Local-Level Disparities in Maternal and Child Health: Findings From the Michigan PRAMS Prosperity Region Analysis

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INTRODUCTION

- Michigan Pregnancy Risk Assessment Monitoring System [MI PRAMS]
  - Annual survey of new mothers
  - Covers year before pregnancy through 3-6 months after delivery
  - Population-based data source
  - Gives **state-level** estimates for factors influencing maternal and child health
- Challenges for mothers and babies vary across the state
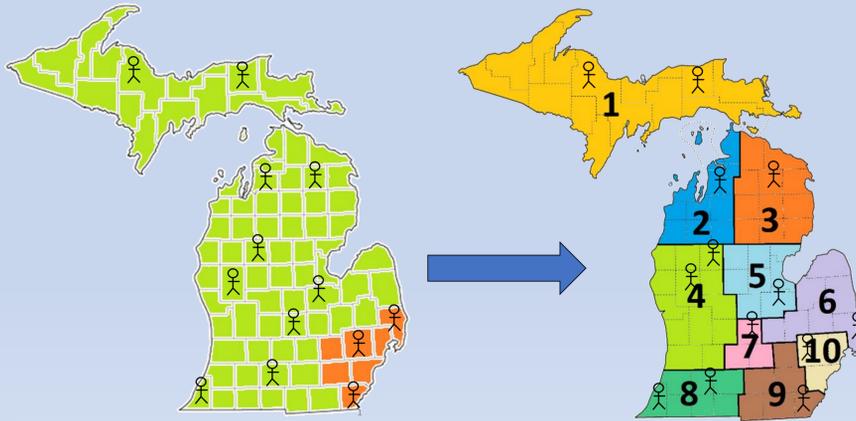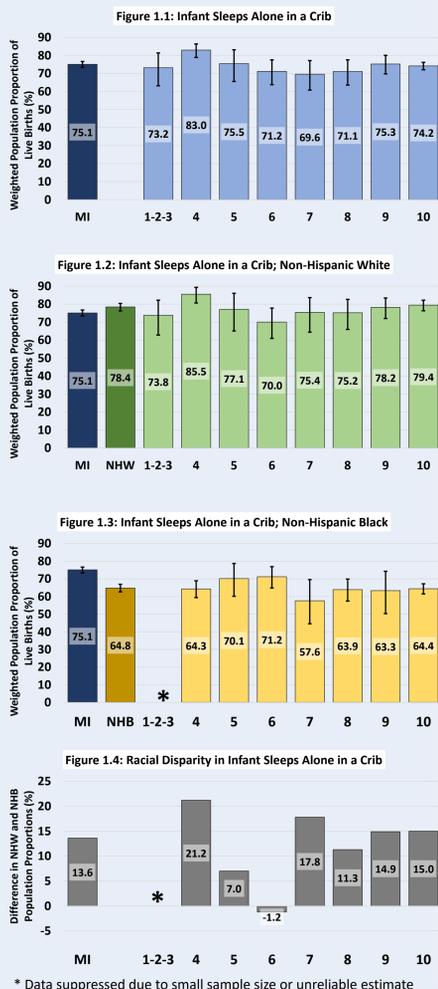 - **Local-level** estimates may be useful

Figure A: Respondents for Michigan PRAMS (LEFT) are reweighted to represent the sub-state Prosperity Region where they reside (RIGHT).

Materials and Methods

- MI PRAMS oversamples:
  - Low birth weight
  - African American
  - Southeast Michigan [Fig.A, left]

- For this analysis:
  - Birth years 2012-2014 combined
  - State-level data reweighted to represent Prosperity Regions [Fig.A]
  - Regions 1-3 were combined

- Using Prosperity Region data sets we:
  - Examine four measures of pregnancy and infant health
  - Compare Region estimates to State
  - Examine breakdown by race and ethnicity
    - Non-Hispanic White [NHW]
    - Non-Hispanic Black [NHB]
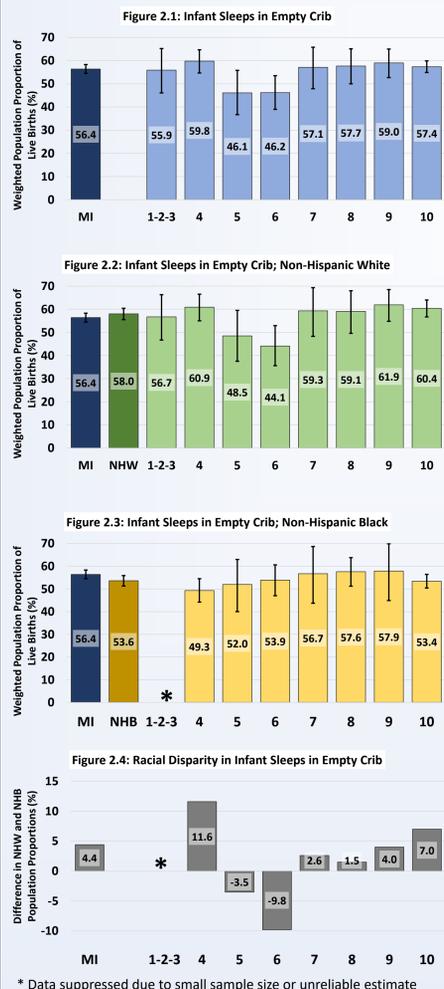 - Locate areas with highest and lowest disparity

Indicator 1: Does the proportion of infants sleeping **alone** [no other person sharing sleep space] in a **crib or pack and play** differ by Prosperity Region? By maternal race/ethnicity?

* Data suppressed due to small sample size or unreliable estimate
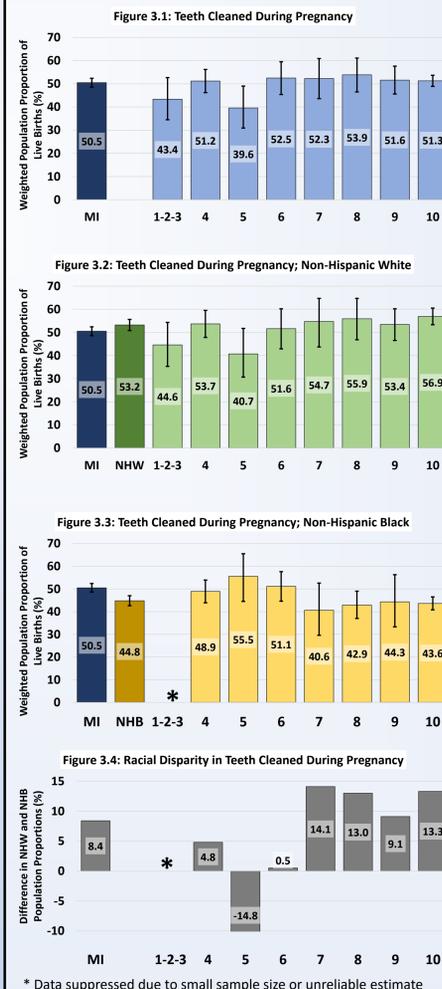
Indicator 2: Does the proportion of infants sleeping in an **empty crib or pack and play** [no blankets, pillows, other objects] differ by Prosperity Region? By maternal race/ethnicity?

* Data suppressed due to small sample size or unreliable estimate

Indicator 3: Does the proportion of mothers having their **teeth cleaned during pregnancy** differ by Prosperity Region? By maternal race/ethnicity?

* Data suppressed due to small sample size or unreliable estimate

Indicator 4: Does the proportion of mothers reporting an **intended pregnancy** differ by Prosperity Region? By maternal race/ethnicity?

* Data suppressed due to small sample size or unreliable estimate

Results 1

- Infants sleeping alone in crib highest in Region 4
- Disparity highest in Regions 4 and 7
- Disparity lowest in Regions 5 and 6

Results 2

- Infants sleeping in empty crib lowest in Regions 5 and 6
- Disparity lowest in Regions 5 and 6
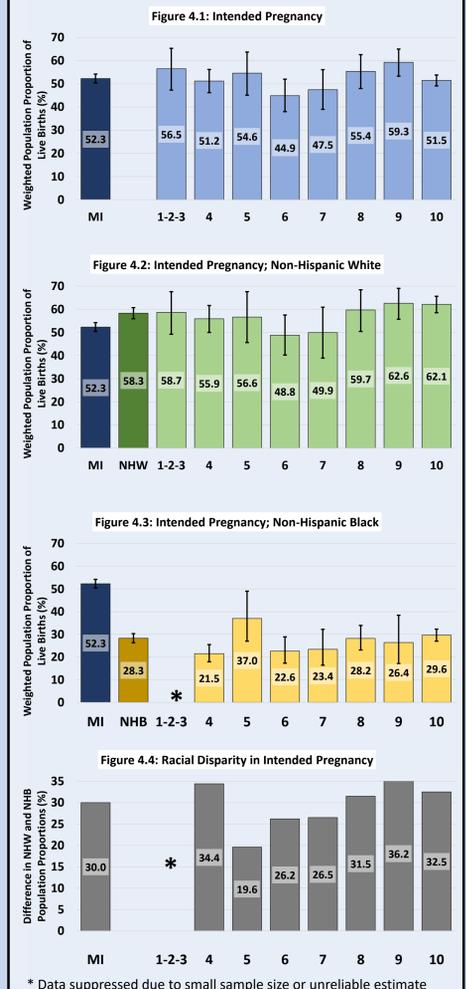 - More NHB babies slept safely than NHW

Results 3

- Lowest cleaning in Region 5
  - Driven by NHW mothers
- Disparity lower in Regions 4-6
- Disparity higher in Regions 7-10

Results 4

- Intention highest in Northern Michigan and Regions 5, 8, and 9
- Disparity exists in all regions
  - Intended pregnancies half as common for NHB mothers
- Disparity highest in Regions 4 and 9
- Disparity lowest in Region 5

DISCUSSION

- State-level measures and disparities have been known for some time
- Sub-state differences and disparities are now apparent
- The best performing region for Indicator 1 also has the highest racial disparity
- Regions 5 and 6 have lowest disparity in Indicators 2 and 3
  - Driven by low values for NHW and better performance for NHB mothers
- Racial inequity in pregnancy intention exists everywhere
  - Lower in Region 5
- Improving outcomes for all mothers and reducing racial inequity may be assisted by looking at sub-state regions