

Variation in State Unintended Pregnancy Rates In the United States

CONTEXT: Newly available data show large differences in rates of unintended pregnancy across states. Because key policy and program decisions that could affect these rates are made by state governments, it is important to assess whether characteristics of the states are associated with this variation.

METHODS: Regression analysis was used to assess the relationship between the variation in state unintended pregnancy rates in 2006 and state-level aggregate measures of demographic composition, socioeconomic conditions, contraceptive use, and funding of and access to family planning services.

RESULTS: State unintended pregnancy rates were positively associated with the proportion of resident women who were black or Hispanic. However, these associations were almost entirely accounted for by differences in the age and marital status of women, the proportion without health insurance and the proportion receiving Medicaid. In addition, these last two measures were strongly associated with state unintended pregnancy rates after the other measures were controlled for: An increase in the proportion of women uninsured was associated with elevated unintended pregnancy rates, and an increase in the proportion receiving Medicaid coverage was associated with reduced rates.

CONCLUSIONS: State programs and policies should pay particular attention to increasing support for family planning services for minority groups. Findings also suggest that insurance coverage and receipt of Medicaid among women of reproductive age deserve further exploration as potentially important mechanisms for reducing state unintended pregnancy rates.

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National-level rates of unintended pregnancy in the United States have been available for many years, but only recently have rates for individual states become available.¹ These new estimates show wide variation in rates and point to an important question: Do differences among states lie behind this variation? Research on this issue is especially needed because it can provide valuable guidance for decisions by state governments on policies and programs directed toward reducing the rate of unintended pregnancy, which is a widely accepted societal goal.²

This analysis is a first attempt to investigate state-level characteristics that may be associated with variation in state unintended pregnancy rates, and to provide information for states to use in evidence-based decision making. Identifying these characteristics is important not only because state leaders are concerned with protecting the health and well-being of their populations, but also because the costs associated with unintended pregnancy strain states' limited resources for promoting and protecting their residents' health.³

To date, individual-level research on characteristics associated with unintended pregnancy in the United States has been limited because abortions are highly underreported in surveys of women, even when confidential approaches to interviewing are used.⁴ As a result, estimates

of unintended pregnancy rates at the national level are available for selected population subgroups, but these measures have been obtained by combining aggregated data from several sources. Because of these limitations, an aggregate-level study is the only feasible approach to studying variation in unintended pregnancy rates. This study presents findings using ecological, or aggregate-level, data for analyses in which the units of analysis are states, not individual women. Thus, we examine how demographic profiles and other characteristics of states are associated with their unintended pregnancy rates.

The median state unintended pregnancy rate in 2006 was 51 per 1,000 women aged 15–44; the rate ranged from 37 to 69 per 1,000 for the states included in this analysis.¹ We know from studies using national data that a variety of demographic and socioeconomic characteristics are associated with unintended pregnancy. Black and Hispanic women are far more likely than white women to experience an unintended pregnancy, and women with incomes below the federal poverty line are four times as likely as women living at 200% or more of the poverty line to have an unintended pregnancy.^{5,6} Furthermore, age and marital status are strongly related to unintended pregnancy: Rates are typically highest among 18–24-year-olds and among unmarried women.^{5,6} We might expect, then,

that a great deal of state variation in unintended pregnancy is positively related to the proportions of states' populations in the highest risk groups.

In addition, the demographic and socioeconomic characteristics strongly associated with unintended pregnancy are interrelated. For example, both nationally and in most states, the proportion of women who are married is smaller among blacks than among whites or Hispanics; in some states, Hispanic women tend to be slightly younger than non-Hispanic women.⁷ Furthermore, a greater proportion of minority populations than of whites belong to the lowest poverty status group.⁸ Thus, it is essential to consider multiple characteristics of states' populations when assessing the relationship between unintended pregnancy rates and the states' racial and ethnic composition.

States may also differ in other ways that may be related to the likelihood that residents will have an unintended pregnancy. For example, states vary in public-sector funding for family planning, policies directed at access to family planning services, insurance coverage and the content of sex education in schools. State-level characteristics that reflect residents' socioeconomic conditions, such as income inequality and the proportion of the population living below the poverty line, may be linked to unintended pregnancy rates.

In this article, we examine how state-level characteristics are associated with overall rates of unintended pregnancy. Specifically, we perform a cross-sectional analysis to investigate the extent to which differences in the demographic composition of the states' populations align with the variation in unintended pregnancy rates across the states, and whether differences in other state-level characteristics are associated with such variation.

METHODS

Unintended Pregnancy Rates

The dependent variable was the overall unintended pregnancy rate of each state in 2006—defined as the number of unintended pregnancies per 1,000 women aged 15–44—as estimated by Finer and Kost.¹ We excluded six states for which rates were predicted by multivariate linear regression because no appropriate state survey data were available.*

In this article, a pregnancy is considered unintended if the woman reported that it was mistimed (i.e., she had wanted to become pregnant, but at a later date) or unwanted (i.e., she had not wanted to become pregnant at any time); unintended pregnancies include those ending in births, abortions and fetal losses. Intended pregnancies are those that occurred either at the time they were desired or later. Our definition of intention status is limited to the categories presented to respondents in the state-level surveys available for our analysis.

*The excluded states were Arizona, Indiana, Kansas, Nevada, New Hampshire and South Dakota.

†The BRFSS does not interview respondents younger than 18.

State-Level Measures

The independent variables in our analysis are aggregate state-level measures. All data are for 2006, unless otherwise noted.

•**Demographic.** Population distributions according to race, ethnicity, age and marital status for each state come from the U.S. Census Bureau and the National Center for Health Statistics.⁹ We tested three measures of the age composition of the population of women aged 15–44: the proportion who were 18–24, the proportion who were 25–34 and the proportion who were 30–44. At the national level, women aged 18–24 typically experience the highest unintended pregnancy rate among all age-groups.^{5,6} Those aged 25–34 may be considered to be in the most active child-bearing years, and half of all births in 2006 occurred among this age-group.¹⁰ Women aged 30–44 may be at greater risk of unintended pregnancy than the younger age-groups, because they have had all the children they wanted; however, they may be less fecund than others, which would mean that they have a lower risk of unintended pregnancy.

Because unintended pregnancy is more likely to occur among unmarried than married women,^{5,6} we also examined the proportion of women of reproductive age who were unmarried and sexually active. We obtained these estimates from the Behavioral Risk Factors Surveillance System (BRFSS), an annual survey conducted in every state.¹¹

•**Socioeconomic.** We combined data from the 2006 and 2007 Current Population Surveys for estimates of the proportion of females aged 15–44 who lacked health insurance (private or Medicaid) in 2005 or 2006.¹² The 2006 American Community Survey provided state-level data on the proportion of women aged 15–44 living below the federal poverty line, the proportion of the total population living in urban areas, the proportion of women 25 or older who had not completed high school or a general equivalency diploma, and income inequality among all households.^{7,8} This last measure was calculated as the difference between the proportions of aggregate income earned by the bottom 20% and the top 20% of households in the state.

We included the proportion of the population living in urban areas as a socioeconomic (rather than demographic) characteristic because it can serve as a proxy for a variety of social and economic conditions, including ease of access or distance to family planning and other health services.

•**Contraceptive use.** Data on women's contraceptive use and exposure to risk of unintended pregnancy were obtained from the 2004 BRFSS, the most recent to include these questions for all states except Hawaii (for which we used 2002 data).¹¹ We calculated the proportion of women aged 18–44 and at risk of unintended pregnancy who were using any form of birth control (including traditional methods), as well as the proportion relying on an effective method (female or male sterilization, or the IUD, pill, patch, implant or injectable).† Women were considered at risk of having an unintended pregnancy if they were

using any method or, if they were not using, were able to become pregnant but were not trying to.

•**Family planning services.** We used data from the Guttmacher Institute's 2006 Census of Publicly Funded Family Planning Clinics for the proportion of all women in need of government-funded family planning services who obtained them at a public clinic* and the proportion of counties in each state with at least one publicly funded family planning clinic.^{13,14} We used these measures as rough proxies for access to services among disadvantaged women. We also examined the total dollar amount spent (adjusted for state-specific cost of living in 2006) per woman in need of publicly funded services from all state and federal sources, as a measure of support for family planning services in the state.¹⁵ Finally, we included the proportion of women aged 15–44 receiving Medicaid in the state,¹² as well as a dummy variable for whether, as of 2005, the state had expanded Medicaid eligibility for family planning services to individuals who would otherwise not qualify for coverage.¹⁶

Analysis

We used univariate linear regression analysis to assess the relationship between each state-level measure and the variation in the overall unintended pregnancy rate among states. Associations were assessed using an R^2 statistic, a measure of the proportion of the variation in rates across states captured by the model. We also examined the size of the estimated coefficients and their level of statistical significance. Because the independent variables are measured as proportions, the coefficients can be interpreted as the amount that the unintended pregnancy rate increased (or decreased) with each percentage-point increase in a given variable. †

Next, we used multivariate regression analysis to investigate how much of the variation in state rates could be attributed to the demographic characteristics of the states—excluding the racial and ethnic composition—as well as to socioeconomic conditions, contraceptive use, and the funding and availability of family planning services. We examined correlations among the independent variables to avoid including multiple measures that captured similar

*Women are considered in need of contraceptive services if they are aged 13–44 and are sexually experienced; they are fecund (i.e., neither they nor their partner have been sterilized, and they do not believe they are infecund); and, during at least part of the year, they neither tried to get pregnant nor were intentionally pregnant. If, in addition, women either are aged 20–44 and have a family income below 250% of the federal poverty level (\$41,500 for a family of three in 2006) or are younger than 20, they are considered in need of publicly funded services.¹³

†Two variables were not measured as proportions: state and federal expenditures on family planning services (in dollars) and whether a state had expanded Medicaid eligibility for such services (a dummy variable). The coefficient for expenditures can be interpreted as the amount that the unintended pregnancy rate changed with each dollar spent (range, \$30–275 per woman); the coefficient for expanded Medicaid coverage represents the average difference in rates between states with and without some form of expansion.

state-level attributes. In our final set of regression analyses, we assessed associations of the racial and ethnic composition of the states and unintended pregnancy rates while adjusting for other state-level characteristics.

RESULTS

Univariate Models

•**Demographic.** Variation in the proportion of women aged 18–24 was associated with the unintended pregnancy rates, accounting for 11% of the variation in state rates (Table 1). For every one-point increase in the proportion of women who were in this age-group, the unintended pregnancy rate decreased by 1.7 points. The proportions of women in the other two age-groups were not associated with state rates.

Married women are far less likely to have an unintended pregnancy than unmarried women,^{5,6} so it was not surprising that as the proportion married increased, the unintended pregnancy rate decreased (by 1.6 points); this measure accounted for 29% of variation in state rates. A one-point increase in the proportion of women who are

TABLE 1. Results of univariate linear regression analysis assessing proportion of variation in state unintended pregnancy rates explained by selected state-level characteristics (R^2 statistics) and change in state rates associated with a one-point increase in each characteristic (coefficients), United States, 2006

Characteristic	R^2	Coefficient
Demographic		
% aged 18–24	0.11	-1.65*
% aged 25–34	0.06	1.30
% aged 30–44	0.06	0.95
% married	0.29	-1.58***
% unmarried and sexually active	0.13	0.67*
% white	0.75	-0.48***
% black	0.35	0.48***
% Hispanic	0.18	0.37***
% other race/ethnicity	0.10	0.31*
Socioeconomic		
% with <high school education†	0.21	1.11**
% below federal poverty line	0.00	0.06
%-point difference in income inequality‡	0.27	2.26***
% without insurance	0.18	0.69**
% urban§	0.18	0.25**
Contraceptive use		
% at risk using any method††	0.29	-1.90***
% at risk using effective method††,‡‡	0.10	-0.49*
Funding and availability of services		
% served by public clinic§§	0.04	-0.11
% of counties with a public clinic	0.14	0.19*
State/federal expenditure per woman§§	0.00	0.00
% on Medicaid	0.07	-0.64
Expanded Medicaid family planning eligibility	0.07	4.80

* $p < .05$. ** $p < .01$. *** $p < .001$. †Among women 25 or older. ‡The difference between proportions of aggregate income earned by the bottom 20% and the top 20% of households in the state. §Among the total population. ††Among women aged 18–44 and at risk of unintended pregnancy. ‡‡Sterilization, IUD, pill, patch, implant and injectable. §§Among women aged 13–44, at risk of unintended pregnancy and in need of publicly funded family planning services. Notes: The coefficient for state/federal expenditure represents the rate change per dollar spent, and that for expanded Medicaid represents the average rate difference between states with and without eligibility expansion. Unless noted otherwise, measures are based on resident women aged 15–44.

unmarried and sexually active was associated with a rise of about two-thirds of a point in the unintended pregnancy rate.

Racial and ethnic composition was strongly associated with the unintended pregnancy rate. Most notably, variation in the proportion who are non-Hispanic white accounted for three-quarters of all variation in rates. A one-point increase in the proportion of women who are non-Hispanic black was associated with higher unintended pregnancy rates, although the R² of 0.35 was less than half that for the proportion who are white. Similarly, the proportion of a state's population of women who are Hispanic had a positive relationship with the rate of unintended pregnancy, but it explained only 18% of the variation. The proportion of women who are of other non-Hispanic races or ethnicities was also associated with variation in state rates, but it accounted for only 10% of the variation.

•Socioeconomic. Education was inversely associated with state unintended pregnancy rates; the proportion of women without a high school diploma or its equivalent accounted for 21% of the variation in state rates. Surprisingly, the proportion of a state's female population living in poverty (which ranged from 10% in Maryland to 26% in Mississippi⁷) was not significant. However, income inequality accounted for 27% of the variation in rates. Among the limited set of socioeconomic measures that were assessed, income inequality had the strongest relationship with unintended pregnancy rates: Each one-point increase in the difference in the proportionate share of income held by the lowest 20% and the highest 20% of households was associated with a 2.3-point increase in the rate. Finally, the proportion of women of reproductive age who are uninsured and the proportion of the state population living in urban areas were also positively associated

with unintended pregnancy; each accounted for 18% of the variation in state rates.

•Contraceptive use. The proportion of women at risk of unintended pregnancy who were using any contraceptive method accounted for 29% of state variation; a one-point increase in this proportion was associated with a 1.9-point decline in the unintended pregnancy rate. A one-point increase in the proportion of women using an effective method was associated with a half-point decrease in rates, but the association explained only 10% of the variation.

•Family planning services. Of the measures relating to the funding and availability of family planning services in a state, only the proportion of counties with at least one publicly funded family planning clinic had a significant relationship to unintended pregnancy rates: Each one-point increase in this proportion was associated with a 0.2-point rise in the rate.

Multivariate Models Excluding Race and Ethnicity

In the multivariate analysis, we first sought to determine how much of the variation in unintended pregnancy rates could be accounted for without considering race and ethnicity. We assessed alternative combinations of variables and, within different groupings, dropped variables that did not contribute to model fit.

•Demographic. Together, three demographic measures were associated with 47% of the variation in state rates: the proportion of women aged 18–24, the proportion married, and the proportion unmarried and sexually active (Table 2, model 1).

•Socioeconomic. Four socioeconomic measures—the proportions of women with less than a high school education, living in poverty, and uninsured, and the proportion of the population residing in urban areas—accounted for 49% of

TABLE 2. Estimated coefficients from multivariate regression analysis assessing associations between selected state-level characteristics, excluding racial and ethnic composition, and state unintended pregnancy rates

Characteristic	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Demographic							
% aged 18–24	-2.03**				-1.63*	-1.02	-1.37*
% married	-2.95***				-2.49**	-2.35**	-2.57***
% unmarried and sexually active	-1.07*				-0.97*	-0.71	-0.55
Socioeconomic							
% with <high school education†		1.29**		1.02*		0.68	
% below federal poverty line		-0.96		-0.74		-1.07	
% without insurance		0.62*		0.59*		0.81**	0.52**
% urban‡		0.14		0.08		-0.07	
Contraceptive use							
% at risk using any method§				-0.85	-0.83	-0.28	
Funding and availability of services							
% served by public clinic††			-0.09				
% of counties with a public clinic			0.22**				0.03
% on Medicaid			-0.82*				-0.80**
Expanded Medicaid family planning eligibility			3.11				
R ²	0.47	0.49	0.32	0.52	0.50	0.68	0.70

*p<.05. **p<.01. ***p<.001. †Among women 25 or older. ‡Among the total population. §Among women aged 18–44 and at risk of unintended pregnancy. ††Among women aged 13–44, at risk of unintended pregnancy and in need of publicly funded family planning services. Note: Unless noted otherwise, measures are based on resident women aged 15–44.

TABLE 3. Estimated coefficients from multivariate regression analysis assessing associations between selected state-level characteristics, including racial and ethnic composition, and state unintended pregnancy rates

Characteristic	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
% aged 18–24	–0.64	–0.74	–1.08	–1.06*	–1.43*	–1.24*	–1.46*	–1.18**
% married	–0.24	–0.72*	–1.03*	–1.63***	–1.32**	–1.86***	–1.42***	–1.76***
% white	–0.43***	–0.32***						
% black			0.30**	0.14				
% Hispanic					0.26*	0.04		
% other race/ethnicity							0.21	0.20*
% without insurance		0.26		0.55**		0.58**		0.66***
% on Medicaid		–0.35		–0.73**		–0.78**		–0.67**
R ²	0.76	0.80	0.48	0.69	0.46	0.67	0.43	0.72

*p<.05. **p<.01. ***p<.001. Note: Measures are based on resident women aged 15–44.

the variation in state rates (model 2). Both low educational attainment and insurance status remained strongly associated with unintended pregnancy rates when other socioeconomic variables were controlled for. Income inequality was correlated with the other socioeconomic measures and so was excluded. Poverty was not associated with unintended pregnancy rates in the univariate model (p=.86); however, in the multivariate analysis, it was marginally associated with rates (p=.09) and had a large, negative coefficient.

•**Family planning services.** Four of the measures of funding and availability of services contributed to the fit of the model, and they were associated with 32% of the variation in unintended pregnancy rates (model 3). A one-point increase in the proportion of counties with at least one publicly funded family planning clinic was associated with a 0.2-point rise in the unintended pregnancy rates, whereas a one-point increase in the proportion of women receiving Medicaid assistance was associated with a 0.8-point reduction in the rate.

•**Multiple sets of measures.** When we controlled for the proportion of women at risk of unintended pregnancy who used any contraceptive, the R² of the model with socioeconomic measures increased from 49% to 52% (model 4). The estimated coefficient for the proportion of women without health insurance was relatively unaffected. By contrast, the coefficient for the level of contraceptive use was reduced by half (to –0.9, from –1.9 in the univariate analysis) and was no longer significant. In an alternate model (not shown), the proportion of women using effective methods also was not associated with unintended pregnancy rates once the socioeconomic or demographic variables were adjusted for.

All three demographic measures were strongly related to contraceptive use, so controlling for levels of use among women at risk of unintended pregnancy accounted for some of the association of the states' demographic characteristics with unintended pregnancy rates (model 5). More importantly, the proportion of women using a method had no significant relationship to the variation in state unintended pregnancy rates in this model. Still, the model accounted for 50% of the variation in state rates.

When the demographic, socioeconomic and contraceptive use variables were controlled for, women's educational

level was no longer significant, but the coefficient for the proportion of women without health insurance was increased (0.8, model 6). In the final model, we included all variables from models 3 and 6 that had significant coefficients or contributed to the overall fit of the model. This regression accounted for 70% of the variation in state unintended pregnancy rates, but only four variables remained significant: the proportions of women aged 18–24, married, uninsured and receiving Medicaid.

Multivariate Models Including Race and Ethnicity

We used the findings from Table 2 to investigate how much of the relationship between unintended pregnancy rates and states' racial and ethnic composition could be accounted for by other state-level characteristics. The coefficient for the proportion of women who are white was only slightly diminished when age and marital status were controlled for, dropping from –0.5 in the univariate model (Table 1) to –0.4 (Table 3, model 1). The coefficients for age and marital status were drastically reduced and lost significance.

The associations between unintended pregnancy rates and the proportions of the population in the three non-white groups changed markedly with the inclusion of the age and marital status variables. The coefficient for the proportion of women who are black was reduced by more than one-third, from 0.5 in the univariate analysis to 0.3 (model 3); the multivariate model explained 48% of variation in state unintended pregnancy rates, a considerable increase over the 35% of the univariate model. Similarly, the coefficient for the proportion who are Hispanic was reduced by 30%, to about 0.3 (model 5), and the proportion of the variation explained more than doubled, from 18% to 46%. In the multivariate model, the proportion of women who are of other racial or ethnic backgrounds became statistically insignificant (model 7), and the proportion of the variation explained jumped from 10% to 43%.

Associations of the racial and ethnic composition measures were substantially changed by the further adjustment for the proportions of women of reproductive age without health insurance and receiving Medicaid. Inclusion of these measures diminished the coefficient for the proportion of

women who are white by 33% from the univariate model, to -0.3 (model 2), and reduced the coefficient for the proportion who are of other races or ethnicities by 35%, to 0.2 (model 8). Controlling for these two measures had a much larger effect when the other two racial and ethnic composition measures were used in the models: The coefficient for the proportion of women who are black was reduced by 71% from the univariate model, to 0.1 (model 4), and that for the proportion who are Hispanic fell by 89%, to 0.04 (model 6); furthermore, both of these coefficients lost significance. Inclusion of the insurance measures improved the R^2 by more than 20 points in the multivariate models that included the black and Hispanic population measures (to 67–69%), and while it had little effect on the relationship between the proportion of women of other racial or ethnic backgrounds and unintended pregnancy, the amount of variation explained rose from 43% to 72%—the largest increase of all the models.

For each model that included a proportionate measure of a nonwhite population, the proportion of women who were living without health insurance had a positive association with unintended pregnancy rates (coefficients, 0.6 – 0.7), and the proportion receiving Medicaid had a negative association with rates (-0.7 to -0.8).

DISCUSSION

Given well-established national-level differences in unintended pregnancy rates by age, marital status, and race and ethnicity, it is not surprising that we found strong associations between state-level demographic measures and variation in rates across states. But our findings suggest that while the racial and ethnic composition of states' populations has a strong relationship with their unintended pregnancy rates, it is not the primary reason that states differ in their rates. The proportions of the female population aged 15–44 who belonged to racial or ethnic minority groups were positively associated with unintended pregnancy rates, but most of these associations were eliminated by controlling for women's age, marital status, insurance coverage and receipt of Medicaid. One implication of this finding is that unintended pregnancy is not necessarily entrenched in the culture of minority populations, but instead may be related to other conditions that vary by state.

A range of social and economic conditions were independently associated with elevated unintended pregnancy rates. However, only the proportion uninsured remained significant in analyses controlling for states' demographic characteristics and women's contraceptive use. Furthermore, this association remained strong even after the proportion of nonwhite women in the population was controlled for, and the significance of racial and ethnic composition was greatly diminished once insurance status was considered. Thus, efforts to expand insurance and Medicaid coverage among groups with high levels of unintended pregnancy may be helpful in reducing their unintended pregnancy rates.

We found a negative relationship between the proportion of women aged 18–24 and the unintended pregnancy rate, which seems counter to expectations, given that younger women have higher rates.^{5,6} However, this association may reflect other characteristics of young women in states where the proportion in this age-group is relatively high—such as variation in the proportion sexually active, or in the level of contraceptive use.

Elevated unintended pregnancy rates among women living in poverty are well documented,^{5,6} so it was somewhat surprising that the proportion of women aged 15–44 living below the poverty line had a negative (although not statistically significant) relationship with the unintended pregnancy rate. While the overall proportion of women who live below the poverty level may not be directly related to a state's unintended pregnancy rate, it may identify states with relatively high proportions of women receiving public support, such as Medicaid and other services that may improve access to contraception, particularly the most effective methods.

Similarly, in univariate models, levels of contraceptive use were associated with unintended pregnancy rates. But because contraceptive use is strongly tied to the age and marital status composition of populations, its value in predicting the variation across states was diminished once these two demographic measures—which are strongly related to the risk of an unintended pregnancy—were controlled for. In addition, contraceptive use was no longer associated with unintended pregnancy rates after socioeconomic conditions were taken into account, and these measures, in turn, were not significantly related to rates once insurance status and receipt of Medicaid were included. Thus, the relationship of contraceptive use and reduced levels of unintended pregnancy may not be dissimilar across the states; what may be different is the extent to which vulnerable populations have access to insurance and Medicaid, and hence to contraception and other family planning services. These results are consistent with findings from studies showing that cost burdens to women can discourage contraceptive use, including use of the most effective methods,^{17–21} and possibly result in inconsistent use or gaps in use.²²

Our findings on the relationship of the funding and availability of family planning services with the overall unintended pregnancy rate were inconclusive, but not surprising, since a single point-in-time estimate of association is inadequate to assess the potential impact of funding and services. In addition, a positive relationship between funding or availability of publicly funded services and unintended pregnancy rates may reflect a state's proactive attempts to address women in need of such services. For example, our finding that unintended pregnancy rates are positively associated with the proportion of counties that have at least one publicly funded family planning clinic may mean simply that states with higher levels of unintended pregnancy made greater efforts to expand access to these services. It could also mean that in these states, women in need of services are widely distributed throughout the

state. In fact, this uncertainty demonstrates one of the major inadequacies of assessing associations of state funding and services with data from a single point in time.

However, as more state-level trend data become available, quantitative trend analyses of all states or case studies of individual ones may be able to assess how policies and programs affect unintended pregnancy rates.

Limitations

A detailed account of data limitations underlying the estimates of the unintended pregnancy rates is provided in the article we used as our source for state unintended pregnancy rates,¹ but we mention several limitations here. While the state surveys of births allow for state-specific measurement of intention status, the proportion of all abortions that terminated unintended pregnancies is not available at the state level. Instead, the proportion used to calculate the unintended pregnancy rates was obtained from a national survey of abortion patients.¹ These rates are therefore based on the assumption that the distribution of abortions by intention status was the same for every state. This assumption should not have a large effect, considering that fewer than 5% of abortions nationally were related to intended pregnancies.¹

In addition, we were limited to the conventional measure of intention status used in the state surveys of births: the Pregnancy Risk Assessment Monitoring System surveys²³ and similar surveys used in other states.¹ This measure allows for only four categories—pregnancies that had occurred at the time they were wanted, had occurred later than wanted, had occurred sooner than wanted (i.e., were mistimed) and had not been wanted—and may be too general. For example, some pregnancies may be mistimed but not unwelcome. Others are classified as mistimed on the basis of women's reports, but without information about how many months too early the pregnancy occurred. Furthermore, the proportions of unintended pregnancies that are mistimed and unwanted may not be the same across states: Two states may have the same unintended pregnancy rate; but in one, the majority of unintended pregnancies may have been unwanted, and in the other, the majority may have been mistimed. (In fact, this was shown to be the case in Finer and Kost.¹) Likewise, the extent to which pregnancies are mistimed may vary. However, the state surveys upon which our data are based did not include questions sufficient to examine the timing of pregnancies for all states.

Conclusions

Understanding what lies behind the variation in state unintended pregnancy rates is crucial to ensuring that state policymakers and program planners design the most effective approaches to reducing unintended pregnancy. Our findings provide no evidence for causal relationships, but the associations we found imply that some state-level characteristics deserve exploration as factors in the rate of unintended pregnancy. Specifically, findings regarding insurance coverage and receipt of Medicaid among women of childbearing age suggest that financial obstacles to family

planning services may explain at least part of the variation among the states.

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