

35th Annual Kalamazoo Community Medical and Health Sciences Research Day

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PREGNANCY, CRIME, AND INFANT OUTCOMES

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Disclosure

No financial relationships to disclose.

BACKGROUND

- Infant mortality is a major public health issue
 - Deaths have gradually decreased over the past decade
 - Still, over 23,000 infant deaths were reported in 2016
- Health disparities exist— race, SES and access to health care are all associated with infant mortality
 - In 2014, infant mortality for non-Hispanic black women was almost 2.5 times that of non-Hispanic whites

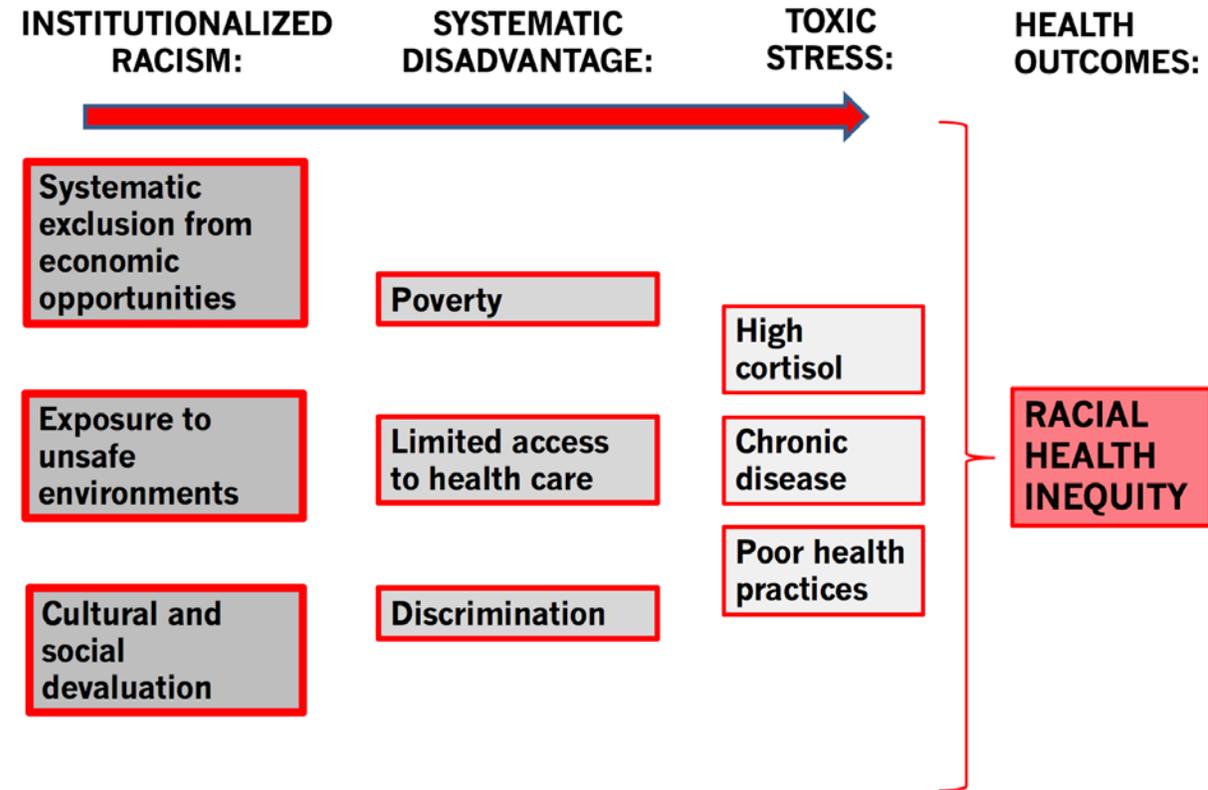
BACKGROUND

- There is a well-documented association between poor birth outcomes and societal conditions
- Poverty, discrimination, and lack of access to health care result in toxic levels of stress, resulting in poor birth outcomes



Where there is more poverty, there is higher crime

Social Determinants of Health



RESEARCH QUESTIONS

- 1. Does maternal criminal justice involvement predict infant outcomes?**
 - Birth outcomes (low birth weight, premature delivery, etc.)
 - Infant mortality/survival
- 2. Does the type of criminal justice involvement differentially affect birth outcomes?**
 - Victim
 - Perpetrator
 - Both

METHODS

Secondary analysis and integration of three administrative databases:

- (1) **Charging requests**—Kalamazoo County charging requests, 2007-2010
- (2) **Birth certificate records**—Maternal demographics, health risks, and birth outcomes
- (3) **Linked birth-death records**—Michigan Department of Community Health Vital Records birth and linked birth-death datasets consisting of all births and infant deaths in Kalamazoo county, 2008-2009
 - Data were matched using Link Plus, a probabilistic record linkage program
 - The study sample (N=6,217) consisted of women delivering between 2008-2009
 - Logistic regression was conducted to predict the association of maternal crime-involvement with infant health
 - Premature delivery, low birthweight, or death within the first year

STUDY POPULATION

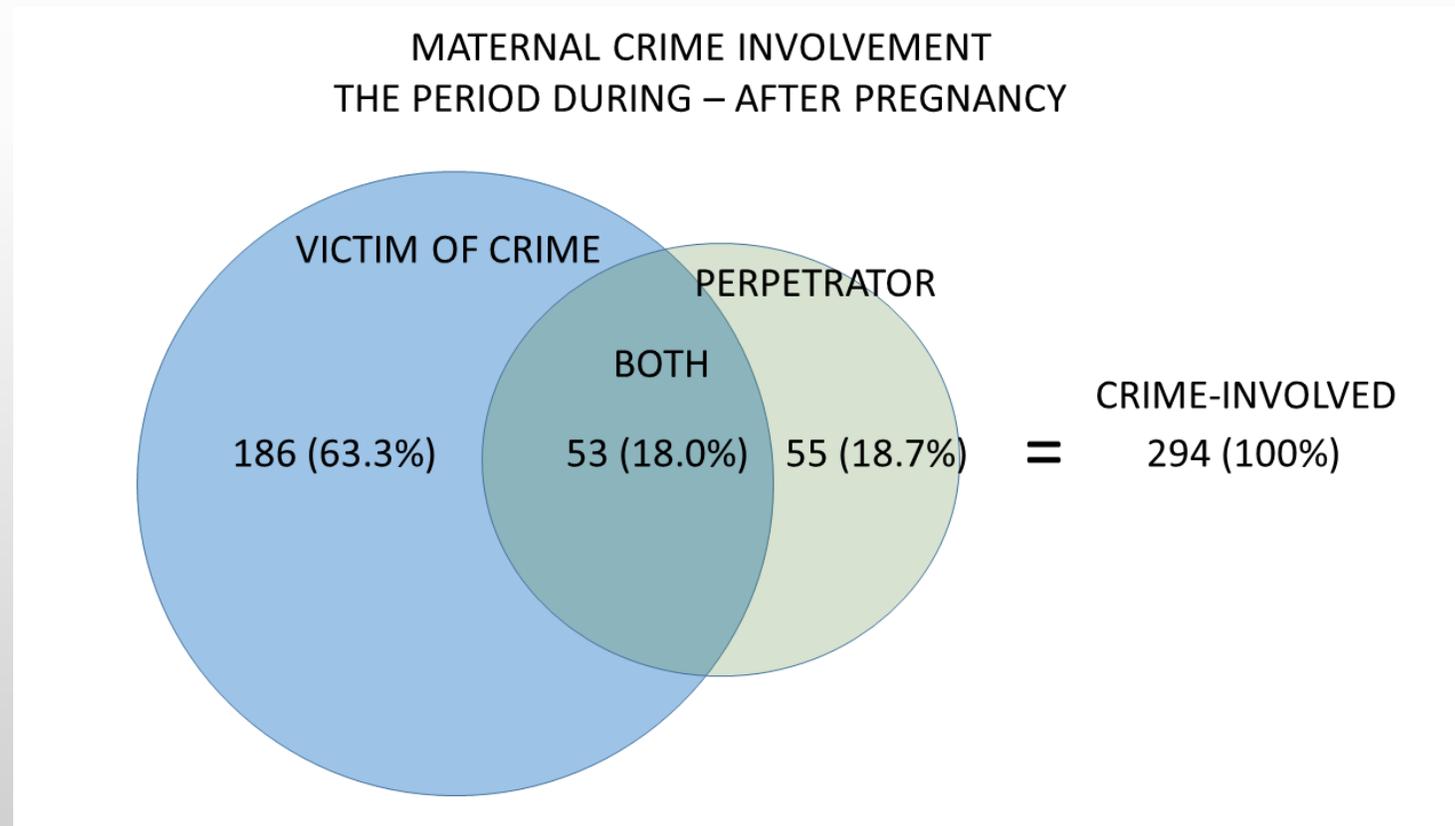
(N=6,217)

- Mean age: 27.3
- Race
 - White: 76.9%
 - Black: 18.8%
- Smokers: 19.8%
- Chronic disease: 15.1%
 - Chronic or gestational Hypertension or Diabetes
- Prior pregnancy with poor outcome: 5.1%

DEMOGRAPHICS	
Age – Mean (SD)	27.34 (5.88%)
Teens – N (%)	627 (10.09%)
Medicaid – N (%)	2933 (47.25%)
Race – N (%)	
White	4779 (76.88%)
Black	1168 (18.79%)
Other	269 (4.33%)
Education – N (%)	
High school or less	2439 (39.24%)
Some college or more	3776 (60.76%)
Hispanic – N(%)	369 (5.94%)
HEALTH	
Chronic disease – N (%)	936 (15.06%)
STI's – N (%)	
Gonorrhea	114 (1.84%)
Chlamydia	356 (5.76%)
Syphilis	4 (0.06%)
Herpes	476 (7.70%)
Hepatitis B	11 (0.18%)
Hepatitis C	1 (0.02%)
Prior birth outcome – N (%)	
Never pregnant	1897 (30.53%)
Prior pregnancy, bad outcome	317 (5.10%)
Prior pregnancy, good outcome	3999 (64.37%)
HEALTH BEHAVIORS	
Smoking – N (%)	1227 (19.75%)
Alcohol – N (%)	283 (4.56%)
HEALTHCARE ACCESS	
Kotelchuck – N (%)	
Inadequate	865 (13.99%)
Intermediate	975 (15.77%)
Adequate	2638 (42.67%)
Adequate plus	1705 (27.58%)

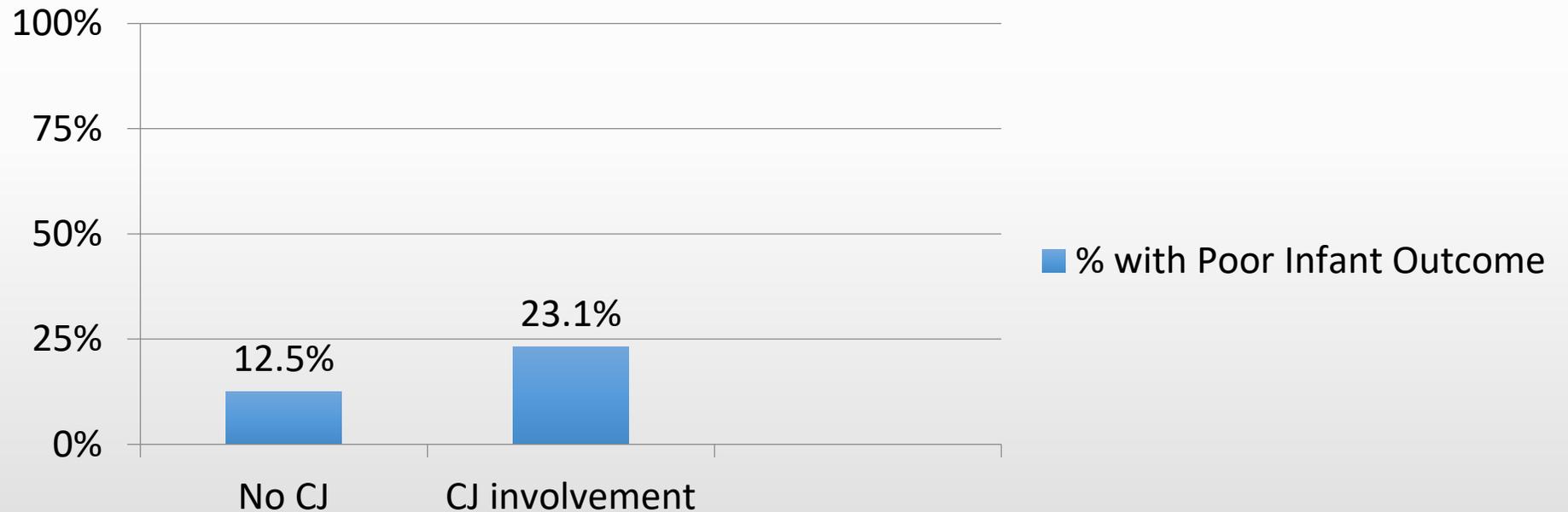
CRIMINAL JUSTICE INVOLVEMENT

- Of 6,217 women in sample, 294 (4.7%) had CJ involvement during perinatal period (pregnancy + 1 year postpartum → 21-mo. period)
 - 526 separate incidents



OUTCOMES

- 809 (13%) of all pregnancies/births/deliveries result in a poor infant outcome (LBW, premature delivery, infant death)



**HAVING HAD CRIMINAL JUSTICE INVOLVEMENT NEARLY DOUBLES
THE RISK OF POOR INFANT OUTCOME**

Does Perinatal Criminal Justice Involvement Predict Infant Outcome?

-Simple Regression-

	Unadjusted OR (95% CI)
Perinatal CJ INVOLV.	
Any criminal justice involvement	2.01(1.51, 2.67)**
No criminal justice involvement	Referent
Criminal justice involvement type – N(%)	
Victim only	1.90(1.36, 2.65)**
Perpetrator only	1.64(0.91, 2.94)
Both Victim & Perprtrat.	2.27(1.38, 3.73)*
Neither	Referent

*=Significant at $p < 0.05$

**=Significant at $p < 0.001$

Does this Relationship Hold When We Adjust for Other Factors?

-Multivariable Regression-

	Unadjusted OR(95% CI)	Adjusted OR(95% CI)
Perinatal CJ INVOLV.		
Any criminal justice involvement – N(%)	2.01(1.51, 2.67)**	1.19 (0.59, 2.41)
Criminal justice involvement type – N(%)		
Victim only	1.90(1.36, 2.65)**	1.23 (0.62, 2.44)
Perpetrator only	1.64(0.91, 2.94)	0.97 (0.45, 2.11)
Both	2.27(1.38, 3.73)*	1.18 (0.50, 2.77)
Neither	Referent	Referent

*=Significant at $p < 0.05$

**=Significant at $p < 0.001$

Adjusted for maternal demographics (age, race, socioeconomic status, education), maternal health (chronic disease, STI, prior pregnancy outcome), health behaviors (prenatal smoking, prenatal alcohol consumption), prenatal care (any, Kotelchuck Index)

WHAT DOES MATTER/PREDICT POOR OUTCOME?

- Prenatal care (Kotelchuck index score)
- Prior pregnancy with poor birth outcome
- Race
- Chronic disease
- Prenatal smoking

CONCLUSIONS

- What is the relationship between maternal criminal justice involvement and poor birth outcomes in Kalamazoo County?

Maternal CJ involvement is a significant predictor of poor infant health, but other health and demographic factors eclipse this effect.

- Does the type of criminal justice involvement (victim only/ perpetrator only/ or both) differentially affect birth outcomes?

Similarly, the type of CJ involvement also matters, with victimization associated with the greatest potential harm, but other factors override its impact upon infant health.

FUTURE DIRECTIONS

- Further investigation into race and its particular effect on infant health outcomes
- Study has identified potential upstream point at which at-risk individuals can be identified
- Court's role: connection to victim advocates; increased education for Probation Officers, Parole Officers, Judges, other court staff

QUESTIONS/ COMMENTS?