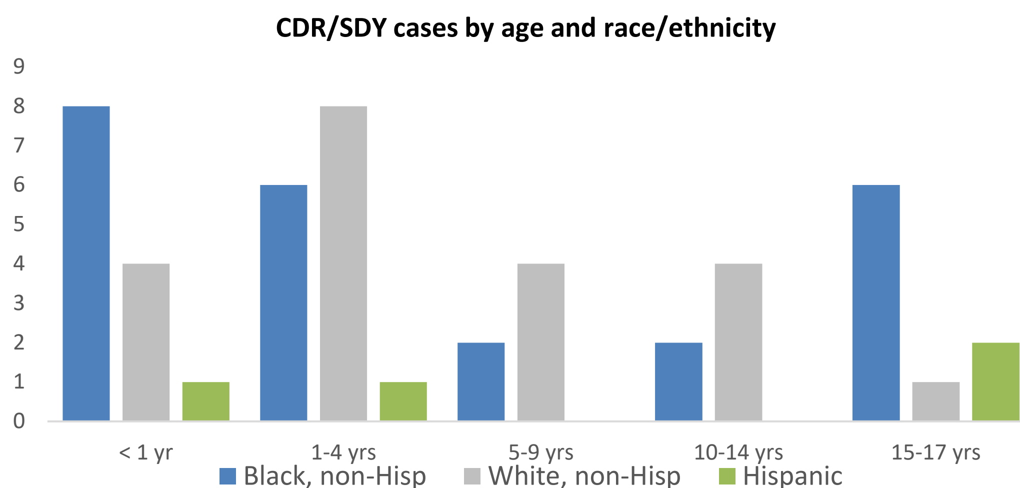
2020 Child Death Review Commission (CDRC) Data Addendum

Child Death Review and Sudden Death in the Young (CDR/SDY)

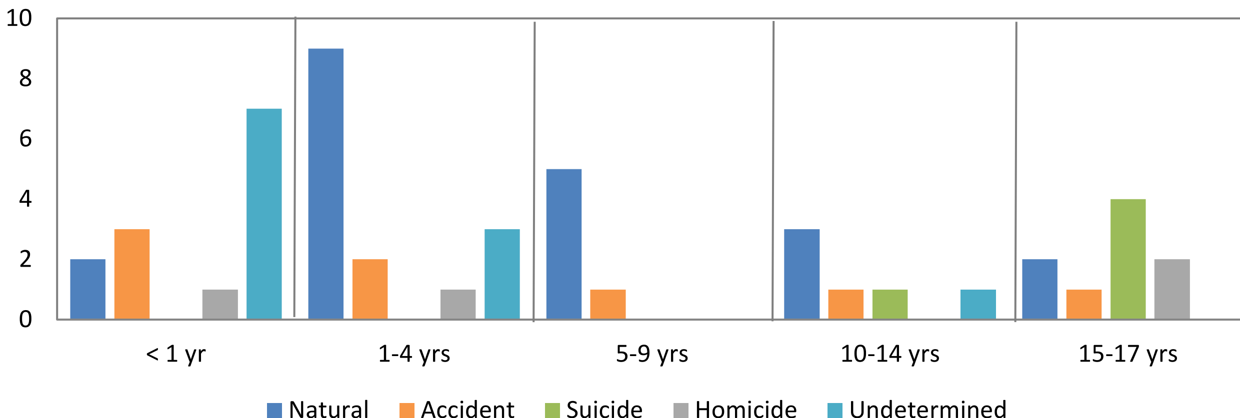
Quick Statistics:

- 49 cases reviewed in 2020—CDR 26 cases; SDY 23 cases
- 13 infant cases reviewed
- 14 unsafe sleep deaths reviewed
- 10 cases were reviewed jointly with the Child Abuse and Neglect (CAN) panel
- 21 children (43%) had chronic health conditions
- New Castle residents made up 65%, Kent 16% and Sussex 18% of cases
    - This is similar to the percent of the total population of children under 18 years living in these counties: 59% of children live in New Castle County, 20% live in Kent and 21% live in Sussex.[1]
- Cases were equally split between males (51%, n=25) and females (49%, n=24)

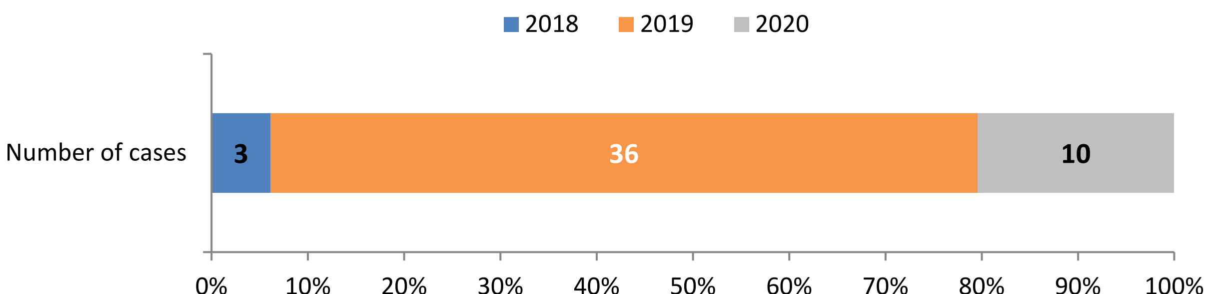


[1] US Census Bureau. QuickFacts, population estimates from 7/1/2019. Available at:. https://www.census.gov/quickfacts/fact/table/sussexcountydelaware,kentcountydelaware,newcastlecountydelaware,DE/PST045219. Accessed 2/17/2021.
[2] The CDRC uses the terms White, Black, and Hispanic based upon the usage by the CDC, the National Center for Vital Statistics, and the National Center for Fatality Review's database.

Number of CDR/SDY Cases by Age and Manner of Death



Year of Death



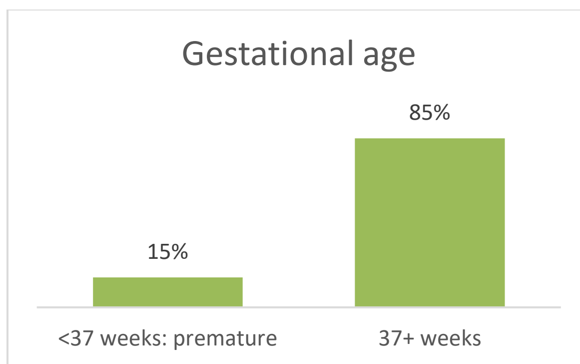
- Average time to first review = 6 months

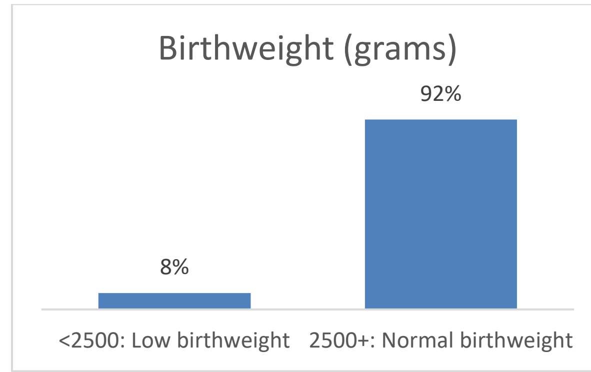
  CDR average = 5.5 months

  SDY average = 6.7 months

CDR/SDY Infant Deaths

Birthweight & Gestational Age: 2020 Infant Cases (n=13)





Infant Cases: Tracking Issues by Year of Review

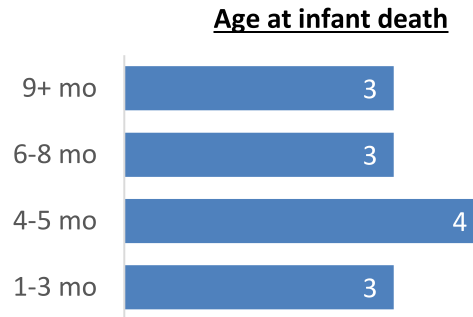
	2020 (n=13)	2019 (n=13)	2018 (n=16)
Intrauterine tobacco exposure[1]	15%	62%	31%
Intrauterine alcohol exposure[1]	0%	0%	6%
Intrauterine drug exposure	36%	38%	38%
Late or no prenatal care[2]	8%	15%	25%
Insurance coverage for infant			
Medicaid	69%	92%	63%
Private	23%	0%	19%
None	0%	8%	6%
No ABC education documented	25%	25%	44%
No infant safe sleep education documented	15%	17%	6%
Drug screen done on mother	91%	100%	87%
NAS scoring	8%	29%	13%
Substance exposed infants with DFS notification	75%	75%	25%
Home visiting referral made	42%	46%	50%
Home visiting enrollment	40% (2 out of 5)	0%	19%

[1]From NCFRP standardized report
[2]Late prenatal care defined as >6 months into pregnancy

	2020 (n=13)	2019 (n=13)	2018 (n=16)
Caregiver at time of death			
Parent	77%	85%	87%
Other	23%	15%	13%
Substance use at time of death	33%	67%*	31%

*includes two cases with buprenorphine use

Age at infant death



CDR/SDY Specific Causes of Death

Unsafe sleep related deaths (n=14)

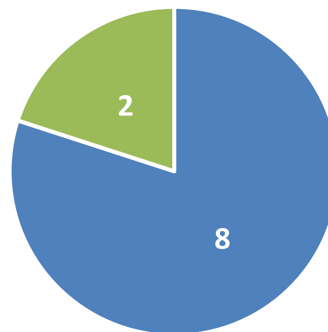
Age and race of unsafe sleep related deaths reviewed in 2020

	White, non-Hispanic	Black, non-Hispanic	Hispanic	Total
0-3 months	1	3	0	4
4-5 months	0	1	1	2
6-11 months	2	2	0	4
1+ years	2	2	0	4
Total	**5**	**8**	**1**	**14**

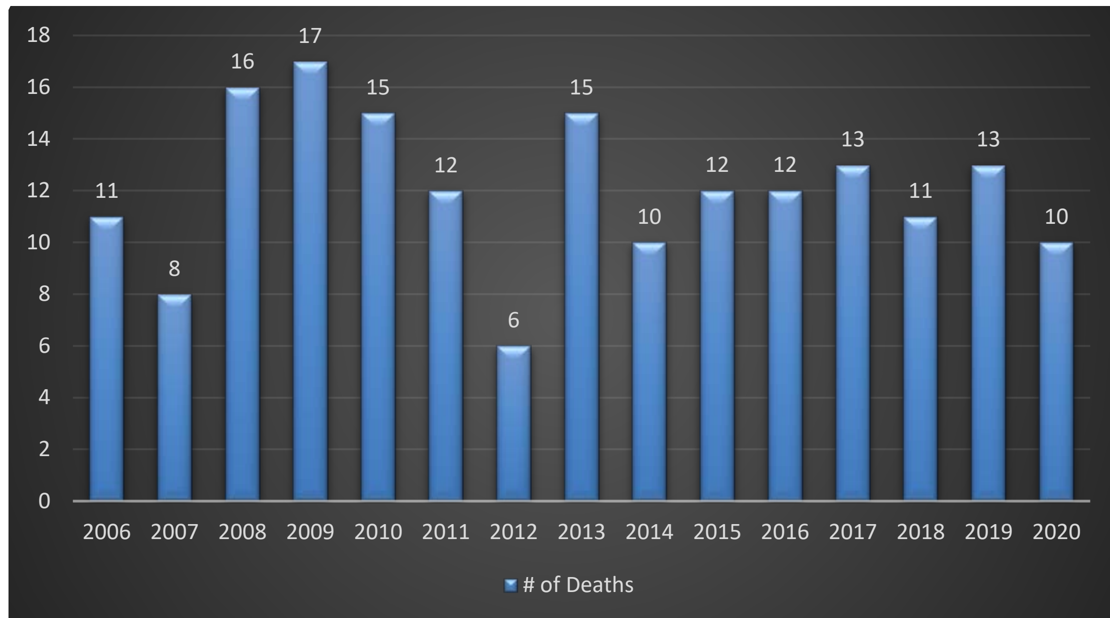
- Two children were Cribs for Kids for recipients
- In 12 cases there was documented Infant Safe Sleep education in the medical record, including 9 out of 10 infants

Gestational age of infant unsafe sleep deaths (n=10)

■ 37+ weeks: Full term ■ <37 weeks: Premature



Number of unsafe infant sleep deaths, by year of death in Delaware[1]



[1]Also includes children dying > 1 year of age if they were born premature

Unsafe sleep related deaths, associated risk factors, by year of review

	2020 infant only[3] (n=10)	2019 (n=12)	2018 (n=12)	PRAMS 2016-2017[1]
Not in a crib, bassinette, side sleeper or baby box	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 2 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.

[3] This count only includes 12 months and under.

Other causes of deaths reviewed and case counts

- Suicides n=5
- Accidental deaths n=8
    - Drownings n=4

CDR/SDY Tracking Issues

Adverse Family Experiences, by year of review[1]

	2020 Total (n=49)	2020 Infants (n=13)	2019 Total (n=49)	2019 Infants (n=13)	2018 (n=52)
DFS notified of death[2]		100%	52%	100%	100%
DFS rejected MDT response that should have been accepted, 0-3 year olds		11%	18%	8%	6%
Active with DFS at time of death	8%	23%	13%	31%	8%
Active with DFS within 12 months of death	27%	23%	23%	46%	13%
DFS history: parents as adults	63%	46%	52%	62%	50%
DFS history: parents as children	35%	38%	40%	62%	35%
Single/divorced/separated parents	33%	23%	31%	46%	41%
Maternal substance abuse[3]	30%	45%	46%	77%	45%
Paternal substance abuse[3]	28%	50%	59%	89%	50%
Maternal criminal history	33%	23%	36%	38%	19%
Paternal criminal history	45%	50%	58%	67%	43%
Maternal mental health issue[3]	58%*	50%*	58%	60%	32%
Paternal mental health issue[3]	33%*	25%*	38%	40%	19%
Maternal intimate partner violence[3]	33%	33%	33%	64%	31%
Paternal intimate partner violence[3]	37%	33%	31%	57%	36%
Maternal history of abuse	13%	8%	7%	18%	19%
Paternal history of abuse	4%	9%	10%	20%	6%
Maternal history of neglect	19%	15%	19%	42%	21%
Paternal history of neglect	11%	9%	19%	25%	17%

[1]Denominator is applicable cases with known information

[2]Denominator is cases specified by statute: Title 16, Chapter 9, Subsection 906(e)(3) for DFS investigation, children ages 0-3 years

[3]Current, history or suspected

*More than 50% of values unknown so estimate may be unreliable

Other Tracking Issues, by year of review

	2020 (n=49)	2019 (n=49)	2018 (n=52)
Hospice involved	6%	NR	17%
Teen parent	4%	2%	4%

	2020 (n=13)	2019 (n=13)	2018 (n=16)
No SUIDI reporting form[1]	18%	8%	0%
No scene investigation[1]	15%	0%	0%
No scene photos[1]	8%	0%	0%
No doll re-enactment[1]	25%	8%	38%

[1]denominator is infant deaths due to unsafe sleeping or undetermined manner
NR=not recorded

Fetal and Infant Mortality Review (FIMR)

Overview of Cases

FIMR Quick Stats:

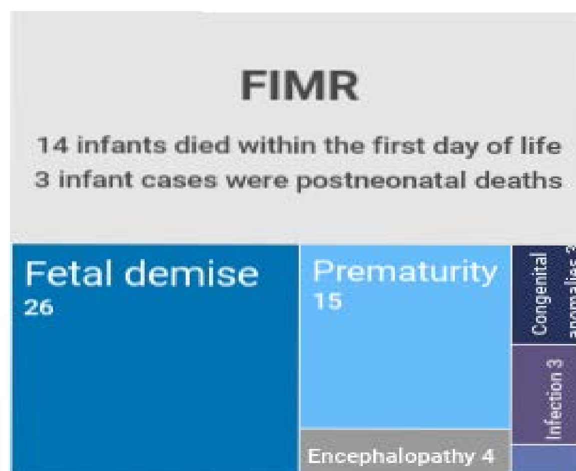
- 52 cases reviewed in 2020: 26 (50%) infant deaths and 26 (50%) fetal deaths
- Family interview completion rate: 15% (8 cases)

Race and Ethnicity

Race/ethnicity	FIMR Total (n=52)	FIMR Fetal (n=26)	FIMR Infant (n=26)	DE live births 2018 (n=10,593)[1]
White, non-Hispanic	40%	58%	23%	49%
Black, non-Hispanic	48%	35%	62%	27%
Hispanic	8%	8%	8%	17%
Other	4%	0%	8%	7%

[1]Delaware Health Statistics Center: 2018 Vital Statistics Annual Report

Underlying Cause of Death (number of cases)



Maternal Health: Physical Health

- 7 FIMR cases involved **severe maternal morbidity** based on the following criteria:
    - 6 obstetric hemorrhage
    - 2 ICU admissions
    - 1 HELLP syndrome (hemolysis, elevated liver enzymes, and low platelet count)
- One FIMR case was also an MMR case.

FIMR Issues Summary by year of review*

Medical: Mother	2020 (n=52 cases)	2019 (n=58 cases)	2018 (n=45 cases)
Pregnancy > 35 yrs	23%	14%	18%
Cord problem	15%	19%	7%
Placental abruption	13%	19%	18%
Chorioamnionitis	27%	12%	9%
Pre-existing diabetes	6%	16%	2%
Gestational diabetes	6%	5%	4%
Incompetent cervix	23%	12%	4%
Infection: bacterial vaginosis	10%	16%	13%
Sexually transmitted infection	17%	16%	7%
Other infection	23%	26%	36%
Multiple gestation	8%	10%	11%
Mother's weight BMI	62%	48%	40%
Insufficient/ excess weight gain	6%	12%	7%
Poor nutrition	6%	12%	4%
Pre-existing hypertension	15%	16%	7%
Preeclampsia	8%	17%	13%
Eclampsia	0%	0%	2%
Preterm labor	27%	12%	29%
Pregnancy < 18 mo apart	14%	26%	20%
PPROM (prolonged premature rupture of membranes)	10%	16%	22%
Pre-existing dental issues	8%	2%	7%
Oligo-/polyhydramnios	15%	22%	11%
Previous miscarriages	31%	31%	27%
Previous fetal loss	6%	7%	2%
Previous infant loss	2%	7%	4%
Previous low birthweight delivery	4%	16%	2%
Previous preterm delivery	8%	22%	16%
Previous C-section	19%	22%	20%
Previous ectopic pregnancy	0%	5%	4%
First pregnancy < 18 yrs old	10%	16%	24%
>4 live births	4%	9%	7%
Assisted reproductive technology	6%	2%	7%
Standard of care not met	2%	0%	0%
Inadequate assessment	4%	0%	2%

*either a P (present) or C (contributing) factor

FIMR Tracking Database by year of review

	2020	2019	2018
Tracking issues			
Antenatal steroids used when appropriate	63% (out of 16 cases)	89% (out of 9 cases)	64% (out of 14 cases)
17-progesterone offered when appropriate	48% (out of 21 cases)	58% (out of 19 cases)	33% (out of 9 cases)
Low-dose aspirin counseling when appropriate	59% (out of 29 cases)	NR	NR

NR=not reported

Infant Health

- FIMR infant deaths, as in prior years, involved infants born earlier and at lower birth weights than the group of fetal death cases.
- Among infant cases, 73% had prematurity, and 65% had extremely low birthweight identified as a contributing factor.
- Intrauterine growth restriction was more prevalent among fetal cases, identified in 27% of fetal deaths compared to 4% of infant deaths.

FIMR Issues Summary by year of review*

	2020 (n=52 cases)	2019 (n=58 cases)	2018 (n=45 cases)
Non-viable fetus	50%	59%	42%
Low birthweight (<2500 grams)	4%	4%	11%
Very low birthweight (<1500 grams)	4%	9%	4%
Extremely low birthweight (<750 grams)	35%	12%	33%
Intrauterine growth restriction	15%	24%	18%
Congenital anomaly	19%	21%	22%
Prematurity	40%	23%	44%
Infection/ sepsis	6%	9%	16%
Failure to thrive	2%	4%	0%
Birth injury	2%	0%	0%
Feeding problem	4%	7%	7%
Respiratory Distress Syndrome	19%	12%	29%
Developmental delay	4%	0%	2%

*either a P (present) or C (contributing) factor

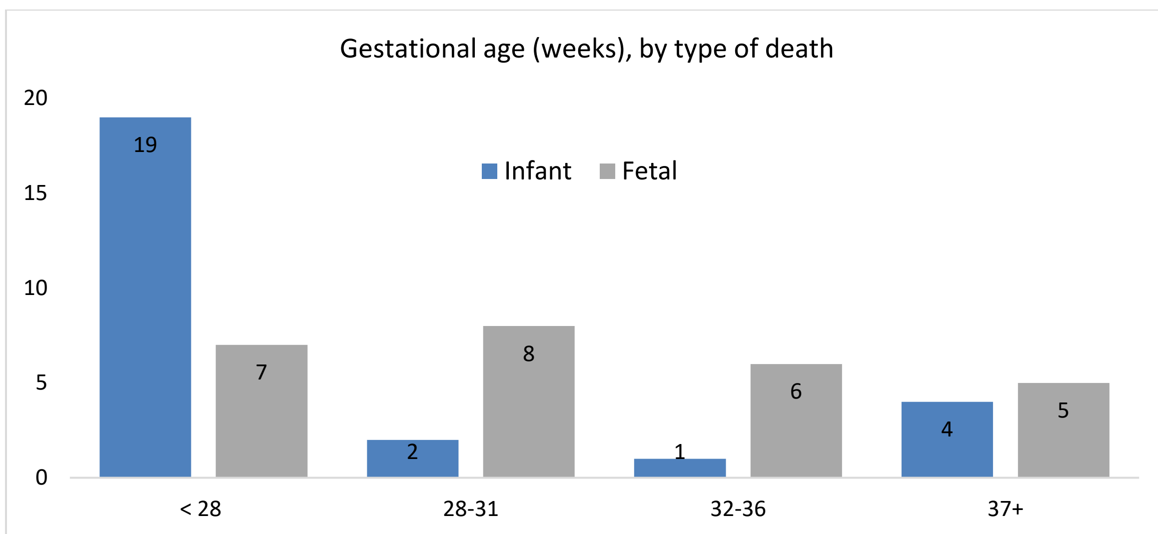
Underlying cause of death

Fetal cases:

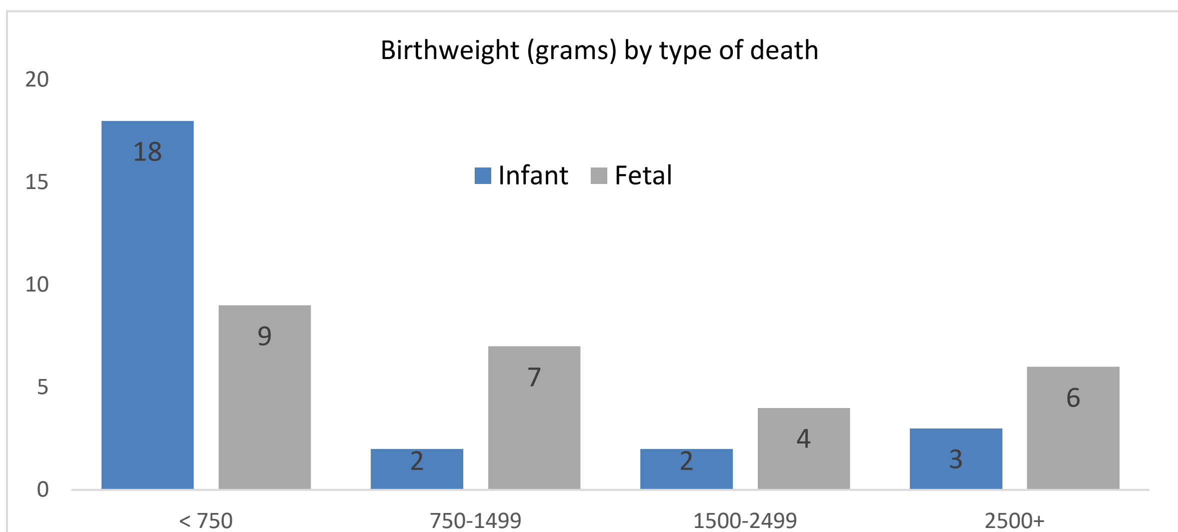
- Placental insufficiency: 5/26 cases
- Congenital anomalies: 2/26 cases

Infant cases:

- Prematurity: 15/26 cases
- Encephalopathy: 4/26 cases
- Congenital anomalies: 3/26 cases
- Infection: 3/26 cases
- Respiratory complication: 1/26 cases



Average infant gestational age = 26 weeks
Average fetal gestational age = 30 weeks



Average infant birthweight = 1044 grams
Average fetal birthweight = 1511 grams

Continuity of Care

- Missed opportunities, as well as strengths in continuity of care, are demonstrated by the factors and findings identified upon case reviews.
- FIMR cases had some notable strengths when providers followed up with mothers based on their pregnancy complications and started interconception counseling by the first postpartum visit.

FIMR Issues Summary by year of review*

	2020 (n=52 cases)	**2019** (n=58 cases)	**2018** (n=45 cases)
Preconception care	12%	5%	13%
Postpartum visit kept	65%	62%	60%
No prenatal care	6%	5%	11%
Late entry to prenatal care	17%	22%	11%
Lack of referrals	4%	4%	0%
Missed appointments	12%	22%	24%
Multiple providers / sites	19%	33%	33%
Lack of dental assessment	0%	0%	4%
Lack of dental care	4%	0%	0%
Inappropriate use of ED	4%	0%	4%
Poor provider to provider communication	6%	5%	0%

*either a P (present) or C (contributing) factor

Family Planning

- There has been a slight increase in the proportion of FIMR mothers counseled on family planning as documented in medical records.
- However, the proportion of women accepting a family planning method has remained stable.

FIMR Issues Summary by year of review*

	2020 (n=52 cases)	**2019** (n=58 cases)	**2018** (n=45 cases)
Pregnancy planning/ birth control education	79%	62%	27%
Intended pregnancy	25%	16%	31%
Unintended pregnancy	17%	36%	24%
Unwanted pregnancy	4%	7%	4%
No birth control	4%	7%	7%
Failed contraception	0%	5%	2%

*either a P (present) or C (contributing) factor

FIMR Tracking Issues by year of review

	2020	2019	2018
Family planning			
Counseled on birth spacing > 18 months	6%	7%	7%
Counseled on family planning postpartum	80%	69%	71%
Accepted family planning postpartum--any type	49%	58%	51%
Accepted LARC postpartum	8%	14%	9%
Expressed interest in LARC but did not receive	4%	7%	13%

LARC = long-acting, reversible contraception

Maternal Health: Behavioral Health

- 33% of FIMR mothers (n=17) had a mental illness condition during their pregnancy:
  - 6 mothers were on medication.
  - 5 mothers were currently in treatment with a behavioral health provider.
  - 4 mothers discontinued their medication as a result of being pregnant.
  - In 1 case, the mother's history of birth trauma and recurrent losses may have triggered her anxiety.
- 40% of FIMR mothers had evidence of depression or mental illness in the postpartum period.
- Among the 45 cases (88%) with a depression screen documented:
  - 30 cases had documented screening in more than one site of care.
  - 11 women were screened during a prenatal visit.
  - 25 women were screened during an OB triage visit.
  - 20 were screened at the time of delivery or hospital postpartum stay.
  - 21 were screened at the postpartum visit.

FIMR Issues Summary by year of review*

Substance Use	**2020** (n=52 cases)	**2019** (n=58 cases)	**2018** (n=45 cases)
Positive drug test	25%	14%	22%
No drug test	15%	21%	13%
Tobacco use: history	19%	12%	11%
Tobacco use: current	19%	21%	18%
Alcohol use: history	10%	7%	7%
Alcohol use: current	4%	4%	7%
Illicit drug use: history	12%	17%	13%
Illicit drug use: current	19%	17%	24%
Use of unprescribed meds	0%	4%	2%
Over the counter/ prescription meds	77%	48%	20%
Mental Health			
History of mental illness	35%	36%	40%
Depression/mental illness during pregnancy	33%	12%	9%

Depression/mental illness postpartum period	40%	35%	22%

*either a P (present) or C (contributing) factor

FIMR Tracking Database by year of review

	2020	2019	2018
Substance Use			
In utero drug exposure	27%	17%	7%
NAS diagnosis	0%	0%	0%
Mental Health			
Depression screen documented	88%	71%	71%

Social Risk Factors

FIMR Issues Summary by year of review*

	2020 (n=52 cases)	**2019** (n=58 cases)	**2018** (n=45 cases)
Lack of family support	15%	14%	18%
Lack of neighbors/ community support	2%	9%	7%
Lack of partner support	15%	9%	16%
Single parent	64%	52%	58%
< 12th grade education	6%	10%	16%
Frequent/recent moves	19%	7%	9%
Living in shelter/homeless	2%	0%	9%
Mother incarcerated	6%	9%	7%
Father incarcerated	14%	16%	9%
Multiple stresses	44%	55%	49%
Social chaos	17%	16%	11%
Concern about enough money	17%	19%	24%
Work/ employment problems	8%	9%	4%
Problems with family/ relatives	6%	10%	13%
History of abuse: Mom	25%	16%	36%
Current abuse: Mom	6%	2%	2%
History of abuse: FOB	6%	7%	2%
CPS referrals	35%	31%	31%
Police reports	27%	21%	24%
Inadequate/ unreliable transportation	2%	9%	7%

* P (present) factor

FIMR Tracking Database by year of review

	2020	2019	2018
Family adverse experiences			
Active with Division of Family Services (DFS)	8%	2%	2%
Any DFS history	54%	36%	33%
DFS Hx as a child: mother	24%	NR	NR
DFS Hx as an adult: mother	19%	NR	NR
DFS Hx as a child: father	24%	NR	NR
DFS Hx as an adult: father	28%	NR	NR
Criminal history: mother	15%	33%	22%
Criminal history: father	40%	41%	18%
IPV screening documented	65%	76%	71%
Intimate partner violence	6%	15%	7%

NR=not recorded

Family Communication and Support

- Women have to process medical information and manage complex conditions—both medical and psychosocial—in the peripartum period. Consistent, clear communication between providers and patients is key to optimizing patient care and autonomy.
- Many FIMR cases documented supportive counseling from palliative care and nursing staff in the prenatal and peripartum periods.
- While there has been an increase in the number of evidence-based home visiting program referrals made in FIMR cases, no mother was enrolled in such services.

FIMR Issues Summary by year of review*

	2020 (n=52 cases)	2019 (n=58 cases)	2018 (n=45 cases)
Bereavement referral made	58%	60%	64%
Language barriers	4%	12%	13%
Beliefs re: pregnancy/health	4%	14%	9%
Lack of home visiting (eligible)	44%	60%	58%
Poor provider to patient communication	14%	7%	2%
Lack of WIC (eligible)	12%	33%	0%
Client dissatisfaction	12%	9%	4%
Lack of grief support	2%	7%	7%

* P (present) factor

FIMR Tracking Database by year of review

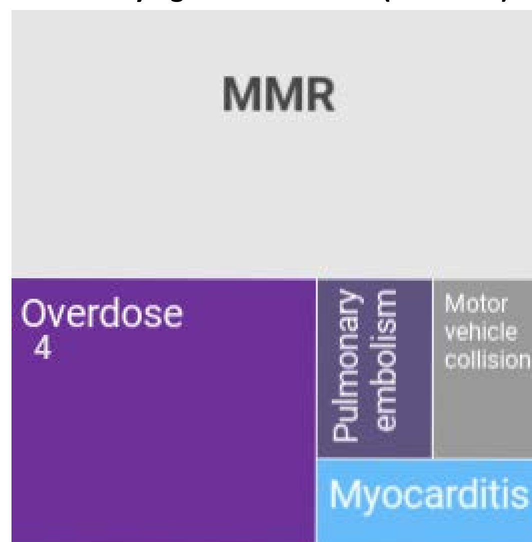
	2020	2019	2018
Tracking issues			
Fetal kick counts education when appropriate	67% (out of 39 cases)	72% (out of 43 cases)	69% (out of 29 cases)
Home visiting referral made when appropriate	14%	4%	2%
Home visiting enrollment	0%	2%	0%

Maternal Mortality Review (MMR)

MMR Quick Stats:

- 7 cases reviewed or re-reviewed in 2020
- Maternal age range: 20-35 years old
- Timing: 6 deaths in the late postpartum (43-365 days postpartum) and 1 death during pregnancy
- Pregnancy relation: 5 deaths pregnancy associated but NOT related; 2 deaths unable to determine
- Preventability: 6 preventable and 1 not preventable (Cause of death=pulmonary embolism)
- Family interview obtained in 1 case
- One MMR case was also a FIMR case

Underlying Cause of Death (n=7 total)



- Acute drug intoxication, n=4
- Pulmonary embolism, blunt trauma due to motor vehicle collision and myocarditis, n=1 each

Prior Recommendations & Key Findings, 2016-2019

Year	Review	Issue	Recommendation
2019	FIMR	Bereavement support—*Priority areas*	Increase awareness of bereavement sensitivity to include training for physicians, residents, nurses, social workers, parent educators, and home visitors. This awareness may include implementing a visual cue on the electronic medical record, so all providers know when a loss has occurred.
			Convene a bereavement conference in Kent or Sussex County to support professional development and networking opportunities.
			New nurses should continue to receive bereavement education upon hire.
		Medical issues—*Priority areas*	Explore expanding options for childbirth and prenatal classes, funding sources, platforms, and accessibility, i.e. online classes and classes that are available regardless of a family's ability to pay. Reinforce the importance of attending classes to prepare parents for the baby's birth and introduce postpartum education topics.
			Explore the possibility of restarting prenatal care and education based on the Centering Pregnancy model.
			Continue to work to utilize evidence-based home visiting prenatally to support mothers in the postpartum period.
		Family planning—*Priority areas*	Improve birth spacing and family planning discussion with mothers and their families who experience a loss, e.g. the conversation would be different for a younger mother in her 20's as compared to a mother over 35 years old, or for a woman who conceived her pregnancy via medical fertility.
			Improve opportunities for pregnancy intention screenings during a well-woman care visit and other settings while being sensitive to asking the questions in a nonjudgmental manner.
			Continue education and documentation of birth spacing and family planning methods and reinforce the importance of documenting these conversations in the medical records.
		FIMR process—*Priority areas*	Explore additional methods for securing a maternal interview, i.e. written responses or open-ended letters written by mothers.
			Track the use of low dose aspirin among mothers with hypertension and pre-eclampsia.
			Explore evaluating data on the Delaware fetal death rate before and after the Fetal Kick Counts' statewide implementation.
2019	MMR	Delay and knowledge	CDRC recommends that all medical providers follow the national ACOG (American College of Obstetricians

			and Gynecologists) guidelines to address standard postpartum pre-eclampsia and eclampsia hospital discharge instructions to educate on emergent conditions.
		Clinical skill/ quality of care	CDRC recommends that all birthing hospitals start postpartum education and teaching in the third prenatal trimester. At the time of labor and delivery, those women who are high risk need differentiated teaching and follow up that is more intensive.
		Clinical skill/ quality of care	CDRC recommends that all birthing hospitals promulgate the ACLS protocol (Advanced Cardiac Life Support) and AIM (Alliance for Innovation on Maternal Health) bundle for obstetric hemorrhage.
		Substance use disorder and continuity of care	CDRC supports the Division of Substance Abuse and Mental Health's START initiative to facilitate referrals for substance use disorder patients to access treatment and services. The START initiative addresses the lack of continuity of care between hospitalizations, community outreach, and follow up. Peer recovery coaches are an essential resource in enhancing connectedness between patients and the system of care.
2018	FIMR / CDR	Home visiting and outreach	Establish a Home Visiting committee to overcome barriers to establishing a home visiting service system for at-risk families. The committee shall address referrals, services, funding, and outcome measures.
			Create an opt-out referral for evidence-based home visiting services in the standard nursing admission orders for every Delaware birthing hospital when the mother comes into labor & delivery and the newborn is at risk.
			Advocate to the Division of Health and Social Services (DHSS) and the General Assembly for Medicaid reimbursement for all evidence-based home visiting providers in Delaware.
2018	MMR	Substance use disorder	The MMR panel recommends that DHSS explore the availability of resources for inpatient and outpatient drug rehabilitation and accessibility for high-risk populations.
		Substance use disorder and continuity of care--*Finding*	There is a lack of continuity of care or referral between the ED, where patients may access care, and substance abuse treatment. Every point of contact is an opportunity to ask if the patient is ready to access services, provide a referral or a list of resources, and call the primary care physician.
		Knowledge--*Finding*	There may be a need for increased public awareness education on breast cancer risk, even in younger women, and the importance of getting checked for a palpable breast lump.

		Clinical skill/quality of care--*Finding*	Family planning counseling is an integral part of the care plan for women and men of childbearing age undergoing cancer treatment.
		MMR process--*Finding*	There is an increasing prevalence of pregnancy-associated deaths over the last few years. This increase may be linked to the changes in case identification procedures. Late ascertainment of maternal deaths is occurring based on the vital statistics linkage.
2017	FIMR/CDR/MMR	Mental health	The CDRC recommends that depression screening be conducted universally at the time of birth and also postpartum.
		Substance use disorder	Increase counseling and referral for substance abuse.
			Improve access to treatment options.
			Pass legislation to implement plans of safe care for every substance-exposed infant.
			Reduce the stigmatization of selectively applying screening by screening all pregnant and postpartum women for substance abuse. Refer every patient, every time.
		Continuity of care and interconception care	The CDRC supports the DHMIC's birth spacing campaign to reframe the postpartum visit as an interconception care visit and the optimal birth spacing of 18 months.
		Home visiting and outreach	The CDRC strongly supports improvement in vulnerable populations' process to access and accept evidence-based home visiting services.
2017	MMR	MMR Process	Improve case identification of possible maternal deaths by linking live birth and fetal death certificate information with death certificates of women of reproductive age.
2016	FIMR/CDR	Home visiting and outreach	The Commission strongly supports improvements in vulnerable populations' process to access and accept evidence-based home visiting services.
	MMR	Clinical skill/quality of care and Violence—*Finding*	Provider education on screening for intimate partner violence as per the ACOG recommendations and education on the services and support offered by the 24-hour domestic violence hotline
		Policies & procedures--*Finding*	Facility policies and procedures for the routine use of drug screens
		Referrals--*Finding*	System referral and decision making algorithms for notification of the medical examiner in cases of maternal death