

Racial/Ethnic Disparities in Wisconsin Birth Outcomes: Data Trends, Evidence Base, and Best Practices

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The true measure of a nation's standing is how well it attends to its children – their health and safety, their material security, their education and socialization, and their sense of being loved, valued, and included in the families and societies into which they are born.

UNICEF, Child poverty in perspective: An overview of child well-being in rich countries, *Innocenti Report Card 7*, 2007, UNICEF Innocenti Research Centre, Florence.



Overview of this Presentation

1. What is the problem and its magnitude?
2. What are the underlying determinants?
3. What is the evidence for some of the interventions?
4. What are some best-practice programs that have worked elsewhere?

What is the problem and its magnitude?

In an Average Week in Wisconsin:

- **1,364** babies are born
- **155** babies are born preterm
- **96** babies are born low birthweight
- **9** babies die before reaching their first birthday

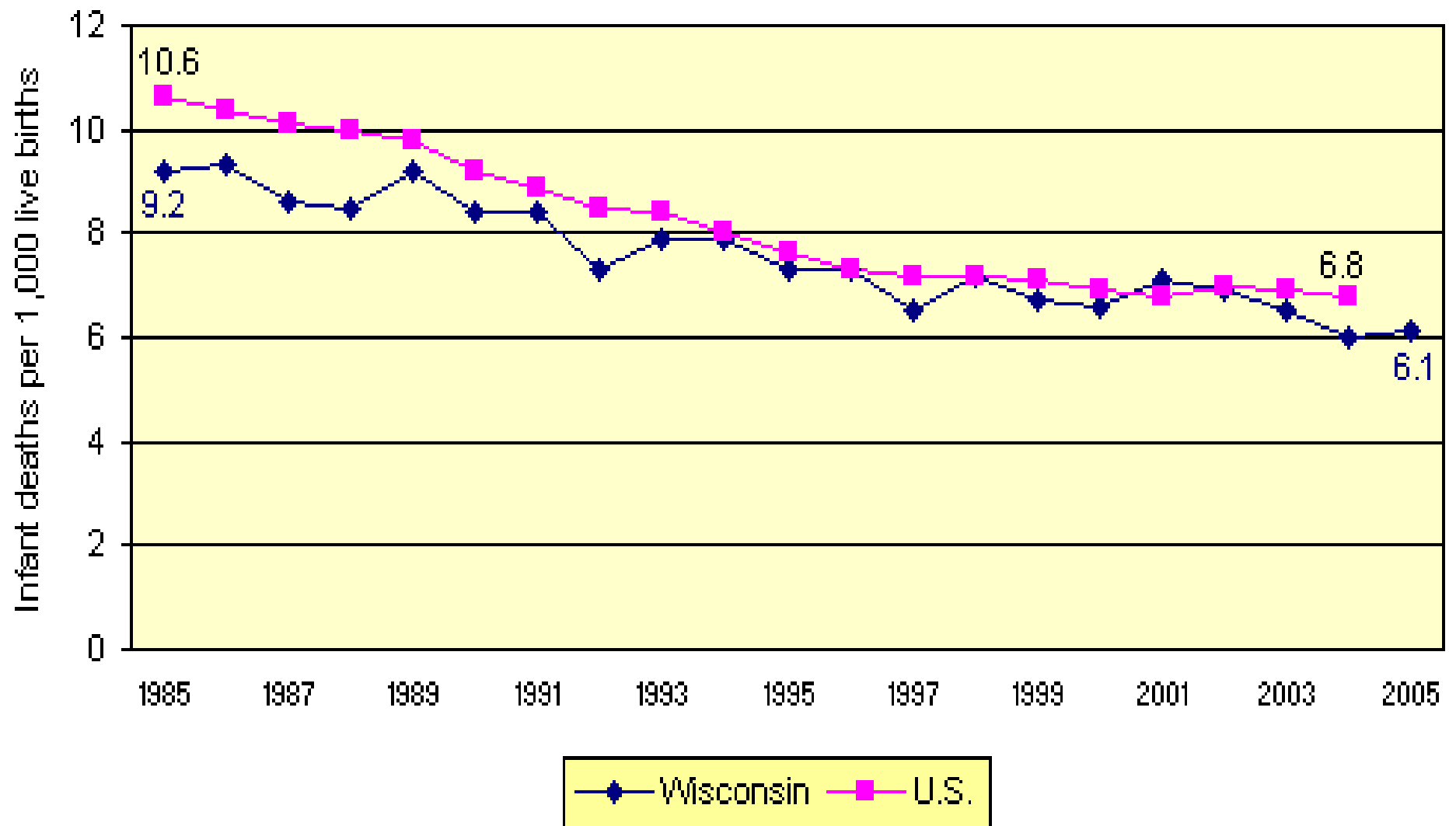
Infant Mortality Rate (IMR)

- **Infant mortality rates reflect a tragic loss of life to individuals, families, and the community.**
- **In Wisconsin, infant mortality rates show widespread disparities across racial and ethnic groups.**

Some Indicators of Perinatal Health

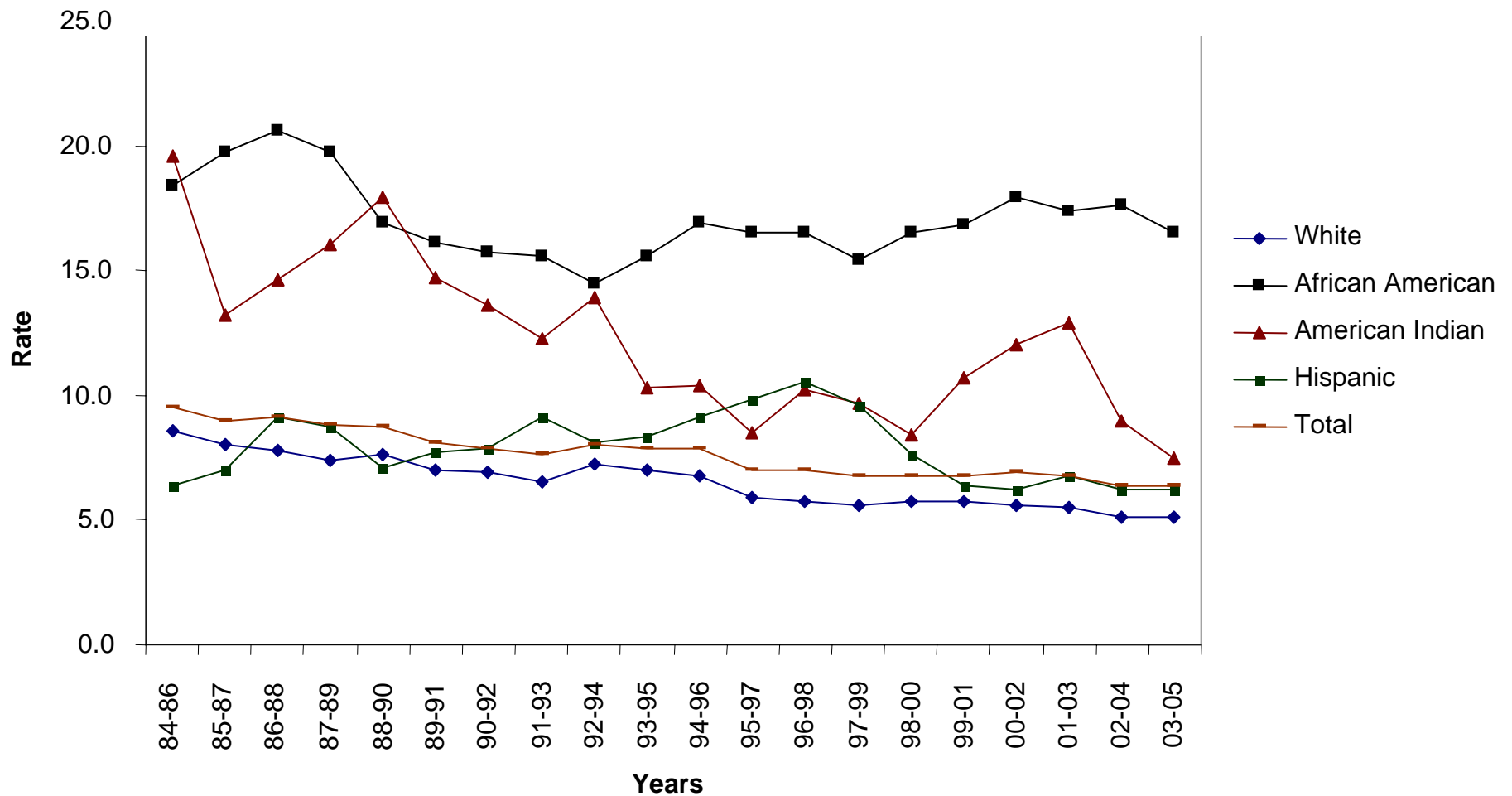
- **Infant mortality rate** (the number of infants who die before the first birthday/1,000 live births)
- Percent of babies born **preterm** (<37 weeks)
- Percent of babies born with **low birth weight** (<2,500 g; <5.5 lb)
- Percent of pregnant women who receive **prenatal care** that begins in the first trimester (<13 weeks)

Infant Mortality Rates, Wisconsin and the United States, 1985-2005



Note: Rates are the number of infant deaths per 1,000 live births.
Infant deaths are those that occur before 365 days of age.

Wisconsin Infant Mortality Rates by Race/Ethnicity, 1984-2005 (3-Year Rolling Averages)



3-Year Infant Mortality Rates

1984-2005, Wisconsin
(number of infant deaths per 1000 live births)

Infant Mortality	1984-86	2003-05
American Indian	19.6	7.5
African American	18.4	16.5
Hispanic	6.4	6.2
White	8.6	5.1
TOTAL	9.5	6.4

Non-Hispanic African American Infant Mortality Rates, among Reporting States and DC, 2001-2003

US								
Rank	State	AA Rate	Rank	State	AA Rate	Rank	State	AA Rate
		13.65						
1	Minnesota	8.39	13	New Jersey	13.08	27	South Carolina	14.52
2	Oregon	9.35	15	Maryland	13.21	28	Mississippi	14.72
3	Washington	9.45	16	Florida	13.31	29	District Columbia	14.81
4	Kentucky	10.07	17	Georgia	13.46	30	North Carolina	15.12
5	Massachusetts	10.18	18	Connecticut	13.58	31	Nebraska	15.18
6	California	11.13	19	Arizona	13.81	32	Ohio	15.41
7	News York	11.22	20	Indiana	13.84	33	Illinois	15.52
8	Rhode Island	11.84	21	Louisiana	13.92	34	Missouri	15.75
9	Texas	11.94	22	Alabama	14.09	35	Kansas	15.81
10	Iowa	12.31	23	Pennsylvania	14.11	36	Delaware	16.43
11	West Virginia	12.47	24	Virginia	14.15	37	Michigan	16.71
12	Nevada	12.81	25	Colorado	14.24	38	Tennessee	16.87
13	Arkansas	13.08	26	Oklahoma	14.25	39	Wisconsin	17.48

Mathews TJ, MacDorman MF. Infant mortality statistics from the 2003 period linked birth/infant death data set. National vital statistics reports; vol 54 no 16. Hyattsville, MD: National Center for Health Statistics, 2006.

Infant Mortality Rates, by Country, 2004

Rank	Country	IMR Rate	Rank	Country	IMR Rate
1	Singapore	2.28	60	Sri Lanka	14.78
2	Sweden	2.77	61	United Arab Emirates	15.06
3	Hong Kong S.A.R.	2.97	62	Mauritius	15.57
4	Japan	3.28	63	Argentina	15.66
5	Iceland	3.31	64	Russia	16.01
6	Finland	3.59	65	Jamaica	16.63
7	Norway	3.73	66	Panama	17.14
8	Malta	3.94	67	Bahrain	17.91
9	Czech Republic	3.97	68	Jordan	18.11
10	Germany	4.2	69	Malaysia	18.35
11	France	4.31		Wisconsin Black	19.2
12	Macau S.A.R.	4.39	70	Qatar	19.32
13	Switzerland	4.43	71	Georgia	19.34
14	Spain	4.48	72	West Bank	20.16
15	Slovenia	4.5	73	Oman	20.26
	Wisconsin White	4.5	74	Thailand	20.83
16	Denmark	4.63	75	Bulgaria	21.31
17	Austria	4.68	76	Mexico	21.69
18	Australia	4.76	77	Colombia	21.72
19	Belgium	4.76	78	Solomon Islands	22.09
20	Canada	4.82	79	Albania	22.31

U.S. Census International Data Base, for countries with populations greater than 250,000

FETAL INFANT MORTALITY REVIEW

REPORT TO THE CITY OF MILWAUKEE



2002-2004 INFANT MORTALITY

2003-2004 FETAL MORTALITY



HOW DOES MILWAUKEE'S INFANT MORTALITY RATE RANK COMPARE TO THE INFANT MORTALITY RATE OF OTHER COUNTRIES?

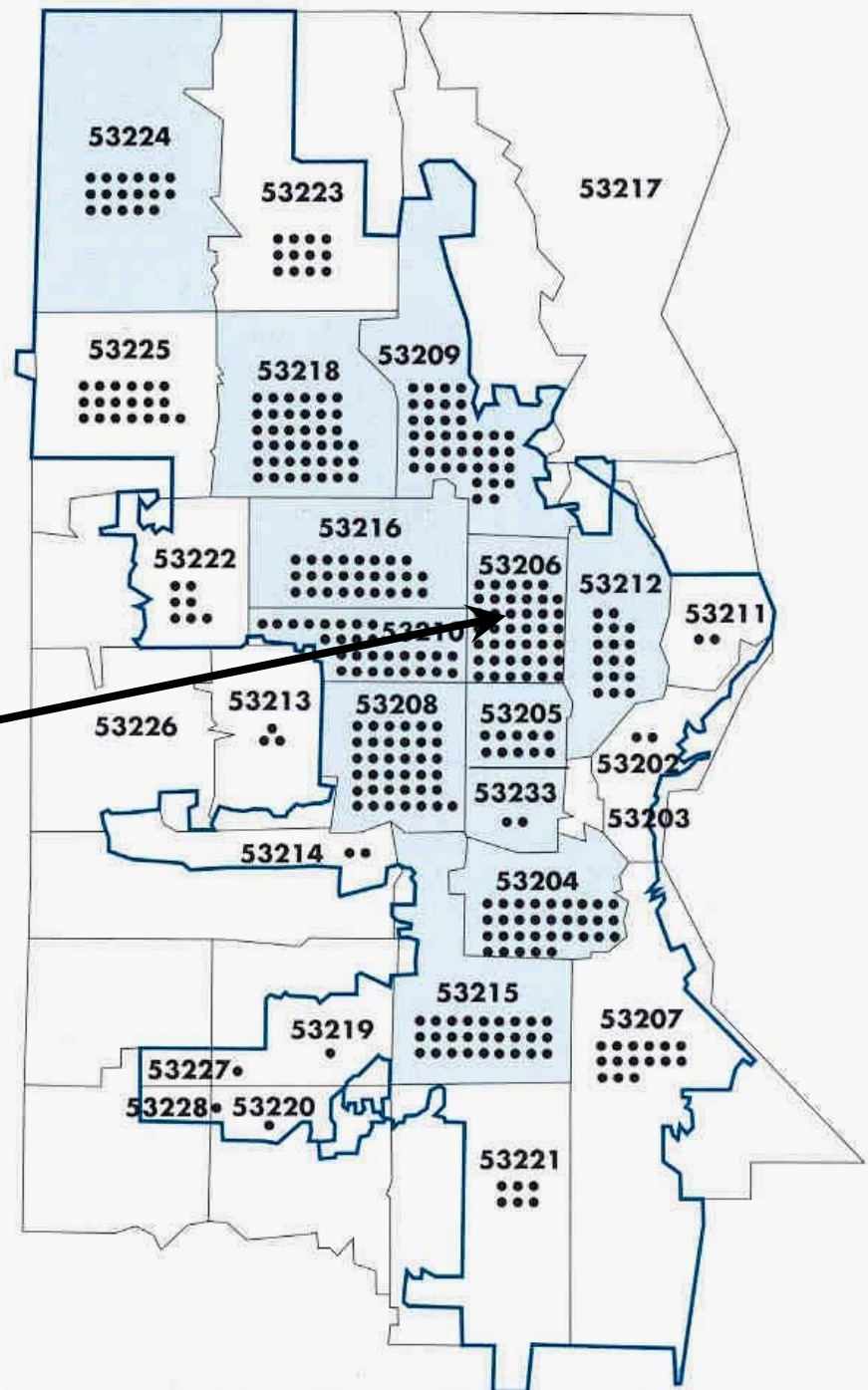
2004 INFANT MORTALITY RATES, by COUNTRY

RANK	COUNTRY	IMR RATE	RANK	COUNTRY	IMR RATE
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21	Luxembourg	4.88	79	Solomon Islands	22.31
	MILWAUKEE HISPANIC	4.9		Albania	22.31
22	Netherlands	5.11	80	Venezuela	22.99
23	Portugal	5.13	81	Gaza Strip	23.54
24	United Kingdon	5.22	82	Suriname	24.15
	MILWAUKEE WHITE	5.3	85	Ecuador	24.49
25	Ireland	5.5	83	Armenia	24.16
26	Greece	5.63	84	Philippines	24.24
			86		

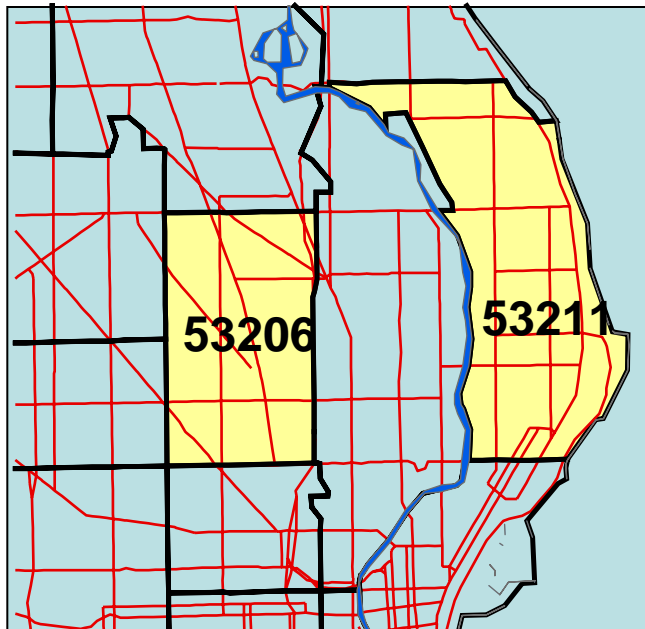
Map of Milwaukee Infant Deaths 2002-2004 (N = 389)

Zip Code **53206** had the greatest number of infant deaths = 41 and the highest infant mortality rate = 20.4

Milwaukee Home Visiting Program, Empowering Families in Milwaukee is in **53204, 05, 06, 08, 12, & 33**



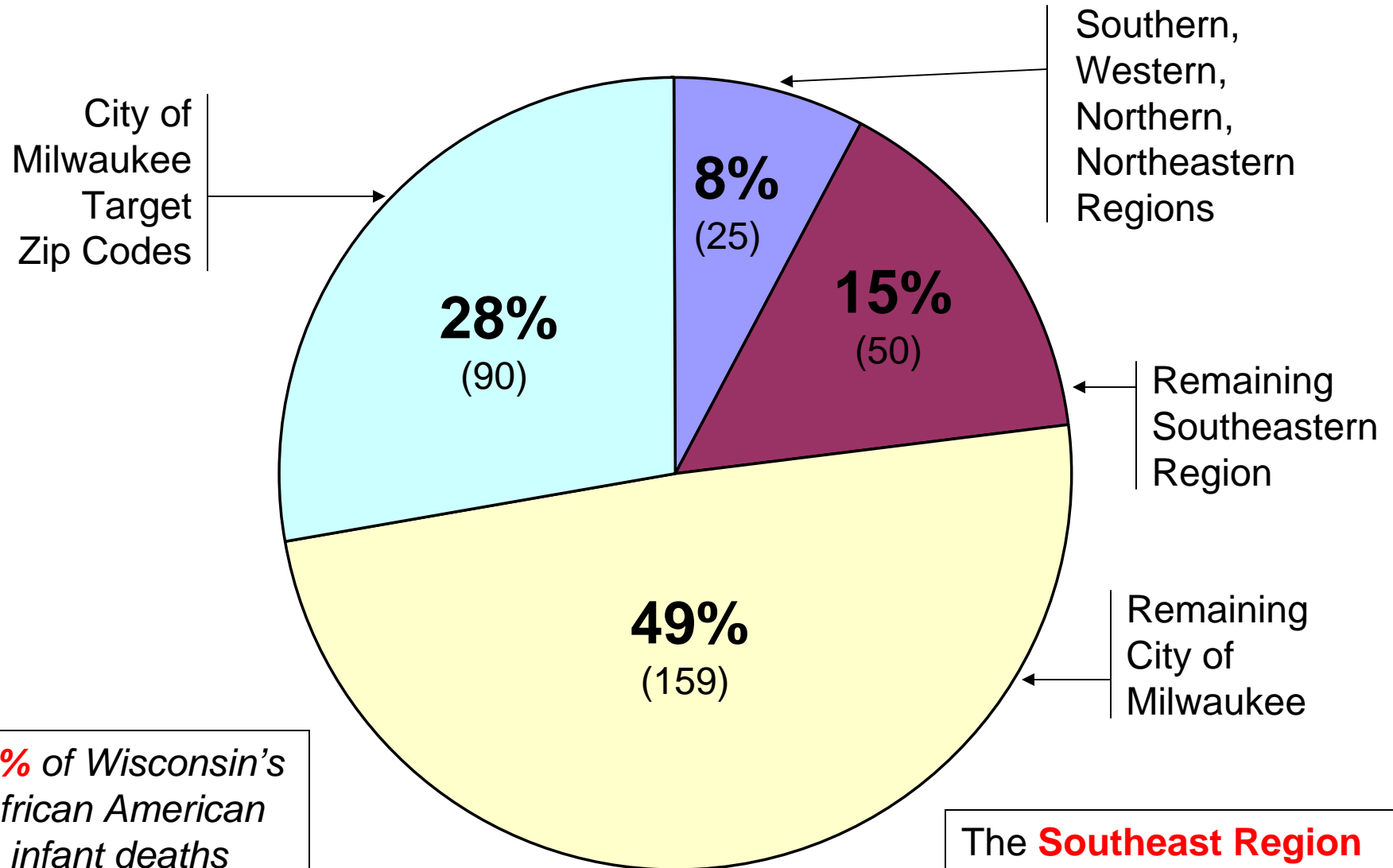
A tale of two zip codes



	<u>53206</u>	<u>53211</u>
Population*	32,868	35,225
Median age*	25.8	29.9
African American*	96.1%	2.5%
High school graduate (25+ yrs of age)*	57.6%	95.7%
Disabled (21-64 yrs of age)*	37.0%	9.3%
Median family income*	\$21,867	\$70,704
Families below poverty level*	35.0%	3.6%
Teen birth rate 2004**	111	3
HIV rate 2004***	47	9
STD rate (15-19 yrs of age)***	22,795	1,070

* Source: 2000 U.S. Census data
 ** Per 1,000 population
 *** Per 100,000 population

Geographical Contribution of African American Infant Deaths, 2003-2005



77% of Wisconsin's African American infant deaths occurred in the City of **Milwaukee** from 2003-2005

(Wisconsin Total N=324)

The **Southeast Region** accounts for **92%** of African American infant deaths.

Infant Mortality Rates, 2001-2005

State/City	White	Black	Hispanic	B/W Ratio
Milwaukee	6.6	16.9	7.5	2.6
Madison	3.8	10.7	7.6	2.8
Kenosha	4.1	18.1	X	4.4
Racine	6.9	28.3	7.0	4.1
Beloit	5.8	19.4	X	3.4
Wisconsin	5.3	17.3	6.4	3.3

Note: 'X' denotes less than 5 events and is not reported.

WISH (Wisconsin Interactive Statistics on Health), Infant Mortality Module, accessed 3/5/07.

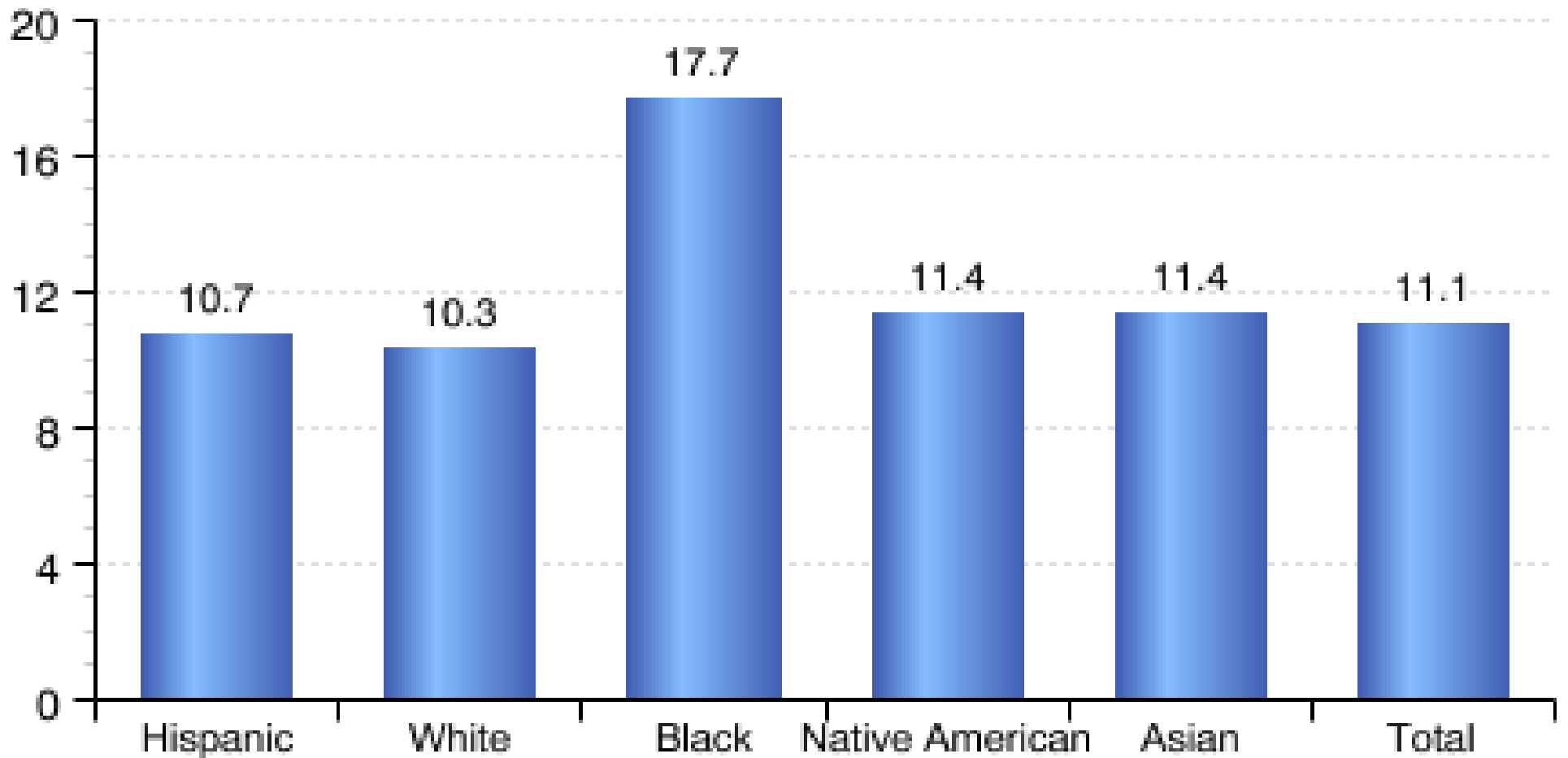
Wisconsin's Leading Causes of Infant Mortality, 2003-2005

Cause of Death	All Race/Ethnicity	African American	White
Perinatal: Disorders related to Preterm Birth and LBW	20.6%	28.1%	17.3%
Congenital Malformations/Birth Defects	20.3%	10.8%	22.0%
SIDS (Sudden Infant Death Syndrome)	9.3%	12.7%	8.9%
Perinatal: Maternal Complications of Pregnancy	5.4%	5.6%	5.7%
Respiratory Distress Syndrome (RDS)	3.3%	3.4%	3.1%
Perinatal: Newborn Complications of Placenta/Cord/Membranes	3.5%	3.4%	3.7%

WISH (Wisconsin Interactive Statistics on Health), Infant Mortality Module, accessed 3/5/07.

Preterm Births by Race/Ethnicity Wisconsin, 2001-2003 Average

Percent of live births



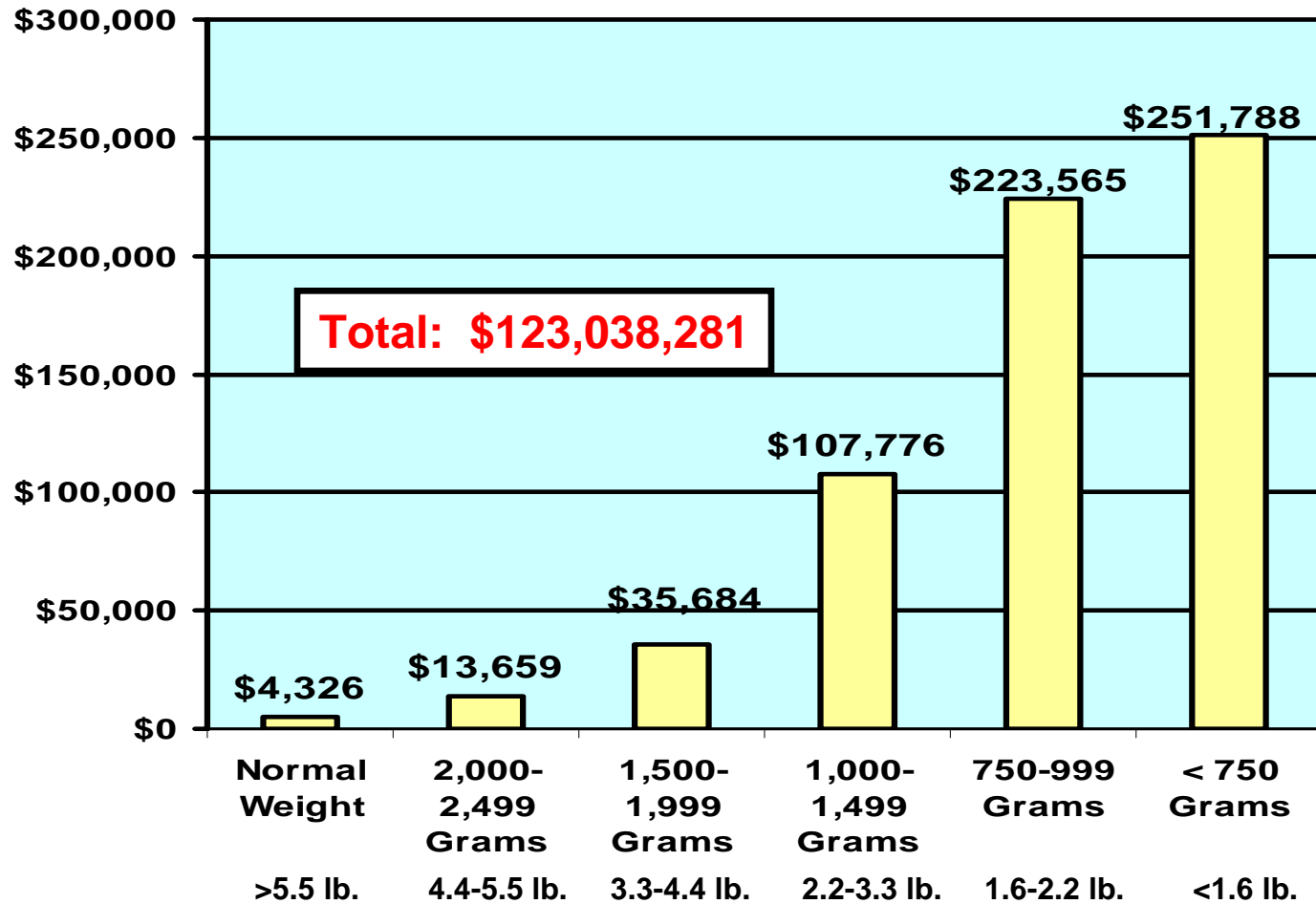
What are some of the characteristics of City of Milwaukee infant deaths due to Prematurity in 2002-2004 (n=202)?

- **71.3% of the mothers were Black.**
- **72.8% of the infants were born before 24 weeks gestation.**
- **53% of the mothers had had a previous preterm birth.**
- **26.7% of the mothers were smokers.**
- **23.8% of the mothers were less than 20 years old.**
- **35.6% of the mothers had their 1st pregnancy when they were < 17 years old.**
- **17.3% of the mothers had a drug or alcohol problem.**
- **16.3% were multiple births where one or more of the infants died.**

Birth Weight and Infant Hospitalization Charges During the First Year of Life 2001 Medicaid Births in Selected Counties

(Dane, Kenosha, Milwaukee, Racine, and Rock Counties)

Linked Birth Events File, Bureau of Health Information



From the FIMR Mothers

“I wish I’d have been told more about contractions and signs of labor,” replied one mother. Symptoms of preterm labor (PTL) were experienced by 42% of interviewed mothers, but nearly 16% of them didn’t recognize them as signs of PTL. One mother said, “I didn’t call my doctor right away because I thought maybe I had a urinary tract infection and the cramping was normal.”

From the FIMR Mothers

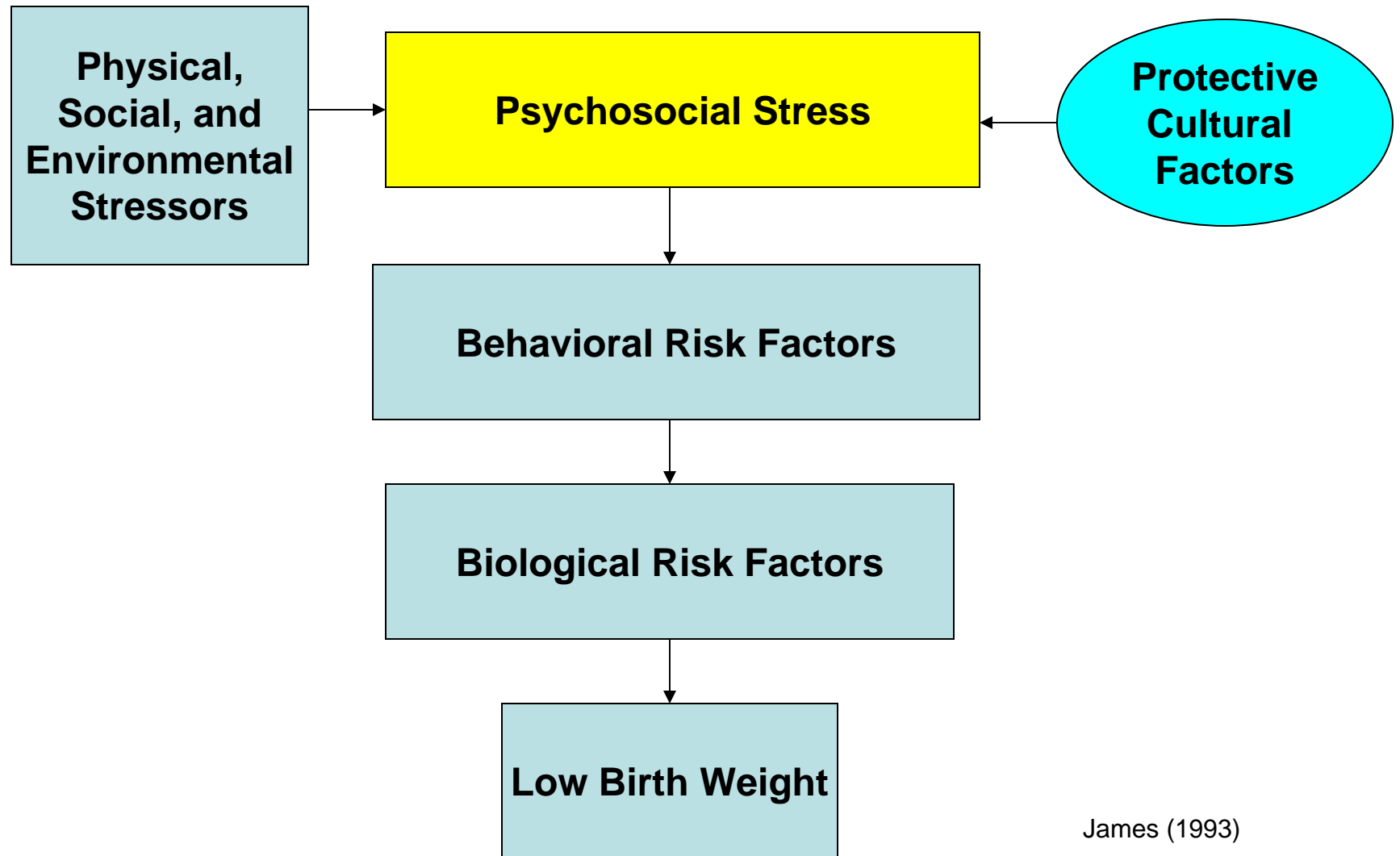
A second and more difficult problem is getting mothers' concerns across to the right people when she calls the hospital. **13.5% of mothers with symptoms of preterm labor were delayed in coming to the hospital by staff, or their concerns were dismissed by staff.** It isn't clear whether mothers are having difficulty communicating their concerns, or whether they are being prevented from talking with a doctor or nurse trained in obstetrics by the triage system.

**What are the underlying
determinants?**

Life Course Perspective

- Perhaps the best way to understand the racial and ethnic disparities in birth outcomes is from a “life course perspective.”
- The life course perspective takes a more holistic, longitudinal approach to the problem of poor birth outcomes, which spans generations.

Stress and Preterm Birth *Culture*



James (1993)

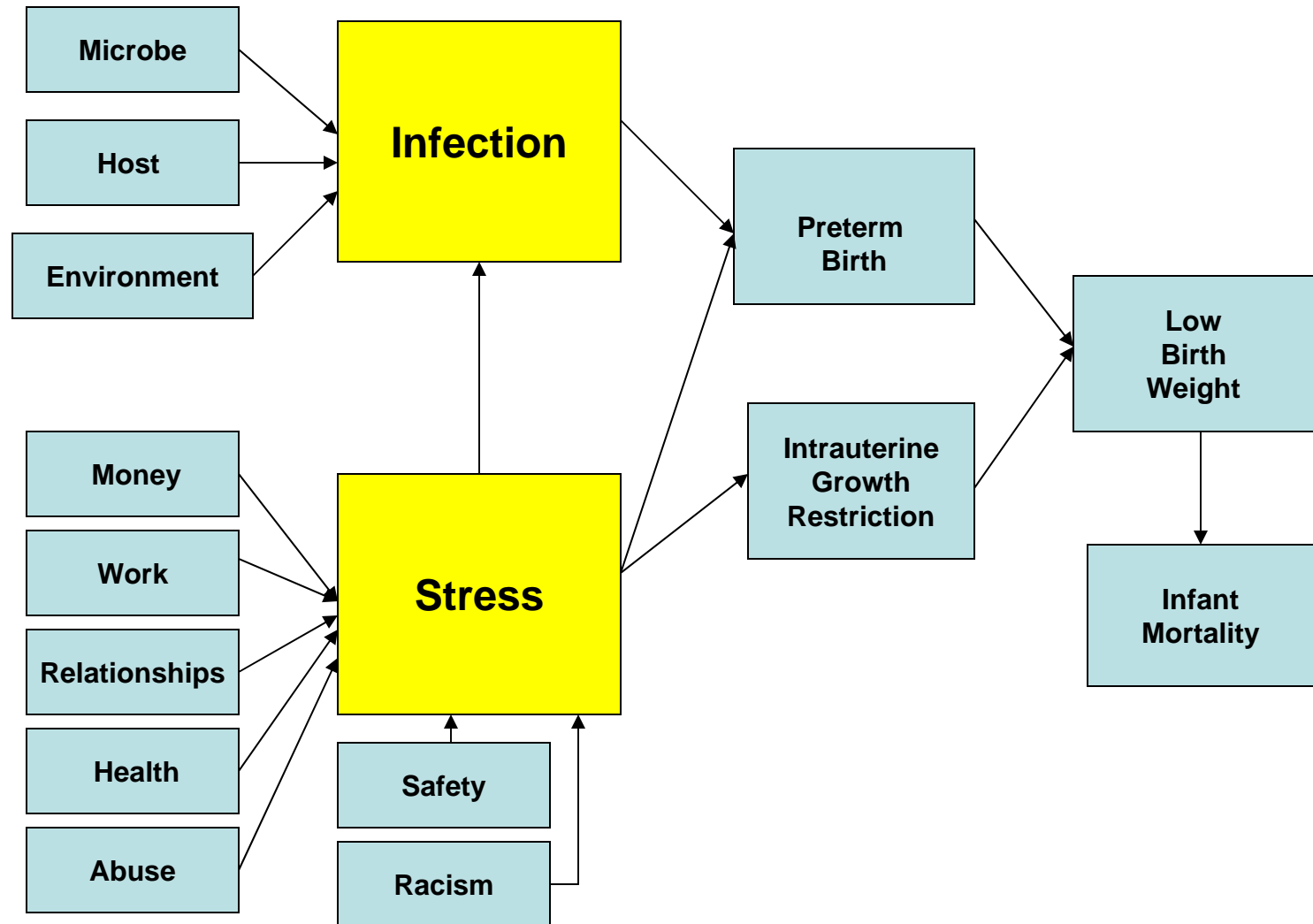
Life Factors that Affect Infant Mortality

POVERTY

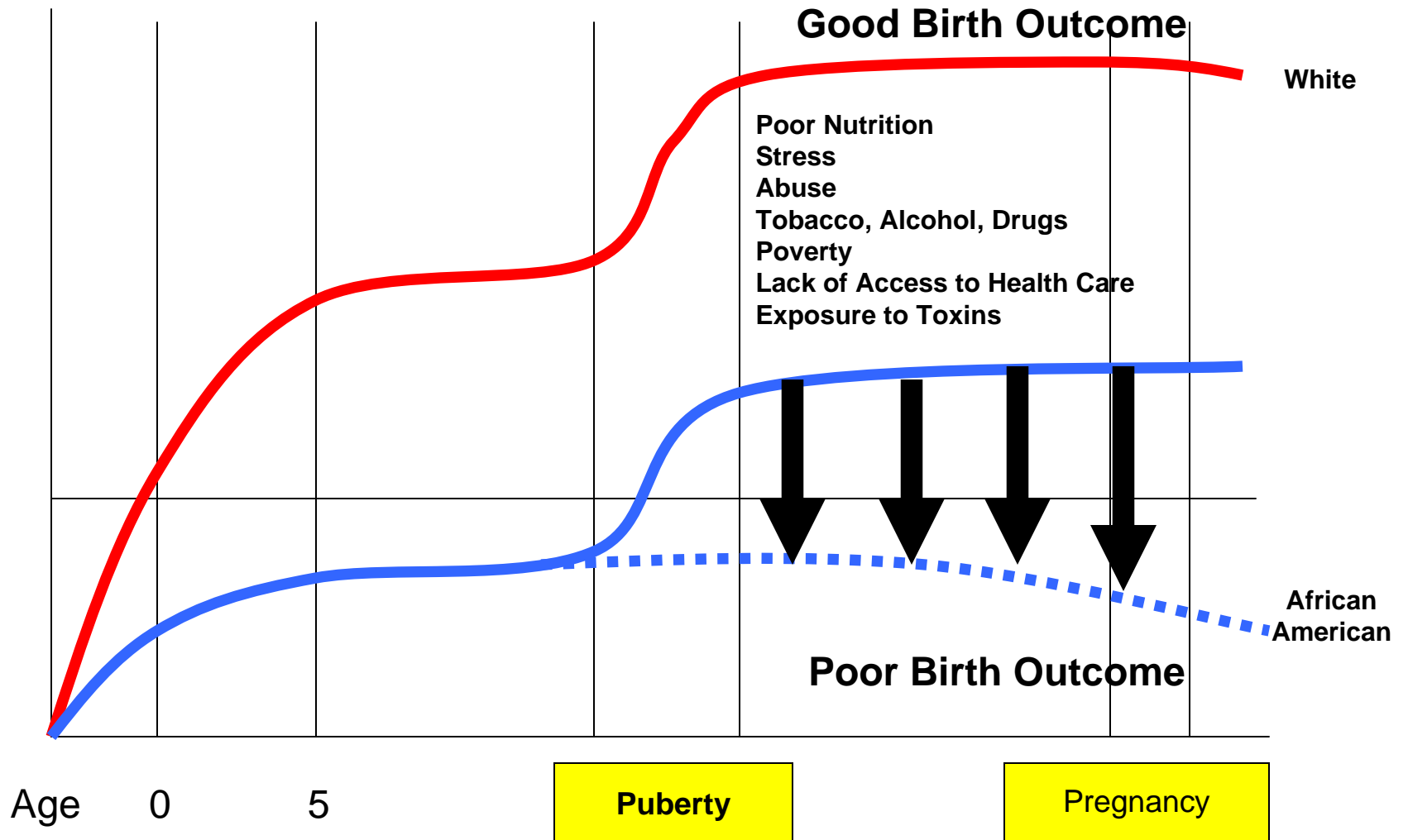
– In Wisconsin, percent poverty for children less than 5 years old:

» White	7%
» Black	44%
» American Indian	32%
» Hispanic	26%
» Asian	17%

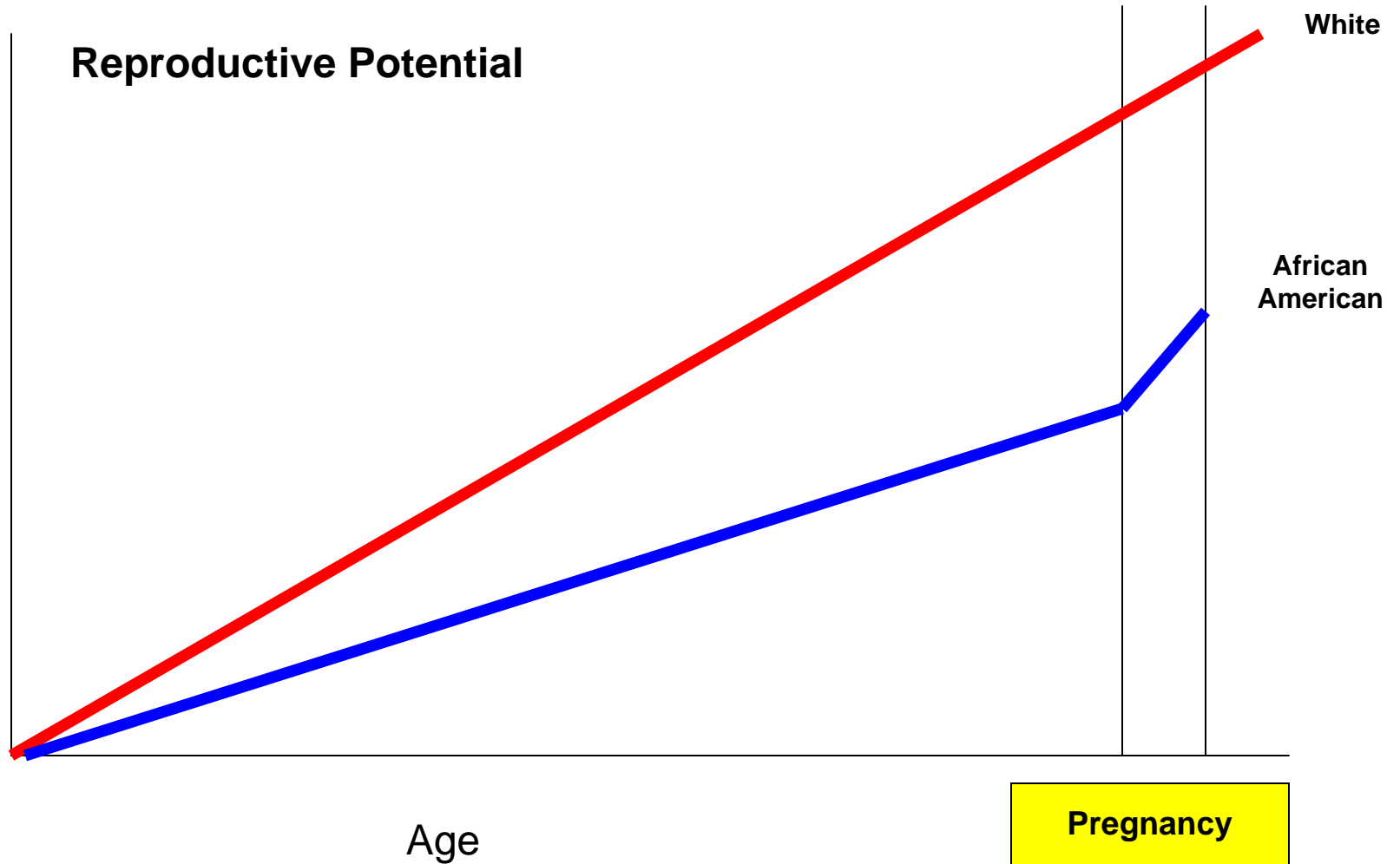
Pathways to Preterm Birth



Life Course Perspective

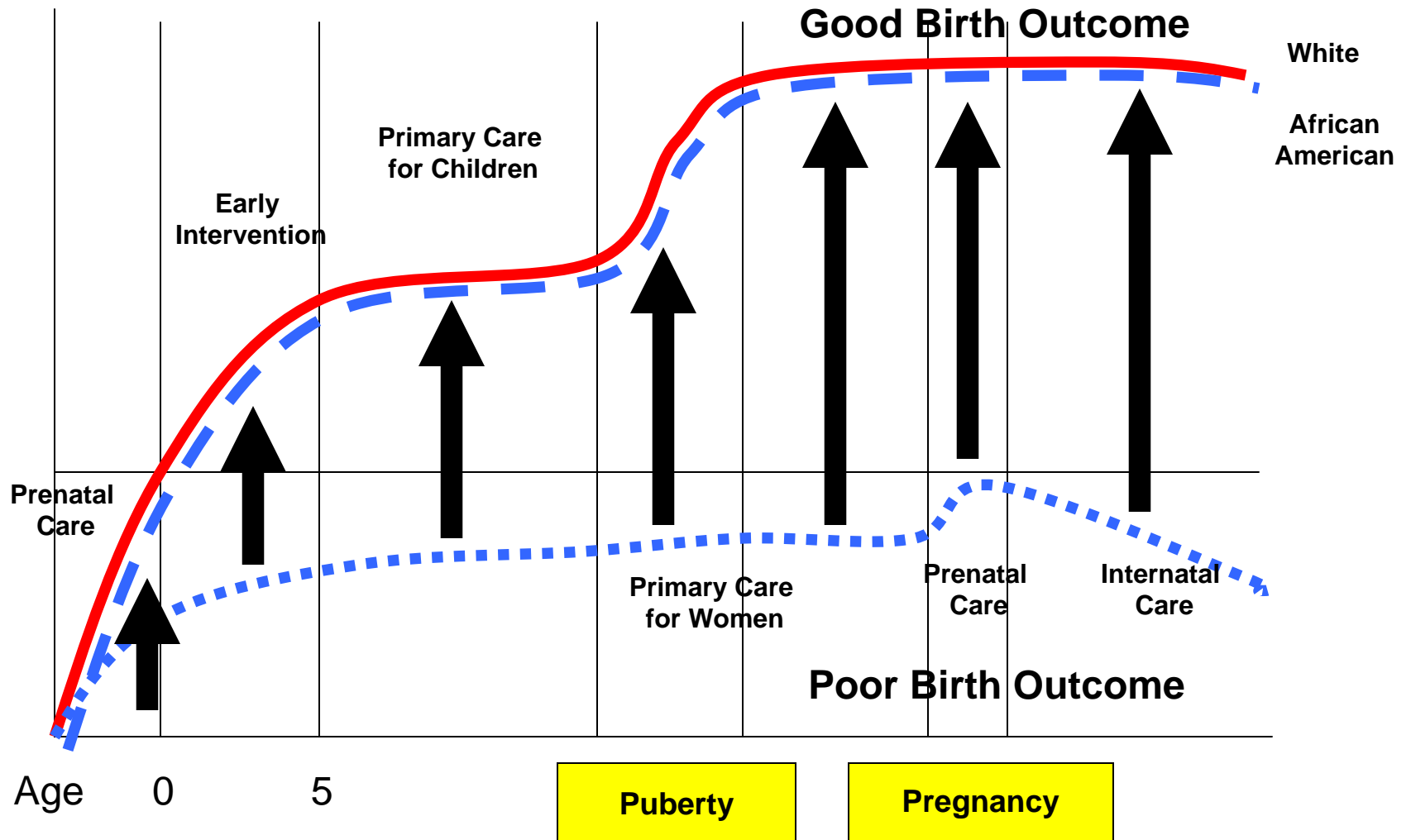


Life Course Perspective



Lu, 2003

Life Course Perspective



**What is the evidence for some
of the interventions?**

Interventions

Must be:

- **family-centered**
- **community-based**
- **culturally-competent**
- **coordinated and collaborative**
- **comprehensive and multi-level**
- **evidence-based or a best practice**
- **connecting what we do
to what we know**

Evidence-Based or Best-Practice Interventions for Healthier Birth Outcomes

Behavioral-Risk Reduction:

Tobacco Use

-low birth weight

Alcohol and Substance Use

**-fetal alcohol spectrum and other
malformation disorders**

Evidence-Based or Best-Practice Behavioral-Risk Reduction

Tobacco Cessation

- Evidence:
 - **21% reduction in LBW** with early cessation (Lumley 2001)
 - For every 56 women who receive effective counseling, 1 LBW birth is prevented
- Prevalence: **13.4%** of WI pregnant women smoke
- Recommendation: **5-As** assessment & intervention
- (e.g., **Gap** in Los Angeles)
 - 80% of providers **Ask** and **Advise** to quit;
 - Fewer than 30% **Assess** readiness to quit, **Assist** to quit, or **Arrange** ongoing follow-up

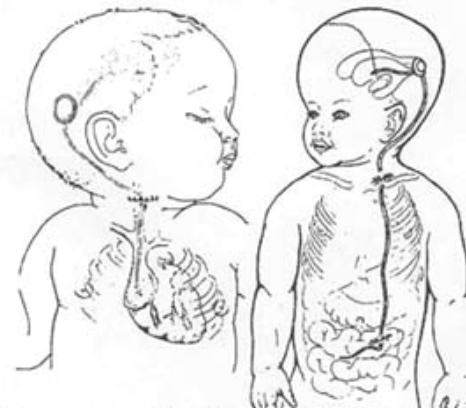
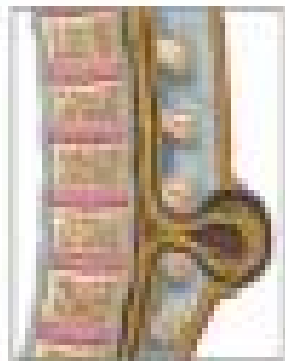
Evidence-Based or Best-Practice Behavioral-Risk Reduction

Substance Use/Abuse

- Evidence:
 - Comprehensive, family-centered services for pregnant women, their children, and families demonstrate:
 - **70% reduction in number PTBs**
 - **84% reduction in LBW birth**
 - **67% reduction in infant mortality** (Clark, 2001)
- Prevalence: ? WI births exposed to alcohol or substances
- Recommendation: screening using appropriate tool in each trimester
- (e.g., Gap in Los Angeles)
 - 40% of providers ask about alcohol at first visit;
 - fewer than 20% ask about substance use/abuse

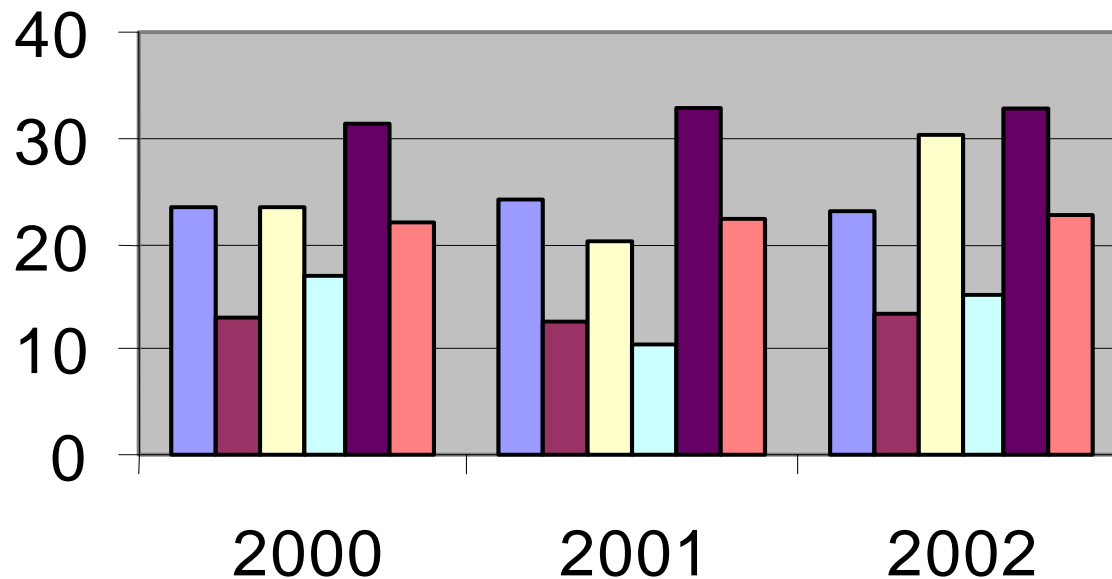
Evidence-Based or Best-Practice Interventions for Healthier Birth Outcomes

- Nutritional support
- Breast Feeding
- Prevention of birth defects with folic acid and other vitamins/minerals



Breast Feeding \geq 6 months

Percent of WIC infants who breastfed at least 6 months



- Non-Hispanic White
- Non-Hispanic Black
- American Indian
- Asian/Pacific Islander
- Hispanic
- Total

Evidence-Based or Best-Practice Interventions for Healthier Birth Outcomes

Medical Conditions:

- **Diabetes and
Gestational Diabetes**
- **Hypertension**
- **Infections**

Evidence-Based or Best-Practice Interventions for Healthier Birth Outcomes

Diagnosis and Treatment of Infections:

- **Urinary Tract Infections**
- **Sexually-Transmitted Disease (STDs)
and HIV/AIDS**
- **Periodontal Disease**

Evidence-Based or Best-Practice Interventions for Healthier Birth Outcomes

Asymptomatic Bacteriuria

- Evidence:
 - **40% reduction in PTB** with screening and treatment asymptomatic bacteriuria (Smaill, 2001)
 - For every 21 women who are treated, 1 PTB could be prevented
- Prevalence: **2% to 8%** of pregnant women
- (e.g., Gap in Los Angeles)
 - **Fewer than 50%** providers screen using culture
 - **85%** of women in baseline data screened

Chlamydia

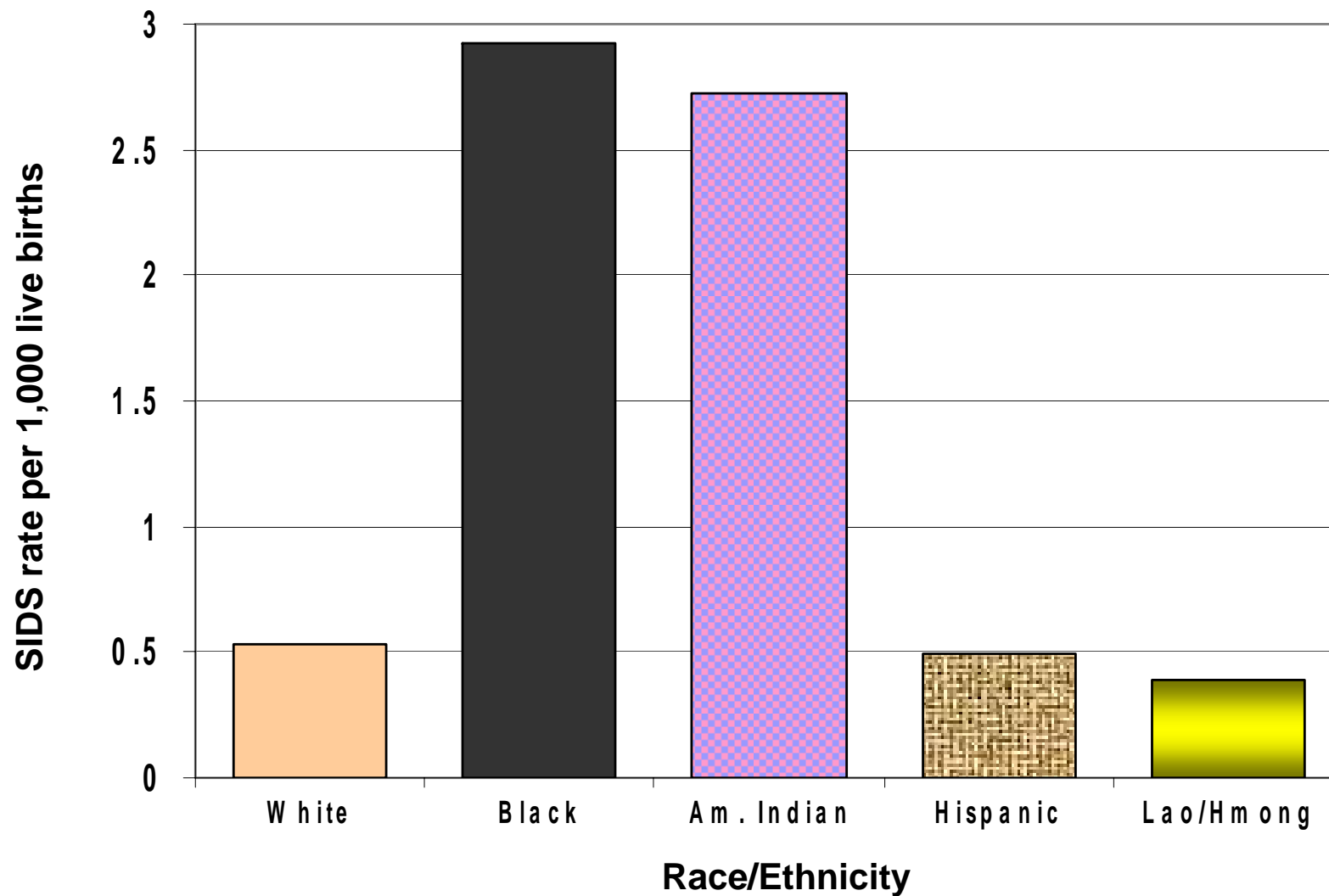
- Evidence: **50% reduction in LBW** (Martin, 1997)
- (e.g., Gap in Los Angeles)
 - **Fewer than 50%** OB/GYN perform recommended screening (LAC-Medical)

Evidence-Based or Best-Practice Interventions for Healthier Birth Outcomes

Post Partum Care

- Evidence:
 - contact by 2 weeks post partum is key to identifying **PP depression**. Improvement is noted within 3-6 weeks following onset of treatment for depression.
 - ADA recommendation to screen those with **gestational diabetes** for type-2 diabetes at 6 wks PP
- (e.g., **Gap** in Los Angeles)
 - Depression: **27%** of providers screening for depression at 2 wks; 40% at 6-8 wks PP
 - Diabetes: **47%** screening for type-2 DM at 6-8 wks PP

SIDS in Wisconsin, 2000-2004

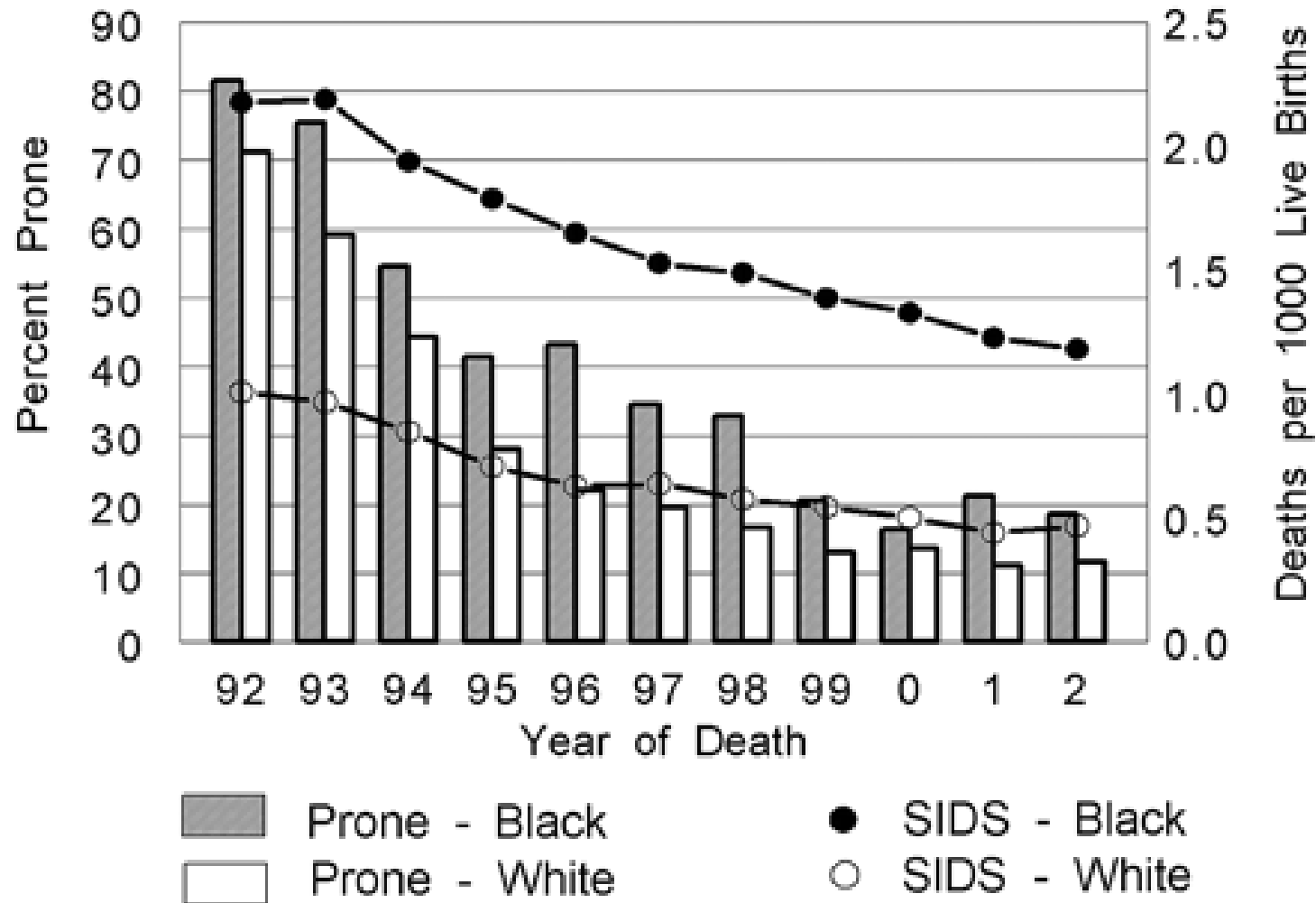


WISH (Wisconsin Interactive Statistics on Health), Infant Mortality Module, accessed 11/22/05.

SIDS by Month of Age



SIDS and Sleep Position by Race



Evidence-Based or Best-Practice Interventions

Safe Sleep:

- **“Back to Sleep”**
- **Firm surface**
- **No soft objects or loose bedding**
- **No overheating**
- **NO smoking in environment
of sleeping baby**
- **No co-bedding while sleeping**

Essential Elements of Good Prenatal Care

Assessment

Health Promotion

Medical and Psychosocial Treatment



Adapted from the Care Model-Ed Wagner MacColl Institute

Evidence-Based or Best-Practice Interventions for Healthier Birth Outcomes

- Provider collaboratives to focus on systems change for improvement of the content, quality and cultural competency of PNC:

- Prenatal nutrition and multivitamins with folic acid
- Breastfeeding preparation and support
- Infection and inflammation
–(UTI, STD, periodontal)
- Perinatal depression
- Domestic violence
- Safe sleep

- Substance use
- Tobacco use
- Diabetes care
- Hypertension care
- Cultural competency
- Health literacy
- Self management
- Comprehensive PP care

What are some best-practice programs that have worked elsewhere?

What Works?

Model State Programs

New York/Harlem

- multi-faceted community approach, funded at \$7.5 million
- African American IMR decreased from **28** in 1990 to **5.1** in 2004, per 1,000 live births

What Works?

Model State Programs

Minnesota

- **\$249 per capita public health spending vs. \$79 in Wisconsin**
- **“Save 10” provocative social marketing campaign**
- **8.9 African American infant deaths per 1,000 live births**
 - **lowest in nation (2001-2003)**

What Works?

Medicaid Managed Care

(Center for Health Care Strategies)

Rochester, NY

- **Culturally competent outreach, education, and family planning to high-risk pregnant teens**
- **\$2.86 returned for every \$1.00 spent on program**

What Works?

Medicaid Managed Care

(Center for Health Care Strategies)

Baltimore, MD

- **System-wide racial and ethnic data collection to focus on reducing disparities**
- **Increased percentage of African American women who completed 80% of prenatal visits**

What Works?

Medicaid Managed Care

(Center for Health Care Strategies)

UPMC for You, Pittsburgh

- Integrated clinical team
- Focus groups
- Mobile outreach
- Doula program

Outcomes

- Increased first trimester identification of African American women
- Decreased low birth weight

What Works?

Selected Recommendations from FIMR *Clinical Care for Women*

- **Identify women with previous poor pregnancy outcomes**
- **Educate women on the signs of preterm labor and fetal movement**
- **Screen and refer for domestic violence and depression**
- **Systematic assessment and referral for tobacco, alcohol, and other substance use**

What Works?

Selected Recommendations from FIMR *Systems of Care*

- **Educate women of color on quality prenatal care and empower them to expect it.**
- **Incorporate quality measures into reimbursement and contracts.**
- **Eliminate gaps between application for insurance/Medicaid and initiation of care.**
- **Fund community-based, multi-disciplinary care.**

Vision

- **Eliminate racial and ethnic disparity in birth outcomes**
- **Optimize potential for early childhood development, intellectual capacity, and lifelong good health**

How Will This Be Achieved?

- **Promote and support systems change efforts**
- **Increase use of nationally or locally established clinical guidelines**
- **Address maternal health issues and modifiable risk factors**
- **Link clinical practice to community resources**

Wisconsin's Framework for Action to Eliminate Racial and Ethnic Disparities in Birth Outcomes



**To achieve greatness:
Start where you are,
Use what you have,
Do what you can.**

- Arthur Ashe

