

Using the Perinatal Period of Risk Assessment to Build a Community-Wide Intervention Effort



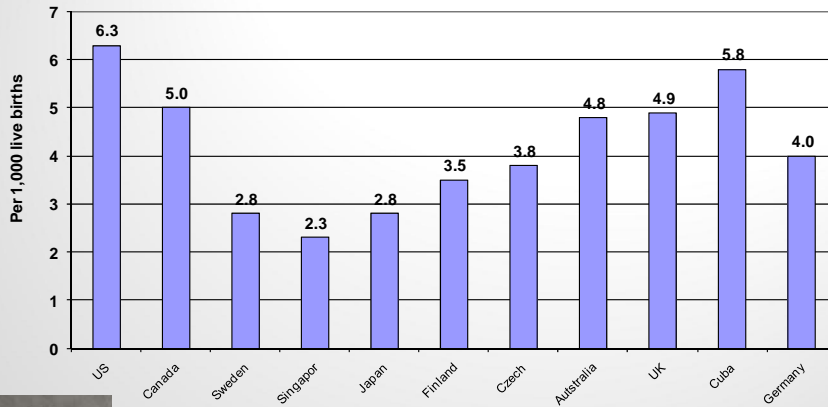
Masho SW, Keyser-Marcus L, Varner SB, Stith-Singleton R, Bradford J, Chapman D, and Svikis DS. Addressing Perinatal Disparities using Community Based Participatory Research. *Journal of Community Psychology*. 2011, 39: 292-302

Background

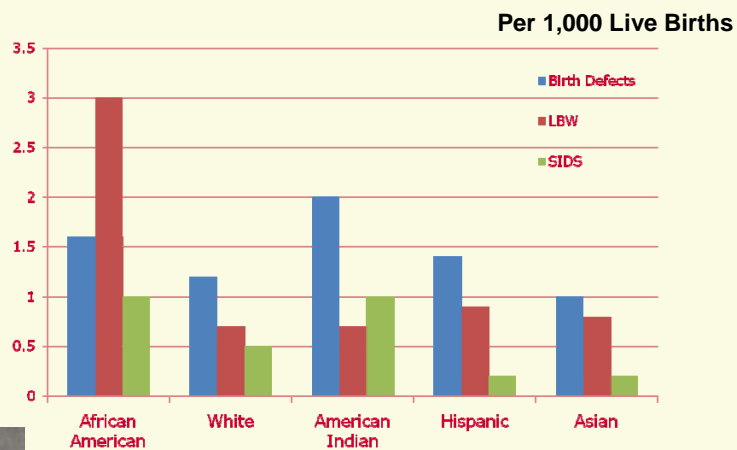
- ▶ Infant Mortality is a major problem in many communities.
- ▶ The United States continues to have one of the highest infant mortality rates (IMR).



Infant Mortality Rate in Selected Countries, 2009



Racial & Ethnic Disparities Causes of Infant Deaths



NCHS

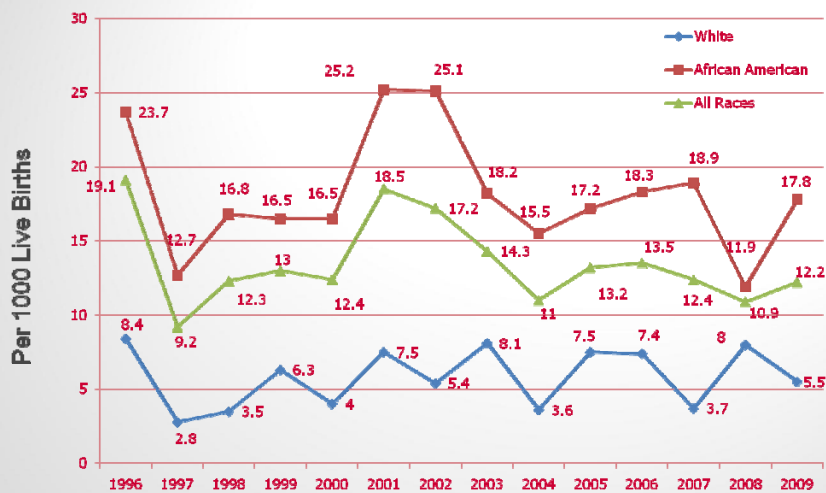


Background

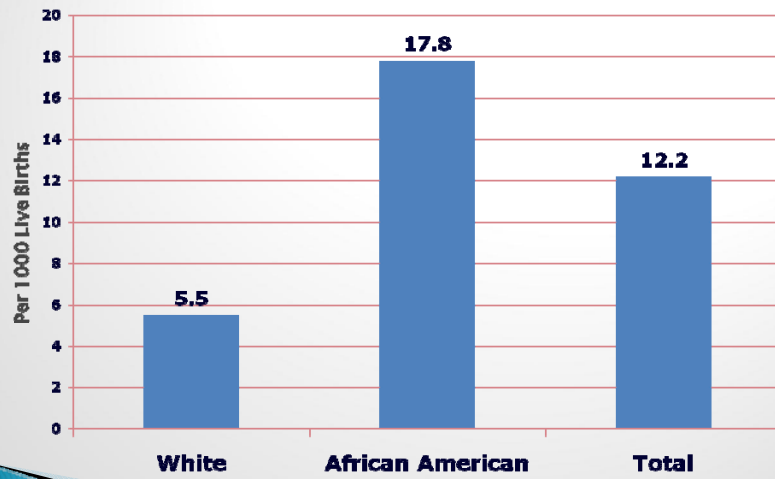
- ▶ Nearly 70 percent of all IM is associated with LBW and prematurity, as are about one-third of all congenital malformations.
- ▶ LBW babies are more likely to die within their first month of life than normal birth weight babies.



Infant Mortality in Richmond, VA (1998-2009)



Infant Mortality In Richmond, 2009



Why?



Identified Risk Factors

- ▶ Demographic
 - Age, ethnicity, race, education, income, marital status, etc.
- ▶ Medical condition
 - Existing medical conditions, Infections
- ▶ Social determinants and community norms
- ▶ Obstetric-gynecological history
 - Birth interval
- ▶ Genetic???
- ▶ Behaviors
 - Drug, alcohol, smoking etc.



Communities Discussed
Infant Mortality



Healthy Start
Consortium
Created



- ▶ Identify a tool that can easily translate data into action....



Perinatal Periods of Risk Analysis (PPOR)

- Maternal and Child Health Bureau encouraged communities to consider PPOR analysis

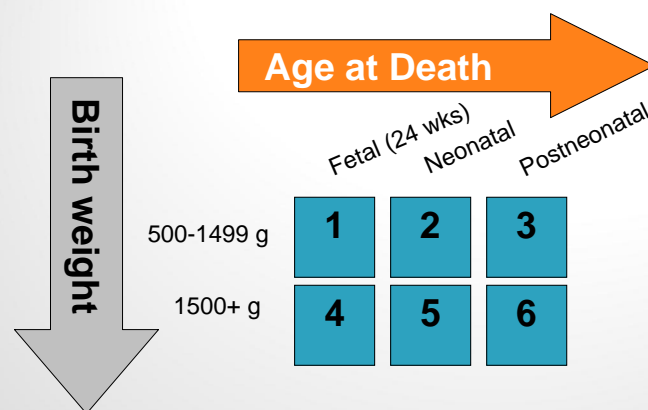


Perinatal Period of Risk (PPOR)

- ▶ Assesses the major factors contributing to infant mortality and morbidity
- ▶ Risk around the developmental periods
- ▶ Planning and evaluation tool to determine priorities for public health interventions, allocate resources to identify needs, and a forum for a community to discuss strategies for reducing infant mortality
- ▶ Identify gaps existing between different population subgroups, and a relatively fast and inexpensive way of assessing infant mortality

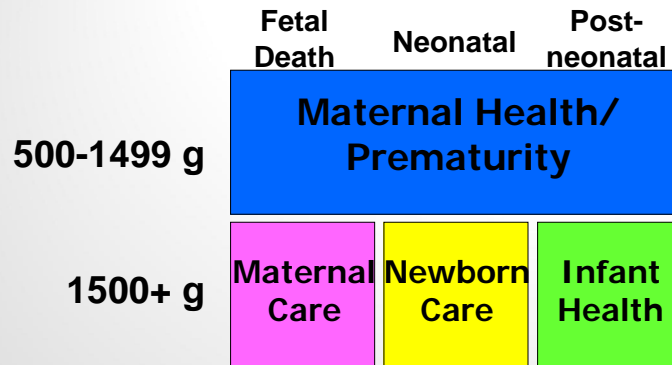


Developing the “Map” of Feto-infant Mortality



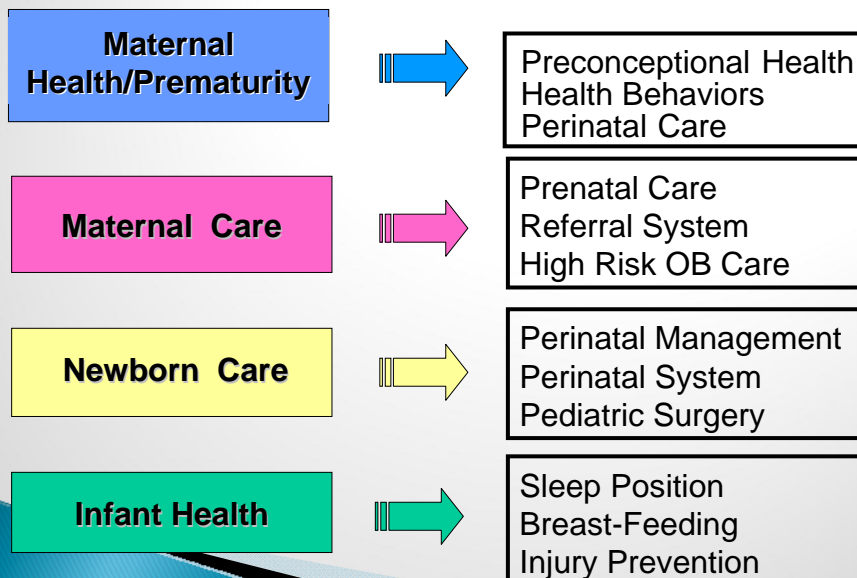
Source: City Match, August 2003

Perinatal Periods Of Risk Fetal-Infant Mortality Map



Source: City Match, August 2003

Mapping Outcomes to Intervention



METHODS



Data Source

- ▶ Virginia Center for Health Statistics, Virginia Department of Health (VDH)
- ▶ 1996 – 2008
 - Live birth file
 - Fetal death file
 - Infant death file
- ▶ Linked infant birth–death data



Definitions

- **Live births:** an infant born at any gestation exhibiting signs of life
- **Fetal death:** pregnancy loss 24+ weeks gestation and 500+ grams
- **Neonatal death:** death of an infant occurring between birth and 28 days of age
- **Postneonatal death:** death of an infant occurring between 28 days and one year of age



PPOR Exclusion Criteria*

- ▶ Spontaneous or induced abortions
- ▶ Fetal death <24 weeks gestation
- ▶ Fetal deaths < 500 grams
- ▶ Live births <500 grams
- ▶ Births with unknown birth weight

* Exclusion criteria established to ensure comparability of findings across regions and time periods through the use of uniform reporting criteria for births.



Data was categorized in to:

- ▶ Birth weight
 - 500–1499 grams
 - 1500–2499 grams
 - 2500+ grams

- ▶ Fetal and infant death
 - Fetal death
 - Neonatal death (<28 days)
 - Post neonatal death (28 days – 1st birthday)



- ▶ Fetal death file (N=1,844)
 - <24 wks gestation (N=1401) (76%)
 - Weight unknown = (N=1701)
 - <500 gram (N=84)
 - 48 fetal deaths were included

- ▶ Infant death file (N=194)
 - <500 gram (N=56)
 - 138 infant deaths included



Infant & Fetal Deaths in Richmond For all Races: 2001–2005

Race	Live Births	Infant death	Fetal Death
White	5,295	16	15
African American	9,040	120	31
Other	372	3	2
All Races	14,714	138	48

Perinatal Periods and Weight Categories

Birthweight	Fetal 24+ wks	Neonatal <28 days	Postneonatal 28 d to 1 yr
500-1499g			
1500-2499g			
2500+ g			



RESULTS

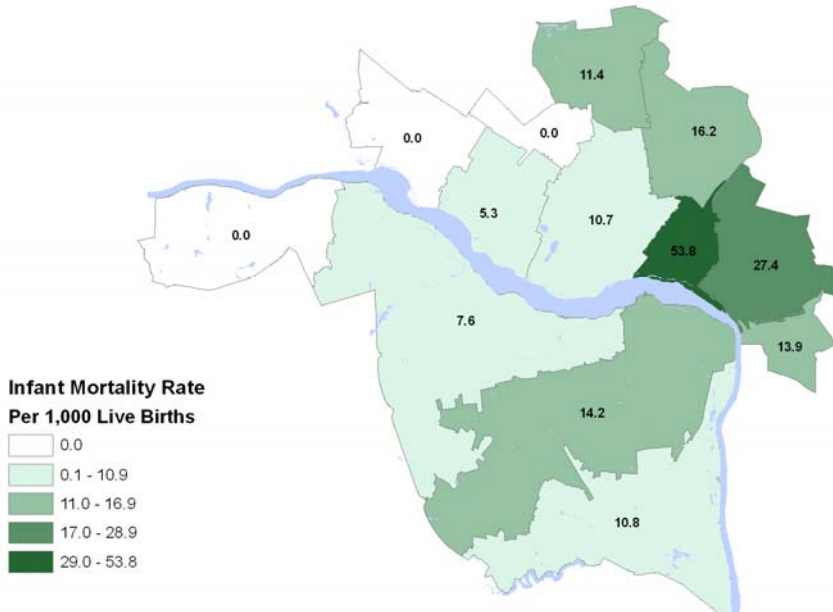


Five Year Infant Mortality Rate by Race, Richmond, VA

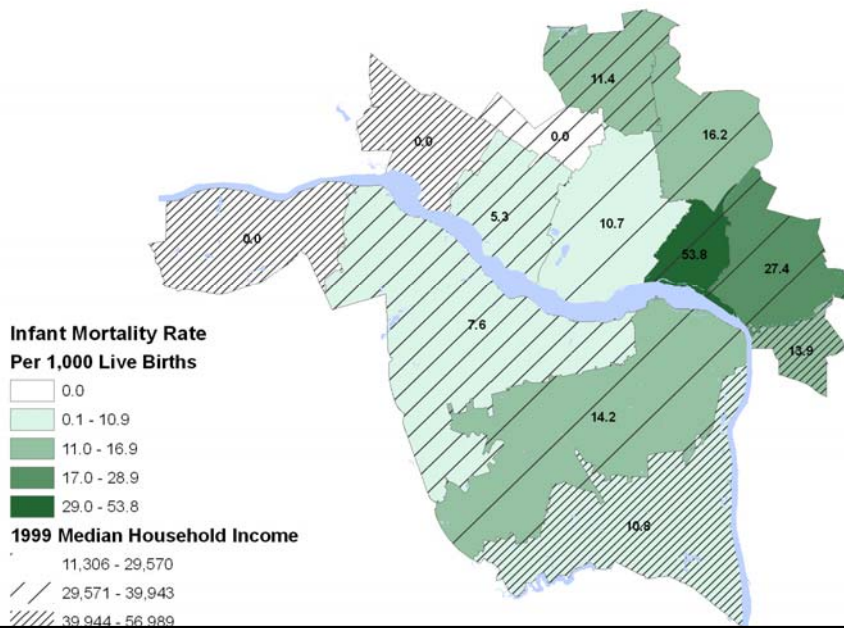
	1996-2000	2001-2005
All Races	11.2	13.1
White	5.8	4.1
African American	16.5	18.6



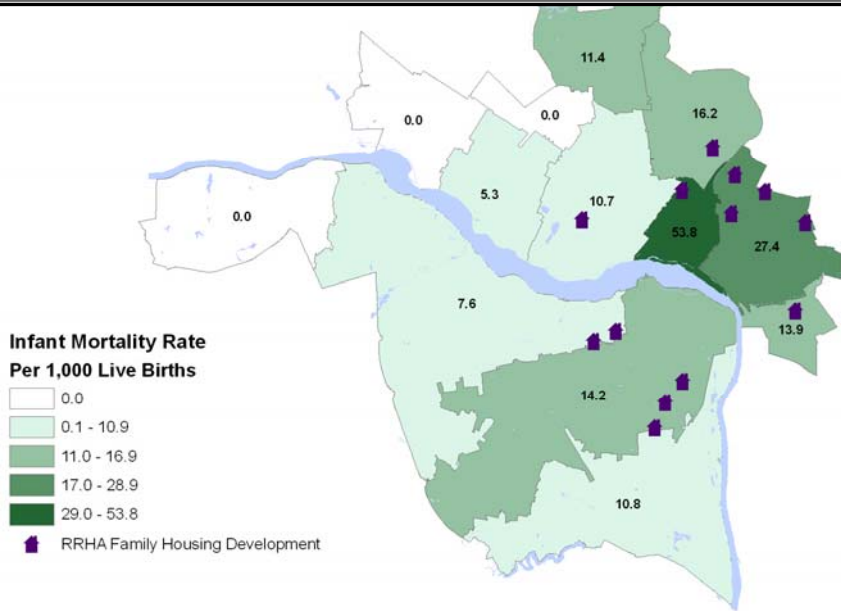
Spatial Presentation of Infant Mortality Rate in Richmond, 2001–5



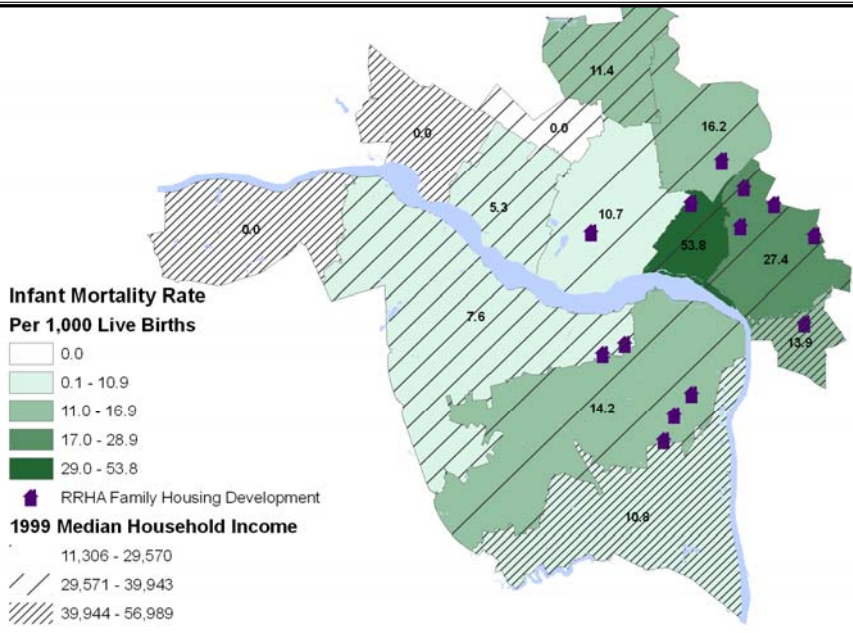
Spatial Presentation of Infant Mortality and Median Income, 2001–5



Spatial Presentation of Infant Mortality Rate and Public Housing, 2001-5

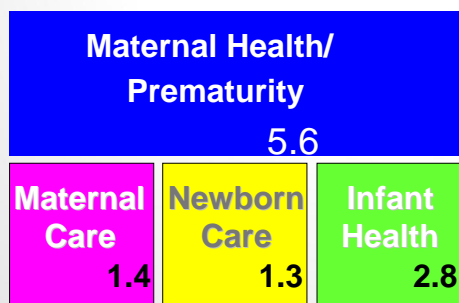


Spatial Presentation of Infant Mortality, Median Income and Public Housing



*Feto-Infant Mortality Rates
PPOR Rates for All Races*

2001-05

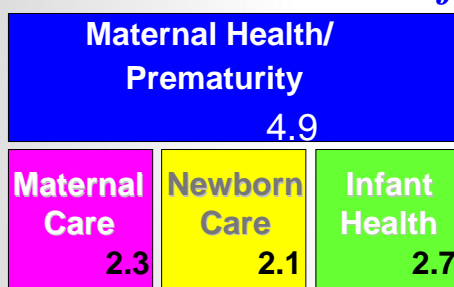


11.2 per 1,000
Infant & fetal death



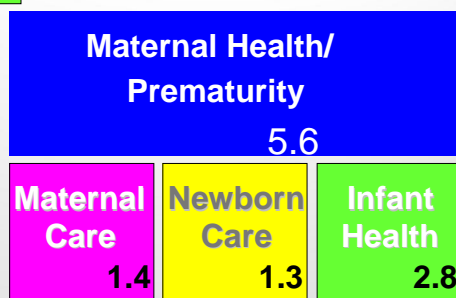
*Feto-Infant Mortality Rates
PPOR Rates for All Races*

1996-2000

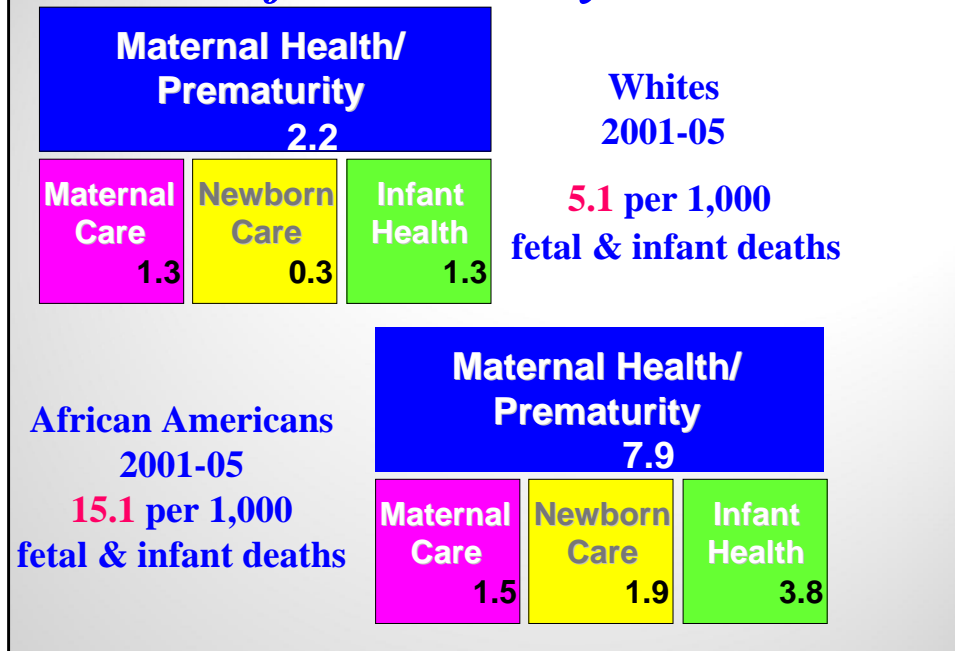


12.0 per 1,000
births & fetal deaths

2001-05
11.2 per 1,000
birth & fetal death

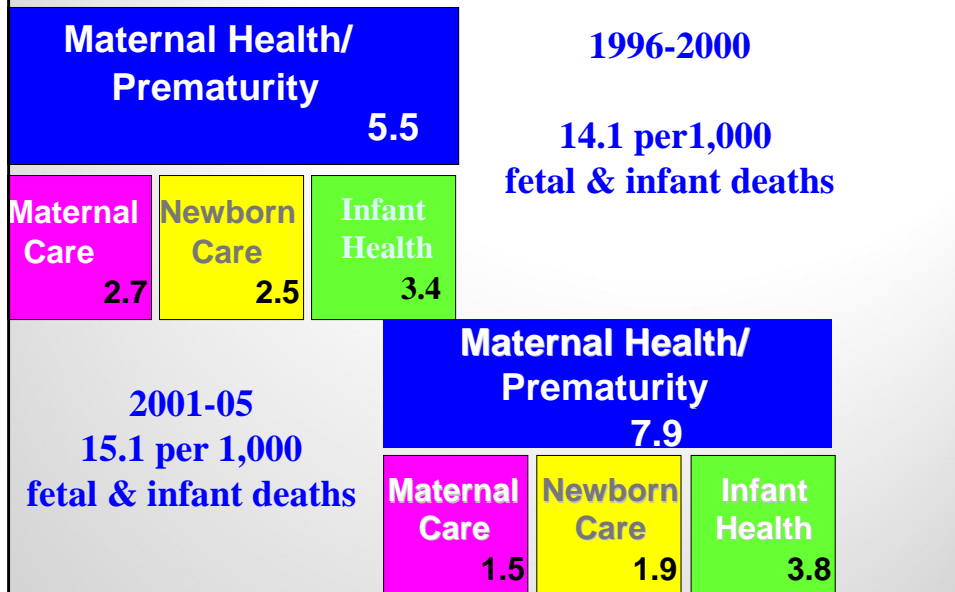


Feto-Infant Mortality Rates



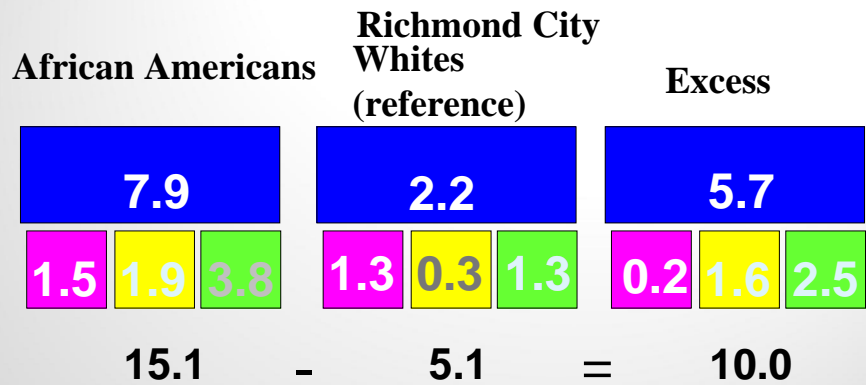
Feto-Infant Mortality Rates

PPOR Rates for African Americans

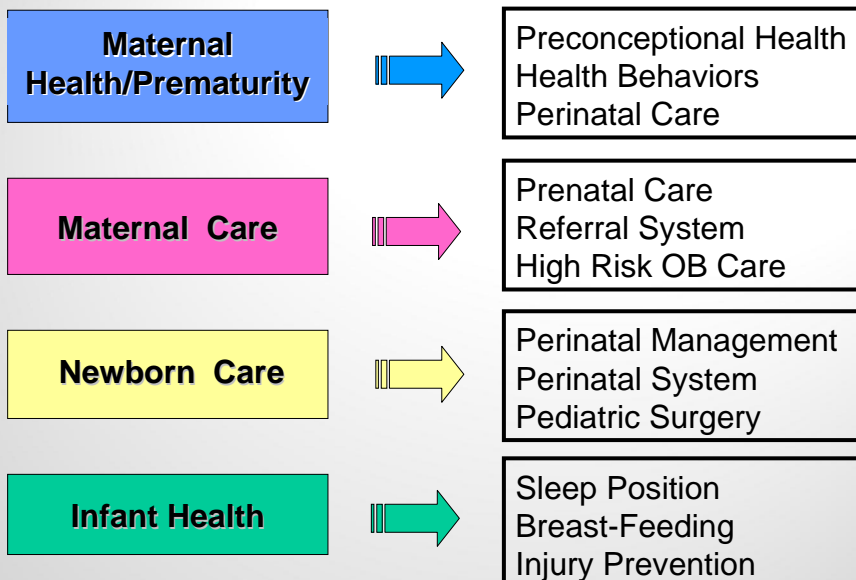


Excess Feto -Infant Mortality

Richmond City

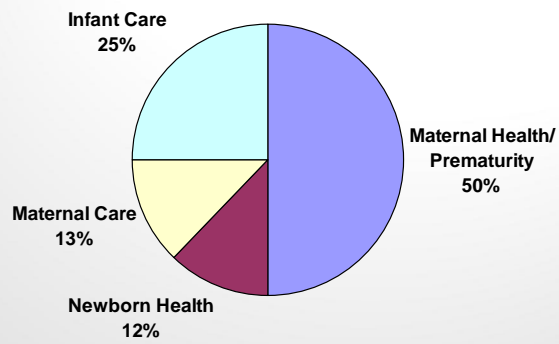


Mapping Outcomes to Intervention



CONCLUSION

Factors Contributing to Fetal-Infant Mortality



Factors

- ▶ **Preconceptional Health:** Pregnancy planning, age, healthy life style (nutrition, exercise, etc), regular medical check up, vit. & folic acid, income, support, education etc.
- ▶ **Health Behaviors:** Good nutrition, regular exercise, no smoking, no drugs, good mental health, violence free lifestyle including relationships and neighborhoods etc.
- ▶ **Perinatal Care:** Well women's health, regular physicals, annual pelvic and pap exams, safe sex, family planning, (wait at least two years between pregnancies).

Factors

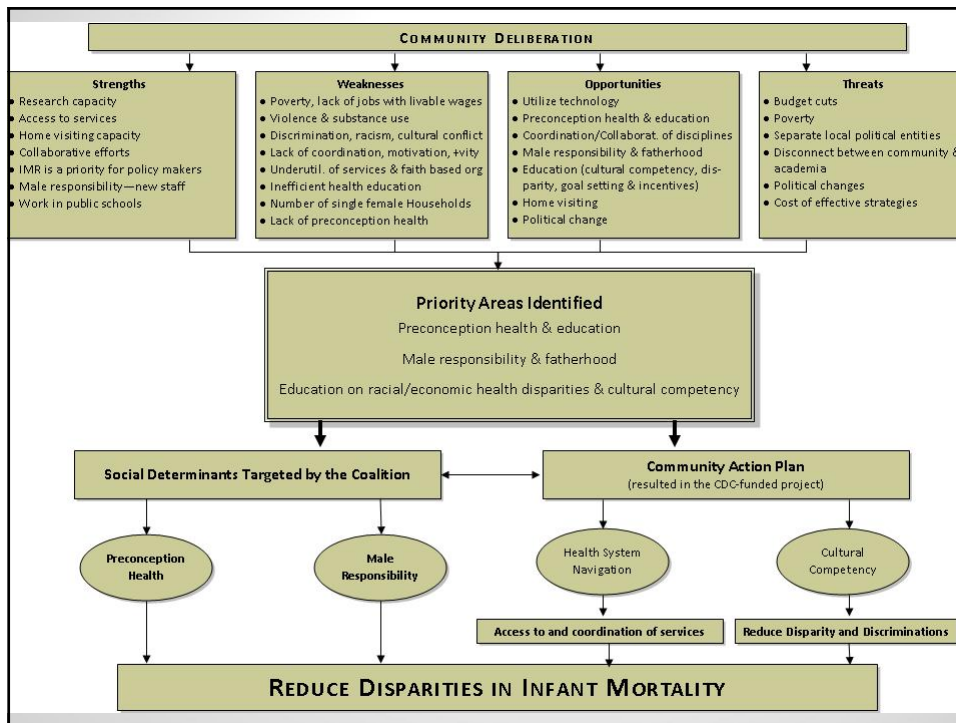
- ▶ **Sleep Positions:** Babies need a safe sleeping environment of their own such as a crib, with a firm mattress, no fluffy blankets or toys and unless your doctor tells you otherwise, always put your baby to sleep on their back.
- ▶ **Breast Feeding:** Breast milk is like a baby's first immunization!! Breastfed babies can fight infection better and breastfeeding establishes a strong and loving bond between mother and baby.
- ▶ **Injury Prevention:** Use car safety seats. Never leave an infant unattended. Safety first.

Action

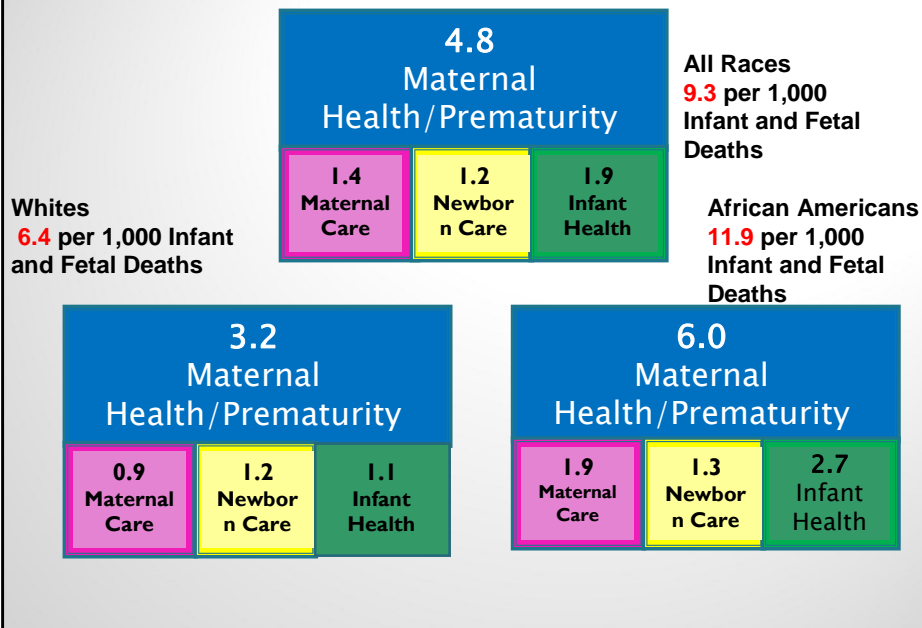
- Identified (priority areas, prevention)
- Examine existing interventions
 - Strengthen interventions that worked
 - New intervention to target priority/needs

Action

- ▶ Infant mortality summit
- ▶ SWOT analysis
- ▶ Identified priority areas

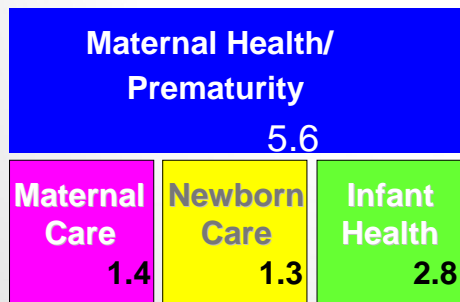


Feto-Infant Mortality Rates 2006-2008



Feto-Infant Mortality Rates PPOR Rates for All Races

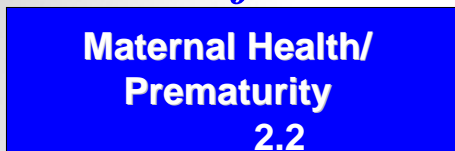
2001-05



11.2 per 1,000
Infant & fetal death



Feto-Infant Mortality Rates

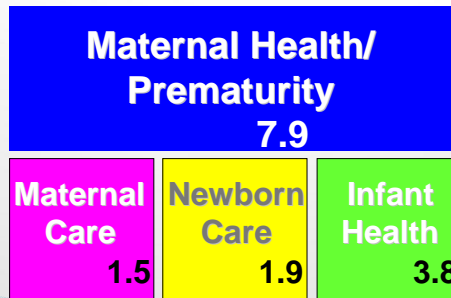


Whites
2001-05

5.1 per 1,000
fetal & infant deaths

African Americans
2001-05

15.1 per 1,000
fetal & infant deaths



Useful Citations

- ▶ Burns PG. Reducing infant mortality rates using the perinatal periods of risk model. *Public Health Nurs.* 2005, 22:2-7.
 - ▶ Perry HB, Shanklin DS, Schroeder DG. Impact of a community-based comprehensive primary healthcare programme on infant and child mortality in Bolivia. *J Health Popul Nutr.* 2003, 21:383-95.
 - ▶ Pestronk RM, Franks ML; REACH Team; Healthy Start Team; PRIDE Team. A partnership to reduce African American infant mortality in Genesee County, Michigan. *Public Health Rep.* 2003, 118:324-35.
- Cai J, Hoff GL, Archer R, Jones LD, Livingston PS, Guillory VJ. Perinatal periods of risk analysis of infant mortality in Jackson County, Missouri. *J Public Health Manag Pract.* 2007, 13:270-7.
- ▶ Cai J, Hoff GL, Dew PC, Guillory VJ, Manning J. Perinatal periods of risk: analysis of fetal-infant mortality rates in Kansas City, Missouri. *Matern Child Health J.* 2005, 9:199-205.

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Thank you!!!!



Questions???