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DOI: 10.1377/hlthaff.2017.1290
HEALTH AFFAIRS 37,
NO. 3 (2018): 447–455


# An Unconditional Prenatal Income Supplement Reduces Population Inequities In Birth Outcomes

**ABSTRACT The Commission on Social Determinants of Health, sponsored by the World Health Organization, has identified measuring health inequities and evaluating interventions to reduce them as important priorities. We examined whether an unconditional prenatal income supplement for low-income women was associated with reduced population-level inequities in birth outcomes. We identified all mother-newborn pairs from the period 2003–10 in Manitoba, Canada, and divided them into the following three groups: low income exposed (received the supplement); low income unexposed (did not receive the supplement); and not low income unexposed (ineligible for the supplement). We measured inequities in low-birthweight births, preterm births, and breast-feeding initiation among these groups. The findings indicated that the socioeconomic gap in birth outcomes between low-income and other women was significantly smaller when the low-income women received the income supplement than when they did not. The prenatal income supplement may be an important driver in attaining population-level equity in birth outcomes; its success could inform strategies seeking to improve maternal and child health.**

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In 2009 the Commission on Social Determinants of Health called for inequities in health to be reduced within a generation.[1,2] The commission, sponsored by the World Health Organization (WHO), was designed to gather evidence on what could be done to promote health equity and launch a global movement to achieve it. The WHO defines *health inequities* as unjust and avoidable differences in health between disadvantaged groups and their better-off counterparts.[3] One of the commission's "overarching recommendations" was that health inequities should be measured and monitored, and actions taken to reduce them should be evaluated.[1,2] In response to this call, we initiated Pathways to Health and Social (PATHS) Equity for Children, a program of research based at the Manitoba Centre for Health Policy, University of Manitoba, to evaluate whether interventions aimed at improving health and social outcomes for children are also effective at reducing socioeconomic inequities in health. In this article we present findings from a study of an intervention that seeks to improve the perinatal health of mothers and their newborns. Our objective was to determine whether the program was associated with reduced population-level socioeconomic inequities in birth outcomes.

Health at birth influences newborns' long-term developmental trajectories and plays a role in cognitive function,[4] mental health,[5] and risk of developing chronic disease as an adult.[6] For example, maternal obesity during pregnancy is a powerful determinant of offspring obesity and has been linked to high blood pressure and cardiovascular dysfunction.[7,8] Poor birth outcomes are not equally distributed in the population but

instead tend to be more concentrated at the lower end of the socioeconomic spectrum. While causal pathways between poverty and poor birth outcomes have not been fully delineated, preterm and low-birthweight births are associated with a number of poverty-related risk factors. For example, compared to pregnant women with higher incomes, pregnant women living in poverty have higher levels of stress,[9–12] inadequate nutritional intake,[10,13,14] higher levels of smoking during pregnancy,[10,11,14] poorer maternal health,[10,15] and poorer access to adequate prenatal care.[10,16] Low socioeconomic status may also have a differential impact on women living in urban or rural areas. In a population-based Canadian study, the differences in large-for-gestational-age births found across income groups were more pronounced in rural areas than in urban areas.[10] Thus, there is a critical role for interventions that aim to improve prenatal health and birth outcomes at the population level, thereby supporting children's healthy development and long-term success.

## The Healthy Baby Prenatal Benefit

The Healthy Baby Prenatal Benefit is a population-level intervention that has been operating in the Canadian province of Manitoba since 2001.[13] The program provides an unconditional income supplement (Can$81, or approximately US$64, per month [2010 exchange rates]) to low-income pregnant women during their second and third trimesters of pregnancy, along with brochures about prenatal nutrition, breast-feeding, and healthy infant development. Prenatal care is already provided free of cost within Manitoba's universal health care system. The income supplement represents an almost 10 percent increase in monthly income for women receiving income assistance (those with a mean annual income of Can$9,941, or approximately US$7,872). A recent evaluation of the Healthy Baby Prenatal Benefit[13] found that it was associated with reduced rates of preterm and low-birthweight birth and with increased breast-feeding initiation among mother-newborn pairs, compared to those who were not enrolled in the program. The goal of the current study was to examine whether the income supplement was also associated with reduced population-level inequities in prenatal health and birth outcomes.

## Study Data And Methods

**STUDY SETTING** Manitoba, a central Canadian province, has a population of approximately 1.3 million.[9] It is representative of Canada in many aspects, including indicators of health,[12,17] education,[18] and equity in use of health care.[19] It is also uniquely suited to be the site of this study, since the province has carefully collected data on Healthy Baby program participation for more than fifteen years. These data are linkable to the information-rich Manitoba Population Research Data Repository—which allows for population-based analyses of health outcomes and health equity.

**DATA SOURCES** This study was conducted at the Manitoba Centre for Health Policy, with approval from the University of Manitoba's Health Research Ethics Board. The study data are from the PATHS Data Resource,[20] which contains whole-population deidentified health and social services data for all children registered in Manitoba's universal health care program. The data are linkable at the individual level using a scrambled identifier. The databases used in this study included Healthy Baby Prenatal Benefit program data, newborn risk screen data, hospital discharge abstracts, data on receipt of income assistance and residence in social housing, physician visit records, prescription medication records, population registry data, and Canada census data. The validity of the data in the PATHS Data Resource has been well documented.[17,21–26]

All pregnant women who are low income (have annual incomes below Can$32,000, approximately US$25,340) and have a medically confirmed pregnancy are eligible for the Healthy Baby Prenatal Benefit. Administrative data on all applicants and recipients are held by the Healthy Child Manitoba Office, which also maintains a database about families with newborns that contains information collected as part of a universal risk screen administered by public health nurses shortly after birth.[27] This screen provides detailed information about maternal pre- and postnatal biological and social risk factors such as education, mental health, violence between parenting partners, prenatal smoking, and alcohol and drug use. Both of these databases are part of the PATHS Data Resource.

**STUDY COHORT DEVELOPMENT** The study cohort is described in detail in the online appendix.[28] Briefly, the study included all mother-newborn pairs in Manitoba in the period 2003–10. These were divided into the following three groups: group 1, which consisted of low-income women who received the income supplement (or were "exposed" to the intervention); group 2, which consisted of low-income women who did not receive the supplement (unexposed); and group 3, which consisted of women who were ineligible for the income supplement, and thus unexposed. Exhibit 1 lists the covariates we used to develop propensity scores

**EXHIBIT 1**

**Standardized differences between low-income women who received the unconditional income supplement and those who did not, before and after adjustment for covariates**

| Covariates | Group 1 | Group 2 | Standardized differences[b] | |
|---|---|---|---|---|
| | | | Before adjustment | After adjustment |
| Mean age at first birth (years) | 23.38 | 20.54 | 0.58 | 0.02 |
| Mean Socioeconomic Factors Index[a] | 0.94 | 1.29 | 0.33 | 0.01 |
| Received universal risk screen prenatally | 6.48% | 2.95% | 0.17 | 0.03 |
| No prenatal care before 6 months | 3.22% | 3.03% | 0.01 | 0.06 |
| Single-parent family | 24.42% | 9.09% | 0.42 | 0.00 |
| Family social isolation | 4.99% | 4.16% | 0.04 | 0.00 |
| Mother smoked during pregnancy | 27.60% | 17.16% | 0.25 | 0.00 |
| Mother used alcohol during pregnancy | 14.11% | 9.93% | 0.13 | 0.00 |
| Mother used drugs during pregnancy | 7.57% | 3.35% | 0.19 | 0.00 |
| Current maternal substance abuse | 1.39% | 0.75% | 0.06 | 0.01 |
| Mother did not complete high school | 28.50% | 16.81% | 0.28 | 0.01 |
| Mother has a mental disability | 0.66% | 0.30% | 0.05 | 0.00 |
| Family history of disability | 2.20% | 1.97% | 0.02 | 0.03 |
| Family received social assistance | 34.91% | 12.64% | 0.54 | 0.02 |
| Mother has anxiety disorder | 3.82% | 2.47% | 0.08 | 0.04 |
| Mother was abused as a child | 8.76% | 4.23% | 0.18 | 0.01 |
| Mother has depression | 12.08% | 8.80% | 0.11 | 0.03 |
| Mother has schizophrenia | 0.65% | 0.33% | 0.05 | 0.01 |
| Maternal diabetes | 3.27% | 2.36% | 0.06 | 0.03 |
| Family relationship distress | 8.64% | 3.62% | 0.21 | 0.03 |
| Violence between parents | 3.80% | 1.40% | 0.15 | 0.01 |
| Antisocial father | 2.01% | 0.70% | 0.11 | 0.01 |
| Antisocial mother | 0.87% | 0.40% | 0.06 | 0.00 |

**SOURCE** Authors' analysis of data for 2003–10 from the PATHS Data Resource, Manitoba Centre for Health Policy, University of Manitoba. **NOTES** Group 1 consists of low-income women (see appendix exhibit 1) who received the supplement. Group 2 consists of low-income women who did not receive it. More information on the covariates is available in Chartier M. Families First Universal Screening in Manitoba [Internet]. Presentation at: Early Development Imperative Conference in Winnipeg, Manitoba, November 16–18, 2009 [cited 2018 Feb 6]. Available from: https://www.gov.mb.ca/healthychild/edi/pancan/pres_ffs.pdf. [a]Scores less than 0 indicate more favorable socioeconomic conditions, while scores greater than 0 indicate less ideal socioeconomic conditions. For details about this index, see Manitoba Centre for Health Policy. Concept: Socioeconomic Factor Index (SEFI)—Version 2 (SEFI-2) [Internet]. Winnipeg (MB): MCHP; [last updated 2014 Feb 19; cited 2018 Feb 1]. Available from: http://mchp-appserv.cpe.umanitoba.ca/viewConcept.php?printer=Y&conceptID=1387. [b]Difference between group 1 and group 2 after adjustment for covariates in the statistical model.

so that we could adjust for differences between groups 1 and 2 to make them as comparable as possible. Propensity scores were estimated using multiple logistic regression, with receipt of the income supplement as the dependent variable. We then matched 1:1 the singleton infants from group 1 to those from group 2 based on the infant's postal code and logit of their propensity score, which yielded 10,031 infants in each group (see appendix exhibit 2).[28] After matching infants, we investigated whether the propensity scores had created comparable comparison groups based on their observed characteristics by examining the standardized differences between comparison groups for each covariate both before and after matching. We used an a priori 10 percent standardized difference cutoff to signal that our groups were comparable on observed characteristics.[29] Further details about the regression model can be found in appendix exhibit 3.[28]

**OUTCOME MEASURES** We measured changes in equity for the following birth outcomes that had showed significant improvements associated with the Healthy Baby Prenatal Benefit during a previous evaluation:[13] breast-feeding initiation (during the birth hospital stay), low-birthweight births (birthweight less than 2,500 grams), and preterm births (gestational age less than thirty-seven weeks).

**STATISTICAL ANALYSIS** Comparing groups 1 and 3 allowed us to estimate the effect of the

income supplement in a population where all low-income women received the supplement. Comparing groups 2 and 3 allowed us to estimate the effect of the supplement in a population where no one received it. We compared inequities in outcomes between the low-income exposed group (group 1) and the group that was not eligible (group 3) to inequities in outcomes between the low-income unexposed group (group 2) and the ineligible group (group 3).

We quantified absolute and relative health inequities by calculating risk differences and risk ratios, respectively, for the comparisons described above.[30] We then calculated the difference of risk differences and the ratio of risk ratios between these comparisons to test whether the Healthy Baby Prenatal Benefit was associated with reduced inequities, weighting the exposed and unexposed groups to represent the whole population of low-income mothers. Comparisons were made for mothers overall and for those residing in urban and rural regions separately.

All analyses were conducted using SAS, version 9.4.

**LIMITATIONS** Our study had several limitations. First, as is the case with all observational studies, we could not control for all potentially confounding factors. The extensive array of risk factors that we included in the propensity scores could mitigate the risk of confounders, but we could not be certain about the influence of unmeasured confounding on our findings. Thus, there may be differences between our exposed and unexposed groups beyond the receipt of the income supplement that contributed to our findings. However, we have demonstrated elsewhere that these differences would have to be substantial to change our conclusions.[13,29,31]

A second limitation is the lack of information on the possible mechanisms through which the Healthy Baby Prenatal Benefit might work to improve outcomes and reduce health inequities, particularly given the regional differences we found. Without knowing how the low-income women in our study spent the benefit they received, it is difficult to know how to tailor this intervention so that it is equally effective for women throughout the province. Our team is exploring this question in an ongoing qualitative study.

The third limitation—one of several pertaining to how we defined *health inequities* in our study—is that we considered only socioeconomic inequities in health. Because of limited information on ethnicity, we were unable to explore whether racial/ethnic characteristics had any influence on observed socioeconomic inequities in health.

Fourth, we measured health inequities using only pairwise comparisons between women eligible and those ineligible to receive the income supplement. Our measures did not take into account distributions of health across the entire socioeconomic gradient. However, the pairwise comparisons presented in this article are policy relevant for our stakeholders: that is, these measures are more meaningful than other possible measures, such as the slope index of inequality, the relative index of inequality, and the concentration index.

## Study Results

There were 118,438 mother-newborn pairs in Manitoba in the period 2003–10 (appendix exhibit 2).[28] We excluded 9,165 mothers who received the income supplement but did not fit our definition of *low income*, and 3,137 mothers who had multiple births. After adjustment, there were 10,031 mother-newborn pairs in each of the low-income exposed and unexposed groups, and 55,987 pairs in the group of women who were unexposed and not low income. All standardized differences decreased to 6 percent or less, which indicates that the observed characteristics between the two low-income groups were balanced (exhibit 1).

Counts and percentages for the birth outcomes we measured are shown in exhibit 2. As expected, breast-feeding initiation was less prevalent, and preterm births and low-birthweight births were more prevalent, among the two low-income groups (groups 1 and 2) than among the higher-income women (group 3).

Exhibit 3 shows measures of health inequities across the study groups. The predicted probabilities for the three outcomes showed that overall inequities (for rural and urban populations combined) in breast-feeding initiation, low-birthweight births, and preterm births between low-income women and other women were smaller when low-income women received the income supplement. As an example, consider the overall results for low-birthweight births. The predicted probabilities show that low-income women (especially those in group 2, who did not receive the income supplement) were more likely to give birth to a low-birthweight baby than women who were not low income (group 3). The risk difference for low-birthweight births between low-income women who received the income supplement and women who were not eligible for it (group 1 versus group 3) was 0.62, whereas the risk difference between low-income women who did not receive the income supplement and women who were not eligible (group 2 versus group 3) was 2.54. Similarly, the risk ratios for these two comparisons were 1.16 and 1.65, respectively. Thus, the gap in low-birthweight

**EXHIBIT 2**

**Counts and percentages for birth outcomes across study groups of women**

| | Group 1 | | Group 2 | | Group 3 | |
|---|---|---|---|---|---|---|
| **Outcome** | **Number** | **Percent** | **Number** | **Percent** | **Number** | **Percent** |
| Initiated breast-feeding[a] | 6,548 | 67.2 | 6,209 | 64.6 | 48,263 | 89.0 |
| Had preterm birth | 738 | 7.6 | 826 | 8.6 | 3,174 | 5.9 |
| Had low-birthweight birth | 407 | 4.1 | 560 | 5.8 | 2,036 | 3.8 |

**SOURCE** Authors' analysis of data for 2003–10 from the PATHS Data Resource, Manitoba Centre for Health Policy, University of Manitoba. **NOTES** Groups 1 and 2 are defined in the notes to exhibit 1. Group 3 is women who were not low income and thus were ineligible for the supplement. Preterm is before thirty-seven weeks' gestation. Low birthweight is less than 2,500 grams. Values were missing on each outcome for fewer than 5 percent of all records; these records were excluded from the calculations. [a]During the birth hospital stay.

births between low-income and other women was smaller by both absolute (risk difference) and relative (risk ratio) measures when low-income women received the benefit.

To quantify this smaller gap and determine whether there was a significant association between the Healthy Baby Prenatal Benefit and reduced inequities in low-birthweight births, we looked at how much the gap between low-income and other women shrank by calculating the difference of risk differences and the ratio of rate ratios (exhibit 3). For low-birthweight births in the overall population, the difference of risk differences was –1.92, which means that the income supplement was associated with an absolute reduction in inequities of almost 2 percentage points (that is, the gap between low-income women and other women shrank by that amount). The ratio of risk ratios for low birthweight was 0.71, which means that the income supplement was associated with a relative reduction of 29 percent in the gap between low-income women and other women.

The results for the other two birth outcomes presented in exhibit 3 follow a pattern similar to those for low-birthweight births. For the overall population, the gaps between group 1 and group 3 were smaller than the gaps between group 2 and group 3, which demonstrates that the benefit helped reduce the equity gap in birth outcomes between low-income and higher-income women.

We note, however, that the reduced health inequities associated with the income supplement were not always experienced equally in urban and rural areas. Reduced inequities in breast-feeding initiation were experienced only by women in rural areas, and reduced inequities

**EXHIBIT 3**

**Population-level health inequities in outcomes across study groups of women, by rural or urban residence**

| | Predicted probability of outcome | | | Risk difference versus group 3 | | | Risk ratio versus group 3 | | |
|---|---|---|---|---|---|---|---|---|---|
| **Outcome** | **Group 1** | **Group 2** | **Group 3** | **Group 1** | **Group 2** | **Difference of risk differences** | **Group 1** | **Group 2** | **Ratio of risk ratios** |
| **INITIATED BREAST-FEEDING[a]** | | | | | | | | | |
| Rural | 64.06 | 60.72 | 86.62 | –22.56 | –25.90 | 3.35** | 0.74 | 0.70 | 1.06** |
| Urban | 73.13 | 72.00 | 90.48 | –17.35 | –18.49 | 1.14 | 0.81 | 0.80 | 1.02 |
| Overall | 68.60 | 66.36 | 88.55 | –19.95 | –22.20 | 2.24** | 0.77 | 0.75 | 1.04** |
| **HAD LOW-BIRTHWEIGHT BIRTH** | | | | | | | | | |
| Rural | 3.82 | 4.82 | 3.41 | 0.41 | 1.41 | –1.00** | 1.12 | 1.41 | 0.79** |
| Urban | 4.79 | 7.63 | 3.95 | 0.83 | 3.68 | –2.85** | 1.21 | 1.93 | 0.63** |
| Overall | 4.30 | 6.23 | 3.68 | 0.62 | 2.54 | –1.92** | 1.16 | 1.65 | 0.71** |
| **HAD PRETERM BIRTH** | | | | | | | | | |
| Rural | 7.81 | 8.09 | 5.58 | 2.23 | 2.51 | –0.28 | 1.40 | 1.45 | 0.97 |
| Urban | 7.11 | 9.53 | 6.02 | 1.08 | 3.51 | –2.43** | 1.18 | 1.58 | 0.75** |
| Overall | 7.46 | 8.81 | 5.80 | 1.66 | 3.01 | –1.35** | 1.28 | 1.51 | 0.85** |

**SOURCE** Authors' analysis of data for 2003–10 from the PATHS Data Resource, Manitoba Centre for Health Policy, University of Manitoba. **NOTES** Groups 1 and 2 are defined in the notes to exhibit 1. Group 3, low birthweight, and preterm are defined in the notes to exhibit 2. A version of this exhibit showing 95% confidence intervals is available as appendix exhibit 4; see note 28 in text. [a]During the birth hospital stay. **$p < 0.05$

in preterm births were seen only for women in urban areas.

## Discussion

This study demonstrates that a program providing a modest amount of money (Can$81, or approximately US$64, per month) and monthly informational mailings about prenatal nutrition, breast-feeding, and healthy infant development to women during pregnancy was associated not only with improved birth outcomes for their newborns,[13] but also with population-level decreases in birth outcome inequities. The Manitoba Healthy Baby Prenatal Benefit was associated with reduced inequities in breast-feeding initiation, low-birthweight births, and preterm births in the overall study cohort. However, we observed different programmatic effects in urban and rural communities.

Good perinatal health can lay the foundation for positive health trajectories throughout the life course.[3,32,33] The opportunity offered by the Healthy Baby Prenatal Benefit for reducing inequities so early in the life span is a promising means of tackling population-level health inequities. Although unconditional cash transfer programs have been evaluated in Africa,[34–39] and conditional cash transfer programs have been evaluated in North and South America,[40–46] to our knowledge this is the first study to focus on an unconditional cash transfer in an affluent country delivered during the prenatal period and on its impact on health equity.

There is much debate in the fields of population and public health about the best way to improve health outcomes and reduce socioeconomic inequities in health,[47–49] ranging from targeted to universal approaches, with combinations of these types of programs in between. Geoffrey Rose's theorem has had substantial influence on approaches to developing prevention strategies.[48] Simply put, a large number of people who are at low risk may result in more cases of poor outcomes than a small number at high risk. Thus, small changes over an entire population provide greater overall benefit than large changes in the small high-risk segment within that population. While universal approaches may "shift" the entire population curve from being, on average, less healthy to more healthy, they may fail to "squish" the curve (that is, narrow the health equity gap) to allow the segment of the population at highest risk to catch up to those who are better off.[47] Should they fail to narrow the gap, well-intentioned interventions can actually result in greater inequities.[49] This has led researchers and policy analysts to suggest that a combination of universal and targeted approaches might be required to improve outcomes and reduce health inequities.[49,50] Although the Healthy Baby Prenatal Benefit is targeted at low-income women, it is one of a suite of programs available to pregnant women in Manitoba that collectively represent this combination of universal and targeted strategies.[51] In Manitoba, prenatal care and community support programs are available to all women free of charge, regardless of socioeconomic status. The Healthy Baby Prenatal Benefit provides additional support for those at the greatest socioeconomic disadvantage, helping narrow the gap between babies born to low-income women and those born to women with higher incomes.

Our findings revealed that inequities in perinatal outcomes across socioeconomic status may differ in rural versus urban settings. Likewise, the Healthy Baby Prenatal Benefit appears to have a different association with reductions in health inequities, depending on the setting. For breast-feeding initiation, the reduction in health inequities was evident only in rural areas, where the gap between low- and higher-income women was larger to begin with. The prevalence of breast-feeding for women in rural areas (64 percent, 61 percent, and 87 percent for groups 1, 2, and 3, respectively) is lower than urban areas (73 percent, 72 percent, and 90 percent, respectively). Given this, universal strategies in rural areas such as the Baby-friendly Hospital Initiative, a hospital-based program launched in 1991 that promotes and supports breast-feeding practices in 152 countries,[52–54] may shift the entire rural population curve. It will also be important to continue supporting targeted strategies to further reduce the gap between low- and higher-income women in these areas.

It is unclear why the Healthy Baby Prenatal Benefit was associated with reduced inequities in breast-feeding in rural areas but not in urban areas. Mechanisms by which the program might improve breast-feeding initiation include the following: through improved maternal nutrition, which leads to new mothers feeling healthier and being better able to initiate breast-feeding of their newborns; through the information in the brochures sent with the monthly check; and through contact with the health care system, with at least one prenatal visit to confirm the pregnancy required for Healthy Baby Prenatal Benefit enrollment. Whether these possible mechanisms are more likely to occur in rural areas than in urban ones deserves further exploration.

In contrast to the results for breast-feeding initiation, we found an association between the income supplement and reduced inequities in preterm births only for women living in urban

areas. It seems plausible that one of the mechanisms for reductions in preterm births is the better nutrition afforded through the income supplement.[13,55] It has been well documented that the price of nutritious food varies by geographic region in Canada, with people in rural and particularly remote areas contending with substantially higher costs for milk, fruit, vegetables, and other food.[55–57] It is possible that the Can$81 (approximately US$64) per month provided by the program is not sufficient to overcome the higher costs of food in these areas. This topic and other nuances of how the program brought about improvements in health equity will be discussed further in a forthcoming qualitative study.

Study limitations were acknowledged above. Several strengths were conferred by the linked administrative data and program data on which the analyses were based, including large sample sizes, information on who was eligible or ineligible for the program, and the absence of reporting or recall bias by participants. The size and scope of the database also provided an extensive array of risk factors with which to balance measured differences between our exposed and unexposed groups. Our use of both absolute and relative measures of inequity (risk differences and risk ratios), with consistent results across these measures, lends robustness to our findings of reduced health inequities associated with the Healthy Baby Prenatal Benefit.[30]

## Policy Recommendations

In response to the call from the Commission on Social Determinants of Health to close the health gap in a generation, we undertook this study to provide evidence of an intervention that can improve health equity. The Healthy Baby Prenatal Benefit is one of a collection of universal and targeted programs that provide support to pregnant women. Together, these programs aim to improve health outcomes and increase health equity at a population level.

Decision makers have the ability to advance health equity by supporting interventions such as the Healthy Baby Prenatal Benefit that work to address the social determinants of health. The message to Manitoba policy makers is clear: The Healthy Baby Prenatal Benefit works, and funding for this important initiative should continue. Geographic and urban/rural differences in the cost of healthy food and other items should be taken into consideration when determining the amount of the income supplement provided to low-income women.

Additionally, our findings suggest that policy makers working to address health inequities in other jurisdictions within and outside of Canada should consider implementing an unconditional benefit similar to the Healthy Baby Prenatal Benefit. Achieving health equity between rural and urban communities may require further efforts, such as sustained investment in rural development and infrastructure to support healthy living.

## Conclusion

An unconditional income supplement of Can$81 (approximately US$64) per month provided to low-income women in Manitoba, Canada, during pregnancies during the period 2003–10 was associated with a reduction in population-level inequities in birth outcomes. Interventions that boost the income of expectant mothers can play an important role in realizing population-level socioeconomic equity in birth outcomes, and evaluating such interventions may inform strategies and policies seeking to improve maternal and child health. ■

The findings in the article were presented at the Sparking Solutions Summit in Ottawa, Ontario, April 27, 2016; the Pathways to Health Equity meeting in Winnipeg, Manitoba, June 1, 2016; and the International Population Data Linkage Network meeting in Swansea, Wales, August 26, 2016. This work was supported by the Canadian Institutes of Health Research (Grant No. ROH-115206) and the Heart and Stroke Foundation of Canada (Grant No. PG-12-0534) under the program of research titled "PATHS Equity for Children: A Program of Research into What Works to Reduce the Gap for Manitoba's Children." This study was part of a program of research conducted by the PATHS Equity Team, whose members are James Bolton, Marni Brownell, Charles Burchill, Elaine Burland, Mariette Chartier, Dan Chateau, Malcolm Doupe, Jennifer Enns, Greg Finlayson, Randall Fransoo, Chun Yan Goh, Milton Hu, Doug Jutte, Alan Katz, Laurence Katz, Lisa Lix, Patricia J. Martens, Colleen Metge, Nathan C. Nickel, Farzana Quddus, Colette Raymond, Les Roos, Noralou Roos, Rob Santos, Joykrishna Sarkar, Mark Smith, Carole Taylor, and Randy Walld. The authors acknowledge Patricia Martens, who was supported by Canadian Institutes of Health Research (CIHR) and the Public Health Agency of Canada (PHAC) for her CIHR/PHAC Applied Public Health Research Chair (2008–14) and who led the PATHS Equity Team until her death in 2015. Marni Brownell acknowledges the financial support of the Government of Manitoba through the Manitoba Centre for Health Policy (MCHP) Population-Based Child Health Research Award. Alan Katz acknowledges funding from the Heart and Stroke Foundation and Research Manitoba in support of his Primary Prevention Research Chair. The authors also acknowledge MCHP for use of data contained in the Manitoba Population Research Data Repository under project 2012-006 (HIPC No. 2011/2012-24B). Data used in this study came from this repository—which is housed at the MCHP, University of Manitoba—and were derived from data provided by Healthy Child Manitoba, Manitoba Education and Training, Manitoba Health, Seniors and Active Living, Manitoba Families, and Statistics Canada.

## NOTES


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