Sacramento County

Fetal/Infant Mortality Review Program

Program Report
June 2002

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and

The FIMR Case Review Team Members

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We will miss you!!

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EXECUTIVE SUMMARY

Beginning in 1991, the Fetal/Infant Mortality Review program (FIMR) in Sacramento County was one of the first 11 such programs implemented in California with the support of the California Department of Health Services, Maternal and Child Health Branch (MCH Branch). The objective for FIMR, set forth by the MCH Branch, is to:

> *Conduct a community-based FIMR Program based on MCH Branch guidelines to: (1) examine contributing factors to fetal, neonatal and post-neonatal deaths; (2) develop recommendations to respond to identified needs; and (3) implement three interventions involving policy, systems, and community norm changes that will lead to the prevention of similar occurrences.*

To meet this objective, the FIMR program must, under local authority from the Health Officer, maintain Case Review and Community Action Teams to review cases of fetal and infant deaths in order to identify factors contributing to the individual death, compile data collected during case reviews, recommend and implement changes that are designed to prevent future occurrences, and disseminate these findings to local policy makers as well as the community at large (including local MCH programs) through published reports, press releases and presentations to increase public awareness of recurring factors causing fetal and/or infant deaths.

The following findings and recommendations were identified by the Case Review Team in response to the objective set forth by the MCH Branch, data collected from cases reviewed, and in conjunction with the preparation of this report:

Finding 1:

There is no standard policy regarding substance use testing for pregnant women in Sacramento County. One area hospital tests all women who deliver there, while others only test if suspicious circumstances exist that warrant testing. It is important to have a consistent policy throughout the County with regards to perinatal substance use testing, and to have mechanisms for follow-up for those women who test positive for substance use.

Recommendation 1:

Establish consistent, County-wide policies for perinatal substance abuse testing, and follow-up for those pregnant women who test positive.

Finding 2:

There are two classifications of the causes of Hydrops fetalis (Fetal Hydrops): immune and non-immune. *Immune Hydrops* is also known as Rh isoimmunization, and was the etiology of the majority of cases prior to the 1960s and the advent of treatment to prevent fetal or infant death resulting from Rh incompatibility between mother and fetus. *Non-immune Hydrops* is usually

classified as: hematologic (α-Thalassemia, twin-to-twin transfusion, etc); congenital infections (viruses, Parvovirus B19, Toxoplasmosis, etc); lymphatic abnormalities (Turner's syndrome, Cystic hygroma, etc); pulmonary malformations (hypoplasia, cystic adenomatoid malformation, etc); other (chromosomal abnormalities, neoplasms, bone diseases, etc); and idiopathic (unknown cause). It is important for the Case Review Team to distinguish between the two to examine the circumstances surrounding a fetal or infant death and identify any medical issues that need to be addressed to prevent future fetal or infant deaths.

Recommendation 2:

Death certificates listing "Hydrops fetalis" or "Fetal Hydrops" should be queried to determine the cause of the Hydrops – either immune or non-immune.

Finding 3:

Almost ten percent of the FIMR cases from 1998-2001 were identified as having inadequate or inconsistent education regarding fetal movement. Some of the mothers interviewed reported noticing fetal movement had decreased or stopped altogether, but waited "until the next appointment" to discuss this with their health care provider, or they reported receiving no fetal movement education during their pregnancy.

Recommendation 3:

Establish and promote consistent community education regarding Fetal Movement.

Finding 4:

Five percent of the FIMR cases from 1998-2001 were identified as having inadequate or inconsistent education regarding signs and symptoms of preterm labor. Some mothers reported during their interview feeling a "cramping" sensation, but did not think there was anything to worry about, only to later be admitted to the hospital with preterm labor, resulting in a fetal or infant death.

Recommendation 4:

Establish and promote consistent community education regarding signs and symptoms of preterm labor.

Finding 5:

In almost 6 percent of the FIMR cases from 1998-2001, no prenatal care was identified as an issue. In many cases, the mothers report not having medical insurance to cover prenatal care expenses, or report having their Medi-Cal applications delayed and thus did not seek care during their pregnancy. The FIMR Case Review Team supposes that if more people were informed about Presumptive Eligibility for Medi-Cal, more pregnant women with no health insurance would seek earlier and continual prenatal care.

Recommendation 5:

Promote public service announcements, media campaigns, etc, regarding Presumptive Eligibility for Medi-Cal for pregnant women with no health insurance.

INTRODUCTION

"The death of an infant can be viewed as a sentinel event that is a measure of a community's overall social and economic well being." – National FIMR Program

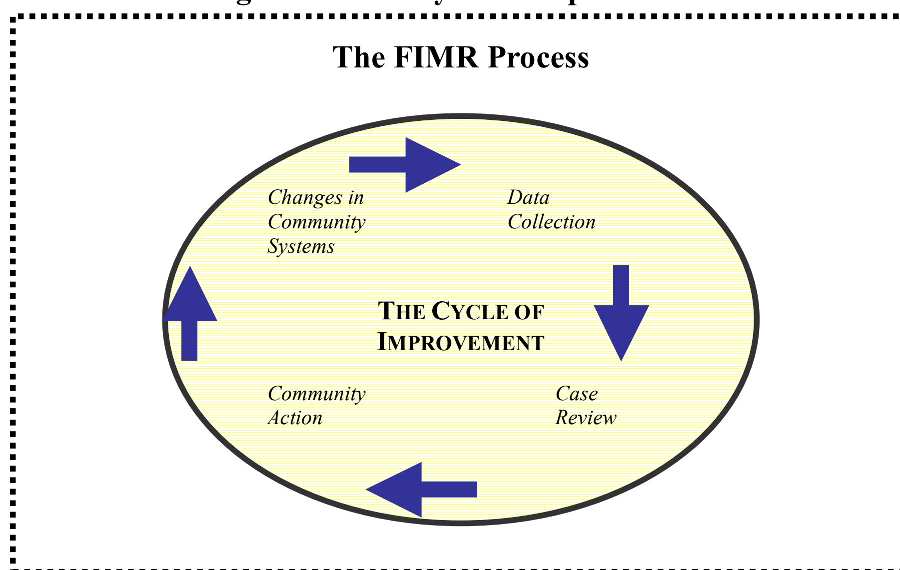
Established in 1990, the National Fetal and Infant Mortality Review (NFIMR) Program is a collaborative effort between the federal Maternal and Child Health Bureau and the American College of Obstetricians and Gynecologists designed to provide a holistic approach to reducing fetal and infant deaths. The NFIMR program was established to provide support to state and local Fetal/Infant Mortality Review (FIMR) programs, which review individual fetal and infant deaths to analyze the circumstances surrounding the death. It is through this review that critical community strengths and weaknesses as well as unique health/social issues associated with poor birth outcomes (a fetal or infant death) are identified. This information is then used to address the weakness identified in hopes that future deaths will be prevented from occurring.

The FIMR program began in Sacramento County in 1991, and was one of the 11 original programs in California. This program is coordinated by the Director of the Maternal, Child and Adolescent Health Program within Sacramento County's Department of Health and Human Services, Division of Public Health Promotion and Education. The overall objective of the FIMR program is to reduce fetal and infant deaths, which is accomplished through the following:

- Examination of the significant social, economic, cultural, safety and health system factors that are associated with fetal and infant mortality through review of individual cases;
- Planning interventions and policies that address these factors to improve services and community resources;
- Participating in the implementation of community-driven interventions and policies; and
- Evaluating the progress of the interventions.

The FIMR program in Sacramento County was designed to address these objectives using the Cycle of Improvement (Figure 1). There are four essential elements to the Cycle of Improvement: Data Collection, Case Review Team, Community Action Team, and Changes in Community Systems. Each of these elements is addressed by a specific level (Administrative, Case Review Team, Community Action Team) of the Sacramento County's FIMR program.

Figure 1: The Cycle of Improvement



The Data Collection element is addressed by the Administrative level of the FIMR team, comprised of six members: the Health Officer of Sacramento County, who provides the local authority to administrate the program; the Director of the Maternal, Child and Adolescent Health program, who coordinates the program; a Senior Public Health Nurse, who coordinates the Case Review Team; an Epidemiologist, who is responsible for data management; a Public Health Nurse to conduct parental interviews; and the Case Review Team Organizer, who is provided by the Child Abuse Prevention Council of Sacramento. These members have the responsibility of gathering information regarding the circumstances and situation surrounding fetal and infant deaths. In addition, this level also manages the programmatic perspective of the FIMR program, which includes submitting semi-annual reports to the California State Department of Health Services Maternal and Child Health Branch, ensuring all appropriate documents are completed, identifying and recruiting abstractors for the Case Review Team, planning and organizing the Case Review Team meetings, among various other administrative activities.

The Case Review Team is the second level of the FIMR program in Sacramento County. This team includes public health professionals, hospitals, health care organizations, health care providers, law enforcement agencies, and community-based agencies or providers of services and/or programs related directly to infant mortality or the issues surrounding infant mortality, such as:

- Black Infant Health program subcontractors;
- Tobacco, alcohol & drug treatment services;
- Domestic violence prevention services;
- The Community Services Planning Council;

- Family planning services;
- Mental health service providers; and
- Adolescent health care/pregnancy prevention providers.

These health and prevention professionals examine de-identified case summaries; identify the issues, gaps and unmet needs in health and social services; and make recommendations for community change, if appropriate, that may prevent future fetal and infant deaths from occurring.

The third level is the Community Action Team, which reviews the Case Review Team's findings and recommendations; prioritizes identified issues, assigns responsibility and forwards the information to appropriate bodies; designs and monitors the implementation and follow-up of interventions that may improve outcomes for future families. Currently, the Perinatal and Child Health Advisory Committee (PCHAC), a sub-committee of the Public Health Advisory Board (PHAB), serves as the Community Action Team. PCACH is comprised of health professionals and community members interested in addressing perinatal and child health in Sacramento County. It is the responsibility of PCHAC to report back to PHAB the status of the recommendations from FIMR; PHAB then reports back to the Sacramento County Board of Supervisors.

The last element of the Cycle of Improvement is "Changes in Community Systems." This occurs when the identified issues, gaps and unmet needs in health and social services are changed in response to the recommendations implemented by the Community Action Team. The ultimate goal of this element is that as service systems and resources continue to improve, the future for families will be better.

The process is continuous, which reflects the ongoing nature and the importance of establishing stages and mechanisms for feedback and assessment.

FIMR DATA PROCESS

FIMR cases for review are selected from fetal and infant death certificates filed with Sacramento County Vital Records that meet the following criteria:

- All cases reviewed are limited to Sacramento County residents.
- Fetal deaths reviewed by FIMR are limited to those weighing 500 grams or more and at least 20 weeks gestation.
- All neonate (birth to 28 days of life) deaths are reviewed, regardless of birthweight or gestational age.

The death certificates are then forwarded to the following agencies, who obtain information and complete the appropriate abstract form (see Appendix for forms):

- Sacramento County Coroner's Office;
- Sacramento County District Attorney;
- Sacramento County Child Protective Services;
- Sacramento County Public Health Nursing Services; and
- Birthing hospitals within Sacramento County, including University of California, Davis Medical Center, Kaiser Morse, Kaiser South, Mercy Hospitals and Sutter Hospitals.

The completed abstracts are forwarded to the Case Review Team Coordinator before the Case Review Team meeting. Identifying information is removed from the abstracts, and the information is consolidated into the Case Review Summary Form (see Appendix for forms).

During this time, a public health nurse attempts to contact the parent(s) of the infant who died to conduct a parental interview (see Appendix for forms). During the parental interview, the public health nurse asks questions regarding the circumstances surrounding the preconception, conception, pregnancy and delivery of the infant. This information is added to the information collected by the abstractors to and reviewed by the Case Review Team.

Unfortunately, the FIMR program in Sacramento County has parent interviews for only 23% of all cases from 1998 to 2001. This is due to many reasons, including incorrect information being reported on the death certificate (ie. wrong street name or number), parents refusing to discuss the circumstances

surrounding their child's death, and families relocating in order to get on with their lives. As a result, crucial information is lost to the Case Review Team. It is the intention of the FIMR program in Sacramento County to investigate the possibility of gaining access to the prenatal records of the mothers who lost an infant. This will help fill in for the crucial information lost when a parent interview cannot be completed.

Once the information is de-identified and compiled into a Case Summary Form and Vignette (see Appendix for forms), the case is then presented to the Case Review Team. The Case Review Team then reviews each case individually, capturing issues, questions and recommendations related to the fetal or infant death. The Case Review Team also assigns a preventability ranking based on the medical cause of death, from not preventable (rank 1), usually due to prematurity, to highly preventable (rank 5), usually due to an accident or homicide. Most of the cases reviewed by FIMR are not preventable based on their *medical* cause, although factors and issues may exist that, had they been addressed, the circumstances resulting in the death may not have occurred.

Data is compiled again after the Case Review Team meeting, entered into a database, and questions and recommendations from the Case Review Team are recorded, and submitted to the FIMR Coordinator. All data and recommendations are then submitted by the FIMR Coordinator to PCHAC, the FIMR Community Action Team, which is then responsible for disseminating this information to the community, as well as implementing any recommendations. This data is also submitted semi-annually to the State Department of Health Services Maternal and Child Health Branch.

DATA FROM THE FIMR PROGRAM

During the eleven years the FIMR Program has been operating in Sacramento County, many different forms of data collection have been used, mostly due to "trial and error" in an attempt to find a data collection system that fulfills the requirements of both the State FIMR Program and the local FIMR Program. In an effort to end the fragmented data collection, the Sacramento County FIMR Program has implemented its own database system. Currently, this database contains information for the cases reviewed by FIMR from 1998 through 2001. All FIMR data presented in this report is from those years; birth data used in this report is from 2000, the last year for which data was available at the time of preparation of this report.

FIMR CASES: GENERAL INFORMATION

From 1998-2001, there were 321 cases reviewed by the FIMR Case Review Team. Of the 321 cases reviewed, 173 (54%) were fetal deaths and 135 (46%) were neonatal deaths. The majority of cases for all races and ethnicities are fetal, except for Asian/Pacific Islanders, who experienced more neonatal deaths than fetal deaths during this time period.

FIMR CASES: RACE AND ETHNICITY

When described by race and ethnicity of mother, 139 (43%) were Caucasian, 67 (21%) were African American, 43 (13%) were Hispanic, 43 (13%) were Asian/Pacific Islander, and 29 (9%) were Other/Unknown. Comparing these whole numbers and percentages to Sacramento County birth data, some disparities are seen (Table 1):

- Caucasians comprised about 51% of all births in Sacramento County in 2000, but only 43% of FIMR cases.
- African Americans are over-represented, with 12% of all births in 2000 and 21% of all FIMR cases.
- Hispanics had 24% of all births in 2000 and 13% of FIMR cases.
- Asian/Pacific Islanders are slightly over-represented, with 13% of FIMR cases and 12% of all 2000 births.

Table 1: 1998-2001 Number of FIMR Cases by Type of Case and Race/Ethnicity of Mother, Sacramento County

Type	Caucasian	African American	Hispanic	Asian/PI	Other/ Unknown	Total
Fetal	78	38	28	19	10	173
Neonatal	60	29	15	24	7	135
Unknown	1	0	0	0	12	13
Total	139	67	43	43	29	321
Percent of FIMR Cases	43	21	13	13	9	100
Percent of 2000 Births	51	12	24	12	1	100

FIMR CASES: GENDER

Of the 321 FIMR cases reviewed, 157 (50%) were male, 144 (45%) were female, with the remaining 5% unknown. The unknown classification describes not only those cases about which we do not know gender, but also those cases of infants born with ambiguous genitalia, usually due to congenital anomalies.

Although overall the majority of FIMR cases were male, when analyzed by race and ethnicity (and excluding unknown cases), differences are seen:

- Caucasians and Hispanics experienced more female than male deaths, with 51% and 53% respectively.
- African Americans experienced more male than female deaths, with 60% of all cases being male and 40% female.
- Asian/Pacific Islanders also had more male (58%) than female (37%) deaths.

Table 2: 1998-2001 Number of FIMR Cases by Race/Ethnicity and Gender, Sacramento County

Gender	Caucasian	African American	Hispanic	Asian/PI	Other/ Unknown	Total
Male	65	40	19	25	8	157
Female	68	27	23	16	10	144
Unknown	6	0	1	2	11	20
Total	139	67	43	43	29	321

FIMR CASES: FETAL AND NEONATAL DEATH RATES

As mentioned, a disparity exists among races and ethnic groups with regards to FIMR cases in Sacramento County. The disparity African Americans experience in Sacramento County, as well as at the State and Federal levels, has been well documented, and is seen once again with regards to the FIMR data. FIMR death rate calculations use four year averages for 1998-2001, and include the total number of births plus fetal deaths that occurred in 2000 as the denominator for rate calculations. For FIMR neonatal deaths, the denominator is the total number of births **only**, and is presented as a rate per 1,000 live births.

Table 3: 1998-2002 FIMR Death Rates and 95% Confidence Intervals by Type of Case, Sacramento County

	Total		**Caucasian**		**African American**		**Hispanic**		**Asian/PI**	
	FIMR Deaths	FIMR Death Rate (95% CI)	FIMR Deaths	FIMR Death Rate (95% CI)	FIMR Deaths	FIMR Death Rate (95% CI)	FIMR Deaths	FIMR Death Rate (95% CI)	FIMR Deaths	FIMR Death Rate (95% CI)
Overall FIMR Cases	321	4.4 (3.9, 4.9)	139	3.8 (3.2, 4.4)	67	7.9 (6.0, 9.8)	43	2.5 (1.8, 3.2)	43	4.9 (3.4, 6.4)
Fetal FIMR Cases	173	2.4 (2.0, 2.8)	78	2.2 (1.7, 2.7)	38	4.3 (2.9, 5.7)	28	1.6 (1.0, 2.2)	19	2.1 (1.2, 3.0)
Neonatal FIMR Cases	135	1.9 (1.6, 2.2)	60	1.7 (1.3, 2.1)	29	3.6 (2.3, 4.9)	15	0.9 (0.4, 1.4)	24	2.2 (1.3, 3.1)

Overall FIMR death rates and FIMR fetal death rates are presented per 1,000 live births plus fetal deaths experienced in 2000. Neonatal FIMR death rates are per 1,000 live births experienced in 2000. 95% CI= 95 percent confidence intervals, which are provided for informational purposes only, as rates based on small numbers of events are not reliable.

Overall, the FIMR death rate for 1998-2001 in Sacramento County was 4.4 per 1,000 live births plus fetal deaths (Table 3). When analyzed by racial/ethnic groups, African Americans had the highest FIMR death rate, with 7.9 per 1,000 live births plus fetal deaths. This rate is 44% higher than the overall FIMR death rate in Sacramento County. The racial/ethnic group with the lowest overall FIMR death rate is Hispanic, with 2.5 per 1,000 live births plus fetal deaths. This rate is 43% lower than the overall FIMR death rate for Sacramento County. Caucasians have an overall FIMR death rate of 3.8 per 1,000 live births, which is 14% lower than Sacramento County's overall rate. Asian/Pacific Islanders have an overall FIMR death rate of 4.9 per 1,000 live births, 10% higher than the overall rate for Sacramento County.

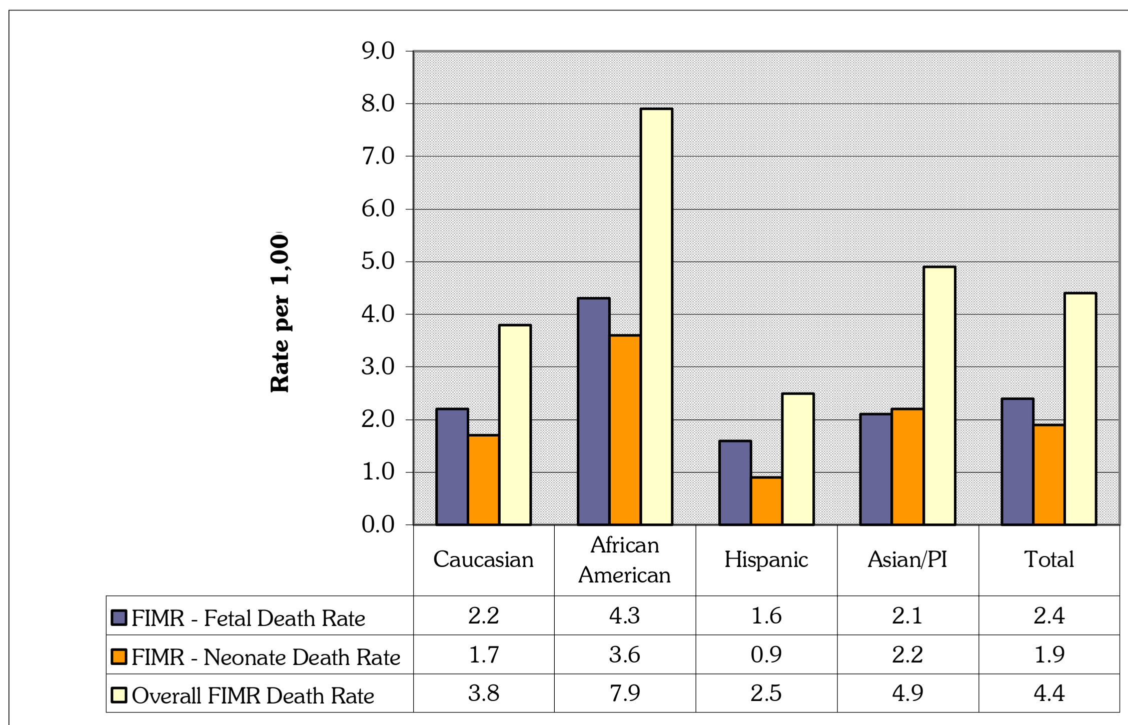
The same differences described above are also seen with regards to the type of FIMR death (fetal vs. neonatal) and racial/ethnic groups. With regards to fetal FIMR deaths (Table 3, Figure 2):

- The overall fetal FIMR death rate is 2.4 per 1,000 live births plus fetal deaths.
- African Americans have the highest fetal FIMR death rate of 4.3 per 1,000 live births plus fetal deaths; this rate is 44% higher than the overall rate.
- Hispanics have the lowest fetal FIMR death rate of 1.6 per 1,000 live births plus fetal deaths, 33% lower than the overall rate.
- Caucasians had a fetal FIMR death rate of 2.2 per 1,000 live births plus fetal deaths, slightly lower than the overall rate of 2.4.
- Asian/Pacific Islanders also experienced a fetal FIMR death rate slightly lower than the overall rate, with 2.1 per 1,000 live births plus fetal deaths.

With regards to neonatal FIMR deaths (Table 3, Figure 2):

- The overall neonatal FIMR death rate was 1.9 per 1,000 live births.
- African Americans again experienced the highest neonatal FIMR death rate, with 3.6 per 1,000 live births; this rate is 47% higher than the overall rate.
- Hispanics have the lowest neonatal FIMR death rate, with 0.9 per 1,000 live births, 53% lower than the overall rate.
- Caucasians had a neonatal FIMR death rate of 1.7 per 1,000 live births, slightly lower than the overall rate of 1.9.
- Asian/Pacific Islanders experienced a slightly higher neonatal FIMR death rate than the overall rate, with 2.2 neonatal FIMR deaths per 1,000 live births; this rate is 14% higher than Sacramento County's overall rate.

Figure 2: 1998-2001 FIMR Death Rates by Race/Ethnicity of Mother, Sacramento County



	Caucasian	African American	Hispanic	Asian/PI	Total
FIMR - Fetal Death Rate	2.2	4.3	1.6	2.1	2.4
FIMR - Neonate Death Rate	1.7	3.6	0.9	2.2	1.9
Overall FIMR Death Rate	3.8	7.9	2.5	4.9	4.4

Overall FIMR death rates and FIMR fetal death rates are presented per 1,000 live births plus fetal deaths experienced in 2000. Neonatal FIMR death rates are per 1,000 live births experienced in 2000.

FIMR CASES: COMPARISON TO NATIONAL OBJECTIVES

National health objectives have been identified for the United States in the publication "Healthy People 2010." These objectives were designed to improve the health and lives of Americans, and the goals outlined in this publication are to be reached by the year 2010. With regards to fetal and neonatal deaths, the objectives are as follows:

- Objective 16-1a: Reduction in the number of fetal deaths at 20 or more weeks of gestation to no more than 4.1 per 1,000 live births plus fetal deaths; and
- Objective 16-1b: Reduction in the number of neonatal deaths (within the first 28 days of life) to no more than 2.9 per 1,000 live births.

With regards to the fetal death rate of FIMR cases, African Americans are the only racial/ethnic group to exceed the Healthy People 2010 objective of no more than 4.1 fetal deaths per 1,000 live births plus fetal deaths. The rate of 4.3 per 1,000 live births plus fetal deaths is 5% higher than the National objective. With regards to neonatal FIMR cases, the overall rate of 1.9 per 1,000 live births meets the Healthy People 2010 objective. However, two racial/ethnic groups exceed the goal: African Americans have a neonatal FIMR death rate of 3.6 per 1,000 live births, which is 47% higher than the objective; and the rate for Asian/Pacific Islanders of 2.2 per 1,000 live births exceeds the objective by 14%.

FIMR CASES: YEAR OF REVIEW

Table 4 details the FIMR cases reviewed by the Case Review Team from 1998 through 2001. As shown in the table, since 1999, there has been a sizeable increase in the number of FIMR case reviews. This is **not** due to a sudden surge in the number of FIMR deaths; instead, it is due to a change in the criteria for selecting cases for review. During 1998 and 1999, FIMR cases were selected only if they were residents of specific zip codes. Because the number of cases to review was so small (less than 5 for some months), the criteria was changed to include all fetal deaths with at least 20 weeks gestation and 500 grams birthweight, and **all** neonates regardless of gestational age or birthweight.

Table 4: 1998-2001 Number of FIMR Cases by Year of Occurrence and Race/Ethnicity of Mother, Sacramento County

	Caucasian	African American	Hispanic	Asian/PI	Other/ Unknown	Total
1998	15	12	7	8	2	44
1999	20	10	5	6	2	43
2000	50	16	12	12	10	100**
2001	54	29	19	17	15	123
Total	139	67	43	43	29	321

The increase in the number of FIMR cases, from 43 in 1999 to 100 in 2000, is due to the change in FIMR criteria for selecting cases. Prior to 2000, cases were selected if the family resided in one of five different zip codes. In 2000, this criteria changed to include **all Sacramento County residents.

FIMR CASES: GESTATIONAL AGE AND TYPE OF DEATH

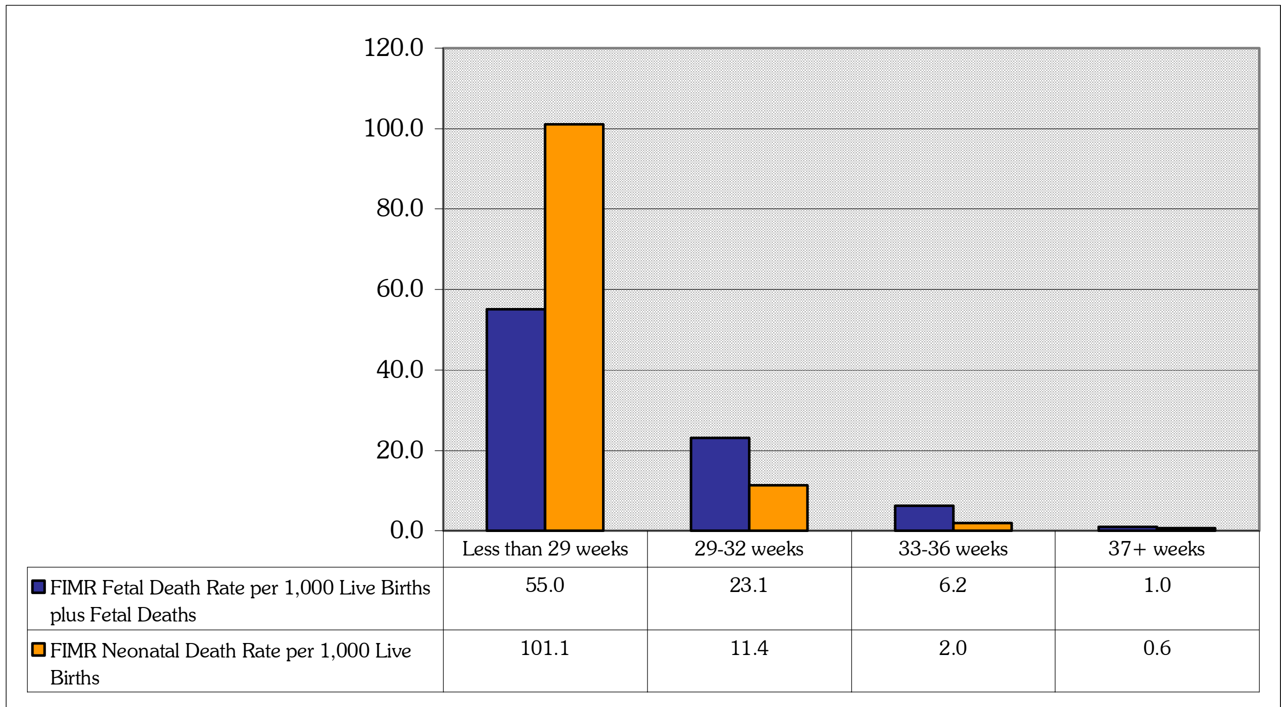
Table 5 details the gestational ages of the FIMR deaths by race/ethnicity of mother. Although this table seems to identify two gestational time periods that have the majority of the fetal and infant deaths (less than 29 weeks and 37+ weeks), when these numbers are translated into rates, the gestational ages with the greatest risks are less than 29 weeks and 29-32 weeks for both fetal and neonatal FIMR deaths (Figure 3).

Table 5: 1998-2001 Number of FIMR Cases by Race/Ethnicity of Mother, Gestational Age and Type of FIMR Case, Sacramento County

Race/Ethnicity of Mother	Less than 29 weeks		29-32 weeks		33-36 weeks		37+ weeks		Total	
	Fetal	Neonate	Fetal	Neonate	Fetal	Neonate	Fetal	Neonate	Fetal	Neonate
Caucasian	21	22	12	5	17	4	25	16	78	60
African American	12	17	5	2	10	3	8	6	38	29
Hispanic	3	7	3	2	5	0	17	4	28	15
Asian/PI	5	4	2	2	2	4	9	9	19	24
Other	2	1	1	0	0	0	4	1	7	2
Unknown	1	6	0	0	1	0	1	3	21	
Total	44	57	23	11	35	11	64	39	321	

Note: Cross-totals will not match because cases with unknown gestational age cases have been excluded.

Figure 3: 1998-2001 FIMR Death Rates per 1,000 Live Births by Gestational Age, Sacramento County



	Less than 29 weeks	29-32 weeks	33-36 weeks	37+ weeks
FIMR Fetal Death Rate per 1,000 Live Births plus Fetal Deaths	55.0	23.1	6.2	1.0
FIMR Neonatal Death Rate per 1,000 Live Births	101.1	11.4	2.0	0.6

FIMR fetal death rates are presented per 1,000 live births plus fetal deaths experienced in 2000. Neonatal FIMR death rates are per 1,000 live births experienced in 2000.

FIMR CASES: BIRTHWEIGHT

During 1998-2001, the majority of FIMR cases had a birthweight of 500-1499 grams (337.0 per 1,000 live births plus fetal deaths), which corresponds to the time period of greatest risk: less than 29 weeks gestational age. This is followed by 1500-2499 grams, with a rate of 116.4 per 1,000 live births.

Figure 4: 1998-2001 FIMR Death Rates per 1,000 Live Births by Birthweight, Sacramento County

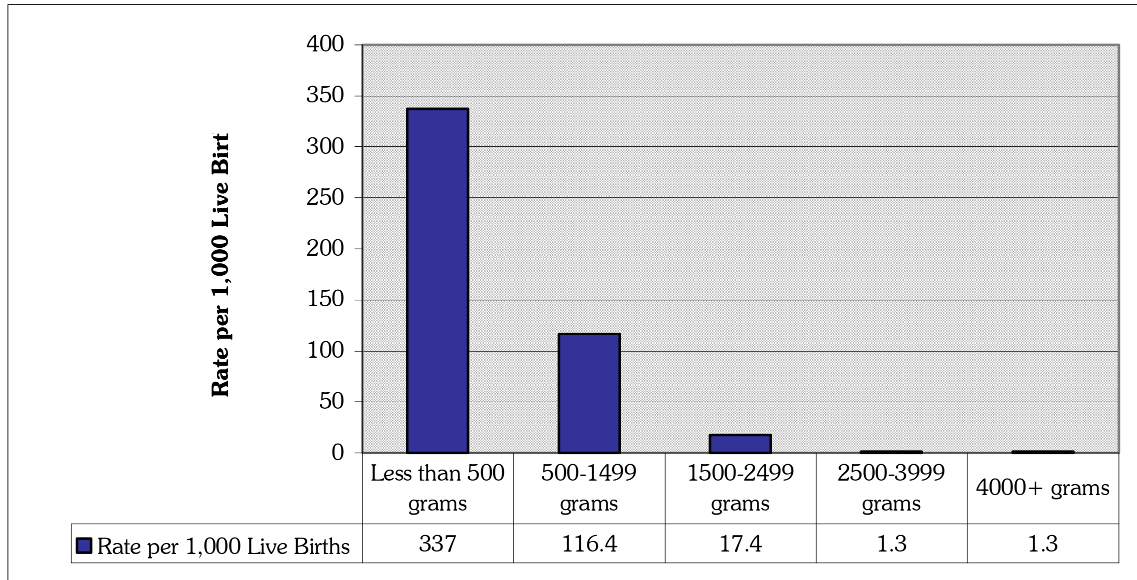


Table 6 provides race and ethnicity detail with regards to birthweight for FIMR cases. Due to the small numbers of deaths when broken out by birthweight, rates are not used to describe this data.

Table 6: 1998-2001 Number and Percent of FIMR Cases Race/Ethnicity of Mother and Birthweight, Sacramento County

Race/ Ethnicity of Mother	Less than 500 grams		500-1499 grams		1500-2499 grams		2500-3999 grams		4000+ grams		Unknown		Total
Caucasian	12	8.6%	42	30.2%	34	24.5%	29	20.9%	6	4.3%	16	11.5%	139
African American	10	14.9%	29	43.3%	11	16.4%	13	19.4%	1	1.5%	3	4.5%	67
Hispanic	3	7.0%	11	25.6%	12	27.9%	13	30.2%	2	4.7%	2	4.7%	43
Asian/PI	1	2.3%	15	34.9%	7	16.3%	12	27.9%	2	4.7%	6	13.9%	43
Other/ Unknown	5	17.2%	5	17.2%	2	6.9%	8	27.6%	0	0.0%	9	31.0%	29
Total	31	9.7%	102	37.8%	66	20.6%	75	23.4%	11	3.4%	36	11.2%	321

FIMR CASES: AGE OF MOTHER

Figure 5 details the rates of FIMR deaths by the age of the mother. Of the 1998-2001 FIMR cases, the majority of mothers were age 45 and older, with a rate of 27.8 per 1,000 live births plus fetal deaths. This is followed by the 40-44 age group, with 6.3 FIMR deaths per 1,000 live births plus fetal deaths. These advanced maternal age groups correspond with the elevated risk associated with pregnancies in mothers over age 40. The third age group with the highest FIMR death rates is the 13-17 age group, with 5.1 FIMR deaths per 1,000 live births plus fetal deaths. This also relates to the risk of pregnancy and the associated factors experienced by this age group.

Figure 5: 1998-2001 FIMR Death Rate per 1,000 Live Births by Age of Mother, Sacramento County

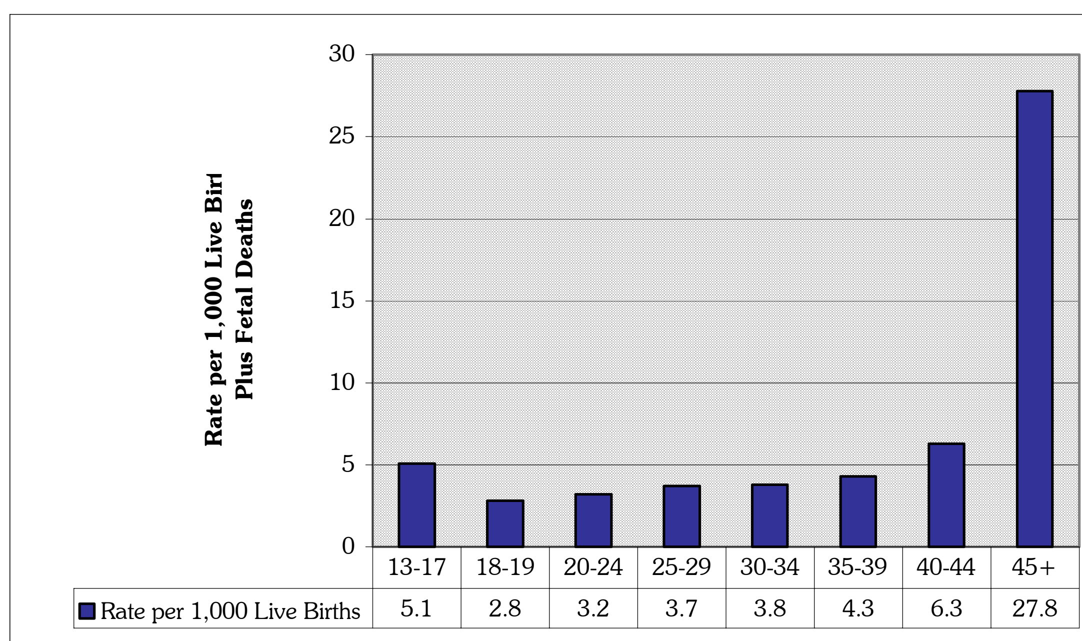


Table 7 presents the numbers of deaths by race/ethnicity and age of mother from 1998-2001. Although no age group is disproportionately represented by FIMR cases, there are slight differences when this data is analyzed by race and ethnicity. The majority (24%) of the mothers of Caucasian FIMR cases were age 25-29. This is followed by 30-34 and 20-24, representing 19% and 18% of Caucasian FIMR cases respectively. The majority (28%) of African American FIMR cases had mothers age 20-24, followed by 25-29 and 30-24, 22% and 15% respectively. For Hispanics, the majority (26%) of mothers

were age 30-34, with 25-29 and 35-39 each representing 23% of Hispanic FIMR cases. Asian/Pacific Islanders had the majority (19%) of cases with mothers age 25-29, followed by 30-34, with 14% of the cases.

Table 7: 1998-2001 Number of FIMR Cases by Race/Ethnicity and Age of Mother, Sacramento County

Race/Ethnicity of Mother	13-17	18-19	20-24	25-29	30-34	35-39	40-44	45+	Other/ Unknown	Total
Caucasian	4	8	25	34	27	15	2	1	23	139
African American	7	3	19	15	10	4	5	0	4	67
Hispanic	1	3	6	10	11	10	0	1	1	43
Asian/PI	0	0	4	8	6	4	4	2	15	43
Other/ Unknown	1	1	5	7	8	2	0	0	5	29
Total	13	15	59	74	62	35	11	4	48	321

FIMR Cases: Cause of Death

Because there can be almost as many causes of death as there are deaths, eight categories are used to classify the causes of death. The categories and their definitions are:

- **Prematurity:** Born after a gestation period of less than 37 weeks.
- **Intrauterine Fetal Demise (IUFD) & Stillbirth:** The death of the fetus while in utero or deceased at birth.
- **Maternal Conditions:** Conditions affecting the mother's ability to deliver a live, healthy child. Examples are incompetent cervix, premature rupture of membranes and chorioamnionitis.
- **Congenital Anomalies:** A physiological or structural abnormality that develops at or before birth and is present at the time of birth, usually a result of abnormal development, infection, heredity or injury; also known as Birth Defects; examples include: congenital heart disease; trisomy 18 or 21; renal agenesis, etc.
- **Other:** Includes all other causes of death, such as cancer and other chronic diseases.
- **Unintentional Injury:** Describes injuries that occurred due to accidents and other unintentional means.

- **Intentional Injury/Homicide:** Described injuries that were intentional or due to homicide.
- **Undetermined:** Cause of death is unknown or undetermined.
- **SIDS:** Sudden Infant Death Syndrome; A fatal syndrome affecting apparently healthy infants under the age of 1 that is characterized by a sudden cessation of breathing; a diagnosis of exclusion requiring a scene investigation and autopsy.

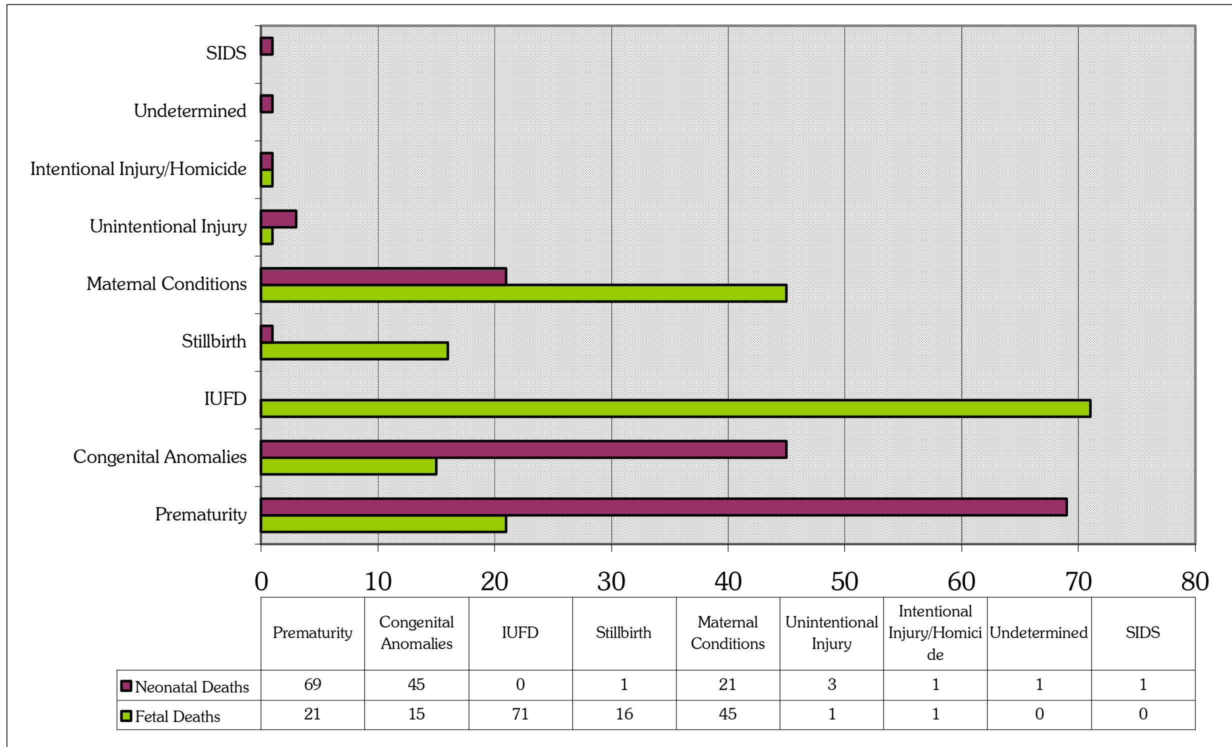
Figure 6 presents the caused of FIMR deaths by type of death (fetal or neonatal). With regards to FIMR fetal deaths:

- The leading cause of death (41%) is Intrauterine Fetal Demise.
- The second leading cause of FIMR fetal deaths was Maternal Conditions, with 26% of all fetal FIMR deaths.
- Prematurity is the third leading cause of death, representing 12% of all fetal FIMR deaths.
- Stillbirths and Congenital Anomalies represent 9% and 8%, respectively, of the fetal FIMR deaths.
- There was one death due to Unintentional Injury and one death due to Intentional Injury/Homicide.

The causes of neonatal FIMR deaths differ considerably than those of fetal FIMR deaths:

- The leading cause of neonatal FIMR deaths was prematurity, which caused 51% of all neonatal FIMR deaths.
- The second leading cause of FIMR neonatal deaths was Congenital Anomalies, which were responsible for 33% of all neonatal FIMR deaths.
- Maternal Conditions is the third leading cause of neonatal FIMR deaths, with 16% of all deaths in this category.
- Three neonatal FIMR deaths were caused by Unintentional Injuries, and one death was due to Intentional Injury or Homicide.
- There was one death due to SIDS.

Figure 6: 1998-2001 Number of FIMR Deaths by Cause of Death Category, Sacramento County



	Prematurity	Congenital Anomalies	IUFD	Stillbirth	Maternal Conditions	Unintentional Injury	Intentional Injury/Homicide	Undetermined	SIDS
Neonatal Deaths	69	45	0	1	21	3	1	1	1
Fetal Deaths	21	15	71	16	45	1	1	0	0

When analyzed by race and ethnicity, the leading causes of FIMR cases differ. For Caucasians, the leading cause of death is prematurity, representing 30% of Caucasian FIMR cases, followed by IUFD & Stillbirth (26%), maternal conditions (21%) and congenital anomalies (19%). For African Americans, the leading cause of death is IUFD & Stillbirth, which account for 30% of the African American FIMR cases. This is followed by prematurity (25%) and maternal conditions (18%). Hispanic FIMR cases are most often caused by IUFD & Stillbirth (40%), followed by maternal conditions (30%). For Asian/Pacific Islanders, the leading cause of death is congenital anomalies, with 33% of the Asian/Pacific Islanders FIMR cases in this category. This is followed by prematurity (26%) and IUFD & Stillbirth and maternal conditions, with each comprising 21% of Asian/Pacific Islander FIMR cases.

Table 8: 1998-2001 Number and Percent of FIMR Cases by Race/Ethnicity and Cause of Death, Sacramento County

Cause of Death	Caucasian		African American		Hispanic		Asian/PI		Other/ Unknown		Total	
Prematurity	42	30%	17	25%	7	16%	11	26%	14	48%	91	28%
IUFD & Stillbirth	36	26%	20	30%	17	40%	9	21%	7	24%	89	28%
Maternal Conditions	29	21%	12	18%	13	30%	9	21%	3	10%	66	21%
Congenital Anomalies	27	19%	9	13%	6	14%	14	33%	4	14%	60	19%
Other	2	1%	4	6%	0	0%	0	0%	1	4%	7	2%
Injury	2	1%	4	6%	0	0%	0	0%	0	0%	6	2%
Undetermined	0	0%	1	2%	0	0%	0	0%	0	0%	1	<1%
SIDS	1	<1%	0	0%	0	0%	0	0%	0	0%	1	<1%
Total	139	100%	67	100%	43	100%	43	100%	29	100%	321	100%

Note: Cross-totals will not match due to rounding.

When analyzed by race and ethnicity, no differences are seen with regards to the overall fetal and neonatal findings previously discussed.

Table 9: 1998-2001 Number of FIMR Cases by Race/Ethnicity, Cause of Death and Type of FIMR Case, Sacramento County

Cause of Death	Caucasian		African American		Hispanic		Asian/PI		Total	
	Fetal	Neonate	Fetal	Neonate	Fetal	Neonate	Fetal	Neonate	Fetal	Neonate
Prematurity	11	31	4	13	1	6	3	8	21	69
IUFD & Stillbirth	36	0	19	1	17	0	9	0	87	1
Maternal Conditions	23	6	9	3	7	6	5	4	45	21
Congenital Anomalies	7	20	3	6	3	3	2	12	15	45
Other	1	2	2	2	0	0	0	0	3	4
Injury	1	1	1	3	0	0	0	0	2	4
Undetermined	0	0	0	1	0	0	0	0	0	1
SIDS	0	1	0	0	0	0	0	0	0	1
Total	79	61	38	29	28	15	19	24	173	135

Note: Cross-totals will not match because other and unknown cases have been excluded.

ISSUES RELATED TO FETAL/INFANT MORTALITY IN SACRAMENTO COUNTY

One of the objectives of the FIMR case review team is to identify issues related to the deaths reviewed. These issues identify critical gaps in services or other issues that, if addressed, may have resulted in more favorable birth outcomes.

The issues are organized into seventeen categories. The listed factors in the individual categories are those most commonly identified in FIMR reviews. The list is not intended to be all-inclusive, but serves as an aid for noting particular factors that commonly appear in reviewed cases. Those factors that were evident in the case within the following general categories are captured on the Issues Checklist (see Appendix for forms).

It is important to note that because the FIMR Case Review Team is often only able to review limited information, many crucial issues remain unidentified due to the lack of information. This lack of data is apparent in the numbers of cases that have issues identified compared to the total number of FIMR cases. For example, of the 321 FIMR cases reviewed, information is available for 217 cases (68%) regarding payment source for delivery and prenatal care, while only 15 cases (5%) had information available regarding the social support for the mother. In the future, the FIMR program will explore the possibility of reviewing prenatal care records for the mothers who lose infants in hopes that more issues will be identified, and subsequently addressed, to prevent other infant deaths.

The following issues were most often identified in the 1998-2001 FIMR case reviews; the categories and issues are presented in the order in which they appear on the Issues Checklist (see Appendix for forms):

1. Medical: Mother

Of the 195 cases (61%) with identified issues in this category, 45 (23%) had pregnancies after age 35; 27 (14%) had infections during the pregnancy (chorioamnionitis, Group B Streptococcus, etc); 33 (17%) experienced preterm labor; 22 (11%) had inter-pregnancy intervals of less than 1 year; 62 (32%) had previous therapeutic or spontaneous abortions; 53 (27%) had experienced a previous preterm delivery, fetal loss, infant loss or low birthweight delivery; and 8 (4%) had their first pregnancy before age 18.

2. **Medical: Fetal/Infant**

   Of the 142 cases (44%0 with identified issues in this category, 20 (14%) had intrauterine growth retardation and 11 (8%) were substance exposed (specific substance exposure is identified in Substance Use category below).

3. **Payment for Prenatal Care & Delivery**

   Of the 217 cases (68%) for which information was available, the majority (n=117, 54%) of payment sources were private insurances, including Health Maintenance Organizations, compared to 59% for all births in Sacramento County in 2000. The second largest payment source was Medi-Cal and Medi-Cal Geographic Managed Care, representing 46% (n=99) cases; in 2000, Medi-Cal was the payment source for 39% of all births in Sacramento County.

4. **Prenatal Care/Delivery**

   Of the 72 cases (22%) with identified issues in this category, 17 (24%) had no prenatal care, 34 (47%) had late entry into prenatal care, and 10 (14%) missed enough appointments that it was an issue. Overall birth data in Sacramento County for 2000 details that about 1% (135 births) had no prenatal care, and 20% experienced late entry into prenatal care. Of the FIMR cases with no prenatal care identified as an issue, 11 (65%) had Medi-Cal or Medi-Cal Geographic Managed Care as the payment source at delivery.

5. **Pediatric Care**

   No issues were identified in this category, mostly due to the infant dying before any pediatric care was provided.

6. **Substance Use**

   Of the 47 (15%) cases identified with substance use, 27 (57%) used tobacco during pregnancy, 10 (21%) used alcohol, and 21 (45%) used illicit drugs. The *Changing the Landscape* Study of Alcohol and other Drug Use in Sacramento County report published in January 2001 discussed that in a 1992 study of the prevalence of perinatal substance exposure in California (the most comprehensive data currently available), 11% of births studied were found to have perinatal exposure to one or more drugs. This estimate is 27% lower than actual number of substance exposed pregnancies collected from FIMR case data.

7. Social Support

Fifteen cases (5%) were identified with social support issues, with 13 (87%) cases not having the father of the baby involved in the pregnancy or the mother's life.

8. Family Transition

Eighty-eight cases (27%) had identified issues in this category. Twenty-two (26%) reported being single mothers, and 57 (65%) reported being married to or living with their partners. Eight (9%) cases with identified risks in this category had a parent in prison or on parole/probation.

9. Mental Health/Stress

Nineteen cases (6%) had identifiable issues in this category, with the majority (n=12, 63%) being non-specific multiple stresses and 5 (29%) having depression/mental illness during pregnancy or postpartum.

10. Family Violence/Neglect

Of the 15 cases (5%) with issues identified in this category, 10 (67%) were abuse of mother and 6 (41%) were related to child abuse or neglect.

11. Culture

Twenty-one cases (7%) had issues related to culture during the pregnancy. The majority (n=17, 81%) of these issues were related to language or cultural differences experienced in the prenatal care. Eight (38%) had issues related to cultural beliefs regarding pregnancy. It is important to note that these women may speak English, and have no language barrier, but their cultural beliefs regarding pregnancy were not respected by the prenatal care provider, thus creating the issue identified.

12. Transportation

Of the three cases (1%) identified with transportation issues, 100% were related to inadequate or unreliable transportation.

13. Provision/Design of Services

Thirty-two cases (10%) were identified with issues in this category, with the majority (n=22, 69%) related to inadequate education or information regarding fetal movement and signs & symptoms of preterm labor. Seven (22%) reported fear and/or dissatisfaction of their health care system.

14. Environment

Only 9 cases (3%) had issues identified in this category, with 8 (89%) reporting exposure to second-hand smoke.

15. Family Planning

Of the 67 cases (21%) with issues identified in this category, the majority (n=41, 61%) of the pregnancies were intended. No birth control/unintended pregnancy was an issue in 21 (31%) of the cases, and 6 (9%) cases reported failed contraception as the reason for becoming pregnant.

16. Injuries

Of the 7 cases (2%) with injuries identified as issues, 1 (14%) was a motor vehicle occupant. Of these cases, 4 (57%) deaths were directly caused by the injury sustained.

17. Other

During 1998-2001, no notable other issues were identified.

FINDINGS AND RECOMMENDATIONS

In December 2000, the FIMR Case Review Team submitted five findings and recommendations to the Community Action Team. At that time, the Community Action Team was the task force convened to address infant mortality in Sacramento County. The task force developed a community health plan, *Saving Babies' Lives*, which included data from the FIMR program as well as the findings and recommendations submitted by the Case Review Team. The findings, recommendations, and statuses of these recommendations are as follows:

Finding 1:

In Sacramento County, the average rate of low birth weight for mothers who received 9 or fewer prenatal care visits is 111.1 per 1,000 births. This rate drops drastically to 33.9 per 1,000 births if mothers receive 10 or more prenatal care visits. Geographic Managed Care (GMC) plans allow for 9 prenatal care visits. The American College of Obstetrics and Gynecology (ACOG) suggests adequate prenatal care include 12-15 prenatal care visits.

Recommendation 1:

The CRT recommends that GMC plans increase their number allowable prenatal visits to at least 10. Optimally, all prenatal care providers would meet ACOG standards and allow 12-15 prenatal care visits.

Status of Recommendation 1:

Information is being gathered and discussed by the Saving Babies' Live Task Force regarding this issue.

Finding 2:

Memorandums of Agreement (MOA) have lapsed, creating occasional gaps in data needed for technical review.

Recommendation 2:

Success of the Case Review Team hinges on participation of key members of the community. A clearly defined MOA will not only delineate roles and responsibilities for stakeholders but also serve as an official acknowledgement of the invaluable contributions and dedication of participating agencies. The Case Review Team recommends that formal relationships be established/reestablished with participating agencies through adoption of a comprehensive MOA for the purpose of strengthening public/private relationships and increasing the Case Review Team's access to case-specific data.

Status of Recommendation 2:

Memorandums of Agreement have been signed by almost all agencies participating in the FIMR program.

Finding 3:

Awareness of the FIMR program among parents who have lost a fetus or infant is lacking and information from parents is not routinely available.

Recommendation 3:

Since information from parents is vital to a thorough and successful case review, the Sacramento FIMR program should explore any and all avenues to improve access to this information, including the establishment of a permanent relationship with Labor and Delivery and Social Workers from every hospital in Sacramento County.

Status on Recommendation 3:

Social Workers from birthing hospitals in Sacramento County provide FIMR program information with the grief packets given to parents who experience a fetal or infant death.

Finding 4:

FIMR has received conflicting information regarding domestic violence, substance (alcohol, tobacco, and/or illicit/prescription drug) use, family planning, HIV/AIDS, and mental health issues within its target population. These inconsistencies indicate that professionals have opportunities that are not regularly used to address these issues.

Recommendation 4:

(A) The CRT recommends that professionals serving families and children routinely include information about the issues listed above in resource materials, regardless of assessment results.

(B) The CRT recommends the reestablishment of the Perinatal Substance Use Coalition to address the following:

1. Assessment of and availability of affordable treatment for substance abusing parents and soon-to-be parents.
2. Ensuring that affordable and appropriate treatment options exist where they are most needed.
3. Examining the legality, costs and benefits of universal drug testing during prenatal care.
4. Evaluation of current practices used by local healthcare providers to address substance use, domestic violence, and family planning among pregnant and postpartum patients. Assessment and monitoring the implementation of a countywide protocol for healthcare providers regarding substance use, domestic violence, and family planning.

Status on Recommendation 4:

The Perinatal Substance Use Coalition has reconvened to address the identified issues.

Finding 5:

Cultural barriers to optimal prenatal care appeared in a significant number of cases reviewed by the CRT. Five percent (5%) of parents experienced difficulty participating fully in their prenatal care due to cultural/language barriers during their pregnancy. Cultural background, including religious beliefs, ethnicity/race, or age

was identified as a factor related to fetal and infant mortality in 20% of cases reviewed.

Recommendation 5:

The CRT recommends that subcommittees of the Saving Babies' Lives Task Force identify and explore issues related to cultural sensitivity and cultural competence when addressing prenatal and infant health issues.

Status on Recommendation 5:

The Saving Babies' Live Task Force has subcommittees currently exploring issues related to cultural sensitivity and competence surrounding prenatal and infant health issues.

The following findings and recommendations were identified by the Case Review Team in response to the objective set forth by the MCH Branch, data collected from cases reviewed, and in conjunction with the preparation of this report:

Finding 1:

There is no standard policy regarding substance use testing for pregnant women in Sacramento County. One area hospital tests **all** women who deliver there, while others only test if suspicious circumstances exist that warrant testing. It is important to have a consistent policy throughout the County with regards to perinatal substance use testing, and to have mechanisms for follow-up for those women who test positive for substance use.

Recommendation 1:

Establish consistent, County-wide policies for perinatal substance abuse testing, and follow-up for the pregnant women who test positive.

Finding 2:

There are two classifications of the causes of Hydrops fetalis (Fetal Hydrops): immune and non-immune. Immune Hydrops is also known as Rh isoimmunization, and was the etiology of the majority of cases prior to the 1960s and the advent of treatment to prevent the fetal or infant death. Non-immune Hydrops is usually classified as: hematologic (α-Thalassemia, fetomaternal or twin-to-twin transfusion); congenital infections (viruses, cytomegalovirus, Parvovirus B19, Toxoplasmosis, Syphilis, etc); lymphatic abnormalities (Turner's syndrome, Cystic hygroma, etc); pulmonary malformations (hypoplasia, cystic adenomatoid malformation, etc); other (chromosomal abnormalities, neoplasms, bone diseases, etc); and idiopathic (unknown cause).

It is important to distinguish between the two in order for the Case Review Team to determine the circumstances surrounding a fetal or infant death and identify any medical issues that need to be addressed.

Recommendation 2:

Death certificates listing "Hydrops fetalis" or "Fetal Hydrops" should be queried to determine the cause of the Hydrops – either immune or non-immune.

Finding 3:

Almost ten percent of the FIMR cases from 1998-2001 were identified as having inadequate or inconsistent education regarding fetal movement. Some of the mothers interviewed reported noticing fetal movement had decreased or stopped altogether, but waited "until the next appointment" to discuss this with their health care provider, or they reported receiving no fetal movement education during their pregnancy.

Recommendation 3:

Establish and promote consistent community education regarding Fetal Movement.

Finding 4:

Five percent of the FIMR cases from 1998-2001 were identified as having inadequate or inconsistent education regarding signs and symptoms of preterm labor. Some mothers reported during their interview feeling a "cramping" sensation, but did not think there was anything to worry about, only to later be admitted to the hospital with preterm labor, resulting in a fetal or infant death.

Recommendation 4:

Establish and promote consistent community education regarding signs and symptoms of preterm labor.

Finding 5:

In almost 6 percent of the FIMR cases from 1998-2001, no prenatal care was identified as an issue. In many cases, the mothers report not having medical insurance to cover prenatal care expenses, or report having their Medi-Cal applications delayed and thus do not seek care during their pregnancy. The FIMR Case Review Team supposes that if more people were informed about Presumptive Eligibility for Medi-Cal, more women with no health insurance would seek earlier and continue with their prenatal care.

Recommendation 5:

Promote public service announcements, media campaigns, etc, regarding Presumptive Eligibility for Medi-Cal for pregnant women with no health insurance.

APPENDIX

FIMR Program Forms:

- Hospital Abstract Form
- Coroner/Pathology Review Form
- Law Enforcement Review Form
- Public Health Nurse Review Form
- Case Summary Review Form/Home Interview Tool
- Issues Checklist
- Explanation of Issues Related to Fetal/Infant Mortality Review

FIMR Hospital Abstract Form (7/01)

FIMR ID #: __________________

Date Completed: _____/_____/_____

Completed by: ____________________________

Type of Case: Fetal Neonatal

Date of Birth/Event: _____/_____/_____

Birth weight: __________lbs __________gms

Date of Death: _____/_____/_____

Length: __________ in __________cm

Sex: Male Female

Payment source:

- ☐ Self-pay/medically indigent
- ☐ Medi-Cal/other gov't prgms
- ☐ Medi-Cal managed care
- ☐ Private insurance/HMO/prepaid health plan

Mother's information at time of registration:

Date of Admission: _____/_____/_____

Mother's Home Phone: _______________________

Marital status: ________________

DOB: _____/_____/_____

Age: __________

Race/Ethnicity: ____

Gravida: ______ Term: _______

Para: ______ Preterm: _______

Prior fetal death? Yes No

Prior neonate death? Yes No

Abortions: Yes No

If yes, when: _____________

Therapeutic: ________

Spontaneous: ________

Weight: Pre pregnancy: _________lbs

At Delivery: _________lbs

LMP: _____/_____/_____

EDC by dates: _____/_____/_____

EDC by sonogram: _____/_____/_____

Sonogram: Yes No

Normal Abnormal

Explain: _________________________________

____

Amniocentesis: Yes No

Normal Abnormal

Explain: ______________________________

____

Prenatal care received: Yes No

Date of 1st visit: _____/_____/_____

Number of visits: ____________

Where did MOB go for prenatal care?

Check all that apply: Name of doctor and/or facility:

Private doctor's office ____

Health Center/Clinic ____

Prison/Jail ____

Other ____

Was mother transferred to another hospital/facility? Yes No

If yes, where: ____________________________

Was infant transferred to another hospital/facility? Yes No

If yes, where: ____________________________

Delivery type: vaginal breech c-section other: _____________________

Any notes of mother signing out of hospital against medical advice? Yes No

If yes, why? ____

Do prenatal or hospital records reveal any maternal hx of alcohol, tobacco or drug use? Yes No

If yes, what kind & how often: ____

____

Any toxicology screens during pregnancy or labor/delivery? Yes No

If yes, results: ____

Any abnormal lab results (Rh, ABGs, STDs, Group B Strep, etc) – please include type and results:

Was mother referred to any other providers for assessment? Yes No
Did she comply? Yes No
Please explain: ____

____

At any time during pregnancy was there *documentation in writing* regarding education about fetal movement (kick counts) and/or preterm labor? Yes No

Prenatal vitamins: Yes No
How often: Daily
Other: ___________

Prenatal supplements: Yes No
Specify (Fe^{2+}, Ca^{2+}, Folic acid, etc): ___________________
How often: Daily

List all medications and anesthetics used during pregnancy and why: ________________________________

Evidence of any of the following in the prenatal records or hospital record:

- ❑ teenage pregnancy (now or ever)
- ❑ pregnancy >35 yo
- ❑ cord problems
- ❑ diabetes
- ❑ incompetent cervix
- ❑ infection during pregnancy
- ❑ insufficient weight gain
- ❑ multiple gestation
- ❑ obesity
- ❑ poor nutrition
- ❑ pre-eclampsia/eclampsia
- ❑ preterm labor
- ❑ STDs
- ❑ Pregnancy less than 1 year apart
- ❑ premature rupture of membranes
- ❑ previous TABs/SABs
- ❑ previous fetal loss
- ❑ previous infant loss
- ❑ previous low birth weight delivery
- ❑ previous preterm delivery
- ❑ first pregnancy <18 yrs old
- ❑ >4 live births
- ❑ pre-existing hypertension
- ❑ abnormal hospital course

Did medical, nursing or social work personnel identify any of the problems listed below?

- ❑ lack of supportive friends/family
- ❑ frequent/recent moves
- ❑ major illness/death in family
- ❑ need for public assistance
- ❑ disturbed mother/infant relationship
- ❑ transportation issues
- ❑ failed contraception
- ❑ MVA while pregnant
- ❑ abuse/harassment of mother
- ❑ abuse (other children)
- ❑ job loss
- ❑ father of baby not involved
- ❑ housing inadequate/homeless
- ❑ crime/legal problems
- ❑ language or communication problems
- ❑ lacks knowledge of family planning methods/resources
- ❑ no birth control: intended or unintended pregnancy
- ❑ cultural differences/beliefs
- ❑ mother abused as child
- ❑ employment/educational needs (mom/dad)
- ❑ concerns regarding citizenship
- ❑ referred to services upon discharge

Placental Pathology/Autopsy Report:

Additional Notes:

____

____

____

____

Fetal Infant Mortality Review Team (FIMRT)

Coroner / Pathology Review Form (Revised 07/01)

FIMR Case #: ________________ **Date Completed: ____/ ____/ ____**

Coroner Case # :__________________________________ DOD:_____________________

Current Address:
____

I. Coroner Investigation:

A. Scene Investigation: *Yes / No*
Summary:

B. Interviews:

Who **Information**

1.

2.

C. Record Review Summaries: (If relevant)

Hospital(s):

Law Enforcement:

Fire:

EMT:

Others:

II. Pathology Report:

A. Cause of Death: (If different than death certificate)

B. Circumstances Surrounding Death:

C. Autopsy: *Yes / No* External Only: *Yes / No*

Relevant Findings:

Fetal Infant Mortality Review (FIMR) Team
Law Enforcement Review Form (Revised 07/01)

FIMR Case #: ________________ **Date Completed:** ____/ ____/ ____

Current Address:
____

I. Incident Report: *Yes / No*

Jurisdiction: City / County / Out Of County / CHP
Patrol Report #:_________________________
Scene Investigation: *Yes / No*
If Yes, Give Summary:

II. Records Check:

A. Mother: DOB: ___________________ SS# : ____________________
Arrest Record:

Convictions:

B. Father/Boyfriend: DOB: ___________________ SS#: _____________________
Arrest Record:

Convictions:

C. Other Significant Others:
Other #1________ DOB: ____________ SSN: _____________________
Arrest Record:

III. Action-If Non-Accidental

Filed To DA: *Yes / No* In Process: *Yes / No* DA File for Prosecution: *Yes / No*
Charges: ____

Outcome: ____

Charges Dropped: *Yes / No*
Plea Bargain: _____ Charges: ____

Trial: ______________

Outcome: ____

Acquittal: _______________________

Other: ________________________

Fetal Infant Mortality Review Team (FIMRT)
PHN Review Form (Revised 07/01)

FIMR Case ID: ____________________ **Date Completed: ____/ ____/ ____**

Case Currently Open? *Yes / No*
Current Address: ____

Mother's Age: _____ Marital Status: __________ Phone: (_____)______-______

Race: ____________ DOB: ________________ Primary Language: ___________

Age of Other Children: _______________________________ #Living In Household? _______

Reason For PHN Visit:

Mother's Health History: (Including STDS and Prior Preg.)

History of Domestic Violence: *Yes / No*

Incarcerated During Pregnancy: *Yes / No*

Prenatal Substance Use and Exposure:

Tobacco Marijuana Alcohol Second Hand Smoke

Crack / Cocaine Speed Other___________________

Trimester Prenatal Care Began: 1st 2nd 3rd

Number of Prenatal Visits: __________

Barriers to Prenatal Care:

Mother's Support System:

Father's History:

Programs Used:

AFDC Food Stamps WIC Options CCS Medi-Cal
GMC Other_________________

Additional Comments:

Sacramento County Fetal-Infant Mortality Review (FIMR) Team
Home Interview/Summary Review Form (10/00)

FIMR ID #: ____________________ **Zip Code:** _____________ **Review Date:** ___/___/______
Type of Case: **Fetal** **Neonatal** **Multiple Birth?** **Yes** **No** **This birth:** **1 2 3**
Interview: **Yes** **No** **Number of Attempts:** _____
Reason if no interview completed: ____

Data Sources Used:

- ☐ Vital Statistics
- ☐ CPS
- ☐ Other: ________________________________
- ☐ Hospital Abstract
- ☐ Law Enforcement
- ☐ Public Health Nursing
- ☐ Coroner

Perinatal Information

Date of Event: ___/___/______
-OR-
Date of Birth: ___/___/______
Date of Death: ___/___/______

Gestational Age: _____ Weeks
Birthweight: _______ grams// ____lbs _____oz
Gender: Male Female
Multiple Birth: Single 1st Twin 2nd Twin Other

Age at Death: Fetal <1 hour
Hrs Days
Wks Months

Cause of Death ICD: __________

Cause of Death:
Immediate Cause: __________________________
Due to B: _________________________________
Due to C: _________________________________
Due to D: _________________________________

Place of Birth:
Primary Level Hospital
Secondary Level Hospital
Tertiary Level Hospital
Birthing Center
Emergency Room
Other: ________________

Place of Death:
Primary Level Hospital
Secondary Level Hospital
Tertiary Level Hospital
Birthing Center
Emergency Room
Other: ________________

Was the infant ever discharged home? Yes No
If yes, how many times, if any, had the baby been hospitalized after birth? ______
Why? ____

Miscellaneous Notes:
____
____
____
____
____
____
____

Interviewers ID: ________________ **Interview Date:** ___/___/______
Please answer all questions; slash through unknown or refused questions.

Maternal History

Date of Birth: ___/___/______

Age: _____ yrs

Education: ______ yrs

Marital Status: Married / Single / Divorced / Separated / Widowed / Other: __________

High School Graduate: Yes No
Other (GED, etc): ____

Where Educated: U. S. / Both / Abroad, where: ____ / Unknown

Race: Native American / Hmong / Asian Indian / Black / Japanese / Laotian / White / Filipino / Korean / Chinese / Other: ____________________________

Ethnicity: Not Hispanic / Eastern European / Mexican / S. American / Caribbean / Other: ______________________________

Primary Language: English / Laotian / Spanish / Japanese / Chinese / Hmong / Other: ______________________________

Comments:

____

____

Paternal History

Date of Birth: ___/___/______

Age: _____ yrs

Education: ______ yrs

Marital Status: Married / Single / Divorced / Separated / Widowed / Other: __________

High School Graduate: Yes No
Other (GED, etc): __________

Where Educated: U. S. / Both / Abroad, where: __________ / Unknown

Race: Native American / Hmong / Asian Indian / Black / Japanese / Laotian / White / Filipino / Korean / Chinese / Other: _____________

Ethnicity: Not Hispanic / Eastern European / Mexican / S. American / Caribbean / Other: _____________

Primary Language: English / Laotian / Spanish / Japanese / Chinese / Hmong / Other: ______________

Comments:

____

____

Prenatal History

Gravidity: _____ Parity: _____ Fetal Deaths: _____ Prior Terminations: _____
Preterm: _____ Spontaneous Abortions: _____
Term: _____ Therapeutic Abortions: _____
Neonatal deaths: _____
Children living: _____

Age at first pregnancy: _____
Using birth control? Yes No
If yes, what: Birth control pills Condoms Diaphragm/sponge Other
IUD Rhythm method Norplant None
Foam/jelly/cream Withdrawal Depo-Provera

Was mother taking fertility drugs? Yes No
If yes, what: ____

Family Planning?
Lacks Knowledge of FP methods/resources
No BC; intended pregnancy No BC; unintended pregnancy
Failed Contraceptive Other: _________________________

STD's: Yes No
Specify when and what: ________________
____

Gestational Diabetes/Diabetes: Yes No
This pregnancy: Yes No
Previous Pregnancy(s): Yes No

MOB's pre-pregnancy weight: _____ lbs
Maternal weight gain during pregnancy: _____ lbs
MOB's height: ______

MOB hospitalized during this pregnancy: Yes
Reason: __________________________
____

No Problems with previous pregnancies: Yes No
Specify: ___________________________
____

Delivery type:

Vaginal
- vaginal, spontaneous
- vaginal, vacuum
- vaginal, forceps

Breech
- breech, spontaneous
- breech, extraction
- breech, unknown

C-Sections
- c-section, emergency, primary
- c-section, elective, primary
- c-section, emergency, repeat
- c-section, elective, repeat
- c-section, unknown

Other
- maternal-fetal death
- unknown

How long in labor:
At home: _____ hours
Total: _____ hours

How did MOB get to hospital:
Family car Friends car EMS
Taxi Walked Other: _____________

Prenatal vitamins: Yes No Prenatal supplements: Yes No

How often: Daily | Specify (Fe^{2+}, Ca^{2+}, Folic acid, etc): ____________________
Other: ___________ | How often: Daily Other: ___________

What month did MOB enter PNC? ________

How many visits? ________

Where did MOB go for prenatal checkups?

Check all that apply:	Name of doctor and/or facility:
Private doctor's office	____
Hospital Clinic	____
Health Center	____
Planned Parenthood	____
Military facility	____
Emergency room	____

At any time during pregnancy, was MOB given any of the following advice or information (check all that apply):

- Importance of keeping track of kick counts
- Take vitamin/mineral supplements
- Eat proper foods during pregnancy
- Try to breastfeed your baby
- Cut down or stop smoking/drinking alcohol
- Seek genetic counseling
- Not to use other medications without consulting a doctor
- Apply for financial assistance (Medi-Cal, AFDC, WIC)
- Danger signs in your pregnancy
- Signs and symptoms of preterm labor
- How to avoid getting HIV/AIDS/where to go to get tested
- Not to use illegal drugs (marijuana, cocaine, crack, etc)

Barriers to Prenatal Care (check all that apply):

- Inadequate patient education/information; Specify: ___________________________________
- Service unavailable in area
- Mother/child not eligible
- Lack of communication among providers/services
- Fear of/dissatisfaction with system(s)
- Other: ____

Narrative:

____

____

How would MOB describe her health status during this pregnancy?

Very healthy Moderately healthy Not very healthy

Social History

Family Support: During Pregnancy After Pregnancy

- Married
- Separated
- Divorced
- Widowed
- Living with father of baby
- Lives with significant other in supportive relationship
- Lives with significant other in non-supportive relationship
- Single parent/head of household with other children
- Single parent/head of household, no other children
- Lives with relatives (Who: ______________________)
- Has other living arrangements

Employment Status:	Maternal	Paternal
Works full time	Hrs: ______	Hrs: ______
Works part time	Hrs: ______	Hrs: ______
Works intermittently	Hrs: ______	Hrs: ______
Unemployed		
Other: _________________	Hrs: ______	Hrs: ______
Unknown		

MOB only: What kind of work? ________________ Until what month did MOB work? __________

Combined Household Income:

under $10,000	$21,000 – 30,000	$41,000 – 50,000	$61,000 and up
$11,000 – 20,000	$31,000 – 40,000	$51,000 – 60,000	Other/Unknown

Program participation: When did you enroll? _____________

AFDC	CCS	Public housing	Social Security
Food stamps	CHDP	SSI	Unemployment benefits
Section 8 housing	WIC	Workman's Comp	Other: ________________

Number of persons in household: _____ = Adults: _____ Children: _____

Housing: Single family home Apartment Homeless Car or camper Other/Unknown

Environment:

Work exposure: Maternal Paternal

- Dust
- Fumes
- Chemicals/Pesticides Specify: _______________________________
- Other Specify: _______________________________
- Unknown

Did MOB eat things like freezer frost, clay, dirt, starch or other non-foods during this pregnancy?

Yes No

Substance use and frequency:	Frequency Mother	Frequency Father
Barbiturates/Tranquilizers/Anti-convulsants	______ day/wk/mth	_____ day/wk/mth
Caffeine (soda, coffee, tea, chocolate)	______ day/wk/mth	_____ day/wk/mth
Alcohol (beer, wine, liquor, wine coolers)	______ day/wk/mth	_____ day/wk/mth
Tobacco (dip, chew, smoke)	______ day/wk/mth	_____ day/wk/mth
Marijuana (pot, bud) or hashish (hash)	______ day/wk/mth	_____ day/wk/mth
Cocaine (rock, coke, crack)	______ day/wk/mth	_____ day/wk/mth
Amphetamines (uppers, ice, speed, crystal, crank)	______ day/wk/mth	_____ day/wk/mth
Heroin (smack, horse)	______ day/wk/mth	_____ day/wk/mth
Methadone	______ day/wk/mth	_____ day/wk/mth
Hallucinogens (LSD, acid, PCP, angel dust, ecstasy)	______ day/wk/mth	_____ day/wk/mth
Sniffing gasoline, glue, hairspray or other aerosols	______ day/wk/mth	_____ day/wk/mth
Other, including prescription (Specify: ________)	______ day/wk/mth	_____ day/wk/mth

In the last 12 months, have any of the following events occurred (If applicable, answer who)?

- MOB got sick or injured and had to stay in the hospital
- MOB household income went down or increase in debt
- MOB separated or divorced from husband or partner
- MOB lost your home or moved
- MOB were involved in a physical fight or threatened with a weapon
- Someone close to MOB had an alcohol or drug problem; Who? ______________________________
- MOB husband/partner or close relative/friend died or tried to commit suicide; Who? ______________
- MOB husband/partner physically or verbally abused you
- MOB husband/partner lost his job
- MOB husband/partner was sent to jail, arrested or went to court
- Other:

____

Background Information

CPS history:

Case on family?	Yes	No
If yes, is case open?	Yes	No
Current child ever referred?	Yes	No

Law enforcement:

Scene investigation?	Yes	No
Domestic violence?	Yes	No
Mother in jail during pregnancy?	Yes	No

Records check:

Mother

Year	Incident Description	Arrest	Conviction
		Yes No	Yes No
		Yes No	Yes No
		Yes No	Yes No
		Yes No	Yes No

Father

Year	Incident Description	Arrest	Conviction
		Yes No	Yes No
		Yes No	Yes No
		Yes No	Yes No
		Yes No	Yes No

Parent Comments/PHN Comments or Interventions:

____

____

____

____

____

FIMR Issues Checklist

1. Medical: Mother

- ❑ Teen pregnancy
- ❑ Pregnancy >35
- ❑ Cord problems
- ❑ Placental abruption
- ❑ Diabetes
- ❑ Incompetent cervix
- ❑ Infection during pregnancy
- ❑ Insufficient weight gain
- ❑ Multiple gestation
- ❑ Obesity
- ❑ Poor nutrition
- ❑ Preeclampsia/eclampsia
- ❑ Preterm labor
- ❑ Preexisting hypertension
- ❑ STDs
- ❑ Pregnancy <1 year apart
- ❑ PROM
- ❑ Previous TABs/SABs
- ❑ Previous Preterm Delivery
- ❑ Previous fetal loss
- ❑ Previous infant loss
- ❑ Previous LBW delivery
- ❑ First pregnancy <18 yo
- ❑ >4 live births
- ❑ Other: ___________________
- ❑ Unknown
- ❑ Not a factor

2. Medical: Fetal/Infant

- ❑ Intrauterine growth retard'n
- ❑ Congenital anomalies
- ❑ Prematurity/extreme prematurity
- ❑ Inadequate fetal monitoring
- ❑ Failure to thrive
- ❑ Substance exposure
- ❑ Feeding problems
- ❑ Respiratory distress syndrome
- ❑ Inappropriate level of care facility
- ❑ Other:___________________
- ❑ Unknown
- ❑ Not a factor

3. Payment for care/services

- ❑ Self-pay/medically indigent
- ❑ Medi-Cal/other gov't prgms
- ❑ Medi-Cal managed care
- ❑ Private insurance/HMO/prepaid health plan
- ❑ Barriers related to insurance coverage
- ❑ Eligibility unclear
- ❑ Other:___________________
- ❑ Unknown
- ❑ Not a factor

4. Prenatal Care/Delivery

- ❑ Standard of care not met
- ❑ Inadequate assessment
- ❑ No prenatal care
- ❑ Late entry into prenatal care
- ❑ Lack of referrals to add'n svcs
- ❑ Missed appointments
- ❑ Multiple providers/sites
- ❑ Other: ___________________
- ❑ Unknown
- ❑ Not a factor

5. Pediatric Care

- ❑ Standard of care not met
- ❑ Inadequate assessment
- ❑ No pediatric care
- ❑ Not or minimally breast fed
- ❑ Lack of referrals to add'n svcs
- ❑ Missed appointments
- ❑ Multiple providers/sites
- ❑ Other: ___________________
- ❑ Unknown
- ❑ Not a factor

6. Substance Use

- ❑ OTC/Prescription drugs
- ❑ Positive drug test
- ❑ Tobacco use
- ❑ Alcohol use
- ❑ Illicit drugs

  type: ______________________
- ❑ Other: ___________________
- ❑ Unknown
- ❑ Not a factor

7. Social Support

- ❑ Lack of supportive family/friends
- ❑ Negative influence of family/friends
- ❑ FOB not involved
- ❑ Other: ___________________
- ❑ Unknown
- ❑ Not a factor

8. Family Transition

- ❑ Frequent/recent moves
- ❑ Job loss
- ❑ Concerns re: citizenship
- ❑ Single parent
- ❑ Married/living together
- ❑ Divorce/separation
- ❑ Parent in prison/parole or probation
- ❑ Living in shelter/homeless
- ❑ Major illness/death in family
- ❑ Other: ___________________
- ❑ Unknown
- ❑ Not a factor

9. Mental Health/Stress

- ❑ Maternal hx of mental illness
- ❑ Depression/mental illness during pregnancy/postpartum
- ❑ Multiple stresses during pregnancy/infancy
- ❑ Other: ___________________
- ❑ Unknown
- ❑ Not a factor

10. Family Violence/Neglect

- ❑ Abuse/harassment of mother
- ❑ Child abuse
- ❑ Child neglect
- ❑ Other: ___________________
- ❑ Unknown
- ❑ Not a factor

11. Culture

- ❑ Language/cultural differences /inability to communicate with provider
- ❑ Cultural beliefs re: pregnancy
- ❑ Other: ___________________
- ❑ Unknown
- ❑ Not a factor

12. Transportation

- ❑ No public transportation
- ❑ Inadequate/unreliable
- ❑ Other: ___________________
- ❑ Unknown
- ❑ Not a factor

13. Provision/Design of Svcs

- ❑ Inadequate patient/client education/information

  Specify: ____________________
- ❑ Service unavailable in area
- ❑ Mother/child not eligible
- ❑ Lack of communication among providers/services
- ❑ Fear of/dissatisfaction with system(s)
- ❑ Other: ___________________
- ❑ Unknown
- ❑ Not a factor

14. Environment

- ❑ Substandard housing
- ❑ Overcrowding
- ❑ Exposure to toxic substances
- ❑ Second-hand smoke
- ❑ Car seat not/improperly used
- ❑ Infant sleeping with others
- ❑ Sleeping in non-infant bed
- ❑ Soft bedding
- ❑ Infant overheating
- ❑ Non-supine positioning
- ❑ Lack of adult visual supervision
- ❑ Other: ___________________
- ❑ Unknown
- ❑ Not a factor

15. Family Planning

- ❑ Lacks knowledge of FP methods/resources
- ❑ No BC; intended pregnancy
- ❑ No BC;unintended pregnancy
- ❑ Failed contraceptive
- ❑ Other: ___________________
- ❑ Unknown
- ❑ Not a factor

16. Injuries

- ❑ MV occupant
- ❑ Suffocation
- ❑ Choking/strangulation
- ❑ Fire/burn
- ❑ Drowning/near drowning
- ❑ Poisoning/toxicity
- ❑ Shaken baby syndrome
- ❑ Other: ___________________
- ❑ Unknown
- ❑ Not a factor

17. Other

- ❑ ________________________
- ❑ ________________________
- ❑ ________________________

Home Interview? ☐ *Yes* ☐ *No*

If no, why?

- ☐ Refused
- ☐ No one home
- ☐ Not found
- ☐ Other:

____

Misc:________________________

____

____

____

____

Explanation of Issues Related to Fetal/Infant Mortality Review

Check all factors related to the death of the fetus/infant. The listed factors are those most commonly identified in FIMR reviews. The list is not intended to be exhaustive, but serves as an aid to noting particular factors that commonly appear in reviewed cases. Note those factors that were evident in this case within the following general categories by checking all applicable boxes. The following definitions appear in all categories:

Other: An additional situation or condition not specifically listed in the category.
Unknown: No information is available regarding this category.
Not a Factor: There were no issues in this category relating to this case, or this category does not apply in this case.

---

1. MEDICAL: MOTHER

Teen pregnancy	Mother was less than 18 years old at time of delivery; confirm age on birth or fetal death certificate
Pregnancy >35	Mother was over 35 at time of delivery; confirm age on birth or fetal death certificate.
Cord problems	Evidence of cord torsion, nuchal cord, insufficient cord vessels, or other problems relating to umbilical cord. Usually noted in prenatal or delivery records or in placental pathology report.
Placental abruption	Abruption of partial abruption of the placenta, usually noted in delivery record or placental pathology report.
Diabetes	Gestational or preexisting diabetes, usually noted in prenatal or delivery records.
Incompetent cervix	Rapid and unexpected premature dilation of the cervix. Noted in delivery record or strongly suspected by clinicians on case review team.
Infection during pregnancy	Vaginosis detected prenatally or at delivery, or evidence of chorioamnionitis or other infection at delivery. Noted in prenatal or delivery records or on placental pathology.
Insufficient weight gain	Little or no gain, or loss of weight given the mother's stature for any prolonged period during pregnancy, or over the entire course of the pregnancy. Usually noted in prenatal record or strongly suspected by clinicians on case review team.
Multiple gestation	Gestation of twins or higher order usually noted prenatally.
Obesity	Morbidly overweight given the mother's height; usually noted in the prenatal records or strongly suspected by clinicians on case review team.
Poor nutrition	Food intake is insufficient for health pregnancy, given the mother's size and stature; usually noted in the prenatal record or strongly suspected by clinicians on case review team.
Preeclampsia/eclampsia	Late-term pregnancy induced hypertension; usually noted in prenatal or delivery record.
Preterm labor	Onset of labor before 37 weeks gestation.
Preexisting hypertension	High blood pressure documented before pregnancy; usually noted in prenatal record or by mother's report.
STDs	Infections commonly transmitted sexually (e.g. syphilis, gonorrhea, chlamydia, HIV, etc) usually noted in prenatal or delivery record.
Pregnancy <1 year apart	Less than one year from end of previous pregnancy to conception of this pregnancy; by mother's report or calculated from medical record.
PROM	Rupture of membranes ("water broke") before the onset of labor.

Previous TABs/SABs	Loss of a previous pregnancy either by elective abortion or miscarriage; usually noted maternal interview or prenatal record.
Previous preterm delivery	Previous delivery before 37 weeks gestation, either stillborn or live born; usually noted in maternal interview or prenatal record.
Previous fetal loss	Loss of a previous pregnancy at 20 weeks or later, not live-born or therapeutic abortion; usually noted in maternal interview or prenatal record.
Previous infant loss	Loss of a live-born infant.
Previous LBW delivery	Previous delivery of a newborn less than 2500 grams birth weight; usually noted in maternal interview or prenatal record.
First pregnancy <18 yo	Mother's first pregnancy was as a teenager less than 18 years old; usually noted in maternal interview or prenatal record.
>4 live births	Mother has had 4 or more live births prior to this pregnancy; usually noted in maternal interview, medical records, birth certificate or fetal death certificate.

2. Medical: Fetal/Infant

Intrauterine Growth Retardation (IUGR)	Fetal growth inconsistent with fetal age; usually noted in prenatal records and confirmed by sonogram, or strongly suspected by clinicians on case review team.
Congenital anomalies	Birth defects, malformations, chromosomal syndromes, and other conditions noted prenatally, at delivery or at autopsy.
Prematurity/extreme prematurity	Infant experienced conditions associated with prematurity (<37 weeks) or extreme prematurity (<34 weeks); usually noted in infant medical records, autopsy or death certificate.
Inadequate fetal monitoring	Fetal monitoring of high-risk patient and/or patient receiving oxytocics or conduction anesthetics were not adequately conducted. Inadequate fetal monitoring of high-risk fetus prior to labor. Non-stress testing or contraction stress testing was inadequately conducted to assess fetal well-being in pregnancy complication.
Failure to thrive	The abnormal retardation of the growth and development of an infant resulting from condition that interfere with normal metabolism, appetite and activity. Causative factors include chromosomal abnormalities; major organ system defects that lead to deficiency or malfunction; systematic disease or acute illness; physical deprivation, primarily malnutrition; and various psychosocial factors.
Substance exposure	Infant exhibits symptoms of in-utero substance exposure or is known to have been exposed to substances during pregnancy.
Feeding problems	Infant exhibits inability or lack of desire to feed from breast or bottle, or regurgitates soon after feeding
Respiratory Distress Syndrome (RDS)	An acute lung disease of the newborn caused by progressive respiratory failure resulting from inadequate surfactant function superimposed on a structurally immature lung. The condition occurs most often in premature babies and in babies of diabetics.
Inappropriate Level of Care Facility	Infant delivered or mother treated in facility without level of care designation appropriate for maternal or infant condition.

3. Payment for Care/Services

Self-Pay/Medically Indigent	Family did not have insurance, Medi-Cal or other means of paying for prenatal care, delivery and/or pediatric care.
Medi-Cal/Other Gov't Programs	Family's medical care paid for by non-managed care Medi-Cal, California Children's Services, or other government support.
Medi-Cal Managed Care	Family's medical care paid for by a managed care Medi-Cal program.
Private Insurance/HMO/Prepaid Health Plan	Family's medical care paid for my non-Medi-Cal insurance, HMO or other plan.
Barriers related to insurance coverage	Delay, loss of inaccessibility of medical services due to problems with finding appropriate providers, receiving authorization for treatment, etc.
Eligibility unclear	Family eligibility for health coverage was unclear, resulting in delay or loss of medical services.

4. Prenatal Care/Delivery

Standard of Care not met	Prenatal assessment or treatment did not meet commonly accepted obstetric practice standards.
Inadequate assessment	Prenatal providers did not appropriately assess for certain conditions or circumstances.
No prenatal care	Mother received no prenatal care.
Late entry into prenatal care	Mother's first prenatal visit was after 14 weeks gestation
Lack of referrals to additional services	Conditions or circumstances were identified in assessment, but no referral was made to existing appropriate services.
Missed appointments	Missed prenatal appointments resulting in sporadic care.
Multiple providers/sites	Mother received prenatal care from several providers, resulting in sporadic and fragmented care.

5. Pediatric Care

Standard of Care not met	Infant assessment or treatment did not meet commonly accepted pediatric practice standards.
Inadequate assessment	Pediatric providers did not appropriately assess for certain conditions or circumstances.
No pediatric care	The infant was never seen for routine visits, immunizations or other non-emergent care.
Not or minimally breast fed	Infant was not breast fed, or was minimally breast fed (irregular, occasional or minimal breast feeds of which the vast majority [more than half] of all feeds are not breast feeds).
Lack of referrals to additional services	Conditions or circumstances were identified in assessment, but no referral was made to existing appropriate services.
Missed appointments	Missed pediatric appointments resulted in ineffective pediatric care.
Multiple providers/sites	Infant received pediatric care from several providers resulting in sporadic and fragmented care.

6. Substance Use

OTC/Prescription drugs	Any use by the mother of any over-the-counter or prescription drug during or after pregnancy up to the time of the infant's death and not under the apparent supervision of a physician; as reported by the mother in the interview or medical record, or as a positive toxicology screen post delivery.
Positive drug test	The mother had any positive toxicology screen for substances during pregnancy or at delivery, or the infant had a positive toxicology screen post delivery.
Tobacco use	Any use by the mother of any tobacco product during or after pregnancy up to the time of the infant's death; noted either by mother in the interview or in the medical record.
Alcohol use	Any use by the mother of any alcohol during or after pregnancy up to the time of the infant's death; noted either by mother in the interview or in the medical record as reported as a positive toxicology screen result.
Illicit drug use	Any use by the mother of any illegal substance during or after pregnancy up to the time of the infant's death; noted either by mother in the interview or in the medical record as reported, or as a positive toxicology screen result. Specify the type of drug, if known.

7. Social Support

Lack of supportive friends or family	The mother had few or no friends or family members providing emotional, financial or physical support during or after her pregnancy.
Negative influence of friends or family	The mother's friends and/or family members contributed to her acting in a manner detrimental to her health or her baby's health.
FOB not involved	The father of this pregnancy did not contribute in a significant emotional, financial or physical fashion.

8. Family Transition

Frequent or recent moves	Living situation is unstable and mother has moved frequently before, during or after the pregnancy
Job loss	The mother or another household financial supported lost his/her job immediately before, during or after the pregnancy, or while the infant was alive.
Concerns regarding citizenship	The mother or other principle caretaker(s) exhibited concerns that their documentation or citizen status may compromise their ability to seek or receive services.
Single parent	A one-parent household in which the mother/father is raising the infant and/or other children while living separately from the father/mother and without a live-in intimate, supportive partner.
Married/Living together	A two-parent household. Mother has a live-in, relatively long-term intimate relationship with either the father of her child(ren) or someone who acts as a parental figure to the child(ren). They may be married or not.
Divorce/Separation	The mother separated or divorced from her spouse or intimate partner immediately before, during or after the pregnancy, or while the infant was alive.
Parent in prison/parole or probation	Either biological parent or other individual in the role of parent was incarcerated, paroled or on probation immediately before, during or after the pregnancy, or while the infant was alive.
Living in shelter or homeless	The mother and baby were homeless, living on the street, living in a shelter, or making frequent moves among friends and family members immediately before, during or after the pregnancy, or while the infant was alive.
Major illness/death in family	A major illness or death of a family member had an impact on the families economic status or essential functions immediately before, during or after the pregnancy, or while the infant was alive.

9. MENTAL HEALTH/STRESS

Maternal History of Mental Illness	The mother of the baby has a history of suicide attempts or gestures, hospitalization, supervised medication or other indicators of mental illness.
Depression/Mental Illness during pregnancy or postpartum	The mother of the baby displays clinical symptoms of depression, makes suicidal attempts or gestures, is hospitalized or under supervised medication, or otherwise is experiencing mental illness during pregnancy or during the time the infant was alive.
Multiple stresses during pregnancy or infancy	The mother experiences three or more family, economic, environmental or other stresses during pregnancy or during the time the infant was alive.

10. FAMILY VIOLENCE/NEGLECT

Abuse/Harassment of mother	Evidence of assaultive and coercive behaviors, including physical, sexual and psychological attacks, as well as economic coercion, used against the mother by an intimate partner (e.g. current or former dating, marriage or cohabiting partner of the same of opposite sex). May be indicated by personal report, medical records, law enforcement reports and/or social services records, etc.
Child abuse	Includes physical, emotional and sexual abuse of the infant who died and/or children in the household. Physical abuse is any act, which results in non-accidental physical injury to the child, such as assault or shaken baby syndrome. Emotional abuse includes subjecting the child to verbal abuse, unpredictable responses, continual negative moods, constant family discord, and double-message communication. Sexual abuse is sexual assault on, or the sexual assault of, the child. May be indicated by personal report, suspected or confirmed reports to child protective services, law enforcement records, and/or medical records.
Child neglect	The negligent treatment of maltreatment of any children in the household by the parent or caretaker under any circumstances indicating harm to the children's health or welfare; includes severe neglect and general neglect. Severe neglect is the negligent failure to protect the child from severe malnutrition or medically diagnosed non-organic failure to thrive and willfully causing or permitting the child to be placed in a situation such that his/her person or health is endangered (e.g. intentional failure to provide adequate food, clothing, shelter or medical care). General neglect is the negligent failure to provide adequate food, clothing, shelter, medical care or supervision. May be indicated by personal report, suspected or confirmed reports to child protective services, law enforcement records and/or medical records, etc.

11. CULTURE

Language/Cultural Differences/Inability to Communicate with Provider	The mother and/or other principle caretakers for the child were not able to communicate expediently with providers because of language differences. Includes use of interpreters.
Cultural beliefs regarding pregnancy or health	The mother or other principle caretakers for the child exhibited health beliefs inconsistent with standard medical practice.

12. TRANSPORTATION

No public transportation	No existent public transportation during pregnancy, time of delivery, postpartum and infant follow-up.
Inadequate/Unreliable transportation	Mother or other principle caretaker did not have reliable transportation to needed services, or ineffective transportation caused mother or caretaker to miss appointments or services.

13. PROVISION/DESIGN OF SERVICES

Inadequate client/patient education/information	The family/client did not receive prevention education and information that would have helped to prevent the fetal/infant death. Specify the education topic area.
Service unavailable in area	A needed or required service does not exist reasonable nearby the family.
Mother/child not eligible	The mother, principle caretaker and/or child are not eligible for a particular services.
Lack of communication among providers	The service providers in the case were not known to each other or did not share with each other potentially important information about the case.
Fear of/dissatisfaction with system(s)	The family's fear of or dissatisfaction with a provider or providers was a factor in their not using a service or provider in a timely or effective manner.

14. ENVIRONMENT

Substandard housing	Any housing that does not meet local housing codes.
Overcrowding	More people living in housing space than the space was designed to accommodate.
Exposure to toxic substances	Mother, father or infant were exposed to carcinogens, teratogens, toxins, etc., in the workplace, home or industrial setting before or during pregnancy, or during the time the infant was alive.
Second-hand smoke	Regular/ongoing smoke inhaled by a pregnant woman or infant from burning tobacco (cigarettes, pipes or cigars) or exhaled by a smoker.
Car sear not used/improperly used	While in a moving vehicle, the infant was not restrained or was restrained incorrectly in a child passenger safety seat at the time of injury leading to death.
Infant sleeping with others	Infant was placed in near proximity to one or more persons on the same sleep surface when found unresponsive.
Sleeping in non-infant bed	Infant was sleeping on a sleep surface, other than those designed and marketed for safe infant sleep, when found unresponsive.
Soft bedding	Infant was found unresponsive on bedding softer than a firm crib mattress and/or near pillows, blankets, comforter, waterbed, sheepskin, etc.
Infant overheating	When found unresponsive, the infant was overheated by overdressing with too many clothes or blankets; the room or area being overheated from a furnace, space heater, fireplace, oven or wood-burning stove; or lack of ventilation, allowing heat build-up (e.g. enclosed car).
Non-supine positioning	Infant found unresponsive in other than a supine position.
Lack of adult visual supervision	Infant was found unresponsive after an episode where vigilant adult visual supervision of an infant would have been reasonable and expected under circumstances. *Note: This should also be noted under Category #10 – Family Violence/Neglect.*

15. FAMILY PLANNING

Lacks knowledge of FP methods and resources	The mother lacks knowledge of family planning methods or how to access family planner resources.
No birth control; intended pregnancy	The mother was intending to get pregnant and neither she nor her partner used a family planning method prior to the pregnancy.
No birth control; unintended pregnancy	The mother was not intending to get pregnant and neither she nor her partner used a family planner method prior to the pregnancy.
Failed Contraceptive	The mother and/or her partner used a family planning method but it failed.

16. INJURIES

Motor vehicle occupant	Infant died due to injuries or conditions resulting from a motor vehicle crash.
Suffocation	Infant died due to injuries or conditions resulting from suffocation or smothering.
Choking/Strangulation	Infant died due to injuries or conditions which may have resulted from choking, strangulation or hanging.
Fire/Burn	Infant died due to injuries or conditions resulting from fire, flames, acid burn and/or scalding with hot food or liquid (includes death due to fire-related causes such as smoke inhalation).
Drowning/Near drowning	Infant died due to injuries or conditions resulting from drowning/submersion in water or other liquid.
Poisoning/Toxicity	Infant died due to injuries or conditions resulting from poisoning by drugs, medicines or biological substances, including cleansing agents, poisonous plants, gasoline, carbon monoxide, etc.
Shaken baby syndrome	Infant died due to injuries or conditions resulting from being shaken.

17. OTHER: FILL IN ISSUE(S)