## Unintended Pregnancy and Taxpayer Spending

# By Emily Monea and Adam Thomas

Emily Monea is a research analyst and Adam Thomas is research director, both at The Brookings Institution, Center on Children and Families, Washington, **CONTEXT:** Nearly half of all pregnancies in the United States are unintended. These pregnancies likely represent a substantial cost to taxpayers, but national-level estimates of these public costs have been lacking.

**METHODS:** Taxpayer spending on unintended pregnancy is measured by multiplying estimates of the 2001 incidence of publicly financed unintended pregnancy outcomes (abortions, fetal losses, births and need for infant medical care) by average per-incident costs. Public savings that would result from preventing unintended pregnancies are estimated by assuming that the prevention of an unwanted pregnancy would save the full cost of financing the pregnancy, while the prevention of a mistimed pregnancy would save the cost of financing the pregnancy today minus the present value of the cost of financing the pregnancy when it eventually occurs.

**RESULTS:** Lower-bound, mean and upper-bound estimates of the annual cost of unintended pregnancy are, respectively, \$9.6 billion, \$11.3 billion and \$12.6 billion. Corresponding estimates of the savings that would accrue to taxpayers by preventing unintended pregnancies are \$4.7 billion, \$5.6 billion and \$6.2 billion. The mean estimate of the taxpayer cost per publicly subsidized unintended pregnancy is \$9,000; the prevention of such a pregnancy would save taxpayers about half that amount.

**CONCLUSIONS:** The prevention of unintended pregnancy represents an important opportunity for the public to reap substantial savings, especially given the current fiscal climate. The enactment or expansion of cost-effective policies to prevent unintended pregnancies is therefore a timely and sensible strategy.

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Policymakers and researchers have become increasingly interested in the issue of unintended pregnancy in the United States and with good cause: Almost half of all pregnancies are unintended. Unintended pregnancy is associated with a host of negative outcomes for the women and children involved, <sup>2,3</sup> and these pregnancies are far more likely to result in abortion than are intended pregnancies (40% vs. 3%). Moreover, a majority of births resulting from unintended pregnancy are to unmarried women (57%), and nonmarital childbearing is associated with negative socioeconomic outcomes for mothers and their children.

Another important consideration involves the implications of unintended pregnancy for public-sector balance sheets, given that a large proportion of unintended pregnancies occur among low-income women who are eligible for a variety of government services for themselves and, if they give birth, for their children. Indeed, according to our tabulations of the 2002 National Survey of Family Growth (NSFG), medical costs for births resulting from unintended pregnancy are about twice as likely to be publicly financed as are medical costs for intended births.\* 5 As a result, unintended pregnancy likely represents a substantial cost to taxpayers, draining already tight federal and state budgets. In this article, we present national-level estimates of the public cost imposed by unintended pregnancy and of the potential taxpayer savings that would result from the prevention of unintended pregnancy.

We are aware of only one other analysis that has attempted to estimate the quantities that we present here. That analysis, conducted by Sonfield and colleagues, 6 differs from ours in many respects: It is based on different data; it does not consider spending on fetal losses and abortions, whereas ours does; it estimates costs at the national and state levels, while ours is strictly a national analysis; and it does not differentiate between costs and potential savings in the manner we do. Nonetheless, our national cost estimates of public spending on births and medical care for infants are quite similar.†

\*While we use NSFG measures of intention status, we note that unintended pregnancy is a difficult concept to measure accurately and that current measures fail to capture fully its intricate nature (source:Santelli J et al., The measurement and meaning of unintended pregnancy, Perspectives on Sexual and Reproductive Health, 2003, 35(2):94–101).

†We manipulate the two estimates slightly to make them as comparable as possible. Specifically, we restrict our estimate to spending on

births and infant medical care, and we inflate the estimate reported by Sonfield and colleagues to 2008 dollars using the medical care component of the Consumer Price Index. We find that Sonfield et al.'s estimate of total public spending on unintended pregnancy is about \$1.1 billion greater than ours (\$12.1 billion vs. \$11 billion). This difference seems reasonable, given that Sonfield et al. estimate that one million births resulting from unintended pregnancy were publicly financed in 2006, while we estimate that 780,000 were publicly financed five years earlier.

Many other analyses—most of them attempting to measure the cost-effectiveness of contraception and family planning interventions—have estimated the average perincident public cost of various pregnancy outcomes. For example, Frost and colleagues have estimated state-level public costs of financing a birth, including the cost of prenatal care, delivery, postpartum care and one year of medical care provided to the infant.<sup>7-9</sup> Other researchers have quantified the public cost of a pregnancy in California by examining the public cost of abortions, fetal losses, births, infant medical care, and other public services provided to children and their mothers. 10-13 Machlin and Rohde have utilized data from the Medical Expenditure Panel Survey to estimate the cost of an uncomplicated birth, as well as the proportion of this cost covered out of pocket, by private insurance and by Medicaid. 14 Trussell and colleagues have investigated the direct medical cost, rather than the public cost, of a birth, abortion, fetal loss and ectopic pregnancy.15 In an earlier paper, we have discussed several of these analyses in more detail;16 we have drawn on information from them to develop many of the estimates presented below.

# METHODS AND RESULTS Public Cost of Unintended Pregnancy

In measuring direct taxpayer spending on unintended pregnancy, we focus on Medicaid-financed medical care for eligible women whose unintended pregnancies result in births, fetal losses and abortions, and on medical care financed through Medicaid and the Children's Health Insurance Program (CHIP) for eligible infants up to a year old who were conceived unintentionally. (The number of such infants is not necessarily equivalent to the number of publicly financed births resulting from unintended pregnancy, since state income thresholds for publicly financed medical care for infants are generally higher than thresholds for Medicaid-financed pregnancy care.) We measure total taxpayer spending on each outcome by estimating its incidence in 2001 (the most recent year for which we have complete data) and its average per-incident cost. We present a range of cost estimates for births and fetal losses, as the literature is not unanimous on the magnitudes of these costs. We also inflate all costs to 2008 dollars, using the medical care component of the Consumer Price Index. The per-incident cost estimates presented below and a detailed description of the assumptions we made in generating them can be found elsewhere.16

- •Abortions. Federal and state governments financed 168,601 abortions in FY 2001, at an average cost of \$576 (Table 1). The As only a small proportion of abortions terminate intended pregnancies (8%), we make the simplifying assumption that all pregnancies ending in abortion are unintended.
- •Fetal losses. In our earlier paper, <sup>16</sup> we used information from four published reports <sup>11,14,15,18</sup> to calculate nine estimates of the average public cost associated with a fetal loss, ranging from \$730 to \$1,522 and with a mean of

TABLE 1. Annual incidence and public cost of unintended pregnancy, and annual public savings from the prevention of unintended pregnancy, by outcome

Measure	Abortion	Fetal loss	Birth	Infant medical care	All
INCIDENCE (2001)	168,601	200,169	782,394	884,336	1,253,106
PUBLIC COST					
Average per incident (in 2008 dollars)					
Lower-bound	576	730	5,070	6,100	7,664
Mean	576	1,173	7,171	6,100	9,047
Upper-bound	576	1,522	8,697	6,100	10,056
Total (in millions of 2008 dollars)					
Lower-bound	97	146	3,967	5,394	9,604
Mean	97	235	5,610	5,394	11,337
Upper-bound	97	305	6,805	5,394	12,601
PUBLIC SAVINGS					
Average per incident (in 2008 dollars)					
Lower-bound	576	730	2,429	2,922	3,773
Mean	576	1,173	3,435	2,922	4,472
Upper-bound	576	1,522	4,166	2,922	4,984
Total (in millions of 2008 dollars)					
Lower-bound	97	146	1,900	2,584	4,727
Mean	97	235	2,688	2,584	5,604
Upper-bound	97	305	3,260	2,584	6,246

Note: Under the assumption that all infants whose births were paid for by Medicaid receive publicly financed medical care, the total number of publicly financed unintended pregnancies is equal to the sum of the incidence estimates for abortions, fetal losses and infant medical care recipients. The average public cost (or savings) per publicly financed unintended pregnancy is equal to the total cost (or savings) estimate divided by the total number of such pregnancies. Sources: Methods used to estimate costs and savings per incident: reference 16. Number of abortions: reference 17. Number of fetal losses: references 5, 19 and 22. Number of births: references 5 and 22. Number of infant medical care recipients who were conceived unintentionally: references 5, 16, 23 and 24, and special tabulations of data from the 2002 Current Population Survey. Average public cost per abortion: reference 17. Average public cost per fetal loss: references 11, 14, 15 and 18. Average public cost per birth: references 7, 11, 14 and 18. Average public cost per year of infant medical care: reference 4.

\$1,173. These estimates account for spending on prenatal care, although they reflect that the cost of such care tends to be considerably lower for fetal losses than for live births, since the gestation period is typically much shorter for the former than for the latter. They also reflect that some fetal losses result from ectopic pregnancies, which are, on average, much more expensive than other fetal losses.

To estimate the incidence of publicly financed fetal losses resulting from unintended pregnancy, we make the simplifying assumption that the proportion of all fetal losses that fall into this category is identical to the corresponding proportion for live births (20%).\* Given that 1.03 million fetal losses occurred in 2001, 19 we estimate that 200,000 were publicly financed and resulted from unintended pregnancy. Some evidence suggests that women whose pregnancies are unintended use less prenatal care than women whose pregnancies are intended. 20,21 To the extent that this is true and that the underutilization of prenatal care raises the risk of fetal loss, the ratio of fetal losses to births will be higher for unintended than for intended pregnancies, abortions excluded. Consequently,

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<sup>\*</sup>We estimate that 782,394 births resulted from unintended pregnancy in 2001; according to the National Vital Statistics System, 4,025,933 births occurred in that year (source: Martin JA et al., Births: final data for 2001, National Vital Statistics Reports, 2002, Vol. 51, No. 2).

our assumption that equal proportions of fetal losses and of births result from unintended pregnancy and are publicly subsidized may result in a modest underestimation of the number of publicly subsidized fetal losses resulting from unintended pregnancy.

•Births. Previously,¹6 we used information from four published reports7,11,14,18 to calculate 10 estimates of the average cost of a publicly financed birth, ranging from \$5,070 to \$8,697 and with a mean of \$7,171. These estimates account for spending on prenatal care, deliveries and postpartum care. As noted above, unintended pregnancies may be less likely than intended pregnancies to involve the use of prenatal care.²0,21 To the extent that this is true, our estimates overstate the cost to taxpayers of unintended pregnancy.\*

By combining data from the National Governors Association on the number of births financed by Medicaid in 2001 (about 1.5 million)<sup>22</sup> with our own tabulations of data from the 2002 NSFG on the proportion of Medicaid-financed births that are unintended (51%),<sup>5</sup> we estimate that 780,000 births in 2001 both were publicly financed and resulted from unintended pregnancy.†

•Infant medical care. Using data gathered by Frost et al. on the cost of providing publicly financed medical care to infants,<sup>7</sup> we estimate that the average cost of a year's worth of such care is \$6,100. 16 Estimating the number of infants who were conceived unintentionally and received such care requires two steps: estimating first the number of infants who received publicly financed medical care and then the proportion of such infants who were conceived unintentionally.

We use data from the Census Bureau's Medicaid Undercount Project<sup>23</sup> and a method we developed earlier<sup>16</sup> to estimate the number of children aged 0-5 who received publicly financed medical care through state Medicaid and CHIP programs in 2001 (infant-specific data are unavailable). Assuming that the proportion of infants who received such care is identical to the corresponding proportion for children aged 0-5 (54%), we estimate that 2.1 million infants received publicly financed medical care.‡ To estimate the share of such infants who were conceived unintentionally, we exploit the variation by income-to-needs status in the proportion of infants participating in Medicaid or CHIP and in the proportion of births resulting from unintended pregnancy.§ Under the assumption that the share of infants within each income-to-needs group who received publicly financed medical care and were conceived unintentionally is equivalent to the corresponding share for births, we estimate that 885,000 infants whose births resulted from unintended pregnancy received publicly financed medical care in 2001.

•Total cost. Calculating annual taxpayer spending on unintended pregnancy entails two steps: First, for each outcome, we multiply its incidence estimate by our lower-bound, mean and upper-bound estimates of its perincident public cost. These calculations produce lower-bound, mean and upper-bound estimates of the total public cost of each outcome. Then, we sum the total costs across outcomes to produce lower-bound, mean and upper-bound estimates of total taxpayer spending on unintended pregnancy of \$9.6 billion, \$11.3 billion and \$12.6 billion, respectively.

It is also useful to consider this burden in terms of spending per publicly financed unintended pregnancy. To generate this estimate, we first calculate the total number of publicly financed unintended pregnancies by summing our incidence estimates for abortions, fetal losses and infant medical care recipients (we make the simplifying assumption that all infants whose births are paid for by Medicaid also receive publicly financed medical care after they are born). We then calculate lower-bound, mean and upper-bound estimates of the average cost per publicly financed unintended pregnancy by dividing our total cost estimates by the total number of publicly financed unintended pregnancies. We find that taxpayers financed a total of about 1.25 million unintended pregnancies in 2001 and that the average cost per publicly financed unintended pregnancy ranges from about \$7,700 to about \$10,000, with a mean of about \$9,000.

## Public Savings from Preventing Unintended Pregnancies

Some prevented pregnancies are simply delayed until such time as they are no longer unintended, and a portion of these delayed pregnancies are publicly financed. Thus, the prevention of an unintended pregnancy saves taxpayers less money, on average, than the public cost of that pregnancy.

To estimate the savings from preventing unintended pregnancy, we make several assumptions. First, we distinguish between unwanted and mistimed pregnancies: A pregnancy is unwanted if the woman who experiences it does not want a child at the time she becomes pregnant

\*In sensitivity analyses, we assumed that women with unintended pregnancies use 25%, 50% and 100% less prenatal care than the average pregnant woman. The resulting mean total cost estimates were roughly 4%, 8% and 17% lower, respectively, than the one presented here.

†When tabulating data from the 2002 NSFG on unintended pregnancies, we use data on births in 1997–2001 in order to increase the sample size for our analysis (source: reference 1).

‡We estimate the size of the population of infants and children aged 0–5 using the 2002 Current Population Survey.

\$We define three income-to-needs status groups: less than 100% of poverty, 100–199% of poverty, and 200% of poverty or more. According to our tabulations of the 2002 Current Population Survey, 47% of infants in the first group, 34% of those in the second group and 19% of those in the third group participated in Medicaid or CHIP. And according to our tabulations of the 2002 NSFG, 50%, 41% and 23% of births to women in these groups, respectively, resulted from unintended pregnancies. We therefore estimate that 42% of all infants both received publicly financed infant medical care and were conceived unintentionally (0.47\*0.50 + 0.34\*0.41 + 0.19\*0.23).

or in the future. A pregnancy is mistimed if the woman who experiences it becomes pregnant before she is ready. We assume that a prevented unwanted pregnancy will be averted altogether and that a prevented mistimed pregnancy will be delayed until it is no longer unintended. We also assume that a delayed unintended pregnancy that would have been publicly financed will still be publicly financed when it eventually occurs. Together, these assumptions imply that the prevention of an unwanted pregnancy saves taxpayers the total amount of money that would have been required to finance that pregnancy and that the prevention of a mistimed pregnancy saves taxpayers the difference between the public cost of the pregnancy today and the present value of the public cost of that pregnancy when it occurs later. Finally, we assume that there is no such thing as a "mistimed fetal loss" or a "mistimed abortion," and we therefore assume that the prevention of unintended pregnancies that would have resulted in fetal losses and abortions saves taxpayers the total amount of money that would have been spent on those pregnancies had they occurred.

For any number of reasons, these assumptions may not hold under all circumstances. Perhaps most important is that if mistimed pregnancies are sufficiently delayed, some of the mothers in question will be more financially secure and will therefore no longer require public assistance when they become pregnant. We do not account for this consideration here because of the difficulty of estimating the causal effect of delaying mistimed pregnancies on the probability that mothers and their children will claim publicly financed benefits. In this sense, our calculations likely underestimate the public cost savings associated with the prevention of unintended pregnancies.

•Births. To estimate the average savings from preventing an unintended pregnancy that would have resulted in a birth, we need three pieces of information. The first is the present value of the cost of financing a birth resulting from a mistimed pregnancy when it eventually occurs, which allows us to estimate the savings from preventing a mistimed birth. To calculate this value, we use a 3% real discount rate\* and assume, on the basis of a published analysis of 2002 NSFG data,<sup>24</sup> that mistimed births among teenagers and adult women are delayed, on average, 4.5

†The formula is as follows:  $0.1*\{b-[(0.71*b)/(1.03)^4.5]\} + 0.9*\{b-[(0.54*b)/(1.03)^2]\}$ , where b is the public cost of financing a birth.

years and 2.0 years, respectively. We differentiate throughout this portion of our analysis between teenagers and adult women because the proportions of unintended pregnancies that are mistimed and unwanted differ substantially by age.<sup>4</sup>

The second piece of information that we require is the proportion of unintended pregnancies that are unwanted and mistimed, which allows us to calculate a weighted average of the savings from preventing an unintended pregnancy. Nationwide, 71% of births to teenagers that result from unintended pregnancy are mistimed and 29% are unwanted; for adult women, the corresponding proportions are 54% and 46%.<sup>4</sup>

Third, we require information regarding the proportions of unintended and publicly financed births that are to teenagers and to adult women, which allows us to calculate a weighted average of the savings from preventing any unintended pregnancy that would have resulted in a birth, regardless of the mother's age. According to our tabulations of data from the 2002 NSFG, 10% of Medicaid-financed births resulting from unintended pregnancy are to teenagers, and 90% are to adult women.<sup>5</sup>

We incorporate all of this information into a formula that allows us to calculate the average savings from preventing an unintended pregnancy that would have resulted in a birth.† Our lower-bound estimate of such savings is \$2,400, the mean is \$3,400 and the upper-bound estimate is \$4,200.

- •Infant medical care. Applying the process detailed in the previous section to our infant medical care cost and incidence estimates, we calculate that the average savings produced by preventing an unintended pregnancy that would have resulted in the use of publicly financed infant medical care is \$3,000.
- •Total savings. We sum our public savings estimates for each outcome to calculate lower-bound, mean and upper-bound estimates of the total savings that would result from the prevention of all unintended pregnancies. These amounts are, respectively, \$4.7 billion, \$5.6 billion and \$6.2 billion. We divide these total savings estimates by our estimate of the total number of unintended pregnancies financed by taxpayers in 2001 (1.25 million, as discussed above) to calculate a range of estimates of the average amount of taxpayer savings per publicly financed unintended pregnancy. Our lower-bound savings estimate is \$3,800, the mean is \$4,500 and our upper-bound estimate is \$5,000.

## **DISCUSSION AND CONCLUSIONS**

We find that the provision of medical services to women who experience unintended pregnancies and to the infants who are born as a result of such pregnancies costs taxpayers \$9.6–12.6 billion annually. We also find that the prevention of all unintended pregnancies would produce public savings of about half of that amount. However, we do not account for a number of public and private costs associated with unintended pregnancy. For instance, women who experience unintended

<sup>\*</sup>Three percent is a commonly used discount rate for this type of analysis (sources: references 5 and 7; Aos S et al., Benefits and costs of prevention and early intervention programs for youth: technical appendix, Olympia, WA: Washington State Institute for Public Policy, 2004, <a href="https://www.wsipp.wa.gov/rptfiles/04-07-3901a.pdf">https://www.wsipp.wa.gov/rptfiles/04-07-3901a.pdf</a>, accessed Jan. 19, 2011; and Weinstein MC et al., Recommendations of the panel on cost-effectiveness in health and medicine, *Journal of the American Medical Association*, 1996, 276(15):1253-1258). Nonetheless, we examined the effect on our results of using other discount rates and found that, for example, using a 2% rate resulted in a mean savings estimate that is 2% lower than the one presented here, a 5% rate resulted in an estimate that is 4% higher, and a 7% rate resulted in an estimate that is 9% higher.

pregnancy have lower levels of educational attainment and labor-force participation than do women who experience intended pregnancy.<sup>25–27</sup> Additionally, children whose births resulted from unintended pregnancy are less likely than other children to succeed in school and are more likely to live in poverty, claim public assistance and engage in delinquent and criminal behavior later in life.<sup>28–30</sup> Furthermore, we excluded important categories of taxpayer spending (e.g., the provision of nonmedical parental benefits and services to mothers whose children were conceived unintentionally and the provision of a range of benefits beyond infancy to children whose conceptions were unintended) because of theoretical and practical concerns about our ability to account for these costs appropriately.

Given the range of costs that are not incorporated into our analysis, our estimates of public spending on unintended pregnancy are inherently conservative; a more complete accounting of these considerations would reinforce the finding that unintended pregnancy imposes considerable costs on society. The teenage pregnancy literature sheds light on just how high these costs may be. Some researchers have attempted to achieve a full accounting of the costs associated with teenage pregnancy by focusing not just on medical expenses but also on the likelihood that teenage mothers will drop out of school and claim public assistance and that their children will struggle academically and engage in criminal and delinquent behavior. Maynard and Hoffman, for example, find that on an annual basis, teenage pregnancy costs society as a whole four times the amount it costs the public sector (\$28 billion vs. \$7 billion).31

Even taking our results at face value, however, one can conclude that the prevention of unintended pregnancy would produce substantial public savings. For example, our mean estimate of annual savings (\$5.6 billion) is more than three-quarters the level of federal funding for either the Special Supplemental Nutrition Program for Women, Infants, and Children (\$7.25 billion)<sup>32</sup> or the Head Start and Early Head Start programs (\$7.23 billion).<sup>33</sup>

The current state and federal fiscal climate—in which budgets are being combed for opportunities to save money, and many state governments are cutting a variety of benefits and services-reinforces the notion that the enactment or expansion of policies to prevent unintended pregnancies is a timely and sensible strategy.<sup>34,35</sup> The incidence of unintended pregnancy can be curbed by well-crafted, evidence-based policies, such as comprehensive teenage pregnancy prevention programs, expansions in subsidized family planning services and media campaigns encouraging contraceptive use.36 While such initiatives would require an up-front investment from taxpayers, the savings that they generate would more than offset their initial costs.36 In light of the substantial public savings that would stem from the reduction of unintended pregnancy, such initiatives are, in short, smart public policy.

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