

# Fetal Infant Mortality Review Team 2005-2007



## *County of Sacramento Program Report October 2008*





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## EXECUTIVE SUMMARY

From 2005 to 2007, there were 250 recorded fetal and infant deaths in Sacramento County. Due to the significant racial disparity in birth outcomes, the County of Sacramento Maternal Child and Adolescent Health Program focused review on the African American fetal and infant deaths. There were a total of 97 deaths among African Americans that fit the criteria for review, and of these, 70 cases were reviewed. The following report summarizes results from the analysis of fetal and infant deaths during this period. In addition, we include recommendations from the Case Review Team that reviewed these cases.

## SUMMARY OF FINDINGS AND RECOMMENDATIONS

### *Finding 1: Overall Fetal-Infant Death Rates*

- a). Sacramento County has not yet achieved the Healthy People 2010 objective to reduce the infant mortality rate to 4.5 per 1,000 live births. In 2006, Sacramento County's infant mortality rate (5.5 per 1,000 live births) was 22.2 percent higher than the Healthy People 2010 objective, with an average of 5.7 per 1,000 live births each year, over an eight-year span.
  
- b). Sacramento County has not yet achieved the Healthy People 2010 objective to reduce the fetal mortality rate to 4.1 per 1,000 live births. In 2006, Sacramento County's fetal mortality rate (5.8 per 1,000 live births plus fetal deaths) was 1.4 times higher than the Healthy People 2010 goal, with an average of 6.3 fetal deaths per 1,000 live births each year, over an eight-year span.

### *Finding 2: Causes of Death for African American Deaths reviewed*

- a). The primary known cause of African American fetal death was maternal conditions (incompetent cervix, premature rupture of membranes, chronic diseases etc), comprising 11.8 percent of fetal deaths reviewed.

b). The primary cause of infant death was prematurity (39.7% of infant deaths reviewed), followed by SIDS and sleep-related deaths (7.4% of infant deaths).

**Finding 3: Geographic distribution of cases**

a). Of the 250 total FIMR cases, 55.6% were distributed in 13 out of Sacramento County's 56 zip codes. The zip code with the highest proportion of fetal and infant death was Sacramento 95823 (8.8%).

b). Of the 70 reviewed African American cases, 50% were distributed in 8 of the County of Sacramento's zip codes. The zip code with the highest proportion of fetal and infant deaths for reviewed African American cases was Sacramento 95823 (18.6%).

**Finding 4: Risk Factors for fetal/ infant loss**

Of the cases reviewed, 94% had identified maternal medical risk factors, 87% had identified fetal/infant medical risk factors, and 81% had identified factors related to social status.

**Finding 5: System Service gaps and recommendations**

Several system service gaps were identified by the Case Review Team. The major recommendations derived from assessment of service gaps were as follows:

Recommendation 1: Educate mothers in a culturally sensitive manner about the importance of monitoring a baby's movements and rhythms and about the symptoms that should alert them to contact their healthcare provider.



Recommendation 2: Educate each prenatal patient in a culturally sensitive manner about the signs and symptoms of preterm labor and the need to seek immediate medical attention if they experienced these symptoms.

Recommendation 3: Streamline Medi-Cal program enrollment procedure to increase acceptance of 'Presumptive eligibility' by providers and improve access to prenatal care for pregnant women.

Recommendation 4.1: Encourage all healthcare providers and health delivery systems to include pre-conception and inter-conception care in their practices.

Recommendation 4.2: Ensure that all mothers experiencing a poor birth outcome (death, premature delivery, low-birth weight baby) receive follow-up care by a Public Health nurse.

Recommendation 4.3: Create and maintain a community awareness campaign that emphasizes the importance of a woman's health throughout the lifespan and promotes healthy lifestyle behaviors that recognize the cultural, language and racial diversity of the community.

Recommendation 4.4: Review best practice models for preconception care, prenatal care, and parenting education and implement strategies that will improve the mental, physical and social well-being of women of child-bearing age.

## BACKGROUND

“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*

In 1991 California was the first state that implemented a Fetal Infant Mortality (FIMR) program established by the National Fetal and Infant Mortality Review (NFIMR) Program. There are FIMR programs in 21 of California's 61 local health departments.

The County of Sacramento was one of the 11 original counties in California, to implement a FIMR program, which began in 1991. The program is coordinated by the Director of the Maternal, Child and Adolescent Health Program (MCAH) within the County of Sacramento’s Department of Health and Human Services, Division of Public Health. The overall goal of the FIMR program is to reduce fetal and infant deaths by implementing system changes. The objective of reviewing eligible fetal and infant deaths is to identify medical and psychosocial risk factors associated with these deaths, and determine whether system changes can affect these factors to reduce fetal and infant mortality.

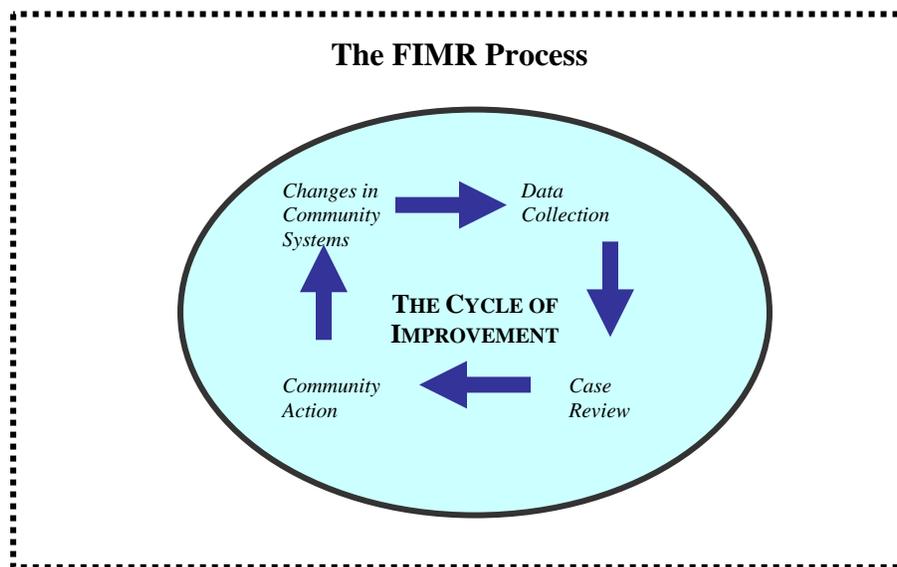
In 2004, the State of California, Maternal Child Health Branch identified eight counties with the largest disparity between African American and Caucasian fetal and infant deaths. At that time the rate of African American fetal and infants deaths in Sacramento County was 2 ½ times the rate of the Caucasian cohort. Sacramento County focused its fetal and infant death reviews only on African American deaths beginning in 2005 with the hope of identifying specific factors that contributed to this disparity.

The FIMR program in Sacramento County was designed to address these objectives using the Cycle of Improvement (Graph 1). There are four essential elements to the Cycle of Improvement:

- 1) Data Collection involves gathering information regarding the circumstances surrounding fetal and infant deaths. Sources of data include birth and death certificates,

medical records from hospitals and other healthcare providers, coroner’s reports, home visitation program reports, and maternal interviews. Volunteer abstractors from the hospitals obtain hospital medical records and abstract information. The information is entered into a database, and presented in a de-identified summary at Case Review Team meetings.

**Graph 1: The Cycle of Improvement**



2) Case Review is conducted by a team that includes public health professionals, health care providers, and representatives from hospitals, health care organizations, community-based agencies and other service providers. Programs represented include the Black Infant Health Program, tobacco, alcohol and drug treatment services, and domestic violence prevention services, the Community Services Planning Council, the Field Nursing Program, mental health service providers and adolescent health / pregnancy prevention providers. Members review and discuss the selected cases to determine medical, psychosocial and system issues that may have contributed to the loss. Based on the identified list of issues, the team develops recommendations.

3) The Community Action Team reviews the Case Review Team’s findings and recommendations and prioritizes the identified issues to develop an action plan.

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, and is comprised of health professionals and community members interested in addressing perinatal and child health issues in the County of Sacramento. Recommendations from PCHAC are presented to PHAB which then reports to the Sacramento County Board of Supervisors.

4) 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 of the Community Action Team. The goal is to improve the birth outcomes of families by better service systems and resources.

Previous Recommendations from the review team include: 1) Increase prenatal provider office referrals of African American patients to home visiting programs; 2) Investigate causes of maternal infections and ways to reduce them; 3) Review best practices models for preconception care, childbirth education, and prenatal care; 4) Conduct community education campaigns to highlight stress, folic acid, need for early and consistent prenatal care, safe sleeping, signs and symptoms of preterm labor, and the dangers of alcohol, tobacco and drug use; 5) Increase prenatal provider knowledge of resources available to their patients; 6) Improve screening and management of maternal chronic health issues; 7) Increase education and resources for women seeking contraceptive services. In response to these recommendations, the MCAH Program and the Black Infant Health Program launched a community education campaign addressing stress. As a result of heightened awareness, there were increased calls to the Pregnancy Care Guidance Program. The MCAH program also increased efforts to distribute information to providers' offices about available resources. The program continues to participate in events and activities that provide opportunities to distribute educational material on various topics that are pregnancy-related and to conduct outreach to pregnant women in the community that qualify for services.



## OVERALL FETAL AND INFANT MORTALITY RATES SACRAMENTO COUNTY

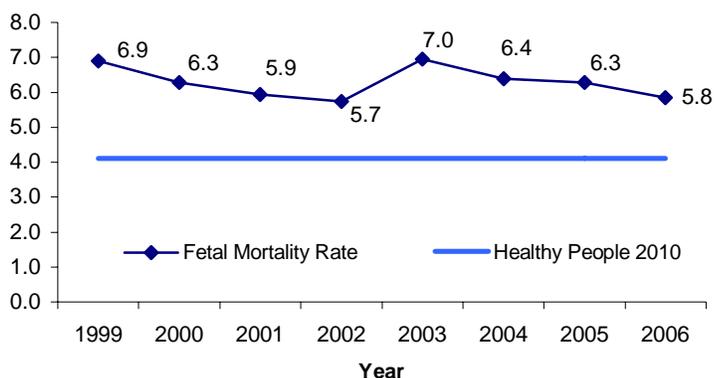
National health objectives have been identified for the United States in the publication “Healthy People 2010.” These objectives are designed to improve the health and lives of Americans, and the goals outlined in this publication are to be reached by the year 2010. The objectives for fetal and neonatal deaths 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 16-1c: Reduction in the number of infant deaths to no more than 4.5 infant per 1,000 live births.

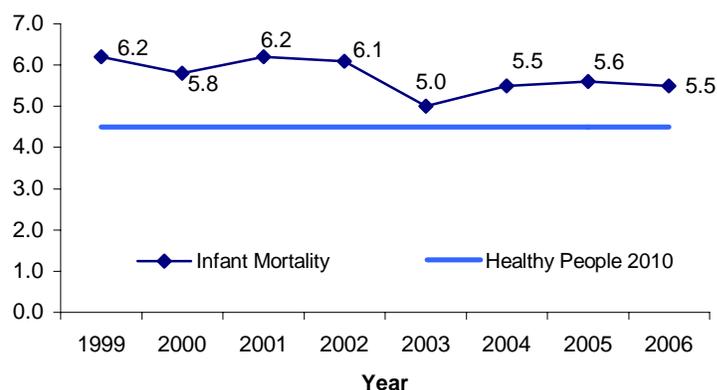
### Fetal Mortality

From 1999 to 2006 the County of Sacramento’s average fetal death rate was 6.3 per 1,000 live births plus fetal deaths, 53.7 % higher than the Healthy People 2010 goal of 4.1. Overall the fetal death rate for the County of Sacramento declined yearly from 6.9 per 1,000 live births plus fetal deaths in 1999 to 5.8 in 2006 (Figure 1).

**Figure 1: Fetal Death Rate County of Sacramento vs. Healthy People 2010, 1999-2006**



**Figure 2: Infant Mortality Rate, County of Sacramento vs. Healthy People 2010, 1999-2006**



### Infant Mortality

Over the same time span, the infant death rate was higher than the Healthy People 2010 goal, with an average of 5.7 per 1,000 live births each year. This is 27.5% higher than the goal of Healthy People 2010 (Figure 2).



## FIMR CASES AND SELECTION CRITERIA

From 2005 to 2007, for all racial and ethnic groups there were a total of 250 cases that were eligible for review by the FIMR program. The criteria below were used to select cases for review.

- Fetal deaths weighing 500 grams or more with a gestational age of at least 20 weeks.
- All infant deaths reviewed, regardless of birth-weight or gestational age.
- The mother is a resident of Sacramento County.
- Due to the recent change in the case review criteria by the California Department of Public Health, Maternal and Child Health Branch, only African American fetal and infant deaths were reviewed.

Of the 97 African American cases eligible for review, 70 (72%) were reviewed by the County of Sacramento FIMR Case Review Team. Table 1 shows breakdown of total number of FIMR cases, total African American deaths and cases reviewed.

**Table 1: Total Cases vs. Reviewed Cases  
Sacramento County, 2005-2007**

Type	Total Cases*		Total African American Cases**		Reviewed African American Cases***	
	Number	(%)	Number	(%)	Number	(%)
Fetal	156	(62.4)	46	(29.5)	34	(21.8)
Infant	94	(37.6)	51	(54.3)	36	(38.3)
Total	250	(100)	97	(38.8)	70	(28)

\* All cases eligible for FIMR case review regardless of race or ethnicity.

\*\* All African American cases eligible for FIMR case review

\*\*\* All African American cases reviewed by FIMR case review team

## GEOGRAPHIC DISTRIBUTION OF FIMR CASES

The geographic distribution of FIMR cases by zip code is similar for both total and reviewed cases. Of the 250 total cases, 55.6% were distributed in 13 of the County of Sacramento's zip code areas. The zip codes with the highest proportion of fetal/infant deaths (See Map 1) were Sacramento 95823 (8.8%) followed by Elk Grove 95758

(5.2%), Sacramento 95822 (4.4%), Oak Park 95820 (4.4%), Fruitridge 95824 (4.0%), Gardenland 95833 (4.0%), Sacramento 95831 (4.0%), Sacramento 95838 (4.0%), Antelope 95843 (3.6%), Elk Grove 95757 (3.6%), Carmichael 95608 (3.2%), Folsom 95630 (3.2%) and Perkins/Rosemont 95826 (3.2%).

Of the seventy reviewed African American cases, 50 % were distributed in 8 of the County of Sacramento's zip codes. The zip code with the highest proportion of fetal/- infant deaths (See Map 2) for reviewed African American cases was Sacramento 95823 (18.6%), followed by Florin 95828 (5.7%), Sacramento 95822 (4.3%), Fruitridge 95824 (4.3%), Oak Park 95820 (4.3%), Elk Grove 95757 (4.3%), North Sacramento 95815 (4.3%), and Carmichael 95608 (4.3%).

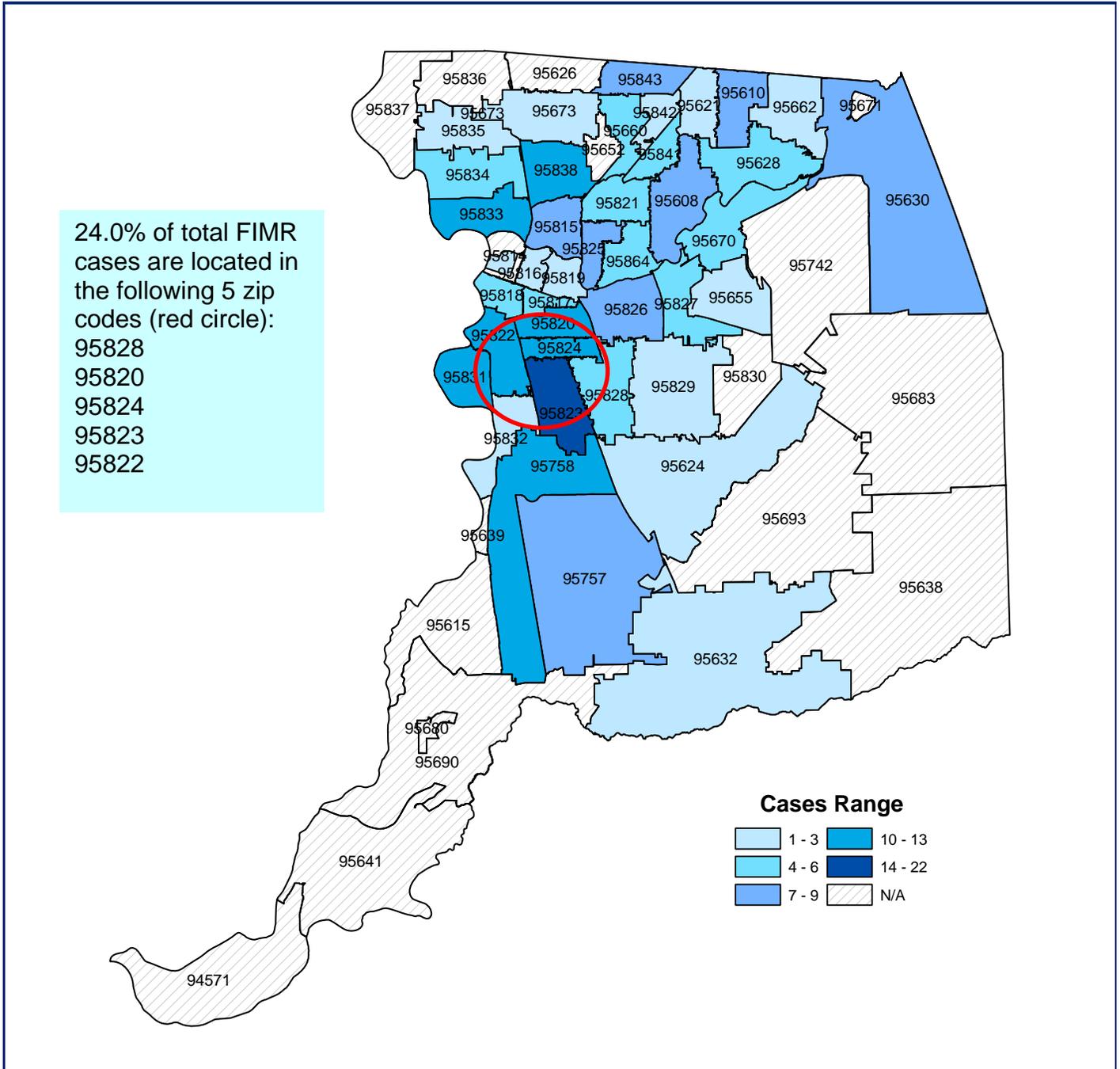
### **GEOGRAPHIC DISTRIBUTION OF AFRICAN AMERICAN BIRTHS**

Map 3, map 4 and map 5 show the distribution of all births, low birth weight births and premature births for African Americans. The distribution of those births showed a very similar pattern by zip code area as was observed for the African American FIMR deaths. The maps show that 31.9 percent all AA births, 34.6 percent of AA low birthweight deliveries, and 33.3 percent of AA premature births were distributed in zip code 95828, 95820, 95824, 95823 and 95822.

Compared with total FIMR cases, 24.0 percent of total FIMR cases were located in these five zip code areas and 37.1 percent of reviewed FIMR cases were located in these zip code areas (Map1, Map 2). This data shows that the areas with the highest rates of AA FIMR deaths correlated with the areas with the highest rates of AA births.

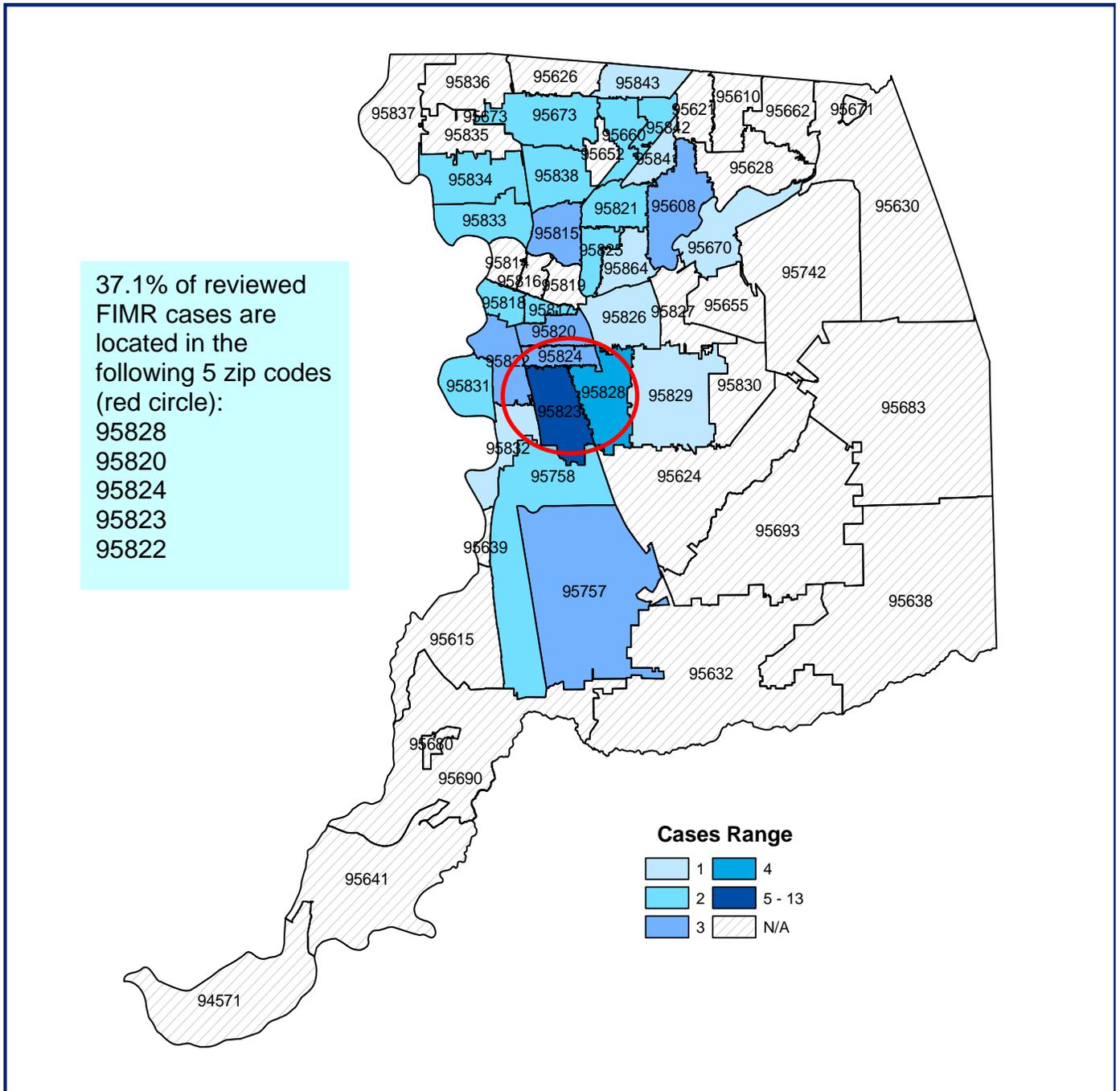


**Map 1: Distribution of FIMR Total Cases\* by Zip Code  
County of Sacramento, 2005—2007**

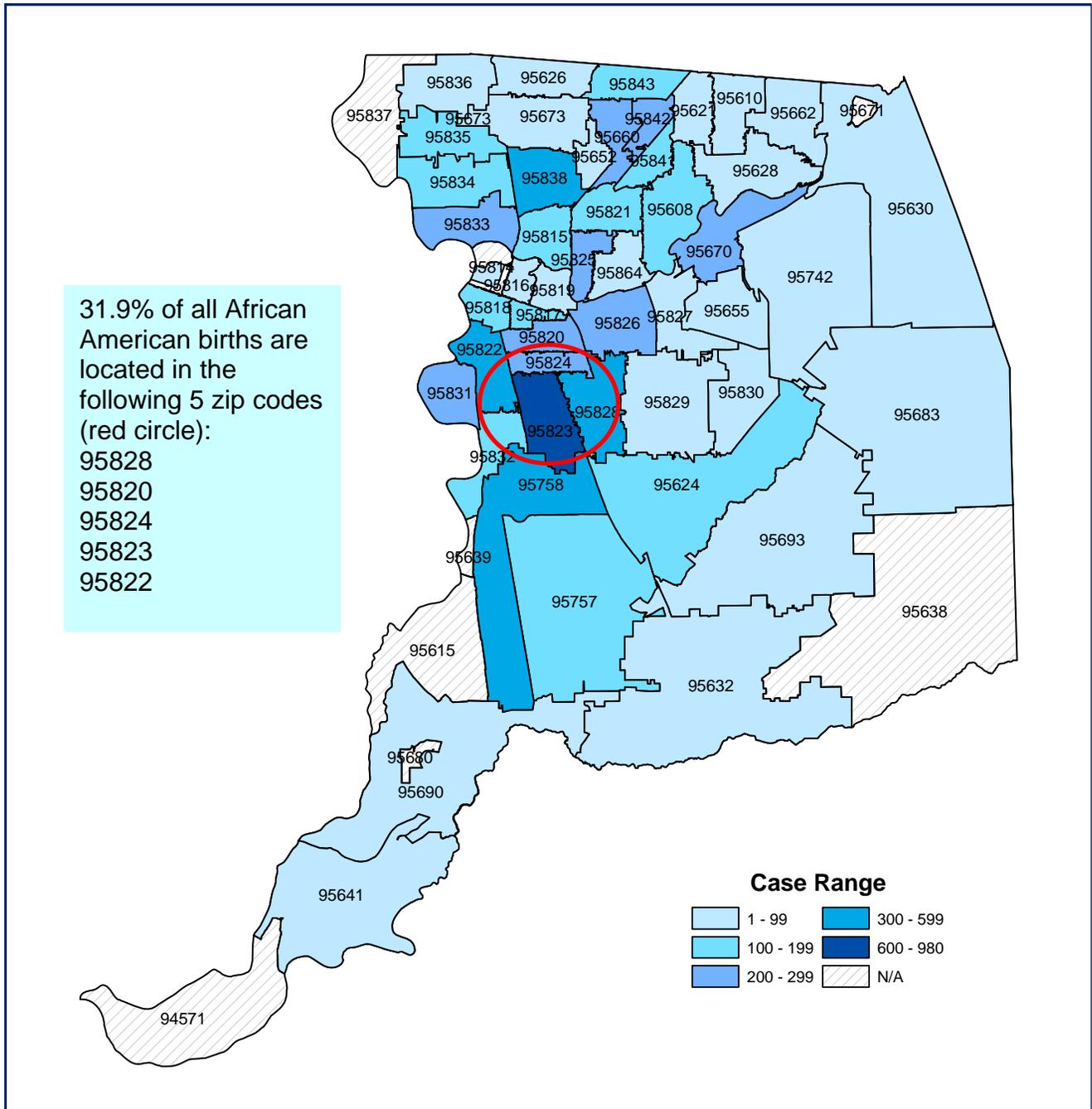


\*FIMR total Case: birth weight 500 grams or more and at least 20 weeks gestation age for fetal death and all infant deaths.

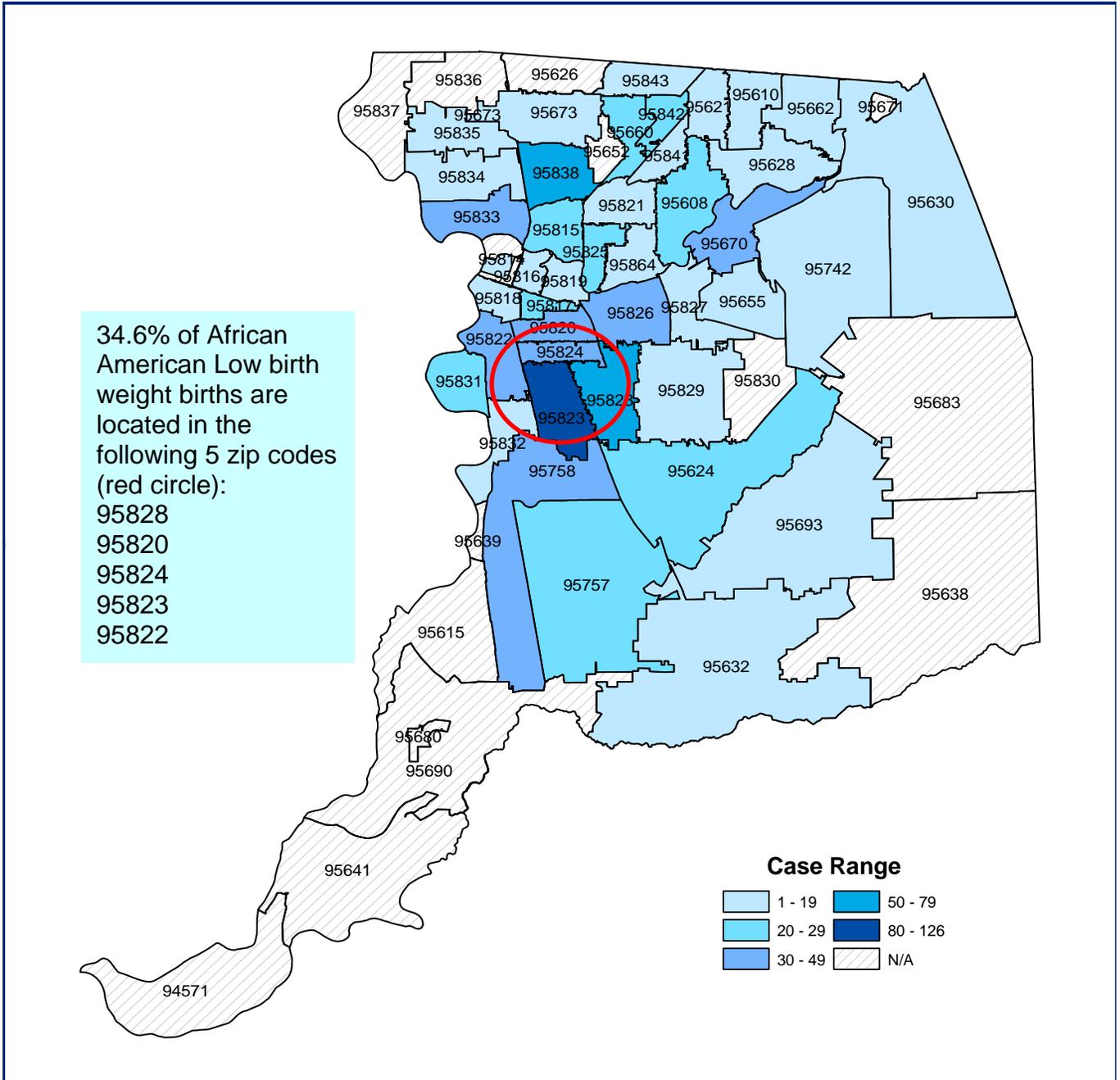
**Map 2: Distribution of FIMR Reviewed African American Cases by Zip Code, County of Sacramento, 2005—2007**



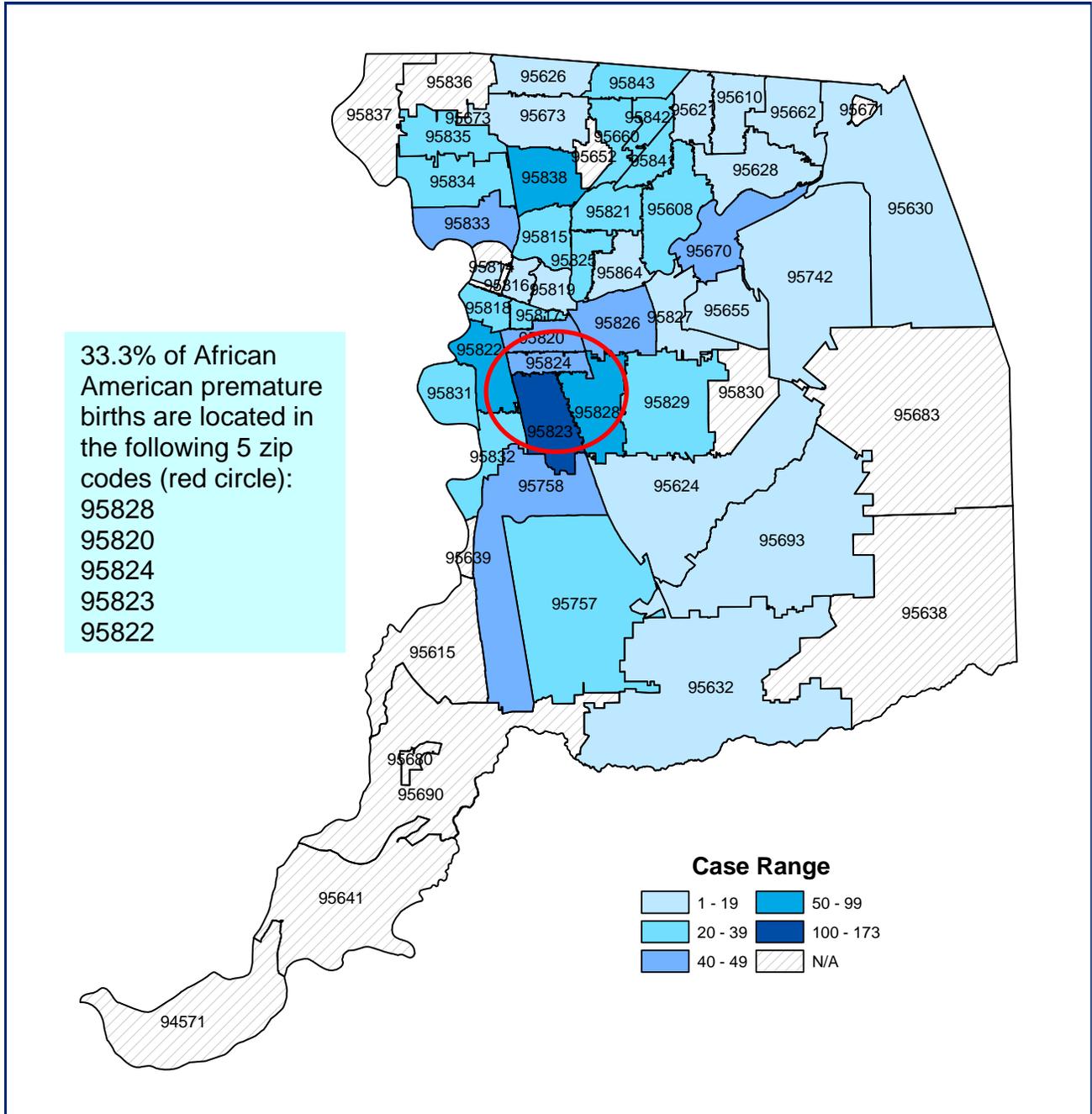
**Map 3: Distribution of African American Births by Zip Code  
County of Sacramento, 2004—2006**



**Map 4: Distributions of African American Low Birth Weight Births by Zip Code, Sacramento County, 2004—2006**



**Map 5: Distribution of African American Premature Births by Zip Code  
Sacramento County, 2004—2006**





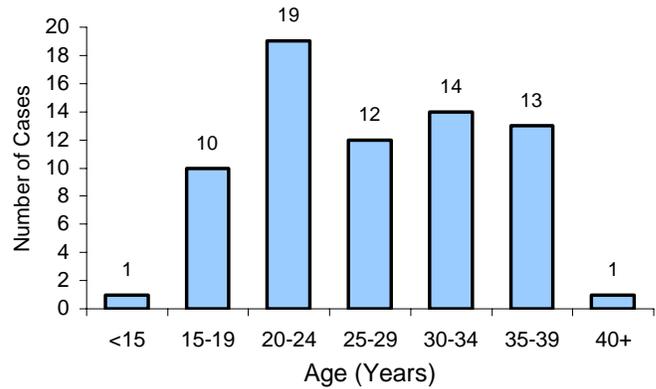
## CHARACTERISTICS OF CASES REVIEWED

From 2005 to 2007 the FIMR program reviewed 70 African American cases, an average of 23 cases per year. Of these cases, 48.6% were fetal deaths and 51.4% were infant deaths; males were 61.4 % of cases whereas females consisted of 38.6 % of cases.

### Maternal Age

Figure 3 shows the distribution of reviewed African American cases by maternal age. The majority of mothers were 20 years of age or older. The age group with the largest number was mothers aged 20 to 24 years, followed by mothers aged 30 to 34 years. Adolescents and young women aged 15-19 years and younger represent 15.7% of all reviewed cases, whereas women aged 40 years and older represent 1.4% of reviewed cases.

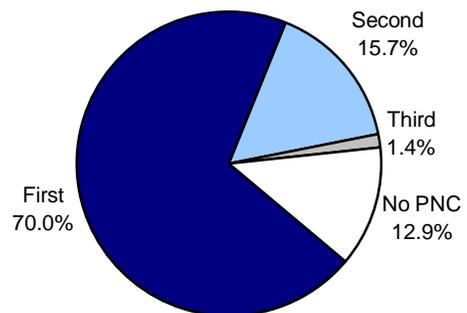
**Figure 3: Number of Reviewed African American Cases by Mother's Age, Sacramento County, 2005-2007**



### Trimester Prenatal Care Began

Of the reviewed African American cases, 70.0% (49) of mothers began their prenatal care within the first trimester, whereas 17.1% began their prenatal care in the second or third trimester, while 12.9% of mothers received no prenatal care (Figure 4).

**Figure 4: Percent of Reviewed Cases by Trimester Prenatal Care Began, County of Sacramento, 2005-2007**





## Gestational Age

Of the 70 reviewed African American FIMR cases from 2005 to 2007, 88.2% (30 out of 34) of fetal deaths occurred before 37 weeks gestation (Table 2). The mean gestational age for fetal deaths was 28 weeks of gestation. The range of gestational age was from 16

weeks to 43 weeks. Of the infant deaths, 77.7% (28 out of 36) were born premature (Table 2). The gestational age range was 19 weeks to 43 weeks, with a mean gestational age of 28 weeks. In 2005, prematurity was the leading cause of infant death.

**Table 2: Gestational Age of Reviewed Cases, County of Sacramento, 2005-2007**

Gestational Age in Weeks	Fetal Deaths		Infant Deaths	
	Number	Percent	Number	Percent
20-23	12	35.3	12	33.3
24-27	3	8.8	12	33.3
28-31	10	29.4	2	5.6
32-36	5	14.7	2	5.6
37+	3	8.8	7	19.4
unk	1	2.9	1	2.8
Total	34	100.0	36	100.0

## Delivery and Birth Weights

Table 3 shows the birth weights for fetal and infant cases. Over 80% of infant deaths and over 97% of fetal deaths were of low birth weight (less than 2,500 grams) at delivery. The birth weight range for fetal deaths was from 225 grams to 4,415 grams, while the mean birth weight was 1,141 grams (low birth-weight). The birth weight range for infant deaths was

from 227 grams to 3,858 grams, with an average birth weight of 1,245 grams (very low birth weight).

**Table 3. Birth Weight for Reviewed Case, Sacramento County 2005-2007**

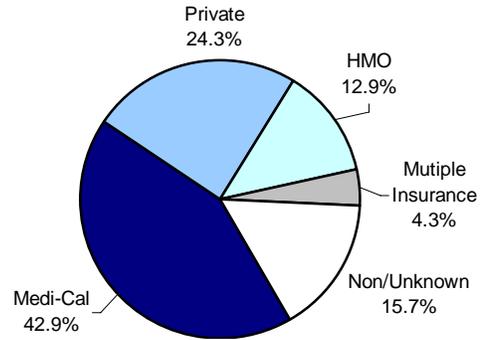
Birth Weight	Fetal (%)	Infant (%)
>= 2,500	1 (2.9)	7 (19.4)
<2,500	33 (97.1)	29 (80.6)
Total	34 (100)	36 (100)



### Medical Insurance

Figure 5 shows the type of health care insurance for the reviewed cases. Of the reviewed cases, nearly half (42.9%) of African American mothers had Medi-Cal health care insurance followed by private insurance (24.3%), HMO (12.9%), unknown or non insurance (15.7%) and 4.3% with multiple health insurance.

**Figure 5. Type of Health Care Insurance for Reviewed Cases, Sacramento County 2005-2007**

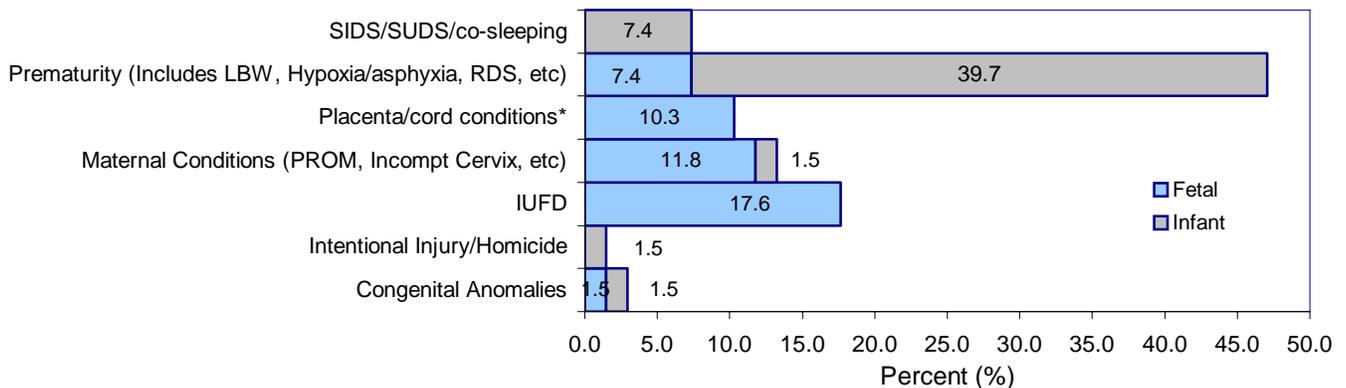


### Cause of Deaths

Close to half of the AA deaths reviewed were due to complications of prematurity (Figure 6). In 17.6% of the cases, the specific cause was not known and the cause of death was listed as Intrauterine fetal death (IUFD). The major identified causes of fetal death were maternal conditions (11.8%), and placental/cord

conditions (including chorioamnionitis, cord entanglement and abruption; (10.3%) and prematurity (7.4% of FIMR cases reviewed). The leading cause of infant death for AA reviewed cases was prematurity (39.7%), followed by SIDS/SUDS/Co-sleeping related deaths (7.4%).

**Figure 6. Leading Causes of Death for Reviewed Cases, Sacramento County 2005-2007**



\* Placenta/cord conditions: including chorioamnionitis, cord entanglement and abruption

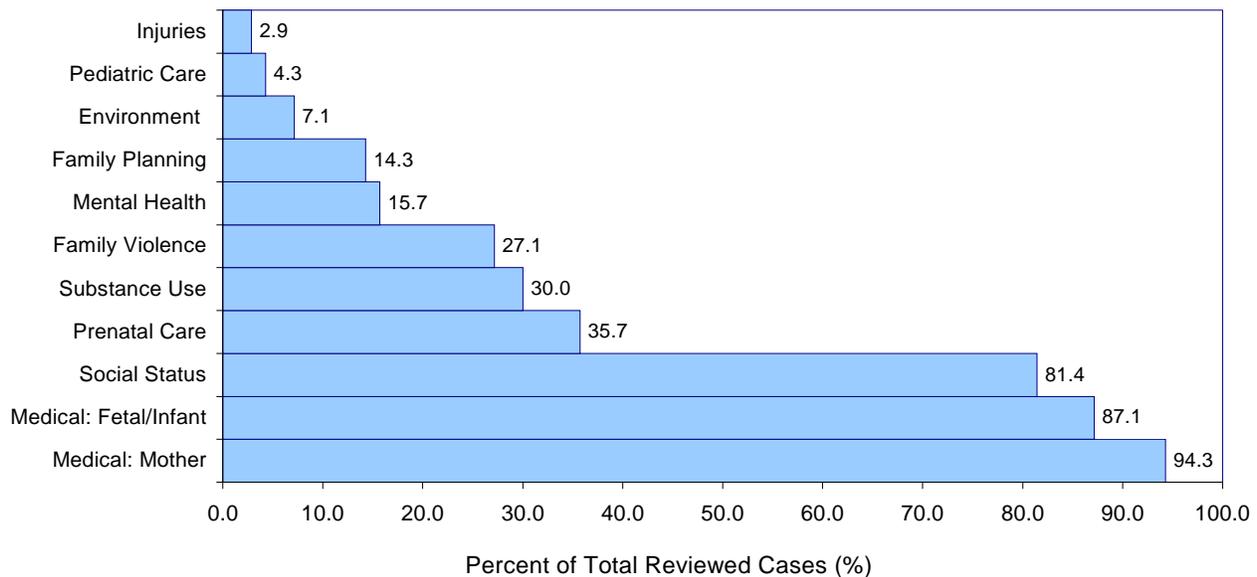


## ISSUES RELATED TO FETAL/INFANT MORTALITY

One of the objectives of the FIMR case review team was to identify issues related to the deaths reviewed. These issues identify critical gaps in services or other preventable risk factors that if addressed, may result in more favorable

birth outcomes. The issues were organized into eleven categories. Figure 7 shows how frequently each general category of issues was identified during the case review process.

**Figure 7: Percent of Reviewed Cases Identified by Specific Issue Sacramento County 2005-2007 (N=70)**



### Case Review Findings

During the three-year span, the following issues were identified most often.

#### 1. Medical: Maternal

A total of 66 cases (94.3% of 70 reviewed cases, Figure 5) had issues identified in this category. Of those cases, 26 (39.4%) had previous

therapeutic or spontaneous abortions; 25 (37.9%) had preterm labor; 18 (27.3%) mothers were obese; 17 (25.8%) had chorioamnionitis infection;



16 (24.2%) had experienced previous preterm deliveries, previous fetal or infant loss or low birth weight delivery; 11 (16.7%) had pregnancies after 35 years of age; 11 (16.7%) had their first

pregnancy before 18 years of age; 10 (15.2%) mothers experienced chronic disease during pregnancy (See Table 4).

**Table 4. Maternal Medical Risk Factors For Reviewed Cases, County 2005-2007**

**Sacramento**

Risk Factor	Number/Total	Percent
Previous therapeutic or spontaneous abortions	26/66	39.4%
Preterm Labor	25/66	37.9%
Obese Mother	18/66	27.3%
Chorioaminonitis	17/66	25.8%
Previous preterm, fetal/infant loss, or low birth weight delivery	16/66	24.2%
Premature rupture of membranes (PROM)	12/66	18.2%
Pregnancy >35 y.o	12/67	18.2%
Infection during pregnancy	11/66	16.7%
Teen Pregnancy	11/66	16.7%
Multiple gestation	11/67	16.7%
Chronic disease	10/66	15.2%
Placental abruption	9/66	13.6%

**2. Medical: Fetal/Infant**

A total of 61 cases (87.1%) were identified with fetal/infant medical issues. The majority of cases 54 (88.5%) were born premature, 27 (44.3%) were stillborn/intrauterine fetal death (IUFD); 12 (19.7%) had respiratory distress syndrome (RDS); 3 (4.9%) had congenital anomalies, and 3 (4.9%) were substance exposed (See Table 5).

**Table 5. Medical fetal/Infant Case Risk Factors For Reviewed Cases, 2005-2007**

Risk Factor	Number Total	Percent
Born premature	54/61	88.5%
Stillborn/Intrauterine fetal death(IUFD)	27/61	44.3%
Respiratory distress syndrome(RDS)	12/61	19.7%
Congenital anomalies	6/61	9.8%
Intrauterine growth retardation	3/61	4.9%
Substance exposed	3/62	4.9%



### 3. Prenatal Care

A total of 25 cases (37.5%) were identified with prenatal care issues. The majority of cases 16 (64.0%) had late entry into prenatal care, 6 (24.0%) missed doctor’s appointments; 6 (24.0%) had multiple health care providers, 5 (20.0%) had no prenatal care and 3 (12.0%) Although close to half of the deliveries were covered through Medi-Cal, only 3 (12%) of the

**Table 6: Prenatal Care Issues for Reviewed Cases, 2005-2007**

Risk Factor	Number/Total	Percent
Late entry into care	16/25	64.0%
Missed appointment	6/25	24.0%
Multiple providers	6/25	24.0%
No prenatal care	5/25	20.0%
CPSP participant	3/25	12.0%

cases were seen by CPSP (Comprehensive Perinatal Services Program) providers (See Table 6).

### 4. Substance Abuse

A total of 21 (30.0%) cases were identified with substance abuse issues during pregnancy. Of those cases 14 (66.7%) used illicit drugs, 9 (42.9%) used tobacco and 4 (19.0%) used alcohol.

**Table 7. Substance Abuse Risk Factor From Issues Check List, 2005-2007**

Risk Factor	Number/Total	Percent
Used illicit drug	14/21	66.7%
Used tobacco	9/21	42.9%
Used alcohol	4/21	19.0%

### 5. Mental Health

A total of 11 (15.7%) cases were identified with mental health and stress issues. Of those cases 7 (63.6%) had

maternal history of mental illness and 6 (54.5%) were on medication for mental illness (depression).



## 6. Social Status

A total of 57 (81.4%) cases were identified with social status issues. Of those cases, 16 (28.1%) were single mothers, 16 (28.1%) were unemployed, 12 (21.1%) mothers had criminal records, 13 (22.8%) fathers had criminal records, 7 (12.3%) mothers had less than a high school education and 6 (10.5%) mothers had no family support during pregnancy (Table 8).

**Table 8. Social Status Issues For Reviewed Cases, 2005-2007**

Risk Factor	Number/Total	Percent
Single parent	16/57	28.1%
Unemployed	16/57	28.1%
Mother had criminal record	12/57	21.1%
Father had criminal record	13/57	22.8%
Less than high school edu.	7/57	12.3%
No family support	6/57	10.5%

## 7. Family Violence/Neglect

A total of 19 (27.1%) cases were identified with issues related to family violence/neglect. Of those cases 9 (47.4%) had a history of domestic violence, 6 (31.6%) mothers had a history with Child Protective Services (CPS); 5 (26.3%) mothers were abused when they were children, 3 (15.8%) mothers had their children removed by

**Table 9. Family Violence/Neglect Issues For Reviewed Cases, 2005-2007**

Risk Factor	Number/Total	Percent
History of DV*	9/19	47.4%
History with CPS**	6/19	31.6%
Abused as child	5/20	26.3%
Children removed	3/19	15.8%
History of Child Abuse	3/19	15.8%

\* DV: Domestic violence

\*\* CPS: Child protective services

CPS and 3 (15.8%) mothers had a history of child abuse.

## 8. Family Planning

Information on family planning was available on only 10 (14.3%) cases. Of those cases, only 3 (30.0%) of the pregnancies were intended; the

remaining 7 (70%) were unintended/unplanned pregnancies of which one was due to failed contraception.



## **SYSTEM GAPS AND GAPS IN SERVICES:**

From a review of social factors and system gaps, the Case Review Team identified the following issues and suggested recommendations for reviewed cases:

### **System Gap 1:**

Intrauterine fetal death accounted for 17.6% of all fetal deaths. Almost ten percent of the FIMR cases from 2005-2007 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 1:*** Educate mothers in a culturally sensitive manner about the importance of monitoring a baby’s movements and rhythms and about the symptoms that should alert them to contact their healthcare provider.

### **System Gap 2:**

Thirty-nine percent of infant deaths and 7.4% of fetal deaths reviewed were due to prematurity and complications of premature birth. Five percent of the FIMR cases from 2005-2007 were identified as having inadequate or inconsistent education regarding signs and symptoms of preterm labor. Some mothers that were interviewed reported 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 2:*** Educate each prenatal patient in a culturally sensitive manner about the signs and symptoms of preterm labor and the need to seek immediate medical attention if they experienced these symptoms.

**System Gap 3:**

In almost 37.5 percent of the FIMR cases from 2005-2007, prenatal care was identified as an issue. In many cases, the mothers that were interviewed reported not having medical insurance to cover prenatal care expenses, or reported having their Medi-Cal applications delayed and thus did not seek care during their pregnancy. Information from the CPSP Program indicated that several providers were not accepting 'Presumptive Eligibility', and were not accepting women into prenatal care until they were enrolled into Medi-Cal. This was resulting in delayed entry into prenatal care for those who encountered problems or delays with enrollment

***Recommendation 3:*** Streamline Medi-Cal program enrollment procedure to increase acceptance of 'Presumptive eligibility' by providers and improve access to prenatal care for mothers.

**System Gap 4:**

Ninety-four percent of reviewed cases indicated at least one risk factor associated with the medical condition of the mother. These conditions included chronic health issues such as diabetes and hypertension, stress from multiple sources, mental health issues such as depressive symptoms, use of alcohol or other drugs, and previous poor birth outcomes.

***Recommendation 4.1:*** Encourage all healthcare providers and health delivery systems to include pre-conception and inter-conception care in their practices.



**Recommendation 4.2** *Ensure that all mothers experiencing a poor birth outcome (death, premature delivery, low-birth weight baby) receive follow-up care by a Public Health nurse.*

**Recommendation 4.3:** *Create and maintain a community awareness campaign that emphasizes the importance of a woman's health throughout the lifespan and promotes healthy lifestyle behaviors that recognize the cultural, language and racial diversity of the community.*

**Recommendation 4.4:** *Review best practice models for preconception care, prenatal care, and parenting education and implement strategies that will improve the mental, physical and social well-being of women of child-bearing age.*

## GLOSSARY OF TERMS

- **Chorioamnionitis:** infection of the membranes and fluid surrounding the fetus
- **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.
- **Fetal death:** Death prior to the complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy and which is not an induced termination of pregnancy (ICD-10). Statistics for fetal death include only deaths occurring in utero in which the fetus weighs 500 g or more occurring at 20 weeks of gestation or greater.
- **Infant death:** Death of a child before the first birthday.
- **Intentional Injury/Homicide:** Described injuries that are intentional or due to homicide.
- **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 chronic disease such as hypertension and diabetes.
- **Prematurity:** Born at a gestation period of less than 37 weeks.
- **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.
- **SUDS:** Sudden Unexpected Death Syndrome; sudden death in an infant for which no explanation can be found, often related to co-sleeping.
- **Unintentional injury:** Describes injuries that occurred due to accidents or other unintentional means.



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