

## No Strings Attached: Evaluating an Unconditional Prenatal Income Supplement Using Linked Administrative Data

Brownell, Marni<sup>1,2\*</sup>, Chartier, Mariette<sup>1,2</sup>, Nickel, Nathan<sup>1,2</sup>, Chateau, Dan<sup>1,2</sup>, Sarkar, Joykrishna<sup>2</sup>, Burland, Elaine<sup>1,2</sup>, Jutte, Doug<sup>3</sup>, Taylor, Carole<sup>2</sup>, Santos, Rob<sup>1,2</sup>, and Katz, Alan<sup>1,2</sup>

<sup>1</sup>University of Manitoba

<sup>2</sup>Manitoba Centre for Health Policy

<sup>3</sup>Berkeley

### Objectives

Perinatal outcomes have improved overall in developed countries over the last several decades but remain poor for disadvantaged populations. In Manitoba, Canada, the Healthy Baby Prenatal Benefit (HBPB), a cash transfer to low-income pregnant women, was introduced with the goal of improving perinatal outcomes. The objective of this study was to use linked administrative and program datasets to determine whether this unconditional income supplement was associated with improved birth outcomes for a low-income population.

### Approach

This study used data from the PATHS Data Resource, which contains population-level health and social service records as well as program data for approximately 600,000 children in Manitoba, Canada, over a 30-year period, linkable at the individual level. All mother-newborn pairs, from 2003-2010, who met the following criteria were included for analyses: i) the mother was on social assistance (i.e., low income); ii) the infant was born in hospital; and, iii) the pair had a newborn risk screen ( $n=14,591$ ), documenting factors such as prenatal alcohol and tobacco exposure and maternal and family characteristics. Low-income women who received HBPB (exposed, 10,738) were compared with low-income women who did not receive HBPB (unexposed, 3,853) on several outcomes: low birth weight, preterm, small- and large-for-gestational age, 5-minutes Apgar scores, breastfeeding initiation, neonatal readmission, and newborn hospital length of stay (LOS). Covariates from the risk screens were used to develop propensity scores to construct Inverse Probability of Treatment Weights, to balance differences between exposed and unexposed groups in regression models. Gamma sensitivity analyses assessed sensitivity to unmeasured confounding. Population

attributable and preventable fractions were calculated.

### Results

HBPB exposure was associated with reductions in low birth weight (adjusted risk ratio, aRR=0.71, 95% CI=0.63, 0.81), preterm (aRR=0.76 (0.69, 0.84)) and small-for-gestational age (aRR=0.90 (0.81, 0.99)) births and increases in breastfeeding (aRR=1.06 (1.03, 1.09)) and large-for-gestational age births (aRR=1.13 (1.05, 1.23)). For vaginal births, HBPB was associated with shortened LOS (mean=2.86,  $p<0.0001$ ). Results for breastfeeding, low birth weight, preterm and LOS were robust to unmeasured confounding. Reductions of 21% (95% CI 13.6, 28.3) of low birth weight and 17.5% (11.2, 23.8) of preterm were associated with receipt of the HBPB.

### Conclusion

A modest income supplement during pregnancy was associated with improved birth outcomes for infants born to low-income women. Placing conditions on income supplements to low income pregnant women may not be necessary to promote prenatal and perinatal health. Linked administrative data can be a valuable tool for program evaluation.

\*Corresponding Author:

Email Address: [marni\\_brownell@cpe.umanitoba.ca](mailto:marni_brownell@cpe.umanitoba.ca) (M. Brownell)

