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The link between reproductive life plan assessment and provision of preconception care at publicly funded health centers

Cheryl L. ROBBINS, PhD¹, Loretta Gavin, PhD², Marion W. Carter, PhD³, and Susan B. Moskosky, MS, WHNP-BC⁴

¹Epidemiologist, Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention (CDC), Atlanta, Georgia

²Senior Health Scientist, Office of Population Affairs, U.S. Department of Health and Human Services, Rockville, Maryland ³Health Scientist, Division of STD Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, CDC, Atlanta, Georgia ⁴Director (acting), Office of Population Affairs, U.S. Department of Health and Human Services, Rockville, Maryland

Abstract

CONTEXT—Federal and clinical guidelines recommend that reproductive life plan assessments be integrated into routine family planning encounters to increase the provision of preconception care. The associations between clinical protocols and reported reproductive life plan assessment, and between reproductive life plan assessment and preconception care delivery, are unknown.

METHODS—Two, nationally-representative surveys of administrators and medical providers at publicly-funded health centers (2013–2014), were linked to explore associations between reproductive life plan protocols, reproductive life plan assessment (very often/often versus not often/never), and preconception care delivery (frequently versus never/rarely/occasionally) (n=1,039). Bivariate and adjusted prevalence ratios (aPR) with 95% confidence intervals (CI) were used to examine associations.

RESULTS—Of respondents, 58% reported having reproductive life plan assessment protocol, 87% reported that they frequently assessed reproductive life plans, and 55% reported that they frequently provided preconception care. Lower percentages of reproductive life plan assessment protocols were observed among: community health centers (32%) versus other health center types; health centers focused on primary care (33%) versus reproductive health or other care focus; and health centers without Title X-funding (36%) versus Title X-funded. Administrators reporting frequent reproductive life plan assessments were more likely than those reporting infrequent

Correspondence: Cheryl L. Robbins, PhD, Centers for Disease Control and Prevention 4770 Buford Highway NE, Mailstop F-74, Atlanta, GA 30341-3717; Phone: (404) 718-6115; Fax: (404) 488-6391; ggf9@cdc.gov.

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reproductive life plan assessment to report frequent provision of preconception care (aPR 1.4, 95% CI 1.09–1.75).

CONCLUSIONS—Further research is needed to confirm the associations between report of having written protocols and reported clinical practice and to elucidate the specific preconception care services that may be associated with reproductive life plan assessment.

Keywords

maternal and child health; pregnancy intention; quality of care; United States

A reproductive life plan is a roadmap to help individuals achieve their personal goals for healthy childbearing.^{1–5} The Centers for Disease Control and Prevention recommends that all women, men, and couples be encouraged to have a reproductive life plan; and the U.S. Department of Health and Human Services' Office of Population Affairs, the American College of Obstetricians and Gynecologists, and the American Academy of Family Physicians encourage healthcare providers to assess women's reproductive life plans at every patient encounter.^{6–9} The reproductive life plan serves as a triage tool for clinicians by prioritizing and appropriately targeting the content of preconception care during clinical encounters to match patients' reproductive goals. For example, women who are not actively trying to get pregnant may only require routine preventive care and contraceptive counseling during family planning visits. Alternatively, extra emphasis on preconception care and risk factor reduction may be indicated for women who desire pregnancy.

The Centers for Disease Control and Prevention defines preconception care as “a set of interventions that aim to identify and modify biomedical, behavioral, and social risks to a woman's health or pregnancy outcome through prevention and management.”⁶ Preconception care is an important public health priority and a Healthy People 2020 strategy for preventing adverse pregnancy outcomes such as unintended pregnancy, pregnancy loss, birth defects, and even infant death.^{6,10} Preconception care includes a broad range of evidence-based screenings and clinical interventions, which should be integrated into primary care and preventive care health care visits to potentially decrease adverse pregnancy outcomes and improve women's health overall.^{6,11,12} When developing Federal recommendations for providing quality family planning services the Centers for Disease Control and Prevention and the Office of Population Affairs reviewed existing recommendations for clinical preconception health services^{11,13} and identified preconception care screenings for which the evidence was strongest: medical history, sexual health, intimate partner violence, alcohol and drug use, tobacco use, immunizations, depression, folic acid, body mass index, blood pressure, diabetes, and reproductive life plan.⁷ Moreover, the guidelines note that the recommended preconception care services are important because they contribute to the health and wellbeing of women's and men's health regardless of pregnancy intention.⁷ Like all other family planning services, they should be offered in a client-centered manner.

Clinical protocols for reproductive life planning have the potential to routinize reproductive life plan assessment during preventive and primary care clinic visits, and increased reproductive life plan assessment may translate into increased provision of preconception

care. Yet, surveillance of written protocols for and actual provision of reproductive life plan assessment is lacking. One U.S. study based on encounter data from multiple clinical sites within a single county of Cincinnati Ohio estimated that 42% of women who were seeking gynecologic services unrelated to pregnancy received reproductive life plan counseling.¹⁴ We are unaware of any studies that have examined associations between written protocols and actual reproductive life plan assessment or between reproductive life plan assessment and provision of preconception care. Estimates of preconception care from epidemiologic studies relying on postpartum women's retrospective recall suggest approximately one-third of postpartum women receive preconception care.^{15–17} According to a recent study based on a nationally representative sample of publicly-funded clinic administrators, 53% reported frequent provision of preconception care to women.¹⁸ While there are relatively few studies that examine associations between having clinical protocols and implementation, the benefits of adopting and using clinical protocols for controlling blood pressure have been elucidated,¹⁹ and similar benefits can be made for reproductive life plan assessment protocols and other clinical practices.

The objectives of this study were: 1) to describe prevalence of having written protocols for reproductive life plan assessment and of frequent assessment of reproductive life plans, 2) to describe health center characteristics associated with having reproductive life plan assessment protocols and frequent reproductive life plan assessments, 3) to examine the associations between written protocols for reproductive life plan assessment and frequent reproductive life plan assessment, and 4) to explore associations between frequent reproductive life plan assessment and frequent provision of preconception care.

Methods

Data

We surveyed a nationally representative, random sample of publicly-funded U.S. health centers (2013–2014) that provided family planning services from a Guttmacher Institute database. As previously reported, half received Title X funding, while the other half received other types of public funding*. The sample included community health centers, Planned Parenthood centers, hospital-based clinics, health departments and other health centers that offered family planning.²⁰ Each sampled clinic received a mailed survey package containing two surveys with postage-paid return envelopes – one to be completed by a randomly-selected family planning provider at the clinic (n=4000), and the second to be completed by the clinic administrator (n=4,000). Respondents also had the option to complete the surveys online. We sent reminder mailings and made follow-up telephone calls to non-responders. Response rates were calculated based on recommendations from the Council of American Survey Research Organizations.²¹ The final response rate for the administrator survey was 49% and 51% for the provider survey. Administrators were asked about clinic protocols and provision of preconception care in their health centers, and providers were asked about the frequency of reproductive life plan assessments. This analysis used the linked data from the administrator and provider surveys. Of responding administrators, 81% were successfully

*Title X is a federal program that provides subsidized family planning services for low-income women and men; Other sources of public funding included state appropriations, Section 308 of Public Health Service Act, and Title V (MCH Block Grant)

linked with a provider survey. The Centers for Disease Control and Prevention's IRB approval was not needed for this project as it was approved as public health practice.

Variables

Reproductive life plan assessment was defined as “asking about clients’ intentions regarding the number and timing of pregnancies in the context of their personal values and life goals.” A binary outcome (yes/no) for having a written clinical protocol to assess clients’ reproductive life plans during contraceptive counseling was created from the administrator survey data. Frequent reproductive life plan assessment by providers was based on responses to the following question in the provider survey: “In the past month, when counseling your typical female patients of reproductive age on family planning, how often have you (or your clinical team) assessed the patient’s reproductive life plan (i.e., asked about their intentions regarding the number and timing of pregnancies in the context of their personal values and life goals).” Response options were presented as a Likert scale: very often, often, not often, or never. Responses options “very often or often” were combined and classified as frequent reproductive life plan assessment (versus “not often or never”). Frequent preconception care provision was based on the following question in the administrator survey: “In the past 3 months, about how often did your health center provide preconception health care for women?” Notably, preconception health care was not defined. Response options were presented as a Likert scale: never, rarely, occasionally, or frequently. The first three response options were combined to define the referent category (i.e., “never, rarely, or occasionally”).

Health center characteristics of interest included: type of health center (community health center, health department, Planned Parenthood, other), health center focus (reproductive health, primary care, other), Title X funding (yes/no), service areas (mostly urban/sub-urban, mostly rural, combination), and annual family planning caseload (<1000, 1000–4999, or 5000). Due to the large number of “other” responses for health center focus (22%), write-in responses were reviewed and recoded to reflect “reproductive health” or “primary care” as appropriate.

Analysis

We estimated the prevalence of having written protocols for reproductive life plan assessment at the health center level as well as the prevalence of frequent reproductive life plan assessment by providers stratified by selected health center characteristics. We also examined the association between those two outcomes. We hypothesized that any potential influence that protocols may have on preconception care is indirect, operating through actual practice of reproductive life plan assessment. Therefore, we only examined the bivariate associations between protocols and preconception care. We then explored the association between providers’ report of frequently assessing reproductive life plans with frequent preconception care provision reported by administrators. Pearson chi-square tests were used to assess differential distributions for the above described analyses ($p < .05$).

Adjusted prevalence ratios (aPR) and 95% confidence intervals controlling for other health center characteristics were estimated using multivariable general linear models with Poisson distribution, for the following analyses: 1) health center characteristics and frequent

reproductive life plan assessment reported by providers, 2) reproductive life plan assessment protocols at the health center level and frequent reproductive life plan assessment reported by providers, and 3) frequent reproductive life plan assessment reported by providers and frequent preconception care reported at the health center level. We assessed multicollinearity in these analyses by examining variance inflation factors, which are measures of inflation to the standard error. The mean variance inflation factor was 2.0 and all mean variance inflation factors were <4. This means that the variables were not highly correlated and collinearity does not threaten the validity of our analyses.

Of 1,681 completed public provider surveys and 1,615 public administrator completed surveys, 1,312 records were successfully linked. Of linked records, 213 were missing on one or more outcome, and 60 were missing on other co-variables included in models. The analytic sample included respondents (administrators and providers) with linked and complete data on all of the variables (n=1,039). We considered alternate ways of maximizing usable data in analyses and the exclusions did not alter results. Data were weighted to correct for non-response and differential probability of selection into the sample by health center type. Data were also weighted to ensure that the 81% of health centers with linked administrator and provider survey data represented the original sample frame of health centers. We compared excluded and included survey respondents to understand how missing data might affect results. All analyses were conducted using the weighted data and STATA 13 to adjust for the complex survey design and non-response.

Results

There were differences between excluded (n=273) and included (n=1,039) survey respondents in the linked data (not shown). We found a higher proportion of community health centers and a lower proportion of health departments and Planned Parenthood centers among excluded respondents. Among respondents who were excluded, we also noted a higher proportion of primary care settings and correspondingly lower proportion of reproductive health focus. Excluded respondents also had a lower proportion of Title X funding, a lower proportion of reporting frequent provision of preconception care to women, and a lower proportion of reproductive life plan assessment written protocols.

Nearly sixty percent (58%) of health centers reported having written protocols for reproductive life plan assessment during family planning counseling with female clients (Table 1). All health center characteristics except service area and family planning caseload were significantly associated with having a written reproductive life plan assessment protocol ($p<.05$). The lowest estimates of having reproductive life plan assessment written protocols (within each health center characteristic category) were noted for community health centers (32%), health centers focused on primary care (33%), and non-Title X funded health centers (36%).

Turning to data reported by providers, 87% reported frequent reproductive life plan assessment during family planning counseling with female clients in the previous month (Table 2). In bivariate analyses, associations between health center characteristics and frequent reproductive life plan assessment by providers mirrored those between health center

characteristics and reproductive life plan protocols. In an examination of the association between health center protocols and provider practice, we found that among providers in health centers with written protocols, 93% reported that they frequently assessed reproductive life plans in the previous month compared with 80% in health centers without such protocols (not shown). In multivariable analysis of the correlates of providers frequently assessing clients' reproductive life plans, we found that the presence of a reproductive life plan assessment protocol at the health center level was the only significant predictor that remained (aPR 1.1).

Frequent provision of preconception care at the health center level was reported by 55% of health center administrators (Table 3). In bivariate analyses, frequent preconception care was more often reported by administrators at health centers with written reproductive life plan assessment protocols (60%) compared with those without such protocols (49%). Frequent provision of preconception care was also more likely among health centers where providers reported frequently assessing reproductive life plans compared with those that reported rarely or never assessing reproductive life plans (aPR 1.4).

Discussion

Reproductive life plan assessment is potentially an important gateway to the delivery of preconception care. This report begins to characterize aspects of this relationship with data reported by providers and administrators of family planning services. We found that providers working in health centers where administrators reported having a written clinical protocol for reproductive life plan assessment were more likely to report that they frequently assessed reproductive life plans during family planning counseling. Administrators' report of having written reproductive life plan protocols and providers' report of conducting reproductive life plan assessments were both less common in community health centers, health centers focused on primary care, and health centers without Title X funding, compared with their respective counterparts. Providers who reported frequently assessing reproductive life plans were more likely to work in health centers that reported frequent provision of preconception care to female clients.

Previous estimates of preconception care according to postpartum women's self-report¹⁵⁻¹⁷ are substantially lower (32-33%) than our findings of administrators' reported frequent provision of preconception care within their health centers (55%). Results from earlier studies of the administrators' survey data were similar to ours: the estimate of frequent preconception care was 53%²⁰ and occasional or frequent preconception care was 81%²², which are also higher than estimates reported by postpartum women. Our estimate of frequent reproductive life plan assessment according to providers' self-reported practice (87%) was more than twice that found in a Cincinnati study based on encounter data (42%).¹⁴

The gap between women's self-reported receipt of preconception care and providers' report of frequently providing preconception care may be attributed to variability in the interpreted meaning of preconception care. The notion of preconception care has evolved from the traditional concept of a pregnancy planning visit, to the current recommendation for every

health care system contact to address women's reproductive health choices and well-woman care.^{23,24} On the one hand, estimates of preconception care based on postpartum women's self-report are based on survey data that asks about receipt of specific preconception counseling content received before their most recent pregnancy that resulted in a live birth. Conversely, in our study, administrators were asked to estimate frequency of preconception care in the previous three months and preconception care was undefined.

Given that the Title X program guidelines have historically emphasized the need to provide preconception care to family planning clients, it is not surprising that Title X-funded health centers reported higher rates of having written protocols for reproductive life plan assessment and were more likely to report frequent provision of reproductive life plan assessment and preconception care compared with health centers that do not receive Title X funding. Additionally, the Office of Population Affairs provides institutional supports, such as routinely offering training to Title X grantees, to ensure that all personnel have the knowledge, skills, and abilities to promote this practice. After implementation of the survey, the Recommendations for Quality Family Planning Services⁷ were published and clarified how to effectively deliver preconception care services.

By the same token, community health centers have not historically been a large part of the Title X network, as their main focus is primary care rather than reproductive health. For this reason, we were not surprised by the findings of lower reported prevalence of written protocols for reproductive life plan assessment, and lower reported prevalence of frequent reproductive life plan assessment among community health centers, health centers focused on primary care more generally, and those with smaller family planning caseloads. The present study underscored the unrealized potential that community health centers and primary care providers represent for integrating preconception care into routine healthcare visits and increasing provision of preconception care.

No published studies have previously examined associations between health center characteristics and written protocols for, or frequent provision of, reproductive life plan assessment. Further examination of the underlying reasons for suboptimal reproductive life plan assessment and preconception care in primary care-focused health centers is needed. Our study suggests that clinical protocols for reproductive life plan assessment are associated with more frequent reproductive life plan assessments. The evidence base supporting the effectiveness of reproductive life plan assessment for increasing preconception care is relatively new and limited,²⁵ and therefore additional epidemiologic studies are needed to fill this void in the literature.

Limitations

The findings should be interpreted with caution and in the context of the study's limitations. Self-reported, subjective assessments of frequency for reproductive life plan assessment and preconception care may be inflated due to desirability bias. Further, they may be over- or under-reported since the response options for the scales (e.g., "frequently") were undefined and therefore interpretations may vary from "every patient" to "every day." Misspecification is also possible since preconception care was not defined in the survey. As a result,

administrators may over-report due to broad, subjective interpretations of preconception care. Conversely, administrators lacking reproductive health expertise may not recognize that many of the preventive services that their health centers offer constitute preconception care and therefore they might have under-reported preconception care. While misspecification could affect the point estimates, we have no reason to think it would affect the nature and direction of associations that we reported. Also, the data do not address the quality or content of the written protocols for reproductive life plan assessment. Selection bias is possible as the sample may not be random as intended. Respondents with missing data were excluded; the excluded sample was overrepresented by community health centers, health centers focused on primary care, and those with smaller family planning caseloads. Additionally, response rates were suboptimal (49% for the administrators' survey and 51% for the providers' survey), although these response rates are higher than most health care provider surveys.²⁶ To limit potential non-response bias, weights were used in all analyses to increase representativeness of estimates. Finally, because the study was cross-sectional in nature, temporality cannot be determined, and endogeneity is possible.

Conclusion

This report is the first attempt to characterize the relationship between reports of having reproductive life plan assessment protocols and reports of actual reproductive life plan assessment, and it also examined the possible association between self-reported frequent reproductive life plan assessment and self-reported frequent preconception care. As a first step in examining this topic, it suggests that written protocols may be of some value for increasing reproductive life plan assessment and preconception care. Additional epidemiologic and implementation research is needed to develop the evidence base for translating research and practice. For one, studies are needed to confirm the associations that we found between report of having written protocols and reported implementation of reproductive life plan assessment, and to elucidate the specific preconception care services that may be associated with reproductive life plan assessment. Program evaluation research is needed to identify best practices. Qualitative research could further clarify the facilitators and barriers to reproductive life plan assessment and preconception care delivery.

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References

1. Files JA, Frey KA, David PS, Hunt KS, Noble BN, Mayer AP. Developing a reproductive life plan. *J Midwifery Womens Health*. 2011; 56(5):468–474. [PubMed: 23181644]
2. Biermann J, Dunlop AL, Brady C, Dubin C, Brann AW Jr. Promising Practices in Preconception Care for Women at Risk for Poor Health and Pregnancy Outcomes. *Matern Child Health J*. 2006; 10(Supplement):21–28.
3. Moos MK, Bangdiwala SI, Meibohm AR, Cefalo RC. The impact of a preconceptional health promotion program on intendedness of pregnancy. *Am J Perinatol*. 1996; 13(2):103–108. [PubMed: 8672181]

4. Stern J, Larsson M, Kristiansson P, Tyden T. Introducing reproductive life plan-based information in contraceptive counselling: an RCT. *Hum Reprod.* 2013; 28(9):2450–2461. [PubMed: 23842564]
5. Mittal P, Dandekar A, Hessler D. Use of a modified reproductive life plan to improve awareness of preconception health in women with chronic disease. *Perm J.* 2014; 18(2):28–32. [PubMed: 24867547]
6. Centers for Disease Control and Prevention. Recommendations to improve preconception health and health care – United States. *MMWR.* 2006; 55(RR-06):1–23.
7. Gavin L, Moskosky S, Carter M, et al. Providing quality family planning services: Recommendations of CDC and the U.S. Office of Population Affairs. *MMWR Recomm Rep.* 2014; 63(RR-04):1–54.
8. American College of Obstetricians and Gynecologists. ACOG Committee Opinion number 654, February 2016. Reproductive Life Planning to Reduce Unintended Pregnancy. *Obstet Gynecol.* 2016; 127(2)
9. Wilkes J. AAFP Releases Position Paper on Preconception care. *Am Fam Physician.* 2016; 94(6): 508–510. [PubMed: 27637129]
10. US Department of Health and Human Services. Healthy People 2020.
11. Jack BW, Atrash H, Coonrod DV, Moos MK, O'Donnell J, Johnson K. The clinical content of preconception care: an overview and preparation of this supplement. *Am J Obstet Gynecol.* 2008; 199(6 Suppl 2):S266–279. [PubMed: 19081421]
12. Temel S, van Voorst SF, Jack BW, Denktas S, Steegers EA. Evidence-Based Preconceptional Lifestyle Interventions. *Epidemiol Rev.* 2014; 36(1):19–30. [PubMed: 23985430]
13. Lu MC. Recommendations for preconception care. *Am Fam Physician.* 2007; 76(3):397–400. [PubMed: 17708141]
14. Bommaraju A, Malat J, Mooney JL. Reproductive Life Plan Counseling and Effective Contraceptive Use among Urban Women Utilizing Title X Services. *Womens Health Issues.* 2015; 25(3):209–215. [PubMed: 25965154]
15. Williams L, Zapata LB, D'Angelo DV, Harrison L, Morrow B. Associations Between Preconception Counseling and Maternal Behaviors Before and During Pregnancy. *Matern Child Health J.* 2012; 16(9):1854–1861. [PubMed: 22173331]
16. Oza-Frank R, Gilson E, Keim SA, Lynch CD, Klebanoff MA. Trends and Factors Associated with Self-Reported Receipt of Preconception Care: PRAMS, 2004–2010. *Birth.* 2014; 41(4):367–373. [PubMed: 24995805]
17. Connor KA, Cheng D, Strobino D, Minkovitz CS. Preconception health promotion among Maryland women. *Matern Child Health J.* 2014; 18(10):2437–2445. [PubMed: 24748212]
18. Carter MW, Gavin L, Zapata L, Moskosky S, Bornstein M, Mautone-Smith N. The scope and quality of family planning services in publicly-funded health centers across the U.S.: Results from a survey of health center administrators. *Perspectives in Sexual and Reproductive Health.* 2016
19. Frieden TR, King SM, Wright JS. Protocol-based treatment of hypertension: a critical step on the pathway to progress. *Jama.* 2014; 311(1):21–22. [PubMed: 24231925]
20. Carter MW, Gavin L, Zapata LB, Bornstein M, Mautone-Smith N, Moskosky SB. Four aspects of the scope and quality of family planning services in US publicly funded health centers: Results from a survey of health center administrators. *Contraception.* 2016
21. CASRO. [Accessed December 28, 2016] On the Definition of Response Rates. 1982. http://c.ymcdn.com/sites/www.casro.org/resource/resmgr/docs/casro_on_definitions_of_resp.pdf
22. Robbins CL, Gavin L, Zapata LB, et al. Preconception care in publicly-funded U.S. clinics that provide family planning services. *American Journal of Preventive Medicine.* 2016
23. Conry JA. Every woman, every time. *Obstet Gynecol.* 2013; 122(1):3–6. [PubMed: 23743469]
24. Crawford C. AAFP urges family physicians to integrate preconception care into patient visits. *Ann Fam Med.* 2016; 14(2):180–181. [PubMed: 26951596]
25. Bellanca HK, Hunter MS. ONE KEY QUESTION(R): Preventive reproductive health is part of high quality primary care. *Contraception.* 2013; 88(1):3–6. [PubMed: 23773527]

26. McLeod CC, Klabunde CN, Willis GB, Stark D. Health care provider surveys in the United States, 2000–2010: A Review. *Evaluation & the Health Professions*. 2013; 36(1):106–126. [PubMed: 23378504]

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Table 1

Among a nationally representative sample of publicly funded U.S. health centers that provide family planning services, percentage reporting having written protocols for assessing patients' reproductive life plan, by selected characteristics, 2013–2014

Characteristic	N	%
Total	1,039	58.0 (0.01)
Type of health center		***
Community Health Center	198	32.3 (0.03)
Health Department	497	77.0 (0.02)
Planned Parenthood	125	90.8 (0.02)
Hospital/Other (Includes private non-profit organizations, and other)	219	51.7 (0.03)
Health center focus		***
Reproductive health	576	76.7 (0.02)
Primary care	326	33.3 (0.02)
Other	137	79.6 (0.04)
Receipt of Title X funding		***
Yes	747	76.5 (0.01)
No	292	36.1 (0.03)
Service area		
Mostly urban/suburban	285	59.1 (0.03)
Mostly rural	535	56.9 (0.02)
Combination (urban/suburban and rural)	219	59.1 (0.03)
Annual family planning caseload		
<1000	482	54.1 (0.02)
1000–4999	414	61.7 (0.02)
5000	143	60.8 (0.04)

*** In chi-square tests, differences by category are significant at $p < .001$. *Note:* Figures in parentheses are standard errors.

Table 2

Percentage of centers reporting frequent reproductive life plan assessment, and percentage reporting frequent provision of preconception care, by selected characteristics; and prevalence ratios from multivariable general linear models assessing correlates

Characteristic	%	Prevalence ratio
FREQUENT REPRODUCTIVE LIFE PLAN ASSESSMENT*		
Total	87.4 (.01)	
Type of center	***	
Community Health Center (ref)	80.6 (.03)	1.00
Health Department	92.3 (.01)	1.00 (0.92–1.09)
Planned Parenthood	90.4 (.02)	0.94 (0.85–1.03)
Hospital/Other (Includes private non-profit organizations, and other)	88.3 (.02)	1.02 (0.94–1.12)
Health center focus	***	
Reproductive health (ref)	92.2 (.01)	1.00
Primary care	80.5 (.02)	0.94 (0.87–1.00)
Other	95.2 (.02)	1.04 (0.99–1.09)
Receipt of Title X funding	***	
Yes	92.3 (.01)	1.06 (1.00–1.13)
No (ref)	81.7 (.02)	1.00
Service area		
Mostly urban/suburban (ref)	88.6 (.02)	1.00
Mostly rural	85.8 (.02)	0.97 (0.91–1.04)
Combination (urban/suburban/rural)	89.5 (.03)	1.00 (0.94–1.07)
Annual family planning caseload		
<1000	85.2 (.02)	0.94 (0.87–1.00)
1000–4999	88.3 (.02)	0.96 (0.90–1.02)
5000 (ref)	92.5 (.02)	1.00
Has written protocol for Reproductive life plan assessment	***	
Yes	92.8 (.01)	1.10 (1.04–1.17)
No (ref)	79.9 (.02)	1.00
FREQUENT PROVISION OF PRECONCEPTION CARE[†]		
Total	55.3 (0.02)	
Has written protocol for reproductive life plan assessment	***	
Yes	59.9 (0.02)	na
No (ref)	49.0 (0.03)	na
Frequently provides reproductive life plan assessment	***	
Yes	57.9 (0.02)	1.38 (1.09–1.75)
No (ref)	37.7 (0.05)	1.00

* Multivariable general linear models with Poisson distribution used to estimate aPR controlling for type of center, health center focus, receipt of Title X funding, service area, annual family planning caseload, and written protocol for reproductive life plan assessment

[†]Multivariable general linear models with Poisson distribution used to estimate aPR controlling for type of center, health center focus, receipt of Title X funding, service area, annual family planning caseload, and frequent reproductive life plan assessment

In chi-square tests, differences by category are significant at $p < .001$.

Notes: “Frequent” assessment denotes that assessment was reportedly offered “very often” or “often” (as opposed to “not often” or “never”) during family planning counseling with female clients in the previous month. “Frequent” provision of care denotes that preconception care was reportedly offered “frequently” (as opposed to “never,” “rarely” or “occasionally”) in the past three months. Figures in parentheses are standard errors (in the percentage column) or 95% confidence intervals (in the prevalence ratio column). ref=reference group in the multivariable model. na=not applicable, because differences were not assessed in the multivariable model.

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