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Connecting Concentrated Disadvantage and Birth Outcomes to Enhance Program Targeting

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BACKGROUND

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Using Local Level Data for Program Targeting

- Ideally, public health programs would be targeted to communities with high rates of adverse outcomes
- Often, local level data on health outcomes are:
  - **Unavailable** due to limitations of data sources & surveillance systems
  - **Unreliable** due to small sample sizes
- In the absence of local data, programs may rely on state or regional data

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Concentrated Disadvantage (CD)

- Individual measures of poverty or income do not capture the **synergistic effects** of factors that cluster together to create disadvantaged communities
- Concentrated disadvantage (CD) is one of 59 “life course indicators” developed by the Association of Maternal and Child Health Programs (AMCHP)
- CD measures community economic strength by combining data from five census variables

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Study Goals

- Calculate CD at the county level for Illinois

- Examine the relationship between county-level CD and birth outcomes to determine whether CD is a reasonable proxy to inform geographical targeting of MCH programs

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METHODS

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Concentrated Disadvantage (CD)

- Used 2010 Census and 2008-2012 American Community Survey (ACS) data for Illinois counties
  - % individuals 16+ yrs old who were unemployed
  - % individuals living in poverty
  - % individuals living in households receiving public assistance
  - % households that are female-headed
  - % individuals that are under 18 years old

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Concentrated Disadvantage (CD)

- State average for each variable determined
- Z-scores calculated for each county for each variable to determine deviation from state average
- Five z-scores in each county averaged to get CD z-score
- County CD z-score divided into four quartiles to indicate level of disadvantage

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MCH Indicators

- Data Sources:
  - Birth Certificates (2010)
  - Death Certificates (2009-2011)
  - Census population estimates (2010)
- Indicators:
  - % births that were **low birth weight** (<2500g)
  - % births that were **very low birth weight** (<1500g)
  - **Infant mortality** rate (per 1,000 births)
  - % births to women receiving **less than adequate prenatal care**
  - **Teen birth** rate (per 1,000 women 15-19 years old)

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RESULTS

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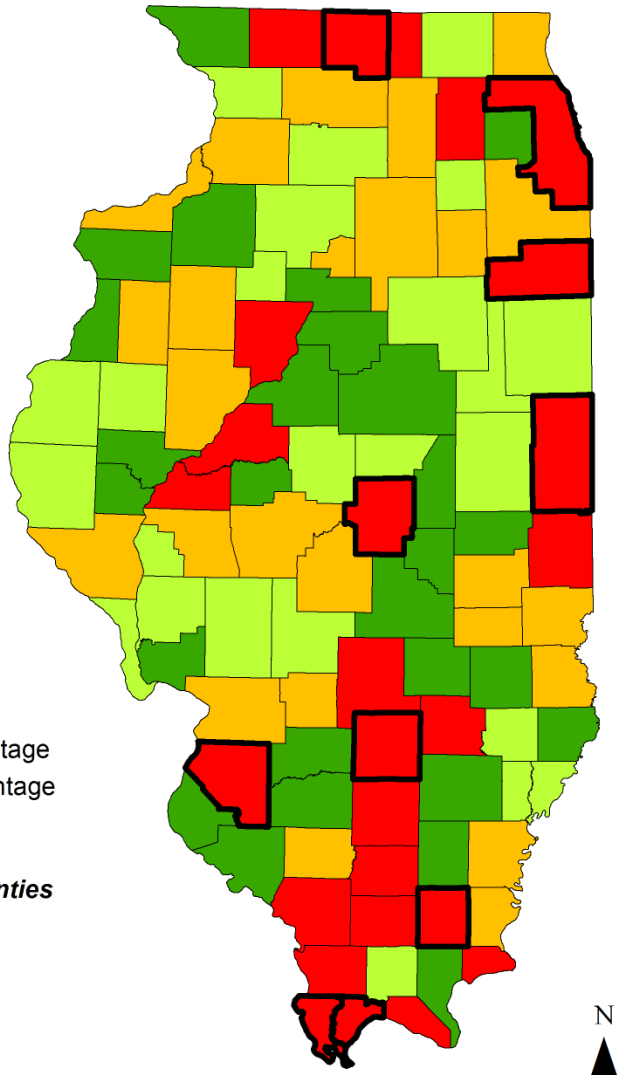
Concentrated Disadvantage in Illinois By County, 2008-2012



Level of Disadvantage

(compared to state average)

- Low Disadvantage
- Low-Medium Disadvantage
- Medium-High Disadvantage
- High Disadvantage

Top 10 disadvantaged counties are outlined in bold line

Data Sources:

Economic Disadvantage is a summary index created from five variables in the 2008-2012 American Community Survey (ACS) and 2010 Census files, as recommended by AMCHP Life Course Indicator Set.

Shapefiles: 2010 Census TigerLine Files

N

0 50 100 200 Miles

The 10 Most Disadvantaged Counties in Illinois:

- Alexander
- Cook
- Kankakee
- Macon
- Marion
- Pulaski
- Saline
- St. Clair
- Vermillion
- Winnebago

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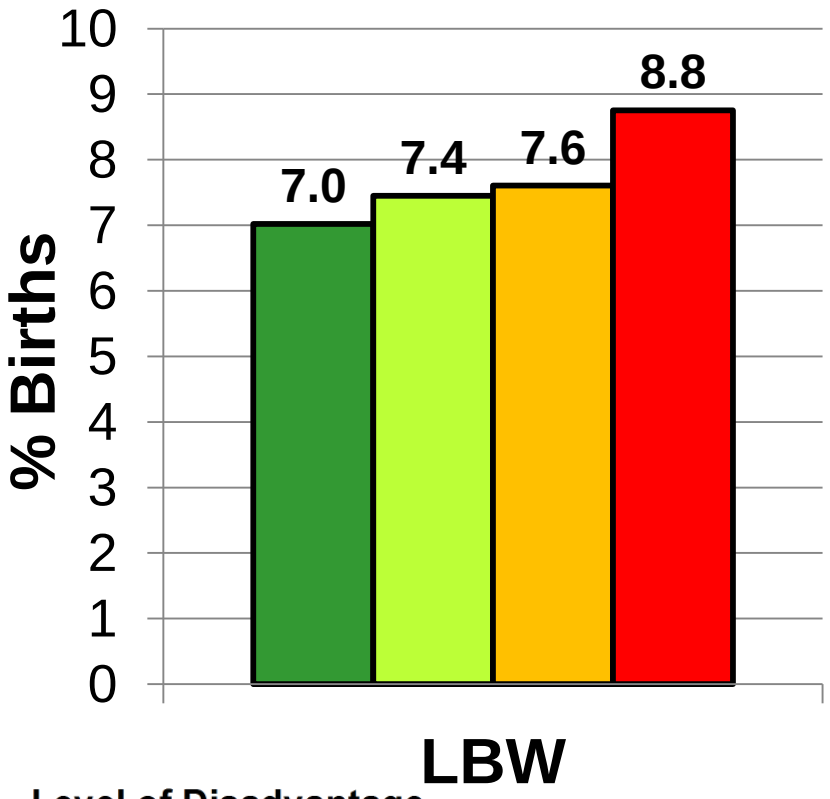
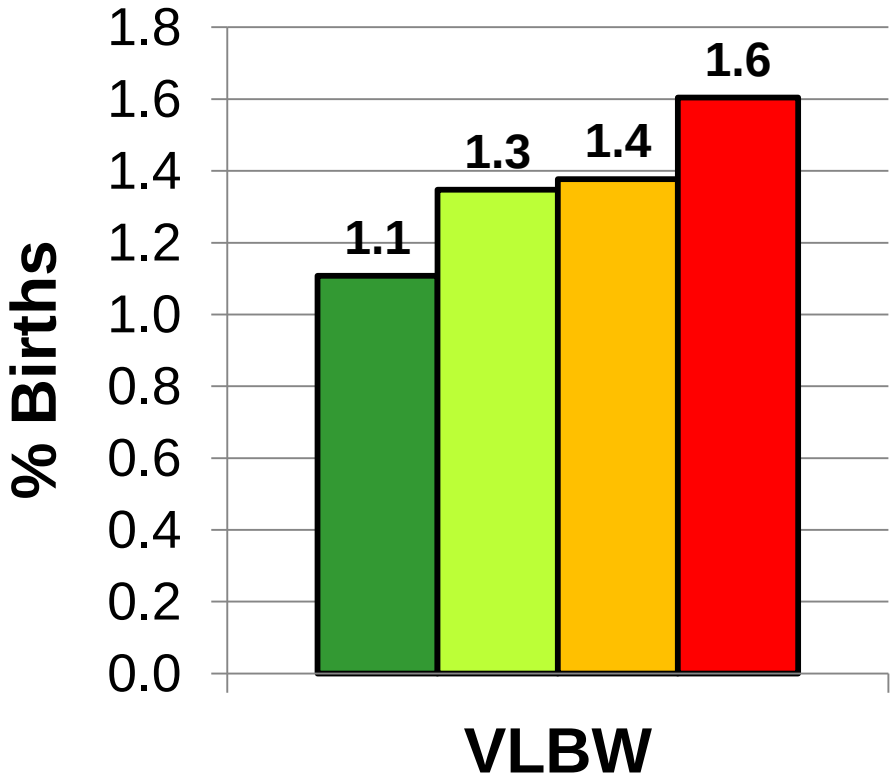
CD & Low / Very Low Birth Weight





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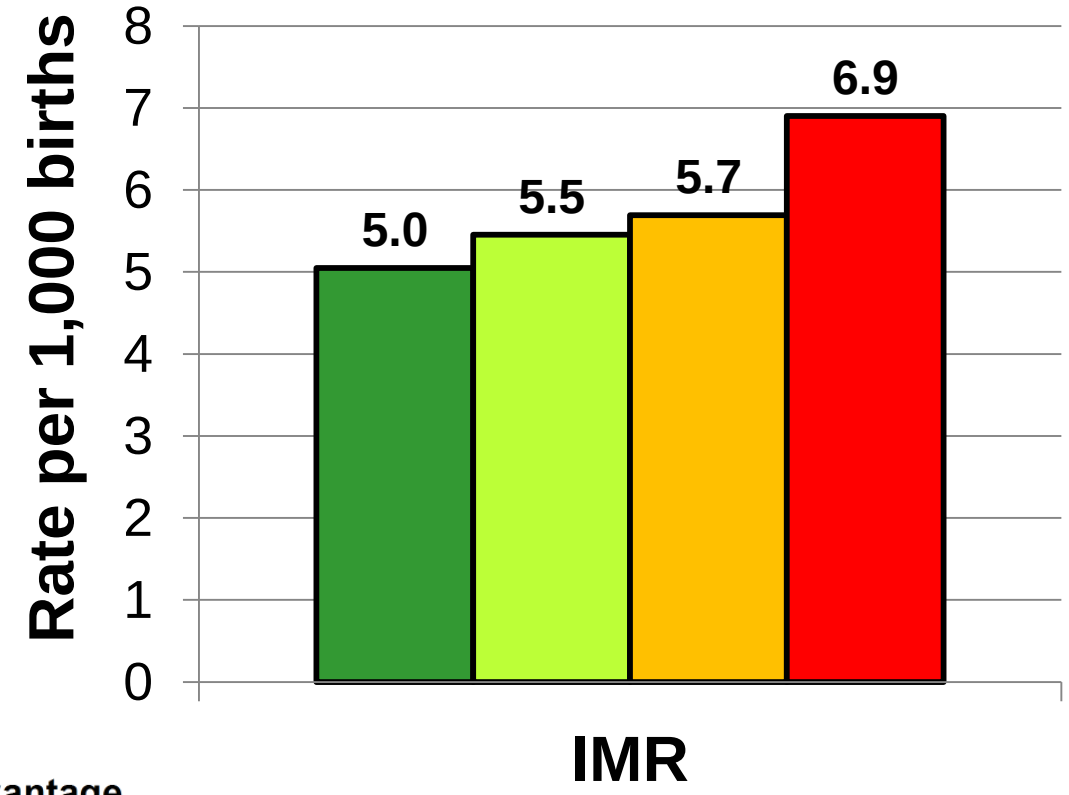
CD & Infant Mortality



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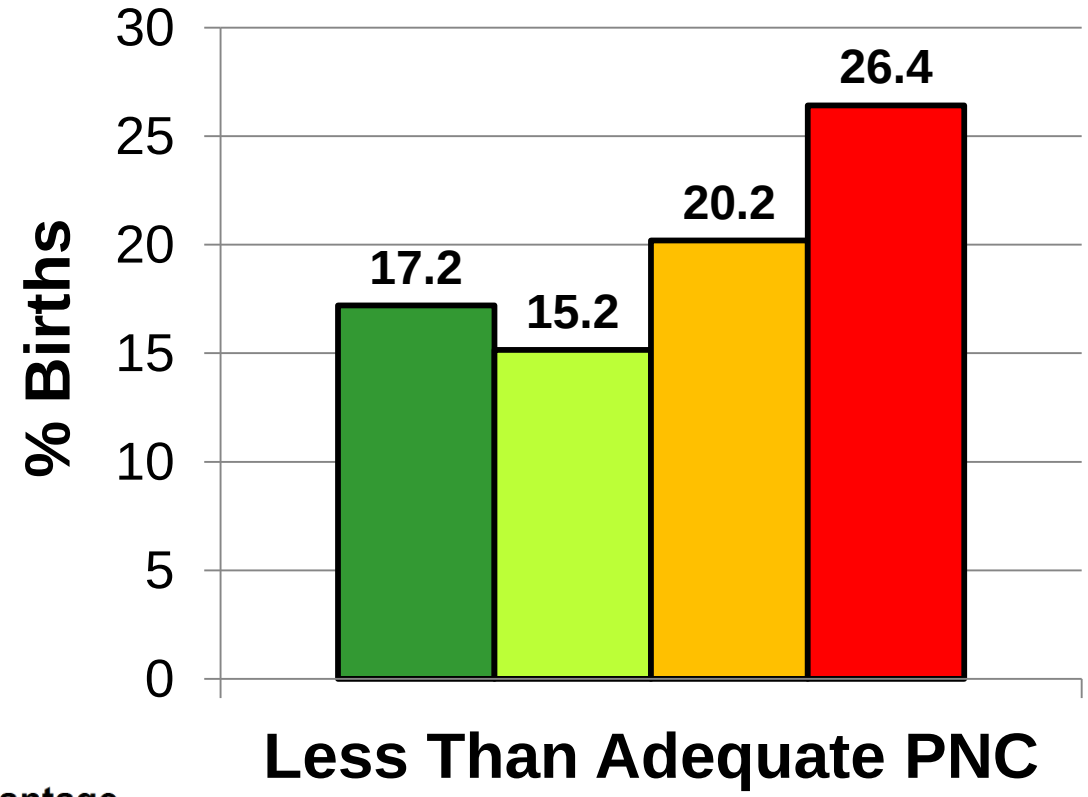
CD & Not Adequate Prenatal Care



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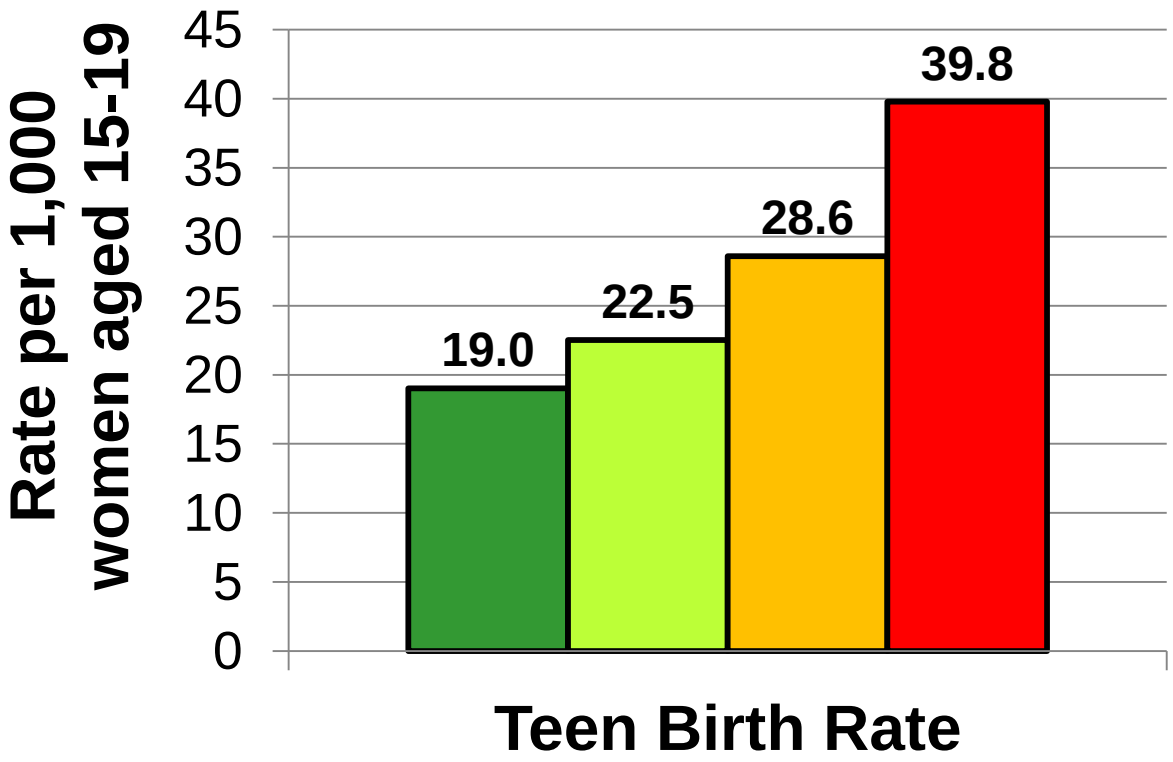
CD & Teen Birth



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Summary of Findings

- In general, the prevalence of the five MCH indicators increased with increasing quartile of county-level CD
- For all five outcomes, the prevalence among high CD counties was significantly higher than low CD counties

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CONCLUSIONS & IMPLICATIONS

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Conclusions

- High county-level concentrated disadvantage was associated with all five MCH indicators
- CD may be useful for targeting MCH programs in the absence of local data
- Calculating and using CD at the census tract level may help allocate resources and programs within a county or within a city

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QUESTIONS?

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