

# Racial Disparities and Birth Outcome

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# What are health disparities?

- Health disparities:
  - Preventable illness, disability, and death
  - Occur more often among people who are treated differently because of:
    - their racial or ethnic background
    - the language that they speak or their culture
    - their gender
    - their socioeconomic status or educational level
    - their sexual orientation
    - where they live

# Policy focus on health disparities

- As one of his top five priorities, former **Surgeon General Dr. David Satcher** called for research and intervention to eliminate disparities in health and survival related to race and minority status
- **Cultural competence:** The Office of Minority Health--Culturally and Linguistically Appropriate Services  
(<http://www.omhrc.gov/clas/>)
- The Institute of Medicine's report, **Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care (2002)** (<http://www.nap.edu/books/030908265X/html/>)

# Conceptual models

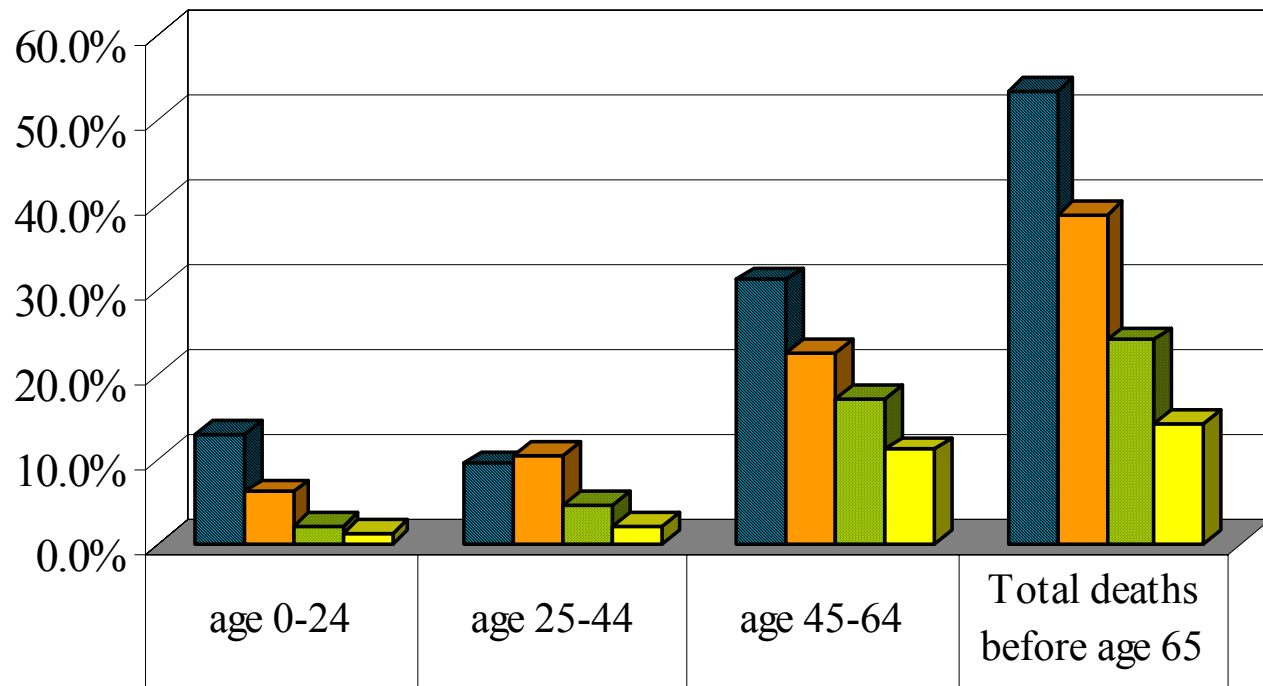
- **Social Determinants**

- The diagnosis on a death certificate (the “proximal cause”) does not give sufficient information to understand how to prevent the death.
- Underlying ecological, social, behavioral issues may be important root causes or risk factors for the condition

- **Structural Violence**

- “preventable harm or damage to persons (and by extension to things) where there is no actor committing the violence or where it is not meaningful to search for the actor(s); such violence emerges from the unequal distribution of power and resources or, in other words, is said to be built into the structure(s).” (Weigert, 1999:431)

# Onondaga County (2000): % of deaths in each age category, by race and sex



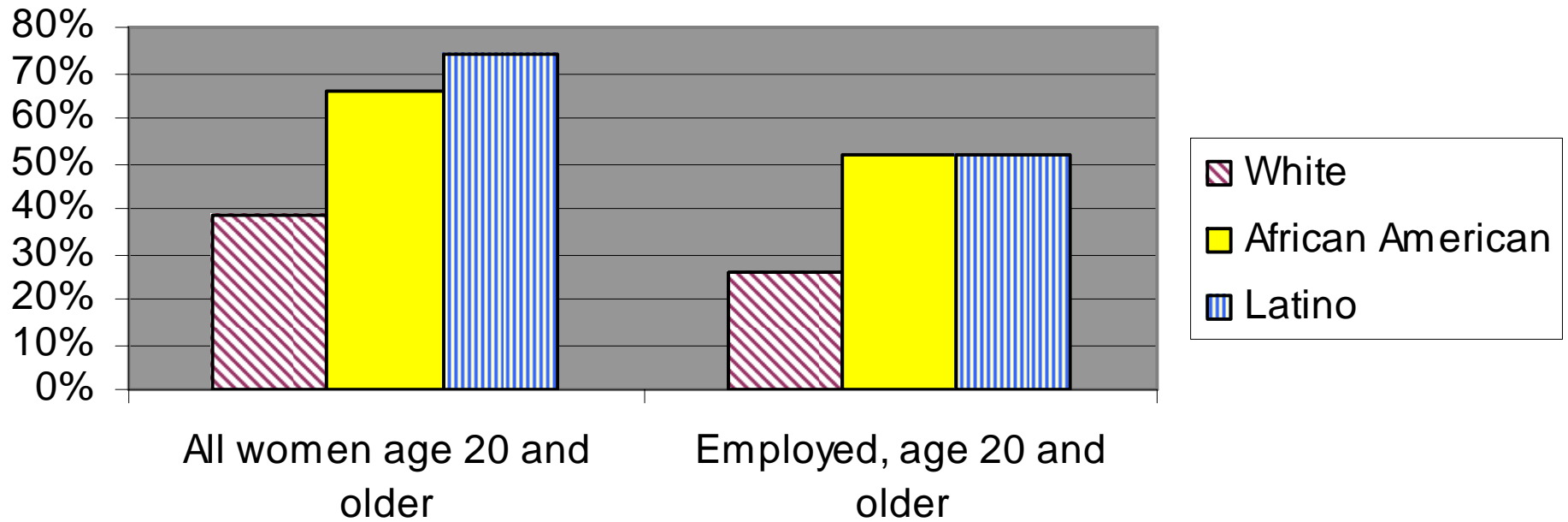
■ African Am male	13.0%	9.3%	31.1%	53.4%
■ African Am female	6.0%	10.4%	22.4%	38.8%
■ white male	2.2%	4.7%	17.0%	23.9%
■ white female	1.2%	2.0%	11.0%	14.2%

In 2000, if African Americans had the same death rate as white residents of Onondaga county, how many more would be alive at each age?

- In 2000, the African American disproportionate death totaled 126 lives (75 males and 51 females).

	» African Am Males	African Am Females
• Age 0-9	9.2	3.4
• Age 10-19	2	0.5
• Age 20-44	13.9	11.9
• Age 45-64	28.2	11.6
• Age 65-84	20.6	15.1
• Age 85+	1.5	8.3

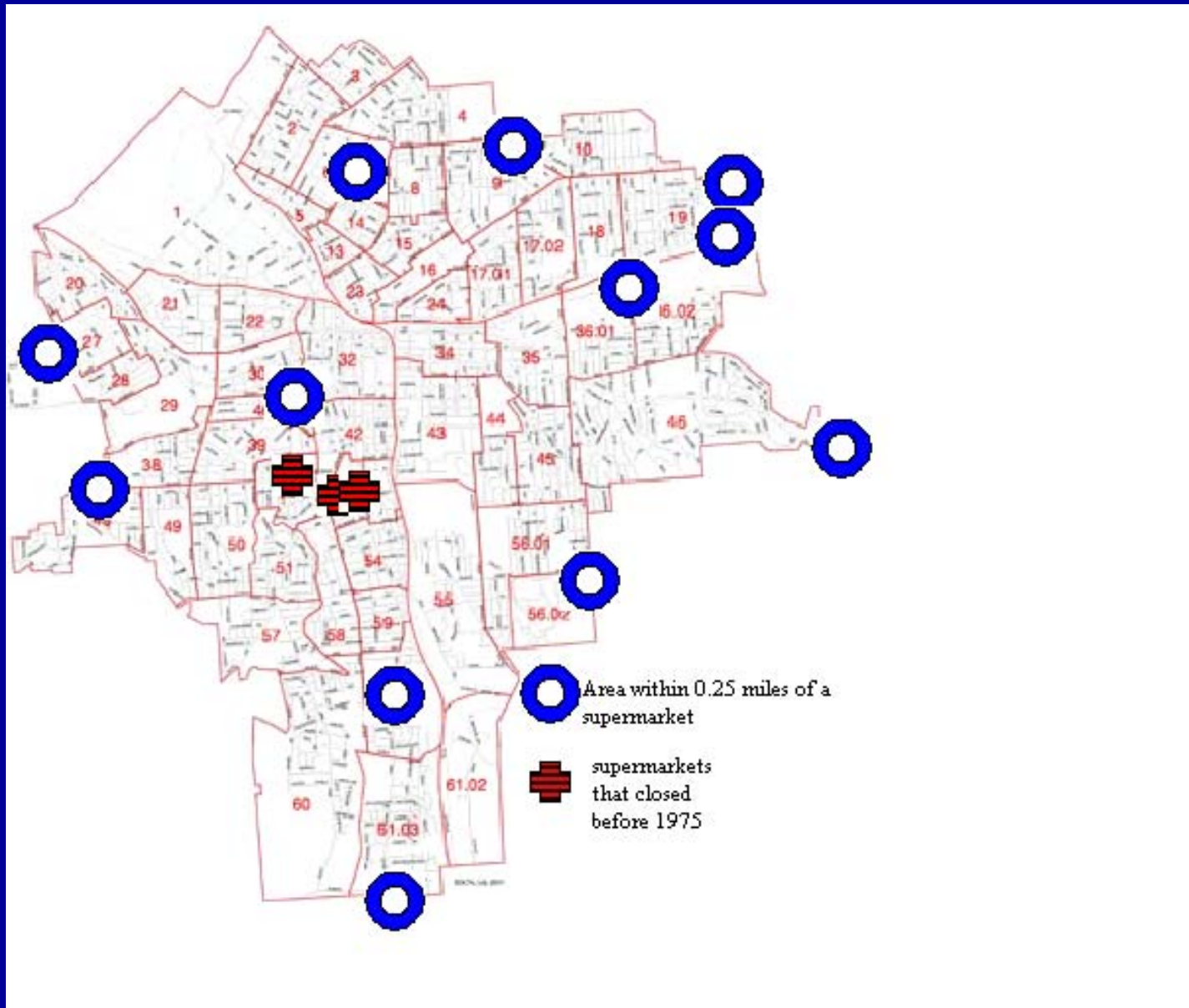
## Percent of pregnant women in Syracuse, uninsured prior to pregnancy, 1996-2003



# Supermarkets and IUGR

# Supermarkets

- Retail grocery markets selling a variety of types of food, including fresh produce and low fat dairy.
- Wegman's P&C, Price Chopper, NoJaims, etc.
- Two groups of census tracts:
  - (1) Those within a ½ mile of a supermarket
  - (2) Those not within a ½ mile of a supermarket



## Racial disparity in birth weight

- T-test, significant difference between Syracuse white and African American singleton infants,  $p < 0.001$
- Actual difference 250.12 gm.

# Full Term IUGR

- Outcome variable
  - Infants born at 37 weeks gestation or greater
  - Who weigh less than 2,500gm.
- Full term IUGR is associated with:
  - Race, Medicaid, preeclampsia, fertility medications, tobacco, alcohol, cocaine.

# Multiple logistic regression

- Outcome variable: full term IUGR
- Exposure variable: residence in a census tract that is not, or is, within  $\frac{1}{2}$  mile of a supermarket
- Controlling for:
  - race (African American, white)
  - Medicaid
- Singleton births only.
- Births in which preeclampsia, fertility meds, alcohol, tobacco, and/or cocaine were removed from the sample

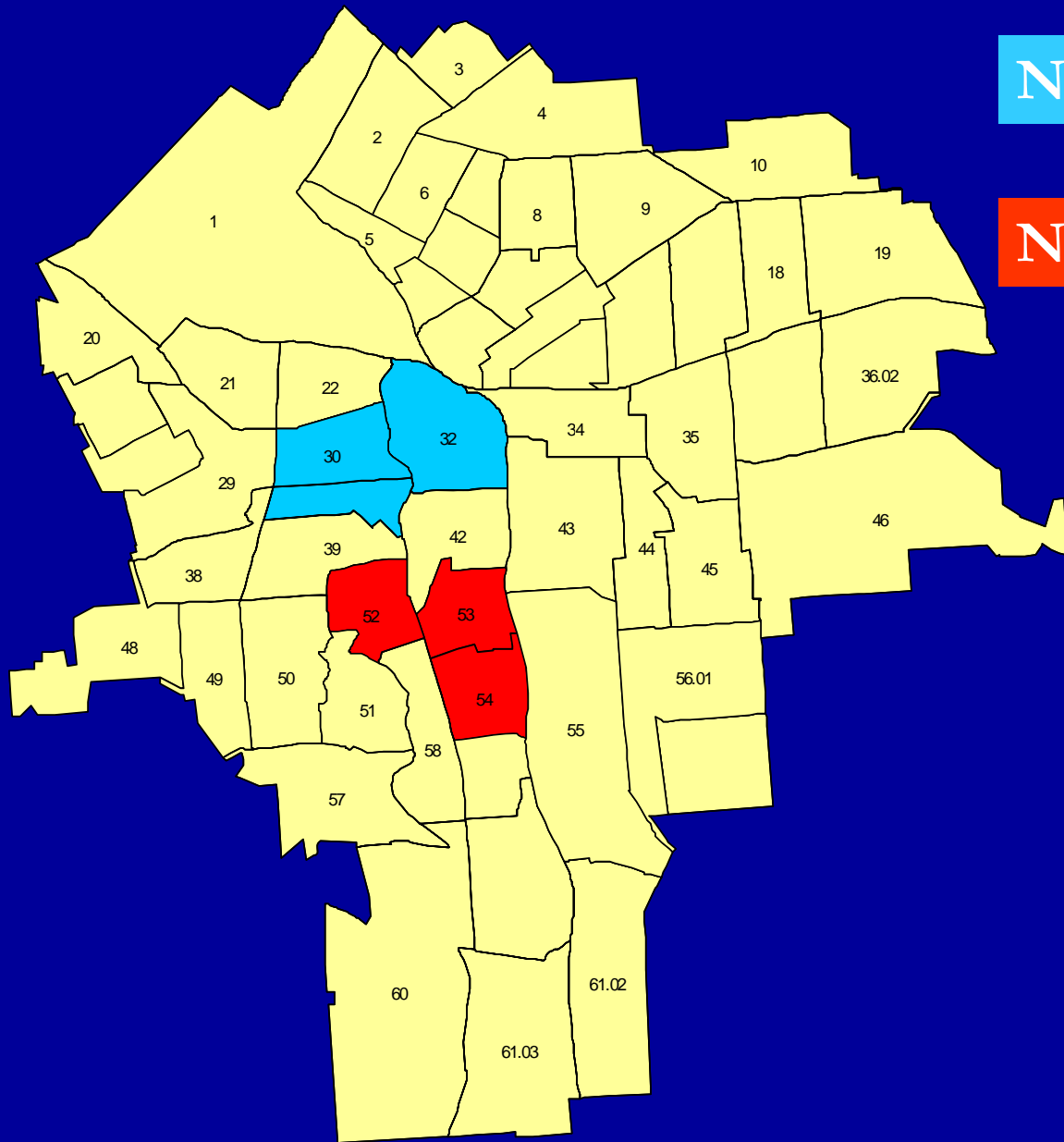
**Babies born to mothers living in  
“non-supermarket” census tracts  
are over three times as likely to be  
born too small**

# Logistic regression analysis

	<b>Sig.</b>	<b>Odds ratio</b>	<b>95% CI</b>	
			<b>Lower</b>	<b>Upper</b>
<b>Supermarket</b>	<b>.016</b>	<b>3.382</b>	<b>1.259</b>	<b>9.086</b>
<b>Race</b>	<b>.099</b>	<b>.494</b>	<b>.214</b>	<b>1.142</b>
<b>Medicaid</b>	<b>.833</b>	<b>1.093</b>	<b>.478</b>	<b>2.499</b>

Nojaim's area

No grocery area



# Is it poverty or the presence of a supermarket?

	<b>Median household income</b>	<b>% Unexplained Full Term IUGR</b>
<b>Nojaim's supermarket</b> (3 census tracts—30, 32, 40)	<b>\$12,513</b>	<b>2.5% (81 births)</b>
<b>No grocery</b> (3 census tracts—52, 53, 54)	<b>\$18,736</b>	<b>3.7% (109 births)</b>

# Corner Stores

# Corner stores

**Licensed for sale of milk, food,  
tobacco, alcohol and lottery**

# Corner Store Structured shopping study

36 randomly selected corner stores in  
Syracuse

# Corner Stores: Key health issues

- **Little or no fresh produce**
- **Very little low fat dairy**
- **Lottery tickets**
- **Marketing of Newport, Kool and Salem cigarettes**
- **Sales of “loosies” to children (50¢ each)**
- **Sales of blunts**
- **Alcohol items for sale, many times greater than dairy**
- **Locus of violence**
- **Some stores sell drug paraphernalia**

# Lottery sales

\$40 million/year

Syracuse

Corner stores sell 68% of all Lottery tickets



## From the New York State Lottery Website



<u>Mean Per Capita Yearly Lotto Purchases**</u>	<u>Median Household Income**</u>
<u>\$595</u>	\$22,942
<u>\$185</u>	\$24,682
<u>\$49</u>	\$33,942

\*excluding the central downtown census tract, with city, county and federal governmental offices and the mall census tract.

\*\* chi square for difference (per capita purchases and median household income) between each stratum was significant at  $p < 0.0001$ .

# 13204

- **Lottery sales 2000, 2001, 2002=**  
\$17,996,757
- Per Capita Income \$14,324
- One third of residents have not finished high school

# 13205

- **Lottery sales 2000, 2001, 2002=**  
\$ 18,913,684
- Per Capita Income \$14,200
- 26% of residents have not finished high school

Missing men  
and  
Disproportionate incarceration

# Disproportionate incarceration

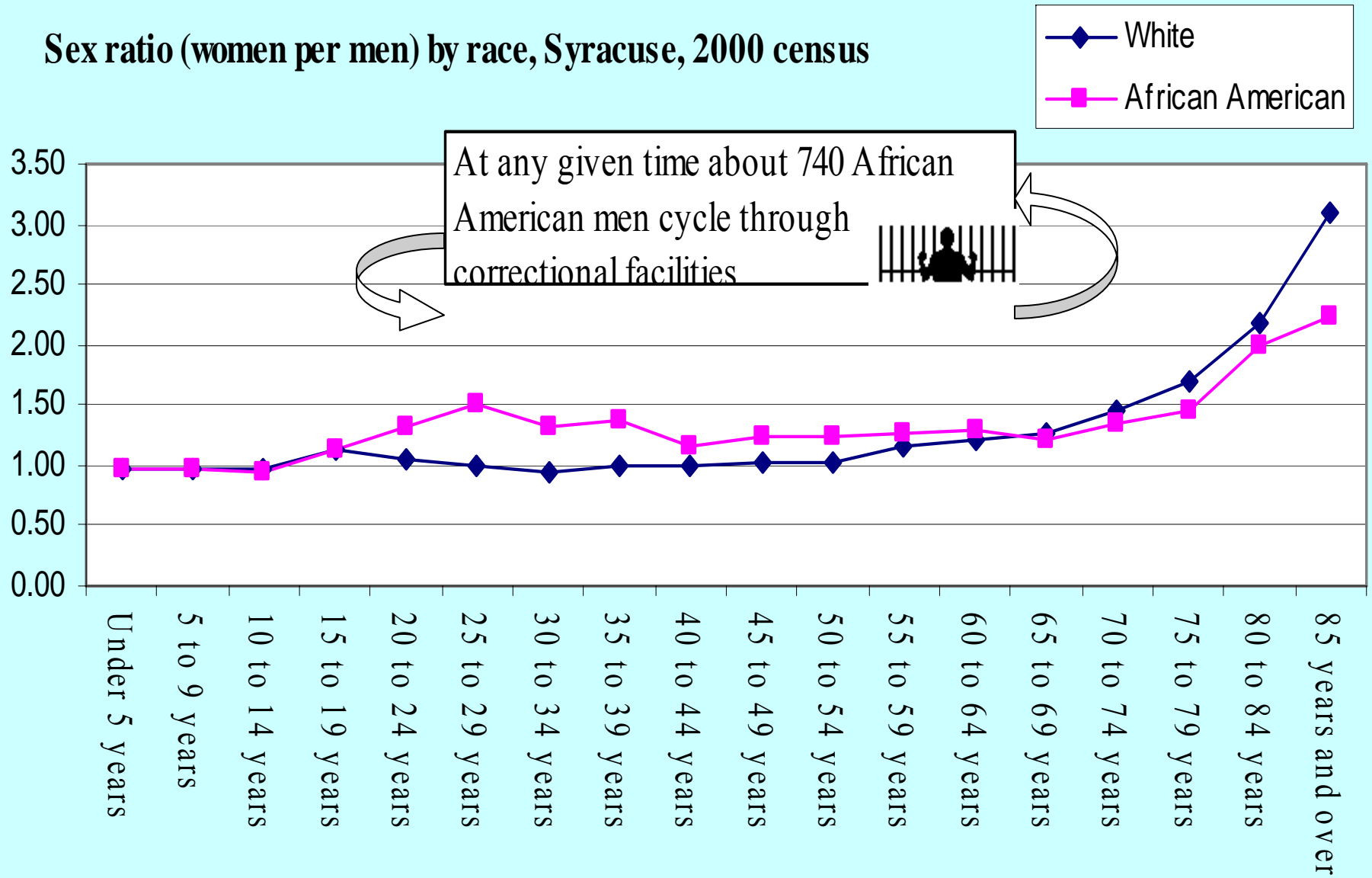
- **In the U.S:**
  - African Americans are incarcerated at a rate of 9.6 times white citizens
  - African Americans make up almost 13 percent of the population, yet they are 30 percent of the people arrested and 49 percent of those in prison (Human Rights Watch, 2000).
- **In New York State**
  - African Americans make up 16 percent of the population, but constitute 43 percent of the arrests (New York State Uniform Crime Report, 1998), and 51 percent of those in state prison (New York State Department of Correctional Services, 2002).

# Disproportionate incarceration

## In Onondaga County

- African Americans comprise 9.4 percent of residents and 52 percent of the inmates incarcerated in the local correctional facility.
- African Americans are incarcerated at over 11 times the white rate.
- During 1997-1999 African Americans made up 52 percent of all persons sentenced to jail and 61 percent of all persons sentenced to state prison.
- Among all persons arrested, African Americans were nearly 4 times more likely to be sentenced to incarceration (jail or prison) than white residents (who were more likely to receive probation or a fine) (odds ratio 3.92, 95% CI 3.43-4.47)

### Sex ratio (women per men) by race, Syracuse, 2000 census



# An African American woman's perspective

- “It’s hard because men have it easy. They have two to three women per man, so it’s very easy for him to not stay committed. A woman like me is looking for commitment and will try almost anything just to keep that commitment going...I’m gonna accept this BS he’s giving me because...without him...it’s gonna be hard for me to find someone else to [be with]...seeing it as if I let him go, this [other] woman’s gonna have him...I don’t want to be alone.”

# Incarceration and HIV risk

- 10% of male inmates are raped
- 30% have sex, many of whom trade sex for drugs
- about 25% of inmates injected drugs prior to incarceration--some portion of these inmates continue to inject drugs in prison
- about 50% of men in one study got a tattoo while incarcerated

<u>Persons living with HIV/AIDS through December 2004</u>	<b>Population Actual number</b>	<b>Per capita residents living with HIV/AIDS Per 100,000 residents</b>	<b>Females living with HIV/AIDS Per 100000 females</b>	<b>Whites living with HIV/AIDS per 100,000 White residents</b>	<b>African Americans living with HIV/AIDS Per 100,000 African Americans</b>	<b>Latinos living with HIV/AIDS Per 100,000 Latinos</b>
13204	20,826	864	465	543	1,557	1,210
13205	20,592	665	418	393	924	599
Syracuse Ryan White Region, excluding zip codes 13204 and 13205	1,384,308	85	54	54	579	348

- Zip codes 13204 and 13205 account for 19% of all adolescents (age 13 to 19 years) living with HIV/AIDS in the Syracuse Ryan White Region,
- But they only comprise 3% of the total population of the Syracuse RWR

# Involvement of the babies' fathers

Of 100 births to mothers who were patient's of UCHH (2005-2006)

- 19% of parents are married
- 60% of parents are living together
- 17% of the baby's fathers had been incarcerated.
  - 12% prenatally
  - 3% remained in correctional facilities prenatally and throughout the birth and post partum period
  - 3% were incarcerated for the first time after the birth
- Over half of the babies' fathers have been unemployed during the pregnancy.

Father not signing the “Declaration of Paternity” within 48 hours after the birth and post neonatal infant mortality

# Logistic regression analysis

- ◆ **Exposure variable: father missing from birth certificate**
- ◆ **Post neonatal mortality not associated with:**
  - ◆ **Tobacco, cocaine, marijuana, entry to prenatal care.**
- ◆ **Controlling for:**
  - ▶ **maternal race (African American vs. white)**
  - ▶ **maternal age (teen vs. age 20 and older)**
  - ▶ **receipt of public assistance**
  - ▶ **Medicaid insurance**

Babies whose fathers did not sign the  
**Declaration of Paternity** within 48 hours  
after the birth:

Were almost Four Times as likely to die  
between one month old and their first  
birthday.

<b>Outcome Variables</b>	<b>Logistic Regression Odds ratio (95% confidence interval) for father's name missing from birth certificate</b>	<b>Additional variables in the logistic regression model that are associated with the outcome</b>
<b>Post neonatal mortality (infant death after 28 days and before the first birthday)</b>	<b>3.841 (1.305-11.294 ) p&lt;0.014</b>	<b>None</b>

# Social policy change

Welfare reform

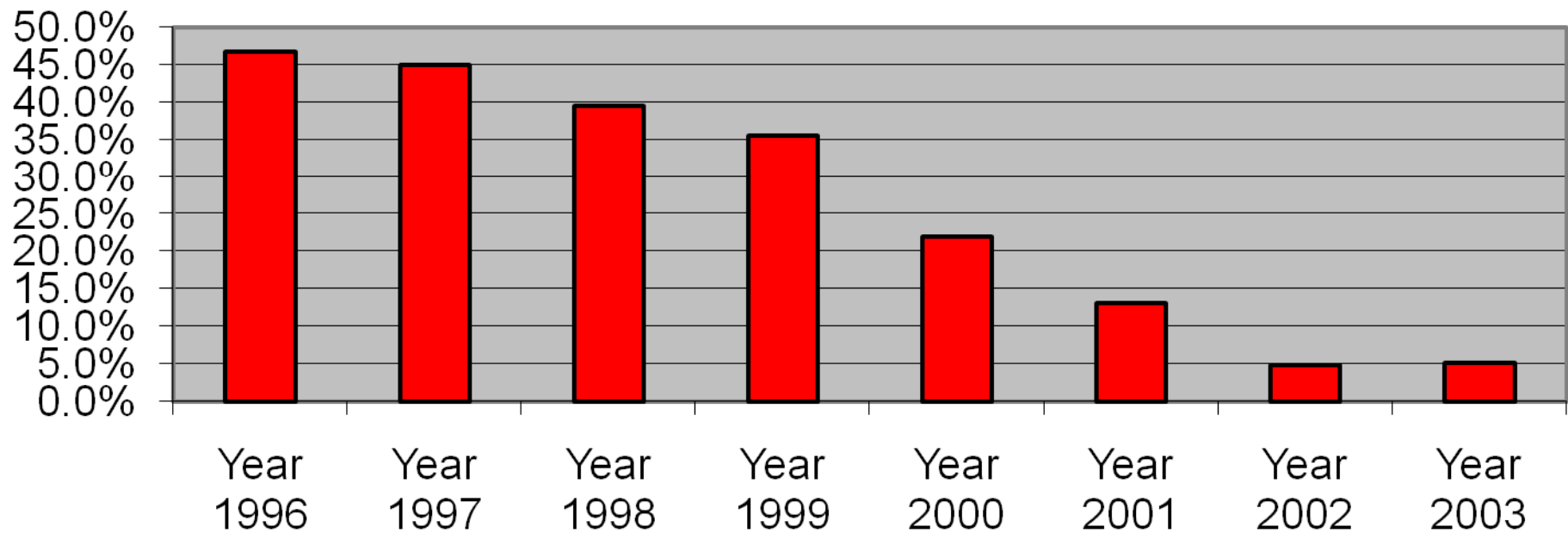
# Welfare reform

- In 1996, as a part of Welfare reform, Onondaga County began the shift from AFDC to TANF
- TANF places a 5-year lifetime cap on eligibility for public assistance.
- In 2001 the first cohort of clients reached their 5-year limit.

# TANF

- Work requirement:
  - Until 36 weeks of pregnancy women must work or actively look for work
  - Postpartum return to work after 6 weeks
  - Inadequate child care

## **% of African American Medicaid covered pregnant women receiving public assistance**



## Quote from a Nurse Midwife:

“Onondaga County’s welfare-to-work program, JOBSplus!, was unrelenting in its requirements for pregnant clients. Women were mandated to participate in the program until their 36th week of pregnancy and threatened with loss of benefits if they did not comply.”

“Daily I counseled women in my midwifery practice who were trying to cope with the discomforts of advancing pregnancy, overwhelming family responsibilities, and the difficulty of searching for work or getting out to their minimum wage JOBSplus! positions through the hazardous Syracuse winter weather conditions, on foot or by public transportation. Complaints of fatigue, back pain, and preterm contractions were common. The only hope of relief was a medical excuse from a health care provider.”

## TANF compared with other pregnant women covered by Medicaid (2000-2002)

- 15.7% of the infants of TANF clients required care in the NICU, compared with 6.5% of infants of women covered by Medicaid, who did not receive public assistance.
- The TANF babies spent a total of 902 days in the NICU; on average TANF babies spent just over 15 days each in the NICU, compared with just over 13 days for all other babies.
- Since NICU care costs between \$1,500 to \$3,000 per day per infant, the bill for the TANF babies cost taxpayers between \$1,352,655 to \$2,705,310

# **Childhood lead and teen pregnancy**

Pregnant Teens --15-19 years  
who had Elevated Blood Lead as very young  
children

**Were over 50% more likely to be on their  
SECOND or higher pregnancy.**

- Logistic Regression Odds Ratio, 95% Confidence Interval  
Controlling for Race (African American vs White), age and Medicaid. Exposure  
variable: childhood lead (less than 20 mcg/dl vs 20mcg/dl or higher)

# Mean Blood Lead Levels

- Griffith et al. (1998) Syracuse data:
- White: 7.38 mcg/dl
- African American: 11.35 mcg/dl
- Hispanic: 9.83 mcg/dl

<b>Zip codes</b>	<b>% of children tested (age 0-24 months) with elevated blood lead (2000-2001)</b>	<b>Birth rate, (15-19 years) per year, per 1,000 births</b>
13203	<b>6.7%</b>	<b>51</b>
13208	<b>8.1%</b>	<b>81</b>
13207	<b>9.3%</b>	<b>82</b>
13205	<b>10.6%</b>	<b>83</b>
<u>13204</u>	<u><b>11.2%</b></u>	<u><b>117</b></u>
Onondaga County excluding the above Zip codes	<b>1.3%</b>	<b>18.6</b>