



Published in final edited form as:

*J Adolesc Health*. 2015 November ; 57(5): 488–495. doi:10.1016/j.jadohealth.2015.07.013.

## Improving the Implementation of Evidence-Based Clinical Practices in Adolescent Reproductive Health Care Services

Lisa M. Romero, Dr.P.H., M.P.H.<sup>a,\*</sup>, Dawn Middleton<sup>b</sup>, Trisha Mueller, M.P.H.<sup>a</sup>, Lia Avellino, M.P.H.<sup>b</sup>, and Rachel Hallum-Montes, Ph.D.<sup>b</sup>

<sup>a</sup>Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia

<sup>b</sup>Cicatelli Associates, Inc. (CAI), New York, New York

### Abstract

**Purpose**—The purposes of the study were to describe baseline data in the implementation of evidence-based clinical practices among health center partners as part of a community-wide teen pregnancy prevention initiative and to identify opportunities for health center improvement.

**Methods**—Health center partner baseline data were collected in the first year (2011) and before program implementation of a 5-year community-wide teen pregnancy prevention initiative. A needs assessment on health center capacity and implementation of evidence-based clinical practices was administered with 51 health centers partners in 10 communities in the United States with high rates of teen pregnancy.

**Results**—Health centers reported inconsistent implementation of evidence-based clinical practices in providing reproductive health services to adolescents. Approximately 94.1% offered same-day appointments, 91.1% had infrastructure to reduce cost barriers, 90.2% offered after-school appointments, and 80.4% prescribed hormonal contraception without prerequisite examinations or testing. Approximately three quarters provided visual and audio privacy in examination rooms (76.5%) and counseling areas (74.5%). Fewer offered a wide range of contraceptive methods (67.8%) and took a sexual health history at every visit (54.9%). Only 45.1% reported Quick Start initiation of hormonal contraception, emergency contraception (43.1%), or intrauterine devices (12.5%) were “always” available to adolescents.

**Conclusions**—The assessment highlighted opportunities for health center improvement. Strategies to build capacity of health center partners to implement evidence-based clinical practices may lead to accessibility and quality of reproductive health services for adolescents in the funded communities.

\*Address correspondence to: Lisa M. Romero, Dr.P.H., M.P.H., Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 4770 Buford Highway, NE MS F-74, Atlanta, GA 30341. [lmromero@cdc.gov](mailto:lmromero@cdc.gov) (L.M. Romero).

**Disclaimer:** The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

## Keywords

Teen pregnancy; Adolescent reproductive health services; Evidence-based clinical practices; Youth-friendly reproductive health services

The 2014 United States (US) teen birth rate of 24.2 births per 1,000 females aged 15–19 years reflects over a 61% decline from 1991 [1]. Despite this trend, US teen birth rates remain higher than rates in other developed countries [2], and marked racial, geographic, and socioeconomic disparities persist [3,4]. In 2014, there were >249,000 births to teens aged 15–19 years, with the birth rate for African-American (34.9) and Hispanic (38.0) adolescents approximately double the rate of white adolescents (17.3) [1].

Observed differences in teen birth rates may be attributed in large part to disparities in access to and use of reproductive health services. Reproductive health services are defined as contraceptive services (provision of a method or prescription, a checkup, counseling, or pregnancy test), gynecologic services (a pelvic examination or Papanicolaou [Pap] smear), and sexually transmitted diseases (STD) counseling, testing, or treatment. Recent analyses of nationally representative data highlight that many adolescents are not receiving recommended preventive reproductive health services, with younger, Hispanic, underinsured, and undereducated adolescents less likely to report utilization of services [5]. During 2006–2010, approximately one in four (24%) sexually experienced females and more than one in three (38%) sexually experienced males aged 15–19 years did not receive a reproductive health service from a health care provider in the past year [5]. In addition, among sexually experienced female adolescents, 85% used contraception the last time they had sex; however, most used birth control pills (56%) and condoms (34%), which when not used consistently or correctly are less effective for pregnancy prevention [6]. Use of long-acting reversible contraception (LARC), specifically intrauterine devices (IUDs) and implants, among teens remains low nationwide (<7%) [7–9], despite their effectiveness [10], safety [11], and ease of use. LARC are the most effective types of birth control for adolescents, with <1% of users becoming pregnant during the first year of typical use compared with birth control pills (9%) and condoms (18%), the two most common methods adolescents use most often [10]. Racial/ethnic disparities in use of highly effective methods (defined as IUD or hormonal methods) are evident among female teens aged 15–19 years. Overall, 66% of sexually experienced white female teens aged 15–19 years used a highly effective method as opposed to only 47% of African-American and 54% of Hispanic female teens [12]. Nonuse of any contraceptive method was significantly higher among sexually experienced African-American (26%) and Hispanic (24%) female teens aged 15–19 years than white teens (15%) [12]. Low use of highly effective methods may be related to lack of service utilization among sexually experienced teens.

Facilitating adolescent access to and use of reproductive services is imperative for reducing disparities in teen birth rates [5,13–15]. Structural (i.e., poverty, inequity, oppression) and policy-level changes are needed to address the social determinants of teen pregnancy; however, changes at the health care delivery systems level that ensure provision of accessible, affordable, and evidence-based clinical practices are necessary to improve

adolescents' use of reproductive health services. Numerous professional organizations and governmental agencies, including the American Academy of Pediatrics, the Society for Adolescent Health and Medicine, the American College of Obstetricians and Gynecologists, the American Medical Association, the American Academy of Family Physicians, the Office of Population Affairs (OPA), and the Centers for Disease Control and Prevention (CDC), have issued recommendations for health centers and providers to facilitate increased adolescent access to reproductive health services and highly effective contraception [10–14] and guide health center implementation of evidence-based clinical practices in the provision of reproductive health services for adolescents [11–22]. Broadly, recommendations for increasing access include ensuring that reproductive health visits begin during early adolescence and include reproductive health counseling, screening for sexual activity, anticipatory guidance/delay counseling and/or provision of contraception as appropriate, and screening for STDs. Recommendations for health centers to implement evidence-based practices include the availability of a wide range of reproductive health services at reduced or no cost, providing services at locations and hours convenient to adolescents, ensuring protection of adolescent privacy and confidentiality, having separate waiting areas and examination rooms with age-appropriate educational materials, having staff trained to address the needs of adolescents of diverse backgrounds, and implementing systems and practices to ensure that the reproductive health care needs of adolescents are addressed in a timely manner [11,16–26].

Health centers that have incorporated evidence-based clinical practices and programs have achieved significant improvements in adolescent uptake of highly effective contraception and in satisfaction with services [15,27–35]. Initiatives to improve access to LARC [8,36–38] have facilitated use of LARC among reproductive-aged women, including teens, by underscoring the importance of educating providers that LARC is medically safe for teens [11], training providers on LARC insertion and use of a client-centered counseling approach that includes discussing the most effective contraceptive methods first [26], and providing contraception at reduced or no cost to the client. These efforts have increased the percentage of teens and young women selecting LARC as their preferred option for contraception and have been associated with declines in teen pregnancies, births, and abortions [36,37]. In addition, an evidence-based program that links at-risk youth to sexual and reproductive health services reported increases in female adolescents' receipt of high-quality sexual and reproductive health care services, including receipt of birth control; increases in STD testing and/or treatment; and increases in ever receiving an HIV test [39]. However, recent research has also documented that these recommendations have been implemented inconsistently or not at all across a nationally representative sample of health centers [15,40].

The purposes of this article were to describe baseline data in the implementation of evidence-based clinical practices among health center partners as part of a multicomponent, community-wide teen pregnancy prevention initiative and, informed by findings from the baseline data, to identify opportunities for health center improvement.

## Methods

A national demonstration project to reduce teen pregnancy was funded to implement a five component community-wide model; one component focuses on providing reproductive health care for adolescents. Before project implementation, two fundamental activities to identify opportunities for health center improvement included the following: (1) the identification of evidence-based clinical practices to assist health center partners in providing accessible reproductive services for adolescents and (2) the development of a needs assessment to measure the implementation of evidence-based clinical practices among health center partners and the capacity (i.e., health center infrastructure and staff skills and motivation) to provide reproductive health care for adolescents.

### **Development of a national demonstration project to prevent teen pregnancy using the integration of services, programs, and strategies through community-wide initiatives**

Under the President's Teenage Pregnancy Prevention Initiative (<http://www.cdc.gov/teenpregnancy/preventteenpreg.htm>), the CDC partnered with the Office of Adolescent Health to fund a national demonstration project to implement community-wide initiatives to reduce teen pregnancy in 10 intervention communities across the United States [41]. Briefly, nine state- and community-based organizations were funded: eight by Office of Adolescent Health and one jointly by CDC and the OPA. Five national organizations were also funded by the CDC to provide technical assistance and training (TTA) to the funded state- and community-based organizations with the purpose of building their capacity to implement a five-component model to prevent teen pregnancy. Each of the funded state- and community-based organizations were then required to work with community partners (e.g., health centers, youth-serving organizations, faith-based organizations, schools) to implement the five key components of the teen pregnancy prevention community-wide initiative model: (1) mobilizing necessary resources, disseminating information, generating support, and fostering cooperation across public and private sectors in the community; (2) providing teens with evidence-based teen pregnancy prevention programs, including youth development and curriculum-based programs that reduce teen pregnancy and associated risk factors; (3) ensuring clinical partners are providing teen friendly, culturally competent reproductive health care services that are easily accessible to all youth in the community and establishing linkages between teen pregnancy prevention program partners and clinics that serve at-risk youth from the target community; (4) educating civic leaders, parents, and other community members about evidence-based strategies to reduce teen pregnancy and improve adolescent reproductive health, including needs and available resources in the target community; and (5) raising awareness of community partners about the link between teen pregnancy and social determinants of health and ensuring culturally and linguistically appropriate programs and reproductive health care services are available to youth.

### **Implementation of the key component to improve adolescent reproductive health care services**

One of the five key components of the teen pregnancy prevention community-wide initiative model is to improve adolescent reproductive health care services. Each of the 10

intervention communities were required to partner (i.e., signed memorandum of agreement) with a minimum of five health centers (i.e., 51 health center partners at baseline) with the goal to establish a coordinated health care delivery systems for adolescents to increase access to and use of reproductive health care services. The role of the funded state- and community-based organizations were to leverage existing and new resources to increase access to reproductive health care for adolescents and to build the capacity of the health center partners to implement evidence-based clinical practices. To build the capacity of health center partners, a funded national organization provided TTA on: (1) establishing linkages between health care and other service area systems (e.g., primary care, education, social services, juvenile justice, foster care) to enhance the coordination of reproductive health care for adolescents; (2) increasing number of adolescents from the target community served at partner health centers; (3) increasing access to and use of highly effective contraception, including LARC by sexually active adolescent females; (4) providing anticipatory guidance and support to adolescents who choose to delay sexual activity; (5) increasing the implementation of evidence-based clinical practices for the delivery of reproductive health care for adolescents among health center partners; (6) ensuring the delivery of culturally, age-, and gender-appropriate health care among health center partners; and (7) measuring and monitoring the impact of activities to improve access to and use of reproductive health care by the target community.

### **Identification of evidence-based clinical practices**

In 2011, before project implementation, we used the rapid synthesis and translation process [42] to facilitate rapid translation of professional recommendations and evidence from the literature to develop a standardized checklist of evidence-based clinical practices to assist our health partners in providing accessible reproductive services for adolescents. The rapid synthesis and translation process is a six-step process that includes the following: (1) soliciting suggested topics by end users (i.e., health center partners); (2) scanning for findings; (3) sorting for relevance; (4) synthesizing results; (5) translating for end user; and (6) review by end user and experts [42]. Resulting products are intended to inform the field and stimulate action.

Briefly, we systematically scanned both professional organizations' and governmental agencies' recommendations (e.g., American Academy of Pediatrics, Society for Adolescent Health and Medicine, American College of Obstetricians and Gynecologists, American Medical Association, American Academy of Family Physicians, CDC, OPA), and peer-reviewed scientific articles that focused on the provision of reproductive health services for adolescents based on developed search strategies for electronic databases, retrieval and inclusion criteria, and quality assessment. To determine which literature is most relevant to clinical practice needs, we sorted evidence-based clinical practice findings related to adolescent reproductive health from the initial literature review scan based on relevance. To narrow the literature focus to discrete, actionable information, we synthesized recommendations from professional organizations and governmental agencies to develop a list of evidence-based clinical practices in service delivery, whereas scientific articles on teen-friendly health care and access to services informed the development of evidence-based clinical practices related to clinic environment and infrastructure [43].

This synthesis resulted in the identification of 31 evidence-based clinical practices [43], which were grouped into the following eight domains: (1) contraceptive access; (2) quick start method to initiate hormonal contraception and IUDs (i.e., begin contraception at the time of the visit rather than waiting for next menses if the health provider can reasonably be certain that the client is not pregnant) [44]; (3) emergency contraception (EC); (4) cervical cancer screening; (5) HIV/STD testing; (6) confidentiality and consent; (7) youth-friendly health center environment; and (8) cost and billing practices to facilitate both provision of and access to adolescent reproductive health services. None of the recommendations obtained from our review of the literature directly conflicted with the guidelines issued by another agency, which likely reflects similarities and consistency in the evidence base related to adolescent reproductive health or mutual recognition of guidance by multiple entities [43]. To determine usability, actionable knowledge, and applicability to practice, we obtained feedback from experts and health center partner staff on the use of plain language, usability, and applicability of the synthesized list of 31 evidence-based clinical practices. The checklist was disseminated to funded state- and community-based organizations and their health center partners [43].

To support health center efforts to ensure consistent implementation of evidence-based clinical practices to increase youth access to, provision of, and appropriate use of reproductive health services, a health center needs assessment, relevant tools and resources, and targeted capacity-building TTA were provided to health center partners. The targeted capacity building focused on systems related to access; processes for the delivery of care; implementation of evidence-based practices; cost, confidentiality, and supportive infrastructure; and the health care delivery environment. Technical assistance, informed by the needs assessment, focused on strategies for addressing the identified gaps to ensure that the health center's ability to implement evidence-based clinical practices improved over the course of the initiative.

### **Development of the clinic partner needs assessment**

The clinic partner needs assessment is a comprehensive assessment tool that was developed during the first year of the community-wide initiative. It is used to examine health center practices and capacity in provision of reproductive health care for adolescents by obtaining data on health center type, funding sources, and staff training needs. In addition, it is used to collect information annually to measure the implementation of evidence-based clinical practices among health center partners in each intervention community.

### **Data collection and analysis**

Health center partner baseline data were collected at the end of the first year (2011) and before implementation of the 5-year community-wide teen pregnancy prevention initiative (the first year was a planning year; program implementation and TTA for health center partners began in the second year). Baseline data from the clinic partner needs assessment included information on the health center setting and funding, processes for referrals and linkages, billing practices and revenue, staff training, implementation of evidence-based clinical practices, accessibility of services for adolescents, health center environment and infrastructure, and the use of health care services by adolescents. Data were collected in



2011 from 51 health center partners in 10 intervention communities in Alabama, Connecticut, Georgia, Massachusetts, New York, North Carolina, Pennsylvania, South Carolina (two communities), and Texas. These data were collected by a multidisciplinary team of health center staff, including providers, administrators, and billing and information technology staff. This team approach facilitated more accurate reporting of health center capacity and practices, as appropriate staff were tasked with completing sections of the data entry form most relevant to their disciplinary roles (i.e., billing staff completed sections relevant to billing codes and practices, information technology staff completed sections on electronic medical record utilization).

All data were entered and maintained on a secure, password-protected server. Descriptive statistics were calculated to summarize health centers practices, by setting, implementation of evidence-based clinical practices, and demographics of the target population. All quantitative data were analyzed using Stata 10 statistical analytic software.

Institutional review board approval was not needed for this project because CDC determined that this project was public health practice.

## Results

### Clinic type, client demographics, and contraceptive coverage

The most commonly reported health center practice setting was family planning clinics (45.1%), followed by school-based health centers (13.7%) and obstetrician/gynecologist clinics (11.7%). Of the 51 health centers, 33 (64.7%) reported receiving Title X funding, in which Title X funded health centers are mandated to provide reproductive health services that are confidential regardless of a client's ability to pay and serve disproportionately high numbers of young clients [24] (Table 1).

Of the 51 health centers, 35 (68.6%) provided information on the demographics of their adolescent clients for the baseline analysis. The health centers served a total of 48,850 adolescent clients in 2011; of whom, 70.1% were female. Among females, health centers provided services to an equal proportion of 15- to 17- (40.9%) and 18- to 19-year olds (40.9%); among males, health centers provided services a near equal proportion of <14-year olds (35.0%) and 15- to 17-year olds (39.9%; Table 2). Most clients served were youth from racial/ethnic minority groups; more than half of the adolescent males (55.9%) and females (56.0%) served by these health centers were African-American, and 28.9% of adolescent males and 19.9% of adolescent females were Hispanic (Table 2).

Analyzing contraceptive coverage, 32.7% of adolescent female clients between the age of 15–19 years were using hormonal contraception, and 2.7% were using an LARC method at the time of their last visit (Table 2).

### Implementation of evidence-based clinical practices

Overall, health centers inconsistently implemented evidence-based clinical practices in the provision of reproductive health care services for adolescents (Table 3).

With respect to practices that increase access to contraception, approximately 94.1% of health centers offered same-day appointments and 90.2% offered after school hours. In addition, 80.4% prescribed hormonal contraception to adolescent female clients without prerequisite examinations or testing (i.e., without first requiring any of the following: Pap smear, pelvic examination, breast examination, or STD testing), and 67.8% of health centers offered a wide-range of contraceptive methods (i.e., IUD, hormonal implant, hormonal injection, hormonal contraceptive pills, patch, ring, EC, and condoms). However, only 54.9% of health centers reported taking or updating a sexual health history at every visit for adolescent clients, and only 23.5% offered weekend appointments for adolescents.

For quick start initiation, less than half of health centers offered this method to adolescents for hormonal contraception (45.1%), EC (43.1%), or insertion of IUDs (12.5%). Similarly, a low proportion offered advance provision of EC for female adolescent clients (25.5%) and for male adolescent clients (14.3%).

Overall, health centers reported adherence to guidelines for cervical cancer screening (i.e., initiative Pap screening at age 21; 84.3%) and HIV rapid testing for adolescent clients per CDC recommendations (63.6%).

With respect to containing costs and providing confidential services, most health centers participated in the 340B drug discount purchasing program (i.e., a federal program that enables health care organizations that care for underserved people to purchase outpatient drugs at discounted prices; 91.1%), provided confidential contraceptive and reproductive health care for adolescents without need for parental or caregiver consent (70.5%), and provided low cost or no cost contraceptive and reproductive health services to adolescents (63.3%); all had an infrastructure in place to reduce cost barriers for adolescent clients.

Finally, results were diverse in regard to the health center environment. With respect to providing privacy for adolescents, only 76.5% and 74.5% of health centers reported areas with visual and auditory privacy for examinations and for providing counseling, respectively; 49.0% reported having teen-focused materials in waiting or examination room areas; and 48.0% reported displaying information on adolescent sexual health.

### **Continuous quality improvement and staff training**

To ensure consistent implementation of evidence-based clinical practices, most health centers (90.0%) regularly used continuous quality improvement (CQI) processes. Health center partners reported their staffs were trained on CQI processes (41.3%) and cultural competency (41.3%) in the past 2 years. Fewer staff, however, had received training on topics specific to adolescent clients, including provision of youth friendly services (20.5%) and addressing the needs of lesbian, gay, bisexual, transgender, and questioning youth (10.4%; Table 4).

## **Discussion**

Despite declines in the U.S. teen birth rate, recent analyses of nationally representative data highlight that many adolescents are not receiving recommended preventive reproductive



health services [5]. Of particular concern are observed socioeconomic disparities in receipt of services, in which underinsured, African-American, and Hispanic adolescents report significantly lower rates of service utilization than their insured, white counterparts [12–14].

Recent transformations in the health care delivery system associated with the Affordable Care Act have presented health care providers with new opportunities to meet the reproductive health care needs of historically underserved populations and communities [45]. A first step in meeting these needs is to conduct an assessment of the current capacity of providers to deliver health care services to the underserved and the subsequent identification of opportunities for improving the accessibility and quality of service provision.

Our findings indicate that across the 10 communities funded through the initiative, implementation of evidence-based clinical practices critical to increasing adolescent access to and use of reproductive health care services is inconsistent. However, our findings speak to larger gaps in accessibility of reproductive health services within communities suffering the greatest disparities in teen birth rates; among the funded communities, the assessment identified limited capacity of health center partners and inconsistent or no implementation of evidence-based clinical practices among health center partners to serve adolescents in communities with disproportionately high rates of teen births.

Our study is not without limitations. Data on implementation of evidence-based clinical practices were collected via self-report and not verified using clinic records. Also of note, the sample of health centers for this analysis is not representative of all health centers with 31% submitting insufficient demographic data to be included in the baseline analysis. However, in spite of this limitation, we identified important areas for improvement in communities with high rates of teen births and were able to highlight the need for targeted efforts at the health systems level to support the work of all health centers in meeting the reproductive health care needs of adolescents. At the health systems level, future efforts may consider focusing on supporting the development of systems and processes to regularly collect, monitor, and report data to assess the consistency and quality with which reproductive health services are provided to adolescents. Where gaps existed, improvement efforts were focused on strategies to build the capacity of health center partners to ensure that the evidence-based clinical practices are implemented, thus enhancing the overall accessibility and quality of reproductive health services for adolescents in the initiative.

Additional efforts at the health systems level may focus on building the knowledge and skills of health center staff to implement evidence-based clinical practices consistently. Of particular importance is implementation of practices to facilitate access to highly effective contraception, including LARC, which have the potential to significantly reduce rates of unintended pregnancy among adolescents [7,15]. These efforts included improving contraceptive access by providing appointments at times that adolescents can access services, working with health care providers to create a health care experience for adolescents that ensures their reproductive health care needs are assessed and addressed every time they visit a health center, and providing a tiered, client-centered counseling

approach in which the most effective contraceptive methods (LARCs) are discussed first among the range of methods that meet priorities expressed by the client.

These findings also point to the need to align strategies and resources at the policy level to support the work of health centers in meeting the reproductive health needs of adolescents. Opportunities for partnership are a critically important part of the service delivery infrastructure to address youth-friendly reproductive health services. For example, with almost 65% of the initiatives health center partners receiving Title X funding, active partnership with the national Title X program is important to coordinate TTA activities, CQI efforts, performance measurement related to the implementation of evidence-based clinical practices and to ensure strategies to increase access to and use of contraception and reproductive health care services for adolescents are aligned with the national quality family planning recommendations [26].

Finally, more research is needed to further highlight opportunities for improving access to and use of youth-friendly reproductive health services in communities with disproportionately high rates of teen births. It is important to identify the barriers and facilitators to implementation of the evidence-based clinical practices to facilitate improvement efforts (e.g., support from health center leadership and providers, communication between leadership and staff overseeing implementation, the use of data for CQI, and attitudes and beliefs among providers to address the reproductive health needs of adolescents). It is also important to evaluate community-wide initiatives such as this study to further understand the impact of whether and how community partnerships and initiatives are facilitating adolescent access to and use of reproductive health services. To improve adolescent access to and use of reproductive health services and ultimately decrease the teen pregnancy and birth rates, it is important to support health center capacity and systems needs to ensure consistent and quality implementation of evidence-based clinical practices.

Our results highlight the importance of using a clinic assessment to examine health center practices and capacity in the provision of reproductive health care for adolescents with the purpose to identify opportunities for health center improvement. Specifically, information collected was used to identify where targeted improvement efforts were needed for adherence to evidence-based clinical practices, including access, processes for the delivery of care, utilization of cost, confidentiality, supportive infrastructure, and the health care delivery environment. These findings suggest the need to focus on strategies to build the capacity of health center partners to ensure that the evidence-based clinical practices are implemented, thus enhancing the overall accessibility and quality of reproductive health services for adolescents in the initiative.

## References

1. Hamilton, B.; Martin, J.; Osterman, M., et al. Births: Preliminary data for 2014. Hyattsville, MD: National Center for Health Statistics, National Vital Statistics Reports; 2015.
2. Sedgh G, Finer LB, Bankole A, et al. Adolescent pregnancy, birth, and abortion rates across countries: Levels and recent trends. *J Adolesc Health*. 2015; 56:223–30. [PubMed: 25620306]

3. Ventura, SJ.; Hamilton, BE.; Mathews, T. National and state patterns of teen births in the United States: 1940–2013. Reports, NVS., editor. Hyattsville, MD: National Center for Health Statistics; 2014.
4. Penman-Aguilar A, Carter M, Snead MC, et al. Socioeconomic disadvantage as a social determinant of teen childbearing in the US. *Public Health Rep.* 2013; 128(Suppl 1):5. [PubMed: 23450881]
5. Tyler C, Warner L, Gavin L, et al. Receipt of reproductive health services among sexually experienced persons aged 15–19 Years—National Survey of Family Growth, United States, 2006–2010. *MMWR Surveill Summ.* 2014; 63:89–98. [PubMed: 25208263]
6. National Center for Health Statistics. *Health, United States, 2014: With special feature on adults aged 55–64.* Hyattsville, MD: National Center for Health Statistics; 2015.
7. Finer LB, Jerman J, Kavanaugh ML. Changes in use of long-acting contraceptive methods in the United States, 2007–2009. *Fertil steril.* 2012; 98:893–7. [PubMed: 22795639]
8. Romero L, Pazol K, Warner L, et al. Vital signs: Trends in use of long-acting reversible contraception among teens aged 15–19 years seeking contraceptive services—United States, 2005–2013. *MMWR Morb Mortal Wkly Rep.* 2015; 64:363–9. [PubMed: 25856258]
9. Kann L, Kinchen S, Shanklin SL, et al. Youth risk behavior surveillance—United States, 2013. *MMWR Surveill Summ.* 2014; 63(Suppl 4):1–168. [PubMed: 24918634]
10. Trussell J. Contraceptive failure in the United States. *Contraception.* 2011; 83:397–404. [PubMed: 21477680]
11. Centers for Disease Control and Prevention. U.S. medical eligibility criteria for contraceptive use, 2010. *MMWR Recomm Rep.* 2010; 59(RR-4):1–86.
12. Centers for Disease Control and Prevention. Sexual experience and contraceptive use among female teens—United States, 1995, 2002, and 2006–2010. *MMWR Morb Mortal Wkly Rep.* 2012; 61:297–301. [PubMed: 22552205]
13. Hall KS, Moreau C, Trussell J. Continuing social disparities despite upward trends in sexual and reproductive health service use among young women in the United States. *Contraception.* 2012; 86:681–6. [PubMed: 22762707]
14. Hall KS, Moreau C, Trussell J. Determinants of and disparities in reproductive health service use among adolescent and young adult women in the United States, 2002–2008. *Am J Public Health.* 2012; 102:359–67. [PubMed: 22390451]
15. Kavanaugh ML, Jerman J, Ethier K, et al. Meeting the contraceptive needs of teens and young adults: Youth-friendly and long-acting reversible contraceptive services in U.S. family planning facilities. *J Adolesc Health.* 2013; 52:284–92. [PubMed: 23298980]
16. Society for Adolescent Medicine. Confidential health care for adolescents: Position paper of the Society for Adolescent Medicine. *J Adolesc Health.* 2004; 35:160–7. [PubMed: 15298005]
17. Society for Adolescent Medicine. Access to health care for adolescents and young adults: Position paper of the Society for Adolescent Medicine. *J Adolesc Health.* 2004; 35:342–4. [PubMed: 15481116]
18. American College of Obstetricians and Gynecologists. *Guidelines for adolescent health care.* Washington DC: ACOG; 2011.
19. American Medical Association. *Guidelines for adolescent preventive services (GAPS): Recommendations monograph.* Chicago, IL: American Medical Association; 1997.
20. Hagan, JF.; Shaw, JS.; Duncan, PM. *Bright futures: Guidelines for health supervision of infants, children, and adolescents.* Elk Grove Village, IL: American Academy of Pediatrics; 2008.
21. Rosen DS, Elster A, Hedberg V, et al. Clinical preventive services for adolescents: Position paper of the Society for Adolescent Medicine. *J Adolesc Health.* 1997; 21:203–14. [PubMed: 9283943]
22. Curtis KM, Tepper NK, Jamieson DJ, et al. Adaptation of the World Health Organization’s selected practice recommendations for contraceptive use for the United States. *Contraception.* 2012
23. Centers for Disease Control and Prevention. *STD treatment guidelines.* *MMWR Recomm Rep.* 2010; 59(RR-12):1–110.
24. U.S. Department of Health and Human Services. *Program Guidelines for Project Grants for Family Planning Services.* Bethesda, MD: U.S. Department of Health and Human Services Office of Population Affairs; 2001.

25. Solberg LI, Nordin JD, Bryant TL, et al. Clinical preventive services for adolescents. *Am J Prev Med.* 2009; 37:445. [PubMed: 19840701]
26. Gavin L, Moskosky S, Carter M, et al. Providing quality family planning services: Recommendations of CDC and the US office of population affairs. *MMWR Recomm Rep.* 2014; 63:1–54. [PubMed: 24759690]
27. Brindis CD, Geierstanger SP, Wilcox N, et al. Evaluation of a peer provider reproductive health service model for adolescents. *Perspect Sex Reprod Health.* 2007; 37:85–91. [PubMed: 15961362]
28. Morrison A, Mackie C, Elliott L, et al. The sexual health help centre: A service for young people. *J Public Health.* 1997; 19:457–63.
29. Winter L, Breckenmaker LC. Tailoring family planning services to the special needs of adolescents. *Fam Plann Perspect.* 1991;24–30. [PubMed: 2029940]
30. Ethier KA, Dittus PJ, DeRosa CJ, et al. School-based health center access, reproductive health care, and contraceptive use among sexually experienced high school students. *J Adolesc Health.* 2011; 48:562–5. [PubMed: 21575814]
31. Christner J, Davis P, Rosen D. Office-based interventions to promote healthy sexual behavior. *Adolesc Med State Art Rev.* 2007; 18:544–57. viii. [PubMed: 18453233]
32. Oberg C, Hogan M, Bertrand J, et al. Health care access, sexually transmitted diseases, and adolescents: Identifying barriers and creating solutions. *Curr Probl Pediatr Adolesc Health Care.* 2002; 32:320–39. [PubMed: 12395136]
33. Sadler LS, Daley AM. A model of teen-friendly care for young women with negative pregnancy test results. *Nurs Clin North Am.* 2002; 37:523–35. [PubMed: 12449010]
34. Reddy D, Fleming R, Swain C. Effect of mandatory parental notification on adolescent girls' use of sexual health services. *J Am Med Assoc.* 2002; 288:710–4.
35. Lau JS, Adams SH, Irwin CE, et al. Receipt of preventive health services in young adults. *J Adolesc Health.* 2013; 52:42–9. [PubMed: 23260833]
36. Secura G, Madden T, McNicholas C, et al. Provision of no-cost, long-acting contraception and teenage pregnancy. *N Engl J Med.* 2014; 371:1316–23. [PubMed: 25271604]
37. Ricketts S, Klingler G, Schwalberg R. Game change in Colorado: Widespread use of long-acting reversible contraceptives and rapid decline in births among young, low-income women. *Perspect Sex Reprod Health.* 2014; 46:125–32. [PubMed: 24961366]
38. Biggs M, Rocca C, Brindis C, et al. Did increasing use of highly effective contraception contribute to declining abortions in Iowa? *Contraception.* 2015; 91:167–73. [PubMed: 25465890]
39. Dittus PJ, De Rosa CJ, Jeffries RA, et al. The project connect health systems intervention: Linking sexually experienced youth to sexual and reproductive health care. *J Adolesc Health.* 2014; 55:528–34. [PubMed: 24856358]
40. Lawrence, RS.; Gootman, JA.; Sim, LJ. *Adolescent Health Services: Missing Opportunities.* Washington, D.C: The National Academies Press; 2009.
41. Centers for Disease Control and Prevention. [Accessed February 1, 2015] Teen pregnancy prevention 2015. Available at, <http://www.cdc.gov/teenpregnancy/prevent-teen-pregnancy/index.htm>
42. Thigpen S, Puddy RW, Singer HH, et al. Moving knowledge into action: Developing the rapid synthesis and translation process within the interactive systems framework. *Am J Community Psychol.* 2012:1–10.
43. Tyler C, Romero L, Hallum-Montes R, et al. Translating adolescent contraceptive and reproductive health research into clinical best practice; 2015 (pre-print submitted). *Journal of Adolescent Health.* May.2015
44. Westhoff C, Heartwell S, Edwards S, et al. Initiation of oral contraceptives using a quick start compared with a conventional start: A randomized controlled trial. *Obstet Gynecol.* 2007; 109:1270–6. [PubMed: 17540797]
45. Sonfield A, Pollack HA. The Affordable Care Act and reproductive health: Potential gains and serious challenges. *J Health Polit Policy Law.* 2013; 38:373–91. [PubMed: 23262768]

### **IMPLICATIONS AND CONTRIBUTION**

This study highlights the importance of using an assessment to identify opportunities for health center improvement. Strategies to build the capacity of health center partners to ensure that evidence-based clinical practices are implemented may enhance the overall accessibility and quality of reproductive health services for adolescents.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

**Table 1**

Number and percentage of health center partners in the Centers of Disease Control and Prevention/Office of Adolescent Health teen pregnancy prevention community-wide initiative by practice setting and Title X funding status, 2011

Practice setting	Total = 51, N (%)
Family planning clinic	23 (45.1)
School-based health center	7 (13.7)
Obstetrician/gynecologist	6 (11.7)
Adolescent subspecialty	5 (9.8)
Multiple practice setting <sup>a</sup>	4 (7.8)
Primary care	4 (7.8)
Pediatric	2 (3.9)
Title X funded <sup>b</sup>	
Yes	33 (64.7)
No	18 (35.2)

Percentages may not add to 100 because of rounding.

<sup>a</sup> Multiple practice setting includes health centers that have more than one type of practice within their setting (e.g., a health department may have a family planning clinic, primary care and pediatric clinic).

<sup>b</sup> The Title X National Family Planning Program provides cost-effective and confidential family planning and related preventive health services for low-income women and men; it serves approximately one million teens each year.



**Table 2**

Number and percentage of unduplicated adolescent clients and contraceptive coverage by health center partners in the Centers for Disease Control and Prevention/Office of Adolescent Health teen pregnancy prevention community-wide initiatives, 2011

	N	%
All clients	48,850	
Male clients	14,608 <sup>a</sup>	29.9
Age 14 years	5,113	35.0
Age 15–17 years	5,843	39.9
Age 18–19 years	3,652	25.0
Hispanic	4,236	28.9
African-American	8,180	55.9
White	1,315	9.0
Female clients	34,242	70.1
Age 14 years	6,164	18.0
Age 15–17 years	14,039	40.9
Age 18–19 years	14,039	40.9
Hispanic	6,848	19.9
African-American	19,176	56.0
White	5,136	14.9
Female clients receiving		
Hormonal contraception <sup>b</sup>	11,189	32.7
Intrauterine devices or implant <sup>c</sup>	925	2.7

<sup>a</sup>The total adolescent client number may not equal the adolescent client numbers for sex, age, and race/ethnicity because of missing data for demographics.

<sup>b</sup>Hormonal contraception includes the pill, patch, ring, and injectable contraception.

<sup>c</sup>Intrauterine devices or implant is also know as long-acting reversible contraception.

**Table 3**

Percentage of health center partners implementing the synthesized list of 31 evidence-based clinical practices for adolescent clients in the Centers for Disease Control and Prevention (CDC)/Office of Adolescent Health teen pregnancy prevention community-wide initiatives, 2011

Evidence-based clinical practices	Percentage (%) of health centers implementing the practice (n = 51 health centers)
Contraceptive access	
1. Offers same-day appointments	94.1
2. Offers after-school hours appointments	90.2
3. Offers appointments during the weekend	23.5
4. Take/update sexual health history at every visit	54.9
5. Offers a wide-range of contraception (via prescription and/or dispensed on-site)	67.8
6. Offers hormonal contraception or IUD at every visit to the clinical provider regardless of reason for visit (e.g., urgent, preventive, school health, sports physical, pregnancy testing, emergency contraception, STD testing, HIV testing) to ensure that there are no missed opportunities	__a
7. Prescribes hormonal contraception without prerequisite examinations or testing (i.e., without first requiring any of the following: Pap smear, pelvic examination, breast examination, or STD testing)	80.4
Quick start method for initiation of hormonal contraception and IUD	
8. Hormonal contraception is initiated utilizing the quick start method	45.1
9. Quick start initiation of hormonal contraception after client has had a negative pregnancy test	46.0
10. Quick start initiation of hormonal contraception when client is provided with emergency contraception where a pregnancy test is negative	43.1
11. Quick start insertion of IUD	12.5
Emergency contraception	
12. Emergency contraception is available to females	88.1
13. Emergency contraception is provided to females for future use (advance provision)	25.5
14. Emergency contraception is provided to males for future use (advance provision)	14.3
Cervical cancer screening	
15. Adhere to current cervical cancer screening (Pap smear) guidelines (i.e., initiative Pap screening at age 21 years)	84.3
STD and HIV testing	
16. Chlamydia screening is provided at least annually, or based on diagnostic criteria, consistent with USPSTF and CDC recommendations	__a
17. Chlamydia screening is available for females using a urine or vaginal swab specimen	__a
18. Chlamydia screening is available for males using a urine specimen	__a
19. Gonorrhea screening is available for both females and males	__a
20. HIV rapid testing is available for females and males per CDC recommendations	63.6
21. Expedited patient delivered partner therapy is available as an option for the treatment of uncomplicated chlamydial infection	__a
Cost, confidentiality, and consent	
22. Low cost or no cost contraceptive and reproductive health care services are provided	63.3
23. Confidential contraceptive and reproductive health care is available without need for parental or caregiver consent	70.5
Infrastructure	

Evidence-based clinical practices	Percentage (%) of health centers implementing the practice (n = 51 health centers)
24. Participate in the federal 340B drug discount purchasing program	91.1
25. Utilize electronic medical records (e.g., eClinical Works, Centricity, Epic, NextGen)	84.8
26. Have systems in place to facilitate billing third party payers for contraceptive and reproductive health care services provided	100
Environment	
27. Has a counseling area that provides both visual and auditory privacy	74.5
28. Has an examination room that provides visual and auditory privacy	76.5
29. Has teen-focused materials in waiting room or examination areas	49.0
30. Displays information on issues related to adolescent sexual health	48.0
31. Has brief evidence-based or evidence-informed video interventions designed for adolescents	29.4

IUD = intrauterine devices; STD = sexually transmitted disease; USPSTF = U.S. Preventive Services Task Force.

<sup>a</sup>Health center data are not available. The initial version of clinic partner needs assessment, which was used for the baseline data, did not include questions to assess the implementation of evidence-based clinical practices related to contraceptive access in nonreproductive health care visits and STD testing. Before project implementation (Year 2), the assessment was modified to include questions to assess contraceptive access in nonreproductive health care visits and STD testing. The total may not equal to 100 because of missing data.

**Table 4**

Number and percentage of health center partners implementing continuous quality improvement and providing staff training in the Centers for Disease Control and Prevention/Office of Adolescent Health teen pregnancy prevention community-wide initiatives, 2011

Continuous quality improvement and staff training	All health centers (n = 51)
CQI	
Regularly utilize CQI processes	90.0
Staff training—all staff	
CQI	41.3
Cultural competency	41.3
Youth-friendly services	20.5
Addressing the needs of LGBTQ youth	10.4
Staff training—clinical staff only	
CQI	41.7
Contraceptive services for adolescents	56.2
IUD insertion for adolescents	36.2
Youth-friendly services	25.5

CQI = continuous quality improvement; LGBTQ = lesbian, gay, bisexual, transgender, and questioning; IUD = intrauterine device.