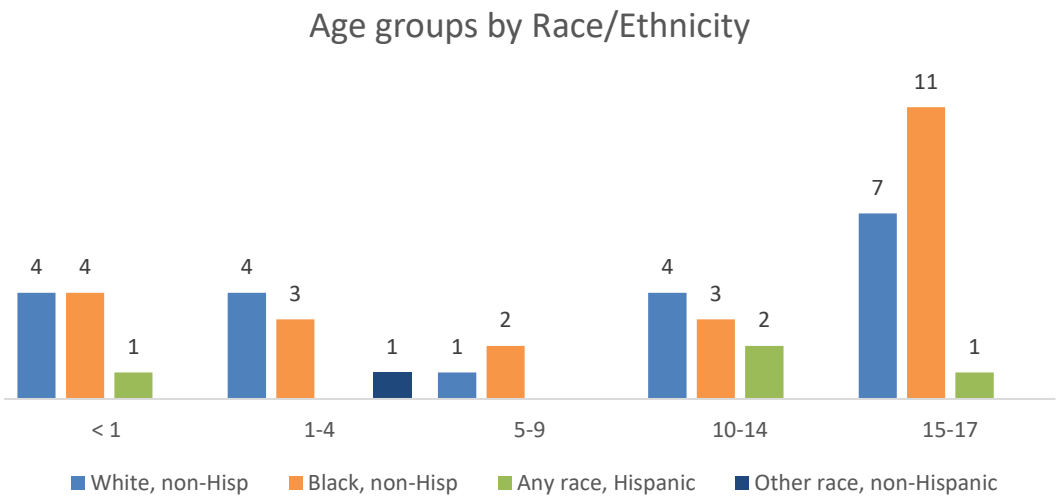
Child Death Review Commission 2021 Data Addendum

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

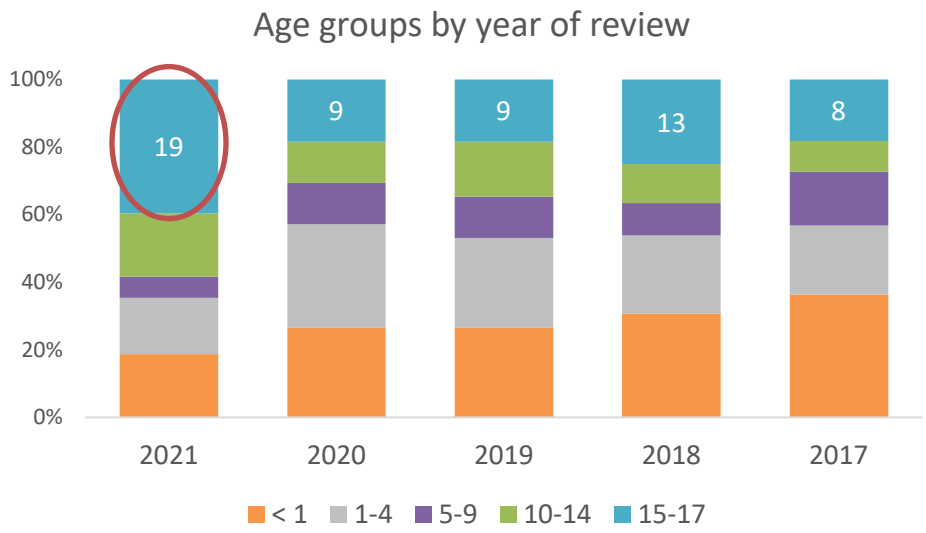
Quick Statistics:

- 48 cases reviewed in 2021—CDR 33 cases, SDY 15 cases
- 9 infant cases reviewed
- 9 unsafe sleep deaths reviewed
- 4 cases were reviewed jointly with the Child Abuse and Neglect (CAN) panel
- 17 children (35%) had chronic health conditions
- New Castle residents made up 63%, Kent 17%, and Sussex 21% 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 (50%, n=24) and females (50%, n=24)

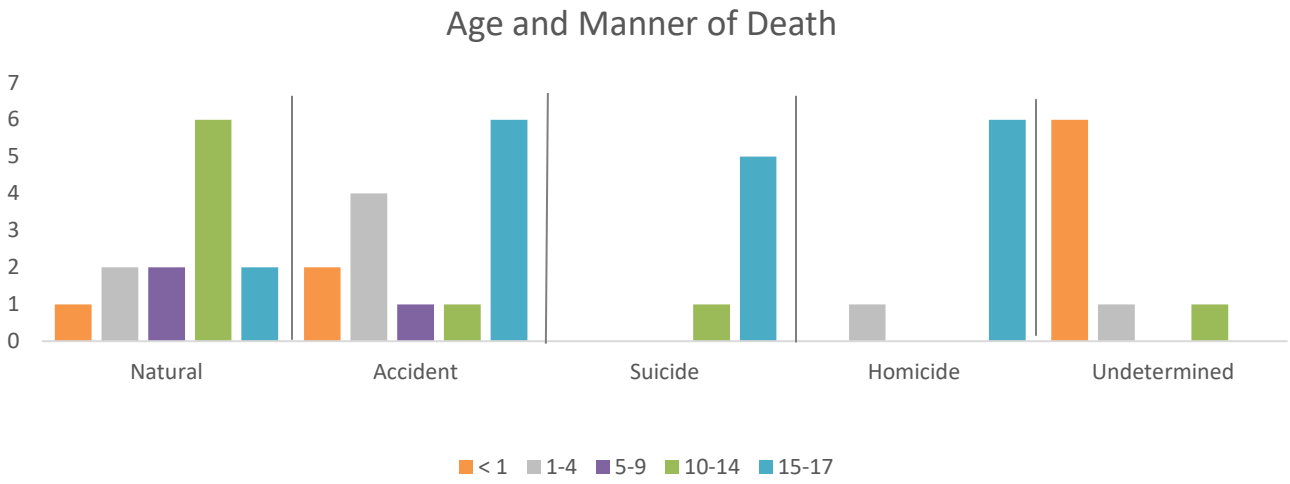


[1] US Census Bureau. Delaware: 2020 Census. Available at: https://www.census.gov/library/stories/state-by-state/delaware-population-change-between-census-decade.html. Accessed on Feb 11, 2022.

[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.



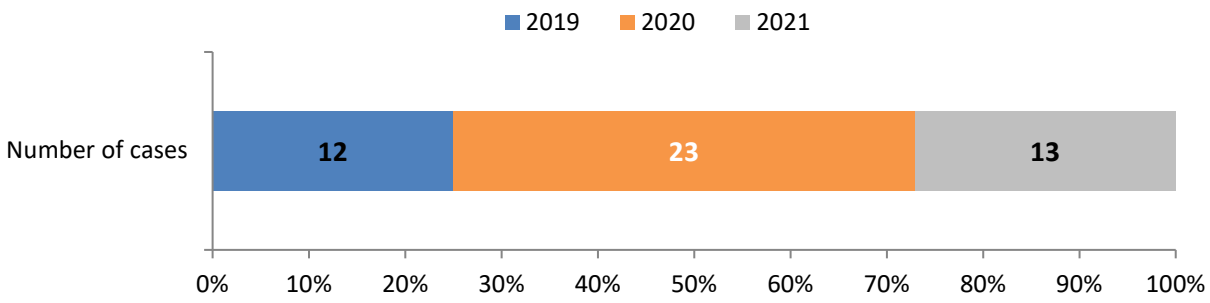
In 2021, 40% of cases reviewed were adolescents aged 15-17 years.
This is twice the proportion (20%) seen on average in the four prior years of review.



Impact of COVID

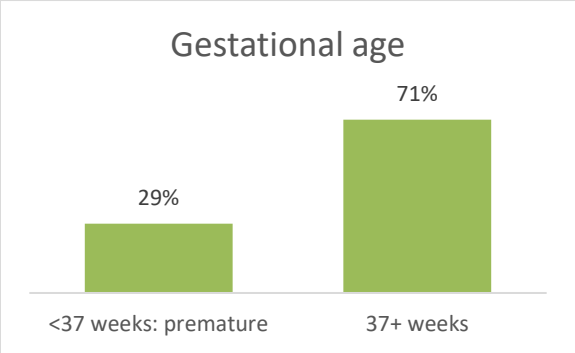
- Twenty-nine deaths (60%) occurred after the onset of Covid restrictions/lockdowns
  - Of these, 20 deaths occurred when there was a Covid stay at home order in effect at the time of death
- Two natural deaths were directly due to Covid, and both children had chronic medical conditions
- Nine deaths were indirectly impacted by Covid, including:
  - All six suicides
  - Two accidental deaths
  - One homicide
- In 15 cases (52%), children experienced significant disruptions in school services. These cases primarily involved older adolescents 16 and 17 years old (n=11 cases).

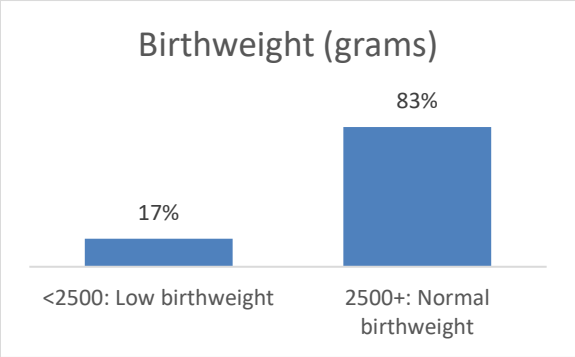
Year of Death



CDR/SDY Infant Deaths

Birthweight & Gestational Age: 2021 Infant Cases (n=9)





Infant Cases: Tracking Issues by Year of Review

	2021 (n=9)	2020 (n=13)	2019 (n=13)	2018 (n=16)
Intrauterine tobacco exposure[1]	44%	15%	62%	31%
Intrauterine alcohol exposure[1]	0%	0%	0%	6%
Intrauterine drug exposure	29%	36%	38%	38%
Late or no prenatal care[2]	11%	8%	15%	25%
Insurance coverage for infant	*			
Medicaid	83%	69%	92%	63%
Private	17%	23%	0%	19%
None	0%	0%	8%	6%
No infant safe sleep education documented	0%	15%	17%	6%
Drug screen done on mother	83%	91%	100%	87%
Neonatal Opioid Withdrawal Syndrome (NOWS) scoring	11%	8%	29%	13%
Substance exposed infants with DFS notification	100% (1 out of 1)	75%	75%	25%
Home visiting referral made	22%	42%	46%	50%
Home visiting enrollment	22% (2 out of 2)	15% (2 out of 5)	0%	19%

No depression screen at birth[3]	NR

[1]From NCFRP standardized report
[2]Late prenatal care is defined as >6 months into pregnancy
[3]More than 50% of cases unknown
NR=not reported
*Insurance status unknown for 3 infants

	2021 (n=9)	2020 (n=13)	2019 (n=13)	2018 (n=16)
Caregiver at time of death				
Parent	78%	77%	85%	87%
Other	22%	23%	15%	13%
Substance use at time of death	22%[1]	33%	67%[2]	31%

[1]Two cases of marijuana use only
[2]includes two cases with buprenorphine use: one prescribed, one diverted use

CDR/SDY Specific Causes of Death

Infant unsafe sleep-related deaths, associated risk factors, by year of review

	2021 (n=8)	2020 (n=10)	2019 (n=12)	2018 (n=12)	PRAMS 2019[1]
Not in a crib, bassinette, side sleeper or baby box	75%	80%	100%	100%	9%[2]
Not sleeping on back	50%	40%	50%	75%	22%
Unsafe bedding or toys near infant	88%	70%	92%	100%	9%[3]
Sleeping with other people	50%	40%	75%	67%	24%[4]
Intrauterine drug exposure	17%	30%	42%	33%	--
Tobacco use: mother	38%	25%	67%	58%	19%
Adult was alcohol or drug-impaired	13%	33%	67%	25%	--
Infant ever breastfed	63%	90%	45%	50%	85%
Mother fell asleep while breastfeeding	0%	0%	0%	8%	--

[1]DPH. Delaware Pregnancy Risk Assessment Monitoring System (PRAMS) 2019 Analysis. Available at: https://www.dhss.delaware.gov/dhss/dph/hp/files/PRAMS2019.pdf. Accessed Feb 11, 2022.
[2]Not usually in a 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 a crib or bed

CDR/SDY Tracking Issues

Adverse Family Experiences, by year of review[1]

	2021 Total (n=48)	2021 Infants (n=9)	2020 Total (n=49)	2020 Infants (n=13)	2019 Total (n=49)	2019 Infants (n=13)
DFS notified of death[2]	69%	100%		100%	52%	100%
DFS rejected MDT response that should have been accepted, 0-3 year olds	13%	11%		11%	18%	8%
Active with DFS at time of death	15%	22%	8%	23%	13%	31%
Active with DFS within 12 months of death	23%	50%	27%	23%	23%	46%
DFS history: parents as adults	64%	88%	63%	46%	52%	62%
DFS history: parents as children	28%	38%	35%	38%	40%	62%
Single/divorced/separated parents		44%	33%	23%	31%	46%
Maternal substance abuse[3]	29%	63%	30%	45%	46%	77%
Paternal substance abuse[3]	33%	60%	28%	50%	59%	89%
Maternal criminal history	36%	67%	33%	23%	36%	38%
Paternal criminal history	46%	*	45%	50%	58%	67%
Maternal mental health issue[3]	*	40%	*	*	58%	60%
Paternal mental health issue[3]	*	*	*	*	38%	40%
Maternal intimate partner violence[3]	50%	57%	33%	33%	33%	64%
Paternal intimate partner violence[3]	41%	40%	37%	33%	31%	57%
Maternal history of abuse	13%	13%	13%	8%	7%	18%
Paternal history of abuse	8%	20%	4%	9%	10%	20%
Maternal history of neglect	15%	25%	19%	15%	19%	42%
Paternal history of neglect	8%	40%	11%	9%	19%	25%

*More than 50% of values are 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

Other Tracking Issues, by year of review

	2021 (n=48)	2020 (n=49)	2019 (n=49)	2018 (n=52)
Hospice involved	NR	6%	NR	17%
Teen parent	4%[1]	4%	2%	4%
Crying impetus for death	9%[2]			

[1]the child involved
[2]restricted to age < 3 years old

Infant Tracking Issues, by year of review

	2021 (n=9)	2020 (n=13)	2019 (n=13)	2018 (n=16)
No SUIDI reporting form[1]	0%	18%	8%	0%
No scene investigation[1]	11%	15%	0%	0%
No scene photos[1]	11%	8%	0%	0%
No doll re-enactment[1]	22%	25%	8%	38%
Toxicology screen of alleged perpetrator	67%			
Depression screen at birth	*			
IPV screen at birth	*			

*More than 50% of values are unknown, so not reported
[1]denominator is infant deaths due to unsafe sleeping or undetermined manner
NR=not recorded

Fetal and Infant Mortality Review

FIMR Process and 2021 Highlights

- In 2021 the odd/even date of death triage system was reinstated to randomly select a subset of fetal and infant death cases for full FIMR review
- All mothers who had a fetal or infant loss were invited to participate in a maternal interview. If the mother accepted, her case was automatically triaged for a full FIMR review, superseding the date of death criteria.
- Three mothers had a history of previous fetal or infant loss.
- One case of an infant death also involved a maternal death and was reviewed by the MMR Committee.
- Eight mothers accepted a maternal interview: six Black/non-Hispanic mothers and two Hispanic mothers.
- In 2021, the CDRC procured access to telephonic interpretation to enhance our ability to offer maternal interviews to non-English-speaking mothers.
- This was the first year of consistently documenting Findings & Strengths using the National FIMR database

40 cases (68%) had at least one finding

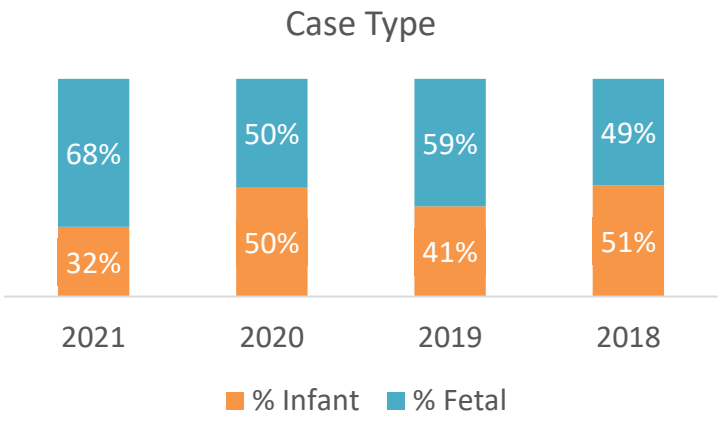
23 cases (39%) had at least one identified strength

Category	Number of Findings (n=92)	Number of Strengths (N=30)
Family support	32	14
Continuity of care	16	6
Behavioral health	10	4
Covid	8	2
Maternal health	6	0
Infant health	6	1
Family planning	3	0
Family social risk	3	1
Fetal kick counts	1	2
FIMR process	7	0

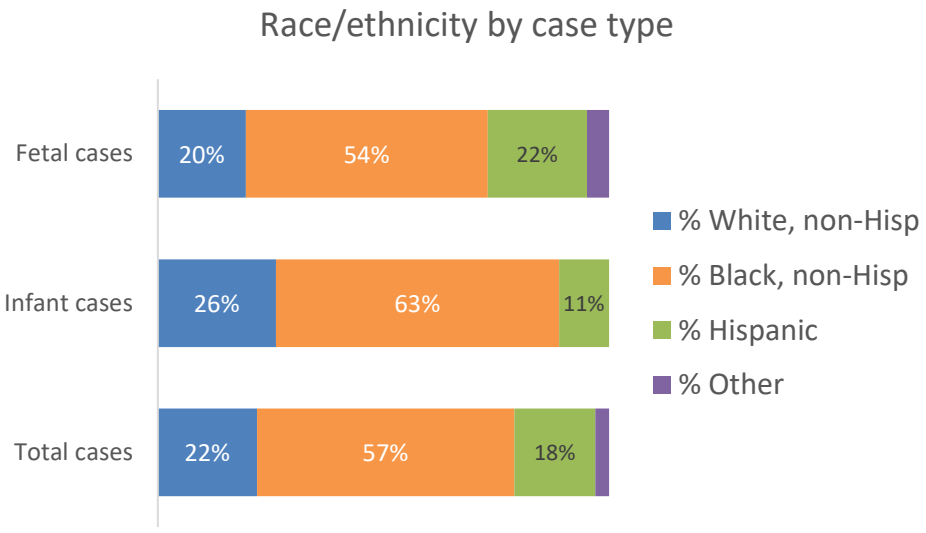
Overview of FIMR Cases

Quick Statistics

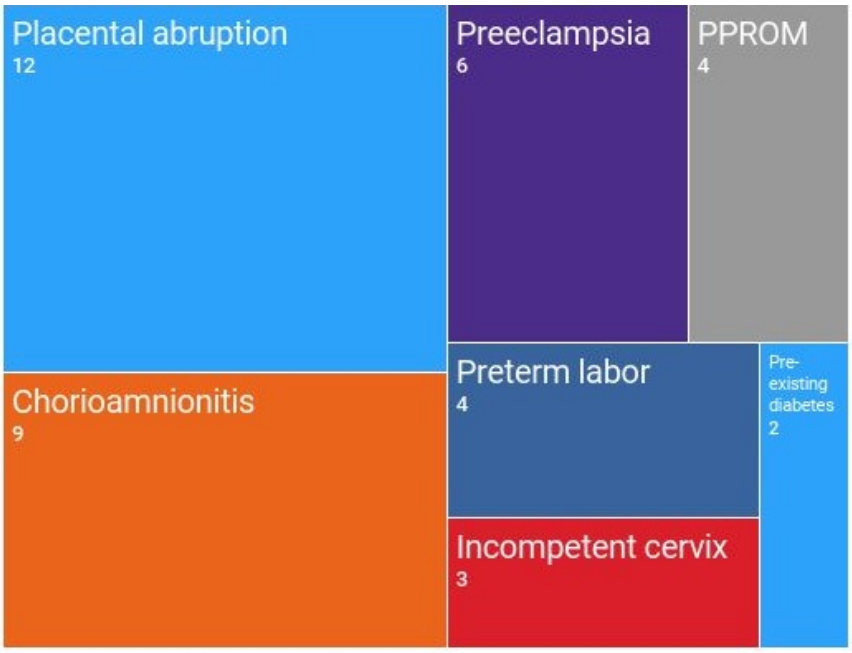
- 60 cases were reviewed in 2021: 41 (68%) fetal deaths and 19 (32%) infant deaths.
- 2021 saw a higher proportion of cases being fetal deaths.
    - Delaware Vital Statistics is only available through 2019, and at that point, the number of fetal deaths was 57 in the state, comparable to the prior two years.
    - However, based on the number of referrals the CDRC received, it appears that 2021 saw a drop in infant referrals more so than in fetal referrals. The average number of fetal referrals did not increase compared to pre-pandemic levels (2019).



- Black infants made up the majority of infant and fetal death cases reviewed.



Underlying Cause of Death



Contributing factors identified in fetal death cases

Underlying cause of death in infant cases

Among infant cases:

- 68% (n=13) were delivered at a Level 3 hospital
- Three infants were delivered at a Level 2 hospital
- One infant was delivered at home, and one infant out of state

Age at infant death:

- Five infants died within a few hours of birth
- Five infants died 1-7 days of life.
- Eight infants (44%) died in the postneonatal period (28+ days of life).

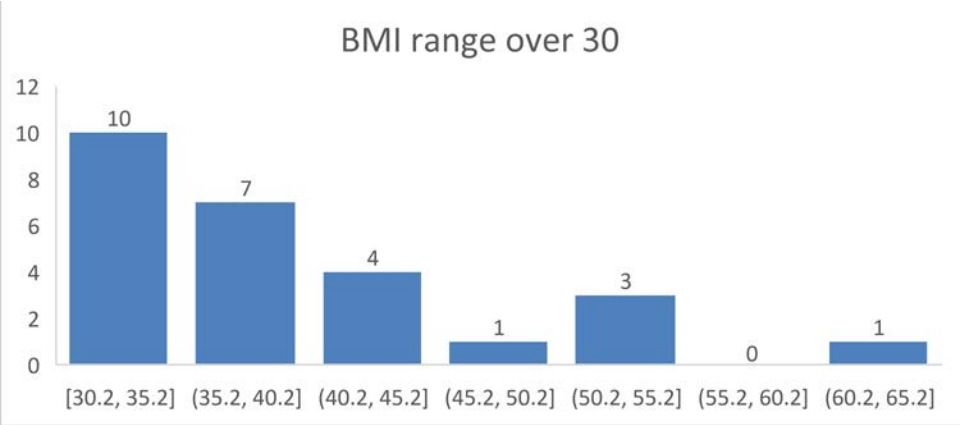
Maternal Health

FIMR Issues Summary by year of review*

Medical: Mother	2021 (n=60 cases)	2020 (n=52 cases)	2019 (n=58 cases)	2018 (n=45 cases)
Pregnancy > 35 yrs	20%	23%	14%	18%
Cord problem	10%	15%	19%	7%
Placental abruption	30%	13%	19%	18%
Chorioamnionitis-Present	20%	27%	12%	9%
Chorioamnionitis-Contributing	23%			
Pre-existing diabetes	5%	6%	16%	2%
Gestational diabetes	8%	6%	5%	4%
Incompetent cervix	12%	23%	12%	4%
Infection: bacterial vaginosis	5%	10%	16%	13%
Sexually transmitted infection	15%	17%	16%	7%
Other infection	17%	23%	26%	36%
Multiple gestation	7%	8%	10%	11%
Mother's weight BMI[1]	62%	62%	48%	40%
Insufficient/ excess weight gain	12%	6%	12%	7%
Poor nutrition	2%	6%	12%	4%
Pre-existing hypertension	22%	15%	16%	7%
Preeclampsia	25%	8%	17%	13%
Eclampsia	0%	0%	0%	2%
Preterm labor	17%	27%	12%	29%
PPROM (prolonged premature rupture of membranes)	13%	10%	16%	22%
Pre-existing dental issues	5%	8%	2%	7%
Oligo-/polyhydramnios	33%	15%	22%	11%
Previous miscarriages	23%	31%	31%	27%
Previous fetal loss	5%	6%	7%	2%
Previous infant loss	2%	2%	7%	4%
Previous low birthweight delivery	3%	4%	16%	2%
Previous preterm delivery	13%	8%	22%	16%
Previous C-section	23%	19%	22%	20%
Previous ectopic pregnancy	0%	0%	5%	4%
First pregnancy < 18 yrs old	10%	10%	16%	24%
>4 live births	5%	4%	9%	7%
Assisted reproductive technology	7%	6%	2%	7%
Standard of care not met	3%	2%	0%	0%
Inadequate assessment	3%	4%	0%	2%

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

[1]BMI ranged from 18.5-61.5 among FIMR mothers. Among the 26 women who were obese, nine met the criteria for class III obesity with BMI > 40



FIMR Tracking Database by year of review

	2021	2020	2019	2018
Tracking issues				
Antenatal steroids used when appropriate[1]	60%	63%	60%	64%
17-progesterone offered when appropriate	33%[2]	48%	58%	33%
Low-dose aspirin counseling, when appropriate	78%[3]	59%	NR	NR

[1]Infant cases only

[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

- 6 FIMR cases involved **severe maternal morbidity** based on the transfusion of at least 2 units of PRBCs (5 cases, some had underlying anemia, not just obstetric hemorrhage) and ICU admission (1 case).
- One case was also a pregnancy-related death reviewed by the MMR Committee.

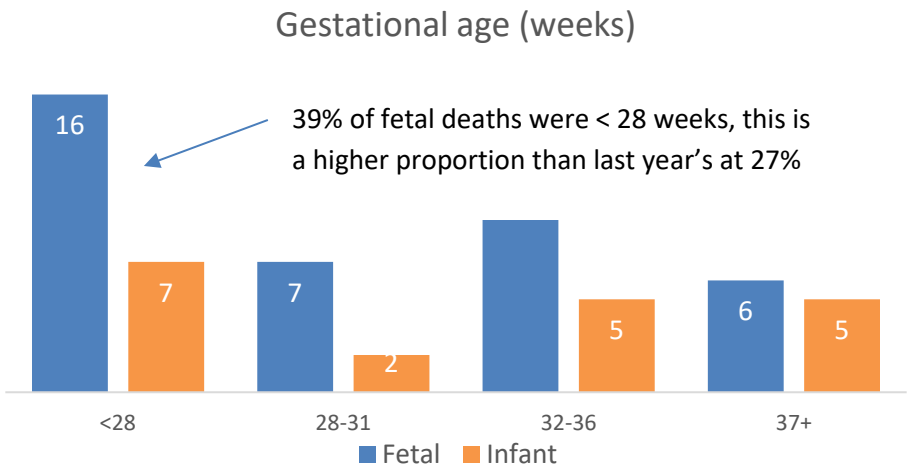
Infant Health

FIMR Issues Summary by year of review*

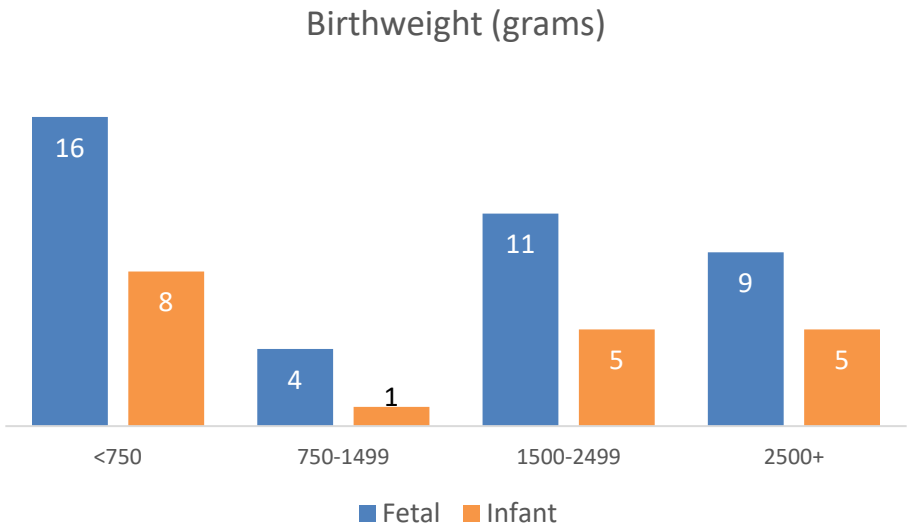
	2021 (n=60 cases)	2020 (n=52 cases)	2019 (n=58 cases)	2018 (n=45 cases)
Non-viable fetus	5% (infant)	50%	59%	42%
Low birthweight (<2500 grams)	27%	4%	4%	11%
Very low birthweight (<1500 grams)	10%	4%	9%	4%
Extremely low birthweight (<750 grams)	40%	35%	12%	33%
Intrauterine growth restriction	15%	15%	24%	18%
Congenital anomaly	23%	19%	21%	22%
Prematurity	20%	40%	23%	44%
Infection/ sepsis	12%	6%	9%	16%
Failure to thrive	0%	2%	4%	0%
Birth injury	2%	2%	0%	0%
Feeding problem	3%	4%	7%	7%
Respiratory Distress Syndrome	18%	19%	12%	29%
Developmental delay	0%	4%	0%	2%

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

- Among infant cases, prematurity and congenital anomaly were the most common contributing factor, each identified in 42% of cases (n=8/19).
- Congenital anomaly was a contributing factor in 7% of cases among fetal cases (n=3/41).



Average infant GA = 31 weeks
Average fetal GA = 30 weeks



Average infant BW = 1603 g
Average fetal BW = 1538 g

Continuity of Care

FIMR Issues Summary by year of review*

	2021 (n=60 cases)	**2020** (n=52 cases)	**2019** (n=58 cases)	**2018** (n=45 cases)
Preconception care	13%	12%	5%	13%
Postpartum visit kept	61%	65%	62%	60%
No prenatal care	10%	6%	5%	11%
Late entry to prenatal care	37%	17%	22%	11%
Lack of referrals	5%	4%	4%	0%

Missed appointments	27%	12%	22%	24%
Multiple providers / sites	8%	19%	33%	33%
Lack of dental assessment	2%	0%	0%	4%
Lack of dental care	8%	4%	0%	0%
Inappropriate use of ED	0%	4%	0%	4%
Poor provider to provider communication	7%	6%	5%	0%

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

Family Planning

FIMR Issues Summary by year of review*

	2021 (n=60 cases)	2020 (n=52 cases)	2019 (n=58 cases)	2018 (n=45 cases)
Pregnancy planning/ birth control education	73%	79%	62%	27%
Intended pregnancy	20%	25%	16%	31%
Unintended pregnancy	32%	17%	36%	24%
Unwanted pregnancy	8%	4%	7%	4%
No birth control	5%	4%	7%	7%
Failed contraception	2%	0%	5%	2%
Pregnancy < 18 mo apart	25%	14%	26%	20%

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

FIMR Tracking Issues by year of review

	2021	2020	2019	2018
Counseled on birth spacing > 18 months	2%	6%	7%	7%
Counseled on family planning postpartum	71%	80%	69%	71%
Accepted family planning postpartum--any type	47%	49%	58%	51%
Accepted LARC postpartum	16%	8%	14%	9%
Expressed interest in LARC but did not receive	0%	4%	7%	13%

LARC = long-acting, reversible contraception

Maternal Behavioral Health

FIMR Issues Summary by year of review*

Substance Use	2021 (n=60 cases)	2020 (n=52 cases)	2019 (n=58 cases)	2018 (n=45 cases)
Positive drug test	18%	25%	14%	22%
No drug test	10%	15%	21%	13%
Tobacco use: history	7%	19%	12%	11%
Tobacco use: current	20%	19%	21%	18%
Alcohol use: history	10%	10%	7%	7%
Alcohol use: current	8%	4%	4%	7%
Illicit drug use: history	10%	12%	17%	13%
Illicit drug use: current	18%	19%	17%	24%
Use of unprescribed meds	5%	0%	4%	2%
Over the counter/ prescription meds	75%	77%	48%	20%
Mental Health				
History of mental illness	33%	35%	36%	40%
Depression/mental illness during pregnancy	20%	33%	12%	9%
Depression/mental illness postpartum period	29%	40%	35%	22

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

FIMR Tracking Database by year of review

	2021	2020	2019	2018
Substance Use				
In utero drug exposure	15%	27%	17%	7%
NAS diagnosis	0%	0%	0%	0%
Mental Health				
Depression screen documented[1]	93%	88%	71%	71%

[1]Screened on one occasion: n=18; the most common site is OB triage. Screened twice: n=25. Screened 3+ times: n=12.

Social Risk Factors

FIMR Issues Summary by year of review*

	2021 (n=60 cases)	2020 (n=52 cases)	2019 (n=58 cases)	2018 (n=45 cases)
Lack of family support	18%	15%	14%	18%
Lack of neighbors/ community support	12%	2%	9%	7%
Lack of partner support	22%	15%	9%	16%
Single parent	27%	64%	52%	58%
< 12th grade education	23%	6%	10%	16%
Frequent/recent moves	25%	19%	7%	9%
Living in shelter/homeless	2%	2%	0%	9%
Mother incarcerated	7%	6%	9%	7%
Father incarcerated	7%	14%	16%	9%
Multiple stresses	55%	44%	55%	49%
Social chaos	12%	17%	16%	11%
Concern about enough money	18%	17%	19%	24%

Work/ employment problems	10%	8%	9%	4%
Problems with family/ relatives	5%	6%	10%	13%
History of abuse: Mom	15%	25%	16%	36%
Current abuse: Mom	10%	6%	2%	2%
History of abuse: FOB	3%	6%	7%	2%
CPS referrals	32%	35%	31%	31%
Police reports	17%	27%	21%	24%
Inadequate/ unreliable transportation	12%	2%	9%	7%

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

FIMR Tracking Database by year of review

	2021	2020	2019	2018
Family adverse experiences				
Active with Division of Family Services (DFS)	7%	8%	2%	2%
Any DFS history	50%	54%	36%	33%
Criminal history: mother	25%	15%	33%	22%
Criminal history: father	39%	40%	41%	18%
IPV screening documented[1]	90%	65%	76%	71%
Intimate partner violence	10%	6%	15%	7%

[1]Screened for IPV once: n=31, most often OB triage or delivery. Screened on two occasions: n=18. Screened 3+ times: n=4.

Covid Impact

	2021 (n=60 cases)
No significant disruptions	50% (17/34 cases)
Significant disruptions to some aspects of life[1]	50%
Lived in an area with an official stay at home order in last year	90%
Stay at home order at the time of death	22%
Impact of Covid	
Indirect impact	35%
No impact	33%
Unknown	30%

[1]In order of occurrence: employment (n=7), medical care (n=5), living environment (n=4), school (n=2)

Family Support

FIMR Issues Summary by year of review*

	2021 (n=60 cases)	2020 (n=52 cases)	2019 (n=58 cases)	2018 (n=45 cases)
Bereavement referral made	63%	58%	60%	64%
Language barriers	12%	4%	12%	13%
Beliefs re: pregnancy/health	13%	4%	14%	9%
Lack of home visiting (eligible)	61%	44%	60%	58%
Poor provider to patient communication	18%	14%	7%	2%

Lack of WIC (eligible)	38%	12%	33%	0%
Client dissatisfaction	13%	12%	9%	4%
Lack of grief support	0%	2%	7%	7%

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

FIMR Tracking Database by year of review

	2021	2020	2019	2018
Home visiting referral made when appropriate	4%	14%	4%	2%

Fetal Kick Counts

	2021	2020	2019	2018
Fetal kick counts education when appropriate	56%[1]	67%	72%	69%

[1]In addition, there were 3 out of 14 cases when delivery occurred before 23 weeks gestation, and FKC education was documented in the prenatal records, earlier than the preferred timing for providing this information.

Maternal Mortality Review

Overview of Cases

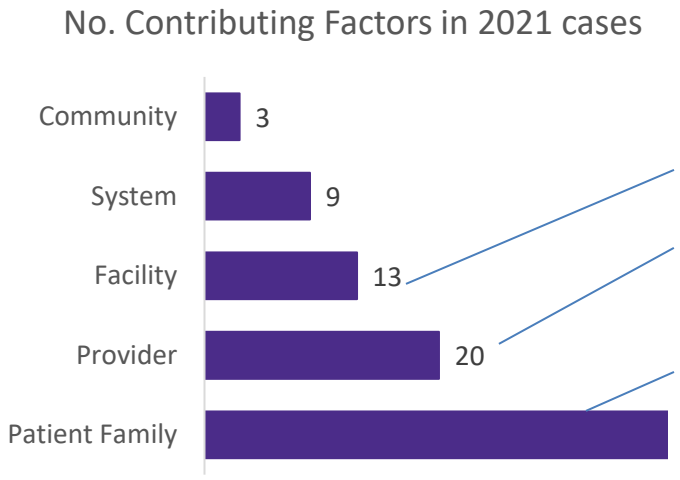
- 11 cases were reviewed in 4 meetings
- Year of death 2019-2021
- Women's ages ranged from 20-40 years old
- Family interviews were available for 5 out of the 11 cases (45%)

Race/ethnicity	MMR 2021 (n=11)	DE live births 2019 (n=10,328)
White, non-Hispanic	55%	47%
Black, non-Hispanic	36%	28%
Hispanic	0%	17%
Other	9%	8%

- Insurance: Medicaid (n=7), Private (n=2), Unknown (n=2)
- Pregnancy Relation for cases reviewed in 2021
  - 4 cases Pregnancy related
  - 4 cases Pregnancy-associated but not related
  - 3 UTD
- Timing of death:
  - 2 pregnant
  - 3 early postpartum, < 42 days after the end of pregnancy
  - 6 late postpartum, 43-365 days after the end of pregnancy

Causes of death, 2021 MMR cases (n=11)

Contributing Factors (or Strengths)



Contributing factor type, in order of frequency

Facility: delay (3), adherence (2)

Provider: clinical skill/quality of care (5), communication (4), assessment (3)

Patient Family: social support/isolation (7), SUD (6), mental health (4), violence (4), childhood trauma (4), chronic disease (4), unstable housing (3)

- There was an average of 8 contributing factors identified per case in 2021.
- For the first time, social support/isolation was the most common Patient/Family Level factor.
- In addition, three **strengths** were identified: one each at the Patient Family, Provider, and Facility levels.