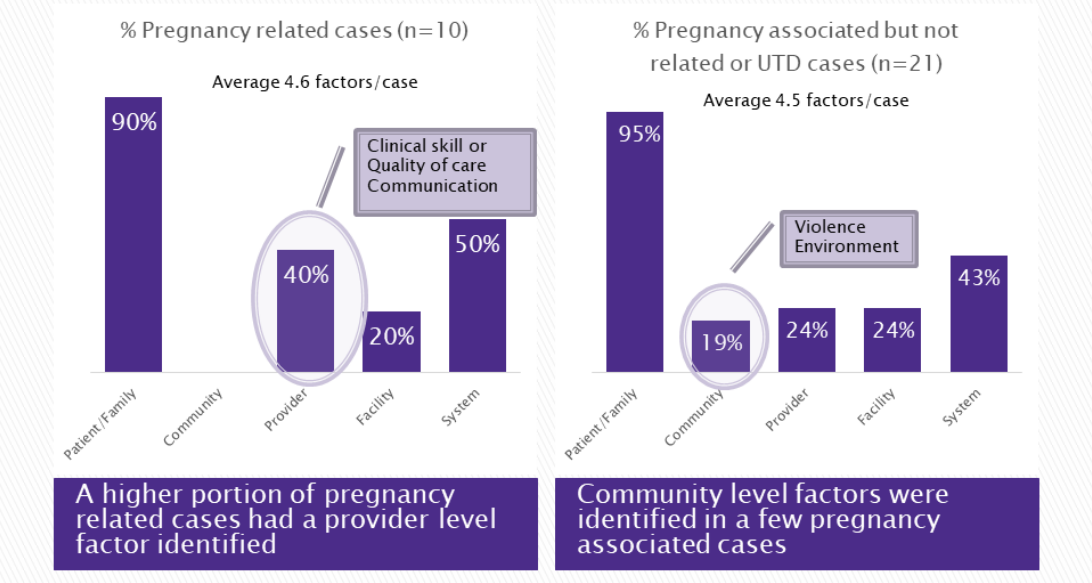
The CDRC will implement its equity statement and increase representation of communities of color in its review committees

The CDRC and DPQC hosted trainings on implicit bias and "strategies for successful care of pregnant and postpartum women of color" with nationally recognized experts Drs. Mahzarin Banaji and Joia Crear-Perry

The DPQC is implementing clinical care standards for the management of obstetric hemorrhage and hypertensive disorders, complications that contribute to maternal morbidity and pregnancy-related mortality

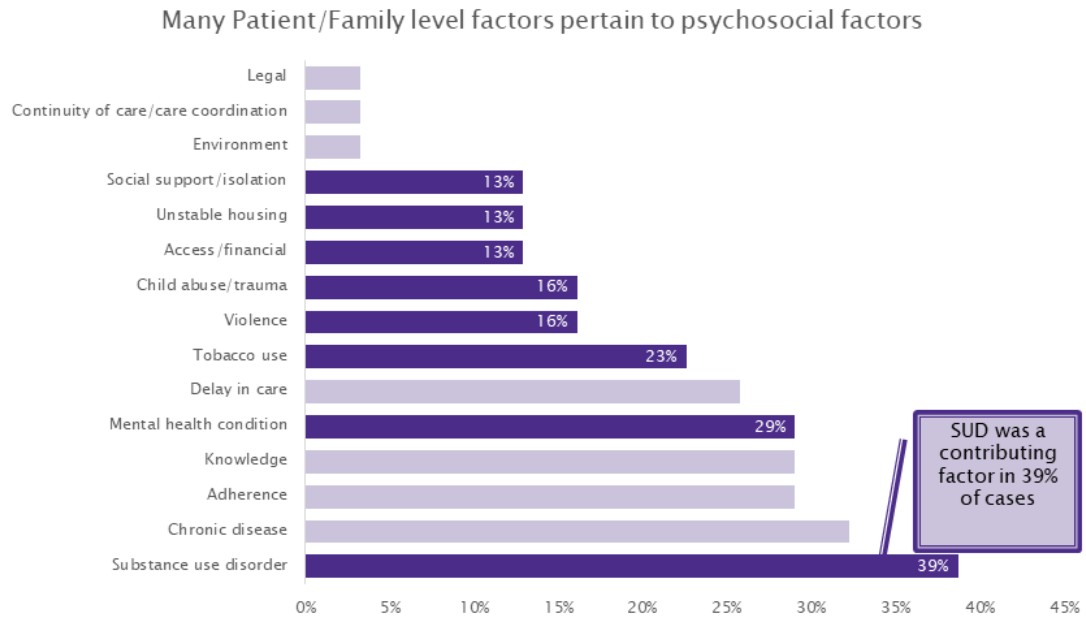
Of the pregnancy-related deaths, 70% were deemed preventable (7 out of 10 cases). Among pregnancy-associated but not related and unable to determine deaths, 57% were deemed preventable (12 out of 21 cases). The types of contributing factors differed slightly between pregnancy-related cases and pregnancy-associated but not related, and UTD with clinical skill, quality of care, or communication issues identified more often in the former group (Figure M7).

Figure M7: Contributing factors identified in MMR cases by level of factor and pregnancy-relatedness



Patient/family level contributing factors were the most common type of factor identified in all MMR cases. Many of these factors pertain to psychosocial risks experienced by women, as highlighted in dark purple in Figure M8, and cases were often found to have multifactorial risks.

Figure M8: Percent of MMR cases by type of patient/family level contributing factor identified



Pregnancy-related mortality ratio

The Delaware pregnancy-related mortality ratio (PRMR) for calendar years 2015-2019 was 13 deaths per 100,000 live births (95% confidence intervals: 5, 27). This is lower than the US average PRMR of 17 over 2015-2017.

The FIMR/MMR Action Plan

Members of the FIMR case review teams and MMR Committee came together in February 2021 to review findings and data from both fatality review programs and identify priority action steps for intervention. The retreat participants brainstormed ideas for intervention and then voted on their top priorities. The outcome of the voting process became the basis for the FIMR/MMR Action Plan, which the CDRC approved in March 2021. The CDRC will monitor the recommendations below with quarterly updates provided by staff.

FIMR/MMR Action Plan: 2021-2022

1. System Area: *Documentation*
   Goal: **Improve documentation issues on patient status and communication of standards across hospitals and provider sites.**
   - Action: The CDRC will send a letter to the Delaware chapter of the American College of Obstetricians and Gynecologists (ACOG) and Medical Society of Delaware (MSD) to encourage providers to improve their patient documentation and present some statistics from FIMR and MMR cases of missing documentation. Areas of focus will include completeness of depression screening, intimate partner violence screening, and bereavement referrals.
   - Action: The DPQC will work to standardize medical transport forms.
2. System Area: *Insurance*
   Goal: **Improve insurance coverage of evidence-based obstetric care statewide.**
   - Action: The Division of Medicaid and Medical Assistance (DMMA) will inventory models of reimbursing care coordination in women's health outpatient settings over the next year.
   - Action: The Delaware Healthy Mother and Infant Consortium (DHMIC) will consider funding a perinatal nurse educator to assist the DPQC with providing guidance and training for providers. An example of a training need identified is guidance around speaking with patients about their past birth trauma as part of prenatal care and birth planning.
3. System Area: *Social Determinants of Health*
   Goal: **Ensure that all providers provide care through a trauma-informed approach and social determinants of health lens.**
   - Action: The DPQC, Delaware ACOG, and DHMIC Social Determinants of Health Workgroup will promote training and resource materials from expert sources on implicit bias and communicating with patients on sensitive or difficult topics over the next year. Resources will be cataloged and available on public-facing or member-only portals and updated on a semiannual basis.

- Action: Providers and hospitals will screen for and review adverse childhood and current events to include a family's access to housing and food security, providing appropriate support and referrals as needed.

4. System Area: *Education*

Goal: **Increase knowledge and awareness by providing ongoing training for providers on issues related to maternal and fetal/infant mortality.**

- Action: The Maternal and Child Care Committee of the MSD will reach out to primary care providers and behavioral health providers to offer informal discussions to enhance provider confidence in caring for pregnant women in various settings. A specific topic identified in FIMR and MMR cases is the appropriate use of psychotropic medications in pregnant patients to ensure optimal management of mood and anxiety disorders.
- Action: The CDRC will develop a list of bereavement specialists who can work with family practice and OB/GYN residency and nurse education programs to offer educational talks on grief and family support strategies.

5. System Area: *Care Coordination/Communication*

Goal: **Optimize care coordination across all domains and providers for high-risk women.**

- Action: DMMA will explore the feasibility of employing an obstetrical navigator in each birth hospital to help coordinate care for women with multiple comorbidities.
- Action: The DPQC and DMMA will encourage women's health providers to participate in the Division of Substance Abuse and Mental Health's (DSAMH) Opioid Response Provider Network to take advantage of the technical assistance and funding offered to operationalize screening and referral for mental health and substance use disorder.

6. System Area: *Housing*

Goal: **Improve housing availability for pregnant women.**

- Action: CDRC will support DHMIC's efforts to launch a Healthy Beginnings at Home pilot program by sharing relevant data and findings from its fatality review programs on housing needs among families with a maternal or child death.

7. System Area: *Home Visiting*

Goal: **Improve participation by high-risk women in home visiting programs.**

- Action: The CDRC will share recommendations and relevant data and findings with the CDRC Home Visiting Committee and Home Visiting Community Advisory Board to inform their efforts to develop recommendations to improve enrollment and retention in home visiting programs.

Conclusion

2020 brought many changes to how the CDRC conducted work. Still, fatality reviews continued with only a brief pause while transitioning to virtual platforms and are arguably more important now than ever. It will take some time to gain more case data on the direct and indirect impact of COVID-19 on the health of mothers and children. Unintended consequences of the lockdowns, social isolation, and stress on families are just some of the themes the CDRC panels are exploring. There is also more awareness and attention to documenting the impact of racism and other forms of discrimination on the health and experiences of patients within systems of care. The in-depth, multidisciplinary reviews conducted by CDR/SDY, FIMR, and MMR committees will continue to be essential to providing a voice for high-risk families, especially with staff's increased efforts to contact affected families for a maternal or family interview.

Looking forward to 2021, the CDRC, its staff, and partners are recommitted and refocused on advancing the work to reduce disparities and give voice to the stories from our community members so that we move forward together toward a more inclusive, compassionate society.

Commissioners and Review Panel Members

The State Attorney General 31 Del. C. § 321 (a) Jim Kriner, Esq., Deputy Attorney General, Designee	The State Medical Examiner 31 Del. C. § 321 (a) Gary L. Collins, MD.
The Secretary of the State Department of Health and Social Services 31 Del. C. § 321 (a) Lena Thompson, BSN, R.N., CCM Chief, Clinical Care Management	The Director of the Division of Public Health 31 Del. C. § 321 (a) Mawuna Gardesey, Public Health Administrator, Designee
The Secretary of the State Department of Services to Children, Youth and Their Families 31 Del. C. § 321 (a) Trenee Parker, Director, Division of Family Services Designee	The Chief Judge of the Family Court 31 Del. C. § 321 (a) The Honorable Joelle Hitch, Judge, Designee
Office of the Child Advocate 31 Del. C. § 321 (a) Tania Culley, Esq., Child Advocate	The Superintendent of the Delaware State Police 31 Del. C. § 321 (a) Corp. Andrea Warfel, Designee
Chair of the Child Protection Accountability Commission 31 Del. C. § 321 (a) Jennifer Donahue, Esq., Investigation Coordinator, Designee	A representative of the Medical Society specializing in Pediatrics 31 Del. C. § 321 (a)(1) Amanda Kay, MD.
The State Secretary of Education 31 Del. C. § 321 (a) Susan Haberstroh, Director, Policy and External Affairs Designee	A representative of the New Castle County Police Department 31 Del. C. § 321 (a)(5) Lt. Michael Bradshaw, Family Services Unit
A representative of the Medical Society specializing in Neonatology 31 Del. C. § 321 (a)(1) David A. Paul MD, Pediatric Chair at Christiana Care	Two Child Advocates from State-wide Nonprofit Organizations 31 Del. C. § 321 (a)(6) Vacant Mary Ann Crosley, Visiting Nurses Association

A representative of the Medical Society specializing in Obstetrics 31 Del. C. § 321 (a) (1) Philip Shlossman, MD.	A representative of the Police Chief's Council of Delaware who is an active Law Enforcement Officer 31 Del. C. § 321 (a)(4) Chief Laura Giles, Elsmere Police Department
A representative of the Medical Society specializing in Perinatology 31 Del. C. § 321 (a)(1) Garrett Colmorgen, MD, Chair of the Commission	A Chairperson of each Regional Child Death Review Panel 31 Del. C. § 321 Mary Anne Crosley, R.N., SDY MDT Chair Kate Cronan, MD, SDY Advanced Chair Amanda Kay, MD, SDY Co-Chair Philip Shlossman, MD, CDR Panel Chair
A representative of the Delaware Nurses Association 31 Del. C. § 321 (a) (2) Nancy Forsyth, R.N.	A Chairperson of the Maternal Mortality Review 31 Del. C. § 321 Garrett Colmorgen, MD, Chair Vanita Jain, MD, Co-Chair
A representative of the National Association of Social Workers 31 Del. C. § 321 (a) (3) Fran Franklin, D.S.W.	A Chairperson of each Fetal and Infant Mortality Review Case Team 31 Del. C. § 321 (a) Aleks Casper, New Castle County Chair Bridget Buckaloo, R.N., Kent/Sussex County Chair

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Det. Hector Garcia
Stewart Krug
Det. Ron Mullin
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Gary Collins, MD
Ember Crevar, MD
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Stephanie Deutsch, MD
Stephen Falchek, MD
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Karen Gripp, MD
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Margaret Chou, MD
Patricia Ciranni, RN
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Linda Daniel, RN
Lindsey Davis, MD
Sandy Elliott, RN
Fran Franklin, DSW
Larry Glazerman, MD
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Khaleel Hussaini, PhD
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Megan O'Hara, LCSW
David A. Paul, MD
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Trenee Parker
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Karyl Rattay, MD
Crystal Sherman
Phillip Shlossman, MD
Natasha Smith
Lesley Tepner, RN
Michael Vest, MD
Leah Woodall
Law Enforcement as relevant on a case-by-case basis

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Aleks Casper, Chair
Dara Hall, MSN, RNC-NIC
Barbara Hobbs, RN, Co-Chair
Judith A. Moore, RN
Hazel Moralez-Ayala
Nancy O'Brien, RN
Kim Petrella, RN
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Lesley Tepner, RN
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2020 K-S FIMR CRT:

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Linda Brauchler, RN
Bridget Buckaloo, RN, Chair/Co-Chair
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