



# The Effects of Socioeconomic Status and Race on Poor Birth Outcomes in Milwaukee, Wisconsin

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## Purpose

Exploratory study to investigate disparities in

- Infant Mortality Rate (IMR),
- Low Birth Weight (LBW), and
- Preterm Birth (PTB)

by race and socioeconomic status (SES) in the City of Milwaukee from 2003-2007.

## Why Focus on Milwaukee?

- Nationally,
  - Across large US cities, high poverty is related to increased IMRs and larger disparities exist between African American and White IMRs in higher poverty areas than lower poverty areas (Sims et al., 2007)
- **But in the City of Milwaukee**
  - In 2007, African American IMR (14.1) was *twice* that of White infants (6.1) (WDHS, 2009)
  - Consistent racial disparities for past **15 years** (Ngu, et al., 2008)
  - 1993 – 2006, African American women **3 times** more likely to have LBW and PTB babies than White women (Ngu, et al., 2008)

## Results

Infant Mortality Rates by Race and SES, 2003-2007

	SES			
	Low	Mid	Upper	City
White	10.1	5.9	5.9	5.1
AA	<b>16.4</b>	<b>18</b>	<b>10.6</b>	<b>16.2</b>
Overall	12.4	10.7	7.7	6.4

Pearson chi-square tests demonstrated:

- Differences among SES groups for both races ( $p < .0001$ ), Whites ( $p < .001$ ), and African Americans ( $p < .05$ )
- Differences among racial groups for Lower ( $p < .0001$ ), Middle ( $p < .0001$ ), and Upper ( $p < .05$ )

Preterm Birth by Race and SES, 2003-2007

	SES			
	Low	Mid	Upper	City
White	11.7%	10.6%	8.8%	10.4%
AA	<b>18.4%</b>	<b>16.8%</b>	<b>14.3%</b>	<b>17.4%</b>
Overall	15.4%	13.2%	10.6%	11.1%

Pearson chi-square tests demonstrated:

- Differences among SES groups for both races ( $p < .0001$ ), Whites ( $p < .0001$ ), and African Americans ( $p = .0001$ )
- Differences among racial groups for Lower ( $p < .0001$ ), Middle ( $p < .0001$ ), and Upper ( $p < .0001$ )

## Conclusions

While Race and SES, individually and in combination, affect birth outcomes in the City of Milwaukee, the most important conclusions of our study are that

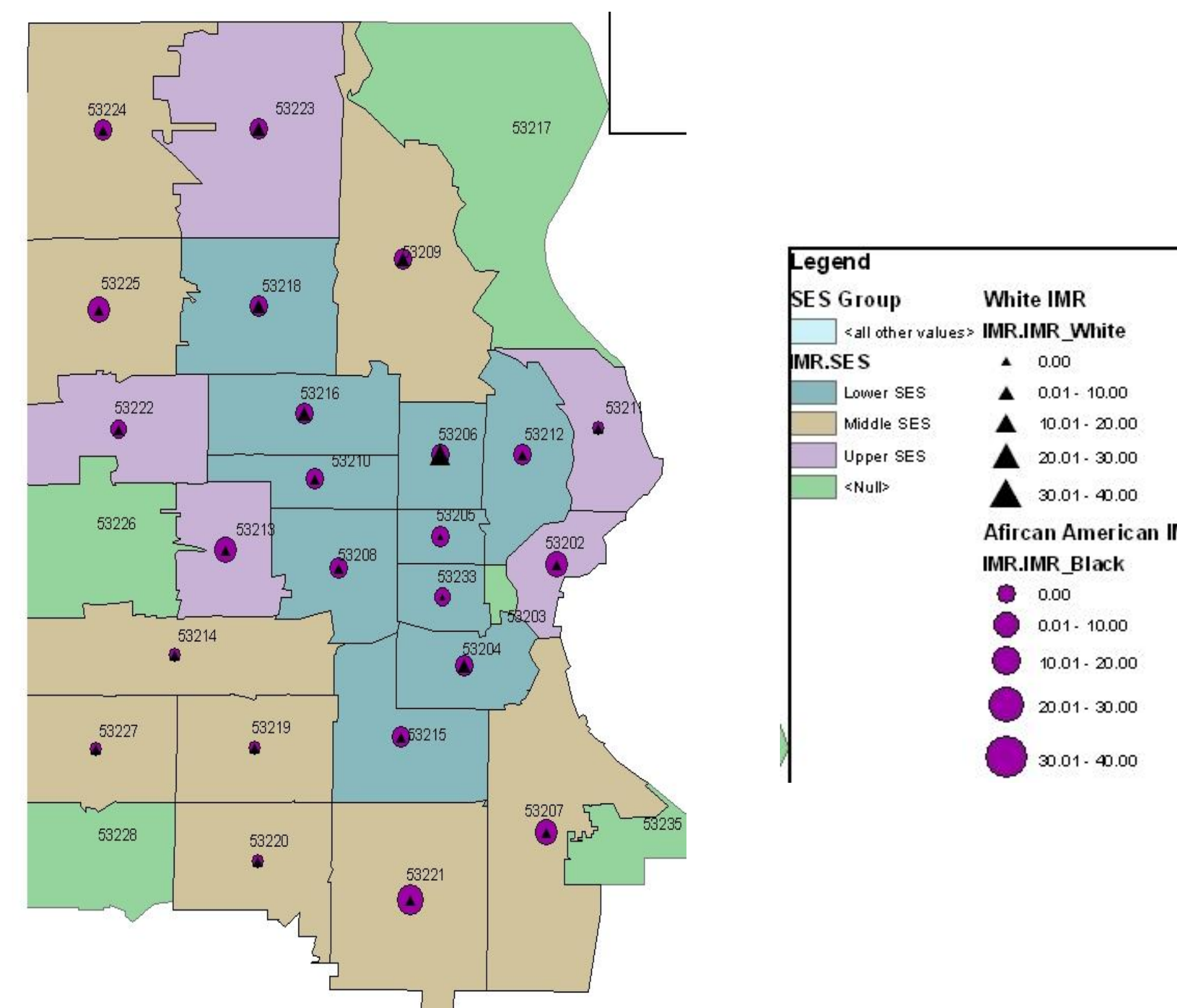
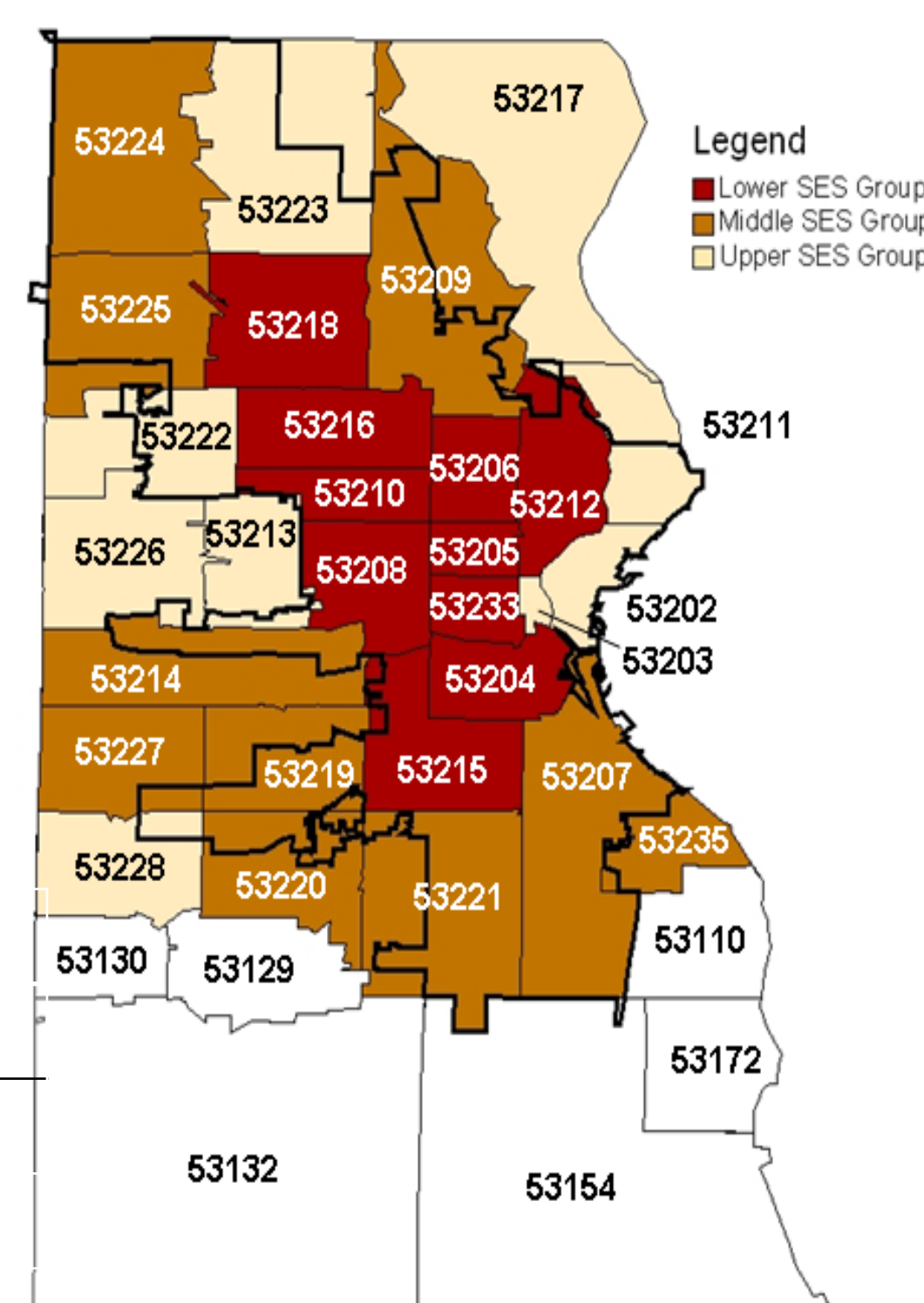
- African American birth outcomes for the **highest** SES group were the same or worse than White outcomes for the **lowest** SES group
- **Largest** disparity in IMR existed for the African American **Middle SES group** with AA infants being 3.1 times more likely to die than White infants

## Methods

- Vila et al's (2007) SES groups
- WISH Data Query System (WDHS, 2009)

City of Milwaukee Births, 2003-2007

	SES			
	Low	Mid	Upper	City
White	4,760	6,970	2,866	15,967
AA	17,829	6,059	1,514	25,690
Hisp	9,221	1,965	240	11,644
Missing	6	7	0	24
Other	1,743	738	441	3,048
Total	33,559	15,739	5,061	56,373



Low Birth Weight by Race and SES, 2003-2007

	SES			
	Low	Mid	Upper	City
White	7.2%	7.2%	5.7%	6.2%
AA	<b>14.2%</b>	<b>13.4%</b>	<b>11%</b>	<b>13.6%</b>
Overall	10.9%	9.5%	7.5%	7%

Pearson chi-square tests demonstrated:

- Differences among SES groups for both races ( $p < .0001$ ), Whites ( $p < .05$ ), and African Americans ( $p = .001$ )
- Differences among racial groups for Lower ( $p < .0001$ ), Middle ( $p < .0001$ ), and Upper ( $p < .0001$ )

## Limitations

- Methodological issues (Vila, et al., 2007), re: how ZIP codes divided into SES groups
  - Income ranges for Middle and Upper SES not mutually exclusive
- 5 ZIP codes (1 Middle and 4 Upper SES groups) used in the Vila paper not included in this analysis due to low birth counts

## Practical Significance

- Interventions in the City of Milwaukee to improve poor birth outcomes need to clearly address the consistent racial disparities across SES groups.

## References

- Ngu, E., Cortright, A., Blair, K. (2008). An Investigation of Racial and Ethnic Disparities in Birth Outcomes in Milwaukee, Wisconsin. Abstract, *American Public Health Association 136th Meeting*, San Diego, CA. (October), [http://apha.confex.com/apha/136am/techprogram/paper\\_169809.htm](http://apha.confex.com/apha/136am/techprogram/paper_169809.htm), accessed 10/17/08.
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