ARTICLE

Projected Economic Costs Due to Health Consequences of Teenagers' Loss of Confidentiality in Obtaining Reproductive Health Care Services in Texas

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Background: We wanted to focus on the potential consequences of recently enacted legislation in Texas that limits adolescents' ability to obtain confidential reproductive health care services.

Objective: To assess the potential economic costs that result when adolescents do not seek reproductive health care services because their confidentiality is compromised.

Design: We developed a cost model to estimate the projected costs of parental consent and law enforcement reporting requirements based on data from the literature, the Texas Department of Health, and publicly funded family planning clinics in Texas. Univariate and multivariate sensitivity analyses explored different scenarios.

Setting: The state of Texas.

Participants: Projected costs were estimated for all girls younger than 18 years using publicly funded reproductive health care services in Texas.

Main Outcome Measures: We determined the projected number of additional pregnancies, births, abortions, and untreated sexually transmitted infections and resulting pelvic inflammatory disease and calculated the associated economic costs of these projected outcomes.

Results: The potential costs of parental consent and law enforcement reporting requirements in Texas were estimated at $43.6 million (range, $11.8 million to $56.6 million) for girls younger than 18 years currently using publicly funded services.

Conclusions: As policymakers throughout the United States search for ways to curtail adolescent sexual activity and its adverse consequences, this analysis suggests that the limiting of medical confidentiality and the resulting restricted use of reproductive health care services potentially have serious health and economic consequences.

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Despite the poor reproductive health status of Texas adolescents compared with national levels,[1-3] recent changes in Texas law may have the consequence of restricting their access to reproductive health care services and further reducing their health status. As of January 2003, Texas law requires parental consent for teenagers younger than 18 years to receive prescribed contraceptives.[4] As of September 2001, Texas law requires that health care providers report to law enforcement officials the identity of all patients younger than 17 years whom they have reason to believe are sexually active, because sexual contact with a person younger than 17 years of age is a criminal offense.[5] Since the law requiring parental consent does not apply to clinics funded by Title X monies (approximately 50% in Texas), it has been suggested that providers could spread Title X money to services not paid for by Title X to avoid requiring parental consent. However, since Title X money comes with costly restrictions, including strict limits on the ability to collect co-pays and extensive budgeting and reporting requirements, providers avoid spreading Title X money for services where the receipt of Title X funds is not substantial. For example, at Planned Parenthood of Houston and Southeast Texas, which receives from Title X approximately $500 000 out of a yearly budget close to $15 million, all Title X money is in the teen clinic. Spreading Title X funds to the other clinics would require approval by the state and would subject all clinics to Title X restrictions, including the inability to collect co-

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pay on all clients, even Title XX–funded clients for whom the state requires the collection of $3 million co-pay as part of the Title XX contract. Likewise, Planned Parenthood would be prevented from charging for services funded or subsidized by Planned Parenthood money. The effect of these limitations would severely restrict Planned Parenthood operations. Furthermore, all providers, independent of funding source, are subject to criminal reporting. The law on criminal reporting was passed in September 2001, but no attempt to enforce it was made until May 15, 2003.[6] Because both laws have not yet been consistently enforced in Texas, and because many health care providers are not in compliance, no data are currently available on the effects of these laws.

This report examines the potential economic costs and health consequences of the loss of confidentiality for adolescents whose communications with health care professionals are disclosed to their parents or governmental authorities. Although our study is based on data specific to Texas, the methods and conclusions are relevant to all states in which such laws exist or are being considered.

Proponents of mandated parental involvement support increasing parental control over all reproductive health behaviors and contend that confidential services usurp the rights of parents to raise their children. Although there is consensus that strengthening communication between adolescents and their parents about sexual decision making is important, interventions to improve communication need not replace the presence of confidential health care.[7] Another argument made by proponents of laws that mandate parental and/or law enforcement involvement in adolescents' medical encounters is that they will result in decreased adolescent sexual activity and a reduction in the adverse consequences of such activity, including teen pregnancies.[8] Despite the lack of valid observational studies assessing the impact of parental notification laws on adolescent reproductive behavior, research indicates that mandated parental or law enforcement involvement may not result in decreased adolescent sexual activity. Studies questioning teenagers about their responses to hypothetical scenarios indicate that only 1% to 4% of girls report they would stop having intercourse if their parents were notified.[9-11] Similarly, there is no evidence that law enforcement involvement reduces or increases teen pregnancy or unfavorable sexual behaviors in teenagers.[8] A likely outcome of these requirements is a decrease in the use of reproductive health services by adolescents.[9,10]

Research examining adolescents' attitudes about confidentiality in health care demonstrates that adolescents' concerns about privacy, especially related to their parents, results in limited or no use of health care services,[7,12-16] and assurances of confidentiality substantially increase the number of adolescents willing to seek health care.[17] For this reason, all major medical associations support the need for confidential sexual health care services for adolescents.[18-21] Specifically, research has shown that loss of confidential care may have a serious impact on adolescents' use of reproductive health care services. In surveys performed in the 1970s, 36% of girls 17 years and younger attending family planning clinics said they would discontinue clinic attendance if their parents were notified.[10] Among the 45% whose parents did not know of their visit, only 2% would continue attending the clinic if their parents were notified.[10] More recently, Reddy et al[9] reported that 47% of girls younger than 18 years surveyed at Planned Parenthood clinics in Wisconsin indicated they would stop using all reproductive health care services if their parents were notified that they were seeking prescribed contraceptives. An additional 12% indicated that they would discontinue or delay specific reproductive health care services.[9]

METHODS

We constructed a model to estimate, for a 1-year period, the potential effect of loss of confidentiality on pregnancies, births, abortions, and untreated sexually transmitted infections (STIs) and their associated economic costs. We computed the costs for Texas girls younger than 18 years who were currently receiving publicly funded reproductive health care (estimated at 72 199 girls in 2001[22,23]). Sensitivity analyses explored different scenarios. Costs were estimated using societal and state perspectives. Only medical costs were included. All costs were translated into 2002 US dollars by using the medical care component of the Consumer Price Index.[24]

EFFECT OF LOSS OF CONFIDENTIALITY ON USE OF REPRODUCTIVE HEALTH CARE

According to Reddy et al,[9] 47% of adolescent girls using reproductive health care services report that they would stop using all reproductive health services because of parental notification. This figure may overestimate the actual decrease in contraceptive use in response to parental notification laws for several reasons. The decrease in reproductive health care use is based on a hypothetical question and may not represent actual behavior. Teenagers may increase their use of condoms as a method of pregnancy prevention. Parental support of their teenagers' use of prescribed contraceptives could lead to improved compliance and thus improved reproductive health. Because of these issues, we used input from national experts in this area to adjust the 47% reported by Reddy et al.[9] They advised an arbitrary downward adjustment to 37% for the estimate of the percentage of girls who would stop using reproductive health care services if parental consent or law enforcement involvement were required (Carol A. Ford, MD, written communication, April 1, 2004; Abigail English, JD, written communication, April 15, 2004). This percentage is also close to that reported in earlier surveys.[10]

EFFECTS OF LOSS OF CONFIDENTIALITY ON PREGNANCIES, BIRTHS, AND ABORTIONS

The effectiveness of reproductive health care in averting pregnancies was estimated at 0.3094 per client, which is the most recent estimate for the rate of pregnancies averted in US teenagers aged 15 to 19 years using publicly funded family planning clinics.[25] The rates of births and abortions averted per client were estimated at 0.2011 and 0.0619, respectively, when the rate of pregnancies averted with pregnancy outcomes for teenagers in Texas were combined.[2] The same method is used with similar results by the Texas Department of Health (TDH) to compute pregnancies and births averted in the Texas population who use Title XX, Title XIX, Title V, and Title X funds.[26] Formulas used in computing additional pregnancies, births, and abortions per 100 adolescent girls are reported in **Table 1**.

Table 1. Consequences of Loss of Confidentiality on Pregnancies and Sexually Transmitted Diseases*

Consequences	Sources/Formulas	Base Case	Ranges	
			Best Case	Worst Case
Reduction in clients due to loss of confidentiality, %	Reddy et al[9]; Torres[10]; personal communications†	37	10	47
Cost of visit, $	Begley et al[27]; personal communication‡	41.00	14.13	41.00
Pregnancies, No.				
Pregnancies averted per client	Forrest and Samara[25]	0.3094	0.2785	0.3403
Births averted per client	Alan Guttmacher Institute[2]; Forrest and Samara[25]	0.2011	0.1810	0.2212
Abortions averted per client	Alan Guttmacher Institute[2]; Forrest and Samara[25]	0.0619	0.0557	0.0681
Cost of birth, $	Women's Health and Family Planning Association[26]	8072	7265	8879
Cost of abortion, $	Henshaw[28]	389	350	428
Per 100 girls				
Additional pregnancies	Pregnancies averted × reduction§	11.45	2.78	16.00
Additional births	Births averted × reduction§	7.44	1.81	10.40
Additional abortions	Abortions averted × reduction§	2.29	0.56	3.20
Cost of additional births, $	Additional births × cost of birth	60061	13149	92316
Cost of additional abortions, $	Additional abortion × cost of abortion	891	195	1369
Additional cost of pregnancies, $	Cost of additional births + cost of additional abortions	60952	13344	93685
STIs				
Female prevalence of chlamydia, %‖	TDH[29]; Shafer et al[30]	10.4	6.25	10.4
PID resulting from untreated chlamydia, %	Wang et al[31]; Howell et al[32]; Welte et al[33]; Shafer et al[34]	20.0	20.0	40.0
Female prevalence of gonorrhea, %‖	TDH[29]	2.3	2.3	2.3
PID resulting from untreated gonorrhea, %	Shafer et al[34]; Westrom and Aschenbach[35]	10.0	10.0	40.0
Cost of screening for chlamydia and gonorrhea, $	Personal communications¶	14.00	16.00	9.10
Return for treatment, %	Wang et al[31]; Howell et al[32]	85	85	85
Cost of drugs for treating a case of chlamydia, $	Personal communications#	14.66	31.67	2.31
Treatment effectiveness for chlamydia, %	Welte et al[33]; Howell et al[36]	95	95	95
Cost of drugs for treating a case of gonorrhea, $	Personal communications¶#	1.71	10.07	1.71
Treatment effectiveness for gonorrhea, %	Centers for Disease Control and Prevention[37]	99.8	99.8	99.8
Cost of return visit for treatment, $	Begley et al[27]	9.63	9.63	9.63
PID cost, $	Yeh et al[38]; Shafer et al[30]; Rein et al[39]	2287	1357	3965
Per 100 girls				
Additional untreated chlamydia cases	Reduction§ × prevalence × return × effectiveness	3.11	0.51	3.95
Additional untreated gonorrhea cases	Reduction§ × prevalence × return × effectiveness	0.72	0.20	0.92
Additional PID due to untreated chlamydia and gonorrhea	Additional untreated cases × PID from untreated cases	0.69	0.12	1.95
Savings in screening, $	Reduction§ × cost of screening	518	160	428
Savings in treatment (chlamydia and gonorrhea), $	Reduction§ × prevalence × return × treatment cost	88	26	60
Additional cost of PID, $	Additional PID × PID cost	1586	163	7714
Net cost of untreated STI, $	Additional PID cost – screen and treatment cost	980	–22	7227

Abbreviations: PID, pelvic inflammatory disease; STI, sexually transmitted infection; TDH, Texas Department of Health.
*All consequences are assessed for a 1-year period, except for the costs of PID, which are lifetime costs.
†Indicates Carol A. Ford, MD, personal communication, April 2004; and Abigail English, JD, personal communication, April 2004.
‡Indicates Melaney A. Linton, RN, CNP, personal communication, April 2004.
§Indicates reduction in the number of girls using reproductive health care services.
‖Given as a percentage of the female population.
¶Indicates Bonnie K. Smith, personal communication, June 2003; Carlos Roca, personal communication, June 2003.
#Indicates Bonnie K. Smith, personal communication, June 2003; Peggy Smith, PhD, personal communication, May 2003; Onesia Bishop, PhD, personal communication, June 2003.

COSTS OF PREGNANCIES, BIRTHS, AND ABORTIONS

The economic consequences of the additional unintended teen pregnancies were estimated by assigning costs to the additional births and abortions resulting from parental consent and law enforcement reporting requirements (Table 1). The TDH estimated the cost of a birth at $8072 on the basis of the Medicaid cost per client for prenatal care, delivery, and first-year infant care.[26] The average abortion cost in the United States was $389.[28]

EFFECTS OF LOSS OF CONFIDENTIALITY ON UNTREATED STIs

Positive findings for chlamydia infection and gonorrhea were estimated at 10.4% and 2.3%, respectively, in girls aged 13 to 17 years attending family planning clinics in Texas in 2002.[29] Current practice is to screen for STIs at least annually in all adolescent girls receiving reproductive health care services in public clinics.[40,41] We assumed the following: all adolescents using reproductive health care services underwent screening for chlamydia and gonorrhea; approximately 85% of those with a positive test result return for treatment[31,32]; and treatment effectiveness for chlamydia infection and gonorrhea were 95% and 99.8%, respectively.[33,36,37] We used conservative estimates of the probability of progression of untreated STI to pelvic inflammatory disease (PID), ie, 20% for chlamydia infection and 10% for gonorrhea.[31-35,42] Table 1 shows the formulas used in computing the number of untreated cases of STI and the number of additional PID cases due to loss of confidentiality.

COSTS OF UNTREATED STI

The economic consequences of the additional untreated cases of chlamydia infection and gonorrhea consist of the costs due to the additional cases of PID minus the savings in screening and treating. We used $14 as the screening cost for chlamydia infection and gonorrhea (Bonnie K. Smith, written communication, June 4, 2003; Carlos Roca, written communication, June 4, 2003). It represents the average cost in publicly funded clinics in Texas for the nucleic acid amplification urine-based test, which is becoming more common for routine screening because it is cost-effective and preferred by adolescent patients.[34,43] The costs of treating chlamydia infection and gonorrhea in TDH-funded clinics were estimated to be $14.66 (the cost of 1 dose of azithromycin) and $1.71 (the cost of 1 dose of ciprofloxacin hydrochloride), respectively (Peggy Smith, PhD, written communication, May 30, 2003). The cost of the return visit for treatment was estimated at $9.63.[27] The lifetime medical cost of treating PID and its sequelae was recently estimated at $2287 for the group aged 15 to 19 years by Yeh et al.[38] The formulas used in computing the savings in screening and in treatment and the costs of the additional PID cases are reported in Table 1.

TOTAL COSTS

Total costs of reporting and consent requirements were computed by adding the costs of additional births and abortions to the costs of increased untreated STIs and subtracting the savings from the decrease in the number of visits due to the reduction in use of reproductive health care. The current cost of an annual visit in a publicly funded family planning clinic in Texas has been reported to be $41.00 (Melaney A. Linton, RN, CNP, oral communication, April 18, 2004).

SENSITIVITY ANALYSIS

We conducted several sensitivity analyses to investigate how the model's results were dependent on the estimates chosen for the probabilities and costs. First, we conducted univariate sensitivity analyses where the estimates of key variables were varied to reflect the plausible range reported in the literature. The percentage of decrease in girls using reproductive health care services because of loss of confidentiality is varied between 47%[9] and 27% (Carol A. Ford, MD, written communication, April 1, 2004; Abigail English, JD, written communication, April 15, 2004). We also considered the very conservative case where the percentage of girls who stop using reproductive health care in response to reporting requirements is arbitrarily adjusted downward to only 10%, well below published estimates. We considered a lower cost for a visit, $14.13, from a published study looking at visit costs in a Texas publicly funded clinic.[27] We used the lower rate of positive findings for chlamydia infection, 6.7%, in adolescents presenting for routine checkups in a large California health maintenance organization.[30] We varied the cost of screening from $9.10 (the cost of the cervical swab test) to $16.00 (the upper limit for the cost of the nucleic acid amplification urine-based test) (Bonnie K. Smith, written communication, June 4, 2003; Carlos Roca, written communication, June 4, 2003; Onesia Bishop, PhD, written communication, June 12, 2003). The upper limits for the costs of treating chlamydia infection and gonorrhea were represented by the following Medicaid reimbursements to a private pharmacy: $31.67 for azithromycin, $6.46 for doxycycline hyclate, and $10.07 for ciprofloxacin.[44,45] We varied the costs of treating chlamydia infection from $2.31 (cost to TDH of doxycycline) to $31.67 (Medicaid cost of azithromycin) and the cost of treating gonorrhea to $10.07 (Medicaid cost of ciprofloxacin). We considered the following ranges of probability of progression to PID: 20% to 40% for chlamydia infection and 10% to 40% for gonorrhea.[31-35] The low and high lifetime medical cost estimates for PID were $1357[39,42] and $3965,[34] respectively. We used plus and minus 10% of base-case values to vary the effectiveness of family planning in averting pregnancies, births, and abortions as well as the costs of births and abortions. Next, we conducted a multivariate sensitivity analysis by varying all variables simultaneously and considered a best-case scenario and a worst-case scenario. In the best-case scenario, all estimates and probabilities were set at their best levels (low for costs and high for savings), and in the worst-case scenario, all estimates and probabilities were set at their worst levels (high for costs and low for savings).

Univariate scenarios provide information on realistic variations in estimates, whereas multivariate scenarios represent the absolute lower and upper limits, which are unlikely to occur in practice. Table 1 reports the assumptions made for the base cases and ranges used in the multivariate scenarios.

In addition, we estimated the costs of consent and reporting requirement laws to the state of Texas. These costs exclude abortions and use TDH reimbursement to family planning clinics for screening and treatment of STIs ($27.71 and $5.90, respectively [L.M., unpublished data, May 2003]).

Table 2. Consequences of Loss of Confidentiality: Base-Case Scenario in 72199 Girls Younger Than 18 Years Served by Publicly Funded Clinics in Texas

Consequences	Additional No.	Additional Costs, $	% of Total Costs
Pregnancies	8265		
Births	5372	43364000	99.4
Abortions	1654	643000	1.5
Total Projected Costs for Pregnancies		**44007000**	**100.9**
Untreated *Chlamydia*	2243	−244000	−0.6
Untreated gonorrhea	521	−193000	−0.4
PID	501	1145000	2.6
Total Projected Costs for STI		**708000**	**1.6**
Visits	−26713	−1095000	−2.5
Total Projected Costs		**43620000**	**100.0**

Abbreviations: PID, pelvic inflammatory disease; STI, sexually transmitted infection.

RESULTS

ADDITIONAL UNINTENDED TEEN PREGNANCIES

Reporting and consent requirements were estimated to result in an additional 11.45 pregnancies, 7.44 births, and 2.29 abortions per 100 teenagers currently receiving reproductive health care services. The cost of the additional births and abortions was estimated at $60952 per 100 teenagers (Table 1). Among Texas girls younger than 18 years currently receiving publicly funded reproductive health services, an estimated 5372 additional births and 1654 additional abortions cost $44007000 (**Table 2**).

ADDITIONAL UNTREATED STIs

Among 100 adolescent girls, an estimated 3.11 additional untreated cases of chlamydia infection and 0.72

Table 3. Consequences of Loss of Confidentiality: Univariate and Multivariate Scenarios in 72199 Girls Younger Than 18 Years Served by Publicly Funded Clinics in Texas

Pregnancies	Additional Pregnancies	Additional Births	Additional Abortions	Pregnancies Costs*
Univariate scenarios				
1. Reduction in clients by 10%	2234	1452	447	11.9
2. Reduction in clients by 27%	6031	3920	1207	32.1
3. Reduction in clients by 47%	10499	6824	2100	55.9
4. 10% Decrease in family planning effectiveness and costs	7439	4835	1488	35.6
5. 10% increase in family planning effectiveness and costs	9092	5909	1819	53.2
Multivariate scenarios				
6. Best case	2010	1307	402	9.6
7. Worst case	11549	7506	2311	67.6
STIs	**Additional Untreated Chlamydia**	**Additional Untreated Gonorrhea**	**Additional PID**	**STI Costs***
Univariate scenarios				
1. Low ct prevalence, 6.25%	1348	521	322	0.3
2. Reduction in clients by 10%	606	141	135	0.2
3. Reduction in clients by 27%	1637	380	365	0.5
4. Reduction in clients by 47%	2850	662	636	0.9
5. Low probability of PID (20% ct and 10% gc)	2243	521	501	0.7
6. High probability of PID (40% ct and 40% gc)	2243	521	1106	2.1
7. Low PID cost ($1357)	2243	521	501	0.2
8. High PID cost ($3965)	2243	521	501	1.5
9. High cost of screening and treatment	2243	521	501	0.6
10. Low cost of screening and treatment	2243	521	501	0.9
Multivariate scenarios				
11. Best case	364	141	87	–0.02
12. Worst case	2850	662	1405	5.2

Abbreviations: ct, chlamydia; gc, gonorrhea; PID, pelvic inflammatory disease; STI, sexually transmitted infection.
*Data are expressed in millions of US dollars.

Table 4. Projected Total Costs Due to Loss of Confidentiality: Univariate and Multivariate Scenarios in 72199 Girls Younger Than 18 Years Served by Publicly Funded Clinics in Texas*

	Univariate		Multivariate	
	Best Case†	Worst Case‡	Best Case§	Worst Case‖
Pregnancy costs	11.9	55.9	9.6	67.6
STI costs	0.2	2.1	–0.02	5.2
Savings in visits	0.3	1.4	0.3	1.4
Total Projected Costs	**11.8**	**56.6**	**9.3**	**71.4**

Abbreviation: STI, sexually transmitted infection.
*Data are expressed in millions of US dollars.
†Pregnancy scenario 1 and STI scenario 2. (Descriptions of all scenarios appear in Table 3.)
‡Pregnancy scenario 3 and STI scenario 6.
§Pregnancy scenario 6 and STI scenario 11.
‖Pregnancy scenario 7 and STI scenario 12.

additional untreated cases of gonorrhea, leading to 0.69 additional cases of PID, would result from reporting and consent requirements. The net cost of untreated STI in 100 girls was estimated at $980 (Table 1). Among girls younger than 18 years receiving publicly funded reproductive health services, an estimated 2243 additional cases of untreated chlamydia infection and 521 additional cases of untreated gonorrhea resulted in 501 additional cases of PID, with a net cost of $708000 (Table 2).

SENSITIVITY ANALYSIS

Multivariate and univariate sensitivity analyses are reported in **Table 3** and **Table 4**. In univariate sensitivity analyses, relative to the base-case scenario, unintended pregnancies and their associated costs decreased by 72% in the best-case scenario (reduction in service use by 10%) and increased by 28% in the worst-case scenario (reduction in service use by 47%). The number of additional cases of PID and the costs of untreated STI had a similar range in those scenarios. The lower prevalence of chlamydia infection in health maintenance organization settings reduced the number of untreated cases and the associated costs by more than half. Costs of untreated STI were particularly sensitive to the probability of progression to PID (tripling in the high-probability scenario) and the costs of PID (reduced by about a third in the low-cost scenario and doubling in the high-cost scenario). Variation in the screening and treatment costs had smaller effects on the costs of untreated STI. The lower cost of an annual visit increased total projected costs to $44.3 million.

TOTAL COST

The projected cost of reporting and consent requirements in Texas was $43.6 million among girls younger than 18 years who were currently using publicly funded family planning clinics (Table 2). Those costs ranged from $11.8 million to $56.6 million for the univariate scenarios with the lowest (pregnancies scenario 1 and STI sce-

What This Study Adds

Laws limiting confidentiality in adolescent reproductive health care have been passed or are being considered in several US states. These laws have the potential of restricting adolescent access to reproductive health care services and reducing adolescent health status.

This report examines the potential economic costs and health consequences of parental consent and law enforcement reporting requirements related to adolescent reproductive health care in Texas. A cost model using extant data was developed to assess the projected costs associated with additional pregnancies, births, abortions, and untreated sexually transmitted infections resulting from the reporting requirements. The potential economic costs and health consequences are substantial and should be taken into account as legislation is considered.

nario 2) and highest costs (pregnancies scenario 3 and STI scenario 6), respectively, and from $9.3 million to $71.4 million for the best-case (pregnancies scenario 6 and STI scenario 11) and worst-case (pregnancies scenario 7 and STI scenario 12) multivariate scenarios. Considering only the costs to the state of Texas, the total projected costs amounted to $33.7 million.

COMMENT

In Texas, the economic costs that could result from the reduction in use of reproductive health care services by adolescents due to loss of confidentiality are potentially high. For girls younger than 18 years currently using publicly funded reproductive health care services, the projected cost is approximately $43.6 million per year. Even in the best-case multivariate and univariate scenarios, these costs are high at $9.3 million and $11.8 million, respectively. The projected costs paid through the state of Texas are $33.7 million. They consist of Title X, Title XX, and Medicaid money that, although partly federal funds, are distributed through the state. These estimates reflect the potential costs that Texas can expect as a result of laws that restrict adolescents' confidentiality in reproductive health care. However, these figures underestimate the true costs to society because they include only direct medical costs.

The largest portion of these potential costs is attributable to an increase in unintended pregnancies. The estimated figures underestimate the societal costs because they include only abortion costs and Medicaid costs of births. The Medicaid cost of a birth, which includes prenatal care, delivery, and infant care for the first year, greatly underestimates the cost to individuals and society of such a birth. Infants of teenage mothers have greater risk of adverse outcomes and require more neonatal intensive care and hospitalizations, all of which increase costs.[46,47] The costs of public assistance, education, and special services that might be required because of the increased likelihood of adverse economic, developmental, and educational outcomes for mother and child were not included.[47,48] These costs are difficult to quantify, but, nonetheless, they are real and substantial. All out-of-pocket costs, time costs, and lost income were excluded, as were the costs of stillbirths and miscarriages. The costs associated with law enforcement and child protective services follow-up of the reports were also not considered. Similarly, the estimated STI costs underestimate societal costs, as not all health consequences of untreated STI were assigned a cost.

The projected negative consequences of reporting and consent requirements on adolescent reproductive health estimated in this study are substantial, despite being conservative. Loss of confidentiality causes a large projected number of unintended teen pregnancies (8265), births (5372), and abortions (1654). The projected number of treated STI cases will be significantly reduced for chlamydia infection and gonorrhea. Lack of confidentiality will increase cases of PID, a consequence of untreated STIs, and women with PID are at subsequent increased risk of ectopic pregnancies, infertility, and chronic pelvic pain.[35] Untreated chlamydia infection and gonorrhea have been associated with adverse outcomes during pregnancy, as well as passage of the infection to the infant during birth.[49,50] We have not included in these calculations the consequences of other STIs (human immunodeficiency virus infection/AIDS was excluded from the analysis because there were only 22 teenagers with new diagnoses of AIDS in Texas in 2002,[3] and no estimates were available on the effectiveness of family planning clinics in preventing human immunodeficiency virus infection) or on the consequences associated with continued transmission of STIs by teenagers who go untreated.

Our calculations were based on several assumptions. The change in the use of reproductive health care services by teenage girls in response to law enforcement reporting or parental consent was based on surveys of what girls said they would do in response to parental notification, which was then adjusted downward on the basis of expert opinion[4,9,10] (Abigail English, JD, written communication, April 15, 2004). The downward adjustment was made considering the likelihood that girls may not do what they say they would when faced with obtaining parental consent. There may be an increased use of condoms. Some parents may consent to the use of prescribed contraceptives and help their daughters use them more effectively. Also, the girls who would actually stop use of reproductive health care services if their parents were notified may have different rates of pregnancy prevention than the population of teenagers who continue to use these services. Our estimates are likely to be conservative, because they are based on information for the case of parental notification rather than the case of reporting to the authorities or requiring parental consent. Reporting to the authorities or requiring parental consent, as opposed to parental notification, may lead to greater curtailment in the use of reproductive health care services due to fear of parental or legal reprisals. In all our assumptions, we tried to be conservative to not overstate the potential consequences and costs of the reporting laws.

As demonstrated, the potential economic costs associated with loss of confidentiality due to reporting requirements are substantial. As policymakers throughout the United States search for ways to curtail adolescent sexual activity and its adverse consequences, this analysis sug-

gests that the limiting of medical confidentiality and the resulting restricted use of reproductive health care services may have serious health and economic consequences.

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