

# Youth-Friendly Family Planning Services for Young People

## A Systematic Review



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**Context:** “Youth-friendly” family planning services, services tailored to meet the particular sexual and reproductive health needs of young people (aged 10–24 years), may improve reproductive health outcomes, including reduction of unintended pregnancy. The objectives of this systematic review were to summarize the evidence of the effect of youth-friendly family planning services on reproductive health outcomes and to describe key characteristics of youth-friendly family planning interventions. The review, conducted in 2011, was used to inform national recommendations on quality family planning services.

**Evidence acquisition:** Several electronic bibliographic databases, including PubMed, PsycINFO, and Popline, were used to identify relevant articles published from January 1985 through February 2011.

**Evidence synthesis:** Nineteen articles met the inclusion criteria. Of these, six evaluated outcomes relevant to unintended pregnancy, contraceptive use, and knowledge or patient satisfaction. The 13 remaining studies identified perspectives on youth-friendly characteristics. Of the studies examining outcomes, most had a positive effect (two of three for unintended pregnancy, three of three for contraceptive use, and three of three for knowledge and/or patient satisfaction). Remaining studies described nine key characteristics of youth-friendly family planning services.

**Conclusions:** This review demonstrates that there is limited evidence that youth-friendly services may improve reproductive health outcomes for young people and identifies service characteristics that might increase their receptivity to using these services. Although more rigorous studies are needed, the interventions and characteristics identified in this review should be considered in the development and evaluation of youth-friendly family planning interventions in clinical settings.

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### Context

In 2013, there were approximately 273,000 births to teens.<sup>1</sup> To address the health needs of young people, reproductive health services that include family planning are essential for adolescents and young adults.<sup>2</sup>

However, having family planning services available is not enough. The concept of a “youth-friendly” approach, that is, tailoring health services to address the

developmental needs of young people and the unique obstacles they face, with the aim of promoting greater access to and use of health services, has received increased attention.<sup>2–5</sup> The emergence of this concept of youth-friendly services stems from a recognition that adolescents have unique developmental needs and face distinct barriers that should be considered when providing health services.<sup>6,7</sup>

Adolescence is a time of substantial physical, emotional, and cognitive changes.<sup>3,8–10</sup> Adolescents begin to exhibit abstract thinking, capacity for planning, a desire for independence and, therefore, increased need for confidentiality and privacy.<sup>3</sup> As adolescents mature, these factors, as well as a perception of invulnerability, can lead to increased sexual and other risk-taking behaviors.<sup>3,5</sup> Further, as adolescents become young adults they experience significant transitions such as

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entry into college, military, or employment, and separation from family. These types of transitions have implications for health status and access to care.<sup>6</sup> Additionally, experts have recognized that much of the mortality and morbidity faced by adults are a result of events and behaviors that began in adolescence.<sup>11</sup>

At the same time, young people face numerous obstacles in accessing health services. These include lack of health insurance coverage,<sup>12</sup> inconvenient clinic hours or location, lack of transportation, and prohibitive costs.<sup>3,4,13,14</sup> Fear of lack of confidentiality is also a barrier, especially when it comes to sensitive health issues such as contraception and pregnancy.<sup>7,15,16</sup>

Although not rigorously evaluated and focused on primary versus reproductive health care in lower-income countries, the WHO has described youth-friendly health-care services as those that are equitable, accessible, acceptable, appropriate, and effective for young people.<sup>5</sup> Youth-friendly services specific to family planning in higher-income countries like the U.S., however, have not been comprehensively described.<sup>5,17</sup> Furthermore, little is known about the effects of youth-friendly family planning services on reproductive health outcomes.<sup>3,10,17</sup>

Conducted in 2011, the main objective of this systematic review was to identify and synthesize the evidence of

the effects of youth-friendly family planning services in clinic settings on reproductive health outcomes. A secondary objective was to describe key characteristics of youth-friendly family planning services from the perspectives of providers and public health professionals, as well as from young people themselves. Youth-friendly family planning services in this report were conceptualized broadly so as to include a variety of possible approaches attempted by clinics to increase a young person's access to services (e.g., clinic hours to suit schedules of young people) and improve quality of care (e.g., providers with specialized training in adolescent health).

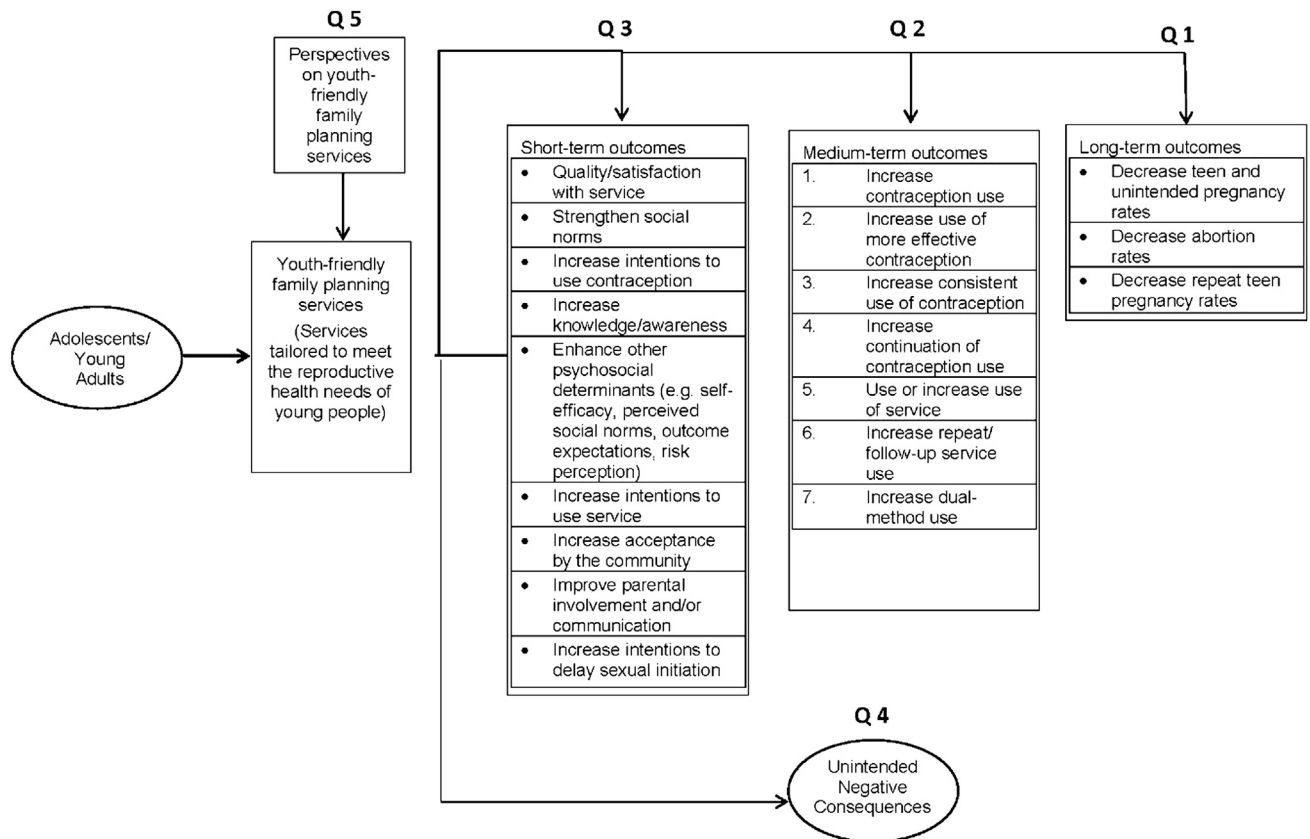
The Office of Population Affairs and CDC used the evidence presented here, along with findings from a series of complementary systematic reviews,<sup>18</sup> to inform the development of "Providing Quality Family Planning Services: Recommendations of CDC and the U.S. Office of Population Affairs."<sup>19</sup>

## Evidence Acquisition

The methods for conducting this systematic review have been described elsewhere.<sup>20</sup> Briefly, the review began with developing five key questions (Table 1) and applying an analytic framework (Figure 1) that shows the logical relationships among the population of interest (adolescents and young adults aged 10–24

**Table 1.** Key Questions for Systematic Review on Youth-Friendly Family Planning Services to Adolescents/Young Adults

Key question no.	Question	Articles that addressed the key question
1	Is there a relationship between youth-friendly family planning services and improved long-term outcomes (e.g., decreased teen or unintended pregnancies, decreased abortion rates, decreased repeat teen pregnancy rates)?	Brindis et al. (2005), <sup>26</sup> Wilson et al. (1994), <sup>30</sup> Winter and Breckenmaker (1991) <sup>31</sup>
2	Is there a relationship between youth-friendly family planning services and improved medium-term outcomes (e.g., increased contraceptive use; increased use of more effective contraceptives; increased consistent use of contraception; increased continuation of contraception use; use, repeat use, or follow-up use of services)?	Brindis et al. (2005), <sup>26</sup> Herz et al. (1988), <sup>28</sup> Winter and Breckenmaker (1991) <sup>31</sup>
3	Is there a relationship between youth-friendly family planning services and improved short-term outcomes (e.g., quality and patient satisfaction, knowledge, intentions to use services, increase in parental involvement or communication)?	Gupta et al. (2001), <sup>27</sup> Morrison et al. (1997), <sup>29</sup> Winter and Breckenmaker (1991) <sup>31</sup>
4	Are there unintended negative consequences associated with providing youth-friendly family planning services?	Brindis et al. (2005) <sup>26</sup>
5	From the perspectives of providers and young people, what are the key characteristics of youth-friendly family planning services (i.e., what do young people want in family planning services)?	Herz et al. (1988), <sup>28</sup> Alberti et al. (2010), <sup>32</sup> Brindis et al. (2005), <sup>33</sup> Chambers et al. (2002), <sup>34</sup> Cromer and McCarthy (1999), <sup>35</sup> Donovan et al. (1997), <sup>36</sup> French (2002), <sup>37</sup> Hayter (2005), <sup>38</sup> Ingram and Salmon (2007), <sup>39</sup> Kapphahn et al. (1999), <sup>40</sup> Peremans et al. (2000), <sup>41</sup> Perry and Thurston (2008), <sup>42</sup> Russell and Lee (2004), <sup>43</sup> Wilson and Williams (2000) <sup>44</sup>



**Figure 1.** Analytic framework for systematic review on youth-friendly family planning services to improve family planning outcomes.

years); the intervention of interest (youth-friendly family planning services); and long-, medium-, and short-term outcomes of interest (Key Questions 1–3, respectively). Long-term outcomes of interest included decrease in teen pregnancy. Medium-term outcomes of interest included various facets of contraceptive use (e.g., use of more effective methods, correct use of methods) and use or repeat use of services. Short-term outcomes examined included satisfaction with services and improved knowledge of family planning. Key Question 4 examined whether unintended negative consequences, such as reduced condom use following adoption of another contraceptive method, were associated with receipt of youth-friendly family planning services. To describe key characteristics of youth-friendly family planning programs, Key Question 5 examined young people's and providers' perspectives regarding what would make family planning services more appealing to young people.

Search strategies (Appendix Table 1, available online) were developed and used to identify relevant articles in several electronic databases (Appendix Table 2, available online).

## Selection of Studies

Retrieval and inclusion criteria were developed a priori and applied to the search results. Studies conducted outside the U.S., Canada, Europe, Australia, or New Zealand, and studies that focused exclusively on sexually transmitted diseases (STDs), including HIV, were not considered. Full-length articles were retrieved if they were published in English from January 1, 1985, through February 28, 2011. Inclusion criteria were then applied. Specific to

this review, included articles must have reported data specific to individuals aged 10–24 years. Articles that only examined contraceptive management practices applicable to women of all ages (e.g., examination requirements for prescribing contraception) were excluded because these issues are addressed in CDC's 2013 "U.S. Selected Practice Recommendations for Contraceptive Use."<sup>21</sup> Articles exclusively addressing confidentiality in the provision of family planning services to young people were excluded because they were examined in a separate review in this series.<sup>22</sup>

Some inclusion criteria were specific to certain key questions. For Key Questions 1–4, studies had to include a comparison group or pre-post measures if there was only a single study group. All study designs were included for Key Question 5 so as to capture the perspectives of young people and providers on youth-friendly family planning services via studies that did not have a comparison group.

## Assessment of Study Quality and Synthesis of Data

The assessment of study quality and synthesis of data have been described in detail elsewhere.<sup>20</sup> Briefly, each analytic study was assessed to evaluate the risk that the findings may be confounded by a systematic bias, using a schema developed by U.S. Preventive Services Task Force (USPSTF).<sup>23</sup> A rating of risk for bias was determined by assessing the presence or absence of several characteristics known to protect a study from the confounding influence of bias. Criteria for this process were developed based on recommendations from several sources including the USPSTF<sup>23</sup>; the Grading of Recommendations Assessment, Development and

Evaluation (GRADE) system<sup>24</sup>; and Community Guide for Preventive Services.<sup>25</sup> The quality of the non-comparative studies was not evaluated, as these did not measure associations but rather described characteristics that might be considered youth-friendly.

## Evidence Synthesis

As shown in Figure 2, the search strategy identified 19,332 articles. After an initial title and abstract content screen, 711 articles were retrieved for full review. The other 18,621 citations were not retrieved because they either were not relevant to the questions or they did not report on original studies. Of the 711 retrieved articles, 19 met the inclusion criteria. Six articles<sup>26–31</sup> were analytic studies that examined the effects of youth-friendly family planning services on reproductive health outcomes: Three<sup>26,30,31</sup> examined long-term outcomes, three<sup>26,28,31</sup> addressed medium-term outcomes, and three<sup>27,29,31</sup> addressed short-term outcomes. An unintended negative consequence was also reported in one of the studies.<sup>26</sup> Thirteen studies<sup>32–44</sup> were lacking a comparison group and thus were examined only for perspectives on youth-friendly family planning services.

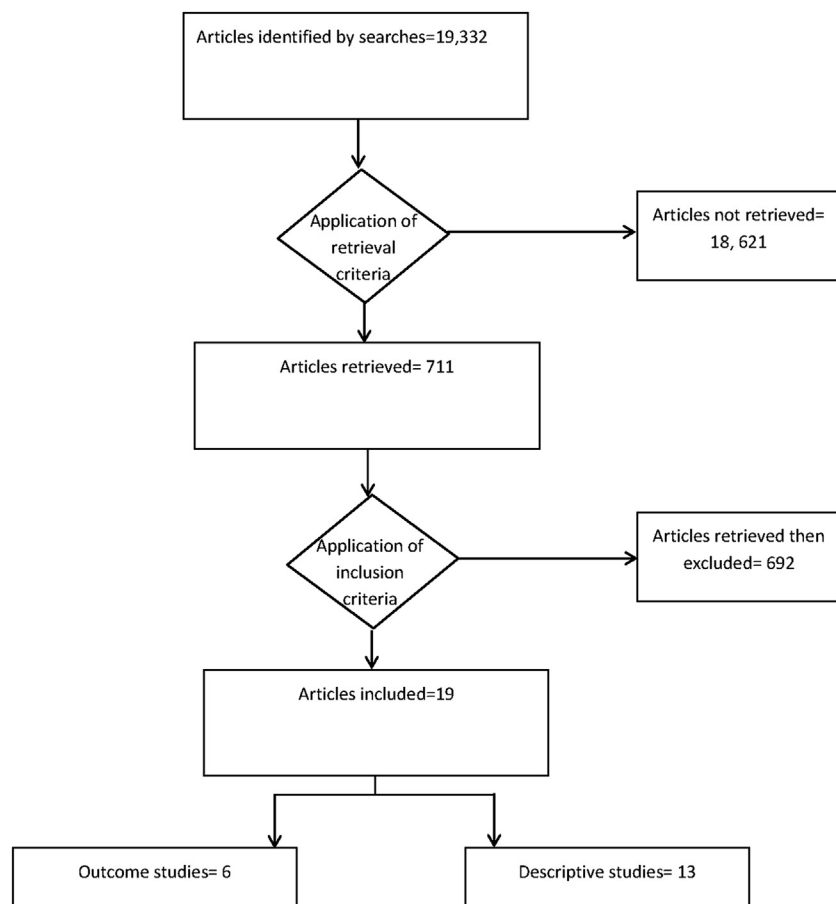


Figure 2. Flow chart of study selection.

## Analytic Studies Examining the Effects of Youth-Friendly Family Planning Services on Reproductive Health Outcomes

The studies examining outcomes used a variety of youth-friendly approaches to increase a young person's access to services and improve quality of care. One<sup>26</sup> examined the effectiveness of various components of the "Peer Providers of Reproductive Health Services to Teens" model, which included peer provider clinical services, follow-up phone calls, and outreach services. Another<sup>31</sup> examined services that emphasized in-depth counseling, education tailored to an adolescent's level of development, and the provision of reassurance and social support. Another<sup>30</sup> examined a teen health service that offered easy access to contraceptives and counseling services through drop-in clinics, and also provided routine and crisis management of sexual and general health problems offered by a team of specialists. One study<sup>29</sup> examined the "Sexual Health Help Center" service model, which offered weekend hours, an informal atmosphere, and confidential services, and another<sup>28</sup> assessed a teen clinic that provided free services and afterschool hours, as well as peer group discussions on reproductive health issues. The last study<sup>27</sup> investigated family planning and "young person" clinics serving women aged <25 years to assess the associations between various clinic characteristics and patient satisfaction with services.

One study<sup>26</sup> used a pre-post study design with one study group; two<sup>28,29</sup> used a prospective cohort design. One<sup>30</sup> analyzed repeated cross-sectional population-based surveys, one<sup>27</sup> used a cross-sectional design, and one<sup>31</sup> used a nonrandomized trial. Sample sizes ranged from 163 to 1,590, and the age of study populations ranged from 12 to 24 years. Subjects were recruited from clinics<sup>26–28,30,31</sup> or a combination of clinics, schools, and communities.<sup>29</sup>

Four studies<sup>26,27,30,31</sup> were rated as having high risk for bias, and two<sup>28,29</sup> were rated as having moderate risk for bias. Risk for bias pertains to the degree to which the causal relationships examined by a study are in danger of being confounded by extraneous, systematic events or activities. Table 2 summarizes the findings of each study by outcome of interest. Appendix Table 3 describes additional details of each study.

**Table 2.** Summary of Evidence on Effects of Youth-Friendly Family Planning Services on Reproductive Health Outcomes

Reference, year study design/aim	Long-term outcomes		Medium-term outcomes					Short-term outcomes	
	Decrease teen or unintended pregnancy	Decrease abortion rates	Contracep- tive use	Use of more effective contracep- tives	Consistent use of contracep- tion	Continua- tion of contracep- tive use	Use, repeat use, or follow-up use of services	Patient satisfaction	Knowledge
Brindis et al. (2005) <sup>26</sup> Pre-post study (1 study group) to examine effectiveness of components or combination components of the “Peer Providers of Reproductive Health Services to Teens” model	↑ <sup>a</sup>		↑	↑	↑		↑		
Gupta et al. (2001) <sup>27</sup> Cross-sectional study to analyze young women’s experiences of the first pelvic examination and identify associations between patient satisfaction and characteristics of FP services								↑	
Herz et al. (1988) <sup>28</sup> Prospective cohort study assessing trends in new patient registrations to evaluate the Teen Clinic, a Chicago public health clinic’s special FP program for adolescents as compared to two nearby PH department facilities that had no special teen FP program							↑		

(continued on next page)

**Table 2.** Summary of Evidence on Effects of Youth-Friendly Family Planning Services on Reproductive Health Outcomes (*continued*)

Reference, year study design/aim	Long-term outcomes		Medium-term outcomes					Short-term outcomes	
	Decrease teen or unintended pregnancy	Decrease abortion rates	Contracep- tive use	Use of more effective contracep- tives	Consistent use of contracep- tion	Continua- tion of contracep- tive use	Use, repeat use, or follow-up use of services	Patient satisfaction	Knowledge
Morrison et al. (1997) <sup>29</sup> Prospective cohort study comparing clinic experiences at the Sexual Health Help Centre (SHHC) with experiences at clinics with “conventional FP services”								↑	
Wilson et al. (1994) <sup>30</sup> Analysis of repeated cross-sectional population-based surveys, 1986–1992, to assess trends in rates of conceptions, maternity, and abortion among young persons aged 11–19 years to determine the effectiveness of teen clinics to reduce teen conceptions	↓	↓							
Winter and Breckenmaker (1991) <sup>31</sup> Non-randomized trial to assess experimental service protocol for teen FP patients	↑		↑			↑		↔	↑
<b>Total studies with positive impact</b>	2/3	1/1	2/2	1/1	1/1	1/1	2/2	2/3	1/1

Note: ↑ statistically significant positive impact; ↔ no evidence of a statistically significant impact on outcome (inconclusive finding); ↓ statistically significant negative impact.

<sup>a</sup>Decrease in rates found for study participants exposed to clinical and telephone services, and Hispanic clients exposed to the full model, when compared to clients who received clinical services only. FP, family planning; PH, public health.



Of the three studies<sup>26,30,31</sup> that examined long-term outcomes (i.e., teen or unintended pregnancy rates<sup>26,30,31</sup> and abortion rates<sup>30</sup>), two<sup>26,31</sup> found a statistically significant impact of youth-friendly family planning service components on reduced teen pregnancy. In the first,<sup>26</sup> a pre–post study of 1,590 sexually active male and female participants, clients were retrospectively assigned to four study groups based on their level of exposure to a peer provider model:

1. those receiving peer provider clinical services only;
2. those receiving peer provider clinical services and follow-up phone calls;
3. those receiving peer provider clinical and outreach services; and
4. those receiving the full model (all components).

Significance was set at  $p < 0.05$ . Among all female participants, those exposed to the clinical services and follow-up phone calls had significantly decreased odds (OR=0.88, 95% CI not reported) of a positive pregnancy test at any follow-up visit compared with those exposed to only clinical services. Further, female Hispanics exposed to the full model had significantly decreased odds of a positive pregnancy test (OR=0.2, 95% CI=0.01, 0.66) compared with those exposed to only clinical services. In the second study,<sup>31</sup> a nonrandomized trial, a service protocol for teens that emphasized in-depth counseling, education geared to an adolescent's level of development, and provision of reassurance and social support was evaluated. Statistically significant results were found among the 740 continuing patients (73% of the original sample) for whom complete follow-up data were available: 4.0% at experimental clinics versus 7.8% at control clinics ( $p < 0.05$ ) reported a pregnancy.<sup>31</sup> The third study evaluated whether a teen health service offering easy access to contraceptives and counseling services through drop-in clinics affected teen pregnancy rates in Nottingham district from 1986 to 1992. Results from the study, which analyzed repeated cross-sectional population-based surveys, indicated that pregnancy rates among female participants aged 11–19 years increased from 52.9/1,000 in 1986 to 66.2/1,000 in 1992, with a significant ( $p < 0.0001$ ) linear trend detected. During the same time period, abortion rates and birth rates also increased among this age group (17.2/1,000 to 23.1/1,000 and 35.7/1,000 to 43.1/1,000, respectively), both with significant ( $p < 0.0001$ ) linear trends detected.

All three studies<sup>26,28,31</sup> that examined the impact of youth-friendly family planning services on medium-term outcomes found significant impacts. In the first, a pre–post study using a peer provider model as described previously, female clients (N=1,424) had significantly

( $p < 0.01$ ) increased odds of consistent birth control use from first to last visit (OR=1.9) and at last intercourse (OR=1.8), as well as use of effective birth control methods (OR=3.5); associated confidence intervals were not reported.<sup>26</sup> Additionally, comparing female clients exposed to the full peer provider model (clinical services, follow-up phone calls, and outreach services) with those receiving clinical services only, full model clients had significantly increased odds of returning for an annual exam (OR=2.2,  $p < 0.01$ ) and of making three or more visits during the 3-year study period (OR=1.7,  $p < 0.05$ ). Other significant improvements were observed for select subpopulations. The second study<sup>28</sup> was a prospective cohort study that evaluated an intervention at “the Teen Clinic” by assessing trends in new patient registrations at the clinic compared with registrations at two comparison sites. The Teen Clinic offered free services, tailored hours, peer group reproductive health discussions, and outreach efforts in local schools. During implementation, the Teen Clinic experienced an 82% increase in new patient registration compared with the enrollment before the program began. By contrast, during the same time frame, two comparison sites without special family planning programs for teens experienced either a small increase (4%), or a modest decrease (17%), in utilization by teenagers during the same period. Furthermore, in the three-quarter period before implementation of the teen clinic, teens accounted for 47% of all new family planning registrants at the intervention site compared with 57% following implementation. The third study,<sup>31</sup> the aforementioned nonrandomized trial, found that, compared with control site clients, clients at the experimental site were more likely to be using their chosen contraceptive method at the 6-month (92% vs 85%,  $p < 0.01$ ) and 12-month (90% vs 81%,  $p < 0.05$ ) follow-up visits, and were more likely to be using any method at the 6-month follow-up visit (97% vs 92%,  $p < 0.01$ ). Among patients who had experienced problems, such as a side effect or partner objection, the intervention group was more likely than the control group to continue using their chosen method at 12-month follow-up, despite problems (71.2% vs 40.0%,  $p < 0.01$ ).

All three studies<sup>27,29,31</sup> that examined short-term outcomes found significant impacts. The first<sup>27</sup> was a cross-sectional study that examined young women's experiences of their first pelvic examination in a variety of clinics and identified factors associated with higher patient satisfaction. A positive evaluation of the examination was noted when the examination was conducted by a female versus a male doctor ( $p = 0.02$ ); when it was conducted in a family planning clinic as opposed to a general practitioner's office ( $p = 0.04$ ); and after permission was sought by the provider versus not ( $p = 0.001$ ).

There were no significant differences in positive experiences with the offer or presence of a chaperone. In the second,<sup>29</sup> a prospective cohort study, clinic experiences were examined comparing youth who received services at the “Sexual Health Help Center” (SHHC) with those who received conventional family planning services. The SHHC was designed specifically for young people and offered weekend hours, an informal atmosphere, a waiting area tailored to the preferences of young people, and assurance of complete confidentiality. Compared with youth who received conventional services, those receiving SHHC services were more likely to report satisfactory opening times (86% vs 70%,  $p < 0.01$ ); pleasant surroundings (98% vs 88%,  $p < 0.01$ ); and feeling relaxed while waiting for a consultation (76% vs 48%,  $p < 0.01$ ). Additionally, those who received SHHC services were significantly ( $p < 0.01$ ) more likely to report feeling that clinical staff treated what they said in confidence (98% vs 84%); treated them in a professional manner (99% vs 86%); explained medical terms in language they understood (99% vs 87%); and respected their privacy (93% vs 61%). Similarly, those who received SHHC services (compared with those who received conventional services) reported significantly ( $p < 0.01$ ) higher ratings of being happy with the form of contraception they received (98% vs 87%); feeling that staff understood their problems (99% vs 85%); and lower ratings of feeling embarrassed during the consultation (10% vs 23%). No significant differences were found in ratings of clinical staff being friendly, approachable, treating them as an individual, listening to what they said, or being professionally experienced enough to deal with their problems. In the third study,<sup>31</sup> the aforementioned nonrandomized trial, patients completed a quiz that assessed knowledge of basic reproduction, contraception, and STDs. Quiz scores were significantly improved between study phases at the experimental sites ( $t[459] = 2.43$ ,  $p = 0.015$ ), but remained unchanged at the control sites. No significant change in patient satisfaction was observed at either experimental or controls sites.

Of the six studies that examined the effects of youth-friendly family planning services on reproductive health outcomes, one<sup>26</sup> discussed an unintended negative consequence. In this study, the aforementioned pre-post peer provider model study with sexually active male and female participants, female subjects demonstrated significantly decreased odds from first to last visits ( $OR = 0.65$ ,  $p < 0.01$ ) of always using condoms. The authors hypothesized that the reduction in condom use may have occurred because of the increase in female participants’ use of more-effective methods, which was observed in the study, but no tests of association were conducted.

## Studies Reporting Key Characteristics of Youth-Friendly Family Planning Services

Thirteen studies<sup>28,32–44</sup> discussed key characteristics of youth-friendly family planning services, as well as one<sup>28</sup> of the aforementioned outcome studies that also included a survey of teen client perspectives. One<sup>34</sup> of these provided the perspectives of young people and providers, nine<sup>28,36–42,44</sup> described the perspectives of young people only, and four<sup>32,33,35,43</sup> described the perspectives of providers only. Details of each study are described in [Appendix Table 4](#).

[Table 3](#) summarizes the key characteristics as described by young people and providers of youth-friendly family planning services by study. A number of youth-friendly characteristics were described, including

1. **Confidentiality.**<sup>45</sup> Information discussed between patient and provider during or after the encounter will not be shared with other parties without the explicit permission of the patient.<sup>28,32–34,36–44</sup>
2. **Accessibility.** This includes low-cost/free services; location (proximity); access to transportation; tailored outreach; tailored hours; shorter wait times; appointment availability or “drop-ins”; pleasing atmosphere entrance; and having a range of available contraceptive options.<sup>28,32–35,37–39,41,42,44</sup>
3. **Peer involvement.** This is use of peer health providers or peer educators in the clinic or providing adolescent peer support groups within the clinic.<sup>28,33,34</sup>
4. **Parental or familial involvement.** This includes having parents and families involved during the clinic visit or in health discussions.<sup>32,40,41,43</sup>
5. **Integration.** This involves integration of family planning services into other settings such as youth clubs, or integration with other services such as mental health or more-comprehensive care services.<sup>33–35,38,39,42,43</sup>
6. **Provider interaction.** This involves allowing sufficient time for building rapport between provider and patient; specialized approaches to the educational session such as providers engaging in one-on-one versus group education; and a respectful, nonjudgmental approach taken by providers (provider could refer to doctors, nurses, health educators, counselors, receptionists, or other staff an adolescent might encounter in the clinic).<sup>28,32–39,41,42</sup>
7. **Cultural competence.**<sup>46</sup> This represents providers and their clinics having congruent behaviors, attitudes, and policies that come together in a way that enables effective service provision in cross-cultural situations.<sup>43</sup>
8. **Specialized training for staff.** This involves training to providers on adolescent and young adult health and how to communicate with young people about reproductive health.<sup>32,34,37,38,40</sup>



**Table 3.** Summary of Key Characteristics of Youth-Friendly Family Planning Services

Reference year	Key characteristics of youth-friendly family planning services								
	Confidentiality	Accessibility	Peer involvement	Parental or familial involvement	Integration	Provider interaction	Cultural competence	Specialized training for staff	Preference for certain provider characteristics
Perspectives of young people									
Chambers et al. <sup>a</sup> (2002) <sup>34</sup>	✓	✓	✓		✓	✓		✓	
Donovan et al. (1997) <sup>36</sup>	✓					✓			✓
French et al. (2002) <sup>37</sup>	✓	✓				✓		✓	
Hayter et al. (2005) <sup>38</sup>	✓	✓			✓	✓		✓	
Herz et al. <sup>b</sup> (1988) <sup>28</sup>	✓	✓	✓			✓			
Ingram and Salmon (2007) <sup>39</sup>	✓	✓			✓	✓			
Kapphahn et al. (1999) <sup>40</sup>	✓			✓				✓	✓
Peremans et al. (2000) <sup>41</sup>	✓	✓		✓		✓			✓
Perry et al. (2008) <sup>42</sup>	✓	✓			✓	✓			
Wilson et al. (2000) <sup>44</sup>	✓	✓							✓
Perspectives of providers									
Alberti et al. (2010) <sup>32</sup>	✓	✓		✓		✓		✓	
Brindis et al. (2005) <sup>33</sup>	✓	✓	✓		✓	✓			
Cromer et al. (1999) <sup>35</sup>		✓			✓	✓			
Russell et al. (2004) <sup>43</sup>	✓			✓	✓		✓		
Totals	13	11	3	4	7	11	1	5	4

Note: ✓ Study described this as a youth-friendly characteristic in the results and/or discussion section.

<sup>a</sup>Included both adolescents/young adults and providers/professionals in study population; however, the study is only represented once in table.

<sup>b</sup>This article also described a prospective cohort study to evaluate the Chicago Teen Clinic and the results are discussed in the Qs 1–3 section of this report.

9. **Preference among young people for certain provider characteristics.** This is the preference for a particular provider gender or type of provider (e.g., nurse, general practitioner, or social worker).<sup>36,40,41,44</sup>

Of all the characteristics, confidentiality was the most frequently described across papers, followed by accessibility and provider interaction. Least-described characteristics were cultural competence and peer involvement.

## Discussion

This review identified six studies<sup>26–31</sup> that examined the effects of youth-friendly family planning services on reproductive health outcomes, with five studies finding a statistically significant positive effect on at least one outcome of interest. As distal versus proximal outcomes are often more challenging to influence, it is striking that two<sup>26,31</sup> of three<sup>26,30,31</sup> studies that examined long-term outcomes found significant reductions in teen pregnancy. The youth-friendly services in these two studies included clinic-based services, follow-up phone calls, and outreach efforts provided by peer providers<sup>26</sup> and services that emphasized in-depth counseling, education geared to an adolescent's level of development, and provision of reassurance and social support.<sup>31</sup> Youth-friendly services were also positively associated with several medium-<sup>26,28,31</sup> and short-term<sup>27,29,31</sup> outcomes. According to the analytic framework, these more-proximal outcomes would be the first outcomes to be influenced but may contribute to potential longer-term effects, such as reduction in teen pregnancy. One study<sup>19</sup> reported an unintended negative consequence of youth-friendly services, showing decreased use of condoms from first to last visit, underscoring the importance of addressing dual protection (protection from both pregnancy and STDs) when working with young people.

## Limitations

These outcome studies have several limitations that should be considered when interpreting the evidence. Four<sup>26,27,30,31</sup> were rated as having high risk for bias. The study on the peer provider model<sup>22</sup> was at risk for recall, selection, and self-report bias, and follow-up time between first to last visit was not reported. In the cross-sectional study,<sup>23</sup> behavioral outcomes were not assessed, causal relationships could not be established, and the recruitment rate was not reported. It was also subject to self-report bias. The repeated cross-sectional population-based survey analysis<sup>30</sup> did not provide information on intervention exposure among population-based survey respondents; clinic attendees represented approximately 7% of adolescents in the district and it may not be

realistic to expect program-related change in population-based estimates. The nonrandomized trial<sup>31</sup> suffered from high attrition and was at risk for self-report bias. The participation rate was unknown as was the method to measure pregnancy. Also, the comparability of groups was questionable, as baseline data were not collected for 80% of participants.

The remaining two studies<sup>28,29</sup> were rated as having moderate risk for bias. In the Teen Clinic study,<sup>24</sup> comparability of study groups related to demographic and other potential confounding factors was not established. Subject to both recall and self-report bias, the SHHC study<sup>29</sup> also used disparate recruitment methods for intervention versus comparison. Its participation rates for SHHC and non-SHHC users differed, and it also suffered from non-independence of data (32 female participants were included in both the analytic and comparison groups). As another limitation, four studies<sup>28–31</sup> pre-date the 21st century and therefore may not represent the current healthcare environment.

Despite these limitations, the evidence base had strengths worth noting. One study<sup>31</sup> examined behavioral outcomes and followed participants for 12 months. Several conducted statistical tests for significance to examine associations,<sup>26,27,29,30</sup> or used objective measurement of outcomes rather than self-report (e.g., urine pregnancy tests).<sup>26,28,30</sup> One cross-sectional study<sup>27</sup> had a high rate of usable survey responses, and another<sup>29</sup> achieved comparable study groups by matching participants on age and area of residence.

Nevertheless, this review is unable to draw definitive conclusions about the effects of youth-friendly family planning services on reproductive health outcomes owing to the limited number of outcome studies meeting the inclusion criteria and the diversity of examined youth-friendly service interventions. Each study examined different youth-friendly services interventions, and each intervention involved different strategies to increase a young person's access to services (e.g., tailored hours to suit teen schedules or drop-in appointments) or improve quality of care (e.g., specialized training for providers). As such, this review was unable to assess the effects of one strategy separately from the others or to compare the relative effectiveness of one strategy versus another. Nonetheless, the youth-friendly services contained in this review that resulted in some statistically significant positive changes in outcomes can be considered in future research and when developing youth-friendly family planning programs.

This review also identified 14 studies that provided information on youth-friendly family planning services from the perspectives of providers and young people. Although the information garnered from these non-

comparative studies did not test the effects of youth-friendly approaches on outcomes, they did provide insight on factors to assess when researching how to increase access and improve quality of care in family planning services for young people. A range of characteristics—many of those seen to some degree in the models examined in the six outcome studies—were discussed. For example, confidentiality was the most frequently described characteristic among youth regarding what they want in family planning services. Other frequently described factors were provider interaction and accessibility. Further research to determine how to assure confidentiality and improve provider interaction is warranted. Methods to ensure accessibility also should be prioritized when setting priorities for future research and developing youth-friendly family planning service models.

A targeted search was rerun in PubMed for the period from March 1, 2011, to March 1, 2015, to search for newly published articles that would fit the inclusion criteria. No articles examining youth-friendly family planning services and their relationship with reproductive health outcomes were found. Two retrieved articles<sup>14,47</sup> offered a description of youth-friendly family planning services. These two descriptions were aligned with the findings on provider and youth perspectives in this review, emphasizing confidentiality, provider interaction, accessibility, provider training, integration, and peer involvement.

## Conclusions

This review demonstrates that there is limited evidence that youth-friendly family planning services affect reproductive health outcomes. Characteristics of interventions that were associated with reduced teen pregnancy include clinic-based services with peer providers, follow-up phone calls, and outreach efforts<sup>26</sup> and services that emphasized in-depth counseling, education geared to an adolescent's level of development, and provision of reassurance and social support.<sup>31</sup> These same interventions were correlated with improved contraceptive use. Another intervention that offered free services, tailored hours, peer group reproductive health discussions, and outreach efforts in local schools<sup>28</sup> was associated with increased use of services. Although most of the six outcome studies showed a significant positive effect, the body of evidence lacked rigorous study designs and risk for bias was high. Many of the non-comparative studies presented valuable information on what young people desire in family planning services; these can serve to inform future research on youth-friendly family planning services. Further, the studies collecting perspectives from young people and providers demonstrate that young people desire specific characteristics in family planning

services and thus lend support to the idea that adopting some of these desired characteristics might increase receptivity to and use of services.

The evidence offered here was presented to a group of experts in May 2011 at a meeting convened by the Office of Population Affairs and CDC. Along with expert feedback, the review was used to inform the development of recommendations included in the 2014 “Recommendations for Providing Quality Family Planning Services.”<sup>19</sup> The evidence base on the effects of youth-friendly family planning services would be strengthened by the inclusion of more-rigorous studies of high quality and assessment of behavioral outcomes at least 12 months post-intervention.

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## Appendix

### Supplementary data

Supplementary data associated with this article can be found at <http://dx.doi.org/10.1016/j.amepre.2015.03.019>.