

The Cost of Teen Births in Georgia
Report for the Georgia Health Policy Center

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Over the past decade, the U.S. teen pregnancy rate has fallen. The teen pregnancy rate in Georgia has fallen as well, but remains above the national average.¹ In 1990, the national teen birth rate (births per 1,000 females ages 15-17) was 37 and in Georgia it was 50; in 1999 the same figures were 29 and 38 respectively. It is good news that the teen birth rate has dropped, however teen births in general pose a difficult public policy problem and cost young mothers, their children and other family members significantly in terms of lost opportunities both in the short and long term. Teen births also pose costs to local, state and federal governments due to the relationships between teen births, care for teen mothers and their children, long term education attainment issues, incarcerations of teen fathers, and lack of family stability.

Profile of Teen Birth in Georgia

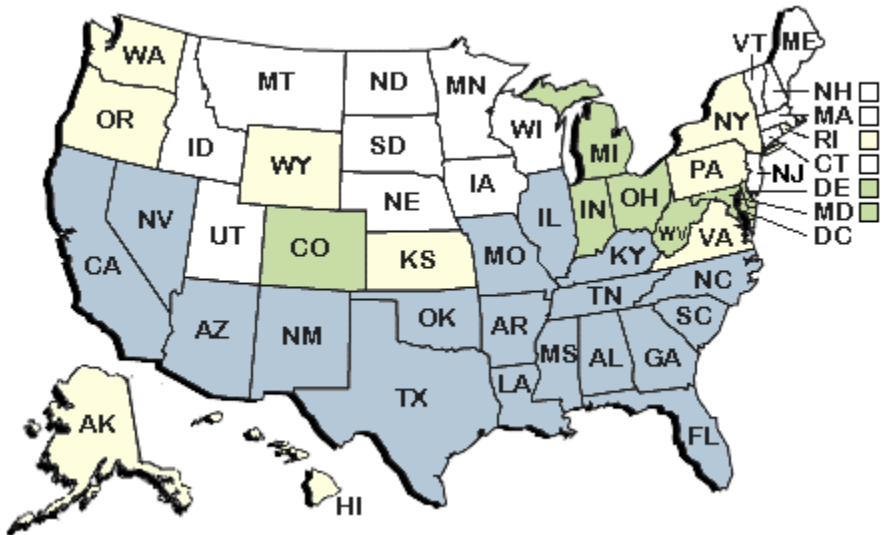
Teen births, defined by Kids Count as births to teenagers who are between the ages of 15 and 17, located by place of residence, are on the decline. However, geographically, the states of the U.S. South have some of the highest teen birth rates, well above the national median in 1990 and 1999. As seen in Figures 1 and 2, the relative position of Georgia's teen birth rate has not changed much in the past decade, although Georgia's rate has declined along with that of the rest of the nation.

In Georgia and in the U.S., most births occur to women who are aged 19 and older. From 1994-2000, 90 percent of all births in Georgia occurred to woman 19 and older.² The distribution of births by age shows that peak births occur between 19 and 31 and then births tail-off dramatically (see Figure 3).

¹ See KidsCount data online: <http://www.aecf.org/kidscount/kc2002/>

² These data are from tabulations of Georgia's Vital Statistics records.

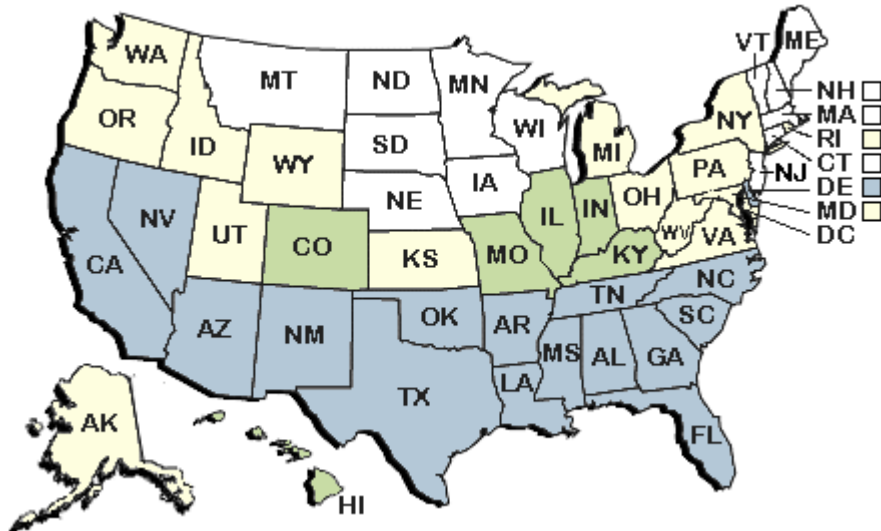
Figure 1
Teen Birth Rate, 1990



- More than 20% better than state median (26 and lower)
- Up to 20% better than state median (27 to 32)
- Up to 20% worse than state median (33 to 38)
- More than 20% worse than state median (39 and higher)
- No data available

Source: Kids Count Data Book Online, <http://www.aecf.org/cgi-bin/kc2002.cgi?action=newmap>

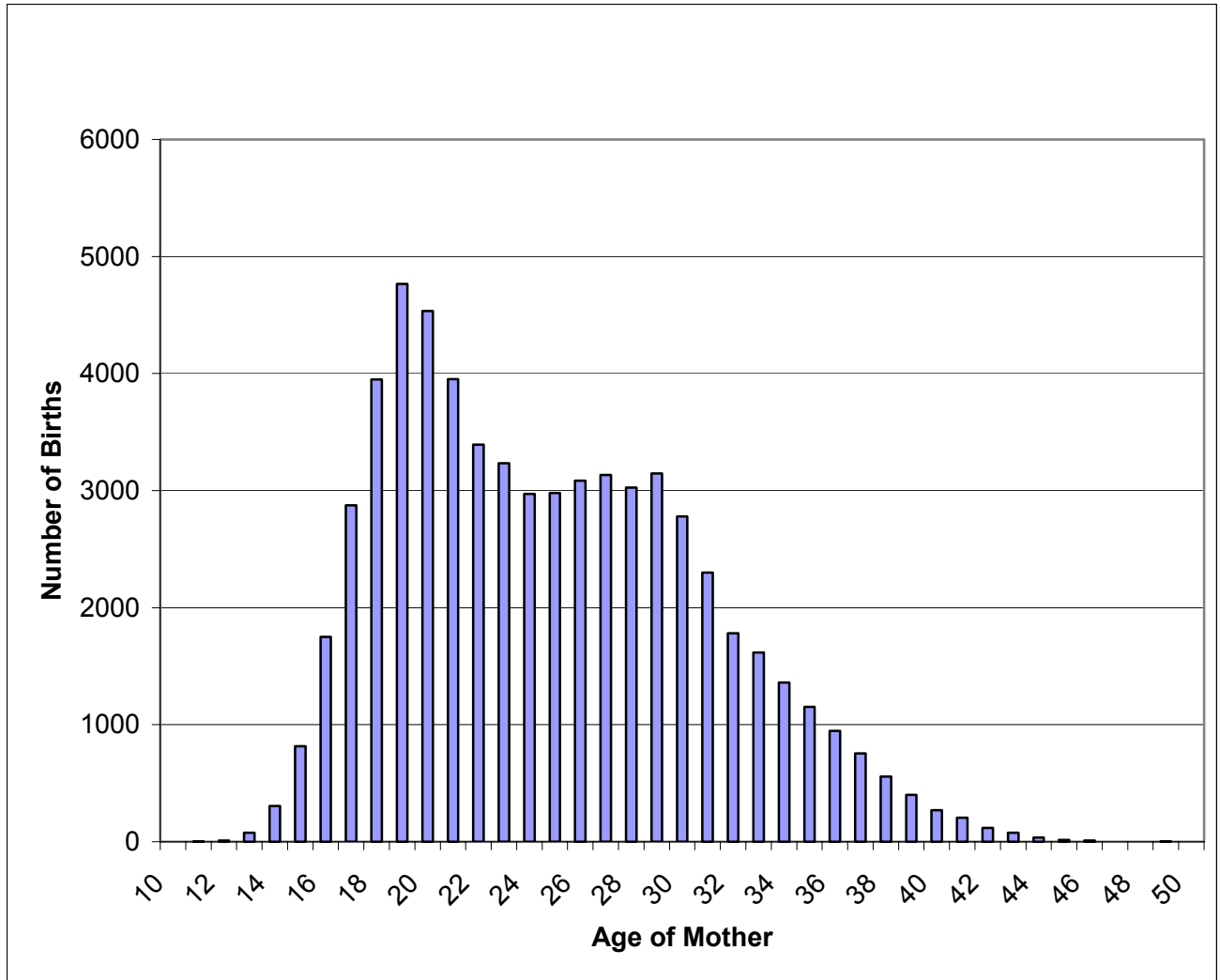
Figure 2
Teen Birth Rate, 1999



- More than 20% better than state median (20 and lower)
- Up to 20% better than state median (21 to 25)
- Up to 20% worse than state median (26 to 30)
- More than 20% worse than state median (31 and higher)
- No data available

Source: *Kids Count Data Book Online*, <http://www.aecf.org/cgi-bin/kc2002.cgi?action=newmap>

Figure 3
 Distribution of Births in Georgia by Mother's Age at Birth
 2000

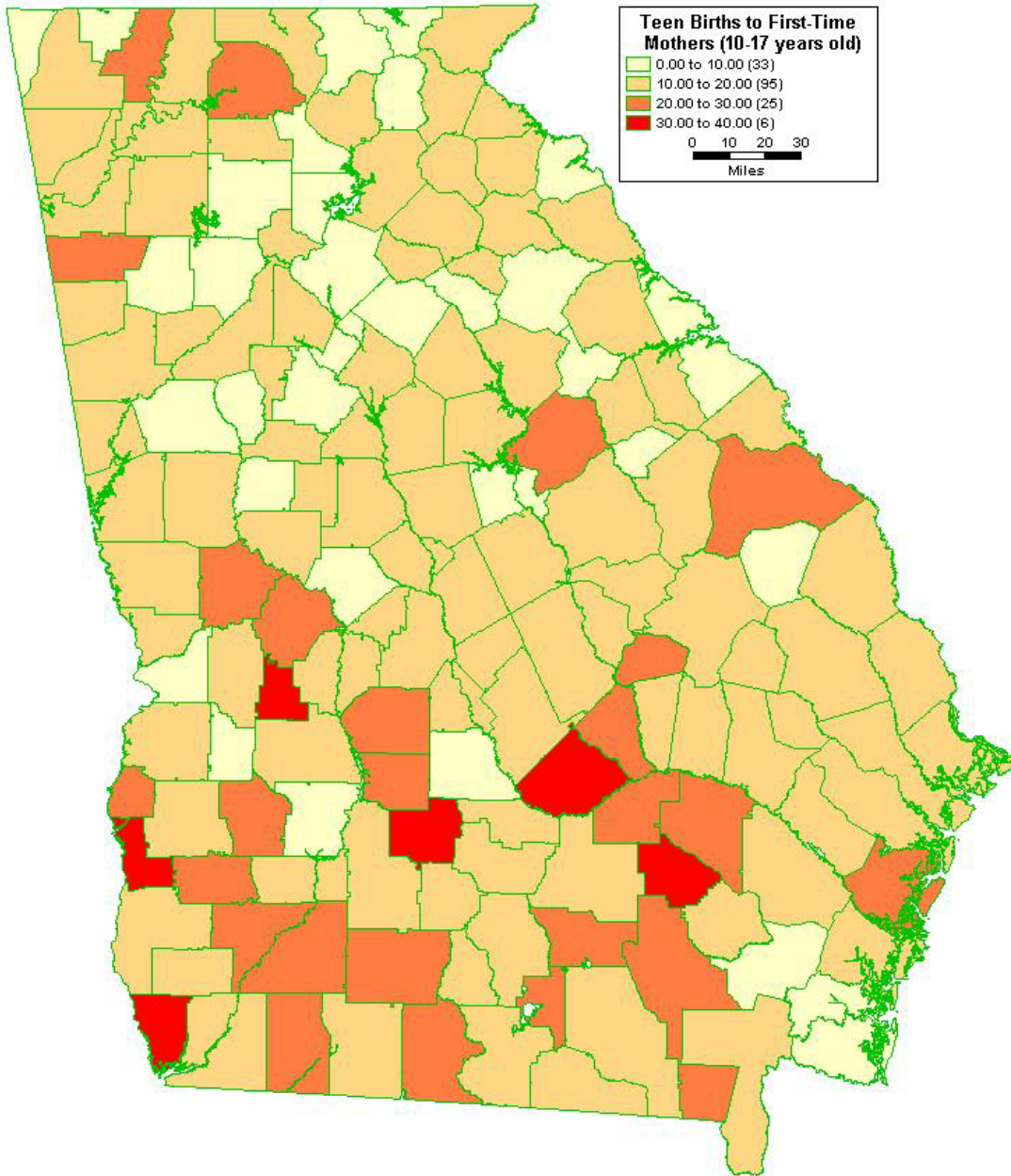


National statistics are not readily available to compare teen birth rates for mothers younger than 15. More detailed data of births in Georgia reflect some startling statistics regarding births to teen mothers. If we look at all births to mothers below the age of 19, 4% of those births are to mothers younger than age 15 (at time of delivery) and 26% to mothers ages 15-16. Of teen births in 2000, 93 percent of teen births were covered by Medicaid.³

³ Based on tabulations of Georgia Medicaid and Georgia Vital Statistics records.

In Georgia, the distribution of teen births varies significantly by county. Map 1 presents the number of teen births per 1,000 population aged 10-17 for each county in Georgia. The lightest colors have the lowest rates of teen births per 1,000 same-aged population and the darkest color has the highest incidence of teen births. In general, counties in the northern part of the state have lower incidence than those counties in the southern part of the state. Metropolitan areas have a lower per capita incidence of teen births, but have among the highest number of teen mothers in absolute terms. This map was derived from Georgia Vital Statistics records on all births in Georgia.

Map 1
First Time Teen Births by County in Georgia
(teen births per 1,000 population 10-17)



There are reasons to expect that teen births are costly to the young mothers, fathers, children of teen mothers, and society as a whole. National data show that teen mothers are often in poverty with low rates of high school graduation. Teen mothers also experience more years of single parenting than non-teen mothers (Hotz, et al.). As reported by the General Accounting Office, children of teen mothers are at greater risk for low birthweight and school failure (GAO, 1998). These characteristics paint a very bleak future for the teen mom and her child.

Some outcomes that have been associated with teen childbearing, such as poor job prospects, are now under scrutiny. Recent studies have shown that a teen mother's initial socioeconomic status and home environment are important factors in the teen mother's development and may play at least as important a role in shaping her future as a teen birth does. It is important to distinguish between the costs associated with teen birth that are due to the birth itself and those costs that are related to these other conditions of the teen. In this report, we use the vast literature on the cost of teen births as well as some original analysis of Georgia vital statistics and social programs data to develop estimates of the cost of teen births in Georgia.

Costs of Teen Births

The costs of teen births are many and varied. Teen moms often delay their schooling, which can reduce their future earnings. Medical, childcare, and living expenses for children must be paid. Fathers of these children may also delay schooling. Fathers may be less active in the child's life than fathers of non-teen births, which can add to the complications and costs of teen childbirth.

We can categorize the costs associated with teen childbearing as direct and indirect and falling on the mother, father, and the child, as well as society. Direct costs are those costs that are directly associated with the existence of a pregnancy, birth or child. Indirect costs are those associated with decisions made due to pregnancy, birth or a child. For example, there are direct costs to the mother (cost of prenatal care, hospital expenses at birth, and food and clothing for the child) and direct costs for the fathers (expenses for the child). Indirect costs include reduced earnings if the presence of a child reduces the mother or father's schooling or choice of employment. Other indirect costs include the reduced probability of young mothers getting married, which is associated with lower lifetime family earnings. Costs to the children of teen moms include reduced financial support from the father and potential developmental issues.

From the viewpoint of government, if teen mothers are more likely to receive social benefits than non-teen mothers, teen child bearing represents a direct cost to society in terms of the health and support benefits for the child. If teen mothers have more complicated births or less healthy babies, these direct health and maintenance costs increase. If a mother later enters a jobs training program because of foregone schooling, this is an indirect cost to the government. Tax payments may also be affected by teen childbearing. If teen mothers have reduced (increased) earnings, then income tax

revenues will be lower (higher). Consumption taxes could be higher due to the needs of the baby.

Table 1 provides a summary of the direct and indirect impacts that are associated with teen childbearing. The list was derived based on a review of the literature that is cited in the references. Some of these have measurable costs, such as the impact of childbearing on medical assistance payments. For others, such as delayed schooling for young parents and the long-term educational and social impacts on the children of teen parents, the costs are more difficult to measure. In this report, we provide dollar estimates of costs where possible.

Table 1
Direct and Indirect Impacts Associated with Teen Childbearing

Impact	Explanation
Medical costs of pregnancy and childbirth	Teen mothers may or may not require more expensive pre and post natal care than non-teen mothers
Children's health care	Post-natal and pediatric care for the children may or may not be greater for children of teen mothers. This depends on the health status of the child at birth and the living conditions of the child after birth.
Delayed education/earnings	Teen mothers may delay high school completion; earnings may be affected Teen fathers may delay high school completion; earnings may be affected Spouses may take responsibility for a teen mother family and increase income.
Mother's income tax payments	If teen mothers earnings are affected, her income tax payments would also be affected. However, tax credits could offset any income increase.
Consumption taxes	Goods for children and a natural propensity to increase (decrease) consumption if income increases (decreases) could yield higher (lower) consumption (i.e., sales) taxes.
Father's income tax payments	If fathers' earnings were affected, their income tax payments would also be affected. However, tax credits could offset any income increase.
Child support payments	Non-married fathers could increase child support payments if teen births occur more frequently out of wedlock.
TANF payments, food stamps, rent	If a teen mother earns more income, she

subsidies	may be less eligible for support services. However, the presence of a child may increase her eligibility. Also, since teen mothers are less likely to be married than non-teen mothers, a teen mother's family income will likely be lower and therefore increase the chances for support services relative to a non-teen mother.
Foster care	If children of teen mothers are more likely need foster care, these expenses could increase for teen births relative to non-teen births.
Incarceration of young men	Children of teen mothers have a higher probability of incarceration yielding higher costs to society.
Educational attainment and future earnings of children of teen mothers	If children of teen mothers have more health risk factors and social risk factors, they may not succeed as well in school as children of non-teen mothers.

To estimate the specific costs of teen births, we must consider the appropriate comparison. For example, if a 16-year old girl gives birth, she incurs a variety of expenses. However, if we compare the cost of her giving birth as a teen and giving birth as a 21 year old (as an example), the differences in typical costs associated with child rearing may not be that great. In this report, we use that type of comparison—we analyze the costs of teen births (births to girls 18 and younger) relative to the costs associated with giving birth as a non-teen.⁴ From a policy perspective, we are analyzing the impact on personal and social costs of convincing young women (via public policies) to delay childbirth to post-teen years. We implicitly assume that any teen birth that is delayed will end up in a birth by the age of 21. This is an over statement as not all young women would give birth by age 21.

In the next section, we analyze each major cost of childbearing by presenting the intuition of the impact and by summarizing the empirical literature on the issue. We base our cost estimates for Georgia on a careful read of the literature that currently exists and supplement with specific data for Georgia where available. For a number of years, the conventional wisdom on the costs of teen pregnancy and teen births was that they were large and permanent. The literature that has examined the costs associated with teen

⁴ Even if there are no differences in a child's health, living arrangements, or other basic needs, the fact that a girl has a birth as a teen will move her costs from some time in the future to today. For example, say a 16 year old gives birth in 12/2002 and spends \$5,000 per year for the next 5 years caring and feeding the child. In 2003, she will be spending \$5,000 more than she would if she delayed the birth 3 or more years. The expenses may be paid by the mother, family members, or federal, state and local governments. If the 16 year old did not give birth until she was 23, this \$5,000 could be invested in education, in savings, or spent on other government programs.

child bearing was more conclusive in the 1980s than in the 1990s. In the 1980s, well-respected research concluded that teen moms were at greater risk than non-teen moms to face “social and economic disadvantage throughout their lives” (Hayes, p. 138). More recent evidence suggests that the earlier studies did not appropriately control for factors like the income of the young mothers or the educational attainment of family members. We pay careful attention to these empirical issues in developing our estimates.

We summarize results found in our reading of the literature in Table 2. To develop cost estimates, we have made a series of assumptions regarding impacts of childbearing on income, labor, health, etc. We use what we believe are a consistent set of estimates that produce conservative (understated) costs to individuals and society. We also employ two conventions in developing these estimates. First, as noted above, delaying costs can impose a cost on society. If a mother would receive welfare benefits as a teen mom and as a 21-year old first mom, society uses resources three or more years earlier than they would otherwise. In our cost analysis, we assume that the “time value” of money is just equal to the inflation rate so that this timing cost is reduced to zero. This is also a conservative assumption that reduces our overall cost estimate. Secondly, we use the results of the literature taken at the average impact in most all cases. We do not do a specific projection of each cost over the total dependent lifetime of the children of teen mothers.

Medical costs of pregnancy and childbirth

Mothers of all ages will experience medical expenses during pregnancy and childbirth. In this report, we must differentiate whether the pre and post-natal costs for teen mothers are significantly different from those of non-teen mothers. Secondly, we should analyze who pays for these costs (individuals directly or governments) and whether or not the payer is different for teen and non-teen moms.

To analyze the medical costs associated with pregnancy and childbirth, we do two things. First, we used Medicaid claims and eligibility data to examine the experience of adult women and teenage girls who were enrolled in Medicaid and delivered a baby during calendar year 2000. Adult women are defined as women age 19 and above at the time of delivery. Teenage girls are defined as girls ages 11 to 18 at the time of delivery. Medicaid claims do not cover the population of births in Georgia, but give us some picture of the public sector costs of pregnancy and birth related expenses. We expect Medicaid recipients to have higher usage of medical care in general than the overall population since Medicaid covers many basic services and the network for services is more established than in the case of an uninsured young mother. Second, we analyze the Georgia Vital Statistics records, which do cover all births in Georgia. These records report prenatal care use for all women in the state who give birth in a hospital in Georgia.

We examined claims records for each mother’s 11-month pregnancy and postpartum period to determine prenatal and postpartum care use rates, incidence of caesarian delivery, and incidence of non-live births. We also compare Medicaid costs for care of

teen versus adult women. We used methods outlined by the HEDIS 2003 Technical Specifications published by the National Center for Quality Assurance.

During CY2000, there were 57,841 deliveries covered by Medicaid. Of these, 9,187 (24%) were for teenagers. The majority of mothers had only one delivery during 2000, however 89 mothers had two deliveries during the year. The mothers that had two deliveries made up 0.13% of adult women, and 0.28% of teenage girls.

The rate of receiving timely (first trimester) prenatal care was slightly higher for teens than adults. 11.24% of teens received timely prenatal care versus 7.80% for adult women. Teens were also more likely to receive any prenatal care (timely or otherwise). 57.24% of teens received prenatal care, compared to just 48.43% of adults. Teens also received postpartum care more frequently than adults. 18.05% of teens got postpartum care compared to 16.62% of adults. Rates of caesarian delivery were somewhat higher for adult women than for teens. Adult deliveries were performed by caesarian 19.41% of the time, while teen deliveries were performed by caesarian just 14.06% of the time.

Among teens that received prenatal care, their costs for prenatal care were lower than for adult women with prenatal care. The average cost of prenatal care for a teenager was \$619, while the average cost for an adult was \$750. The same was true of postpartum care. The average cost of postpartum care for a teenager was \$87, while the average cost for an adult was \$96.

Despite teens' lower costs for prenatal and postpartum care, their total costs for all medical services over the 11 month pregnancy and postpartum period was higher than for adults. All medical services include all claims for inpatient and outpatient services as well as prescription drugs. Teenagers cost an average of \$9,975 during pregnancy while adults cost an average of \$9,782. However, it should be noted that these total costs do not distinguish between costs for services related to the pregnancy and other unrelated medical costs. Teenagers may be more likely to receive medical services not related to pregnancy, thereby raising their total costs.

We also analyze prenatal care usage information from the Georgia Vital Statistics records. These data provide information on all births in the state, so while the Medicaid data provide us information on a subset of births, the vital statistic records provide us information on the population of births. From the vital statistics data, we find that some health costs are slightly higher for teen mothers. For example, teen mothers are significantly more likely to use tobacco (10 percent of teen mothers versus 5 percent of non-teen mothers in the vital statistics data), are less likely to use prenatal care in the first trimester (70 percent versus 86 percent), and have a higher probability of labor complications and medical risks. However, the vital statistics records do not include data on the potential costs of these risk factors. Finally, the vital statistics data suggest that teen mothers give birth to more low birthweight babies than do older mothers.

Neither the Medicaid nor the vital statistics data allow us to control for other factors that we would like to control for, such as income and family education. If we look just at the

differences in teen pregnancies and those of older women from the Medicaid and vital statistics records, it is not obvious that teen mothers' pregnancy and birth expenses are higher than those for older mothers. Also, since we cannot control for income and other factors, we can't conclude that if there were increased expenses, they were due mostly to the teen pregnancy. However, in the Medicaid data, we do have a sample of births in which the mothers are similar in income status. If we believe that Medicaid is a decent proxy for income and other factors that create a relatively homogenous group, then we see that teen mothers have slightly higher total pre and post-natal expenses than non-teen mothers who are in a similar income situation.

At the national level, Koniak-Griffin and Turner-Pluta present evidence that younger mothers are at higher risk for complications at birth and that younger mothers give birth to infants with lower birthweight (in 1996, 11% of births to mothers under 15 years of age were low birthweight, 8% of births to mothers 15-19 were low birthweight and 6% of births to all women were low birthweight, with low birthweight being 2500 grams or less). This information suggests that medical costs for a birth to teen mothers may be higher due to complications immediately after birth if the babies are at higher risk for medical problems. This is consistent with the Medicaid expense figures presented above (higher for teen mothers) and the vital statistics records data on prenatal usage.

The one consistent piece of information from the national and Georgia data is that teen mothers have smaller babies than non-teen mothers. Low birthweight is correlated with a number of long-term health and development problems, all of which can be costly. However, the costs associated with these developmental and health problems will be analyzed separately in sections below. To maintain our methodology for providing a conservative estimate of the cost of teen childbirth, we do not attribute a cost for teen mothers for pre and post-natal care. We simply do not have the right information to sort out other possible causes for the differences we find in our data regarding health status of the pre and post-natal experience.

Health expenditures for children of teen mothers

Another health issue is to consider whether or not children of teen mothers start life with any significant medical conditions that result in short and/or long-term medical costs and whether general health care expenses are greater or less for children of teen mothers. Similar to the costs of pregnancy and childbirth, it is also important to know who pays these costs and whether the payer is different for teen and non-teen births.

Wolfe and Perozek (1997) provide an analysis of the issue of health care for children of teen mothers. They report national data that show that children of teen mothers are more likely to be in poor or fair health at different ages than children of non-teen mothers, but less likely to have chronic or acute illnesses.⁵ All of these data are based on responses of parents so there are possible biases in the reporting, but Wolfe and Perozek do not analyze such biases. The authors also analyze use of health care and find that non-teen

⁵ The authors point out that this difference in health condition (acute or chronic illness) may reflect true differences in health or may be due to differences in diagnosis.

mothers utilize more health care than teen mothers for their sample of children up to age 14.

For health care expenses for children, we use the Wolfe and Perozek estimates of the difference between the estimated expenditures for teen moms and the expenditures if the mothers delayed until age 20 to 21. We used their reported baseline values as average expenditures and did not adjust the annual expenditures for the age of the children. We also assumed that the inflation rate was equal to the discount rate so in the present value calculation, the effects of inflation and discounting would wash out.

Teen mothers spend less in general on health expenditures for their children on an annual basis but more of their expenditures are paid for by government. Non-teen mothers spend more on total health care expenditures and more out of pocket than non-teen moms. Teen childbirth delay would therefore be expected to increase total health care expenditures, but decrease the amount that government pays and increase the amount that is paid out of pocket.

Wolfe and Perozek find that between 39 and 49 percent of health care for children of teen mothers is paid for by society (via government programs), while 20 percent of health care of non-teen moms is paid for by society. The authors estimate an empirical model of the total expected medical expenses and assuming there is an increase in the child's health with the mother's age, they find that in 1987 dollars, the annual cost of health expenditures would rise by about \$180 (\$320 in 2000 dollars). However, this is split between out of pocket costs and government provided medical care. The authors conclude that the reduction in health costs to society for delay would be between \$82 and \$98 annually per child, \$146 and \$174 in 2000 dollars. We take the lower figure, \$146 as the cost savings to government from delayed childbirth. We also use their information to estimate the additional cost of out of pocket expenses for mothers who delayed childbirth. Based on Wolfe and Perozek's estimates of the increased expenditures of non-teen moms and the fact that they pay about 80 percent of their expenses out of pocket, we estimate that by delaying childbirth, costs to the mother increase by \$128 per year.

Education, labor supply, and earnings

Teen mothers virtually by definition have less time for school than their non-childbearing cohort. Approximately two-thirds of teen moms do not complete high school, while about 13.5 percent of all 18-21 year olds were not high school graduates in the general population (see U.S. Statistical Abstract, table 259).

In *Kids Having Kids* Hotz et al (1997) find that teen births do not contribute significantly to reduced future earnings. In a simplification of the analysis, take, for example, two 16 year olds, one with a child and one without. If these two girls have the same probability of dropping out of school, we cannot automatically assign the cost of foregone earnings to the birth of the child. It may be that the basic economic and social conditions of the girls, with or without bearing children as teens, are the main reason for dropping out of

school. If there is something *else* that is generating the costs that we associate with teen childbearing, we need to be careful to separate those factors and the teen childbearing.

Hotz finds that teen mothers in fact earn approximately 35 percent more on average than non-teen mothers. In the early years of teen motherhood, teen mothers do earn less, but in Hotz's analysis, this is more than made up by teen mom's higher working hours in their 20s and 30s. This estimate is based on a "natural experiment" which analyzes the differences in labor supply and earnings for teen mothers and women who were pregnant as teens but miscarried. The intuition of the analysis is that these two groups of women are largely the same, except for the fact that one group had a live birth and one did not. Other recent studies find negligible or positive results of teen childbearing on earnings (Ribar, 1995 as referenced in Hotz. Et al, and Geronimus and Korenman, 1992), while some find negative results (Bronars and Grogger, 1995), but most all of the more recent literature finds smaller impacts of teen childbirth on earnings than earlier studies that did not control for other factors.

However, questions remain about the new versus old estimates. Studies report that slightly more than half of teenage mothers complete high school (Cameron and Heckman, 1993 and Maynard, 1997). If it is the teen birth that reduces the probability of the young mothers finishing school and not other conditions of the young women (such as income or educational attainment of her parents), public policies can be designed to affect change in this area. If the impact of other factors such as the education of the teen mothers' parents and the socio-economic status of the family on the teen mom's education decision like are much larger than the effect of childbearing itself, then a different set of public policies would be warranted.

Hoffman (1998) presents a synthesis of the new and old estimates of the cost of teen childbearing. He concludes that while the old estimates may be overstated because of the difficulty of controlling for the impacts of all other conditions besides teen births on the welfare of the teen mom, the new estimates also have shortcomings. These shortcomings include dated data, questionable assumptions regarding the behavior of "control" groups in the analyses, and the impacts of other unobservable factors.

Ahn (1994) also studies the impact of a teen childbirth and other factors on high school completion. In this study, Ahn controls for impact of family characteristics such as family education, living status (whether or not the teen mom is living with family members), the number of siblings, race and ethnicity, and place of residence on the likelihood that a teen mother completes high school. Like other studies, Ahn tries to determine these impacts while controlling for "unobservable" differences among teenagers. These unobservables are variables that can't be measured but might have an impact on whether or not a teenager completes school whether or not she gives birth as a teen. Some examples of these types of variables include an attitude about school that can't be measured or a feeling of exclusion that makes the future less important. Ahn concludes that both teen births and these other factors significantly affect the likelihood of high school completion and that elimination of teen births alone would reduce the high

school completion gap between teens who give birth and those who do not by about 50 percent.

Based on the controversy in the literature, we use two estimates of the impact of teen childbearing on the mother's average annual earnings. In one estimate, we use Maynard's interpretation of the results of Hotz, et. Al. and find that teen mothers annually earn \$333 more than non-teen mothers. In Georgia, with an average marginal tax rate of 2.8 percent, this increases annual state income tax collections by a nominal \$9. If we take a middle-road position and assume that teen childbirth has no impact on lifetime earnings when other factors are controlled for, the earnings and tax impacts are reduced to zero. Both of these estimates are conservative in terms of their bias on the final costs. A number of researchers would argue that teen mothers earning profile is negatively affected thereby increasing personal costs to her and to the government in terms of reduced tax revenues.

Consumption taxes would also be expected to rise due to the income increase, but also due to the presence of a child. Comparing teen to non-teen mothers, we will assume that the increases in consumption due to the presence of the child would be present in the same magnitude for non-teen families. If we assume that the average teen mother spends 90 percent of their income (this is what we refer to as the marginal propensity to consume),⁶ we also need to estimate how much of a basic consumption bundle of a teen mother would be taxable in Georgia. Major exempt items include food and housing. The increment to expenditures from any increase in income is less likely to come from housing than from food and clothing and other items (assuming the teen mother had previous housing). The Bureau of Labor Statistics (BLS) reports that 50 percent of expenditures for lower income families (below \$40,000) are for food and shelter. So, our conservative estimate of the increased consumption tax in Georgia is 50 percent of increased expenditures of $\$333 * 0.9 * 0.06$ (an average sales tax rate in Georgia), or \$10.00.

Fathers' income, Child support payments and Spouses' income

Fathers of children born to teen mothers face a number of potential risks. The fathers may or may not be married (or become married), they may or may not provide child support, and they may or may not finish school. In the long run, these potential costs could influence long term labor supply behavior and other social factors of the fathers. In this section, we analyze the costs of teen childbirths to the fathers. Also, the teen mothers family income is affected by what the father does in terms of marriage and work. Teen mothers are less likely to be married than non-teen mothers so child support payments

⁶ This is based on our knowledge that the majority of teen mothers are earning wages at or below the poverty line. The Bureau of Labor Statistics (BLS) *Consumer Expenditure Survey (CES)*, reports that average annual expenditures exceed average annual income for income groups up to \$40,000 of annual income.

become an important part of our analysis as well.⁷ We will use our estimates of the impact of teen childbirth on the family income to further cost-out welfare support.

The father of children born to teen mothers may or may not be teens themselves. This factor further complicates an analysis of the impact of childbearing on these men as just identifying them is sometimes difficult and finding a counterfactual is not as clear-cut as with the teen mothers. Brien and Willis (1997) use national data to analyze the impact of parenting a child of a teen mother on the father's education and income. In their analysis, they control for differences in economic potential that come from factors other than fathering a child of a teen mother. The authors estimate the impact of these factors on years of education, occupational income, actual income, and hours worked in a calendar year. Brien and Willis find that if a young man (less than 18) fathers a child of a teen girl, his education and earnings profiles suffer. Based on these results, Maynard (1997) estimated that of the difference in average annual incomes for fathers of children born to teen mothers and fathers to children born of women in their twenties, \$2,270 (1996 levels) is due to the fathering of children of teen mothers.

Like many of the cost estimates, this is based on national data. There are reasons to believe that the situation in Georgia is somewhat different since, in 1996, Georgia's average income was about 93 percent of the U.S. average. For this reason, we attribute 93 percent of the foregone income to the teen mother childbirth. We adjust this figure for inflation and arrive at an annual cost (reduced earnings) of \$2,450 for Georgia fathers of children of teen mothers in 2000 levels.

Since teen moms are more likely to not be married, Brien and Willis find that child support payments are likely to be higher for teen moms than non-teen moms (who are more likely to be married, thus reducing the probability of child support payments). Maynard adjusts their findings for the impact of the teen birth alone and estimates that the value of the additional child support payments are \$20 per year in 1996 dollars, or about \$23 per year in 2000 levels. We assume that Georgia's child support payments would be the same as the U.S. national average.

Spouses' income is an important factor for teen mothers as many spouses are not the parent of the child in the case of teen births. Current research on the effect of teen childbearing on a spouse's income is also inconclusive. Hotz et al estimate that in the early years (through the teen mothers early thirties), spouses bring more money to the household than would be the case if she delayed childbearing. Their estimate of this impact is an addition of \$961 (1996 levels) due to the spouse working to support the family. Maynard concludes that the statistical significance of this result is particularly questionable and suggests that sensitivity analyses consider a zero impact as well. For Georgia, we assume that the impact would be 93 percent of the national impact (due to Georgia's slightly below average income), so that in 2000, the average annual benefit of a spouse in a teen childbearing household would be \$1,034. We also provide a separate estimate assuming the additional income from the spouse is \$0.

⁷ The Alan Guttmacher Institute (1994) reports that 19 percent of teen mothers were married before or shortly after the birth of their first child while 42 percent of older mothers were married.

We use the same estimates to estimate the state income and consumption tax impacts as are used for the mother.

TANF, Housing Subsidies, Food Stamps

In Georgia, TANF, housing and food stamp subsidies are guided by a general monthly income eligibility requirement and federal guidelines. The research used above suggests that a teen mother may see an increase in her own income relative to a non-teen mother, but will receive minimal child support payments and have less probability of income from a spouse than a non-teen mom. The study of Hotz et al suggests that AFDC, housing subsidies and other welfare payments would be less for a teen mother due to the increase in her income relative to a non-teen mother, holding other factors constant. They estimate that \$0.8 billion more would have been spent in 1996 if teen mothers delayed birth. In 1998-2000, Georgia's TANF caseload was about 2.5 percent of the U.S. total caseload (U.S. Department of Health and Human Services). If we assume that this translates into 2.5 percent of the increased cost that Hotz et al associate with delayed childbirth, then these subsidies would have declined by \$20 million in Georgia in 1996, or \$23 million in 2000 levels. Maynard estimates that on a per childbirth basis, the increased cost of delay (due to increased work effort) would be \$138 for AFDC and food stamps and a reduction in housing subsidies of \$108. We use these estimates, adjusted for inflation to represent the change in welfare expenditures in Georgia due to delay as a lower bound estimate (less conservative). The total of these three is an increase in expenditures of \$35 per childbirth. As a more conservative estimate, we attribute Hotz estimate directly, adjusted for inflation.

If we take a closer look at the various welfare packages, we may conclude that the costs of delayed childbirth are not as significant as Hotz et al suggest. In Georgia, most welfare programs are regulated by federal guidelines, but the state has discretion over eligibility and actual subsidies. For example, in Georgia in 2002, the increase to the income limit for housing subsidies from the addition of one person in a household is greater than most all estimates of the potential increase in income of a teen mother (http://www.huduser.org/datasets/il/fmr02/prts801_02.pdf). This suggests that for teen mothers in low-income households, the addition of a child will increase the probability of qualifying for public housing even if her income goes up. However, Cuts and Olsen (2002) report that Section 8 housing (HUD's largest housing program) funds have not been sufficient to provide housing all eligible families. In Georgia, there is evidence of a long waiting list for subsidized housing, so eligibility itself may not guarantee a housing subsidy.

The other factor in determining eligibility for welfare programs in Georgia is other income, including spouses' income. Since teen moms are more likely not to be married and the differential they receive is child support is minimal (adjusted for factors other than teen childbearing), they will more likely be eligible for welfare programs than an

older mother who has a higher probability of being married.⁸ As we presented earlier, the value of foregone spouses earnings to a teen mother are greater than the estimated increase in her income. This would suggest that an older mother would be less likely to be eligible for welfare programs than a teen mom who is not married. For this reason, we also include a cost of \$0 for the estimated cost of welfare programs due to teen childbearing.

Incarcerations

Jeffery Grogger analyzes the implications of teen childbearing on the children's probability of incarceration and the cost of incarceration to society. Using national data on the young male population, he finds that young men of teen mothers are 2.7 times more likely than men of non-teen mothers to be incarcerated at some point. There are many factors that influence this difference such as income and education of the teen mother, however, Grogger and Maynard conclude that about 18.5 percent of the increased risk (and cost) of incarceration are directly related to teen childbearing itself. Using national data, Maynard estimates that these incarceration costs amount to \$396 on average per event (based on teen childbirths) in 1996 levels.

Grogger also computes the estimated savings in total correction expenses based on national estimates of the average cost of incarceration and the total expenditures on corrections. If we look at state level data on the total expenditures for corrections and the total number of imprisoned men, we find national estimates of between \$20,000 and \$50,000 per inmate per year in the prison systems.⁹ Using these data, Grogger concludes that a childbirth delay from age 16 to 20.5 would reduce total expenses nationwide by \$920 million (based on 1992 data). If childbirth were delayed from 16 to 22.5, the total savings would be \$1.23 billion.

The *Sourcebook of Criminal Justice Statistics* reports that Georgia's incarceration rate (sentenced prisoners under federal and state correctional authorities) is slightly higher than average—550 people per 100,000 of total population versus a U.S. average of 478 per 100,000 (this amounts to 3.1 percent of such prisoners in 2000). So, it is reasonable to expect that Georgia's incarcerations of children of teen parents are not necessarily much different from the average. Thus, we can use Grogger's estimate that if teen mothers delayed births until age 20.5, the reduction in expenditures would be 3.5 percent, or 1,472 men in 2000. At an average annual cost of \$20,000 per person, this would yield savings of \$29,440,000 to the federal and state budgets. Again, this is a relatively conservative estimate as it uses the lower end of reported cost figures.

Foster Care

⁸ Note that Holtz et al do not appear to include child support and other income in their calculation of AFDC and other welfare payments.

⁹ Estimates include those by the General Accounting Office (1996), DiIulio, John and A.M. Piehl (1991), and U. S. Department of Justice (1999).

Children of teen mothers are much more likely to end up in foster care than children of older mothers. Goerge and Lee (1997) report that children of teen mothers are 2.7 times more likely to be placed in foster care. In their analysis, most of the additional cost of foster care for children of teen moms is due to the teen childbirth itself and much less is attributed to other factors. This stands in sharp contrast to other results such as those for the mother and father's income. Based on Goerge and Lee, Maynard estimates that \$424 annual additional foster care costs come from the teen childbirth itself (1996 levels). In 2000 levels, this would be \$490.00

According to the Lino of the U. S. Department of Agriculture (USDA, 2003), Georgia's reimbursement rates for foster care are about 86 percent of the average of those reported by USDA.¹⁰ This is based on an overall average of the reported monthly or daily reimbursement rates, averaged across all categories reported by individual states. We use this percentage to reduce the cost of foster care to \$407.00 annually.¹¹

Impacts on children

The research presented above has focused on the costs of teen childbearing on parents and government, but has not stressed the potential impact of teen childbearing on the children themselves. We have seen that children of teen mothers probably start life with some health risks (associated with low birthweight) and are less likely to have an identified father who is married to their mother. Whether or not these factors impact the child short or long term is a difficult issue. Haveman, Wolfe and Peterson (1997) use a national longitudinal panel data set to determine whether or not children of teen mothers have worse educational and employment outcomes than children of non-teen mothers.

The authors find that children of teen mothers are less likely to graduate from high school, more likely to have children as teens themselves and more likely to have a child out of wedlock than a woman who delays birth. There is more limited evidence that children of teen mothers are more likely to be economically "inactive" at age 24 than children of non-teen mothers. The authors note the difficulty of operationalizing these results into cost estimates. The benefits of delayed births, from their research perspective, come from increased probability of finishing high school and having a child in wedlock. Finishing high school increases the employment and earnings profile of these children and yields increases in income. Haveman et al estimate that delayed childbirth could yield benefits to children (discounted to 1994 levels) of \$2.3 to \$4.9 billion dollars. Maynard uses these estimates with estimates of the number of teen births to conclude that the average delayed teen childbirth would yield an increase in income to the children of \$646 in 1996 dollars. We use our 93 percent adjustment to reflect Georgia's per capita income relative to the U.S. and inflate the figures to 2000 levels to

¹⁰ Tabulations based on data from Lino 2003, as reported on <http://www.nfpainc.org/kidcosts.html>

¹¹ The funding of foster care is very complicated and individualized by state. The averaging that we did is consistent with the reported methodology used in *Kids Having Kids* and we believe it is therefore a reasonable way to adjust the national findings to reflect Georgia's unique position.

arrive at an average annual benefit of \$695 per child benefit in increased income and productivity for child birth delay.¹²

Table 2
Evidence on Impacts with Measurable Costs: U.S.

Cost Factor	Estimates associated with teen childbirth	Evidence
Pregnancy and childbirth costs	Estimates of prenatal care and labor and delivery complications suggest teen mothers have higher incidence of low birthweight babies. The costs of low birthweight come mostly in the future of the child and are considered in costs to children of teen mothers. Other evidence on health risks is mixed.	Georgia Medicaid data show that teen mothers have a slightly higher use of prenatal care and overall costs of pregnancy and childbirth are slightly higher than non-teen mothers. No correction can be made for differences in other socio-economic factors. Georgia Vital Statistics data show a lower use of prenatal care and higher risk factors for teen mothers. Again, no controls can be made for other socio-economic factors.
Children's health care	Higher total health care costs for non-teen mother children: \$320 in 2000 Higher social health care costs for teen mothers: \$146-\$174 annually Lower out of pocket costs	Children of teen births have lower health status; Chronic and acute illness less likely in teen births, but costs of health care for children of teen births likely to be lower due to use of lower cost providers and reduced number of visits Wolfe and Perozek (1997); 1987 National Medical Expenditure Study Georgia Vital Statistics Records and Medicaid

¹² We assume that this applies to all teen births in the same proportion.

		Records
Teen mothers' income	Increased annual income of \$333 per mother (2000 levels), this is an upper bound estimate based on teen mothers working more hours	Based on estimates of Hotz et al as an upper bound (conservative estimate); we also assume no impact as a lower bound estimate.
Income for Fathers of teen births	Reduced annual earnings of \$2,628 per father (2000 levels)	Brien and Willis and Maynard (1997).
Income for spouse of teen births	Increased annual income of \$1,034 (2000 levels)	Hotz et al and Maynard (1997). Increase is due to more work effort.
Income and consumption taxes from mothers, fathers and spouses	National estimates range from reduced taxes of \$272 per year per teen birth (2000 levels)	Hotz et al and Maynard (1997). Reduction is due to reduced income of the father
Welfare payments	National estimates suggest reduced costs of \$0.9 million	Hotz et al and Maynard (1997). Reduction is due to increased income of teen mother due to higher work effort and higher spousal income if teen mother is married.
Incarceration of young men, born of teen mothers	Children of teen mothers increase costs due to incarceration by \$920 million to \$1.2 billion	Grogger (1997) analyzes the incarceration of young men and finds a higher probability of incarceration for men of teen mothers.
Foster care	Increased foster care expenses of \$490 per birth annually at the national level.	Goerge and Lee (1997) and Maynard.
Children's educational and economic attainment	Reduced earnings and productivity costing approximately \$748 per year	Haveman, Wolfe and Peterson (1997)

Costs for Georgia

As explained above, we estimate as many costs as we believe that we can do given national and Georgia-based data. There are a number of costs that we do not analyze

due to a lack of data. Maynard (1997) presents a list of costs that are difficult to quantify and those include the following: the impact of teen childbirth on access to job training, costs of spending more time as a single parent, psychological impacts of poor child development outcomes, costs of funding programs for learning disabilities for the children, other costs of socially deviant behavior, and other social welfare programs. We also do not include a cost for day care expenses because we have not found research that specifically addresses the cost of childcare for teen mothers relative to that for mothers who delay childbirth, and that also controls for the factors described throughout this report.

Our final cost estimates for Georgia are contained in Table 3 and were derived as explained above. In each case, a number in parenthesis means that if childbirth were delayed, we would see higher costs to either to an individual or to government from the delay. For example, the teen mother's income would be expected to *decrease* by \$333 per year if she delayed but the father's income would be expected to *increase* by \$2,470 per year if there were no teen childbirth.

We estimate that the total cost of teen childbearing according to these factors in Georgia is at least \$38 million dollars, based on 9,800 first teen births. A change in assumptions regarding welfare support suggests much larger impacts to the tune of \$60 million dollars. Even at that level, we believe these estimates are quite conservative and represent a lower bound of the costs of teen childbearing in Georgia. For example, these estimates are much lower than those presented in Maynard (1997).

These estimates were developed using data largely from the late 1980s through the mid 1990s. There have been a number of changes since that time, especially in the case of welfare support. A more detailed analysis of the changes in the welfare programs and their impact on teen mothers is needed to provide a more specific estimate of the relationship between teen pregnancy and welfare programs. Also, most of the empirical literature follows teen mothers through the early to mid-30s. More analysis needs to be done to determine the longer-run consequences of teen childbirth on the teen mothers as they move through their years of productive labor and their children.

Table 3
Change in Costs of Delaying Teen Childbearing: Georgia
Average Annual Expense

Impact	Average annual expense per first childbirth delayed
Pre and post natal care	Not estimated
Health care for children out of pocket	(\$128)
Health care paid for by government	\$146
Teen mothers' income	(\$333)
Fathers' income	\$2,470
Spouses' income	(\$1,034) <i>alternative estimate: \$0</i>
Child support payments	(\$20)
Teen mothers', fathers' and spouses' Georgia income and consumption taxes	(\$76) mother and spouse \$136 father
TANF, housing subsidies and food stamps, TOTAL STATEWIDE, State and Federal programs	(\$12 million) <i>alternative estimate: (\$38 per childbirth)</i>
Incarceration TOTAL STATEWIDE, State and Federal programs	\$29 million
Foster Care	\$470
Impacts on children of teen mothers	\$674
Number of teen births assuming all would have children by age 20-21	9,800
Total Impact of delayed childbirth	\$38 million additional cost <i>alternative estimate: \$60 million</i>

Notes: Negative impacts of delaying are noted in parenthesis. For example, by delaying, the teen mother will reduce her annual income and increase her out of pocket expenses.

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