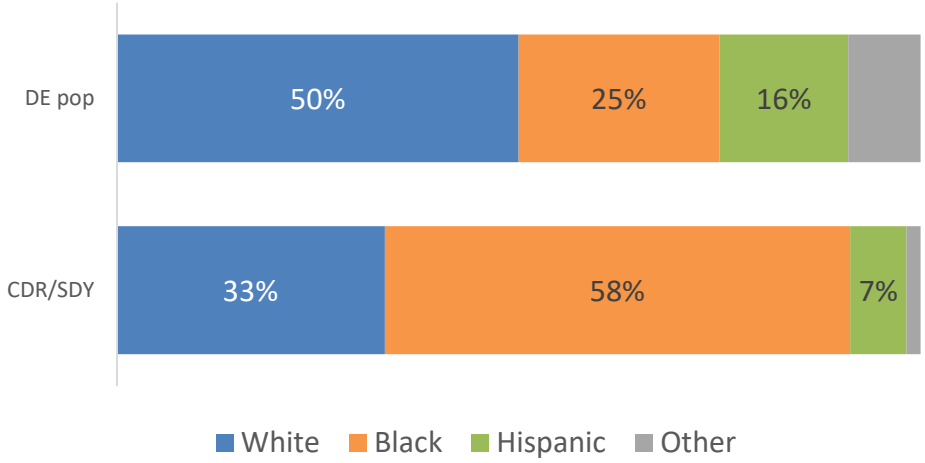
Maternal and Child Death Review Commission
2022 Annual Report Data Addendum

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

Quick Statistics:

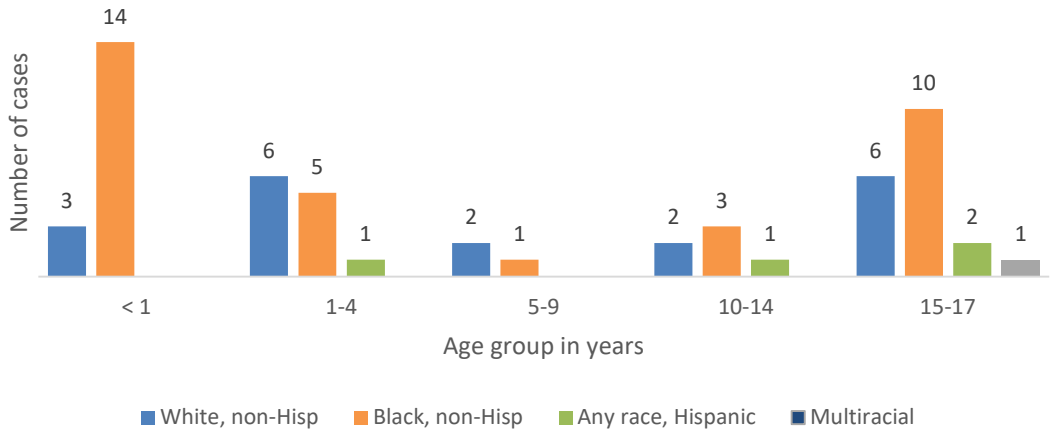
- 57 cases reviewed: CDR 34 cases, SDY 23 cases
- 5 cases administratively closed
- 17 infant cases reviewed
- 14 unsafe sleep deaths reviewed, including 3 involving children over 1 year of age
- 13 cases were reviewed jointly with the Child Abuse and Neglect (CAN) panel
- 15 children (26%) had known chronic health conditions
- New Castle residents made up 72%, Kent 12% and Sussex 16% of cases
    - New Castle children are overrepresented as they make up only 58% of 0–17-year-olds in Delaware, 20% of children 0-17 live in Kent County and 22% live in Sussex County.[1]
- Males made up 58% of cases and females 42%
- Black children are overrepresented in the CDR/SDY cohort. While Black children make up 25% of the total population of 0-17-year-olds in Delaware, they make up 58% of the 2022 cohort of CDR/SDY cases. (Figure 1)

Figure 1: Race/ethnicity of Children 0-17 years in 2022



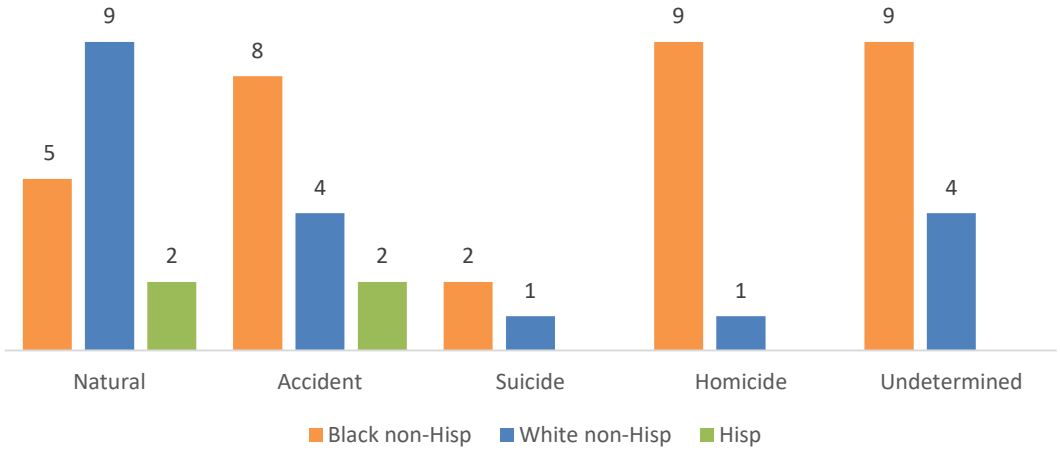
[1] Annie E. Casey Foundation, Kids Count Data Center. Delaware Indicators. Accessed at https://datacenter.kidscount.org/data#DE/5/2/3,6,7,5/char/0 on January 31, 2023.

Figure 2: Age groups by Race/Ethnicity



- The Black: White disparity is most notable for children 0-4 years of age, in that group Black children made up 66% of CDR/SDY cases in 2022 while they represent only 25% of the total 0–4-year-old population in Delaware.
- For all manners of death except "natural", Black children and youth outnumber all other groups combined 2 to 1. (Figure 3)

Figure 3: Manner of Death and Race/Ethnicity



[2] The MCDRC 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.

Figure 4: Age Groups by Race/Ethnicity

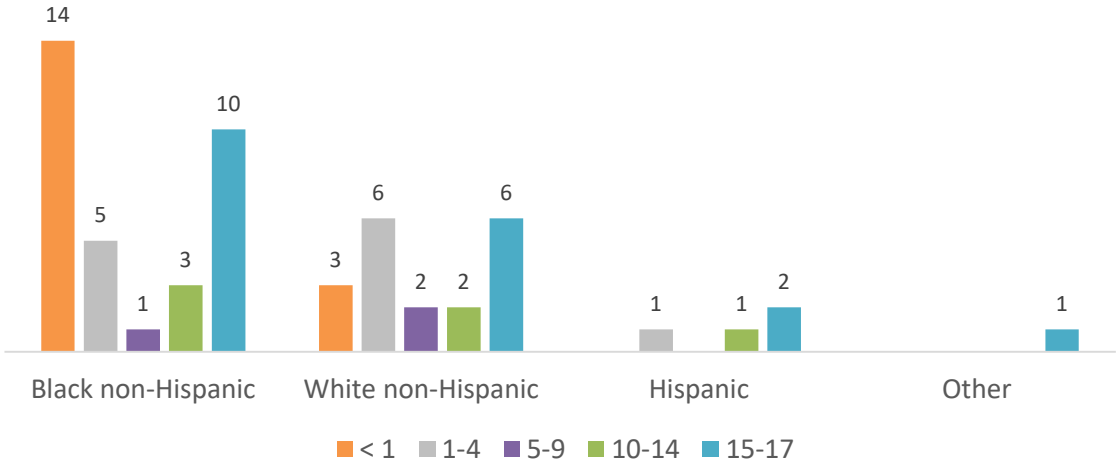


Figure 5: Age groups by year of review

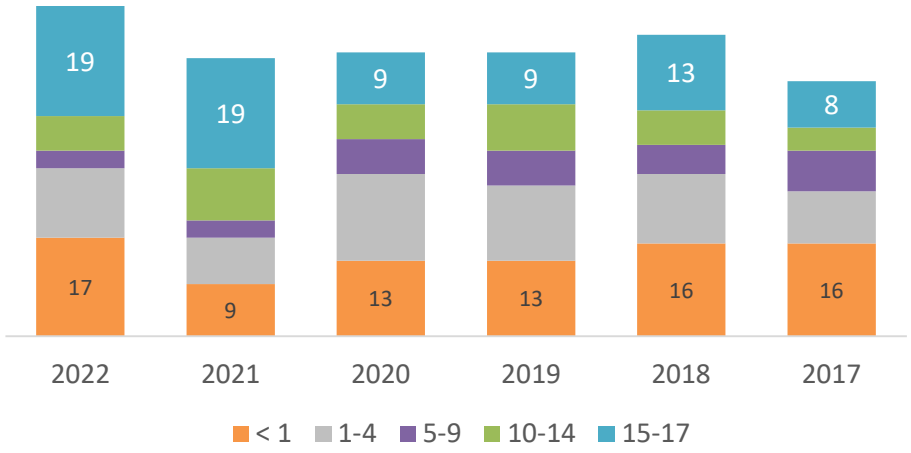
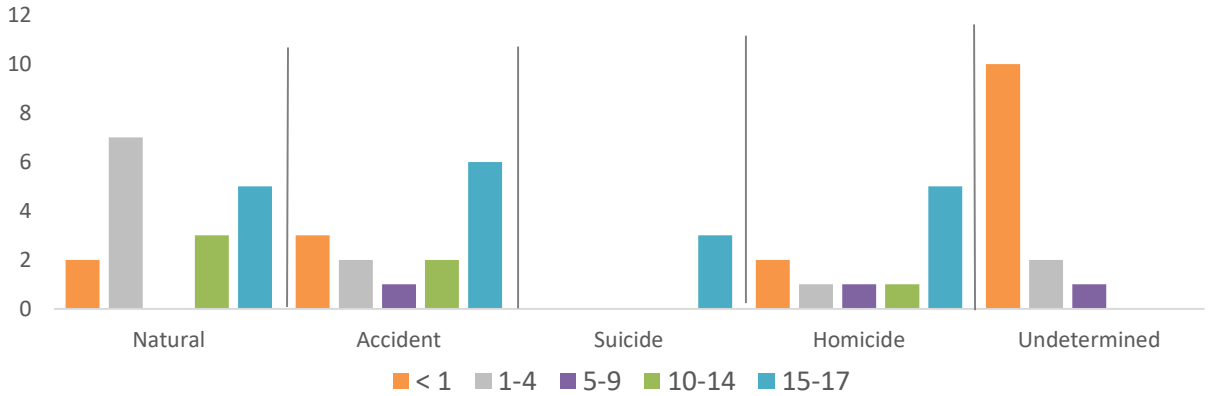


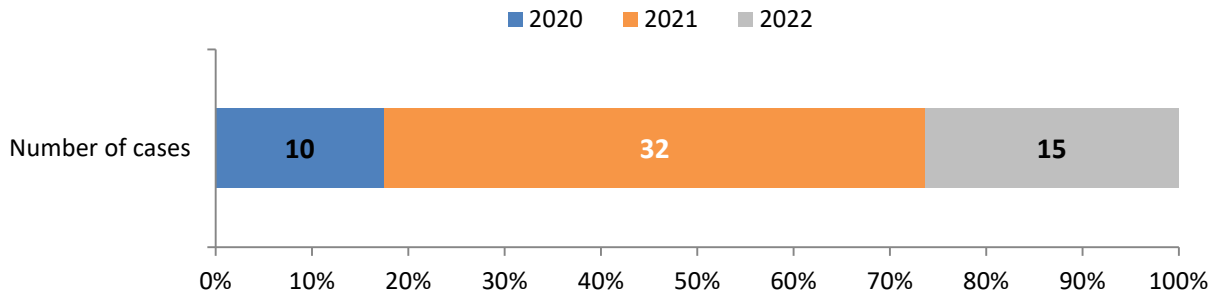
Figure 6: Manner of Death and Age



Impact of COVID

- No deaths occurred during the stay-at-home period.
- Three deaths were indirectly impacted by Covid.
- No deaths were directly due to Covid.
- Disruptions due to Covid were known for 18 cases, and 15 of these (84%) experienced significant disruptions, most often in school and medical care

Figure 7: Year of Death

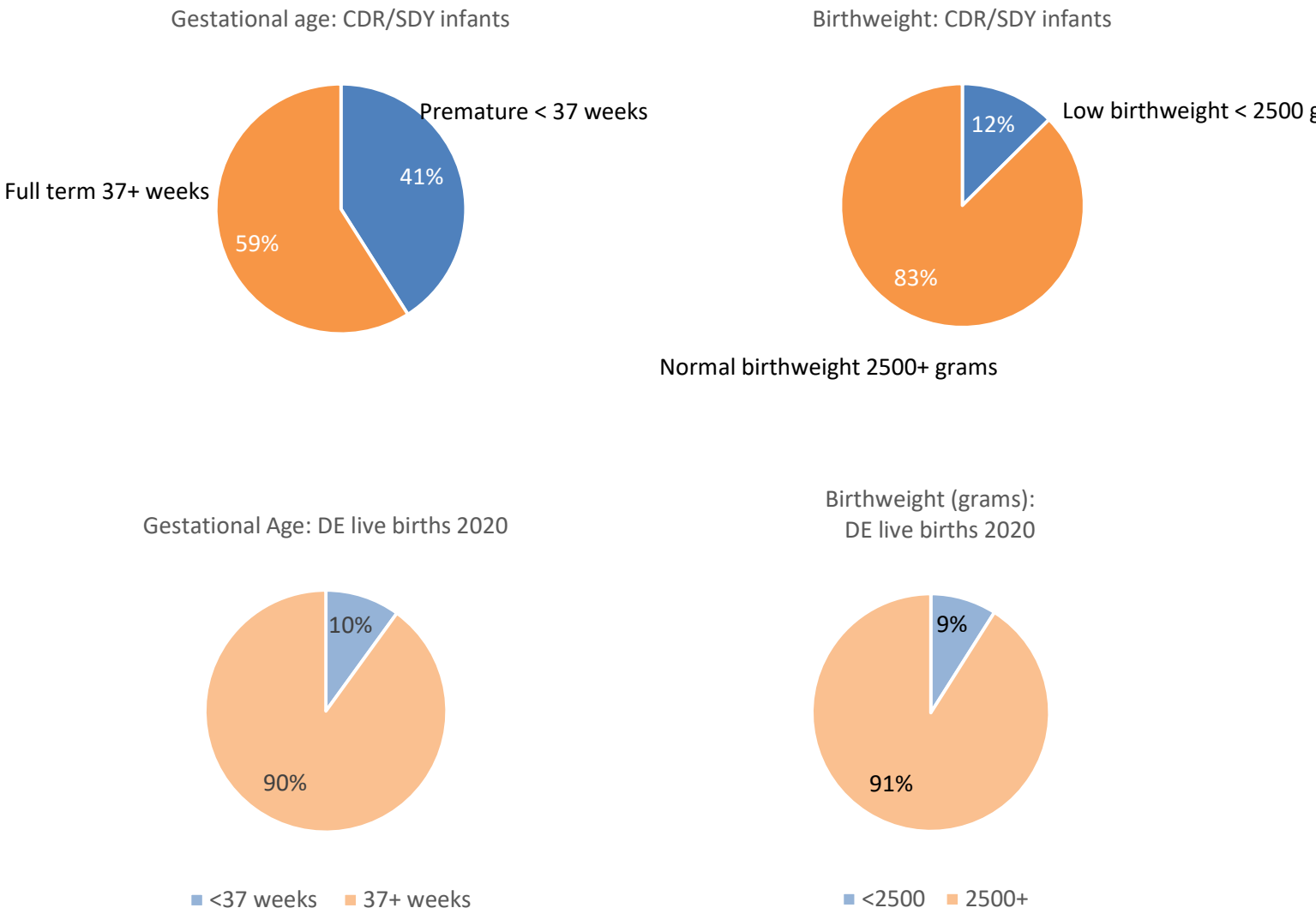


CDR/SDY Infant Deaths

Birthweight & Gestational Age: 2022 Infant Cases (n=17)

- A higher percentage of CDR/SDY infants were born premature (41%) compared to the overall Delaware live birth cohort in 2020 (10%). (Figure 9)

Figure 9: CDR/SDY infant cases compared to DE Live Births[3]



[3] Division of Public Health. Delaware Vital Statistics Annual Report 2020. Accessed at https://dhss.delaware.gov/dph/hp/2020.html on January 31, 2023.

Infant Cases: Tracking Issues by Year of Review

	2022 (n=17)	2021 (n=9)	2020 (n=13)	2019 (n=13)
Intrauterine tobacco exposure[1]	35%	44%	15%	62%
Intrauterine alcohol exposure[1]	18%	0%	0%	0%
Intrauterine drug exposure	46%	29%	36%	38%
Late or no prenatal care[2]	12%	11%	8%	15%
Insurance coverage for infant				
Medicaid	59%	83%	69%	92%
Private	18%	17%	23%	0%
None	18%	0%	0%	8%
No infant safe sleep education documented	15%	0%	15%	17%
Drug screen done on mother	82%	83%	91%	100%
Neonatal Opioid Withdrawal Syndrome (NOWS) scoring	0%	11%	8%	29%
Substance exposed infants with DFS notification	67% (4 out of 6)	100% (1 out of 1)	75%	75%
Home visiting referral made	35%	22%	42%	46%
Home visiting enrollment	6% (1 out of 6)	22% (2 out of 2)	15% (2 out of 5)	0%
No depression screen at birth[3]	*	0%		

[1]From NCFRP standardized report
[2]Late prenatal care defined as >6 months into pregnancy
[3]More than 50% of cases unknown
*Unknown for >50% cases so not reported

	2022 (n=17)	2021 (n=9)	2020 (n=13)	2019 (n=13)
Caregiver at time of death				
Parent	82%	78%	77%	85%
Other	18%	22%	23%	15%
Substance use at time of death	25%[1]	22%	33%	67%

[1]Five cases were marked as unknown, these cases are not included in the denominator

CDR/SDY Specific Causes of Death

Unsafe sleep related deaths (n=14)

Age and race of unsafe sleep related deaths reviewed in 2022

	White, non-Hispanic	Black, non-Hispanic	Total
0-3 months	1	5	6
4-5 months	1	0	1
6-11 months	0	4	4
1+ years	2	1	3
Total	**4**	**10**	**14**

- Two families were a Cribs for Kids recipient
- In 9 cases (64%) there was documented Infant Safe Sleep education in the medical record

Figure 10: Gestational age of infant unsafe sleep deaths (n=11)

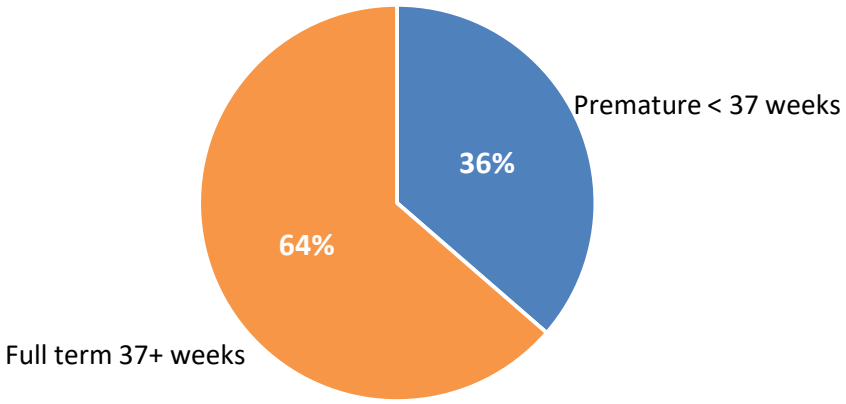


Figure 11: Proportion of unsafe sleep-related deaths by race/ethnicity

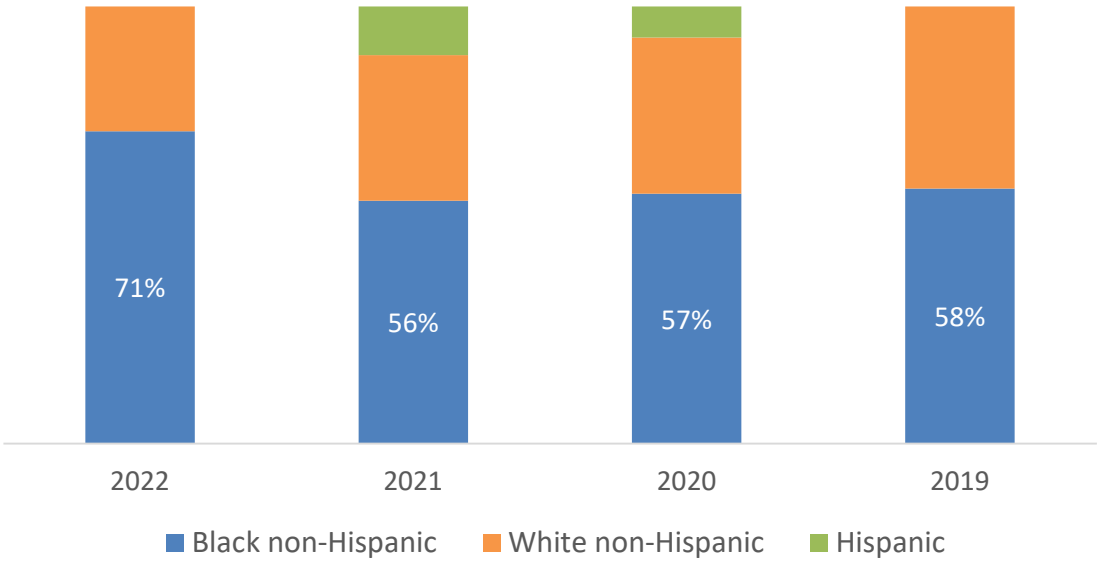
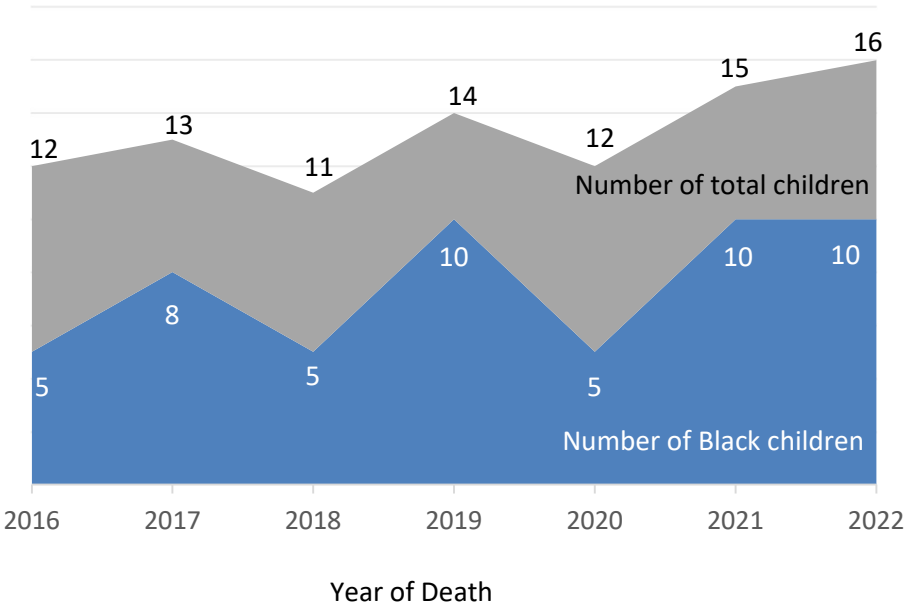


Figure 12: Number of Unsafe Sleep-related Deaths by Year of Death



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

	2022 (n=14)	2021 (n=9)	2020 infant only (n=10)	2019 (n=12)	PRAMS 2020[1]
Not in a crib, bassinette, side sleeper or baby box	79%	78%	80%	100%	10%[2]
Not sleeping on back	43%	44%	40%	50%	22%
Unsafe bedding or toys near infant	79%	89%	70%	92%	8%[3]
Sleeping with other people	79%	56%	40%	75%	23%[4]
Intrauterine drug exposure	36%*	17%*	30%	42%	--
Tobacco use: mother	45%*	38%*	25%	67%	21%
Adult was alcohol or drug impaired	21%	11%	33%	67%	--
Infant ever breastfed	64%*	63%*	90%	45%	83%
Mother fell asleep while breastfeeding	7%	0%	0%	0%	--

[1]DPH. Delaware Pregnancy Risk Assessment Monitoring System (PRAMS) 2020 Analysis. Personal communication with G Yocher.

[2]Not usually in crib, bassinet or pack and play in the last 2 weeks

[3]Sleep with toys, cushions or pillows

[4]Baby does not often or always sleeps alone in crib or bed

*Only infant unsafe sleep deaths included

Suicides n=3 cases

Two hangings; one gunshot wound

Tracking issues:

- One case the youth was in a psychiatric facility
- In and out of mental health treatment: 2/3
- Receiving consistent treatment: 1/3
- No use of non-FDA meds within 24-48 hours of death
- No substance use implicated in death

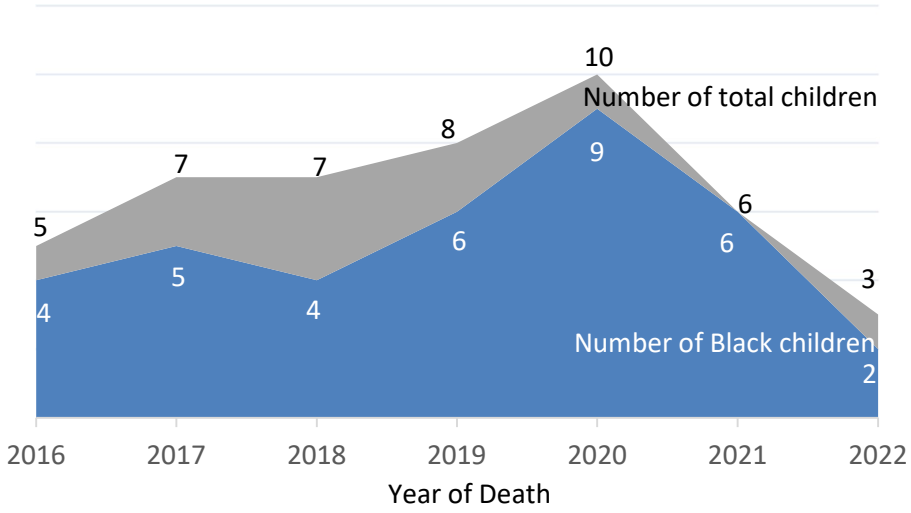
Homicides n=10 cases

6 cases reviewed in 2022 involved a firearm

- 2 domestic violence
- 2 gang-related activity
- 1 drug dealing

9 out of 10 homicides involved Black youth

Figure 13: Number of Homicides by Year of Death



Accidental deaths n=14 cases

4 drowning deaths

- No barriers to water: 2 out of 4
- Child used alcohol/drugs prior to incident: 3 out of 4
- Supervisor impaired by drugs/alcohol: 1 out of 4
- Two were preceded by a motor vehicle collision

6 motor vehicle collision deaths

- 3 as pedestrians
- 2 as drivers-1 was wearing seat belt
- 1 as passenger-no protective measure used

Findings by Year of Review

System Area	2022 (n=19)	2021 (n=37)	2020 (n=28)	Comments
Legal: Regulations/ Policies/ Contracts	6	8	1	Inability to obtain out of state records
Unresolved Risk: Parental Risk Factors	4	3	1	
Child Risk Factors	1	0	1	Mental health concern in suicide death
Home Visiting Programs	0	1	0	
MDT Response: Communication	2	3	1	
Documentation	1	3	0	
Doll Reenactment	1	1	0	
Criminal Investigation	0	3	2	
Reporting	0	2	0	
Crime Scene	0	1	0	
Medical: Documentation	1	1	2	
Medical Exam/ Standard of Care	0	1	1	
Emergency Dept	0	3	2	
Primary Care	0	2	3	
Autopsy	0	2	3	
Specialist	0	0	3	
Birth	0	0	1	
Regulations/ Policies/ Contracts	0	0	2	
Home Visiting Program	0	0	1	
Risk Assessment/Caseloads: Documentation	2	0	0	
Risk Assessment-Screened Out	0	0	3	
Communication	0	0	1	
Education: Regulations/Policies	1	3	0	

Note: Findings do not include those made in the 13 cases jointly reviewed with the CAN panel. These findings are reported out as part of the Child Protection Accountability Commission's annual report.

CDR/SDY Tracking Issues

Adverse Family Experiences, by year of review[1]

	2022 Total (n=57)	2022 Infants (n=17)	2021 Total (n=48)	2021 Infants (n=9)	2020 Total (n=49)	2020 Infants (n=13)
DFS notified of death[2]	65%	94%	69%	100%		100%
DFS rejected MDT response that should have been accepted, 0-3 year olds	0%	0%	13%	11%		11%
Active with DFS at time of death	19%	35%	15%	22%	8%	23%
Active with DFS within 12 months of death	27%	53%	23%	50%	27%	23%
DFS history: parents as adults	57%	56%	64%	88%	63%	46%
DFS history: parents as children	41%	57%	28%	38%	35%	38%
Maternal substance abuse[3]	37%	60%	29%	63%	30%	45%
Paternal substance abuse[3]	31%	44%	33%	60%	28%	50%
Maternal criminal history	35%	40%	36%	67%	33%	23%
Paternal criminal history	57%	58%	46%	*	45%	50%
Maternal mental health issue[3]	*	*	*	40%	*	*
Paternal mental health issue[3]	*	*	*	*	*	*
Maternal intimate partner violence[3]	43%	46%	50%	57%	33%	33%
Paternal intimate partner violence[3]	42%	46%	41%	40%	37%	33%
Maternal history of abuse	8%	0%	13%	13%	13%	8%
Paternal history of abuse	7%	8%	8%	20%	4%	9%
Maternal history of neglect	30%	40%	15%	25%	19%	15%
Paternal history of neglect	10%	0%	8%	40%	11%	9%

*More than 50% of values unknown so not reported

[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

Infant Tracking Issues, by year of review

	2022 (n=17)	2021 (n=9)	2020 (n=13)	2019 (n=13)
No SUIDI reporting form[1]	8%	0%	18%	8%
No scene investigation[1]	0%	11%	15%	0%
No scene photos[1]	0%	11%	8%	0%
No doll re-enactment[1]	15%[2]	22%	25%	8%
Toxicology screen of alleged perpetrator	67%	67%		

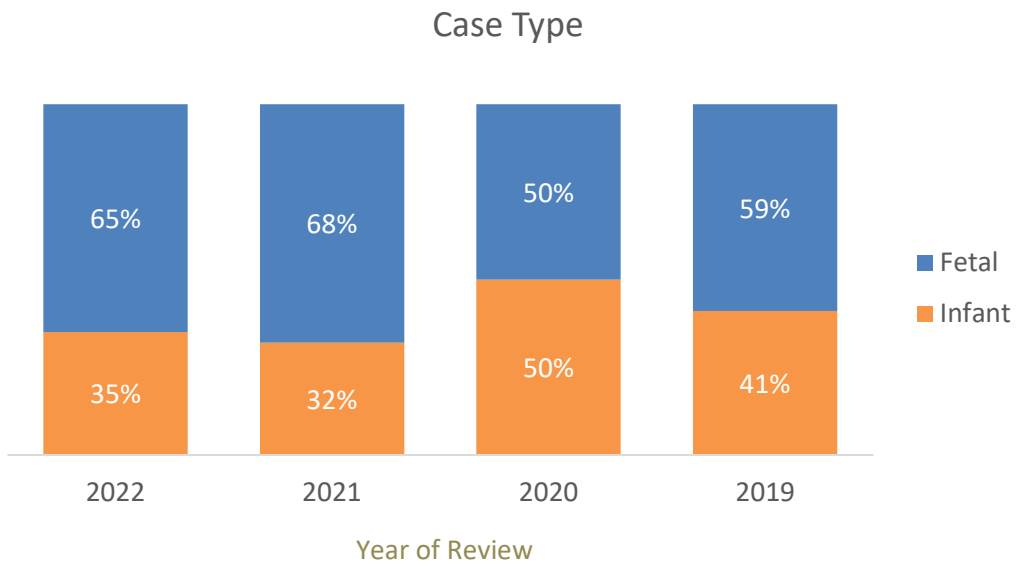
[1]denominator is infant deaths due to unsafe sleeping or undetermined manner

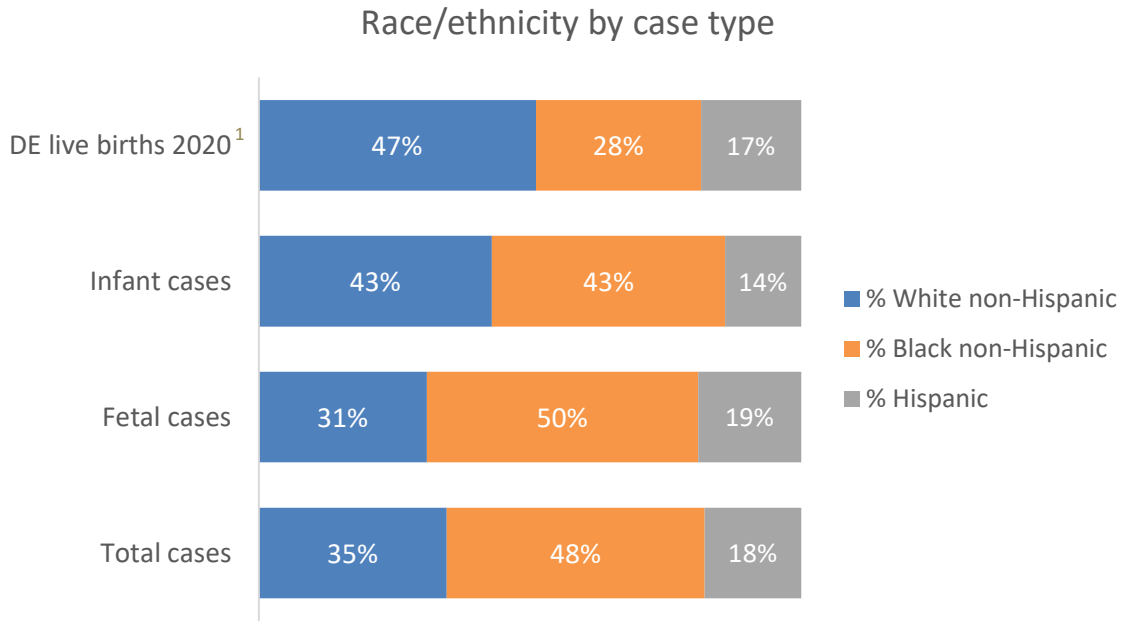
[2]One parent refused to cooperate

Fetal and Infant Mortality Review

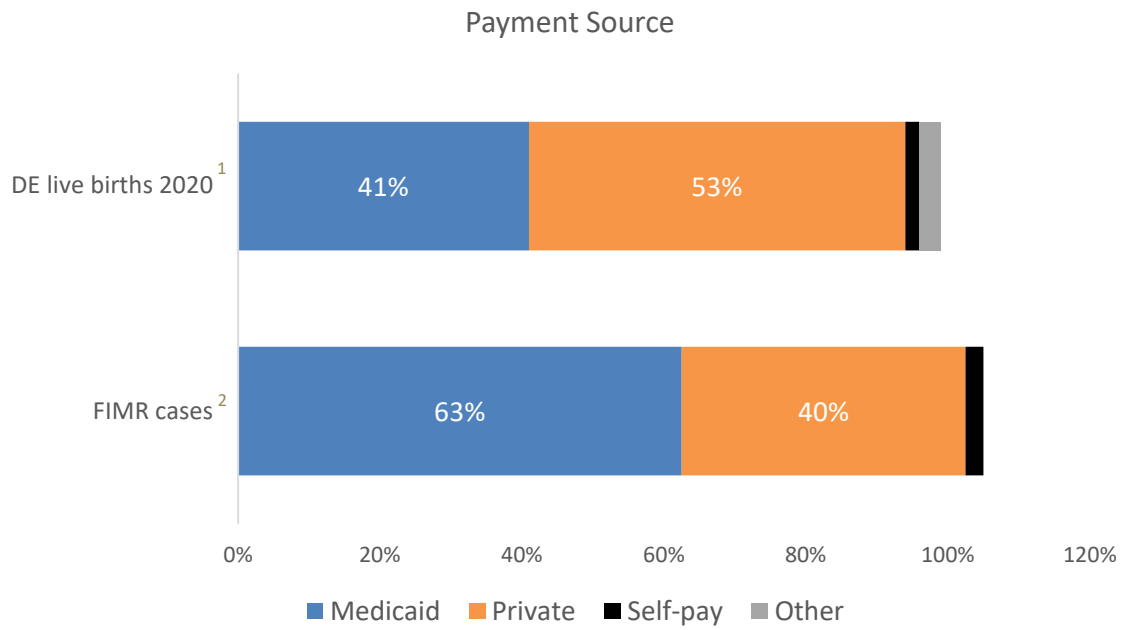
Overview of Cases

- FIMR CRTs reviewed 40 cases: 26 (65%) fetal deaths and 14 (35%) infant deaths





[1]Delaware Department of Health and Social Services, Division of Public Health, Delaware Health Statistics Center. Delaware Vital Statistics Annual Report 2020.



[1]Delaware Department of Health and Social Services, Division of Public Health, Delaware Health Statistics Center. Delaware Vital Statistics Annual Report 2020.

[2]More than one category was selected for some cases so sum exceeds 100%.

Number of FIMR Findings and Strengths by Category

Category	Findings (n=68 total)	Strengths (n=39 total)
Maternal Health	3	0
Infant Health	9	1
Continuity of care	10	11
Mental health	3	8
Substance use disorder	3	2
Bereavement support	6	5
Patient provider communication	5	2
Shared decision making	3	2
Quality of care	6	3
Family planning and birth spacing education	5	3
Family support and social determinants of health	5	1
Covid	5	0
Fetal kick counts	2	0
FIMR process	3	1

Maternal Health

Definition: Issues relating to the mother's medical health needs, obstetric complications or the care she received as a result of her health conditions. This topic includes aggregate data on the burden of medical and obstetric conditions in FIMR mothers as a group.

FIMR Issues Summary by year of review*

Medical: Mother	2022 (n=40 cases)	2021 (n=60 cases)	2020 (n=52 cases)	2019 (n=58 cases)	PRAMS 2020[4]
Cord problem	23%	10%	15%	19%	
Placental abruption	28%	30%	13%	19%	
Chorioamnionitis-Present	15%	20%	27%	12%	
Chorioamnionitis-Contributing	13%	23%			
Gestational diabetes	3%	8%	6%	5%	15%
Cervical insufficiency	5%	12%	23%	12%	
Infection: bacterial vaginosis	10%	5%	10%	16%	6%
Sexually transmitted infection	8%	15%	17%	16%	
Other infection	30%	17%	23%	26%	
Multiple gestation	10%	7%	8%	10%	
Mother's weight BMI[1]	70%	62%	62%	48%	
Insufficient/ excess weight gain	13%	12%	6%	12%	
Pre-existing hypertension	18%	22%	15%	16%	6%
Preeclampsia	23%	25%	8%	17%	
Preterm labor	15%	17%	27%	12%	13%
PPROM (prolonged premature rupture of membranes)	15%	13%	10%	16%	
Oligo-/polyhydramnios	23%	33%	15%	22%	
Previous miscarriages	38%	23%	31%	31%	
Previous fetal loss	5%	5%	6%	7%	
Previous infant loss	3%	2%	2%	7%	
Previous low birthweight delivery	10%	3%	4%	16%	8%[1]
Previous preterm delivery	18%	13%	8%	22%	8%[1]
Previous C-section	18%	23%	19%	22%	

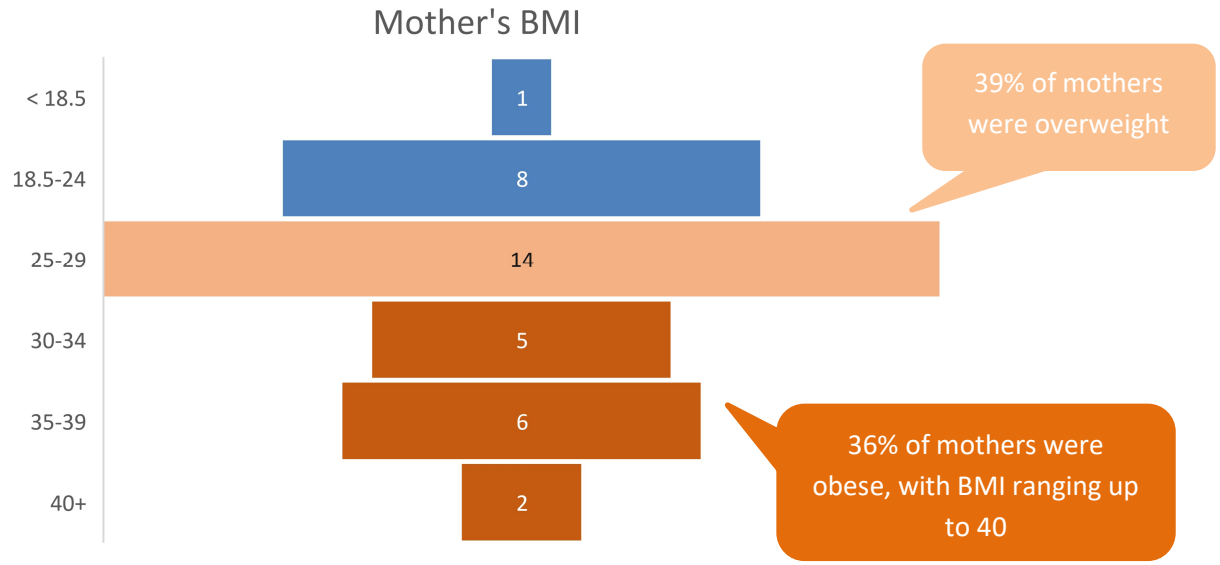
[4] Delaware Health and Social Services, Division of Public Health. Delaware Pregnancy Risk Assessment Monitoring System (PRAMS) 2020 Analysis. November 2022. PRAMS is a standardized data collection questionnaire administered by telephone and mail. It samples a proportion of women who give birth in Delaware to ascertain maternal attitudes and experiences before, during and shortly after pregnancy. PRAMS is conducted by the Delaware Division of Public Health and the Centers for Disease Control and Prevention (CDC).

Assisted reproductive tech	10%	7%	6%	2%	

*either a P (present) or C (contributing) factor, unless otherwise specified

[1]In pregnancy just before the new baby.

Note: For brevity, some P/C factors have not been included if their prevalence is low or has not been changing over the last few years.



- Three cases of **severe maternal morbidity** (8%) due to obstetric hemorrhage (2 cases) and HELLP syndrome with hypertensive emergency (1 case).
- Two cases were also a **maternal death**, with an accompanying fetal death.

FIMR Tracking Database by year of review

	2022	2021	2020	2019
Antenatal steroids used when appropriate[1]	50%	60%	63%	60%
17-progesterone offered when appropriate[2]	45%	33%	48%	58%
Low-dose aspirin counseling when appropriate[3]	75%	78%	59%	NR

[1]Infant cases only, viable and preterm

[2]History of prior spontaneous miscarriages or preterm delivery and single gestation in this index pregnancy

[3]History of hypertension, diabetes, preeclampsia, eclampsia or multiple gestation

Infant Health

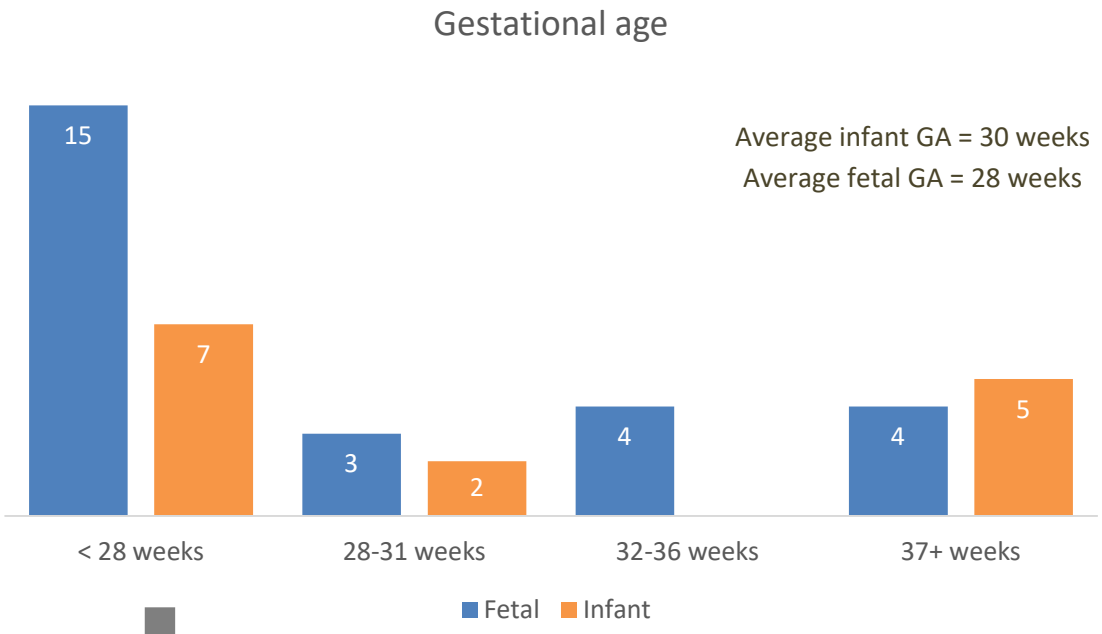
Definition: Issues relating to the baby's medical health needs, the care the mother or baby received in the perinatal period that impacted the baby's death. This topic includes aggregate data on the underlying causes of death, and the distribution of gestational age and birthweight in infants and fetuses.

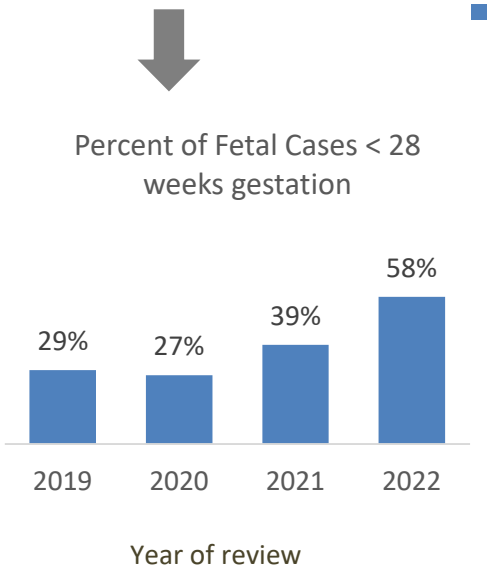
FIMR Issues Summary by year of review*

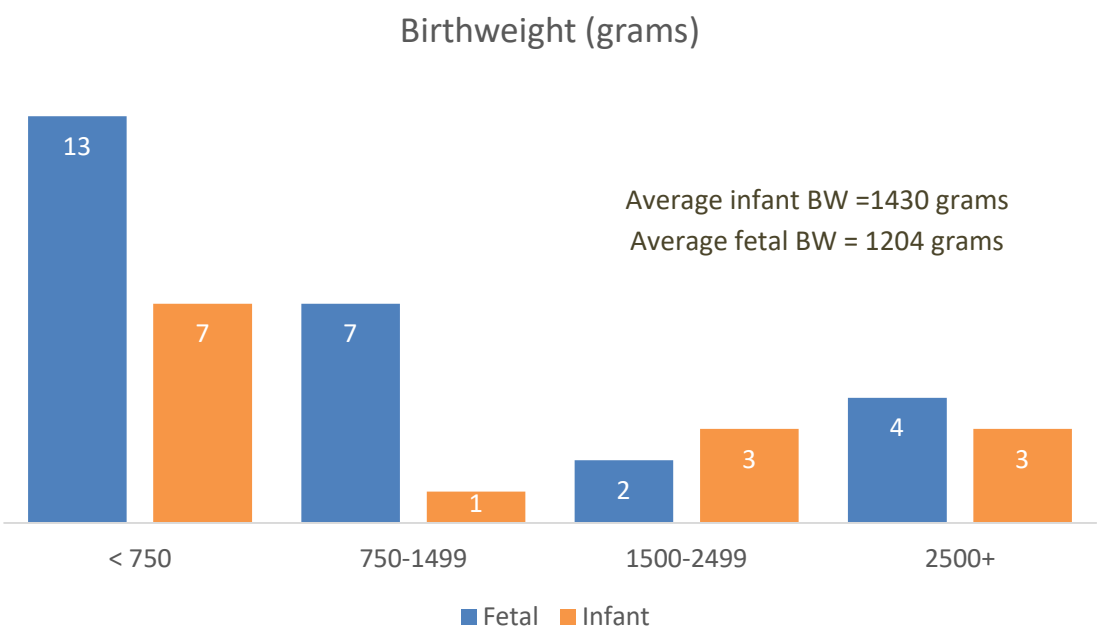
	2022 (n=40 cases)	**2021** (n=60 cases)	**2020** (n=52 cases)	**2019** (n=58 cases)
Non-viable fetus	14% (infant)	5% (infant)	50%	59%
Intrauterine growth restriction	23%	15%	15%	24%
Congenital anomaly	28%	23%	19%	21%
Prematurity	23%	20%	40%	23%
Infection/ sepsis	13%	12%	6%	9%
Respiratory Distress Syndrome	10%	18%	19%	12%

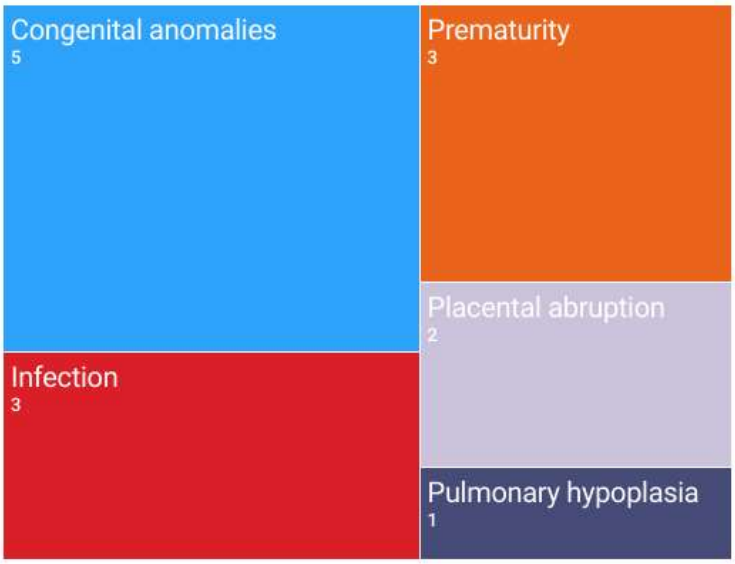
*either a P (present) or C (contributing) factor

- Among infant cases, contributing issues included:
  - 50% had congenital anomalies.
  - 43% had prematurity.
  - 36% had infection/sepsis.
- Among fetal cases, contributing issues included:
  - 15% had congenital anomalies.


Gestational age
Average infant GA = 30 weeks
Average fetal GA = 28 weeks
15
7
3
2
4
4
5
< 28 weeks
28-31 weeks
32-36 weeks
37+ weeks
Fetal
Infant


Percent of Fetal Cases < 28 weeks gestation
29%
27%
39%
58%
2019
2020
2021
2022
Year of review


Birthweight (grams)
13
7
7
1
2
3
4
3
Average infant BW =1430 grams
Average fetal BW = 1204 grams
< 750
750-1499
1500-2499
2500+
Fetal
Infant



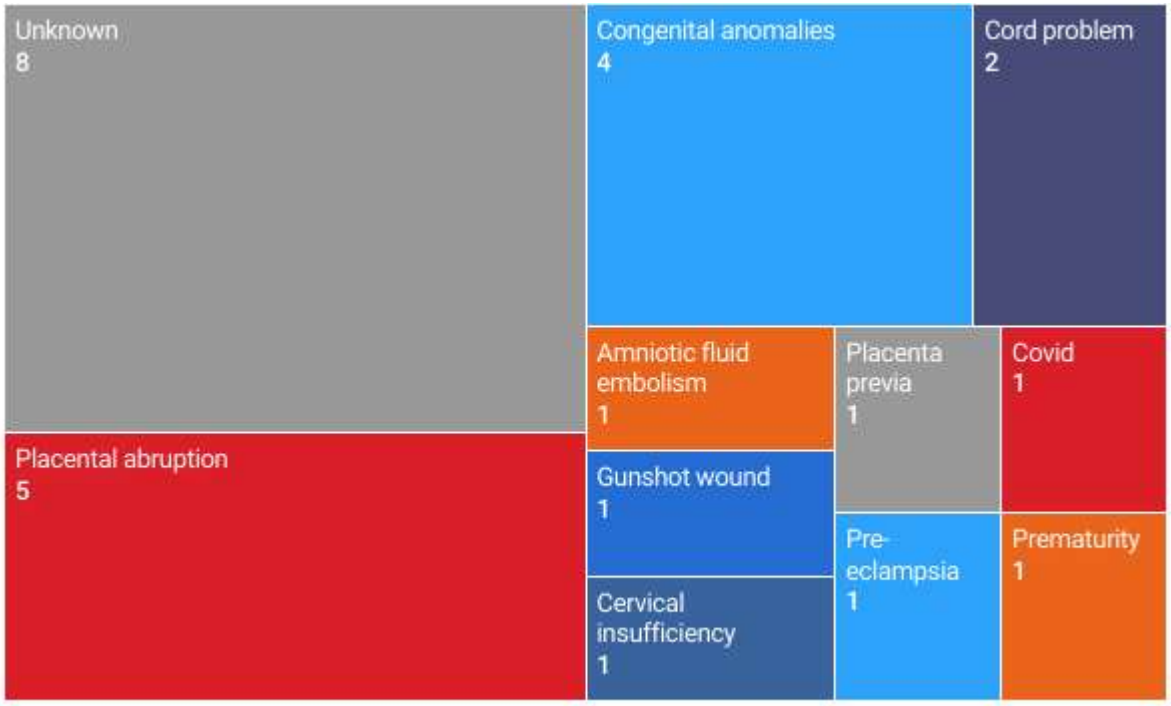
Underlying causes of infant deaths

Age at infant death

- 43% of infants died in their 1st day of life
- 29% of infants survived beyond 28 days, dying in the post-neonatal period

Location of birth

- 1 infant was born in a Level 1 hospital
- 1 infant was born at home



Underlying causes of fetal deaths*

*Two deaths involve a maternal death and have the same underlying cause of death as the mother.

Continuity of Care

Definition: Issues relating to a family accessing care when they want it; getting a referral for appropriate care; or the (in)effective communication between providers at different sites to coordinate a family's care, referral or follow up.

FIMR Issues Summary by year of review*

	2022 (n=40 cases)	2021 (n=60 cases)	2020 (n=52 cases)	2019 (n=58 cases)	PRAMS 2020
Preconception care	25%	13%	12%	5%	27%[1]
Postpartum visit kept	74%	61%	65%	62%	85%
No prenatal care	10%	10%	6%	5%	
Late entry to prenatal care	18%	37%	17%	22%	
Lack of referrals	3%	5%	4%	4%	
Missed appointments	18%	27%	12%	22%	
Multiple providers / sites	8%	8%	19%	33%	
Poor provider to provider communication	3%	7%	6%	5%	

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

[1]Did a healthcare worker talk the mother about preparing for pregnancy?

Mental Health

Definition: Issues relating to a mental health condition; screening, diagnosis and/or treatment for a mental health condition, including the sequalae of traumatic birth; access to mental health resources both in-hospital and in the community; or the stigma/discrimination associated with mental health. Aggregate data summarizes the prevalence of mental health conditions documented in FIMR cases.

FIMR Issues Summary by year of review*

	2022 (n=40 cases)	**2021** (n=60 cases)	**2020** (n=52 cases)	**2019** (n=58 cases)	**PRAMS 2020**
History of mental illness	43%	33%	35%	36%	
Depression/mental illness during pregnancy	20%	20%	33%	12%	16%[2]
Depression/mental illness postpartum period	45%	29%	40%	35%	7%[3]
Depression screen documented (tracking database)	93%[1]	93%	88%	71%	88%[4]

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

[1]Screened on one occasion 22%; 46% screened twice; 32% screened on 3+ occasions.

[2]Only depression

[3]Since your baby was born, have you always or often felt down, depressed or hopeless

[4]Depression screening during prenatal care visit

Substance Use Disorder

Definition: Issues relating to a substance use disorder and its diagnosis and/or treatment; access to SUD treatment; or the stigma/discrimination associated with SUD. Aggregate data includes documentation of drug testing in the prenatal or intrapartum period and the prevalence of current or past history of substance misuse among FIMR mothers, including alcohol, illicit and prescription drugs.

FIMR Issues Summary by year of review*

	2022 (n=40 cases)	**2021** (n=60 cases)	**2020** (n=52 cases)	**2019** (n=58 cases)
Positive drug test	28%	18%	25%	14%
No drug test	10%	10%	15%	21%
Tobacco use: history	10%	7%	19%	12%
Tobacco use: current	25%	20%	19%	21%
Alcohol use: history	15%	10%	10%	7%
Alcohol use: current	8%	8%	4%	4%
Illicit drug use: history	13%	10%	12%	17%
Illicit drug use: current	20%	18%	19%	17%
Use of unprescribed meds	0%	5%	0%	4%
Over the counter/ prescription meds	90%	75%	77%	48%
In utero drug exposure[1]	18%	15%	27%	17%
NAS diagnosis[1]	0%	0%	0%	0%

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

[1]FIMR tracking database

Bereavement Support

Definition: Issues relating to providing a family with bereavement support in the prenatal, intrapartum and postpartum periods.

FIMR Issues Summary by year of review

	2022 (n=40 cases)	**2021** (n=60 cases)	**2020** (n=52 cases)	**2019** (n=58 cases)
Bereavement referral made	80%	63%	58%	60%
Lack of grief support	8%	0%	2%	7%

Patient-provider Communication

Definition: Issues relating to the (in)effective communication between providers and patients that creates a trusting, respectful experience of care.

FIMR Issues Summary by year of review

	2022 (n=40 cases)	**2021** (n=60 cases)	**2020** (n=52 cases)	**2019** (n=58 cases)
Language barriers	5%	12%	4%	12%
Beliefs re: pregnancy/health	8%	13%	4%	14%
Poor provider to patient communication	15%	18%	14%	7%
Client dissatisfaction	23%	13%	12%	9%

Shared Decision-Making

Definition: Issues relating to shared medical decision making and engaging the patient in her care, often based on providing the patient the information, time and space to voice her preferences.

Quality of Care

Definition: Issues relating to the quality of care as perceived by the patient or a provider's going above and beyond to care for a patient.

FIMR Issues Summary by year of review*

	2022 (n=40 cases)	**2021** (n=60 cases)	**2020** (n=52 cases)	**2019** (n=58 cases)
Obstetric care standard not met	8%	3%	2%	0%
Inadequate assessment	8%	3%	4%	0%
Multiple providers/sites	8%	8%	19%	33%
Pediatric care standard not met	3%	0%	0%	2%

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

Six FIMR mothers participated in a **maternal interview** and were asked if they felt they were treated differently of unfairly in getting services.

- Two mothers said no (one was Black non-Hispanic, and one was White Hispanic)
- Four mothers said yes based on the following reasons:
  - Two identified race as the reason for their being treated differently (one was White, and one was Black)
  - One identified citizenship status
  - One identified ability to pay
  - One identified culture and ethnicity (Hispanic) and
  - One identified her beliefs on abortion

Family Planning and Birth Spacing Education

Definition: Issues relating to the provision of family planning services; or education about family planning options in a timely manner and appropriate birth spacing education.

FIMR Issues Summary by year of review*

	2022 (n=40 cases)	2021 (n=60 cases)	2020 (n=52 cases)	2019 (n=58 cases)	PRAMS 2020
Pregnancy planning/ birth control education	70%	73%	79%	62%	
Intended pregnancy	43%	20%	25%	16%	50%[1]
Unintended pregnancy	25%	32%	17%	36%	
Unwanted pregnancy	0%	8%	4%	7%	
Pregnancy < 18 mo apart	23%	25%	14%	26%	

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

[1]Mother was trying to get pregnant

FIMR Tracking Issues by year of review

	2022	2021	2020	2019	PRAMS 2020
Counseled on birth spacing > 18 months	5%	2%	6%	7%	
Counseled on family planning postpartum	74%	71%	80%	69%	77%
Accepted family planning postpartum--any type	42%	47%	49%	58%	
Accepted LARC postpartum	8%	16%	8%	14%	

LARC = long-acting, reversible contraception

Family Support and Social Determinants of Health

Definition: Issues relating to a family's psychosocial risk, experiences of adverse events and the screening, diagnosis and referrals made to assess and ameliorate that risk. Aggregate data includes adverse family experiences tracked in FIMR cases over time, such as DFS involvement, incarceration and current or past history of abuse or violence. Services that could support families like evidence-based home visiting and doula support are included in this topic.

FIMR Issues Summary by year of review*

	2022 (n=40 cases)	2021 (n=60 cases)	2020 (n=52 cases)	2019 (n=58 cases)	PRAMS 2020
Lack of family support	10%	18%	15%	14%	
Lack of neighbors/ community support	0%	12%	2%	9%	
Lack of partner support	10%	22%	15%	9%	
Single parent[1]	18%	27%	64%	52%	
Frequent/recent moves	20%	25%	19%	7%	28%
Living in shelter/homeless	5%	2%	2%	0%	4%
Mother incarcerated	3%	7%	6%	9%	
Father incarcerated	10%	7%	14%	16%	
Multiple stresses	50%	55%	44%	55%	
Social chaos	13%	12%	17%	16%	
Concern about enough money	8%	18%	17%	19%	14%
Work/ employment problems	8%	10%	8%	9%	
Problems with family/ relatives	0%	5%	6%	10%	
Past intimate partner violence: Mom	8%	15%	25%	16%	
Current intimate partner violence: Mom	5%	10%	6%	2%	3%
CPS referrals	50%	32%	35%	31%	
Police reports	43%	17%	27%	21%	
Lack of Home Visiting (eligible)[2]	72%	67%	67%	77%	7%[3]
Inadequate/ unreliable transportation	3%	12%	2%	9%	

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

[1]Definition changed in 2021 to include child-bearing parent living alone without support of non-childbearing parent

[2]Only among women with Medicaid insurance

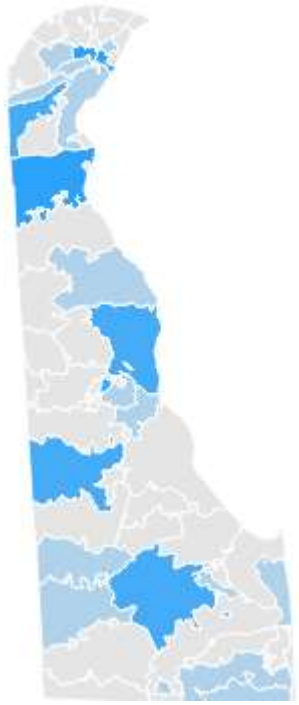
[3]Mother saw a home visitor during the prenatal period

FIMR Tracking Database by year of review

	2022	2021	2020	2019	PRAMS 2020
Family adverse experiences					
Active with Division of Family Services (DFS)	5%	7%	8%	2%	
Any DFS history	52%	50%	54%	36%	
Criminal history: mother	25%	25%	15%	33%	
Criminal history: father	43%	39%	40%	41%	
Intimate partner violence screening documented	90%[1]	90%	65%	76%	87%[2]
Intimate partner violence	5%	10%	6%	15%	

[1]63% screened only on one occasion.

[2]Intimate partner violence screen during a prenatal care visit

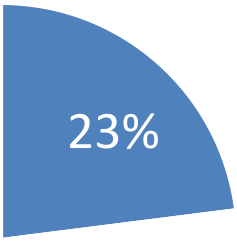


Heat map of 2022 FIMR cases by maternal residence

A darker color corresponds to more FIMR cases, with the range being 0-4 cases per zip code.

Covid

Definition: Issues and data relating to the direct or indirect impact of Covid infection; or the pandemic response that may have resulted in disruptions in care, stress or hardship to a family and that may have impacted their healthcare.



From the NFIMR database Covid section:

- 23% of FIMR mothers contracted Covid infection right before or during pregnancy.
- In one case, the FIMR CRT thought that Covid infection indirectly contributed to the fetal death.
- Vaccination status was known for 22 of the 39 FIMR mothers. Of this group, 55% (n=12) were fully or partially vaccinated.
- 23% of cases reviewed had a known, major disruption in services such as childcare, mental health/SUD care or employment.

Fetal Kick Counts (FKC)

Definition: Issues relating to the effective and timely provision of education on fetal movement tracking.

FIMR Tracking Database	2022	2021	2020	2019	PRAMS 2020
FKC education after 23 weeks gestation	65%	56%	67%	72%	87%[1]

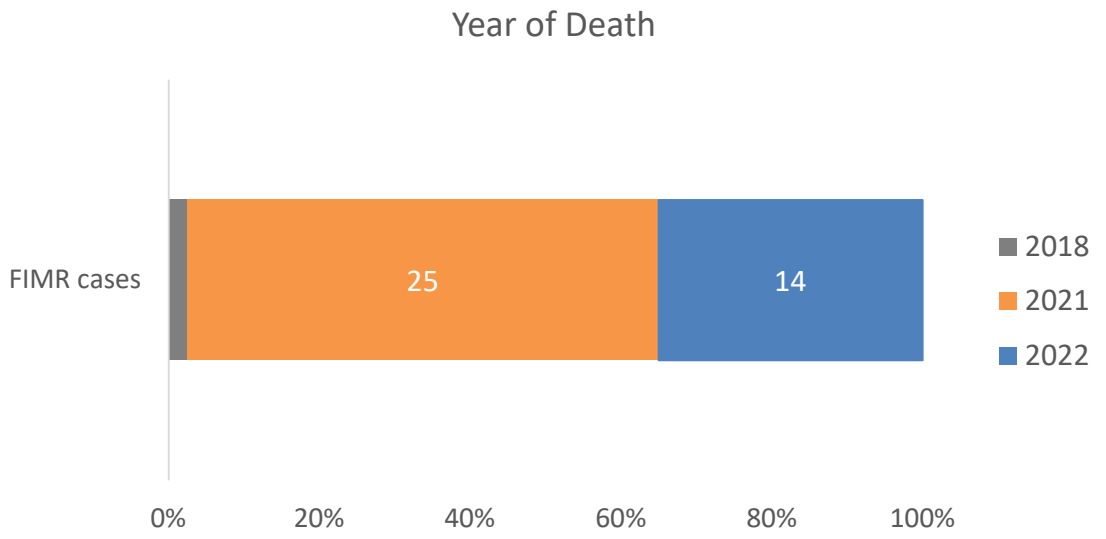
[1]At any time during prenatal care

FIMR Process

Definition: Issues that affect the timely and thorough review of FIMR cases such as case identification, medical record retrieval, data collection and effective case deliberation. This topic includes process measures to track timely case work up and review.

	2022	2021	2020	2019
Number of cases reviewed	40	60	52	58
Average time to referral (days)	45	45	56	31
Maternal interview acceptance rate	15%	13%	15%	12%
Average time to review (months)	5.5[1]	8.2	6.7	5.1

[1]Does not include one outlier case (MMR) that was delayed pending prosecution and dates from 2018



Maternal Mortality Review

Overview of 2022 Cases

- N=11 cases reviewed
- Year of death ranging from 2018 – 2022
- Family interviews available for 2 cases (18%).

Maternal demographic	MMR 2022 (n=11)	DE live births 2020 (n=10,352)[5]
Race/ethnicity		
White non-Hispanic	36%	47%
Black non-Hispanic	45%	28%
Hispanic	18%	18%
Maternal Age		
< 20	0	4%
20-24	0	17%
25-29	0	29%
30-34	64%	30%
35+	36%	19%
County		
New Castle	91%	59%
Kent	0	21%
Sussex	9%	21%
Insurance		
Private	27%	53%
Medicaid	55%	41%
Self-pay	9%	2%
Unknown	9%	1%

Timing of Death

- Pregnant: n=4 (36%)
- Postpartum < 42 days: n=2 (18%)
- Late postpartum 43-365 days: n=5 (45%)

Checkbox Factors Contributing to Death

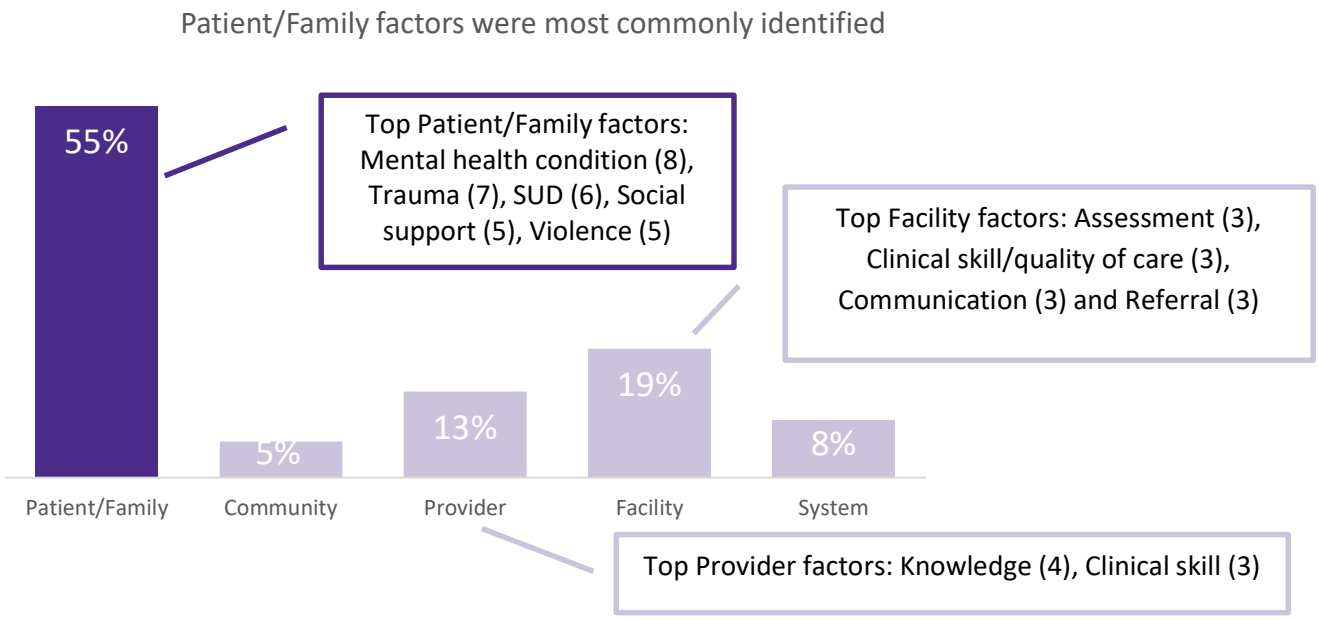
Checkbox Factor(s)	Yes/Probably	No	Unknown
Substance Use Disorder (SUD *AND* Serious Mental Illness (SMI)	7	4	0
SMI only	1	3	0
Obesity	1	9	1
Discrimination	0	6	5

[5] Delaware Department of Health and Social Services, Division of Public Health, Delaware Health Statistics Center. Delaware Vital Statistics Annual Report 2020.

Contributing Factors

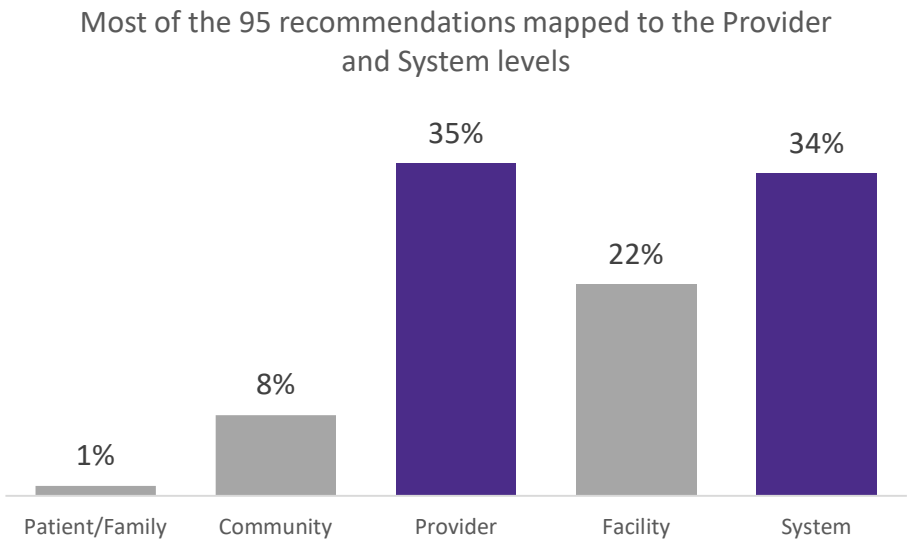
Ninety-five contributing factors were identified in the 11 cases (average 9 factors per case)

- 21 were not preventable factors and would not have altered the outcome of the case



Recommendations

For the first time since receiving the CDC MMR grant, Delaware MMR was able to document a recommendation for each contributing factor identified, for a total of 95 recommendations. This brought Delaware in compliance with the CDC MMR grant guidance.



Bin	Recommendation	# of cases	Rec_Level	Notes
Acute/chronic disease (4)	Adequate clinical specialty services, including cardiology , should always be available throughout the state.	2	System	
	Specialists who are caring for patients with clinical issues should always verify that the patients have access to the medication prescribed and provide referrals for help if patient expresses concerns.	1	Provider	
	Care providers should always refer patients whose care is interrupted by hypertension to appropriate care providers for management.	1	Provider	
Community (15)	Communities should communicate services available to individuals experiencing interpersonal violence. More emergency funds should be available to victims of IPV to use to enact a safety plan. More grief counseling and trauma therapy resources need to be made available to victims of IPV to process the consequences of experiencing traumatic events.	2	Community	

	Community Victims Services and counseling services should be prioritized for children who have witness or be part of a violent event. More grief counseling and trauma therapy resources need to be made available to victims of IPV to process the consequences of experiencing traumatic events.	2	System	
	DSAMH is analyzing overdose death data to target outreach and service expansion in "hot zones", including for pregnant and postpartum women.	1	Community	
	Communities and law enforcement should collaborate to provide safe environment and reduce the need for guns in the community for self-protection.	1	Community	
	Facilities should provide walk in and urgent care facilities in under-served areas to reduce use of Emergency Departments for non-emergent problems. State agencies could increase funding or incentives to encourage facilities such as urgent care clinics to open in under-served areas. It seems that a facility would open a new location only if there is a business case/ incentive to do so.	1	Facility	
	Fatality Review teams should always have access to allocution statements, when available to facilitate determination of prevention and pregnancy relatedness.	1	System	
	Community systems should support family members attempting to extract themselves from violent circumstances through grants and counseling programs. More emergency funds should be available to victims of IPV to use to enact a safety plan.	1	System	
	Law enforcement should partner with community organizations to support violence prevention efforts that focus on high-risk groups.	1	System	
	Communities need to always provide stability in facilities for the homeless which can create stabilization in their lives.	1	Community	Housing
	Communities need to always provide better facilities in homeless residences to be able to cook and have access to healthy foods.	1	Community	Housing

	Families need to be aware that they can call a psychiatric crisis center if immediate concern no matter where they live in DE.	1	Patient/Family	Mental health
	Mental health and SUD services should be available to all residents. Crisis intervention services should be made available to the community to report concerning behavior and mental health concerns. Adequate resources should be made available to fully staff and support the implementation of the 988 call line in DE, including adequate public education to make people aware of the call line's purpose and function.	1	System	Mental health
	Bridge Clinics are a resource if help is needed in placing a person in SUD program. In some areas, there is a community outreach program (SOS) if person initially declines care.	1	System	Mental health
Continuity/ Coordination of care (19)	Peer educator and patient navigator may have helped mother build on her resilience/ empowerment, and she was making some changes to improve her life.	4	System	
	Providers and hospitals should use different opportunities to coordinate and communicate care wherever a patient accesses care, including review of prescription monitoring system.	2	Provider	
	Always consider use of care coordinators and/or community health care workers to follow up with postpartum women who have had minimal to no prenatal care. Service include helping her to make or making a postpartum appointment for her.	1	Facility	
	Facilities should always provide notification to primary care and other current care providers, including obstetrics when an individual obtains emergency department care.	1	Facility	
	EDs should request or look for information regarding MOUD providers, e.g., DHIN, and notify the provider when patients experience an overdose.	1	Facility	
	Facilities should offer to assist patients in obtaining Medicaid when there is a known history of not being able to obtain care due to the lack of coverage.	1	Facility	
	Facilities should offer to assist patients in scheduling care when there is a known history of not having care.	1	Facility	
	OB providers should work in conjunction with a woman's primary provider during pregnancy and in the postpartum period to optimally manage chronic conditions that impact her long-term health and well-being.	1	Provider	

	Specialists who are caring for patients without a medical home should always make referrals and educate patients on importance of having that coordination and continuity of care.	1	Provider	
	Care providers should coordinate with insurance and provide timely evidence of need for prescribed med at an affordable cost.	1	Provider	
	Mothers without prenatal care may benefit from a referral to a community health worker for follow up and engagement.	1	System	
	EDs offer/should provide case management/social work consult for referral to substance use treatment.	1	System	
	EDs treating a patient for overdose should communicate overdose events to the patient's PCP or OB for follow up counseling and care.	1	System	
	Care coordinators may improve opportunities to try different and non-addicting medications to manage chronic illness, care coordination but accessing multiple different facilities for same issue.	1	System	
	Patients with medical and/or social risk factors should be offered care coordination or navigation services to help ensure they can efficiently access needed services in the appropriate time and place.	1	System	
Knowledge provider/facility (12)	Providers may benefit from education on motivational interviewing and patient engagement strategies to help foster a better relationship and openness to patient choice. Nurses and doctors may be pivotal in opening the door to care in the small window of opportunity during a delivery stay.	2	Provider	
	L&D staff should be regularly trained on responding to OB emergencies in a coordinated team approach.	1	Facility	
	OB providers should maintain skills in advanced fetal monitoring, for example as provided by the AWHONN or other professional continuing education courses.	1	Provider	
	Educate staff MD/RN on an ongoing basis regarding how to engage/connect with clients. Reinforce importance of engagement as part of clinical role.	1	Provider	
	Providers should disseminate information on psychiatric crisis lines and Bridge Clinic as immediate resources.	1	Provider	
	Provider training is needed in psychopharmacology for PP mood and anxiety disorders, e.g. through Postpartum Support International.	1	Provider	

	Providers should direct discussions regarding taper to self-recovery of recent challenges including obtaining recommended counseling before considering MOUD taper.	1	Provider	
	Providers need to be educated regarding the standards of practice for MOUD in pregnant & postpartum people.	1	Provider	
	DSAMH should educate providers who care for women during pregnancy or in the postpartum period on the options for care coordination and case management in the behavioral health system of care such as DSAMH's ACT program.	1	System	
	DSAMH and professional organizations will offer ongoing trainings for providers, who care for women during pregnancy or in the postpartum period, on SUD to enhance empathy and true understanding of the condition as a treatable, chronic brain disease and thereby decreasing tolerance for discriminatory actions against patients suffering from the condition.	1	System	
	DSAMH should offer resources to healthcare providers describing available mental health supports during pregnancy and postpartum women, specifically addressing concerns about social isolation and telemedicine therapies.	1	System	
Mental Health and SUD (15)	Trauma Informed Care is needed in the settings in which the mother came in contact: ED, Obstetrics, DFS, SUD providers.	2	Facility	
	A comprehensive obstetric history includes a mental health screen. The obstetric provider will document a plan of care for a positive screen during pregnancy or in the postpartum period.	2	Provider	
	Healthcare providers should refer patients with untreated SUD, known ACEs and/or trauma to follow up community mental health or peer support services. Each encounter is an opportunity to screen and refer.	2	Provider	
	Mental health and SUD services should be available to all residents.	2	System	
	Consider having a behavioral health consultant in outpatient clinic or immediately available to clinic staff so provider could get input right away.	1	Facility	

	Providers should maintain a sensitivity to trauma informed care throughout prenatal and postpartum care and work to establish trust and rapport with a patient.	1	Provider	
	Care providers should always offer a supportive non-threatening environment to encourage truthful disclosure of important health information.	1	Provider	
	Providers and patients should call psych crisis together and make immediate alternative plan if services not available.	1	Provider	
	DSCYF will work to retrain and rebrand the Plan of Safe Care in the postpartum period as a voluntary care plan encompassing the whole family with a central focus on the woman and her needs as a person and not just a mother.	1	System	
	DSAMH will work to strengthen collaboration between mobile crisis teams and law enforcement to coordinate outreach and response to high-risk persons, especially during pregnancy and in the postpartum period.	1	System	
	Providers should counsel patients on the importance of adequate treatment of their mood/anxiety disorders throughout the perinatal period as maternal mental health is a key component of overall health including infant health.	1	System	
Patient-centered/ Respectful care (3)	Willingness to obtain necessary emergency mental health services should not hold stigma so services can be sought. Emergency warning signs and crisis lines for behavioral health issues should be widely shared.	1	Community	
	Social support screening should occur for birthing persons. When needed, a PP doula could offer support and this service may be covered through insurance.	1	Facility	
	Providers should have a consistent process for guiding patients who report concerns in their care and treatment and direct patients who express concerns of traumatic birth.	1	Provider	
Policy/procedure -	Facilities need to establish alternative systems to perform confidential screening for interpersonal violence in every case when client is initially not alone.	2	Facility	
	Team training for OBERT should include designating a recorder to document key events, patient vital signs and response to interventions.	1	Facility	

	Facilities should have in place debrief and emotional support protocols for staff that have participated in a traumatizing event in order to process their emotions and grief.	1	Facility	
	Facilities should analyze their physical space (i.e. distance between L&D and OR), staff resources and use of standardized checklists to optimize patient care during crisis event.	1	Facility	
	Hospitals should make reports to law enforcement and document that a report was made in every case when treating a victim of a gunshot wound.	1	Facility	
	Facilities should provide/document resources and supports to persons reporting sexual assaults.	1	Facility	
	Narcan should be offered to all patients who present to medical facilities with overdoses that could be opioid related.	1	Facility	
	Providers should document a plan for any abnormal vital sign recorded during a clinical encounter in pregnancy or in the postpartum period.	1	Provider	
	Providers should educate patient and family on potential side effects of new medications including PP psychosis when starting a new antidepressant. This should include possibility of exacerbating symptoms if pt is bipolar but undiagnosed as such.	1	Provider	
	The choice of MOUD during pregnancy and in the postpartum period should be primarily one of clinical need and patient preference. SUD programs and Medicaid should remove any barriers that limit patient autonomy on how and when they want to receive buprenorphine, a MOUD intended for outpatient prescription dispensing.	1	System	
	Hospital systems and payors should advocate for EHR development that communicates/imports fetal monitoring data.	1	System	
	ME's office should perform autopsies on all pregnant/postpartum women where cause of death is unclear. While an autopsy may not have confirmed an amniotic fluid embolism, autopsy may have excluded other diagnoses.	1	System	
	Ensure that persons of all income have access to internet and telehealth services by phone or computer. Verify access before hospital discharge or at the end of a visit before scheduling telehealth visit.	1	System	

	Facility, Community and System level responses should be available and initiated when a pregnant patient reports that the FOB is perpetrator of IPV. Providers should be trained and feel confident to follow up on a positive screen for IPV by assessing a patient's safety and initiating further referrals as needed.	1	System	
Social determinants of health including screenings for IPV, SUD (12)	Providers should screen for social determinants of health including interpersonal violence, at the first prenatal visit and at regular intervals in the perinatal period (through postpartum) to identify women in need of support and referrals. Findings suggestive of interpersonal violence in a thorough physical exam should also trigger referrals. Questions should be asked in a respectful way to build trust and ensure patient privacy.	4	Provider	
	Providers should conduct standardized screening for SUD during pregnancy and in the postpartum period, followed up with SBIRT for any positive responses. The focus of any counseling or intervention should center on the woman, her needs and care for her well-being.	2	Provider	
	Hospitals should screen women for social risk factors as well as medical home. Patients who are at high risk could be given high priority for case management services while admitted to help engage the patient and identify her most pressing needs and opportunities to help.	1	Facility	
	Screening for domestic violence should occur at every encounter in health care.	1	Facility	
	Providers should always query patients about sexual abuse and ACES using a trauma-informed approach.	1	Provider	
	At every interaction with the health care system, patients should be screened for substance use disorders and offered support and intervention if substance use disorders identified.	1	System	
	At every interaction with the health care system, patients should be screened for mental health issues and offered support and intervention if mental health issues identified.	1	System	
	At every interaction with the health care system, patients should be screened for ACES and offered support and intervention if ACES identified.	1	System	