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***Estimated State and Local Fiscal Effects
of the Nurse Family Partnership Program***

Upjohn Institute Staff Working Paper 09-152

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ABSTRACT

This short paper estimates the state and local fiscal benefits of the Nurse Family Partnership (NFP) program. NFP provides nurse home visiting services to low-income first-time mothers. In addition to social benefits, NFP provides state and local fiscal benefits by reducing costs of social services, welfare, and crime, and increasing tax receipts due to increased earnings of mothers and former child participants when they grow up. Based on previous studies, this paper estimates that the present value, in 2007 dollars, of these state and local fiscal benefits is a little over \$15,000 per NFP case.

JEL Classification Codes: H75, H71, I18, J48

The purpose of this memo is to provide estimates of the state and local fiscal effects of the Nurse Family Partnership (NFP) program. These estimates are based upon previous studies that are deemed to be of high quality. My “bottom-line”: for each NFP “case” (a mother and her child), the average present value of state and local fiscal benefits is \$15,273.

The NFP program provides nurse home visits to low-income first-time mothers. Visits are provided from the prenatal period to the child’s second birthday. The nurse visits aim at three goals: 1) improved prenatal care, 2) better quality of parental child care, and 3) improved life prospects for the mother. Fiscal benefits for state and local government are not the primary goal of the program. Yet these fiscal benefits are large at \$15,273 per case.

This \$15,273 could be multiplied by the number of NFP cases in the state, or in a local area, to get the gross fiscal benefits for state and local government of the program’s current operations.

This \$15,273 represents the average gross fiscal benefits per case. The state and local budgetary cost per NFP case of the program would have to be subtracted out to get the “net” fiscal effects of the NFP program per case.

These gross fiscal benefits include

- reduced cost of emergency room visits;
- savings for the child abuse and neglect system;
- increased state and local tax payments of the mom due to increased employment and earnings;
- reduced welfare payments to the mom;
- decreased costs to the criminal justice system due to fewer arrests, less court time, and less jail and prison time, principally due to less criminal activity of the child as he or she gets older; and
- increased state and local tax payments of the child due to increased employment and earnings when the child becomes an adult.

These gross fiscal benefits are average fiscal benefits per case. Obviously each case is different. For some NFP moms and their children, the program has much larger dollar fiscal benefits than these averages.

The gross fiscal benefits do not include all possible fiscal benefits of NFP. For example, I have not attempted to estimate reduced welfare system costs due to the increased employment of NFP children when they become adults. I focused on fiscal benefits for which estimates were readily available. Other fiscal benefits could be estimated with some investment of additional time and effort.

The gross fiscal benefits do not include many other social benefits of NFP. For example, this analysis only counts the increased state and local tax payments due to the increased earnings of the mom and child. The benefits of the increase in net after-tax earnings to the mom and child are not counted. As another example, this analysis only counts as benefits of reduced crime the reduced costs to the criminal justice system. The benefits for potential crime victims of reduced crime are not counted.

These fiscal estimates are adjusted for out-migration and displacement effects. Thus, fiscal benefits that occur outside of the state providing NFP are not counted in these estimates. I also adjust for the possibility that increased labor supply quality due to NFP may displace some other state residents from jobs.

These estimates are principally based on three high-quality studies; most are adapted from estimates done by the Rand Corporation in 1998 (Karoely et al. 1998). The savings for the child welfare system are derived from estimates by the Washington State Institute for Public Policy (Lee et al. 2008). The state and local tax collections due to the child's future earnings are derived from my previous study of the economic development effects of early childhood programs (Bartik 2008).

MORE DETAILED BREAKDOWN OF ESTIMATES

Table 1 provides a more detailed breakdown of the estimated fiscal benefits of NFP. As can be seen in the table, the most important fiscal benefit from NFP is reduced criminal justice system costs. This is followed closely by reduced welfare system costs. However, there also are important effects on state and local tax payments and the child welfare tax system.

I provide some brief description of each category of fiscal effects. I explain more details of where the actual estimates come from in the next section.

The reduced emergency room cost is based on estimates that NFP reduces the average number of emergency room visits, by the time the child is age 4, by about one-half fewer visits per NFP case.

The reduced child welfare system cost is based on estimates that NFP significantly reduces the number of substantiated child abuse and neglect cases. Child abuse and neglect cases involve costs such as investigation costs, and costs for the police and the juvenile court. In some cases, there may be costs for foster care and adoption support services, as well as additional juvenile court costs for termination proceedings.

The increased state and local taxes from additional employment of the mother are based on estimates that NFP increased a mom's months of employment, from the time the child is born until he turns 15, by about 16 months on average. The resulting increased earnings were multiplied by estimated average state and local taxes for the bottom income quintile in Michigan. This average state and local tax rate is estimated to be 13.3 percent (McIntyre et al. 2003). (This is slightly higher than the U.S. average, which is 11.4 percent. If someone wants to adopt this study for use in other states, or for a national average, they need to multiply 13.3 percent times the appropriate figure for their state.)

The decreased welfare system payments are based on estimates that NFP reduced the average number of months the mother is on welfare, from the time the child is born until the child is 15, by 30 months.

The decrease in criminal justice system costs are based on three effects of NFP. First, NFP reduced arrests and jail time for the mother. Second, NFP is observed to reduce arrests of the child up to age 15. The third and largest effect is that the reduced arrests of the child prior to age 15 allow a projection of reduced odds of the child having an adult criminal career.

Reduced criminal justice system costs include the reduced costs to the police due to reduced arrests. They also include reduced court costs. Finally, they include reductions in the cost of jail and prison.

The increase in state and local taxes from the future increased adult earnings of the child are based on several effects of NFP. First, NFP increases test scores at age 6, which can be used to project future adult earnings. Second, NFP reduces the proportion of former child participants who become involved with the criminal justice system. I use estimates of how much involvement with the criminal justice system reduces future employment rates of ex-offenders to project different adult earning trajectories due to NFP. These future earnings were then multiplied by estimated state and local tax rates on the bottom income quintile.

DERIVING THE ESTIMATES

This section briefly explains how the estimates presented here were derived from previous studies.

The estimated effects on emergency room visits, state and local taxes from the mom's added employment, decreased welfare system costs, and decreased criminal justice system costs were all derived from the Rand Corporation study by Karoly et al. (1998). I made the following adjustments to the Karoly et al. estimates:

- Estimates were adjusted from 1996 dollars to 2007 dollars using the change in the Consumer Price Index for All Urban Consumers.
- Karoly et al. used a discount rate of 4 percent. I adjusted the estimates to a discount rate of 3 percent. This adjustment assumed that benefits per year were constant in real terms over the period during which benefits were received. (Why 3 percent rather than 4 percent? I explain why 3 percent is a good discount rate in Bartik [2008]. I should also note that this is the rate generally used by the U.S. General Accounting Office in evaluating government programs. In addition, 3 percent is close to the rate recommended by Moore et al. [2004] in a well-known article).
- Karoly et al. included all taxes by using a tax rate of 35 percent. I adjusted this to a tax rate of 13.3 percent based on the state and local tax rate for the bottom income quintile in

Michigan estimated by the Institute on Taxation and Economic Policy (McIntyre et al. 2003).

- I adjusted all figures for estimated number of survivors and out migrants. I used numbers previously used in my study of early childhood programs (Bartik 2008), which explains the sources of these numbers. To simplify the calculation, the proportion of cases surviving who will stay in the state was based on the midpoint of the period during which a particular category of benefits reported by Karoly et al. was received.
- I adjusted all earnings effects and welfare system payment effects for displacement. NFP is increasing the quality of labor supply of NFP moms and their children. This will in general increase labor demand in the state, but it may also displace some other state residents from jobs. Based on reasoning explained more fully in my previous writing (see Bartik [2008]), a reasonable estimate is that a labor supply increase will be accommodated by a two-thirds increase in labor demanded, with one-third displacement.
- I adjusted future adult earnings effects of NFP children upward by 54 percent to reflect peer effects in school. The rationale for this peer effect estimate is explained in Bartik (2006).
- The welfare system is quite different now from when the welfare cost savings estimated in Karoly et al. were estimated. Among other things, welfare receipt is less common, which should significantly reduce welfare cost savings. I adjusted welfare cost savings down by 62 percent. This adjustment was based on how much welfare caseloads in Michigan declined from 1996 to 2008. These welfare caseload figures were obtained from the Web site of the Administration for Children and Families, U.S. Department of Health and Human Services (http://www.acf.hhs.gov/acf_policy_planning.html#stats).

The child abuse and neglect cost savings were derived from a study by the Washington State Institute for Public Policy (Lee et al. 2008). These savings are based on their studies of the Washington State child welfare system.

I adjusted that estimated cost savings number by doubling it. Upon looking at the numbers, Lee et al. somewhat arbitrarily cut the estimated effect of NFP on child abuse and neglect in half. Their rationale for doing so is that the NFP estimates come from programs and studies run by the principal researcher of NFP, and “real world programs” might not achieve the full effects of the pilot programs. While this may be true, it could also be the case that increased experience with a program will enable us to improve the program’s effectiveness. In any event, cutting estimated program effects in half is somewhat arbitrary. It seems better to use the original estimated effects. However, users of these research numbers should note that all these numbers are derived from pilot programs. Whether an ongoing program will have the same effects depends entirely on the quality with which the NFP program is implemented.

Finally, the estimated effect upon state and local tax payments as an adult for former NFP child participants were derived from the underlying data I used in Bartik (2008). More details on the methodology for estimating future earnings effects are provided in that publication.

CONCLUSION

The Nurse Family Partnership program provides large state and local fiscal benefits. Estimated average state and local fiscal benefits per NFP case are over \$15,000. NFP's average costs per case are estimated to be between \$8,000 and \$10,000 (Bartik 2008; Lee et al. 2008). Therefore, NFP probably pays for itself from a state and local perspective, even if state and local governments pay for all NFP program costs. But in many cases the federal government may pay for part of the costs through Medicaid. In addition, President Obama has proposed significantly expanding federal support for NFP. Therefore, the state and local fiscal payoff per state and local dollar paid for program cost is likely to be highly favorable. And these calculations also do not count other social benefits, which are likely to be larger than fiscal benefits.

These NFP fiscal benefits are not immediate. Many of the most important fiscal benefits accrue over time, and may occur 5, 10, or more years after the NFP program begins delivering services in the prenatal period to a low-income first-time mother. However, the present value of these gross fiscal benefits do appear to significantly outweigh the costs of the program. How this affects state and local policy depends upon whether policymakers adopt a long-term perspective.

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Table 1 Breakdown of Present Value of Fiscal Benefits from the Nurse Family Partnership Program Per NFP Case

Category of fiscal benefit	Present value of fiscal benefits per case, in year 2007 dollars
Reduced emergency room visits	156
Reduced child welfare system costs due to reduced child abuse and neglect	1,322
Increased state and local taxes from mom's added employment	1,898
Decrease in welfare system payments to mom	4,771
Decrease in criminal justice system costs (principally costs of child's adult criminal career)	5,894
Increased state and local taxes from increase in child's earnings as an adult	1,231
Total fiscal benefit	15,273

NOTE: Dollar figures are rounded to nearest dollar. Present value is calculated using 3% real discount rate.