Crib Notes

A Healthy Lifestyle Program To Prevent Infant Mortality

Presented by
Mary White, RN, BSN
Infant Health Promotion Coordinator

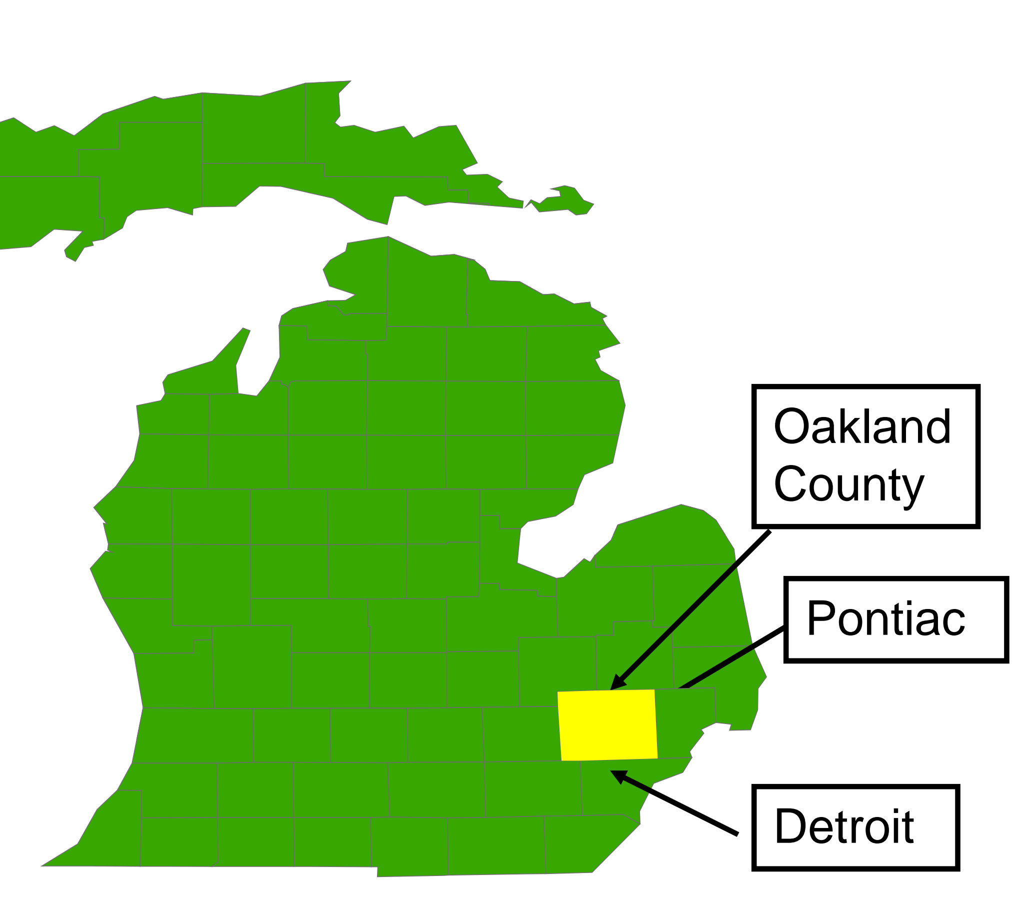
Objectives

- Participants will be able to identify 3 lifestyle factors or behaviors that contribute to poor pregnancy outcomes (Infant Mortality)
- Participants will be able to identify 3 strategies used to engage middle school students in choosing healthy and safe behaviors

The Problem

Through the Fetal & Infant Mortality Review process in Oakland County, Michigan, it was identified that in the years 2004-2006, *premature births* of infants and *positional asphyxia* accounted for 75% of the infant deaths in Pontiac, Michigan.

State of Michigan



Infant Mortality Rate

Michigan

Black 17.9

White 5.5

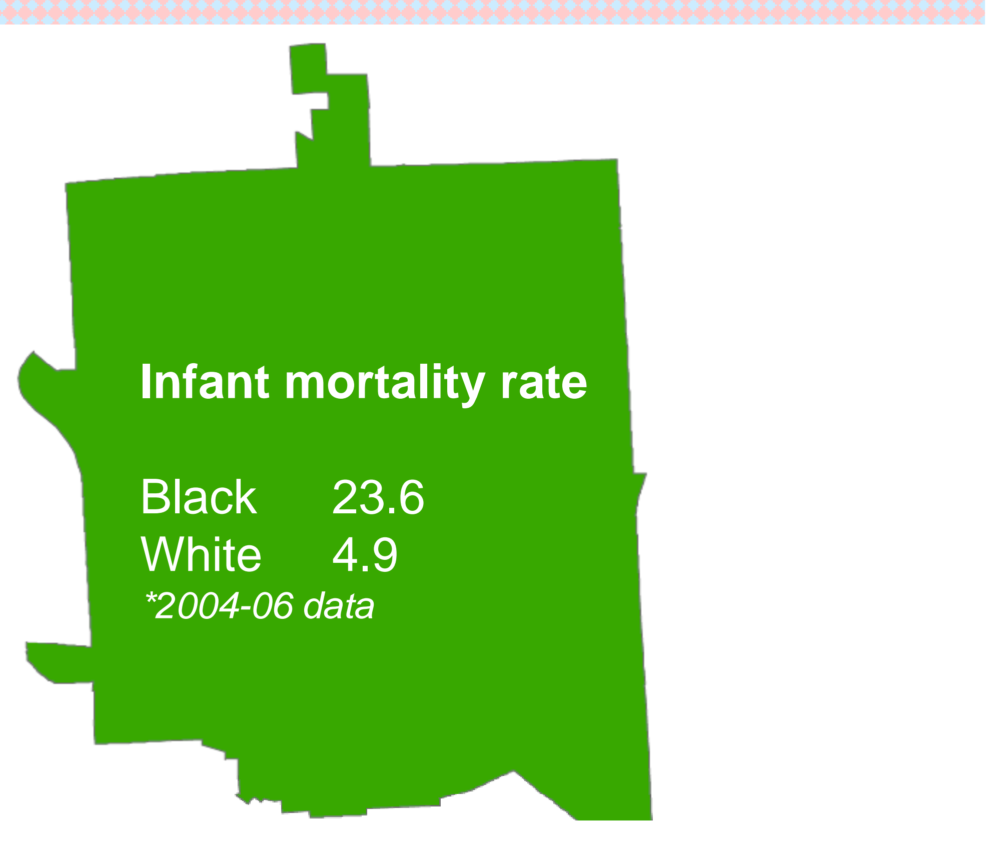
Oakland County

Black 15.4

White 5.4

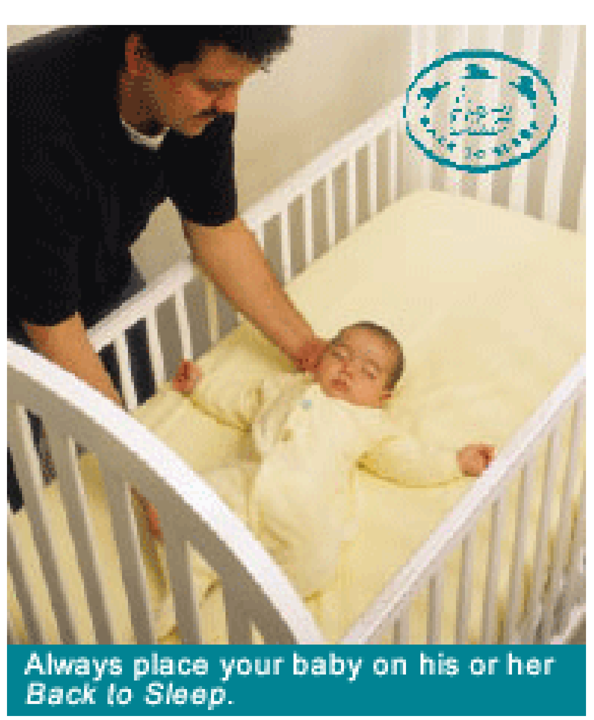
**2005 data*

City of Pontiac



Issues Identified

- July 2005 – Oakland County FIMR identified factors in infant deaths for Pontiac
- Unsafe sleep issues
  - Soft bedding in cribs
  - Baby in non-infant bed
  - Baby sleeping with others



Maternal Factors Identified by Oakland County FIMR

- 1ST Pregnancy before 18
- Tobacco use by Mom
- History of abuse
- Obesity and poor nutrition

Recommendation

Health education to promote healthy lifestyle behaviors and choices will impact the factors that contribute to infant mortality.

Goal

- Engage middle school students in strategies to choose healthy and safe behaviors

- Identify lifestyle behaviors that contribute to Infant Mortality

Crib Notes

A series of classes was created by Oakland County Health Division nurses to educate adolescents about making healthy choices now and in the future.

Within this context, we are teaching adolescents about factors which contribute to prematurity and infant mortality.

Crib Notes is an effort to reduce infant mortality in Oakland County

Some of the most important choices teens make affect their health...

Crib Notes teaches adolescents how to make healthy choices and properly care for siblings and/or other young children.

This interactive class series is offered at local middle schools and community sites by request. One 50-minute class is taught weekly for six weeks by staff from Oakland County Health Division.

Students learn about:

- Eating Right
- Dangers of Smoking
- Growth & Development
- Personal & Infant/Child Safety

Sign-Up for Crib Notes now!

Contact the Public Health Nurse at your school or call

248-858-1406

www.oakgov.com/health

The Oakland County Health Division will not deny participation in its programs based on race, sex, religion, national orgin, age or disability. State and Federal eligibility requirements apply for certain programs.

Crib Notes

- Teaches adolescents how to take care of babies
- Teaches about safe environments for babies
- Provides opportunities to practice how to safely take care of a baby

7 Weekly Lessons

- Tobacco and Marijuana Prevention
  - "Smoke Free Me"
- Obesity Prevention (2 sessions)
  - "Eat Fit"
  - Obesity as a national health problem in infants/children & families
- Infant/Child and Teen Nutrition
  - "Hands on Snack Preparation"

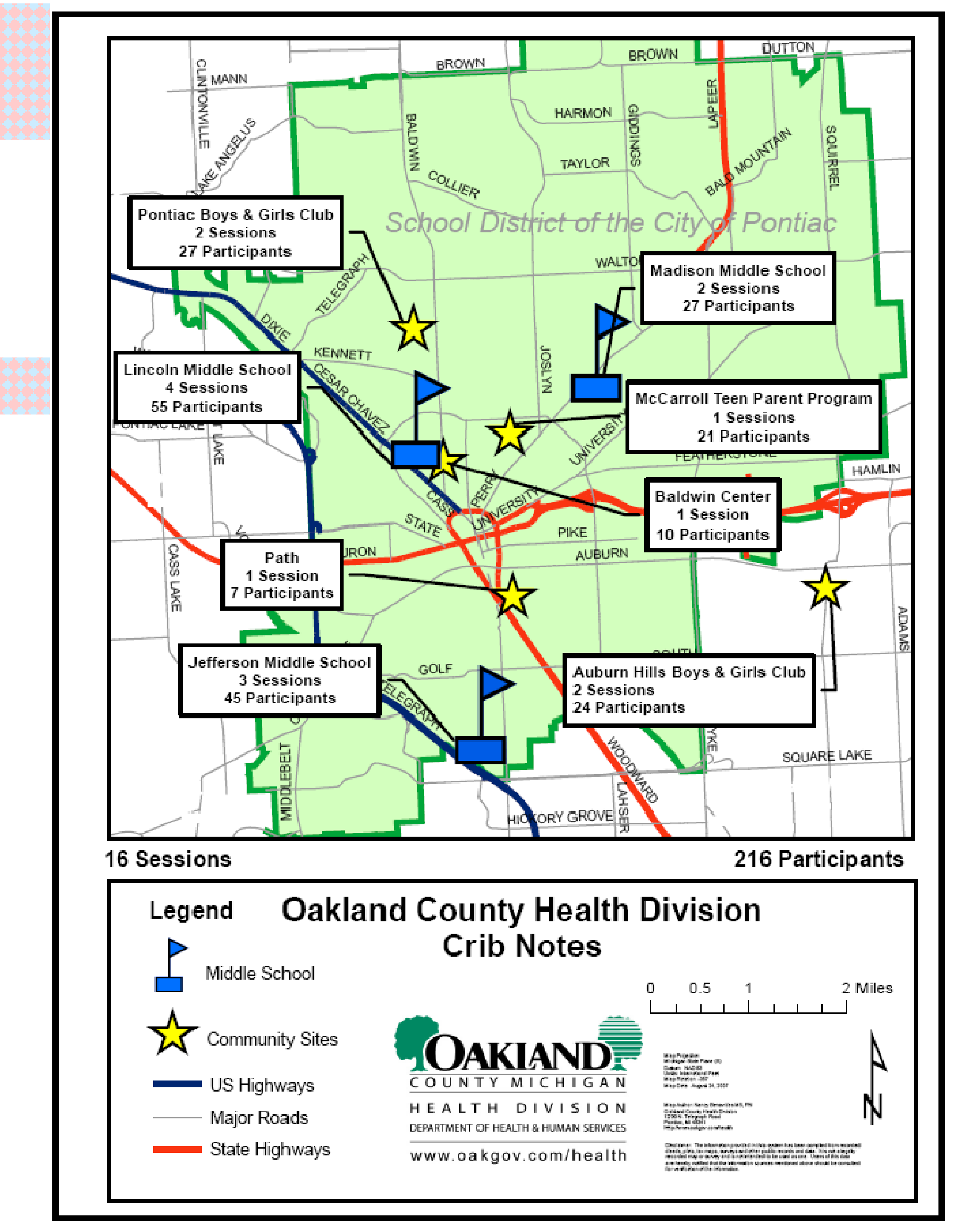
7 - Weekly Lessons

- Safe Sleep
  - “Safe Sleep for Your Child”
- Infant and Child Development
  - “Baby Think It Over”
- Violence Prevention
  - “No Bull”

7 – Weekly Lessons (Cont.)

- Birth Control Options*
- Sexually Transmitted Diseases/ Sexually Transmitted Infection Prevention*

*Lessons taught in community setting only



School District of the City of Pontiac
Pontiac Boys & Girls Club
2 Sessions
27 Participants
Madison Middle School
2 Sessions
27 Participants
Lincoln Middle School
4 Sessions
55 Participants
McCarroll Teen Parent Program
1 Sessions
21 Participants
Baldwin Center
1 Session
10 Participants
Path
1 Session
7 Participants
Jefferson Middle School
3 Sessions
45 Participants
Auburn Hills Boys & Girls Club
2 Sessions
24 Participants
BROWN
DUTTON
MANN
CLINTONVILLE
HARMON
GIDDINGS
LAPEER
TAYLOR
BALDWIN
COLLIER
BALD MOUNTAIN
SQUIRREL
TELEGRAPH
DIXIE
KENNETT
CESAR CHAVEZ
JOSLYN
UNIVERSITY
HAMLIN
LAKE
CASS
PERRY
STATE
PIKE
AUBURN
CASS LAKE
ADAMS
GOLF
WOODWARD
SQUARE LAKE
MIDDLEBELT
LAHSER
HICKORY GROVE
16 Sessions
216 Participants
Legend
Oakland County Health Division
Crib Notes
Middle School
Community Sites
US Highways
Major Roads
State Highways
0
0.5
1
2 Miles
OAKLAND
COUNTY MICHIGAN
HEALTH DIVISION
DEPARTMENT OF HEALTH & HUMAN SERVICES
www.oakgov.com/health
N

Outcomes

- 251 Public/Charter School students have participated in the 7 week series over the last 3 years.
- Pre and post testing resulted in 100% of students stating that *they learned ways they can reduce infant mortality.*

MEDIA

"Students learn to reduce infant mortality"

By Jeff Karoub

Associated Press Writer

What Is Next…

- Recommend expansion to other high risk school districts (which is in process)
- Implement in community settings (Boys and Girls clubs and community recreation centers)
- Evaluate students retention over long term (6 months and 1 year (this has been completed in 3 Pontiac middle schools; 6th & 8th graders)
- Compare future FIMR data to measure Crib Notes program success

DATA COLLECTION:

- Data collected by:

  -Pre tests- given immediately before a session began

  -Post tests- given immediately after a session completed

  -Follow up test- given 1 school year later

The same questions for the topics on the pre and post tests were used for the follow up tests

RESULTS…

General trends that were noted include:

- The 6th graders (retested as 7th graders) :

  -retained the **same or higher** percentage of knowledge in the areas of violence prevention, safe eating and preventing SBS

  -retained **less knowledge (not by much,** however) in the areas of safe sleep and child development

  -the 2 classes were **split** (1 higher and 1 lower) in retaining knowledge in the area of tobacco prevention

RESULTS…

The 8th graders, who became 9th graders when given the follow up test:

-retained the **same or significantly higher** percentage of knowledge (very near or at 100%) in the areas of violence prevention and safe feeding

-retained **less or the same** percentage of knowledge in the areas of safe asleep and preventing SBS

-retained **significantly less** knowledge in the areas of tobacco prevention and child development

Soooooo……..

Lowlights noted:

-Difficult challenge to relate tobacco risks and prevention message to all age students, but it appears the younger the better.

Highlights noted:

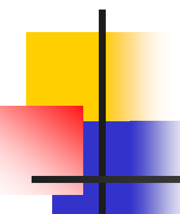
-Violence prevention information is very relevant and important to all students, no matter their age.

The Impact of Fetal and Infant Mortality Review (FIMR) Teams in Local Communities

FIMR Overview

May 5, 2008
Lansing Community Center

We wish to acknowledge the dedication of the hundreds of volunteers throughout the FIMR communities who serve our state and the children of Michigan by participating on review teams and/or action teams. The death of a child is a ***community*** *problem. We thank all of you for your role in better understanding how to prevent future deaths and improve lives of babies, children, and families.*



Infant Mortality

- Definition: The death of any live born infant prior to his/her first birthday.
- "The most sensitive index we possess of social welfare . . . "

  Julia Lathrop,
  Children's Bureau, 1913

Additional Definitions

- Fetal Death
  - Stillbirth: infant born with no signs of life
  - Reportable in Michigan if > 400 grams OR 20 weeks gestation and greater
- Perinatal Death
  - Fetal deaths (stillbirths) plus infant deaths under 7 days
- Neonatal Death
  - Live birth dying within 28 days

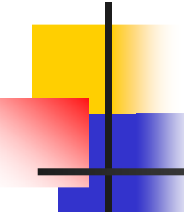
Source: National Center for Health Statistics, CDC

Michigan Definition of Live Birth

"Live birth" means the complete expulsion or extraction of a product of conception from its mother, regardless of the duration of the pregnancy, that after expulsion or extraction, whether or not the umbilical cord has been cut or the placenta is attached, shows any evidence of life, including, but not limited to, 1 or more of the following:

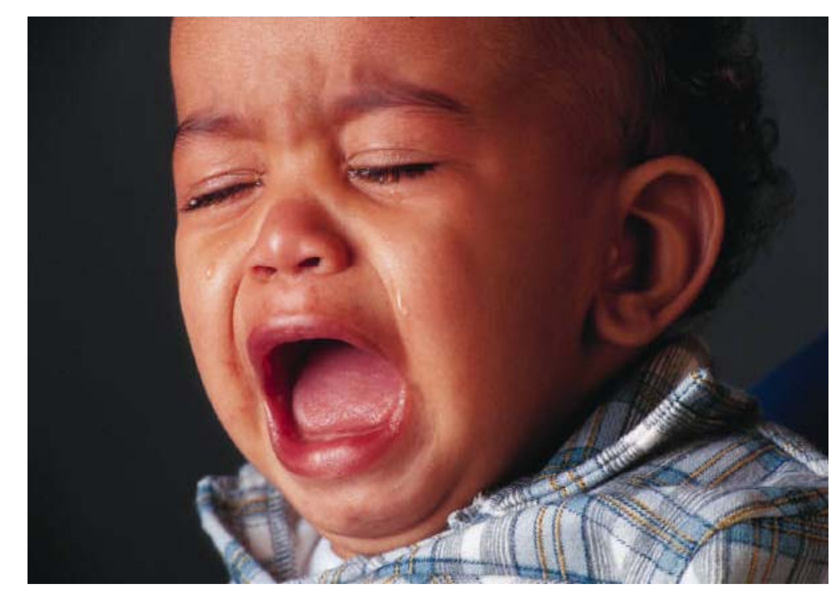
(i) Breathing.
(ii) A heartbeat.
(iii) Umbilical cord pulsation.
(iv) Definite movement of voluntary muscles.

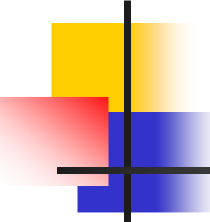
Act 687 of 2002 (MCL 333.1071)



Fetal Infant Mortality Review

- A process that tells us How and Why babies die in a community





FIMR Purpose

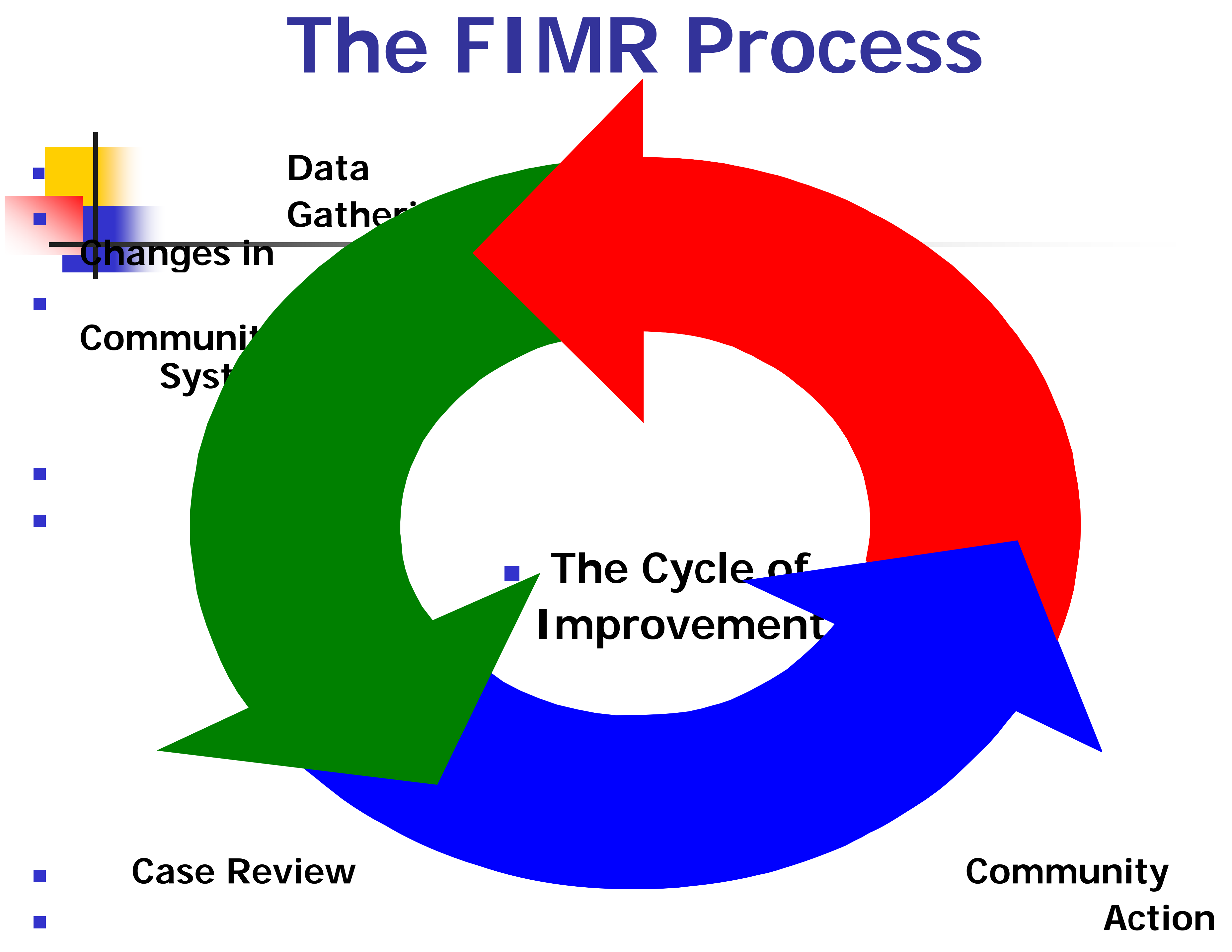
- The purpose of the review is to better understand all the factors contributing to infant deaths, and to identify areas for improvement in perinatal service systems and community resources for women, children, and families.

The FIMR Process

- **FIMR brings a multidisciplinary community team together to examine confidential, de-identified cases of infant deaths.**

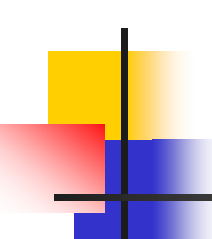
- Review Team

The FIMR Process



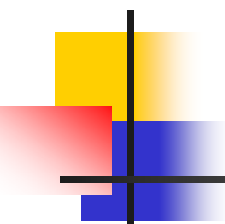
Sources of information for Maternal Health History

- Birth and Death certificates
- Prenatal records
  - OB/GYN history, past pregnancies
- Hospital records
  - Antepartum
  - Delivery
  - Newborn/NICU
  - ED admissions



Sources of information for Maternal Health History

- Public health records
  - MIHP
  - WIC
  - Family Planning
  - Other support services (CSHC, Healthy Start)
- DHS Records (including CPS histories)
- Police reports (domestic violence, other stressors)

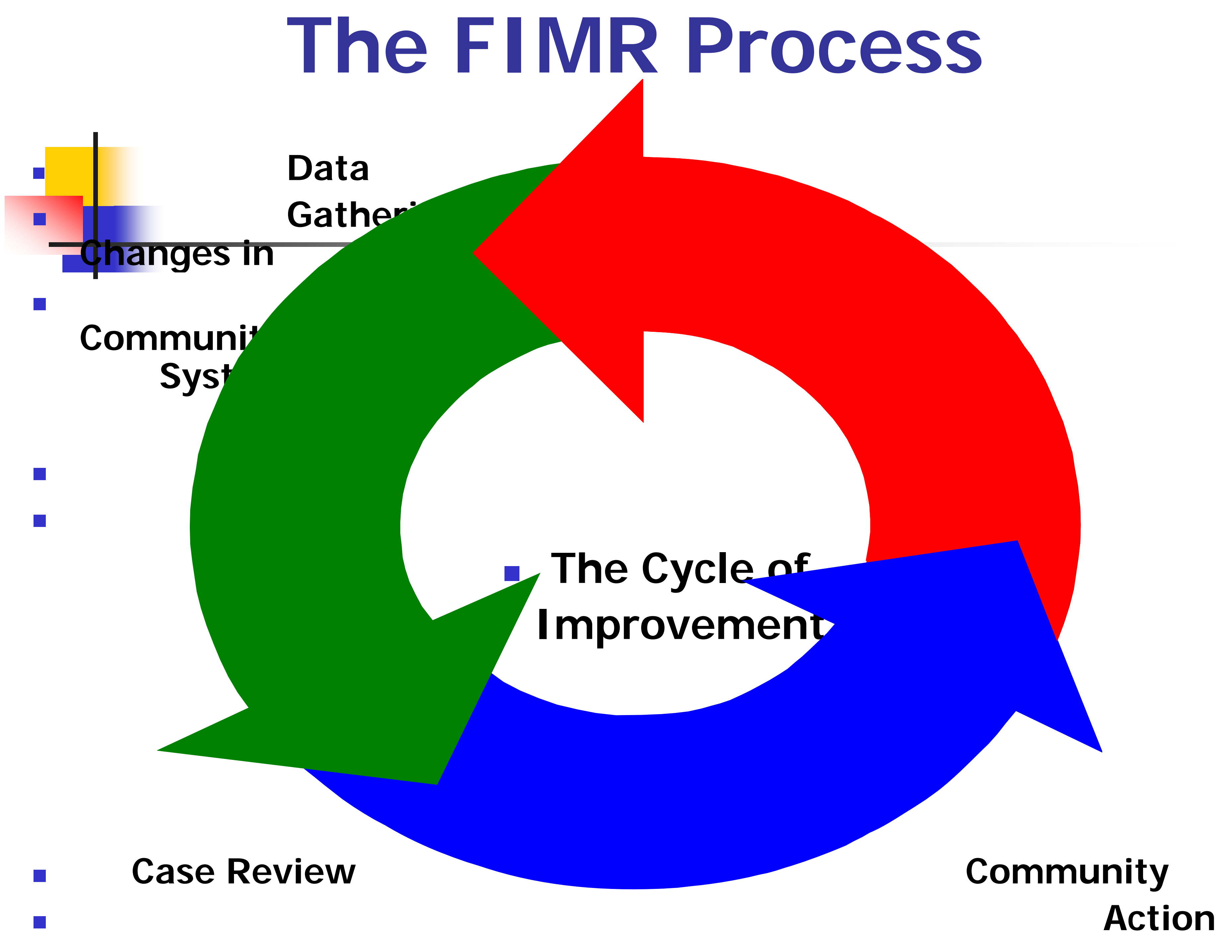


Additional Sources of Information

- Pediatric Records
  - Well baby/sick baby
  - Support services (early on, CSHC, etc.)
  - Immunization
  - Emergency and Urgent Care
- EMS records
- Medical Examiner's Records
  - Autopsy
  - Death Scene Investigation

The Story not told by Vital Statistics . . .

- **Home Interview**
- Gives insight into the mother's experience before and during pregnancy
- Conveys the mother's story of her encounters with local service systems


The FIMR Process
Data
Changes in
The Cycle of
Improvement
Case Review
Community
Action

FIMR: Two Tiered Process

- CRT

- Case Review Team
- Community Action Team

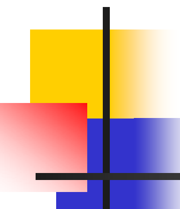
Role of the CRT (Community Review Team)

- Review Cases
  - Sentinel Events
  - Trends
  - Incidental Findings
- Develop Initial Recommendations

Role of the CAT (Community Action Team)

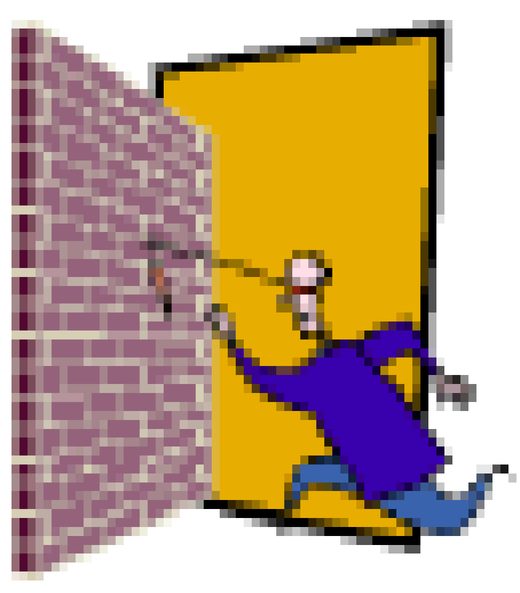
- Composed of those who have the political will and fiscal resources to create large scale systems change

- Responsible for taking CRT recommendations to **ACTION**
  - Creative solutions to improve services and resources
  - Prioritize and implement interventions



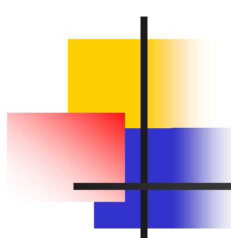
Benefits of FIMR

- Better agency cooperation
- Removal of barriers to care within a community
- Correct identification of ***local*** factors contributing to infant deaths



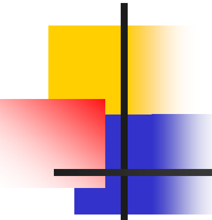
FIMR's Strength

- Access to medical records
  - Grant of authority by MDCH
  - CPS histories authorized by DHS
- Home Interviews (Qualitative Data)
- *Community specific* determinants of Infant Mortality



History of NFIMR Coalition

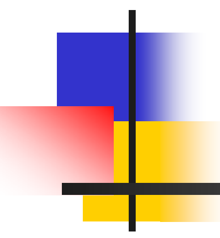
- Established in 1990
- Collaborative Effort of ACOG & MCHB



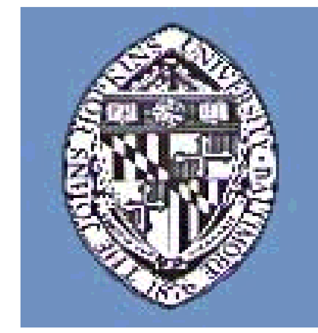
Current FIMR Projects

220 sites in 40 states

Evaluation of FIMR Programs Nationwide

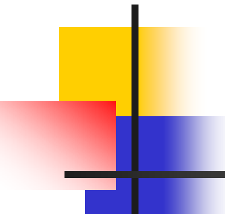


Early Findings



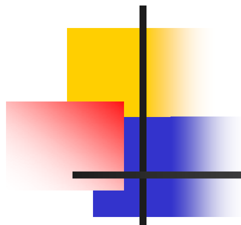
Women's and Children's Health Policy Center

The Johns Hopkins University



Methods

- 193 participating communities
- Cross-sectional observational study (Telephone interview, written survey & site visits)
  - Communities with FIMR
  - Communities with Perinatal Initiative
  - Communities with both (FIMR & PI)
  - Communities with neither

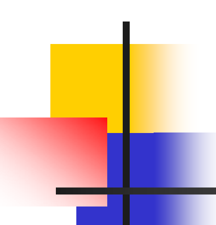


Results

- FIMR Programs contribute significantly to improvements in systems of health care for pregnant women and infants through enhanced public health activities in Communities.

FIMR-Specific Influences

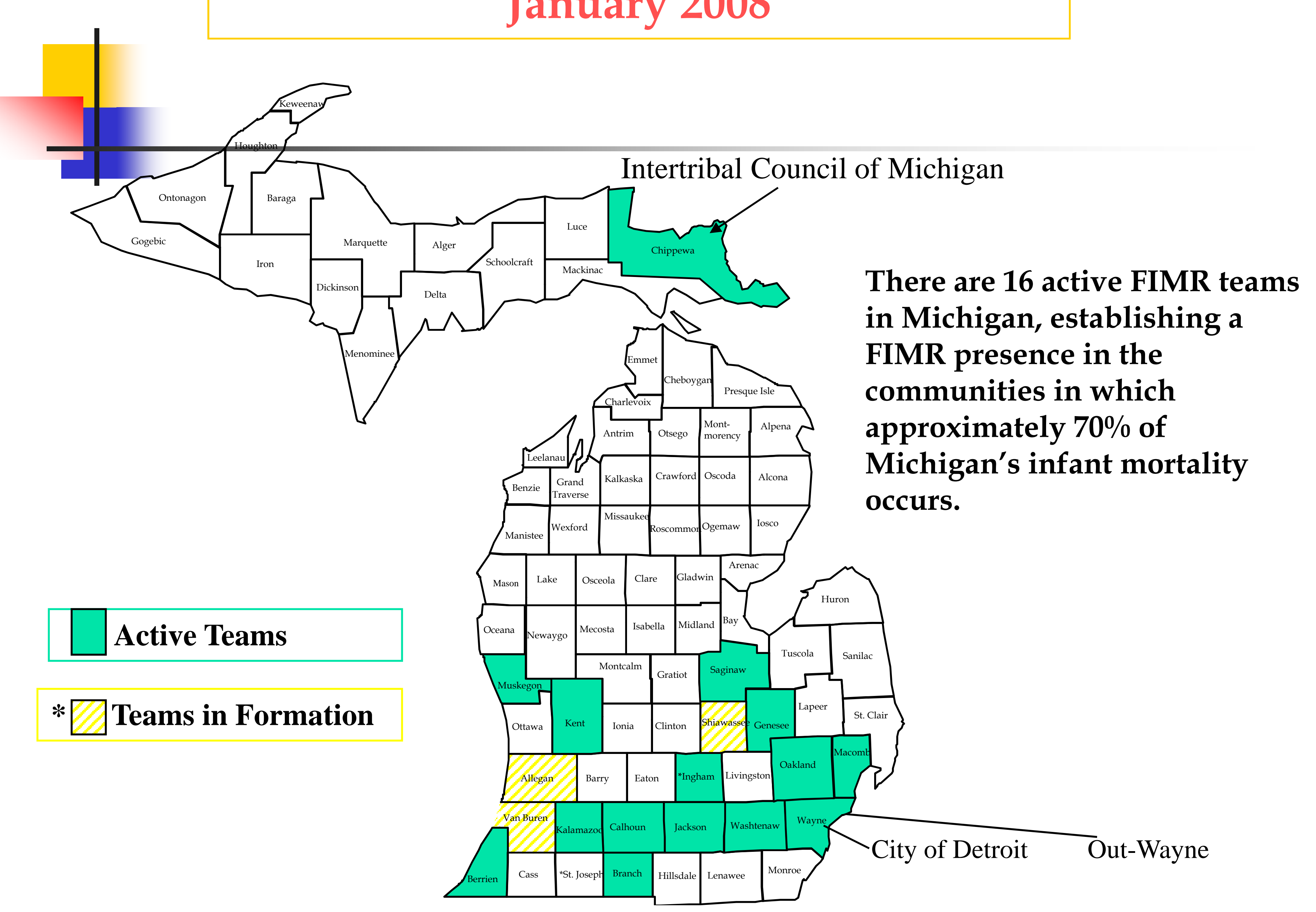
- Data assessment and analysis
- Client services and access
- Quality improvement for systems of care
- Partnerships and collaboration
- Population advocacy and policy development



History of FIMR in Michigan

- 1991, two sites among those originally funded by NFIMR

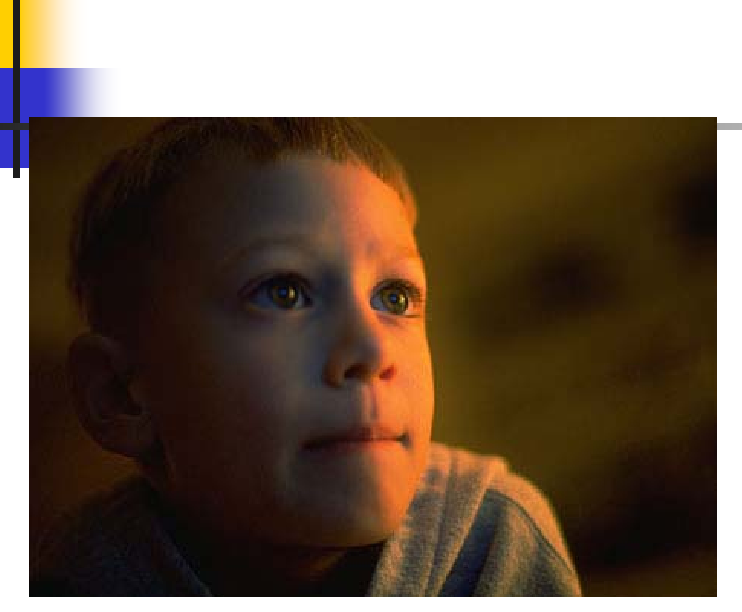
Current Michigan FIMR Sites
January 2008



There are 16 active FIMR teams in Michigan, establishing a FIMR presence in the communities in which approximately 70% of Michigan's infant mortality occurs.

Why FIMR?

- Michigan has significantly higher Infant Mortality rates than the rest of the country: currently 40th worst State for overall IM, and 3rd worst for Black infant mortality
- Healthy People 2010 objective: Infant Mortality Rate of 4.5 (Michigan 7.6/1000)
- No other State or local surveillance



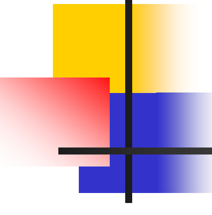
- When Vital Statistics alone cannot tell us the story . . . .

- . . . Communities turn to FIMR to tell us how and why babies are dying

Year of Review	Cases Reviewed
2000	75
2001	108
2002	126
2003	222
2004	230
2005	217
2006	249
2007	279

2004 FIMR Cases Reviewed by Cause

Cause of Death	2004	
	#	%
Perinatal Conditions	104	45.2
Congenital Anomaly	36	15.7
Infection	13	5.7
Injury	38	16.5
SIDS	14	6.1
Oth/Undeter/Unk	25	10.8
Total	230	100.0

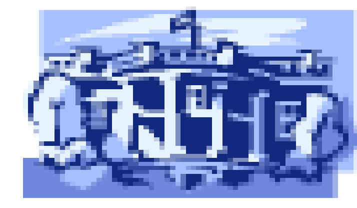


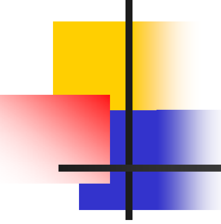
- Change Behavior

- Change Technology

- Change Systems

- Change the Law





Sleep Related Deaths

- Annually, Post-neonatal deaths (infant deaths from 28 days to one year of age) account for about 30% of all infant deaths
- Most of the Post-neonatal deaths are attributed to unsafe sleep environments
- Prevention of Sleep related deaths has a huge potential to impact the overall Infant Mortality Rate in Michigan

State Wide Prevention Efforts

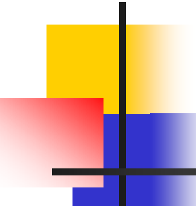
- **Multidisciplinary State level task force convened**
- **Uniform message and recommendations issued for:**
  - **Child Care providers**
  - **Health care professionals**
  - **General public**

- House bill 5225 – became Public Act 179 on July 1, 2004
- Mandates investigation by county medical examiner for cases of child death (under 2) under circumstances of sudden death, cause unknown.
- Promotes consistency and accuracy among county medical

American Academy of Pediatrics Recommendations

- In October of 2005, the American Academy of Pediatrics revised recommendations on Safe Sleep environment for Infants, reinforcing Michigan's guidelines.

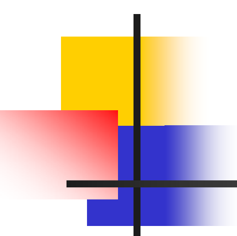
AAP Policy Statement, October 2005



FIMR as Partner

- Enhances ability of communities to work together.
- Brings players to a common table and improves communication among health and human service providers
- Provides community specific information about changing health care systems

FIMR's Role in Public Health

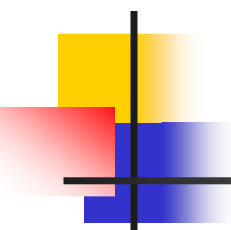


- Surveillance:

- The ongoing systematic collection and analysis of data about a health problem that can lead to action being taken to control or prevent the problem. An infant death is a sentinel event that triggers surveillance activities.

FIMR as part of other MCH Initiatives

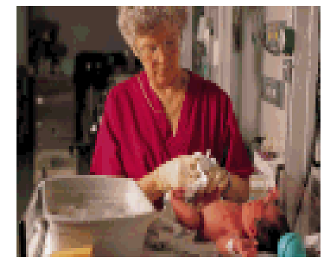
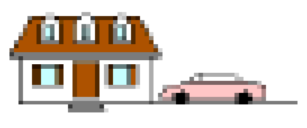
- Surveillance
  - Vital Statistics
  - PRAMS (Pregnancy Risk Assessment Monitoring)
  - CDR (Child Death Review)
  - MMR (Maternal Mortality Review)
  - PPOR (Perinatal Periods of Risk)
  - BRFSS (Behavioral Risk Factor survey System)

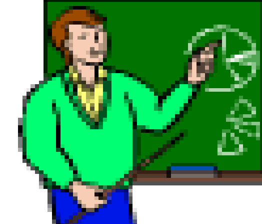


FIMR as part of other MCH Initiatives

- MIHP
- Plan First!
- Infant Mortality Coalitions Initiative, reducing Racial Disparities in 11 target communities
  - FIMR informs the coalitions about their systems problems → FIMR findings help shape work plans of coalitions

The death of an infant is a community problem . . . and is too multidimensional for responsibility to rest in any one place.



Rosemary Fournier, RN, BSN
MDCH Contractor/MPHI
Fetal Infant Mortality Review Program
Division of Family and Community Health

Phone: (517) 335-8416
e-mail: fournierr1@michigan.gov

FIMR A Pathway to Change

Sarah E. MacDonald, RN, BSN

Kent County FIMR

- 2001 – started reviewing all African American infant deaths.
  - 2-4 de-identified case summaries were brought to the FIMR CRT meeting monthly. At this meeting there would be:
    - Oral read through of the medical abstraction
    - Oral read through of the home interview
    - Discussion about the issues present and contributory to the death of the infant.

Total Infant Mortality in Kent County

- Approximately 70-80 infant deaths/year
- African American infant deaths ~ 20-25/yr
- Review provides extensive information of African American infant deaths but little on non-African American infant deaths

Reasons for Expansion of Review

- Identify similarities/differences between populations
- Assure effectiveness of CRT recommendations
- Provide opportunity for improved outcomes for total population

Expanded Kent County FIMR

- Continued full Case Review Team (CRT)
- Added subcommittee CRT
- Expanded FIMR Process:
  - Began in October 2006
  - Includes review of all infant deaths
    - Silent read through
    - Discussion of factors present and contributory
  - 67 cases reviewed since October 2006

Full Case Review Team

- Full Team –
  - Has approximately 15 members
  - Meets monthly
  - Reviews 4-6 de-identified case summaries
  - Reviews all cases with a home interview
  - Also reviews cases where infants died of SIDS, injury, infection, or the cause of death was undeterminable even if these cases do not have a home interview.

Subcommittee Case Review Team

- Has four members – physician, nurse, public health nurse, and geneticist
- Meets approximately monthly
- Reviews 6-10 de-identified case summaries
- Cases reviewed:
  - Extreme prematurity
  - Congenital anomalies incompatible with life
  - These cases will not have a home interview

Cases Reviewed N=212

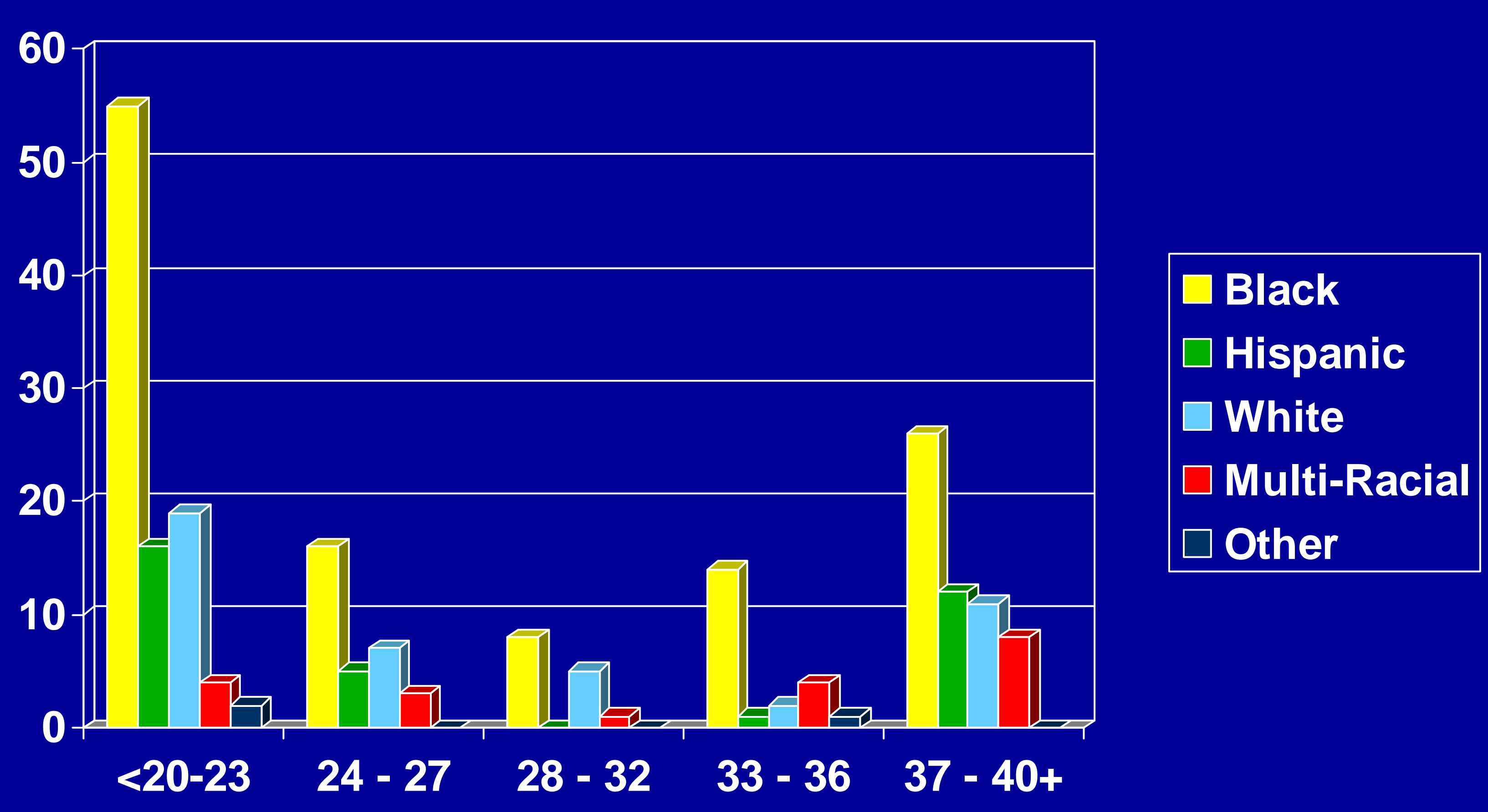
- The initial focus of the FIMR review was on African American infant mortality. In October of 2006, these reviews were expanded to include all races and ethnicities.

- Ethnicity:
  - Hispanic: 32
  - Arabic: 0
  - Other: 181
- Race:
  - White: 62
  - Black: 119
  - Multi-racial: 23
  - Other: 8

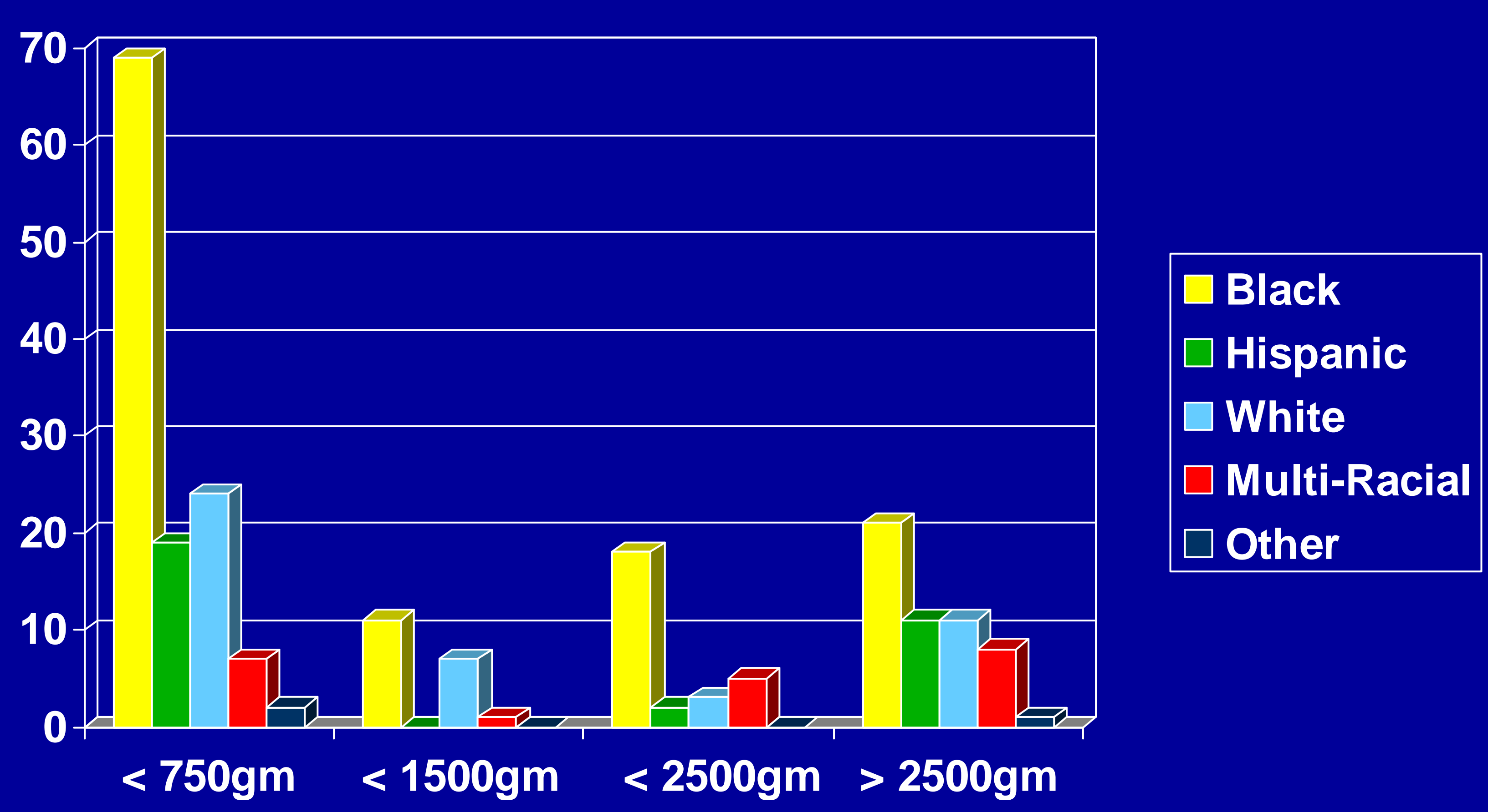
Cause of Death
(N=212 mother/babies, and 221 infants)

- Perinatal Conditions: 122
  - Complications of pregnancy/labor/delivery
  - Prematurity (28-37 weeks)
  - Extreme prematurity (<28 weeks)
  - Birth trauma
  - Hypoxia
  - Respiratory distress
- Congenital Anomalies: 42
- Infection: 11
- Injury: 11
- SIDS: 17
- Undetermined: 5
- Other: 13
  - Bronchopulmonary Dysplasia, Dehydration.

Gestational Age by Race of cases reviewed (n=221)



Birth Weight by Race of Cases Reviewed (N= 221)



FIMR Findings Lead to Recommendations

- 31 recommendations have been made to the Healthy Kent 2010 Infant Health Implementation Team (IHIT) since we began reviewing cases in 2001. The CAT has approximately 40 members.
- A few of these recommendations are:
  - Ensure access to timely and appropriate prenatal care and delivery services
  - Provide timely assessment and social support with existing resources
  - Assure consistent assessment of mental health for all pregnant women
  - Increase pre/interconceptional counseling

Actions Taken in Response to Recommendations

- Developed the Core Concepts of Prenatal Care. From this they developed:
  - A risk screening tool
  - A resource guide for providers
    - Decision trees
  - A pamphlet for providers to go over with their patients if they have a positive screen for substance use
  - A Healthy Women's Resource Guide

Outcomes

- Prenatal providers came together and developed the risk screening tool.
- The prenatal core concepts, prenatal screening tool, and the resource guide were presented to physicians at the OB Grand Rounds
- MSW intern went to all clinics and private practice offices to train staff to use these tools.