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Variation in Pregnancy Outcomes Following Statewide Implementation of a Prenatal Home Visitation Program

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The Nurse-Family Partnership (NFP), a program of prenatal, infancy, and toddler home visitation by nurses for low-income mothers bearing their first children, is designed to improve the outcomes of pregnancy, children's health and development, and parents' economic self-sufficiency. The latter goal is accomplished by helping parents plan the timing of subsequent pregnancies through the first child's second birthday. Growing from its 1978 inception for 400 women in Elmira, New York, it has expanded throughout the United States and currently serves more than 20 000 families per year in 31 states. Its expansion is owing in large part to data from 3 randomized trials conducted in different locations revealing multiple benefits to the mother and child. For the mother, a focus on family planning has resulted in a reduction in rapid-succession second pregnancies within the 2-year period following birth of the first child, an outcome that can negatively affect outcomes for teenage mothers, let alone increase the risk for adverse perinatal outcomes. Long-term follow-ups of these trials have also found sustained benefit, including reduced welfare receipt and reduced antisocial behavior among adolescents born to program recipients many years later.

Based on such evidence, the US Congress recently appropriated in the Patient Protection and Affordable Care Act (Pub L No. 111-148) $1.5 billion to expand prenatal and early childhood home visitation programs over the next 5 years. Despite a large public investment in home visitation, however, it remains uncertain whether wider dissemination can reproduce the success of earlier trials. This concern is not trivial as prior prevention programs in maternal and child health have failed in some cases to maintain effectiveness following dissemination, reflecting the real-world difficulty in replicating on a larger scale earlier successes from controlled clinical trials or demonstration projects. Aside from the challenges of implementation, there are concerns that as the program disseminates, it will increasingly reach populations of women who were not well represented in the original trials. Such is the case for a state like Pennsylvania, which boasts the largest rural population in the country. Although the Elmira trial was conducted in a mixed urban and rural setting, the other trials of the NFP were conducted in urban locations; it is uncertain whether the benefits identified in those trials would be conferred equally to women served by sites in more rural areas.

This study sought to examine the success of the NFP program following statewide implementation in the Commonwealth of Pennsylvania. To do so, we matched clients served across the 23 NFP sites in Pennsylvania between January 1, 2000, and December 31, 2007, to local-area controls across the Commonwealth to understand agency-level variation in second-pregnancy outcomes resulting in live births and whether the benefits of earlier trials of the NFP were sustained after dissemination across disparate urban and rural locations. We sought to test 2 hypotheses: (1) that success following implementation would not be immediate but would grow over time, and (2) that women served in rural areas would have outcomes comparable to those of women served in urban areas.

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