

ESTIMATING THE STATE AND NATIONAL SAVINGS ASSOCIATED WITH DECLINES IN TEEN CHILDBEARING

Overview

Unplanned pregnancy has fallen dramatically among teens since peaking in the late 1980s¹, and declines in the rate of teen childbearing have followed suit. In fact, the teen birth rate has fallen by 64% between 1991 and 2015 (the most recent year of data available at the time our analysis began).² Providing an environment where young people have the power to decide if, when, and under what circumstances to get pregnant and have a child not only benefits the young people themselves, but also leads to significant savings in publicly funded programs.

New estimates from Power to Decide suggest that nationally the public savings associated with this decline in teen childbearing totaled \$4.4 billion in 2015 alone, when factoring in the expense for health care and economic supports that would have been incurred had the rate not fallen. At the state level, these savings range from \$3 million to \$596 million annually.

Without question, we as a society must support healthy pregnancy, healthy childbirth and healthy outcomes for children. But it's also essential—and more effective for women, families, and society—to provide information and contraceptive options that empower women to decide if and when to get pregnant in the first place. In fact, we further estimate that the nation would save an additional \$1.9 billion each year if **all** teens were able to avoid unplanned pregnancy and the births that follow.

We estimated savings for every state and the District of Columbia, reflecting each jurisdiction's own programs and trends in teen childbearing. Results for each state and for the United States are detailed in a series of fact sheets available at Powertodecide.org/savings. Also featured is a calculator that enables users to estimate savings for their county or locality of interest. In this research brief we provide additional details of how we developed these estimates.

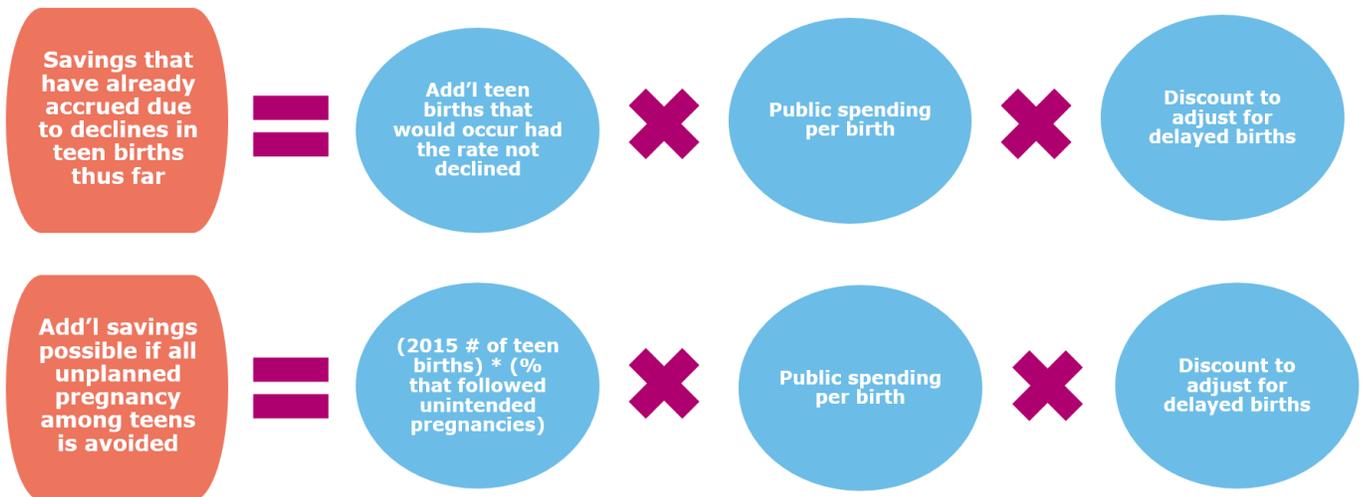
Methodology

State Specific Estimates. Our methodology followed a bottom-up approach, whereby we produced estimates for each state and then aggregated across states to produce a national total. The results reflect the following state-specific elements:

- Number of teen births, overall
- Number of teen births, publicly funded
- Teen share of WIC prenatal participants
- Average Medicaid payments for teen maternity and infant care
- Inflation for medical care based on change in hospital costs among Medicaid maternity patients
- WIC participants by eligibility category and overall expenditures
- TANF expenditures and share of caseload that are teen parents with infants under 12 months of age
- SNAP expenditures and share that are teen parents with infants under 12 months of age

Measures of Savings. For this analysis, we provide two savings estimates. The first reflects annual savings currently realized as the result of declines in the teen birth rate that have already occurred. The second reflects the additional savings that would be realized if all teens were able to avoid unplanned pregnancy and the births that follow. These two measures are highlighted in Figure 1.

Figure 1. Definition of Savings



The first measure of savings is based on the additional number of teen births that would have occurred in 2015 had the rate not fallen, which in turn is calculated as the difference between the actual number of births among women age 14 to 19 in 2015 and the projected number based on the 1991 birth rate among this same age group times the population for this same age group in 2015. Nationally, this totaled approximately 428,000 averted teen births in 2015. These estimates are based on the 1991 and 2015 published statistics from the vital records data published by the National Center for Health Statistics within the Centers for Disease Control.³ Vital records data provide a nearly complete census of all births across the United States, and include detailed information as recorded on the birth certificate regarding characteristics of mother, child, and circumstances of delivery.

This number of averted teen births was then multiplied by the average public spending per birth for a narrow set of publicly funded services that are tied directly to the birth of a child and for which sufficient data were available to produce reliable estimates across all 50 states and the District of Columbia. These spending categories are described in further detail later in this brief.

Finally, the estimated savings are further multiplied by a discount factor that takes into account the fact that some averted teen births may simply be delayed to some point in the near future, for example in a woman's early twenties, at which time she may still rely on publicly funded services. This adjustment factor, equal to 0.62, takes into account the percent of unintended births among teens that are reported by the mother as "unwanted" versus "mistimed" as well as the falling likelihood of participating in Medicaid as a mother-to-be ages, and was informed by other earlier studies applying a similar approach.⁴

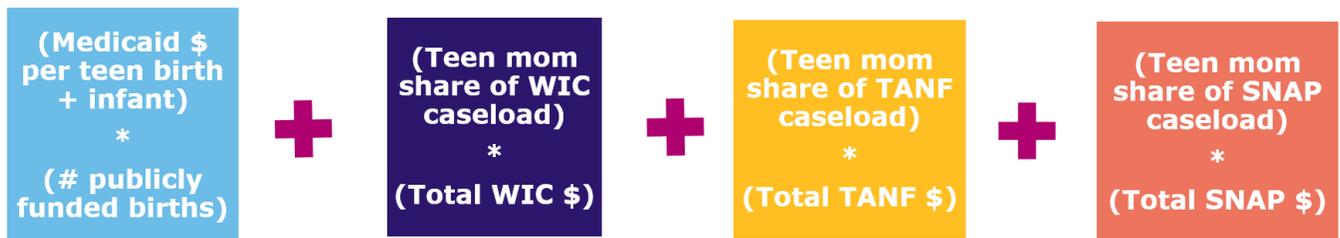
Though we are basing this measure of savings on the total decline in teen births, we interpret it to be reflective of the savings that have resulted from the prevention of teen births following unplanned pregnancies. This is based on our assumption that averted teen pregnancies and births were among women not seeking pregnancy.

The second measure of savings—that is, the additional savings that would result if all teens were able to avoid unplanned pregnancy and the births that follow—is similar to the first except that it is based on the number of teen births in 2015 that followed an unplanned pregnancy. This is estimated as the number of teen births as reported

in 2015 vital records data multiplied by national estimates of the percent of teen births that follow unplanned pregnancy (approximately three quarters) as reported in published tabulations of the National Survey of Family Growth.⁵ Similar to the first estimate of savings, this is then multiplied by the average public spending per birth and by an additional adjustment factor that takes into account that fact that some births are delayed rather than prevented.

Estimating Public Spending Per Teen Birth. As noted above, our estimates reflect public spending in a narrowly defined set of categories. We included only those programs that could be directly tied to pregnancy, childbirth and the first year of infancy, and for which we had sufficient data to produce reliable estimates at the national and state levels. As highlighted in Figure 2, this includes medical spending from pregnancy through postpartum care for mothers and one year of care for infants, as well as receipt of benefits through the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), Temporary Assistance for Needy Families (TANF), and the Supplemental Nutrition Assistance Program (SNAP). Nationally, this averaged roughly \$16,000 per teen birth, and ranged from a low of \$10,000 to a high of \$33,000 across the states. Our methodology for estimating public spending per birth varies for each of the programs listed below, reflecting differing data availability.

Figure 2. Defining Public Spending Per Birth



Medical Care. To estimate the public spending associated with medical care for teen mothers and their infants, we began by estimating average Medicaid payments associated with prenatal care, labor and delivery and postpartum care among teen mothers as well as average payments for 12 months of infant care. Estimates for teen mothers included all fee-for-service Medicaid payments associated with maternity related diagnosis or procedure codes⁶ as well as all Medicaid managed care payments dated during the prenatal through post-partum period. Estimates for infant care included all payments from birth through 12 months regardless of payment type, diagnosis or procedure. We note that, due to data limitations, payments for infant care were averaged among all infants on Medicaid rather than just those born to teen mothers, though we anticipate this had little effect on our overall estimates. These estimates were derived using the Medicaid Analytic eXtract (MAX) files for 2010, the most recent year of data available at the time we began our analysis.⁷ These restricted-use data are available through special application and are in turn derived from data submitted through the Medicaid and CHIP Statistical Information System (MSIS). These data contain detailed information regarding services rendered, costs and payments for each claim for each Medicaid recipient.⁸

Because these data reflected payments in 2010, we then inflated these estimates using results from HCUPnet, an online tool provided by the Healthcare Cost and Utilization Project, offering state-level estimates of facility-related medical costs for inpatient hospital stays, by patient characteristics, for particular diagnosis or procedure codes.⁹ For 34 states, we used HCUPnet to calculate an inflation factor equal to the percentage change in costs among Medicaid patients whose hospital stay was related to a live birth, between 2010 and 2014 (the most recent year for which HCUPnet was available). Among the remaining 17 jurisdictions, for which HCUPnet results were not available, we assumed an inflation factor equal to the average among the other states.

The average Medicaid payments for teen mothers and their infants were then multiplied by the number of teen births that were publicly funded in 2015. The number of teen births that were publicly funded was tabulated using the 2015 vital records data which, for the first time, contained information on payment source for the birth for all states.¹⁰ Our specific source of vital statistics records was the 2015 All County Natality file, a restricted use data file available through special application that includes state and county identifiers in addition to the detailed information on maternal and infant characteristics mentioned above.¹¹

WIC. The 2015 All County Natality file also contains detail on whether the mother received WIC benefits during her pregnancy. Using this information, we tabulated the percent of pregnant WIC recipients who were teens. We then apply that percentage to WIC caseload numbers within each participation category—that is, pregnant women, breastfeeding mothers, and infants on WIC during their first 12 months (the one category we excluded was children ages one through five, given that we only count expenditures through the first year of infancy). These caseload numbers are taken from administrative tables containing detailed caseload information for each state, as published by the U.S. Department of Agriculture, Food and Nutrition Service for 2014, the most recent available.¹² This, in essence, assumes that share of WIC cases attributable to teen mothers after delivery is the same as during pregnancy. However, we know from data released by the Pregnancy Risk Assessment Monitoring System that teen mothers are somewhat less likely to breastfeed; therefore, we further adjust downward the share of breastfeeding women on WIC who were teen mothers. The resulting number of cases across these three categories is then summed and divided by the total number of WIC cases to yield an estimate of the percent of WIC cases attributed to teen mothers and their infants. Finally, we multiply this percent times total WIC spending for 2015 to yield an estimate of WIC spending attributable to teen mothers and their infants. WIC spending figures are also taken from state-level administrative data tables provided online by the Food and Nutrition Service.¹³

Unlike our estimate of Medicaid spending, we did not have detailed person-level data for WIC benefits and thus our WIC estimates are less precise. Nonetheless, they reflect real-world WIC spending for each state and a reasonable estimate of the share of that spending associated with teen childbearing. Nationally, we estimate the share of WIC benefits paid out to teen mothers and their infants is relatively low, at approximately 10%.

TANF. Our approach to estimating TANF spending associated with teen mothers and their infants was similar—that is, we first estimated the share of the TANF caseload attributable to teen mothers and their infants and then multiplied that by total TANF spending. Similar to estimates for WIC, we relied heavily on state-level administrative data tables. Because the workforce participation requirements associated with TANF are different for teen mothers than mothers overall,¹⁴ cases headed by teen parents are identified separately in caseload statistics for basic assistance.¹⁵ Published administrative data tables summarizing caseload characteristics indicate that the share of basic assistance cases headed by teen parents is extremely low, equal to roughly 2.5% nationally. For the purpose of our analyses, we further refined this estimate to include only those cases headed by a teen parent whose youngest child was age one year or less. We also included cases not headed by a teen parent, but that included an infant whose relationship to the head-of-household was that of grandchild and whose mother was a teen.¹⁶ Under this definition, for which we relied on unpublished tabulations of TANF caseload data provided by the Administration for Children and Families, the share of basic assistance cases associated with teen parents was approximately 2% nationally.

Similar to our approach for spending associated with WIC, we then multiplied this caseload share by the total amount of TANF spending on basic assistance, including both federal spending and state maintenance of effort spending. TANF spending on basic assistance by state was based on published summaries of TANF financial data for 2015.¹⁷

SNAP. The fourth category of publicly funded services we included in our analysis was SNAP benefits. Similar to our estimates for savings associated with TANF and WIC benefits, savings associated with the SNAP program are estimated based on the total spending within the SNAP program, multiplied by the share of the SNAP caseload associated with teen parents and their infants. We were not aware of any state-level, publicly available administrative data source that would inform our estimates of the share of SNAP recipients who were teen parents. Therefore, we used the American Community Survey to estimate this parameter at the state level. Specifically, we used the 2011-2015 five-year estimates to increase the sample of teen mothers in each state underlying our estimates.¹⁸ Using these data, we estimated the share of SNAP recipients who were women less than 20 years of age who had a child less than one year of age. Given that our data cover the period of 2011-2015, during which time the rate of teen childbearing was declining significantly, we applied a further downward adjustment equal to the share of all mothers who were teens in 2015 compared to the share during the 2011 to 2015 period. Using this methodology, we found that less than 1 percent of all SNAP recipients across the states are either teen mothers or their infants. We further assessed the reasonability of this estimate using the Survey of Income and Program Participation, 2014 Panel, Wave 1.¹⁹ Although only able to support estimates at the national level, these data confirmed that the share of SNAP recipients who are either teen moms or their infants is extremely low, at less than 1 percent.

We then multiplied the estimated share of the SNAP caseload attributable to teen mothers and their infants times total SNAP spending by state. SNAP spending by state was based on administrative data tables published by the Food and Nutrition Service.²⁰

Results in Brief. Based on this approach, we estimate that there were 428,000 fewer teen births across the nation in 2015 as compared to the number that would have occurred had the teen birth rate not fallen. This translates into \$4.4 billion in savings across the nation for 2015 alone. We further estimate that an additional \$1.9 billion could be saved if all unplanned pregnancy among teens and the births that follow could be prevented.

Not surprisingly, these results varied greatly across the states. Naturally, savings were largest in states with the largest populations. Savings also varied based on the state’s teen birth rate, the extent to which the rate has fallen, the participation of teen mothers and their infants in various publicly funded programs, and the cost of participation in those programs. Figure 3 shows the variation in some of these underlying factors.

Figure 3. 2015 Variation in State Savings Parameters

	Minimum	Maximum	United States
Cost Per Teen Birth	\$10,000 New Hampshire	\$33,000 Alaska	\$16,000
% Decline in Teen Birth Rate	37% North Dakota	75% Massachusetts	64%
2015 Savings	\$2.5 Million North Dakota	\$596 Million California	\$4.4 Billion

The results for each state as well as for the United States overall are summarized in a variety of informational resources on the PowerToDecide.org website. This includes a fact sheet and press release for each state and the nation overall, as well as FAQs and a link to a webinar presentation of the results.

In addition, the website features an online tool that enables users to estimate savings associated with sub-state areas—specifically, the savings that could be realized if that area were able to prevent all unplanned pregnancy among teens and the births that follow. For this estimate, users are prompted for their state of interest. After selecting a state, they may then enter a county of interest, or enter a value that reflects the number of teen births in some other locality of interest (e.g. a city). The calculator will then return an estimate of savings based on the average savings per teen birth in that state and either the number of teen births in the selected county or the number entered by the user. If the user enters a county for which the number of teen births is not publicly available, the user will then be prompted to enter a number of teen births. This calculator returns results for the amount of additional savings that would accrue if all unplanned pregnancy among teens and the births that follow were prevented.

Conclusion. The results we present here are conservative on many levels. They account for the fact that some pregnancies that are prevented in one year may simply be postponed to a future year, and they account for the fact that not all teens mothers participate in publicly funded programs. In addition, we count spending in only a narrow range of publicly funded programs—specifically those directly tied to benefits for new mothers from pregnancy through the first year of infancy and for which reliable estimates could be constructed. Undoubtedly, savings estimates factoring in participation in a broader array of publicly funded service or receipt of services over a longer period would be much higher.

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Endnotes

- 1 Finer, L.B., Zolna, M.R. Declines in unintended pregnancy in the United States, 2008–2011. *N Engl J Med.* 2016;374:843–852.
- 2 Martin JA, Hamilton BE, Osterman MJK, et al. Births: Final data for 2015. National vital statistics report; vol 66, no 1. Hyattsville, MD:National Center for Health Statistics. 2017.
- 3 Hamilton BE, Rossen L, Lu L, Chong Y. U.S. and state trends on teen births, 1990–2015. National Center for Health Statistics. 2017. Designed by L Lu, BE Hamilton, L Rossen, A Lipphardt, JM Keralis, and Y Chong: CDC/National Center for Health Statistics.
- 4 Amaral, G., Foster, D. G., Biggs, M. A., Jasik, C. B., Judd, S., & Brindis, C. D. (2007). Public Savings from the Prevention of Unintended Pregnancy: A Cost Analysis of Family Planning Services in California. *Health Services Research*, 42(5), 1960–1980. <http://doi.org/10.1111/j.1475-6773.2007.00702.x>. Frost, J. J., Sonfield, A., Zolna, M. R., & Finer, L. B. (2014). Return on Investment: A Fuller Assessment of the Benefits and Cost Savings of the US Publicly Funded Family Planning Program. *The Milbank Quarterly*, 92(4), 667–720. <http://doi.org/10.1111/1468-0009.12080>
- 5 Mosher WD, Jones J, Abma JC. Intended and unintended births in the United States: 1982–2010. National health statistics reports; no 55. Hyattsville, MD: National Center for Health Statistics. 2012.
- 6 The medical codes used to identify related care are similar to those described in Truven Health Analytics. The cost of having a baby in the United States [Internet]. Ann Arbor (MI) : Truven Health Analytics ; 2013 Jan [cited 2017 Jul 25]. Available from: <http://transform.childbirthconnection.org/wp-content/uploads/2013/01/Cost-of-Having-a-Baby1.pdf>
- 7 There are three exceptions. The Medicaid Analytic eXtract (MAX) files we received for 2010 failed to represent the majority of births in Hawaii, Kansas, and Maine, and it was not feasible to generate an estimate of average spending per birth. Therefore, in these states, we relied on estimates of the average spending of maternal care and one year of infant care for births following unplanned pregnancy, as published by the Guttmacher Institute. See Sonfield A and Kost K, Public Costs from Unintended Pregnancies and the Role of Public Insurance Programs in Paying for Pregnancy-Related Care: National and State Estimates for 2010, New York: Guttmacher Institute, 2015, <<http://www.guttmacher.org/pubs/public-costs-of-UP-2010.pdf>>.
- 8 For a description of these data, see <https://www.cms.gov/research-statistics-data-and-systems/computer-data-and-systems/medicaidatasourcesgeninfo/maxgeneralinformation.html>
- 9 The Health Care Cost and Utilization Project is sponsored by the Agency for Healthcare Research and Quality. To learn more or to access HCUPnet or to learn more about it, please see <https://hcupnet.ahrq.gov/#setup>
- 10 For more information, see <https://blogs.cdc.gov/inside-nchs/2014/07/30/the-birth-certificate-finally-goes-national/>
- 11 National Center for Health Statistics. 2015. All County Natality File (Restricted Use). https://www.cdc.gov/nchs/nvss/dvs_data_release.htm 2015.
- 12 Thorn, B., Tadler, C., Huret, N., Trippe, C., Ayo, E., Mendelson, M., Patlan, K. L., Schwartz, G., & Tran, V. (2015). WIC Participant and Program Characteristics 2014. Prepared by Insight Policy Research under Contract No. AG-3198-C-11-0010. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service. <https://www.fns.usda.gov/wic/wic-participant-and-program-characteristics-2014>

- 13 U.S. Department of Agriculture, Food and Nutrition Service. 2017. WIC Program: Food Cost. Retrieved from [https://fns-prod.azureedge.net/sites/default/files/pd/24wicfood\\$.pdf](https://fns-prod.azureedge.net/sites/default/files/pd/24wicfood$.pdf) . U.S. Department of Agriculture, Food and Nutrition Service. 2017. WIC Program: Nutrition Service and Administrative Costs. Retrieved from [https://fns-prod.azureedge.net/sites/default/files/pd/23WICAdm\\$.pdf](https://fns-prod.azureedge.net/sites/default/files/pd/23WICAdm$.pdf) .
- 14 U.S. Department of Health and Human Services. 2016. Temporary Assistance for Needy Families (TANF) Program: Eleventh Annual Report to Congress. Washington, DC: U.S. Department of Health and Human Services, Administration for Children and Families, Office of Family Assistance. https://www.acf.hhs.gov/sites/default/files/ofa/eleventh_report_to_congress.pdf
- 15 Department of Health and Human Services, Office of Family Assistance. 2014. Characteristics and financial circumstances of TANF recipients, fiscal year 2015 . Author. Available at: <http://www.acf.hhs.gov/programs/ofa/resource/characteristics-and-financialcircumstances-appendix-fy2012>. Tables 18 and 31
- 16 U.S. Department of Health and Human Services, Office of Children and Families, Office of Policy, Research and Evaluation. Unpublished tabulations of TANF caseload data. 2017.
- 17 U.S. Department of Health and Human Service, Administration for Children and Families (2017). TANF Financial Data - FY 2015 [administrative data tables]. Retrieved from <https://www.acf.hhs.gov/ofa/resource/tanf-financial-data-fy-2015>.
- 18 U.S. Census Bureau; 2011-2015 ACS 5-year Public Use Micro Data Samples ; generated using FERRET; <<http://ferret.bls.census.gov/cgi-bin/ferret>>; (2017)
- 19 U.S. Census Bureau; Survey of Income and Program Participation, 2014 Panel, Wave 1; retrieved from <https://www.census.gov/programs-surveys/sipp/data/2014-panel/wave-1.html> 2017.
- 20 U.S. Department of Agriculture, Food and Nutrition Service. 2017. Supplemental Nutrition Assistance Program: Benefits, 2015. Retrieved from <https://www.fns.usda.gov/sites/default/files/pd/SNAPZip69throughCurrent.zip>