The Public Costs of Births Resulting from Unintended Pregnancies: National and State-Level Estimates

By Adam Sonfield, Kathryn Kost, Rachel Benson Gold and Lawrence B. Finer

Adam Sonfield is senior public policy associate, and Rachel Benson Gold is director of policy analysis, both at the Guttmacher Institute, Washington, DC. Kathryn Kost is senior research associate, and Lawrence B. Finer is director of domestic research, both at the Guttmacher Institute, New York.

CONTEXT: *Births resulting from unintended pregnancies are associated with substantial maternity and infant care costs to the federal and state governments; these costs have never been estimated at the national and state levels.*

METHODS: *The proportions of births paid for by public insurance programs in 2006 were estimated, by pregnancy intention status, using data from the Pregnancy Risk Assessment Monitoring System and similar state surveys, or were predicted by multivariate linear regression. Public costs were calculated using state-level estimates of the number of births, by intention status, and of the cost of a publicly funded birth.*

RESULTS: *In 2006, 64% of births resulting from unintended pregnancies were publicly funded, compared with 48% of all births and 35% of births resulting from intended pregnancies. The proportion of births resulting from unintended pregnancies that were publicly funded varied by state, from 42% to 81%. Of the 2.0 million publicly funded births, 51% resulted from unintended pregnancies, accounting for $11.1 billion in costs—half of the total public expenditures on births. In seven states, the costs for births from unintended pregnancies exceeded a half billion dollars.*

CONCLUSIONS: *Public insurance programs are central in assisting American families in affording pregnancy and childbirth; however, they pay for a disproportionately high number of births resulting from unintended pregnancy. The resulting budgetary impact warrants increased public efforts to reduce unintended pregnancy.*

Perspectives on Sexual and Reproductive Health, 2011, 43(2):94–102, doi: 10.1363/4309411

Unintended pregnancy has long been acknowledged as an important health, social and economic problem in the United States, one that creates hardships for women and threatens the health and well-being of their infants.[1–6] Those consequences, in turn, have a broad societal impact, such as on the national economy and the extent of government expenditures. Rates of unintended pregnancy are far higher among women living in poverty and low-income women (those with an income at 100–199% of the federal poverty level) than among higher income women (those with an income at or above 200% of poverty)—a disparity that grew substantially between 1994 and 2001.[7] Most of these poor and low-income women are eligible for public coverage of pregnancy-related care through Medicaid and the Children's Health Insurance Program (CHIP).

Care related to unintended pregnancy presents substantial costs to the federal and state governments in the form of reimbursements through these programs, although little information has existed to gauge the overall magnitude of these costs. One obstacle to an in-depth look at the public costs of unintended pregnancy is that states vary widely in every component of the necessary calculations: from rates of unintended pregnancy and resulting births, to the proportion of those births that are publicly funded, to the cost to public programs of covering such births. State-level estimates require state-level data on these indicators, which have never before been available for all 50 states. This analysis is the first to use state-level data to estimate public expenditure on births resulting from unintended pregnancy, as well as the contribution of public insurance programs in providing essential care to pregnant women and infants.

METHODS

Our analysis focuses on the cost of publicly funded births resulting from unintended pregnancies: those births paid for by Medicaid or CHIP, including Medicaid and CHIP managed care plans, and Medicaid and CHIP programs operating under Section 1115 waivers (which permit states to receive federal funding for programs that do not meet federal Medicaid and CHIP requirements). We include costs for prenatal care, labor and delivery, postpartum care and one year of care for the infant. This is the same convention used in a number of studies of cost savings associated with publicly funded contraceptive services and supplies.[8–12] It is also the model that the federal government has used, and has required individual states to use, to evaluate the impact of demonstration programs that expand Medicaid eligibility specifically for family planning services.[13,14]

As in prior studies and evaluations of public costs and savings, our analysis includes all unintended births and makes no distinction between births resulting from mistimed pregnancies (i.e., pregnancies among women who

had wanted to get pregnant, but at a later time) and those resulting from unwanted pregnancies (i.e., pregnancies among women who had not wanted to become pregnant at any time). Other studies, including one by Monea and Thomas,[15] have argued for discounting births resulting from mistimed pregnancies in the calculations of public costs or potential public savings, because these births might "replace" later, planned births that would have been paid for with government funds. For this analysis, such an approach would have underestimated public costs and potential public savings. In some cases, a woman who has a mistimed birth achieves her preferred family size, only earlier; in other cases, if a woman has additional unintended pregnancies, a mistimed birth is an "extra" birth beyond what she preferred. Indeed, 44% of women aged 15–44 who have had an unintended pregnancy have had two or more unintended pregnancies, and 36% of women who have had a birth resulting from an unintended pregnancy have had two or more such births.[16]

Moreover, even if a mistimed birth replaces a later, planned birth, preventing it may do more than merely delay the public cost of that birth. For example, a woman who today is eligible for pregnancy-related care under Medicaid may have a higher income later in life that precludes her from eligibility. (Although the opposite is also possible, it is less likely, because income typically increases with age.[17]) Furthermore, for teenagers and young adults, a birth following an unintended pregnancy may curtail educational achievement and lifetime earnings potential,[5,18,19] and the large majority of unintended pregnancies among these women are mistimed rather than unwanted.[20] Accounting for these possibilities would be exceedingly difficult, if not impossible, with available U.S. data. Finally, immediate costs (e.g., one-year), rather than long-term costs, are typically paramount for policymakers and advocates.

To estimate the costs of publicly funded births, we needed to obtain three underlying state-level estimates: the number of births resulting from unintended pregnancies in a given year, the proportion of such births paid for by public programs and the cost to programs for each birth.

Number of Births

In a related analysis, Finer and Kost estimated 2006 unintended pregnancy rates for all 50 states and the District of Columbia.[21] They obtained each state's total number of births for 2006 from the U.S. vital statistics system.[22] The proportion of those births that resulted from unintended pregnancies came, for most (39) states, from the Pregnancy Risk Assessment Monitoring System (PRAMS), a population-based surveillance project of the Centers for Disease Control and Prevention (CDC).[23] For an additional five states, data came from similar state-conducted surveys.[21] And for the remaining six states and the District of Columbia, multivariate linear regression was used to predict the unintended pregnancy rate.[21] We obtained the estimated number of unintended births for each state from unpublished tabulations of data by Finer and Kost.[24]

Proportion of Births Paid for by Public Programs

PRAMS was the primary source for the proportion of births resulting from unintended pregnancies paid for by Medicaid and CHIP. The core PRAMS questionnaire for 2006 asked how the respondent's delivery was paid for. Possible responses included Medicaid, personal income, private health insurance and up to two additional categories defined by individual states; respondents could also answer "other" and provide additional information.*

For some states, information about deliveries paid for by CHIP, Medicaid managed care plans or waiver programs were captured by the additional, state-defined categories and by the write-in responses (see appendix, page 100). For 28 states, estimates of the proportion of births resulting from unintended pregnancies paid for by Medicaid or CHIP were drawn from individual-level PRAMS data, obtained from the CDC, for either 2006 or the closest available year. For these states, complete data were available for the related programs, including any state-specific categories or eligible responses written in by at least 10 respondents. For eight other states, we requested tabulations that included these additional responses directly from state health departments. For seven additional states, data were limited to the Medicaid category included on the PRAMS questionnaire or that of a similar survey, and were obtained in aggregate from CDC's Web site or from state health department tabulations or publications.

For the remaining seven states and the District of Columbia, the proportion of births resulting from unintended pregnancies paid for by Medicaid or CHIP was predicted using a multivariate linear regression model similar to that used by Finer and Kost to estimate state unintended pregnancy rates.[21] In the model, each of the 43 states with data represented an observation. The dependent variable was the proportion of births following unintended pregnancies for which the delivery was covered by Medicaid or CHIP. Independent variables, measured at the state level, were demographic characteristics of women aged 15–44,† overall birthrate, birthrate associated with unintended pregnancies and income-eligibility threshold for pregnancy-related care under Medicaid and CHIP.[22,25–28] The R-squared of the final model indicated that 77% of the

*Additional questions asked about payment for prenatal care or coverage at any point during pregnancy. Because the majority of maternity costs are related to delivery, and in some cases a bundled payment at delivery is the only payment made to a physician for the entire pregnancy, we deemed the delivery payment question most appropriate to gauge source of payment for pregnancy-related costs overall.

†The model included age (15–19, 20–24 and 25–34); race or ethnicity (non-Hispanic white, non-Hispanic black and Hispanic); poverty status (proportion below the poverty line); and insurance (Medicaid or CHIP and uninsured). Excluded categories (35 or older, non-Hispanic other, proportion at or above the poverty line, proportion with private insurance) were omitted to prevent overspecification of the model.

variation in the dependent variable could be accounted for by the independent variables. The same procedures were used to obtain data on the proportion of births resulting from intended pregnancies and of all births that were paid for by Medicaid or CHIP; the R-squared coefficients for the two models indicated that 80% and 85% of the variation, respectively, could be accounted for by the independent variables. (See appendix for additional details.)

Cost per Publicly Funded Birth

State-level data on the average cost of a Medicaid-funded birth were drawn from earlier studies.[9,11] (Data on the cost of a CHIP-funded birth were not available, but are assumed for the current analysis to be the same as for a Medicaid-funded birth.) Briefly, data on these costs are not consistently collected for all states, but were available in applications or evaluations completed by 24 states that

TABLE 1. Number of births, and percentage and number that were publicly funded, by pregnancy intention status, 2006

State	No. of births			% that were publicly funded			No. that were publicly funded		
	All	Unintended	Intended	All	Unintended	Intended	All	Unintended	Intended
U.S. total									
Adjusted	4,265,600	1,620,000	2,645,600	47.6	64.0	35.4	2,031,400	1,036,800	994,600
Unadjusted	4,265,600	1,823,900	2,441,600	47.6	64.0	35.4	2,031,400	1,167,400	864,000
State									
Alabama	63,200	30,500	32,700	49.8	66.2	33.7	31,500	20,200	11,300
Alaska	11,000	4,800	6,200	49.3	63.9	37.2	5,400	3,100	2,400
Arizona*,†	102,400	43,800	58,600	52.1	66.7	42.0	53,300	29,200	24,100
Arkansas	41,000	20,800	20,200	59.9	73.6	46.0	24,500	15,300	9,200
California	562,400	243,000	319,500	49.8	62.0	40.6	280,300	150,600	129,700
Colorado	70,800	28,200	42,600	41.6	59.5	29.4	29,400	16,700	12,700
Connecticut†	41,800	13,500	28,300	28.2	47.3	18.1	11,800	6,400	5,400
Delaware	12,000	5,600	6,300	50.3	67.5	35.1	6,000	3,800	2,200
District of Columbia*,†	8,500	2,600	6,000	63.4	75.2	53.5	5,400	1,900	3,500
Florida	236,800	109,600	127,200	49.6	62.9	38.2	117,500	69,000	48,500
Georgia	148,600	74,900	73,700	56.4	70.7	40.9	83,800	53,000	30,800
Hawaii	19,000	8,700	10,300	31.8	42.2	22.9	6,000	3,700	2,400
Idaho	24,200	8,300	15,900	37.7	55.5	28.0	9,100	4,600	4,500
Illinois	180,600	75,300	105,300	49.8	68.2	36.3	89,900	51,400	38,600
Indiana*,†	88,600	37,000	51,600	43.9	61.3	31.2	38,900	22,700	16,200
Iowa‡	40,600	14,600	26,000	37.2	56.8	20.4	15,100	8,300	6,800
Kansas*,†	41,000	17,200	23,800	36.2	54.6	22.3	14,800	9,400	5,500
Kentucky	58,300	23,700	34,500	54.0	78.4	37.2	31,500	18,600	12,800
Louisiana	63,400	34,700	28,700	67.1	80.5	52.0	42,500	27,900	14,600
Maine	14,200	5,400	8,700	44.8	65.5	31.9	6,300	3,600	2,800
Maryland	77,500	31,200	46,300	33.5	46.5	25.2	26,000	14,500	11,400
Massachusetts	77,700	24,000	53,700	36.1	59.1	25.9	28,000	14,200	13,900
Michigan	127,500	52,100	75,300	43.5	61.5	31.0	55,500	32,000	23,400
Minnesota	73,500	26,500	47,100	37.9	58.9	25.5	27,900	15,600	12,300
Mississippi	46,100	27,400	18,700	69.2	81.0	52.6	31,900	22,200	9,700
Missouri	81,400	37,700	43,700	50.0	65.1	36.7	40,700	24,500	16,200
Montana	12,500	5,500	7,000	36.0	53.0	21.7	4,500	2,900	1,600
Nebraska	26,700	10,600	16,100	43.7	64.5	29.9	11,700	6,900	4,800
Nevada*,†	40,000	15,000	25,100	44.0	60.3	33.1	17,600	9,000	8,600
New Hampshire*,†	14,400	5,000	9,300	25.8	45.5	14.8	3,700	2,300	1,400
New Jersey	115,000	40,500	74,500	32.1	49.7	22.6	36,900	20,100	16,800
New Mexico	29,900	13,700	16,200	53.8	65.1	44.3	16,100	8,900	7,200
New York	250,100	86,600	163,500	50.1	64.7	42.0	125,300	56,000	69,300
North Carolina	127,900	60,900	67,000	53.1	74.1	39.7	67,900	45,100	22,800
North Dakota	8,600	3,100	5,500	26.9	46.0	16.2	2,300	1,400	900
Ohio	150,600	70,300	80,300	42.0	61.6	25.5	63,200	43,300	20,000
Oklahoma	54,000	26,100	27,900	55.3	70.2	41.2	29,900	18,400	11,500
Oregon	48,700	18,500	30,200	44.2	61.2	33.1	21,500	11,300	10,200
Pennsylvania	149,100	66,300	82,700	33.8	50.7	20.3	50,400	33,600	16,800
Rhode Island	12,400	4,600	7,800	42.9	59.1	33.5	5,300	2,700	2,600
South Carolina	62,200	31,200	31,000	60.0	77.5	42.4	37,300	24,200	13,100
South Dakota*,†	11,900	5,300	6,700	35.6	53.5	20.9	4,200	2,800	1,400
Tennessee	84,400	43,500	40,900	53.3	67.9	37.7	45,000	29,500	15,500
Texas	399,600	179,500	220,100	59.9	73.8	48.5	239,400	132,500	106,900
Utah	53,500	18,300	35,200	33.4	49.5	25.0	17,900	9,100	8,800
Vermont	6,500	2,400	4,100	46.5	66.8	34.8	3,000	1,600	1,400
Virginia	107,800	43,700	64,200	29.5	44.6	19.2	31,800	19,500	12,300
Washington	86,900	32,000	54,900	47.2	65.1	36.6	41,000	20,800	20,200
West Virginia	20,900	9,000	12,000	59.5	72.1	49.6	12,500	6,500	6,000
Wisconsin	72,300	27,700	44,600	36.1	51.8	26.3	26,100	14,300	11,800
Wyoming	7,700	3,400	4,300	47.8	59.7	38.1	3,700	2,000	1,600

*Births from unintended pregnancies estimated by regression analyses (see appendix, page 100). †Proportion of all, unintended and intended publicly funded births estimated by regression analyses (see appendix). ‡Proportion of all publicly funded births estimated by regression analyses (see appendix). *Note:* Unadjusted U.S. total is the sum of individual state-level data; adjusted U.S. total is the product of the unadjusted sum and the ratio of the estimated number of births resulting from unintended pregnancies in 2006 (source: reference 31) to the unadjusted total.

have sought a federal waiver to expand Medicaid eligibility specifically for family planning services. For the remaining states, the authors obtained estimates by averaging the available data and adjusting for states' Medicaid payment rates.[9,11]

For the current analysis, we adjusted the published data for inflation to 2006 dollars, using the medical care component of the Consumer Price Index.[29] We then separated the average cost of a Medicaid-funded birth for each state into state and federal costs, on the basis of the state's federal medical assistance percentage for FY 2006.[30] We multiplied the number of births resulting from unintended pregnancies in each state by the proportion of such births paid for by public programs to arrive at each state's number of publicly funded births from unintended pregnancies. That figure was then multiplied by the average cost of a Medicaid-funded birth in the state to arrive at a total cost for the state. A similar process was used for the cost of all publicly funded births in each state (including those from intended pregnancies, which we subsequently calculated by subtraction).

National Totals

According to the National Survey of Family Growth (NSFG), an estimated 1.6 million births resulted from unintended pregnancies in the United States in 2006;[31] by comparison, the estimates we use in this analysis[24] sum to 1.8 million births from unintended pregnancies that year. To account for this difference, we present both unadjusted U.S. totals (summed from the state-level data) and adjusted U.S. totals (calculated as 89%—1.6 million divided by 1.8 million—of the unadjusted totals). The estimates may differ in part because of the timing of the survey interview in relation to the birth (the gap between a given delivery and the survey date could be up to five years for the NSFG, as compared with six months for PRAMS) or because of differences in the questions measuring intention status. Nevertheless, because the NSFG is designed to provide national estimates and because its intention status measure may be superior to the PRAMS measure, we expect the adjusted national totals to be more accurate. Coincidentally, they are also more conservative. We refer in this article exclusively to adjusted totals.

RESULTS

Publicly Funded Births

Nationally, 64% of the 1.6 million births resulting from unintended pregnancies in 2006 were paid for by public insurance programs (Table 1); in comparison, 48% of all births and 35% of births resulting from intended pregnancies were funded by these programs. We estimate that 1.0 million—or 51%—of the 2.0 million total publicly funded births in 2006 resulted from unintended pregnancies. By comparison, 38% of all births nationwide followed unintended pregnancies (1.6 million out of 4.3 million).

States vary considerably in their eligibility levels for pregnancy-related care, as well as in the demographic composition of their populations. Thus, they also vary considerably in the proportion of births that are publicly funded, regardless of pregnancy intention status. In 11 jurisdictions, at least 70% of births resulting from unintended pregnancies were paid for public programs; Louisiana and Mississippi had the highest proportions (81% each). All but one of those 11 jurisdictions are in the

TABLE 2. Cost per publicly funded birth, and total public costs for births resulting from unintended pregnancies

State	Cost per publicly funded birth	Public costs for births resulting from unintended pregnancies			
		All (in millions)	Federal (in millions)	State (in millions)	Per woman 15–44
U.S. total					
Adjusted	$11,647	$11,140.1	$6,523.0	$4,617.1	$180
Unadjusted	11,647	12,542.6	7,344.3	5,198.3	203
State					
Alabama	8,660	175.1	121.7	53.4	186
Alaska	22,242	68.2	39.3	28.9	476
Arizona	9,878	288.7	193.4	95.3	232
Arkansas	11,040	168.8	124.6	44.3	299
California	8,937	1,346.4	673.2	673.2	174
Colorado	9,581	160.5	80.2	80.2	160
Connecticut	13,211	84.4	42.2	42.2	120
Delaware	12,401	47.2	23.7	23.6	267
District of Columbia	11,875	22.8	15.9	6.8	156
Florida	9,302	641.5	377.8	263.7	184
Georgia	13,128	695.6	421.6	274.1	342
Hawaii	10,571	38.9	22.8	16.0	154
Idaho	14,430	66.6	46.6	20.0	226
Illinois	9,957	511.5	255.8	255.8	190
Indiana	11,119	252.4	159.0	93.4	196
Iowa	14,468	120.1	76.4	43.7	206
Kansas	9,965	93.6	56.5	37.0	168
Kentucky	13,344	248.3	172.0	76.3	287
Louisiana	14,523	405.7	283.1	122.6	451
Maine	8,788	31.3	19.7	11.6	122
Maryland	12,933	187.7	93.8	93.8	157
Massachusetts	12,820	181.8	90.9	90.9	133
Michigan	8,798	282.0	159.6	122.4	137
Minnesota	9,168	142.9	71.5	71.5	135
Mississippi	6,136	136.3	103.6	32.7	225
Missouri	10,655	261.5	161.9	99.5	219
Montana	11,320	33.0	23.3	9.7	183
Nebraska	13,454	92.3	55.1	37.2	261
Nevada	9,232	83.3	45.6	37.7	166
New Hampshire	11,955	27.4	13.7	13.7	103
New Jersey	14,066	283.1	141.5	141.5	161
New Mexico	10,146	90.6	64.4	26.1	228
New York	13,366	749.1	374.5	374.5	182
North Carolina	12,859	579.6	368.0	211.6	314
North Dakota	14,534	20.8	13.7	7.1	164
Ohio	11,059	478.8	286.7	192.1	206
Oklahoma	9,433	173.2	117.6	55.6	241
Oregon	6,329	71.5	44.0	27.5	97
Pennsylvania	9,534	320.7	176.5	144.2	131
Rhode Island	11,490	31.3	17.1	14.3	140
South Carolina	10,509	254.2	176.2	78.0	285
South Dakota	12,911	36.3	23.6	12.7	237
Tennessee	11,647	343.7	219.9	123.8	274
Texas	9,728	1,289.1	782.0	507.1	257
Utah	10,450	94.7	67.0	27.7	165
Vermont	13,562	21.7	12.7	9.0	175
Virginia	14,666	285.9	142.9	142.9	176
Washington	12,205	253.9	127.0	127.0	193
West Virginia	10,999	71.2	52.0	19.2	204
Wisconsin	10,964	157.3	90.7	66.6	139
Wyoming	19,638	40.0	21.7	18.3	399

Note: Unadjusted U.S. total is the sum of individual state-level data; adjusted U.S. total is the product of the unadjusted sum and the ratio of the estimated number of births resulting from unintended pregnancies in 2006 (source: reference 31) to the unadjusted total.

TABLE 3. Costs for all publicly funded births and for those resulting from intended pregnancies

State	All publicly funded births (in millions)			Publicly funded births resulting from intended pregnancies (in millions)		
	All	Federal	State	All	Federal	State
U.S. total						
Adjusted	$21,844.1	$12,700.5	$9,143.6	$10,704.0	$6,177.4	$4,526.5
Unadjusted	21,844.1	12,700.5	9,143.6	9,301.5	5,356.2	3,945.3
State						
Alabama	272.7	189.6	83.1	97.6	67.9	29.8
Alaska	120.6	69.4	51.1	52.4	30.2	22.2
Arizona	526.8	352.8	173.9	238.1	159.5	78.6
Arkansas	270.9	199.8	71.1	102.0	75.3	26.8
California	2,505.3	1,252.7	1,252.7	1,159.0	579.5	579.5
Colorado	282.0	141.0	141.0	121.5	60.8	60.8
Connecticut	155.6	77.8	77.8	71.2	35.6	35.6
Delaware	74.8	37.5	37.3	27.5	13.8	13.7
District of Columbia	64.1	44.9	19.2	41.4	29.0	12.4
Florida	1,092.5	643.4	449.1	451.0	265.6	185.4
Georgia	1,100.5	666.9	433.6	404.9	245.4	159.5
Hawaii	63.8	37.5	26.3	25.0	14.7	10.3
Idaho	131.6	92.0	39.6	64.9	45.4	19.5
Illinois	895.4	447.7	447.7	383.9	191.9	191.9
Indiana	432.9	272.6	160.3	180.5	113.7	66.8
Iowa	218.5	139.0	79.5	98.4	62.6	35.8
Kansas	148.0	89.4	58.6	54.4	32.9	21.5
Kentucky	419.7	290.7	129.0	171.4	118.7	52.7
Louisiana	617.1	430.7	186.4	211.4	147.5	63.9
Maine	55.7	35.0	20.7	24.4	15.3	9.0
Maryland	335.7	167.9	167.9	148.0	74.0	74.0
Massachusetts	359.5	179.7	179.7	177.6	88.8	88.8
Michigan	487.9	276.1	211.8	205.9	116.5	89.4
Minnesota	255.5	127.7	127.7	112.5	56.3	56.3
Mississippi	195.6	148.6	46.9	59.3	45.1	14.2
Missouri	433.6	268.5	165.1	172.1	106.6	65.5
Montana	51.0	36.0	15.0	17.9	12.6	5.3
Nebraska	157.1	93.8	63.4	64.9	38.7	26.2
Nevada	162.6	89.1	73.6	79.3	43.4	35.9
New Hampshire	44.3	22.2	22.2	16.9	8.5	8.5
New Jersey	519.3	259.7	259.7	236.3	118.1	118.1
New Mexico	163.4	116.3	47.1	72.8	51.8	21.0
New York	1,674.7	837.4	837.4	925.6	462.8	462.8
North Carolina	873.0	554.3	318.7	293.4	186.3	107.1
North Dakota	33.7	22.2	11.5	12.9	8.5	4.4
Ohio	699.5	418.9	280.6	220.7	132.2	88.6
Oklahoma	281.8	191.4	90.4	108.5	73.7	34.8
Oregon	136.2	83.9	52.3	64.7	39.9	24.9
Pennsylvania	480.4	264.5	216.0	159.7	87.9	71.8
Rhode Island	61.0	33.2	27.8	29.7	16.1	13.5
South Carolina	391.8	271.6	120.2	137.6	95.4	42.2
South Dakota	54.7	35.6	19.1	18.4	11.9	6.4
Tennessee	523.7	335.1	188.6	180.0	115.2	64.8
Texas	2,328.9	1,412.7	916.2	1,039.8	630.7	409.0
Utah	186.7	132.1	54.6	92.0	65.1	26.9
Vermont	41.1	24.0	17.0	19.4	11.3	8.0
Virginia	467.0	233.5	233.5	181.1	90.6	90.6
Washington	500.5	250.2	250.2	246.6	123.3	123.3
West Virginia	137.0	100.0	37.0	65.8	48.0	17.8
Wisconsin	286.3	165.1	121.3	129.0	74.4	54.6
Wyoming	72.0	39.1	33.0	32.0	17.4	14.6

Note: Unadjusted U.S. total is the sum of individual state-level data; adjusted U.S. total is the product of the unadjusted sum and the ratio of the estimated number of births resulting from unintended pregnancies in 2006 (source: reference 31) to the unadjusted total.

South (as categorized by the U.S. Census Bureau), a region with high levels of poverty. In eight states, by contrast, the proportion was below 50%; Hawaii had the lowest proportion (42%). The eight states with the lowest proportions follow no clear geographic pattern.

State-level patterns for public coverage of births following intended pregnancies and of overall births were very similar. Louisiana, Mississippi and the District of Columbia had the highest proportions (52–54% of births resulting from intended pregnancies and 63–69% of all births); other southern states followed closely. New Hampshire had the lowest proportions (15% and 26%, respectively).

Public-Sector Costs for Unintended Births

Government expenditures on births resulting from unintended pregnancies nationwide totaled $11.1 billion in 2006 (Table 2, page 97); of that, $6.5 billion were federal expenditures and $4.6 billion were state expenditures. On average, a publicly funded birth cost $11,647. To put these figures in perspective, the federal and state governments together spent an average of $180 on maternity and infant care related to births from unintended pregnancies for every woman aged 15–44 in the country.

Because of the wide variation in the number of births resulting from unintended pregnancies paid for by public programs and in the cost of a publicly funded birth, public expenditures on births following unintended pregnancies varied considerably across states. In seven states, these costs exceeded half a billion dollars. California and Texas spent the most—about $1.3 billion each. Controlling for population size, spending per woman aged 15–44 ranged from $97 in Oregon to $476 in Alaska.

In addition to the costs of births resulting from unintended pregnancies, the federal and state governments spent $10.7 billion for births from intended pregnancies, for a total of $21.8 billion for all publicly funded births (Table 3). Thus, 51% of government expenditures on births in 2006 were spent on births following unintended pregnancies ($11.1 billion of $21.8 billion).

DISCUSSION

This analysis demonstrates the importance of Medicaid and CHIP for assisting American women and families to afford the expense of pregnancy and childbirth. According to our estimates, 48% of all births in the United States in 2006 were paid for by these programs. (This estimate is somewhat higher than the 41% found by the National Governors Association for 2003;[32] however, that estimate was based on an unweighted average of state rates.) The role of Medicaid in funding U.S. births has increased dramatically since the mid-1980s, when Congress first allowed and then required states to expand Medicaid eligibility to pregnant women at income levels well above those most states set for Medicaid more generally. In 1985, Medicaid paid for 15% of U.S. births; by 1991, that figure had more than doubled, to 32%.[33]

Our findings also reflect and help illustrate the increasing concentration of unintended pregnancy and resulting births among poor and low-income women. Sixty-four percent of births resulting from unintended pregnancies in 2006—one million of them—were publicly funded. By contrast, only 33% of women 15–44 that year had a family income below 200% of the federal poverty

level[34]—which is roughly the income-eligibility ceiling for pregnancy-related care in most states' Medicaid and CHIP programs.

The health, social and economic consequences of unintended pregnancies are undoubtedly substantial for women and families. In addition, these pregnancies create immense budgetary costs for federal and state governments—$11.1 billion in a single year. Indeed, births resulting from unintended pregnancies account for half of publicly funded births and their resulting costs. This is a disproportionate burden on programs, given that only 38% of all U.S. births result from unintended pregnancies.

Staggering as these numbers are, they would be even higher if not for continued federal and state investments in family planning services. In 2008, an estimated $2 billion in expenditures for services at publicly supported family planning centers resulted in $7 billion in gross savings from helping women avoid unintended pregnancies and the births that follow.[11] In other words, in the absence of the services provided by these centers with government support, the annual public costs of births from unintended pregnancy would increase 60%, to $18 billion.

Reductions in the public costs from the current level of $11.1 billion would translate to gross savings for the federal and state governments. Realizing those potential savings would require substantial public investments beyond those in place today. These should include continuing to increase access to family planning services and comprehensive sex education. Indeed, the Patient Protection and Affordable Care Act—the sweeping health care reform legislation that President Obama signed in March 2010—includes several major provisions to achieve those ends, such as broad expansions of public and private insurance coverage that will address reproductive health needs; new authority to states to expand Medicaid eligibility for family planning services specifically; the possibility (pending federal regulation) of required private insurance coverage of contraceptive services and supplies, free of any out-of-pocket costs; and new grants to states and community-based groups for programs that educate adolescents about both abstinence and contraception for the prevention of pregnancy and STDs.[35–37]

Limitations

Our estimates are subject to a number of limitations, many of which are inherent to the array of sources we have drawn upon and have been discussed at length.[9,21] Several others are important to highlight here.

For about half of the states, estimates for the average cost per Medicaid-funded birth were based on indices of Medicaid payment rates.[9,11] These indices reflect relative costs across states for a broader set of services than maternity and infant care, and could therefore underestimate or overestimate costs in some states for those specific services.

Our method of attributing costs to state and federal governments has shortcomings. It does not reflect that states receive an enhanced federal reimbursement for pregnant women enrolled in CHIP, rather than Medicaid. Similarly, it does not reflect that the federal reimbursement for women covered by Medicaid only for labor and delivery, on an emergency basis (e.g., for undocumented immigrants), is at 50%, a rate that is for most states lower than their standard reimbursement rate. Both groups of women, however, are relatively small compared with the group for whom states receive reimbursement at their federal medical assistance percentage.

This analysis was limited to public costs for births resulting from unintended pregnancies. An estimate of the overall public costs of unintended pregnancies should also include some costs related to abortion and fetal loss, although such costs should be relatively small. The average cost of an abortion at 10 weeks' gestation, for example, was $451 in 2009,[38] which is much less than the $11,647 we estimate as the average cost of a Medicaid-funded birth in 2006. And according to one report, $89 million in public funds were spent for abortion nationally in 2006,[39] substantially less than the $11.1 billion in public expenditures that year for births following unintended pregnancies.

The public costs related to births resulting from unintended pregnancies also, in theory, go far beyond maternity and infant care costs. Uncounted are costs from the increased likelihood of preterm birth, low birth weight and other negative perinatal outcomes;[4] children's medical care beyond their first year; pregnancy-related care paid for by other government-related health programs, including the Indian Health Service and indigent care programs that subsidize hospitals' uncompensated care; and other government benefits, such as food stamps and welfare payments. In addition, because the income-eligibility thresholds for health and welfare benefits increase with family size, a birth from an unintended pregnancy may make family members eligible for additional benefits at additional public cost. A 2010 evaluation of a Medicaid family planning program in California, for example, found that the savings to the state from an averted publicly funded birth were nearly five times as high when analyses included both health and social services costs over a five-year period as when they considered only health care costs over a two-year period.[40] The data that would be necessary to conduct such a broader analysis for all 50 states, however, are not available. Given the scope of our analysis and what was left out, it is safe to say that our estimates are conservative ones.

Conclusion

Clearly, the public costs of births following unintended pregnancies are substantial and place a burden on federal and state governments. For that reason, investments in programs and policies to reduce unintended pregnancies not only would enable women and families to meet their childbearing needs, but would produce public savings that would strengthen government finances and

the sustainability of the nation's health care safety-net programs.

APPENDIX

Data Sources for the Proportion of Births Paid for by Public Programs

•Individual-level PRAMS data (28 states). We tabulated weighted estimates for 2006 from the CDC data set for 21 states: Alaska, Arkansas, Colorado, Georgia, Hawaii, Illinois, Maine, Maryland, Michigan, Minnesota, Mississippi, Nebraska, New Jersey, New York, Ohio, Oklahoma, Oregon, Rhode Island, Utah, Washington and West Virginia. PRAMS was conducted separately for New York City and for the rest of New York State; data from both surveys were combined to arrive at figures for the entire state. We tabulated CDC data from other years for seven states: Delaware (2007), Missouri (2007), Montana (2002), North Carolina (2007), North Dakota (2002), Wisconsin (2007) and Wyoming (2007).

For these 28 states, having access to the individual-level data allowed us to include separately identified CHIP programs, Medicaid and CHIP managed care plan names, and Medicaid and CHIP waiver programs. This can be complicated, because many states operate two or more such programs and contract with multiple managed care plans, and the list of programs and plans may change from year to year. These payment options were either listed on the PRAMS questionnaire within the Medicaid payment category, listed as a separate category or included in the "other" category as a write-in. In the following states, program names either were included in a state-specific category or were written in by at least 10 respondents and were therefore included in this analysis: Alaska (Denali KidCare), Arkansas (ARKids First), Colorado (Child Health Plan Plus), Michigan (Medical Outpatient Maternity Services), Nebraska (Medicaid managed care, including Wellness Option, Share Advantage and Primary Care Plus), New Jersey (New Jersey FamilyCare), New York (Prenatal Care Assistance Program), Ohio (CareSource), Oklahoma (SoonerCare), Rhode Island (RIte Care and Neighborhood Health Plan) and Wisconsin (BadgerCare).

•Other data that include state-specific programs (eight states). Weighted estimates of PRAMS data were obtained from the state health departments in Florida (2005), Louisiana (2007), South Carolina (2006), Tennessee (2007), Vermont (2006) and Virginia (2007). Additional program names identified as a separate category were included in the total estimates of publicly funded births in Florida (Medipass), Tennessee (TennCare) and Vermont (Dr. Dynasaur). State health department analyses confirmed that for all six of these states, fewer than 10 relevant write-in responses were received for each survey. Aggregate data from Massachusetts (2007) were obtained from CDC's PRAMS On-line Data for Epidemiologic Research (CPONDER) system,[41] after we confirmed with the state health department that no state-specific programs were excluded from the Medicaid category and that fewer than 10 observations had write-in answers that included public funding. We produced weighted tabulations of data from Kentucky's 2007 PRAMS Pilot Project survey.

•Aggregate data that may not include state-specific programs (seven states). For Alabama (2003) and Pennsylvania (2007), we were limited to data available in CPONDER. Alabama's questionnaire included no state-specific categories. In Pennsylvania, two state-specific categories were likely not included with Medicaid-funded births in the CPONDER tabulations: adult basic and CHIP. For New Mexico (2006) and Texas (2006), estimates were obtained from state health department tabulations. We obtained tabulations from PRAMS-like surveys in Idaho (2006 Pregnancy Risk Assessment Tracking System) and Iowa (2006 Barriers to Prenatal Care survey). The surveys in New Mexico, Texas, Idaho and Iowa had no state-specific programs, and although the numbers of write-in responses are unknown, the Medicaid category likely captured almost all publicly funded deliveries in those states. Finally, for California, we calculated the proportion of births that were publicly funded using published data from that state's 2006 Maternal and Infant Health Assessment.[42]

•Predicted data from multivariate regression (eight jurisdictions). We used regression analysis to obtain estimates for Arizona, Connecticut, the District of Columbia, Indiana, Kansas, Nevada, New Hampshire and South Dakota. The proportion of all births paid for by public programs was estimated also for Iowa, because data were not available at the time of this analysis. Standard errors for the nine predicted values of the proportion of all births that were publicly funded and for the eight predicted values of the proportion of intended births that were publicly funded ranged from 0.01 to 0.04, except for the District of Columbia (0.10), which is somewhat unlikely to conform to a model in which all the other observations are states, as opposed to cities. Standard errors for the eight predicted values of the proportion of unintended births that were publicly funded ranged from 0.02 to 0.05 (0.11 for the District of Columbia).

To gauge the accuracy of the model, we used the regression coefficients to calculate predicted proportions for the 43 states for which we had data, and then compared the model's predictions to the actual data. For each state, we ran a regression using the data from the other 42 states to predict the proportion of publicly funded births. We repeated that procedure for all three measures. In 22 states, the estimates were within five points or less of the actual proportion. The 21 with larger differences were about equally divided into those estimates below and above the actual proportion; both groups had an average discrepancy of roughly nine points. These results provide confidence that the regression procedure was unbiased—that is, it did not lead to consistently higher or lower estimates than the actual.

REFERENCES

1. Brown SS and Eisenberg L, eds., *The Best Intentions: Unintended Pregnancy and the Well-Being of Children and Families,* Washington, DC: Institute of Medicine, 1995.

2. Gold RB et al., *Next Steps for America's Family Planning Program: Leveraging the Potential of Medicaid and Title X in an Evolving Health Care System,* New York: Guttmacher Institute, 2009.

3. Goldin C and Katz LF, The power of the pill: oral contraceptives and women's career and marriage decisions, *Journal of Political Economy,* 2002, 110(4):730–770.

4. Gipson JD, Koenig MA and Hindin MJ, The effects of unintended pregnancy on infant, child, and parental health: a review of the literature, *Studies in Family Planning,* 2008, 39(1):18–38.

5. Logan C et al., *The Consequences of Unintended Childbearing,* Washington, DC: Child Trends, 2007.

6. U.S. Department of Health and Human Services (DHHS), *Healthy People 2010,* second ed., Washington, DC: U.S. Government Printing Office, 2000.

7. Finer LB et al., Disparities in unintended pregnancy in the United States, 1994 and 2001, *Perspectives on Sexual and Reproductive Health,* 2006, 38(2):90–96.

8. Frost JJ, Finer LB and Tapales A, The impact of publicly funded family planning clinic services on unintended pregnancies and government cost savings, *Journal of Health Care for the Poor and Underserved,* 2008, 19(3):777–795.

9. Frost JJ, Sonfield A and Gold RB, Estimating the impact of expanding Medicaid eligibility for family planning services, *Occasional Report,* New York: Guttmacher Institute, 2006, No. 28.

10. Frost JJ, Sonfield A and Gold RB, Estimating the impact of serving new clients by expanding funding for Title X, *Occasional Report,* New York: Guttmacher Institute, 2006, No. 33.

11. Frost JJ, Henshaw SK and Sonfield A, *Contraceptive Needs and Services, National and State Data, 2008 Update,* New York: Guttmacher Institute, 2010.

12. Sonfield A, Frost JJ and Gold RB, *Estimating the Impact of Expanding Medicaid Eligibility for Family Planning Services: 2011 Update,* New York: Guttmacher Institute, 2011.

13. Edwards J, Bronstein J and Adams K, *Evaluation of Medicaid Family Planning Demonstrations,* Alexandria, VA: CNA Corp., 2003.

14. Centers for Medicare and Medicaid Services (CMS), *Special Terms and Conditions: Project Number 11-W-00142/0, Oregon Family Planning Expansion Project,* Washington, DC: CMS, 2010.

15. Monea E and Thomas A, Unintended pregnancy and taxpayer spending, *Perspectives on Sexual and Reproductive Health,* 2011, 43(2):88–93.

16. Jones RK, Singh S and Finer LB, Repeat abortion in the United States, *Occasional Report,* New York: Guttmacher Institute, 2006, No. 29.

17. DeNavas-Walt C, Proctor BD and Smith JC, Income, poverty, and health insurance coverage in the United States: 2009, *Current Population Reports,* 2010, Series P-60, No. 238.

18. Goldin C and Katz L, Career and marriage in the age of the pill, *American Economic Review,* 2000, 90(2):461–465.

19. Bailey MJ, More power to the pill: the impact of contraceptive freedom on women's life cycle labor supply, *Quarterly Journal of Economics,* 2006, 121(1):289–320.

20. Finer LB and Henshaw SK, Guttmacher Institute, special tabulations of data from analyses of 2001 U.S. unintended pregnancy rates by age.

21. Finer LB and Kost K, Unintended pregnancy rates at the state level, *Perspectives on Sexual and Reproductive Health,* 2011, 43(2):78–87.

22. Martin J et al., Births: final data for 2006, *National Vital Statistics Reports,* 2009, Vol. 57, No. 7.

23. Centers for Disease Control and Prevention (CDC), Pregnancy Risk Assessment Monitoring System (PRAMS), no date, <http://www.cdc.gov/prams/>, accessed Sept. 15, 2010.

24. Finer LB and Kost K, Guttmacher Institute, special tabulations of data from analyses of 2006 unintended pregnancy rates by state.

25. National Center for Health Statistics, Postcensal estimates of the resident population of the United States for July 1, 2000–July 1, 2008, by year, county, age, bridged race, Hispanic origin, and sex (Vintage 2008), 2010, <http://www.cdc.gov/nchs/nvss/bridged_race/data_documentation.htm#vintage2008>, accessed Sept. 13, 2010.

26. U.S. Census Bureau, 2006 American Community Survey, <http://www.census.gov/acs/www/>, accessed Dec. 21, 2010.

27. Jones R, Guttmacher Institute, special tabulations of the U.S. Census Bureau Current Population Survey, 2006 and 2007 March supplements.

28. Ross DC, Cox L and Marks C, *Resuming the Path to Health Coverage for Children and Parents: A 50 State Update on Eligibility Rules, Enrollment and Renewal Procedures, and Cost-Sharing Practices in Medicaid and SCHIP in 2006,* Washington, DC: Kaiser Commission on Medicaid and the Uninsured, 2007.

29. Bureau of Labor Statistics, U.S. Department of Labor, Consumer Price Index—all urban consumers, medical care, no date, <http://data.bls.gov/cgi-bin/dsrv?cu>, accessed Nov. 24, 2009.

30. DHHS, Federal financial participation in state assistance expenditures, *Federal Register,* 2004, 69(226):68370–68373.

31. Finer LB and Zolna M, Guttmacher Institute, special tabulations of data from the 2006–2008 National Survey of Family Growth.

32. National Governors Association Center for Best Practices, *Maternal and Child Health Update: States Increase Eligibility for Children's Health in 2007,* 2008, <http://www.nga.org/Files/pdf/0811MCHUPDATE.PDF>, accessed Aug. 11, 2010.

33. Singh S, Gold RB and Frost JJ, Impact of the Medicaid eligibility expansions on coverage of deliveries, *Family Planning Perspectives,* 1994, 26(1):31–33.

34. Jones R, Guttmacher Institute, special tabulations of data from the 2007 Current Population Survey.

35. Sonfield A, The new health care reform legislation: pros and cons for reproductive health, *Guttmacher Policy Review,* 2010, 13(2):25–27.

36. Sonfield A, Contraception: an integral component of preventive care for women, *Guttmacher Policy Review,* 2010, 13(2):2–7.

37. Boonstra HD, Sex education: another big step forward—and a step back, *Guttmacher Policy Review,* 2010, 13(2):27–28.

38. Jones RK and Kooistra K., Abortion incidence and access to services in the United States, 2008, *Perspectives on Sexual and Reproductive Health,* 2011, 43(1):41–50.

39. Sonfield A, Alrich C and Gold RB, Public funding for family planning, sterilization and abortion services, FY 1980–2006, *Occasional Report,* New York: Guttmacher Institute, 2008, No. 38.

40. Biggs MA et al., *Cost-Benefit Analysis of the California Family PACT Program for Calendar Year 2007*, San Francisco: Bixby Center for Global Reproductive Health, 2010, <http://bixbycenter.ucsf.edu/publications/files/FamilyPACTCost-BenefitAnalysis2007_2010Apr.pdf>, accessed Aug. 11, 2010.

41. CDC, Pregnancy Risk Assessment Monitoring System (PRAMS): CPONDER, <http://apps.nccd.cdc.gov/cPONDER/>, accessed Sept. 15, 2010.

42. California Department of Public Health, Statewide tables from the 2006 Maternal and Infant Health Assessment (MIHA) survey, 2008, <http://www.cdph.ca.gov/data/surveys/Pages/StatewideTablesfrom

the2006MaternalandInfantHealthAssessment%28MIHA%29survey.aspx>, accessed Apr. 1, 2010.

Acknowledgments

The authors thank Leslie Harrison, Indu Ahluwalia, Denise D'Angelo and the many state health department data coordinators and staff, for their assistance in obtaining the data used in this analysis; Cory Richards and Susheela Singh, for providing advice on the analysis and reviewing early drafts; and Jesse Philbin and Deva Cats-Baril, for research assistance.

Author contact: *asonfield@guttmacher.org*