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Youth-Friendly Family Planning Services for Young People: A Systematic Review Update

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Abstract

Context: Youth-friendly family planning services may improve youth reproductive health outcomes. A systematic review conducted in 2011 was updated in 2016 to incorporate recent data examining the effects of youth-friendly family planning services on reproductive health outcomes and the facilitators and barriers facing young people in accessing family planning services.

Evidence acquisition: PubMed, POPLINE, EMBASE, and other databases were used to identify relevant articles published from March 2011 through April 2016.

Evidence synthesis: Eighteen studies met inclusion criteria and were added to 19 studies from the review conducted in 2011. Of these, seven assessed the effect of youth-friendly services on outcomes: two showed a positive effect on reducing teen pregnancy, three on contraceptive use, and three on knowledge and patient satisfaction (not mutually exclusive). Facilitators or barriers were described in 32 studies. However, none were RCTs and most were at high risk for bias due to selection, self-report, and recall bias among others.

Conclusions: The studies in this review suggest some positive effects of youth-friendly family planning services on reproductive health outcomes, but the need for more rigorous research persists. This review identified numerous factors relevant to young people's access to family planning services, reaffirming findings from the initial review: young people value confidentiality, supportive provider interaction, specialized provider training, and the removal of logistic barriers. Further, it illuminates the importance young people place on receiving comprehensive, client-centered family planning counseling. These findings should be considered when developing, implementing, and evaluating reproductive health services for young people.

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CONTEXT

The birth rate among females aged 15–19 years in the U.S. declined 51% from 2007 (41.5 births per 1,000 women) to 2016 (20.3 births per 1,000 women), yet in 2016 there were 209,809 births in this age group.¹ In addition, the Centers for Disease Control and Prevention (CDC) estimates that 42% of young people aged 15–19 years have ever had sexual intercourse.² To reduce unintended teen pregnancy, family planning services must be both available and accessible to young people³ given their unique needs and the barriers they face in accessing related care.⁴ These obstacles include prohibitive financial costs, lack of transportation, and concerns around confidentiality.⁵ Recognizing that young people require care that addresses their needs and helps them overcome barriers, programs that provide family planning and reproductive health services to young people recently have adopted youth-friendly approaches.⁶

In 2011, the CDC and the Office of Population Affairs conducted a systematic review examining the effects of youth-friendly services on the reproductive health of young people including long-term (e.g., unintended pregnancy, teen pregnancy), medium-term (e.g., contraceptive use, dual contraceptive use), and short-term outcomes (e.g., patient satisfaction).⁶ In that review, youth-friendly family planning services were defined as “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).”⁶ Two of the three studies that examined long-term outcomes found that providing youth-friendly services significantly reduced teen pregnancy.^{7,8} Youth-friendly services were also positively associated with several medium- and short-term outcomes, and the review revealed factors that may inform how to increase young people’s access to family planning services and improve quality of care.⁶ This initial review informed the 2014 publication, *Providing Quality Family Planning Services: Recommendations of CDC and the U.S. Office of Population Affairs*.⁹

Since this initial systematic review, the American College of Obstetricians and Gynecologists¹⁰ and the American Academy of Pediatrics¹¹ have highlighted the importance of access to family planning services for sexually active adolescents, including access to implants and intrauterine devices (IUD), also known as long-acting reversible contraception (LARC). Recent studies report that adolescents find LARC acceptable¹² and that continuation rates among young people are generally higher for LARC as compared with other methods,^{13,14} and LARC methods have lower contraceptive failure rates.¹⁵

The purpose of this review is to summarize the body of evidence since the 2011 review examining the effect of youth-friendly family planning services on reproductive health outcomes, and facilitators and barriers for youth access to family planning services. This paper provides a cumulative assessment of the evidence by combining findings from this and the first review.

EVIDENCE ACQUISITION

The initial systematic review included studies published from January 1, 1985 to February 28, 2011.^{6,16} This update includes studies published between March 1, 2011 and April 30, 2016. Six key questions (KQs) guided the review. An analytical framework (Figure 1) illustrates the relationships between the target population (young people ages 10–24 years), the intervention of interest (youth-friendly family planning services), and the long-, medium-, and short-term outcomes of interest (KQs 1–3, respectively). KQs from the initial systematic review and this review update are presented in Appendix Table 1. KQ1 included long-term health outcomes of interest, such as decreased unintended pregnancy. Outcomes related to values or cost savings (i.e., increased value-based care; decreased per capita costs; high return on investment) were added to this review update, to align with the Institute for Healthcare Improvement’s Triple Aim framework.¹⁷ KQ2 included medium-term outcomes, such as increased contraceptive use (which could include emergency contraception) and increased use of dual contraception (use of a condom and other contraceptive method). KQ3 included short-term psychosocial outcomes, such as increased patient satisfaction and knowledge. The perception that services are client-centered and equitable (often measured by client “satisfaction with service”), was added as a short-term outcome. KQ4 examined facilitators and barriers for clinics in implementing interventions designed to strengthen youth-friendly family planning services. KQ5 examined whether unintended consequences are associated with clinics providing youth-friendly family planning services. KQ6 examined facilitators and barriers for youth to obtain and providers to offer youth-friendly services. This KQ was revised from the original review on the recommendation of subject matter experts during protocol update and development: whereas the original review identified contextual factors that influenced access and provision of services, this review recognized the directional nature of these factors.

Relevant studies were identified by searching 16 electronic databases, including PubMed, POPLINE, and EMBASE (Appendix Table 2). The review utilized broad sets of search statements (Appendix Table 3) different combinations to cover the subtopics: youth-friendly services, confidentiality, and parental involvement.

Selection of Studies

Inclusion and exclusion criteria were developed a priori and applied to the search results (Appendix Table 3). Eligible studies met the following criteria: conducted in the U.S., Canada, Australia, New Zealand, and European countries categorized as “very high” on the Human Development Index¹⁸; published from March 1, 2011 to April 30, 2016; and reported outcomes relevant to individuals aged 10–24 years. Articles were not included if they described interventions testing sex education interventions or if they focused solely on HIV/sexually transmitted disease prevention services without a family planning component. For KQs 1–5, studies had to describe a clinical intervention and include a comparison group. For KQ6, descriptive studies without a comparison group were included.

Assessment of Study Quality

For studies that answered KQs 1–5, the quality of individual studies was determined by assessing both the internal and external validity, according to the U.S. Preventive Services Task Force guidance.¹⁹ Individual studies were categorized by U.S. Preventive Services Task Force level of evidence and risk for bias to assess internal validity. External validity was assessed by comparing the study sample characteristics to U.S. females aged 10–24 years. The quality of the studies addressing KQ6 was not assessed, as these did not measure associations but rather described facilitators and barriers.

EVIDENCE SYNTHESIS

The search strategy identified 13,706 articles (Figure 2). After an initial title and abstract content screen, 212 articles were retrieved for full review; 13,494 were not retrieved because they were determined to be outside of the publication date range, duplicates, or met at least one study exclusion criterion. Eighteen of the 212 articles met the inclusion criteria; 16 articles were identified through the youth-friendly services search^{20–35} and two^{36,37} from the confidentiality search; and no articles were identified from the parental involvement search. Of these 18 articles, none reported on long- or short-term outcomes (KQ1 and KQ3), and only one²⁸ reported on medium-term outcomes (KQ2). Combined with the initial review in which six studies reported on outcomes of interest, seven studies reported on outcomes. Findings by outcome of interest are summarized below and in Table 1. All of the 18 studies from this review update provided information on the contextual facilitators and barriers facing young people from the perspectives of young people or providers or both (KQ6). Combined with the initial review, a total of 32 studies addressed KQ6. Table 2 provides summarized findings related to KQ6. No studies from this review update reported on facilitators and barriers for clinics in implementing youth-friendly services interventions (KQ4) or unintended negative consequences (KQ5). Appendix Table 4 provides details of all outcome studies addressing KQs 1–3; Appendix Table 5 lists details of all studies addressing KQ6.

RESULTS

Key Question 1: Long-term Outcomes

The review update found no new evidence related to the effects of youth-friendly services on long-term outcomes. Thus based on the initial review, there were three studies^{7,8,38} that found effects for long-term reproductive health outcomes, of which two^{7,8} had a positive effect on reducing teen pregnancy and one had a negative effect on reducing teen pregnancy and decreasing abortion rates.³⁸

Key Question 2: Medium-term Outcomes

One new, cross-sectional, nationally representative survey of publically funded clinics providing family planning services²⁸ compared clinics that were ($n=455$) or were not ($n=129$) youth friendly (defined as having clinic staff specifically trained to meet the family planning needs of youth). This study was assessed as having a high risk for bias due to low response rate, outcome data being reported by facility managers rather than clients, and lack

of baseline levels to assess magnitude of change. It examined: (1) clinic-reported changes over the past 2 years in LARC use among clients aged 15–24 years, and (2) whether clinic-reported LARC discontinuation rates differed for clients aged 15–24 vs 25 years. Clinics that were or were not classified as youth friendly differed significantly ($p<0.001$) in the proportion reporting “increased” IUD use (49% vs 36%) and “increased” implant use (39% vs 29%) among young people in the previous 2 years. However, clinics that were youth friendly reported significantly higher ($p<0.001$) LARC discontinuation rates for clients aged 15–24 vs 25 years (45%) compared with clinics not classified as youth friendly (32%).

In combination with the initial review, four studies examined the association of youth-friendly services on medium-term outcomes. Three showed a positive effect on increased contraceptive use,^{7,28,39} two on increased use of family planning services,^{7,40} one on increased contraceptive continuation,⁸ one on initiation of a more effective contraceptive method,⁷ and one on increased consistent use of contraception.⁷

Key Question 3: Short-term Outcomes, Client Experience, and Psychosocial Outcomes

The current review found no new evidence related to the effects of youth-friendly services on short-term client experience or psychosocial outcomes. Three studies^{8,39,41} addressed short-term outcomes in the initial review. All showed a positive effect on either patient satisfaction or knowledge. In one study, a clinic designed specifically for young people that offered weekend hours, an informal atmosphere, and assurance of complete confidentiality, was associated with increased patient satisfaction. In another study, patient satisfaction with a pelvic exam was associated with the exam being conducted in a family planning clinic as opposed to a general practitioner’s office and after permission was sought by the provider versus not. In the third, a clinic that emphasized in-depth counseling, education tailored to an adolescent’s level of development, and provision of reassurance and social support was associated with increased knowledge. In this study, however, there was no effect on patient satisfaction.

Key Question 6: Contextual Facilitators and Barriers for Young People in Seeking and Remaining Linked to Family Planning Services

All 18 newly identified studies provided descriptive findings that addressed contextual facilitators and barriers for young people in accessing family planning services, as well as for healthcare providers offering such services. Four^{22,23,25,28} of the 18 studies focused specifically on LARC and three reported specifically on IUDs.^{33–35} Three studies looked at special populations: renal transplant recipients,²⁰ adolescents with epilepsy,²⁹ and homeless adolescents.²² Nine of 18 included perspectives from young people only,^{21,22,25,26,29–31,34,35} eight included perspectives from providers only,^{20,23,24,28,32,33,36,37} and one provided both perspectives.²⁷ Of the ten studies that reported young people’s perspectives, four recruited from clinical settings (one family planning clinic,³⁵ two school clinics/nurses,^{25,30} one multidisciplinary clinic²⁶) and two from emergency department settings; four studies collected data from young people in the community.^{22,27,29,34} In combination with the initial review, 32 studies examined facilitators and barriers. Characteristics of all studies addressing KQ6 are described in Appendix Table 5.

Table 2 summarizes the facilitators and barriers by study as reported by young people and by providers. Described factors included the following.

Confidentiality.—In the previous review, 13 studies^{40,42–53} identified confidentiality as an important aspect of youth-friendly services. In this review, six discussed the assurance of confidentiality as a facilitator.^{24,26,29,30,36,37} Seven discussed concerns related to confidentiality as barriers. Adolescent concerns related to breach in confidentiality,^{20,24,27} lack of privacy^{21,33,37} or loss of anonymity²¹ are described; in addition, administrators reported billing while trying to ensure adolescent confidentiality as a barrier.²³

Accessibility.—In the initial review, 11 studies^{40,42–44,46–48,50,51,53,54} described logistic factors as important aspects of youth-friendly services. In this review, three studies described facilitators for increasing access to family planning services, including low or no cost services^{26,31,33} and contraceptive methods available over the counter.²⁶ Several studies highlighted logistic barriers, including four studies on limited transportation options,^{24,26,28,34} four studies noted limited or inconvenient clinic operating hours,^{24,27,28,34} and two studies reported difficulty or delays in getting appointments.^{21,34} Financial cost of care was another important logistic barrier.^{24,31,32} LARC methods, in particular, present unique barriers including high cost,^{28,33} lack of insurance coverage,³⁴ insufficient capacity of providers to offer immediate postpartum LARC,³⁴ and lack of LARC supplies for training or lack of devices onsite for same-day method provision.^{23,34}

Peer involvement.—In the initial review three studies^{40,43,44} found that involvement of peer health providers, peer educators, or peer support groups was important. No studies in this review reported on this factor.

Parental or familial involvement.—Inclusion of parents and families at some point during the clinic visit was identified as a facilitator in four studies^{42,49,50,52} in the initial review. One study described parental involvement in this update.²⁹ In this study, adolescent epileptic patients perceived parents as helpful advocates for their multiple healthcare needs, including family planning.

Integration.—Seven studies^{43,44,47,48,51,52,54} from the initial review described the integration of family planning services into other settings as a significant factor. In this review, three studies had findings that noted the importance of integration of family planning services and reproductive health information into schools to increase access^{21,24,25}; none noted this as a barrier.

Provider interaction.—In the initial review, 11 studies^{40,42–48,50,51,54} reported provider interaction as a key factor. Seven studies in this review found that young people place a high value on positive provider interaction.^{21,26,27,30,31,33,35} In five studies, young people reported valuing providers who appeared caring and non-judgmental and who take time to explain things clearly.^{21,26,27,30,31} Clinic support after IUD insertion (e.g., when a young person can call and have questions answered) was a facilitator.³⁵ One study found that access to primary care settings is facilitated when a reproductive health champion is onsite and where the full scope of contraception, including IUDs, for young people is supported.³³

Provider attitudes, such as appearing judgmental, can also act as barriers, as reported in three studies.^{21,32,37}

Cultural competence.—Providers in one article⁵² in the initial review reported cultural competence as an important factor; no studies in this update reported on this factor.

Specialized training.—Five studies^{42,44,46,47,49} in the initial review discussed specialized training as a critical factor. Four newly identified studies described training as a critical factor for access: training specific to adolescent service provision in three^{23,31,36}; and training on IUD insertion, or capacity for referral to a trained provider, in another.³³ Conversely, lack of provider training was identified as a barrier,^{20,24,31–34} including lack of training on laws related to confidentiality for adolescent patients,³⁶ and lack of LARC-specific training.^{23,28}

Preference of certain provider characteristics.—Young people reported preferring characteristics, such as a particular gender, in four studies^{45,49,50,53} in the initial review; none were reported in this update.

Counseling.—No studies in the initial review reported on aspects of counseling, but eight studies in this update reported several aspects of counseling as facilitators. This included youth preferences for counseling tailored to their desired contraception method, as well as counseling that provided clear information about side effects, risks, and benefits.^{23,25,35} Two studies described the advantages of routine (every visit) contraceptive counseling.^{21,26} Two studies reported that use of visual aids or models during contraceptive counseling was helpful.^{22,35} Five studies found young people preferred receiving comprehensive information and additional resources during counseling.^{22–24,29,35} Young people cited the importance of discussing IUD removal during counseling (including reassurance that it can be removed and validating concerns when an adolescent chooses to discontinue use of it).³⁵ Young people with epilepsy reported that it was helpful to receive information from providers about how contraceptives interact with epilepsy-related medications.²⁹ Certain provider approaches to counseling can also act as barriers. Providing insufficient information on contraception,³⁷ refusal to provide certain methods,^{32,37} making assumptions about whether a young person needs contraception,^{21,37} provider time limitations,^{20,32} feeling forced to use a contraceptive method²² or an attitude that discourages a young person from disclosing sexual experiences^{21,37} can act as barriers.

Negative provider attitudes displayed during counseling about LARC use^{23,28} including provider perception that LARC use would result in less condom use³³ can hinder LARC access. Studies described providers giving inadequate information on side effects of LARC,²² offering subjective opinions about LARC during counseling,³⁵ and discouraging young people from discontinuing LARC as additional barriers.³⁵

Youth characteristics.—No studies in the initial review reported on the importance of youth characteristics and perceptions. In this review update, these were reported as both facilitators and barriers. Two studies reported that positive views on the IUD from other people (friends or family) as facilitators.^{25,34} One article described young people having

future goals (e.g., planning to go to college) as a facilitator.²⁵ Limited knowledge among young people played a role as a barrier including limited reproductive health literacy,^{26,27,32} limited knowledge about the availability or cost of services,^{24,27,29} and misperceptions about the age appropriateness of LARC for young people or other LARC knowledge gaps.²⁵ Mistrust of all contraceptive methods³⁴ and concerns about judgment or embarrassment^{26,27,32} were also described as barriers. Negative views of LARC informed by commercials or other people,^{22,25,33} and fear of LARC side effects^{25,34} were cited as barriers.

DISCUSSION

The combined reviews identified only seven studies (one from this review update) published between 1985 and 2016 that examined youth-friendly service intervention effects on outcomes of interest. In the initial review, five of six studies found a statistically significant positive effect on at least one outcome of interest; in the review update, the one study identified found a positive effect. Although this suggests positive effects of youth-friendly services on reproductive health outcomes, none of the seven studies used rigorous study designs and most were at high risk for bias. The need for more rigorous studies to understand the effects of youth-friendly services on outcomes persists. Nevertheless, this update reaffirmed factors found from the initial review that act as barriers or facilitators for young people accessing reproductive health services, and introduced several new factors. Although the findings gathered from these studies were descriptive and not based on rigorous evaluation, they illuminate important considerations regarding youth reproductive health services.

Consistent with the initial review, cultural competence, peer involvement, parental involvement, and preference for certain provider characteristics were reported infrequently or not at all. Logistic accessibility factors, such as transportation, hours of operation, and cost, continue to affect access. In the initial review, “integration” of family planning services into other settings was an important factor; three studies in this review update reaffirmed this. Consistent with the previous systematic review, young people reported that assurance of confidentiality, providers being caring and non-judgmental, and having training tailored to youth-specific needs, were some of the most critical factors influencing their access to family planning services. Many of the facilitators/barriers identified (e.g. cost and confidentiality) are also indicators of quality care for family planning services in general. This review can help to inform efforts to better understand which characteristics actually have greater value specifically for young people (e.g. confidentiality in the context of cultural norms against premarital sex).

Counseling emerged as a new and important factor. Young people painted a picture of their desired counseling experience: one in which the counselor takes sufficient time and delivers unbiased, comprehensive information about all available contraceptive methods and side effects. In addition, findings from these studies suggest that young people want contraceptive counseling that covers the removal processes for LARC. The studies suggest that counseling sessions should also include other resources to aid comprehension and support decision-making processes, including visual materials and models.^{22–24,29,35} In

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addition, young people want providers to support their decisions, including those around method discontinuation. Counseling models that are “client-centered” and emphasize “shared decision making” have emerged since the initial review and its proponents say these models are supportive of women’s reproductive autonomy.^{55–59} This is said to be especially important for groups that experience, or have historically experienced, reproductive injustices such as women of color, young women, or low-income women.⁶⁰ The field would benefit from additional research on how best to counsel young people, especially those with lower incomes or youth of color, in a client-centered way.

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The cost effectiveness of covering new contraceptive methods among women of all reproductive ages has been demonstrated⁶¹ but the search did not yield any studies that examined this. Another striking element of this review was the absence of studies examining confidentiality’s effect on long-term outcomes, given its importance to young people. Additional investigation of these topics would be beneficial to reproductive health providers as well as policy makers.

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Unlike the previous systematic review, three studies in this update highlighted the importance of looking at special adolescent populations (adolescents with epilepsy,²⁹ homeless adolescents,²² or renal transplant recipients²⁰) when providing quality family planning services.^{20,22,29} Two^{22,29} of the three found that patients desired comprehensive information and educational materials during counseling. The third²⁰ cited lack of provider training on counseling and provider time limitations as barriers. Evidence shows that although all young people face barriers in accessing sexual and reproductive health care, these challenges can be exacerbated among young people who are low income⁴ or have chronic health conditions.⁶² Indeed, the connection between inequitable access to health care and negative health outcomes among certain groups of people (e.g., being young, from low-income families, immigrants, or of a sexual minority), has been well documented.^{3,4,63} Research focusing on meeting the family planning needs of unique youth populations along with addressing broader issues of healthcare inequity deserves attention.

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Ten studies in this update reported that factors specific to the young people themselves could influence access, including: poor reproductive health literacy, a mistrust of all contraceptive methods, and limited knowledge about availability and cost of services. These factors point to the need for education on reproductive biology, contraception, and the availability and cost of local services. Although these partially can be addressed by the clinical settings themselves, this underscores the need for interventions, beyond just the clinical setting, designed to increase awareness, foster knowledge, and link young people to family planning services. Multiple efforts in recent years have launched to increase knowledge and connect young people to reproductive health services^{64–68} but only a few have been evaluated.^{65,66}

Limitations

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Readers should consider several limitations when interpreting the gathered evidence. Only one study²⁸ in this update reported findings on outcomes of interest, and this study was assessed as having a high risk for bias. Although most of the six outcome studies addressing KQs 1–3 from the initial review showed a significant positive effect, the body of evidence lacked rigorous study designs and risk for bias was high. Although the information collected

from the 13 studies that address KQ6^{20–37} shed light on important factors that may influence access to quality family planning services, the data were gathered through descriptive methods rather than through experimental designs. “Delayed sexual initiation” was not a medium-term outcome in the analytic framework. Thus, studies with this as an outcome may have been missed and this as an outcome in included studies would not have been abstracted. Of the ten studies that reported young people’s perspectives, four collected data in clinic settings and two in emergency department settings; only two collected data from young people outside of clinics and in the community. It is possible that perspectives from these young people in the community may have been missed given that most of the reported perspectives were from those who had already entered the clinic setting.

CONCLUSIONS

The descriptive studies summarized here emphasize the numerous factors that impede or facilitate access to quality family planning services, painting a clear picture of the desire for youth-friendly services. Yet the need for more rigorous studies to understand the effects of youth-friendly services on reproductive health outcomes persists. Although this review demonstrates that there continues to be limited evidence related to the outcomes of interest, it reaffirms findings from the previous review: young people continue to value confidentiality, supportive provider interaction, specialized provider training, and the removal of logistic barriers to access family planning services. Further, it sheds new light on the importance young people put on receiving complete and unbiased contraceptive counseling from providers, with supportive tools and a client-centered approach, as a critical part of the clinic visit. Youth-serving professionals and researchers should consider these factors when developing, implementing, and evaluating reproductive health services for young people.

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Appendix

Appendix Table 1.

Key Questions (KQ) From Initial Systematic Review and Review Update

KQ #	Initial systematic review		Systematic review update
1	Is there a relationship between youth-friendly family planning services and improved long-term outcomes (e.g., decrease teen or unintended pregnancies, decrease abortion rates, decrease repeat teen pregnancy rates)?	1	Is there a relationship between the provision of youth-friendly services interventions and improved health outcomes among adolescents/young adults?
2	Is there a relationship between youth-friendly family planning services and improved medium-term outcomes (e.g., increase contraceptive use; increase use of more effective contraceptives; increase consistent use of contraception; increase continuation of contraception use; use, repeat use, or follow-up use of services)?	2	Is there a relationship between the provision of youth-friendly services interventions and improved behavioral outcomes among adolescents/young adults?
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)?	3	Is there a relationship between the provision of youth-friendly services interventions and improved psychosocial outcomes among adolescents/young adults?
4	Are there unintended negative consequences associated with providing youth-friendly family planning services?	4	What are the barriers and facilitators for clinics in adopting and/or implementing youth-friendly services interventions?
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)?	5	Are there unintended consequences associated with adopting and/or implementing youth-friendly services interventions?
		6	What are the contextual barriers and facilitators for young people in seeking and/or remaining linked to adolescent/young adult quality family planning services, as well as for healthcare providers providing such services?

Appendix Table 2.

Electronic Databases Searched

Database	URL for search platform
CINAHL	https://www.ebscohost.com/nursing/products/cinahl-databases/the-cinahl-database
PubMed	www.ncbi.nlm.nih.gov/pubmed/
PsycINFO	http://www.apa.org/pubs/databases/psycinfo/index.aspx
HealthSTAR	www.library.georgetown.edu/
POPLINE	www.popline.org/
EMBASE	www.embase.com/
Education Resources Information Center (ERIC)	https://eric.ed.gov/
Campbell Collaboration Library of Systematic Reviews	www.campbellcollaboration.org/
Cochrane Database of Systematic Reviews (CDSR)	http://onlinelibrary.wiley.com/cochranelibrary/search
Cochrane Central Register of Controlled Trials (CENTRAL)	http://onlinelibrary.wiley.com/cochranelibrary/search?searchRow.searchOptions.searchProducts=clinicalTrialsDoi

Database	URL for search platform
Database of Abstracts of Reviews of Effects (DARE)	www.crd.york.ac.uk/CRDWeb/
UK NHS Economic Evaluation Database (NHS EED)	www.crd.york.ac.uk/CRDWeb/
National Guideline Clearinghouse	www.guideline.gov/
UK National Institute of Clinical Excellence (NICE)	www.nice.org.uk/
Evidence for Policy and Practice Information and Coordinating Centre (EPPI-Centre)	http://eppi.ioe.ac.uk/webdatabases/
Turning Research Into Practice (TRIP)	http://tripdatabase.com/

Appendix Table 3A.

Search Strategy

Set #	Concept	PubMed search statements
1	Family planning	"family planning"[All fields] OR "family planning services"[MeSH] OR "family planning policy"[MeSH] OR "reproductive health services"[MeSH] OR "Title X"[All fields] OR "planned parenthood" [All fields] OR contraception[MeSH] OR "contraceptive agents"[MeSH] OR "contraceptive devices"[MeSH] OR "contraception behavior"[MeSH] OR "birth control"[All fields] OR contracept*[All fields]
2	Adolescents	adolescent[MeSH] OR "adolescent behavior"[MeSH] OR "adolescent development"[MeSH] OR "pregnancy in adolescence"[MeSH]
3	Youth-friendly services	"adolescent health services"[MeSH] OR "youth friendly services"[All fields] OR "adolescent friendly services"[All fields]
4	Parental involvement	"parental notification"[MeSH] OR "parental consent"[MeSH] OR "parental involvement"[All fields] OR "parental behavior"[All fields] OR "parent child relations"[All fields] OR "parental role"[All fields] OR "family involvement"[All fields] OR "parental investment"[All fields] OR "parent child communication"[All fields]
5	Confidentiality/Privacy	confidentiality[MeSH] OR privacy[MeSH] OR confidentiality[All fields] OR "privileged communication"[All fields]
6	Combined sets – general	((#1) AND (#2)) NOT (#3 OR #4 OR #5)
7	Combined sets – youth-friendly services	(#6) AND (#3)
8	Combined sets – parental involvement	(#6) AND (#4)
9	Combined sets – confidentiality/privacy	(#6) AND (#5)

Appendix Table 3B.

Inclusion/Exclusion Criteria for the Adolescent-focused Systematic Review

Area	KQ #	Inclusion criteria	Exclusion criteria
Populations	KQ 1–6	The population aged 10–24 years	Other populations that fall outside of the adolescent/young adult population
Interventions	KQ 1–5	A clinical or community-based service, strategy, program, practice, activity, or treatment implemented to improve quality family planning-related processes or outcomes of adolescents/young adults	All other interventions that are not part of the targeted intervention being studied
Comparators	KQ 1–5	A comparator or control group to which the above strategy, service, intervention, etc. is compared. This can consist of no intervention, usual care, ^a or a different strategy, service, intervention, etc. to increase intended consequences and/or reduce unintended consequences relative to the topic area of adolescent/young adult quality family planning services	Studies with no comparison or control groups to which the targeted intervention can be compared for efficacy or effectiveness
Outcomes	KQ 1	Long-term health outcomes of an adolescent/young adult population	Studies that either assess the outcomes of non-adolescent/young adult populations or do not assess effects of intervention on relevant outcomes
	KQ 2	Medium-term behavioral outcomes of an adolescent/young adult population	
	KQ 3	Short-term psychosocial outcomes of an adolescent/young adult population	
Time frames	KQ 1–6	Published between March 1, 2011–April 30, 2016	Studies that fall outside of the predetermined date range; Studies that do not meet the predetermined length of study duration
Settings	KQ 1–6	Care or study settings (e.g., Federally Qualified Health Centers, public health clinics, school-based clinics, community-based programs, etc.) relative to topic area of adolescent/young adult quality family planning services	All other settings that fall outside of the targeted care settings

^aUsual care is defined in this review as the current standard of care for a particular population or setting before implementation of an intervention designed to increase intended consequences or reduce unintended consequences in the topic area of adolescent/young adult quality family planning.

KQ, key question

Appendix 4.

Summary of Studies Examining Effects of Youth-friendly Family Planning Services on Behavioral Outcomes

Reference/ Funding	Study design/ Aim	Population	Intervention	Results	Study quality
<p>Studies from review update</p> <p>Kavanaugh et al., 2013, U.S. Funding source: U.S. HHS, Office of Population Affairs; Guttmacher Institute</p>	<p>Cross-sectional, nationally representative survey of publicly funded clinics providing family planning services; evaluated the association between being a YF clinic (defined as having staff specifically trained to meet the contraceptive needs of youth) and clinic-reported LARC use and continuation among adolescents (15–19 years) and young women (20–24 years).</p>	<p>Nationally representative sample of publicly funded clinics that provide family planning services in the U.S. (n=584). <ul style="list-style-type: none"> • 455 classified as YF • 129 not classified as YF Distribution by clinic type: <ul style="list-style-type: none"> • 33% health departments • 9% hospitals • 10% PP clinics • 28% FQHCs^{3,4} • 20% "other" Percentage receiving Title X funding: 52% Percentage with a reproductive health vs primary care focus: 52% Percentage with >50% of adolescents or young women: 77%</p>	<p>Having staff specifically trained to meet adolescents' contraceptive needs was used as an indicator that a clinic was YF (since this is a key <i>b</i> characteristic of YFS.)^b</p>	<p>Clinic-Reported LARC Use Proportion of clinics reporting change in LARC use among adolescents and young adults in past 2 years differed significantly ($p<0.001$) for clinics that were and were not characterized as YF. IUD Use <ul style="list-style-type: none"> • "Increased" at 49% vs 36% of clinics, respectively. • "Stayed about the same" at 47% vs 58% of clinics, respectively. • "Decreased" at 4% vs 6% of clinics, respectively. Implant Use <ul style="list-style-type: none"> • "Increased" at 39% vs 29% of clinics, respectively. • "Stayed about the same" at 54% vs 65% of clinics, respectively. • "Decreased" at 6% vs 6% of clinics, respectively. Clinic-Reported LARC Continuation Proportion of clinics reporting change in LARC discontinuation rates among adolescents and young adults vs women 25 years differed for clinics that were and were not characterized as YF ($p<0.001$). <ul style="list-style-type: none"> • "Higher" at 45% vs 32% of clinics, respectively. • "About the same" at 46% vs 58% of clinics, respectively. • "Lower" at 9% vs 32% of clinics, respectively. </p>	<p>Quality of study: Level III; High risk of bias Strengths: Large sample size from nationally representative sample. Analysis weighted to account for nonresponse. Weaknesses: Clinic YF classification based on poor/incomplete definition YFS. Outcome data reported by facility managers rather than clients; also lack baseline levels and magnitude of change. Clinic trends for LARC discontinuation among adolescents and young adults versus women 25 years do not control for the number of clients served, who are younger and older. Analyses did not control for clinic type, Title X funding, or reproductive health focus, all of which were associated with being classified as youth friendly. Low response rate (52%). Sample only included publicly funded sites, which have a disproportionately high number of women at risk for UIP and may also have staff particularly attuned to LARC service provision. Findings may not represent services provided at private clinics.</p>
<p>Studies from initial review</p> <p>Brindis et al., 2005, U.S. Funding source: California Wellness Foundation</p>	<p>Pre-post study (1 study group) to examine effectiveness of components or combination "Peer Providers of Reproductive Health</p>	<p>Sexually active clients who received an initial FP visit or male medical exam during their first visit and made one or more visits at least 90 days after their initial FP visit or first male medical exam Females: 89% of 1,590</p>	<p>The "Peer Providers of Reproductive Health Services to Teens" model: <ul style="list-style-type: none"> • Peer provider clinical services • Peer provider follow up phone calls </p>	<p>Long-term outcomes Among all females, clinic-telephone females had significantly ($p<0.05$) decreased odds of a positive pregnancy test at any follow-up visit (OR=0.9; 95% CI NR) when compared with clinic-only females; Clinic-outreach and full model females did not have significantly decreased odds of a</p>	<p>Level II-3; high risk for bias Strengths Pregnancy tests used Conducted statistical tests of significance Weaknesses Recall bias</p>

Reference/ Funding	Study design/ Aim	Population	Intervention	Results	Study quality
	Services to Teens" model	Ethnicity: 41% Hispanic among females; 37% Hispanic among males Age: 98% 15–20 years among females; 97% 15–20 years among males Convenience sampling of adolescents visiting 8 FP clinics over a 3-year period Completed study: Females=1,424 Males=166	<ul style="list-style-type: none"> Peer provider outreach services For data analysis, clients were retrospectively assigned to four groups depending on level of exposure: clinic-only, clinic-telephone, clinic-outreach, or full model (those who received all components) 	<p>positive pregnancy test when compared with clinic-only females.</p> <p>Full model Hispanic females had decreased odds of a positive pregnancy test than clinic-only Hispanic females (OR=0.2; 95% CI=0.01, 0.66)</p> <p>Medium-term outcomes</p> <p>Female clients demonstrated significantly ($p<0.01$) increased odds from first to last visit of always using birth control (OR=1.9), birth control use at last intercourse (OR=1.8) and use of effective birth control methods (OR=3.5), but significantly decreased odds in always using condoms (OR=0.7, $p<0.01$).</p> <p>Full model clients (compared to clinical-only) had elevated odds of returning for an annual exam (OR=2.2, $p<0.01$) and making 3 visits during the 3 year study period (OR=1.7, $p<0.05$).</p> <p>Full model Hispanic females had increased odds of always using birth control when compared to clinic-only Hispanic females (OR=1.7; 95% CI=1.33, 2.08)</p> <p>Full model females born to adolescent mothers had increased odds of always using birth control (OR=1.5; 95% CI=1.41, 1.66) and using effective methods (OR=1.7; 95% CI=1.38, 2.03) than their clinic-only counterparts</p> <p>Full model females who reported at first visit at most one sexual partner in the previous 6 months had increased odds of frequent clinic visits than their clinic-only counterparts (OR=1.7; 95% CI=1.35, 2.17)</p>	<p>Selection bias – analytic sample only included 19% and 8% of initial female and male populations</p> <p>Self-report bias</p> <p>FU time between first to last visit</p> <p>NR</p>
Gupta et al., 2001, UK Funding source: Departmental endowment monies	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	Women aged <25 years who attended a representative geographical spread of FP and young peoples' clinics Female=100% Ethnicity: NR Age: <25 years (mean=17.3 years) Completed survey=167 Evaluable response=163	<p>Characteristics of FP services examined at multiple clinics included: provider gender; provider type (e.g., GP, FP provider); provider-patient interaction; age at first examination</p>	<p>Short-term Outcomes</p> <p>Females reported significantly higher positive experiences when the first pelvic examination was conducted: by a female versus male doctor ($p=0.02$); in a FP versus GP clinic ($p=0.04$); after permission was sought versus not ($p=0.001$); and with increasing age at first examination (Mann-Whitney, $p=0.003$)</p> <p>There were no significant differences in positive experiences with the offer or presence of a chaperrone.</p>	<p>Level III; high risk for bias</p> <p>Strengths</p> <p>High rate of usable survey responses for analysis (98%)</p> <p>Conducted statistical tests of significance</p> <p>Weaknesses</p> <p>Self-report bias</p> <p>Causal relationships bias</p> <p>No behavioral outcomes assessed</p> <p>Recruitment rate NR</p>
Herz et al, 1988, U.S. Funding source: Grants to the Center for Health Services and Policy research, Northwestern University, Ford Foundation,	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	Adolescents aged 19 years at time of registration Teen Clinic: Female=88% Ethnicity=>90 African American Age=mean of 16.4 years Comparison Sites: NR but ethnicity estimated to be >90% African American	<p>Teen Clinic characteristics:</p> <ul style="list-style-type: none"> No cost for services Tailored hours (1 afternoon/week, 2–6 PM) "Rap group" offering patients a forum to discuss human sexuality, birth control, interpersonal 	<p>Medium-term Outcomes</p> <p>Following implementation of the Teen Clinic, there was an average 82% increase in the number of new teen registrants during the post-implementation quarters in the study facility; in contrast, comparison site 1 experienced a 4% increase, whereas comparison site 2 experienced a 17% decrease</p> <p>In the three-quarter period before the Teen Clinic, adolescents accounted for 47% of all new FP</p>	<p>Level II-2; moderate risk for bias</p> <p>Strengths</p> <p>Objective measure of clinic utilization</p> <p>Weaknesses</p> <p>Unable to assess comparability of study groups related to demographic and other potential confounding factors</p>

Reference/ Funding	Study design/ Aim	Population	Intervention	Results	Study quality
Chicago Community Trust, Field Foundation, and Joyce Foundation	nearly PH department facilities that had no special teen FP program		relationships, and related topics • Outreach and recruitment strategies including flyers and presentations in local schools Two comparison clinics: • Open 5 days/week, 8AM–4PM • No special services for adolescents	registrants; following implementation, adolescents accounted for 57% of all new FP registrants (representing a 21 percent increase overall)	
Morrison et al., 1997, Glasgow, Scotland Funding source: Greater Glasgow Health Board Health Promotion Department	Prospective cohort study comparing clinic experiences at the Sexual Health Help Centre (SHHC) with experiences at clinics with “conventional FP services”.	Young people who either attended the SHHC between June 1995 and February 1996 and those who did not SHHC users (n=151); Female=99% Age=mean of 17.3 years Non-SHHC users (n=217); Female=69% Age=mean of 17.1 years Ethnicity: NR SHHC users were asked to participate in an interview after a clinic consultation Non-SHHC users were recruited from schools, youth groups and sports clubs For analyses, SHHC users (n=151) were compared with 67 users of conventional FP services (n=32 from the SHHC group and n=35 from the non- SHHC group)	SHHC provides FP and SH services specialized for young people 20 years; SHHC characteristics: • Open Saturday 1– 3:30PM • Informal atmosphere • Waiting area with age appropriate posters, music, videos, free condoms and information on contraception and SH confidentiality • Assurance of complete Clients also encouraged to bring along friends or sexual partners	Short-term Outcomes Compared with conventional FP services, those who received SHHC services reported significantly ($p<0.01$) higher ratings of: satisfactory opening times (86% vs 70%); pleasant surroundings (98% vs 88%); and feeling relaxed while waiting for a consultation (76% vs 48%); no significant differences were found in ratings of satisfactory location or formal surroundings Compared with conventional FP services, those who received SHHC services reported significantly ($p<0.01$) higher ratings of clinical staff; treating what they said in confidence (98% vs 84%); treating them in a professional manner (99% vs 86%); explaining medical terms in language they understood (99% vs 87%); and respecting their privacy (93% vs 61%); 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. Compared with conventional FP services, those who received SHHC services reported significantly ($p<0.01$): higher ratings of being happy with the form of contraception they received (98% vs 87%) and feeling that staff understood their problems (99% vs 85%), and lower ratings of feeling embarrassed during the consultation (10% vs 23%)	Level II-2; moderate risk for bias Strengths SHHC and non-SHHC groups were matched on age and area of residence and had comparable social backgrounds Conducted statistical tests of significance Weaknesses Recall bias Self-report bias Disparate recruitment methods and participation rates for SHHC (57%) and non-SHHC users (91%), calculated from manuscript data) Non-independence of data (32 females were included in both analytic comparison groups)
Wilson et al., 1994, UK Funding source: NR	Analysis of repeated cross-sectional population-based surveys, 1986–1992 to assess trends in rates of conceptions, maternity, and abortion among young people aged 11– 19 years to determine the effectiveness of	Characteristics of women in population-based surveys from 1986–1992 NR Characteristics of young people who attended new teen clinics between April 1987 and June 1990 (n=1,402); Female=100% Ethnicity: NR Ages 12–19 years	New health center offered contraceptives and counseling services via easy access “drop in” clinics for young people aged 12 to 19 years; routine and crisis management of sexual and general health problems was offered by a team of	Conception rate among women 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 Abortion rate among women aged 11–19 years increased from 17.2/1,000 in 1986 to 23.1/1,000 in 1992 with a significant ($p<0.0001$) linear trend detected Maternity rate among women aged 11–19 years increased from 35.7/1,000 in 1986 to 43.1/1,000 in	Level II-3; high risk for bias Strengths Objective measures were obtained from population-based surveys Conducted statistical tests of significance Weaknesses No information on intervention exposure among population-based survey respondents

Reference/ Funding	Study design/ Aim	Population	Intervention	Results	Study quality
Winter and Breckenmaker 1991, U.S. Funding source: Ford Foundation	teen clinics to reduce teen conceptions Non-randomized trial to assess experimental service protocol for teen FP patients 2 study groups, 6 non-metropolitan FP clinics, (3 control clinics and 3 experimental clinics) FU=12 months	FP patients aged 18 years or younger Female=100% Ethnicity: 98% White, non-Hispanic Age: 40% aged 17 years, ~34% aged 16 years, ~16% aged 15 years Number of individuals enrolled=1,256 Baseline data collected=251 individuals (experimental group=93; control group who received usual service delivery practices=158) Treatment phase collected=1,005 (experimental group=425; control group=580)	specialist health professionals A set of family planning service protocols tailored to meet the needs of teen patients that emphasized in-depth counseling, education geared to an adolescent's level of development, and provision of reassurance and social support	1992 with a significant ($p<0.0001$) linear trend detected Long-term Outcomes Among all patients in the original sample (N=1,010), 3.1% at experimental clinics vs 5.5% at control clinics ($p<0.10$) reported a pregnancy Among continuing patients (patients for whom FU data were available, n=740), 4.0% at experimental clinics vs 7.8% at control clinics ($p<0.05$) reported a pregnancy Medium-term Outcomes Intervention group, compared to control group, was more likely to be: using chosen method at 6 months FU (92% vs 85%, $p<0.01$), using chosen method at 12 months FU (90% vs 81%, $p<0.05$), and using any method at 6 months (97% vs 92%, $p<0.01$) Intervention group patients with problems, compared to control group patients with problems, were more likely to continue using their method despite problems at 12 months FU (71% vs 40%, $p<0.01$) Short-term Outcomes Intervention group had significantly ($p<0.015$) improved knowledge [(459)=2.43] from baseline to FU; no differences in control group No significant change in patient satisfaction was observed	Clinic attendees represented only ~7% of teens in the district; may not be realistic to expect program-related change in population-based estimates Level II-1: high risk for bias Strengths FU=1 year Weaknesses High attrition Participation rate unknown Self-report bias Comparability of groups questionable (baseline data not collected for 80% of participants); experimental sites had elevated satisfaction scores at baseline Pregnancy measurement method unclear

^a Indian Health Services sites, FQHC look alike sites, social service agencies that provide family planning, free clinics, and visiting nurse association sites.

^b Youth-friendly primary-care services: How are we doing and what more needs to be done? *Lancet*. 2007;369:1565–1573.

^c Discontinuation rates, unlike proportion of users discontinuing a method, are influenced by the total number of clients. Therefore, high discontinuation rates at clinics characterized as YF might be elevated by a larger number of adolescents and young adults receiving LARC at these facilities.

FP, family planning; FQHC, Federally Qualified Health Center; GP, general practitioner; LARC, long-acting reversible contraception; NR, not reported; PP, Planned Parenthood; SH, sexual health; UIP, unintended pregnancy; UK, United Kingdom; YF, youth friendly; YFS, youth friendly services; IUD, intrauterine device; FU, follow up; PH, public health.

Appendix Table 5.

Characteristics of Studies Examining Facilitators and Barriers

Reference/ Location (country)/ Funding source	Study aim	Study population/ Setting	Observational method	Contextual barriers or facilitators
Ashoor and Dhamidharka (2015) U.S. None	To identify barriers and practice patterns among pediatric nephrologists for STI screening and reproductive health counseling in teens with renal transplants	N=69 pediatric nephrologists Age=NR % Female=48% Race/Ethnicity=NR Response rate=54% Inclusion criteria for enrollment=respondents who followed patients in their outpatient clinic; answered at 75% of questions Setting=NR	Web-based survey sent by invitation via e-mail • 4 e-mail invitations in 2 week intervals	<u>Barriers:</u> time limitations (72%), adolescents fear that parents will be notified of their sexual activity (56%), and lack of professional training in this area (54%); only 7% believed lack of counseling effectiveness was a barrier
Brown et al. (2013) U.S. NIH/NCRR/OD UCSF-CTSI grant number KL RR024130; Association of Reproductive Health Professionals Gary Stewart Scholarship in Public Health; the Joint Medical Program health and Medical Sciences Thesis Research Fellowship; UCSF School of Medicine Dean's Research Fellowship	To describe the IUC adoption process among nulliparous teens and to identify the role of the medical provider in this trajectory	N=20 nulliparous adolescents and young adults Age=NR Race/ethnicity=NR (from clinic serving mostly AA and H) Inclusion criteria for enrollment=female, nulliparous, 15–24 years, English speaking, current or past IUC user Setting=adolescent family planning clinic in San Francisco	1-hour, semi-structured interviews; brief demographic survey	<u>Facilitators:</u> Identified by participants: importance of the provider's role during the entire process; getting visual materials and use of anatomical models, side effect information, and reassurance that the IUC could be removed; when counselors personalized their counseling to the adolescent's expressed method preferences; when providers self-disclosed that they themselves used an IUC (participants cited as appropriate and comforting);when providers gave them subjective opinions (see also barriers); getting comprehensive information and additional resources when choosing a method; Having concerns validated by provider when choosing to discontinue method <u>Barriers:</u> Providers' discouraging them from discontinuing—participants felt loss of control and became disengaged in future discussions with their providers; When providers gave patients subjective opinions
Chemick, Schmall, et al. (2015)	To identify the barriers facilitators affecting contraceptive use among adolescent females using ED and determine interest in ED-based pregnancy prevention interventions	N=14 Age=14–19 years Female=100% Race/Ethnicity= predominately H Inclusion criteria= English-speaking, not pregnancy/trying to become pregnant, sexually active with male partner in past 3 months, reproductive health complaint, non-use of contraception last sex currently not using contraception, not owning mobile phone with text Setting=urban tertiary-care pediatric ED	Demographic, paper-based questionnaire; interviews	<u>Facilitators:</u> Presence of a school-based clinic; organized school education on contraception; respectful office staff; receiving contraceptive counseling at each visit; providers spending time to explain; being treated "like an adult" <u>Barriers:</u> Past negative experiences with contraceptive methods and pregnancies and abortions also affected contraception decisions; Friends sharing past negative experiences with contraception; Physical side effects: concern about getting "fat," "changes" in menstruation; wanting to wait before choosing another method until that method was "out of my system;" "creepy" appearance of the implant; feared being "marked;" Fear of loss of anonymity when using same clinic as family members; Long delays to get appointment; Refusal of PCP to provide certain methods; Lack of privacy (parents staying in room); Conversations with providers excluded

Reference/ Location (country)/ Funding source	Study aim	Study population/ Setting	Observational method	Contextual barriers or facilitators
Dasari et al. (2016)	To explore barriers to LARC use among currently or recently homeless women	N=15 Age=mean 21 years % Female=100 Race/Ethnicity=AA=53% W=33% O=2% (multiracial) Inclusion criteria= young women; aged 18-24 years; history of homelessness; ever vaginal intercourse with a man Setting=drop-in community center for homeless youth	Computerized survey; in-person interview	certain methods (e.g., IUDs); Feeling judged by PCP, dissuading teen from disclosing sexual experiences (Expressed) Facilitators: Being counseled on the comparative effectiveness of all options and on all contraceptive methods; Prefer combination of verbal counseling and materials to take with them Barriers Information that provided negative view on IUDs (TV commercials); Perspectives on provider communication were inadequate counseling about side effects; receiving incomplete information about all contraceptive methods, including relative effectiveness (some thought deliberately to influence selection); feeling forced to use certain methods
Gilmore et al. (2015)	To describe implementation of a program that provides LARC services within school-based health centers (SBHCs); and identify barriers and facilitators to implementation as reported by SBHC clinicians and administrators, public health officials, and community partners	N=14 Age=NR % Female=NR Race/Ethnicity=NR Inclusion criteria= SBHC clinicians, Neighborhood Health executive staff, PH officials, community partners Setting=NR	Semi-structured interviews	Barriers: Clinical skill, confidence and training, including fear of causing an emergency situation; bias and negative attitudes about LARC methods; low LARC demand so clinician skills wanted; lack of community training and LARC resources; Among administrators, barriers: Technical logistical and expense/billing issues (e.g., billing difficulties billing for minors who need confidential services and enrolling teens in the Take Charge! Benefit program) Facilitators: Contraceptive counseling practice changes (counseling major facilitator for LARC uptake); Clear communication about risks and benefits of LARC; clinician training about adolescent brain development; tiered contraceptive counseling, provider trainings; stakeholder engagement for buy-in for LARC service delivery; presenting evidence regarding LARC safety and efficacy to SBHC clinicians by a trusted physician in the community who routinely provides LARC services to adolescents
Hermann (2015) Delaware, U.S. Division of Public Health Delaware Department of Health and Social Services	To gather the perspectives of community stakeholders on reproductive health services offered by SBHCs	N=50 Participation rate: 69% 1/3 of sample represented SBHC staff, other subjects included public health clinicians and administrators, physicians, school nurses, school administrators, teachers, school resource officers, school board members, and parents. Demographics=NR	Purposive sample of participants and snowball technique Individual, semi-structured interviews; interviews, 8 by phone, 42 in person. All participants signed consent forms. Interviews not recorded. Used template and thematic analysis and arrived at 9 overarching themes	Findings: See article, Table 1 for 9 overarching themes that were identified as a result of interviews. Barriers: Being in a rural community – transportation, poor mass transit system, distance of services, lack of cars or ability to drive, and the ability to garner transportation in a confidential manner; cost; lack of teen-friendly services; limited hours; limited knowledge of services or potential for cost-free care; confidentiality; parents and other adults; “parents prevent prevention.” Facilitators: Access in schools, and thereby the SBHCs, ability for services to be provided during the school day, with little interruption in classes, on-site, and in a confidential manner; access provided in an “educational way—don’t just hand out condoms in a fish bowl,” education and opportunity for follow-up, along with

Reference/ Location (country)/ Funding source	Study aim	Study population/ Setting	Observational method	Contextual barriers or facilitators
Hoopes et al. (2016) Washington state, U.S. Private donor, NIH/ NIMH, HRS A/ MCHB, NICHD, NINR, Society for Family Planning, Templeton Foundation, Bayer HealthCare	To explore attitudes and experience related to pregnancy and contraception to inform development of LARC counseling strategies for use in primary care settings	N=30 Age=mean 16.2 years Race/Ethnicity= AA=10% H=23% W=37% O=10% 70% received free and/or reduced lunch, 50% sexually active, 17% had used LARCs Eligibility: English-speaking women aged <18 years that received parental permission to access SBHC primary care services. Parents and/or guardians of students had opportunity to opt their child out. Recruitment: flyers posted at the SBHCs and distributed to women at clinic	Brief demographic questionnaire Interviews: Obtained written informed consent; 2 investigators conducted; private rooms at the SBHC; after school hours; 30–60 minutes. Interview guide based on the principles of Social Cognitive Learning theory and previous studies. Interviews audio recorded, transcribed, reviewed, and then coded; used grounded theory; a priori categories, recoded all transcripts using the constant comparison method	ongoing contact and access to students associated with SBHCs; RHS being “perceived as part of fully integrated healthcare rather than isolated dimension,” and that “teens just think of this as another part of healthcare.” Findings: 5 themes identified: (1) strong preferences about device-specific characteristics; (2) previous exposure to information about LARCs from peers, family members, or health counseling sessions; (3) knowledge gaps about LARC methods that affect informed decision-making; (4) personal circumstances or experiences that motivate a desire for effective and/or long-acting contraception; and (5) environmental constraints and supports that might influence adolescent access to LARCs. Barriers: perceptions about age-appropriateness of a particular method (e.g., LARC for older women); perceptions about potential side effects; negative insight from social references; knowledge gaps about LARC (what exactly they does/ effectiveness/how they re inserted, etc.). Facilitators: positive insight from social references; provider education that balances negative peer anecdotes; desire to delay childbearing; teens’ plans to attend college; positive experience and trust in SBHCs for contraceptive information and access (preferred over regular doctor).
Jaruseviciene et al. (2011) Lithuania United Nations Population Fund	To gather GP’s views on confidentiality for adolescents and their current practice in informing parents about the content of adolescents consultations on SRH issues	N=46 GPs Response rate=73.5% Age=63.7% 50 years; 35.9% 51 years % Female=83 Race/Ethnicity=NR 33.4% practiced in private healthcare centers; 62.3% practiced in public healthcare centers	4 items from a 41-item questionnaire	Facilitators: Multivariate analysis; predictors of whether GPs informed parents or guardians of adolescent patients about the importance of confidentiality in adolescent health care=GP being younger than 50 years, GP being a retrained pediatrician or internist, existence of a written office policy on confidentiality for minors, routine discussion of confidentiality during consultations with adolescents. Between 70% and 85% of the GPs reported that they were ready to protect the confidentiality of their patients if the consultation concerned general sexual issues (e.g., about sexual intercourse and contraception). However, concerning sexually transmitted infections, pregnancy, and requests for abortion, between 19% and 44% would protect the confidentiality of their patients. The age of the minors involved does not significantly affect GPs’ provision of confidential services. 62.3% of the GPs reported that they believe that Lithuanian law only protects the right to confidentiality for patients from the age of 18 years. Another 29.2% of them reported that the law protects the right for confidentiality for those aged 16–17 years.
Johnson et al. (2015) Massachusetts, U.S. Harvard Medical School’s Office of Enrichment Programs	To investigate adolescent perspectives on family planning services at a community-health	N=20 Age=45% 16–17 years; 55% 18–20 years % Female=100% Race/ethnicity=NR	Semi-structured interviews using interview guide was revised using pilot studies. Responses audio recorded and transcribed verbatim	Barriers: Limited reproductive health literacy, concern about judgment from providers; forgetting to take birth control and fear about other people’s experiences with a particular method; obtaining birth control, and specifically going to the healthcare center, cited as inconvenient.

Reference/ Location (country)/ Funding source	Study aim	Study population/ Setting	Observational method	Contextual barriers or facilitators
Johnston et al. (2015) Queensland, Australia Health and Family Planning Queensland	center, with the intent to inform health center programs aimed at stemming the adolescent pregnancy rate	Inclusion criteria: age <20 years, use of services at the health center, and female Setting: an urban multidisciplinary clinic serving neighborhoods largely of lower socioeconomic position	Transcripts coded by 2 coders, differences then reconciled Quantitative data obtained using questionnaire.	Facilitators: Some teens cited learning about pregnancy prevention from sexual partners; clinicians that are non-judgmental, listen, trustworthy, who ask questions about birth control needs at every visit; condoms cited as the easiest method because they do not need to be obtained from a clinician; free health care was important to 20%, and confidential care a concern for 25%. Provider-cited Barriers: Concerns about confidentiality especially in small towns; lack of awareness of available SRH services; issues related to transport; hours of service operation; cost associated with attending SRH service and associated treatments; stigma around sexual health; fear and embarrassment; lack of sexual health awareness; geographical isolation; stage of life – lack of confidence and experience in caring for own health Youth-cited facilitators: Welcoming, attentive and non-judgmental nature of individual service providers as most important rather than structural qualities of a service such as cost, appointment system and distance to a service.
Kavanaugh et al. (2013) U.S. Funding: U.S. HHS, Office of Population Affairs; Guttmacher Institute	To describe youth friendly contraceptive services, both general and LARC specific, available to teens and young adults at publicly funded family planning facilities across the country and to identify challenges to providing contraceptive services to younger populations	IntervIEWS: N=32 providers (9 sexual health nurses, 8 general practitioners, 6 school-based youth health nurses, 5 sexual health educators, 2 Australian Aboriginal health workers and 2 youth workers). Age=NR % Female=NR Race/Ethnicity=NR Electronic Survey: N=391 adolescents. Mean age=18.96 years Race/ethnicity= 11.3% identified as Australian Aboriginal or Torres Strait Islander Inclusion: ages 15–24 years Other demographics= NR Setting: 4 sites (Atherton Tablelands, Townsville, Rockhampton and Toowoomba)	Mixed-methods approach: purposive sampling for individual interviews with providers; interviews and paper surveys from providers coded for themes. Reference group discussions. Electronic survey to gather perceptions of young people. Survey design informed by young people through the formation of young peoples' reference groups at each study site.	Barriers: Respondents rated the degree to which potential challenges limited a facility's ability to provide contraceptive services to teens and young adults; Inconvenient center hours (51%) and too few staff (39%) were cited as two most common challenges. Costs of LARC methods (60%), staff concerns about IUD use among teens (47%), and the need for more training on implant insertion for staff (47%) were reported to be the most common challenges to providing LARC specific services to younger clients.
Manski and Dennis (2014) U.S. Funding: Society of Family Planning Research Fund	To explore experiences of female teens with epilepsy in knowledge and perceptions of interactions between antiepileptic drugs and hormonal contraception	N=584 nationally representative sample of publicly funded facilities family planning clinics that provide family planning services in the U.S. Response rate=52% Compared to non-responders, facilities that responded to the survey were more likely to be Planned Parenthoods and health departments, to have received Title X funding, and to be located in the South and Midwest Exclusion criteria: if they were school based health centers (N=146), functioned as satellite centers (N=99) or were a combination of these categories (N=7). Also removed sites that were already participating in a similar survey from the organization (N=1,247) Teens defined as <20 years and young adults 20–24 years	Four-page questionnaire mailed, consisted of 23 primarily close ended questions and asked for basic information about the facility, client caseload, demographics, and contraceptive services available to teens and young adults. Chi square analysis conducted to determine associations between youth friendly services and LARC service practices and facility characteristics. Responses were weighted to account for nonresponse so as to reflect entire universe of FP facilities.	Barriers: Concerns about medication interactions influenced participants' contraceptive decision-making; epilepsy specialists emerged as key resources when considering contraceptive methods. Some participants noted, though, that they were given incorrect information about general and epilepsy-specific contraceptive issues from doctors, which interfered with informed-decision making.

Reference/ Location (country)/ Funding source	Study aim	Study population/ Setting	Observational method	Contextual barriers or facilitators
Matich et al. (2015)	To investigate how access to the SRH services can be improved for young people in rural and regional areas	Non-Latina=96% Participants reported having a variety of seizure types and almost all reported use of AEDs Eligibility criteria: Female teens; diagnosed with epilepsy; age 13–19 years at the time of initial contact; fluent in English; and who, if younger than 18, had previously sought contraception or experienced pregnancy in one of the 25 U.S. states where minors who have sought contraception or experienced pregnancy can participate in research without parental consent.	Cross-sectional study via eight reference group meetings and an electronic survey in four sites Survey, developed in consultation with young people, was administered online and face to face using tablet computers	Facilitators: Confidentiality important for teens without supportive parents or who felt uncomfortable opening up to a doctor about sexual activity in front of a parent; survey participants reported that they generally preferred parents being involved in their contraceptive appointments (57%); 63% reported having received information about contraception from their parents; most focus group participants reported having discussed contraception with their parents and described their mothers, in particular, as important sources of contraceptive support; healthcare providers informing them more about contraceptive issues for females with epilepsy; more contraceptive support systems, as they felt often felt unsure of where to go for comprehensive information that addresses their specific contraceptive needs.
Miller et al. (2011) U.S. Katharine B. Richardson grant from the Children's Mercy Hospitals and Clinics, the Division of Emergency Medicine, Cincinnati Children's Hospital Medical Center, Nicholas Crognale Chair for Emergency Medicine at The Children's Hospital of Philadelphia	To describe the attitudes, beliefs, and experiences regarding EC among these HCPs and to determine HCP self-perceived role in EC provision	N=85 Age=59% <40 years % Female=77 Race/Ethnicity=NR 36 nurses (one male), 26 PEM physicians, 13 PEM fellows, 2 pediatricians, and 8 NPs. Inclusion criteria for enrollment: English-speaking physicians, NPs, or nurses employed in U.S. pediatric EDs (two Midwestern and one Northeastern). Setting: EDs in free-standing urban, pediatric, teaching hospitals; None of the hospitals had a religious affiliation or a specific policy about EC. Most patients at each site were nonwhite and did not have private insurance. Recruitment= workplace announcements.	12 multistate focus groups; semi-structured lead by a professional moderator; participants provided verbal consent, received \$25 gift card; IRB approval obtain for each site Focus group guide developed by authors and moderator; included topics from literature and clinical experience; discussion pursued until thematic saturation; no mention of whether guide/questions were validated Sessions lasted 60–90 minutes; audiotaped and transcribed.	Facilitators: Going to usual doctor because of established relationship; provider knowledgeable in SRH care; provider assuring confidentiality; welcoming, attentive and non-judgmental nature of individual service providers was most highly valued by young people. Staff who listened attentively were very important to 95.4% of young people and absence of this was a major concern; Other very important markers were staff who are easy to talk to (91.4%), non-judgmental (90.5%) and friendly (87.3%); A service that helps with all health issues was considered as very important by 58.9% of respondents vs 19.4% of respondents who valued a service that helps with only SRH issues. However, young people they were satisfied with their experiences at SRH services. 89% of respondents indicated that they were happy with the help and information received for an SRH issue and 2% indicated that they had an unsatisfactory experience.
				Barriers: Identified by participants: fear, availability, knowledge deficits, side effects, cost, transportation, need for HCP contact and prescription, embarrassment, lack of planning, and privacy issues. Identified by nurses: adolescent and HCP knowledge deficits, cost, embarrassment, and need for timely access. Identified by physicians and NPs: shame, timeliness, HCP refusal, transportation, adolescent and HCP knowledge deficits, lack of adolescent interest, lack of PCP, cost, availability, family, religion, and stigma. Identified by authors: use of social judgment by nurses a barrier to EC provision—majority did not support screening for potential need for EC. The majority of nurses felt HCPs should have option to refuse to provide EC. Most HCPs did not support routine screening for EC need; Most HCPs were willing to provide information for certain

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Miller et al. (2013) U.S. Frontiers: The Heartland Institute for Clinical and Translational Research	To describe sexual health behaviors of adolescents presenting in pediatric EDs and adolescents preferences for sexual health care services	N=306 Adolescents in either of two EDs (one urban, one suburban) from a single Midwestern children's hospital system Age=25% 14 years; 25% 15 years; 25% 16 years Inclusion= English-speaking, patients aged 14–19 years seeking care for any reason. Subjects were excluded if they had significant impairment that would impede participation, had complaints involving sexual assault or psychiatric issues, or were wards of the state 85% participation rate	Notes taken during the sessions and used for reference if needed. Cross-sectional survey Survey based in large part on national surveys as well as review of the pertinent literature. Convenience sample was obtained across a wide range of hours, based on research assistant availability Study received IRB approval and waived requirements for parental and written informed consent	“high-risk” populations. Most obtained sexual history only when relevant to the presenting complaint. No physician or NP had provided an advance prescription for EC. Most were uncomfortable doing it, citing lack of knowledge or conflict with their ED role. Facilitators: Provision of EC supported by majority of physicians and NPs Facilitators: items that scored highest in importance were “The nurses and doctors know a lot about sexual health care”; “The nurses and doctors are caring”; and “The care is free or covered by insurance”; more adolescents preferred the hospital-associated teen clinic (78%), hospital ED (74%), and personal physician (73%) than the health department (47%), and family planning clinic (44%), or school-based clinic (22%). Barriers: Identified by authors: lack of needed care among teens using ED as usual source of care; cost Facilitators: doctors and nurses who are knowledgeable about sexual health care and who are caring; affordability; (per discussion); providers that are comfortable providing sexual health care to teens
Rubin et al. (2013) U.S. Funding: NIH NICHD, NCRR, a component of the NIH, NIH Roadmap for Medical Research	To explore New York City primary care physicians' experiences, attitudes, and beliefs about counseling and provision of LARC to adolescents with a focus on enablers and barriers	N=28; 9 family physicians, 10 pediatricians, and 9 obstetrician-gynecologists. Inclusion: family physicians, generalist pediatricians, and obstetrician-gynecologists who care for female adolescents, provide at least 30% outpatient clinical time, and practice at 1 of 2 large New York medical centers in the Bronx (all 3 physician types) or Brooklyn (family physicians only). Specialists, specialty sites, and residents were excluded	In-depth phone interviews using a qualitative exploratory interview guide based on implementation science theoretical framework Findings were interpreted using the capability (knowledge and skills), opportunity (environmental factors), and motivation (attitudes and beliefs) conceptual model of behavior change	Facilitators: Physicians were more likely to counsel about IUDs at sites where colleagues were perceived to be supportive of IUD provision to adolescents, if a reproductive health champion was on site, if the physicians themselves inserted IUDs, or if there was access to a clinician inserter; Physicians reported that clear clinical guidelines supporting IUD use in adolescents would make them more comfortable inserting these devices; some physicians who worked in Federally Qualified Health Centers perceived better access to the device because the full scope of contraception provision aligned with the clinic's mission, and the administration supported IUD provision despite any potential financial burden Barriers: potential parental resistance to IUD use and limited time alone with adolescents influenced their willingness to counsel or insert the devices. A few respondents were uncomfortable with the idea of IUD use (compared with prescribing contraceptives) without parental permission or consent; Inability to offer same-day insertions; Cost of the device was the main opportunity barrier identified by those physicians who inserted IUDs for adolescents; Many respondents feared that forgettable contraception results in more forgotten condoms; Others expressed concern that the IUDs' high efficacy in pregnancy prevention results in less condom or dual protection (condom plus prescription contraception) use; Apprehension stemming from non- evidence-based, outdated device-related concerns.
Weston et al. (2012) U.S.	To assess barriers and facilitators to IUD	N=20 Age= 18 (n=8), 17 (n=6), 16 (n=5) or 15 (n=1) years.	Longitudinal qualitative interviews 4–9 weeks	Barriers: lack of insurance coverage, difficulty scheduling appointments, limited clinic hours, referral requirements, long wait times, clinic closings, and lack of provider training;

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NIH/National Institute of Child Health and Development	uptake by postpartum adolescents	Race/ethnicity= 100% AA % female=100 Inclusion: aged 14–18 years at childbirth, primiparous, African American females, 9 weeks postpartum, and living in Chicago who expressed both desire for and intention to obtain the IUD in at least one interview.	(baseline), 3, 6, 9, and 12 months postpartum. Transcripts were analyzed for salient themes using a grounded theory approach to content analysis Data from Postpartum Adolescent Birth Control Study (Postpartum ABCs), a longitudinal study of first-time African American adolescent mothers	scheduling and attending appointments, often related to juggling multiple responsibilities as new parents; incorrect eligibility requirements according to providers. Concerns about IUD-related side effects, risks, and procedures (e.g., infection, infertility, hair loss, and the insertion process). Opposition due to their partner's attitude toward future childbearing and concerns about the device. Contraceptive gap between delivery and insertion led to a change in method choice; their perceptions of the device's efficacy changed upon reading educational materials and/or talking to other people, including physicians, following their delivery; mistrust of all contraceptives, including the IUD Facilitators: doctor encouraging or insisting on IUD; friends or relatives (predominantly mothers) who were supportive of the method; limited partner influence regarding their IUD decision, using phrases like "my body" or "my decision," struggle with adhering and side effects of other postpartum methods prompted some to choose IUD.
Wilkinson et al. (2013) U.S. Joel and Barbara Albert Endowment for the Children of the City and Boston University School of Medicine	To understand what adolescents experience when they interact with pharmacy staff to try to obtain EC.	943 pharmacies geographically located in the counties of Nashville, Tennessee; Philadelphia, Pennsylvania; Cleveland, Ohio; Austin, Texas; and Portland, Oregon. States without individual state pharmacy access laws that supersede federal regulation were selected. Lists of pharmacies were obtained from state boards of pharmacy	Female callers, posing as 17- year-old adolescents, used standardized scripts to telephone 943 pharmacies in five U.S. cities. Callers followed standardized, semi-structured scripts. Two investigators independently coded qualitative data. Codes were discussed and a thematic analysis was conducted. Investigator, expert, and informant triangulation were used to ensure data credibility.	Barriers: ethic laden terminology used when stating institutional policies, presentation of false barrier of in-person requirement; age presented as a false barrier; requirement for parental involvement and prescriptions as false barriers; gender-male can't pick it up for you (false barrier); having to present ID (true barrier); lack of knowledge about whether caller could obtain EC with regards to her age (confusion); conditional confidentiality or no assurance of confidentiality. Facilitator: guaranteed confidentiality
Summary of Studies Describing Key Characteristics from Brittain et al. 2015				
Alberti et al., 2010, U.S. Funding source: New York City Department of Health and Mental Hygiene	To assess the teen friendliness in South Bronx medical practices, and to evaluate intervention designed to increase teen friendliness	105 South Bronx medical practices known to provide adolescent health care Age, gender, ethnicity: NR Enrolled=75 Dropped out=0	Article presents teen friendliness assessment of South Bronx medical practices that see teens for sexual and reproductive health care; no practice was deemed teen friendly and a 2-hour specialized training was developed to improve "teen friendliness"	Characteristics Frontline staff's teen-friendliness was evaluated based on mention of (1) confidentiality, (2) parental involvement, (3) insurance, and (4) whether the teenager could be seen regardless of his/her ability to pay. Customer service scores were based on knowledge, friendliness, and comforting approach
Brindis et al., 2005, U.S.	To examine the implementation of service integration of	Administrators, providers, and adolescent clients from 10 clinical adolescent SH and RH	Semi-structured interviews conducted; programs were placed into a topology of	Characteristics Services available free for teens, easy access to public transportation, designated hours for teens, testing services

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Funding source: CDC, HRSA	HIV, STD, and FP and teen friendliness as strategies to improve adolescent SH and RH	clinics chosen from a survey of San Francisco Bay Area communities Inclusion criteria for the geographic area included: high rates of STDs; and births among teens; a racially and ethnically diverse population; and a wide range of SH and RH service providers; Alameda County selected. Gender, ethnicity, age=NR Through meetings with key community informants and listings from service provider directories, the project team identified programs; key community informants facilitated the process of recruiting administrators and providers	integrated service delivery models The teen friendliness of each program was assessed	available outside of facility; specific protocols to protect teens' confidentiality; holistic approach to teens; outreach for teens; providers with specialized training; provider demographics reflect clients; peer involvement: teens organize events/presentations for other teens, teens have input on service delivery; client-provider rapport
Chambers et al., 2002, UK Funding source: Department of Health	To examine views of young people and professionals on ways to reduce the frequency of teenage pregnancy.	SH service providers and young people in North Staffordshire, UK Professionals: Female=74% Age=NR Ethnicity=NR Young People: Female=65% Age=12 to 20 years Ethnicity=NR Providers: postal round 1=50; postal round 2=56 Young people: postal round 1= 18; postal round 2=14	A comparison of consensus emerging from adult and young people workshop discussions and subsequent modified two-round Delphi questionnaires for each group	<u>Characteristics</u> Among young people: Being "young person-centered" and using creative ways of communicating health and education messages, desire for increasing privacy in personal consultations Both young people and providers agree on the following: peer involvement; training for patient provider interaction; locating SH services for teenagers in settings youth frequent
Cromer et al., 1999, UK, U.S., Netherlands, Sweden Funding source: NR	To assess relevant issues for comparing rates of adolescent pregnancy between industrialized countries	75 professionals who had a particular expertise or interest in adolescent pregnancy (clinicians, politicians, public health administrators, social and behavioral scientists, and antiabortion activists) Gender, ethnicity, age=NR A contact person in each country, identified by principal author's professional organization, identified potential interviewees; no one declined. Sweden (n=20) U.S. (n=18) UK (n=18) Netherlands (n=19)	Face-to-face, semi-structured interviews conducted in the UK, U.S., the Netherlands, and Sweden to obtain the impressions of key informants; Inductive, systematic qualitative analysis was performed on verbatim transcripts of interviews	<u>Characteristics</u> Accessible location and staff; convenient hours; low cost; services located in close proximity to adolescent residences or schools; transportation to access to services; contraceptive accessibility; friendly, nonjudgmental approach from all staff; comprehensive care (i.e., more than just contraceptive options offered).
Donovan et al., 1997, UK Funding source: NR	To assess a peer-based program that assessed teenagers' use, views, and opinions of their GP services, with particular respect to the issues of contraceptives	4,481 grade 11 students from 30 schools in rural, semi-urban, and urban areas of UK outside of major cities. % Female=48.4 Ethnicity=NR Mean age=16.2 years	Questionnaires were completed as part of an evaluation of a novel sex education program. Data was collected from successive years (1990-1994) of national curriculum	<u>Characteristics</u> When asked what would make a GP consultation easier: • 72% of males and 64% of females cited quicker appointments • 56% of males and 61% of females responded a "more sympathetic doctor"

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French, 2002, UK Funding source: Camden and Islington Health Authority	To examine young people's attitudes towards and experiences of consultations with healthcare providers about contraception	Prior to the questionnaire sessions, discussions were held with each school for agreed upon procedures. Parents were informed and consent obtained by letter. Completed questionnaires: n=4,481 Eligible: n = ~5,271	grade-11 students (age 15/16 years).	<ul style="list-style-type: none"> • 58% of males and 57% of females responded "friendly receptionist." • 73.2% of all respondents (males and females) cited having more time • Among just females, 81.7% reported a GP of the same sex • 77.6% thought their consultations would be completely confidential
Hayter et al., 2005, UK Funding source: NR	To assess views of service users towards sexual health nursing outreach clinics situated in youth clubs	Young people aged 16–21 years Interviews: 32 young people (males and females) recruited from: young mothers' support group=2, termination of pregnancy clinic=6, youth community project=9, and young people's contraceptive services=15. Ethnicity, % female=NR 4 focus groups held: n=28; at boys school (n=13); at mixed sex school (n=6, male; female=2:1); at youth club (n=6, male; female=1:1). Ethnicity=NR	In depth interviews and focus groups conducted; interviews and focus groups taped, transcribed and analyzed by author. Grounded theory approach used to analyze data. Contraceptive consultations with healthcare workers were also observed and notes taken.	<p>Characteristics Adequate time during consultation to discuss contraceptive decision making and effective use of methods; additional educational materials; non-judgmental approach from providers; desire for more contraceptive choices; staff with training on working with young people and discussing confidentiality</p> <p>Characteristics Among questionnaire responses: 95% of respondents reported clinic was easy to use; 90% agreed that staff treated them respectfully; 90.3% thought the staff were good listeners; 84.3% felt able to ask all their questions; 90.3% reported they had enough time to talk with staff; 93.3% agreed they were able to talk in private Among service user interviews, young people identified respectful and nonjudgmental attitudes of clinic staff and stressed the value of confidentiality</p>
Hertz et al., 1988, U.S. Funding source: Grants to the Center for Health Services and Policy research, Northwestern University, Ford Foundation, Chicago Community Trust, Field Foundation, and Joyce Foundation	To examine patient perceptions of a Chicago public health clinic's special family planning program for adolescents, the Teen Clinic; also employed a prospective cohort study to assess new patients	Adolescents (ages 19 years or younger at the time of registration) Patient Registration: Female=87.8% Ethnicity=100% AA Mean age=16.4 years Survey: Ethnicity=100% AA Age: NR Participation rate=~90% Survey completed=153	Questionnaire examining patient perceptions of the Teen Clinic via a cross-sectional survey Clinic Characteristics: <ul style="list-style-type: none"> • No cost • Tailored hours: one afternoon/week, 2–6PM • Provides rap group, offering patients a forum to discuss human sexuality, birth control, interpersonal relationships, and related topics 	<p>Characteristics Responses among respondents asked why they initially chose Teen Clinic: "services are free" (36%); "clinic is for teens only" (34.7%); "open in afternoon" (19.3%); "easy to get here" (24.4%); "staff friendly" (28.7%); "comfortable talking to staff" (27.3%); "friends come here" (22%); "no parental consent required" (26.7%); "staff won't tell" (24%) Responses among respondents asked why they kept coming back: "easy to get here" (33.3%); "staff friendly" (32.4%); "comfortable talking to staff" (35.3%); "clinic is for teens only" (35.3%); "open in the afternoon" (27.5%)</p>

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Ingram and Salmon, 2007, U.K Funding source: Primary Care Practice Development Unit at the University of the West of England	To evaluate the patterns of use, effectiveness and acceptability of the "No Worries!" service – a nurse-led drop-in sexual health service	At the beginning of each Teen Clinic session, all clients seeking contraceptive services were approached by a research assistant Young people aged 13–21 years who attended "No Worries" clinics from November 2004–February 2005 Questionnaire respondents % Females=93 Ethnicity: B, NH or O=3% (approximately) Age: 15 or 16 years old=58% Questionnaires completed: n=153 Participation rate: 89% Recruitment: completed at end of first visit, youth also indicated if they were willing to participate in an interview Interviews: n=15 Participation rate=NR	<ul style="list-style-type: none"> • Outreach and recruitment strategies including flyers and presentations given in local schools <p>Validated patient satisfaction questionnaires conducted; two experienced researchers conducted semi-structured interviews that were transcribed and analyzed by 2 researchers using recognized qualitative data analysis approach Clinic Characteristics: <ul style="list-style-type: none"> • Staff have received a 'No Worries!' training • Staff are expected to listen actively • Staff are expected to respect client confidentiality • Each clinic opened once a week for 2–3 afternoon hours • Informal seating, background music, light refreshments • A holistic approach taken, including responding to requests for information on other topics </p>	<p><u>Characteristics</u> Among questionnaire responses, respondents usually chose the clinic because it was nearby or more convenient than anywhere else and most found that it was easy to attend between 3PM and 5PM (percentages NR). In free-text comments about what they liked most about the service: staff being helpful, friendly, welcoming (49%); easy to talk to, they understand (14.4%); privacy, confidentiality (14.4%) Interview responses: reasons for choosing the clinic: proximity, range of services offered, confidentiality, drop-in nature, accessibility of staff. The social aspect of the clinic helped them to feel relaxed and enabled peers to support each other. Staff were seen as friendly, nonjudgmental and reassuring. Confidentiality emerged as an important issue-young people felt they could discuss issues without fear of others finding out</p>
Kappahhn et al., 1999, U.S. Funding source: Commonwealth Fund of New York, and Generalist Faculty Scholars Award from Robert Wood Johnson Foundation	To assess influence of demographic variables and health risk status on adolescents' preferences and actual receipt of services regarding provider gender, sharing a physician with parents, and private examinations	Students in 297 public, private, and parochial schools Females=53.1% Ethnicity: W, NH=65% Age: grades 5–12 265 schools were selected at random from the National Center for Educational Statistics' database of approximately 80,000 public, private, and parochial schools in the U.S. Surveys completed=6,748; 5,067 included in analysis of healthcare preferences.	<p>Data from students participating in the Commonwealth Fund 1997 Survey of the Health of Adolescent Girls were analyzed.</p>	<p><u>Characteristics</u> Provider gender preference: 50% females preferred to have a female provider while 48% had no preference. 65% males did not have a preference regarding provider gender. Preference regarding parental presence: among 5–8 graders, most females (54%) preferred to have parent present during examination vs no preference or preferred to be alone, whereas males most likely to say they had no preference (44%). Among 9–12 graders, most females preferred to be alone (41%), and most males (51%) preferred to be alone Private time with provider: Younger adolescents were less likely than older adolescents to have had private time with their provider: among females, 42% 5–8 graders vs 70% 9–12 graders; among males, 53% 5–8 graders vs 77% 9–12 graders; 88% females who reported having a pelvic examination for a reason related to sexual activity had private time with a provider vs 54% females reporting no pelvic examination; 68% females with female providers had private time with their providers, vs 53% females with male providers ($p<0.001$). There was little difference in private time for males seeing male or female providers. Authors conclude that factors behind the lower rate of private time offered adolescent girls by male</p>

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Peremans et al., 2000, Belgium Funding source: NR	To determine the needs and expectations of adolescent girls concerning contraceptive use as well as their attitude toward healthcare providers	17-year old girls 100% Female Ethnicity=NR Mean age=17.8 years Direct sampling Number of individuals=26	One focus group per school from 4 secondary schools were conducted; sessions recorded and transcribed then coded.	healthcare providers needs to be assessed. They suggest education and training for providers. Characteristics Majority of girls went to their own general practitioner because they knew and trusted him or her Accessibility was an important reason to go to the general practitioner Experience rather than age was an important criterion for choosing a physician. Female physicians were more popular Adolescents look for services/professionals with an attitude of "caring about teenagers" Time physician spent on patient, cost, wait time, and delays in appointments were important issues The close relation with GP could be an obstacle to talk about sexual problems and contraceptives Waiting rooms atmosphere also important
Perry et al., 2008, UK Funding source: NR	To assess two services which were set up specifically for young people, exploring service use and patient satisfaction among the young people served	<u>Service one:</u> Patients between September 1999 and June 2000 Mean age=14 years Ethnicity=NR Female new clients=48% Contacts recorded=425 Those of which were new clients=149 <u>Service two:</u> Individuals who completed questionnaire=86 Patients between October 2001 and June 2003. Female new clients=68% Ethnicity=NR Mean age=16.8 years Contacts recorded=399 Those of which were new clients=118 Individuals who completed questionnaire=36 Questionnaires were handed out by a receptionist, completed anonymously, and left in a collection box	<u>Questionnaires were administered to assess patient satisfaction.</u> <u>Clinic Characteristics:</u> • For young people aged 18 years • Open 3 hours/week on Monday evening • Service delivered on a 'drop in' basis • Staffed by two Youth Workers, a Family-Planning Nurse and a School Health Adviser • Offered information, advice and support on any issue affecting the lives of young people <u>Service Two:</u> • For young people aged 18 years • "A sexual health service specifically for young people" • Located next door to a sixth form college • Staffed by a receptionist and a Family-Planning Nurse, with doctor on call if needed • Open for 2 hours every Monday lunch time during the college term	<u>Characteristics</u> <u>Service one:</u> Among questionnaires completed (n=86), percent agreed/strongly agreed that: service was in the right place 93%; waiting areas were okay (93%); they were seen quickly (85%); staff were friendly (99%); the conversations they had with staff were private (90%); they were happy with the services/support provided (96%); the opening hours were okay (86%); and they would come back to the service (82%) <u>Service two:</u> Among questionnaires completed (n=36), percent agreed/strongly agreed: the service was in the right place (97%); the waiting areas were okay (94%); they were seen quickly (75%); staff were friendly (94%); conversations they had with staff were private (94%); agreed/strongly agreed that they were happy with the services/support given (97%); opening hours were okay (53%); they would come back to the service (97%)

Reference/ Location (country)/ Funding source	Study aim	Study population/ Setting	Observational method	Contextual barriers or facilitators
Russell et al., 2004, U.S. Funding source: Agriculture Experiment Station funds through University of California Division of Agriculture and National resources; University of California Institute for Mexico and the U.S.	To inform culturally appropriate Hispanic teenage pregnancy prevention programs, assessing the challenges associated with implementation of these programs and strategies for success	Pregnancy prevention practitioners who work primarily with Mexican American female teenagers in the San Francisco Bay area and in Southern Central Valley in California % Female: 55.1 Ethnicity: H or L=44.8% Age: 20–29 years=17.2% 30–39 years=36.2% 40–49 years=29.3% 50–59 years=17.2% Practitioners interviewed=58 Practitioners identified from authors’ professional networks for voluntary participation; purposeful sampling used to select participants	Interviews conducted, audiotaped, transcribed and categorized and coded using qualitative data coding software	<u>Characteristics</u> Staff with ability to connect with and care for young people, to be an appropriate role model for teenagers, and to relate to and communicate with teenagers’ families; staff being from the same economic background or having been a teenage parent seen as beneficial; staff with diverse backgrounds and experience; involving parents and extended family members; addressing confidentiality, especially for new immigrants
Wilson et al., 2000, UK Funding source: NHS Trent and Fosse NHS Trust	To assess views of local teenagers on current and future provision of SH services in one part of Leicester, UK	Teenagers aged 13–16 years in two of the three schools in the locality; teenagers aged 16–19 years living in the locality who attended 5 of the 7 local general practices % Female: Overall, Female=35.4% Ethnicity: W, NH=82.5% Age=NR Students that completed the questionnaire=394 out of 399 Teenagers aged 16–19 that completed the questionnaire=317 out of 1,255 Total respondents=711	A questionnaire was developed from literature review and focus group interviews. Administered in two schools, and by post to using the age- sex registers of 5 of the 7 local practices	<u>Characteristics</u> Respondents were asked about concerns with existing services they use (GPs, family planning clinics and pharmacists). Main concerns with GPs; confidentiality (45.7%), embarrassment (48.7%) and fear of examination (49.4%). Main concerns for FP services: concern about fear of being seen (31.9%) and transportation problems (33.9%). Concerns with pharmacists: embarrassment (55.2%) was a more frequent barrier than for the other two providers, but being seen was a less frequent obstacle (19.3%), as was transport problems (5.6%). A minority also expressed fear about confidentiality (27.4%) Regarding the best place and person (occupation and gender) to provide contraceptive advice, of the 479 who expressed a preference from one of the three options, 53.9% chose a GP surgery, 40.5% a FP clinic and 5.5% a community center Preference between doctor, nurse or community worker was answered by 510 respondents: doctor (62.9%, 67.2% of males, 55.6% of females); nurse (19.4%, 32.6% of females, 11.8% of males); community worker (17.6%, 21.1% of males, 11.8% females) When asked about preferred gender of provider, a majority of both sexes had no preference. However, 46.4% of 252 female respondents preferred a female practitioner, and 29.5% of 454 male respondents preferred a male practitioner. Of the 68 non- sexually active female respondents, 61.8% preferred female practitioner On easiest time for teenagers to use local services: of 665 who expressed a preference, 412 (62.0%) chose evenings (defined as 1,800–2,000 hours)

Notes: If not reported, indicate category and “NR.”

AA, African American; EC, emergency contraction; ED, emergency department; GP, general practitioner; H, Hispanic; HCP, health care provider; IUC, intrauterine contraception; LARC, long-acting reversible contraception; NICHD, National Institutes of Child Health and Development; PEM, pediatric emergency medicine; PH, public health; SBHC, school-based health center; STI, sexually transmitted

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infection; NR, not reported; NCRR, National Center for Research Resources; OD, Office of the Director; UCSF-CTSI, Clinical and Translational Science Institute; PCP, primary care physician; IUD, intrauterine device; W, white; O, other; RHS, reproductive health services; NIMH, National Institute of Mental Health; HRSA, Health Resources and Services Administration; MCHB, Maternal Child Health Bureau; NINR, National Institute of Nursing Research; SRH, sexual reproductive health; FP, family planning; AED, anti-epileptic drugs; NP, nurse practitioner; CDC, Centers for Disease Control and Prevention; STD, sexually transmitted disease; SH, sexual health; RH, reproductive health; UK, United Kingdom; B, black; NH, non-Hispanic; NHS, National Health Service.

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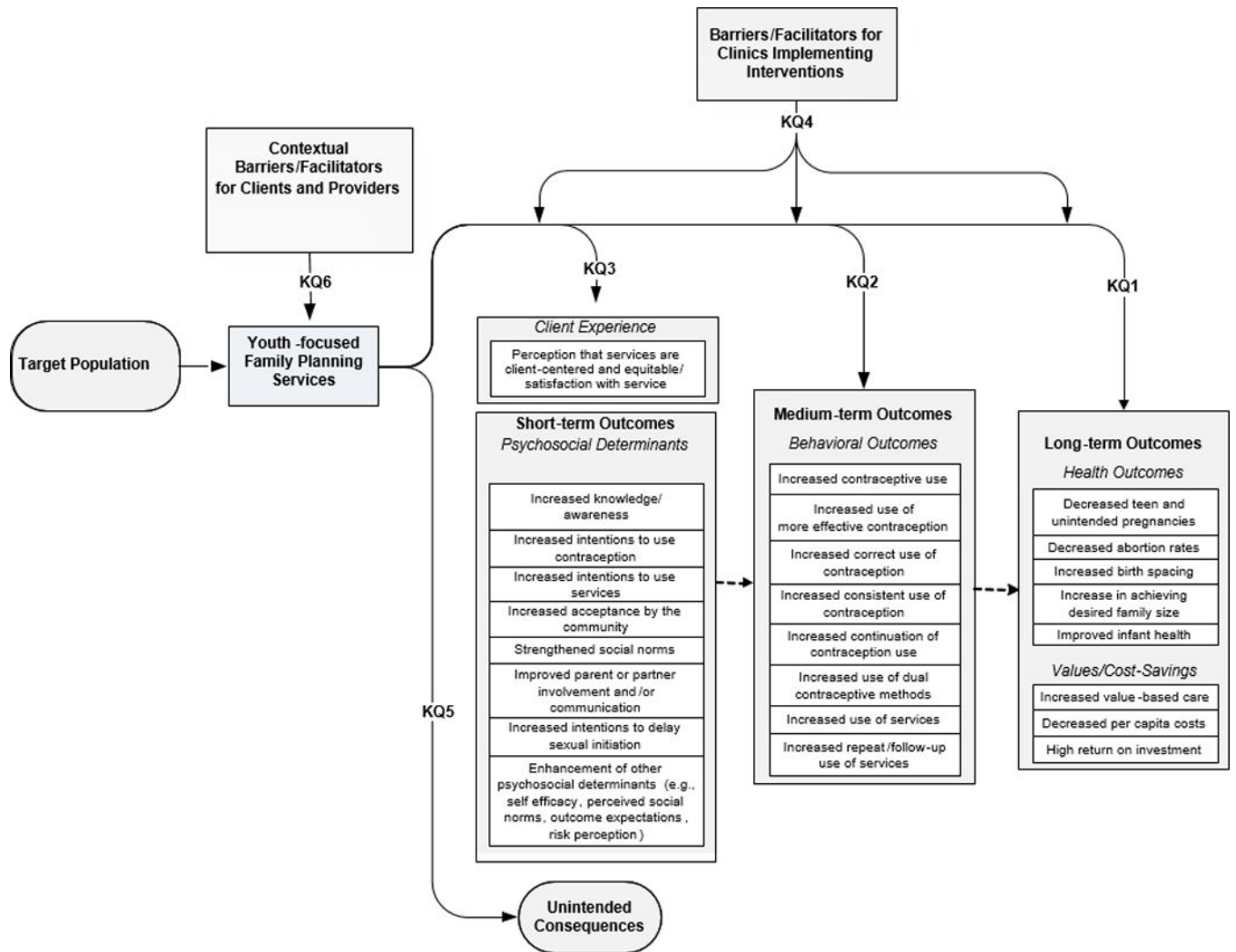


Figure 1.
Analytic framework.
KQ, key question.

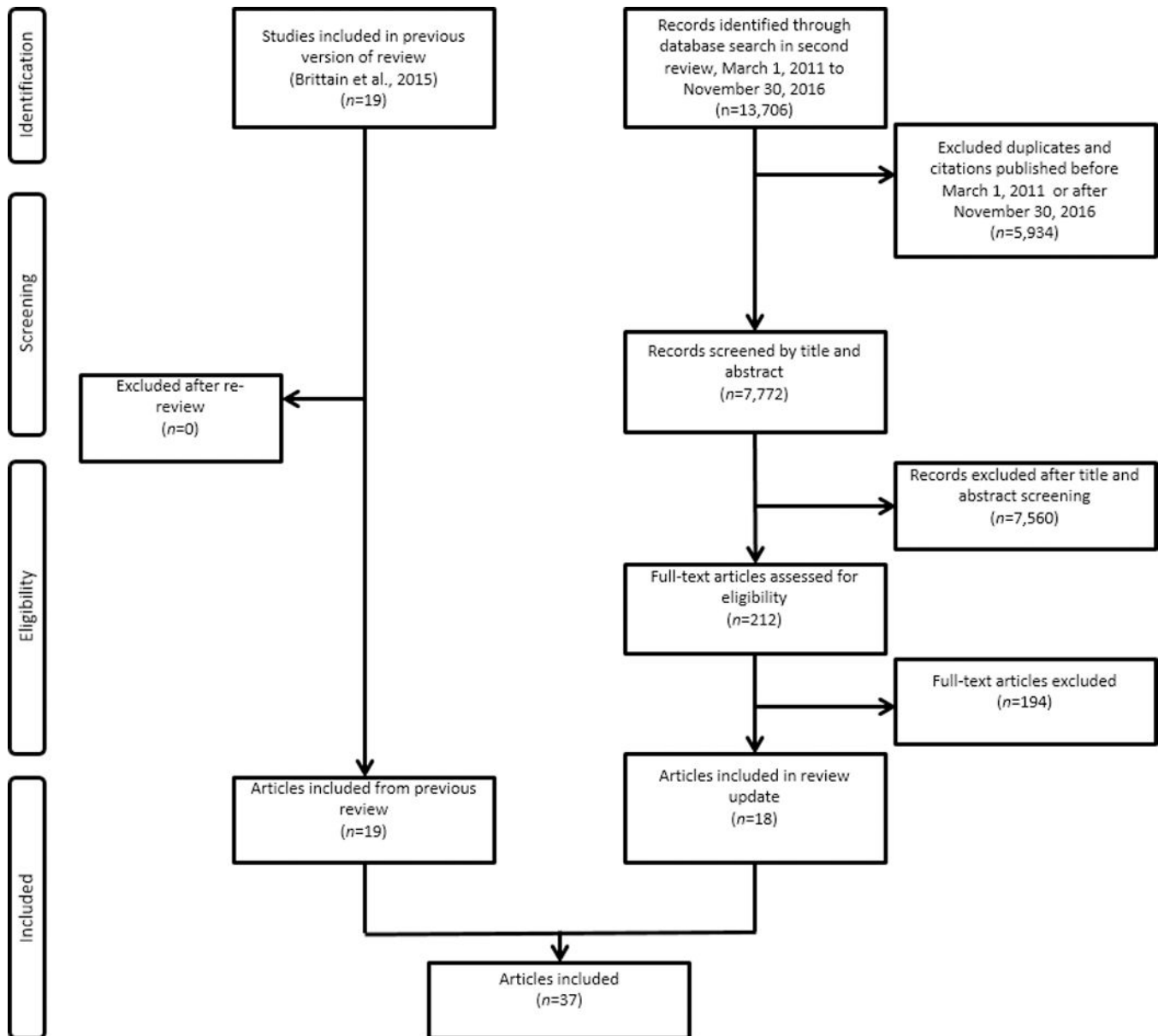


Figure 2.
Flow chart of study selection.

Summary of Evidence of Effects of Youth-friendly Family Planning Services on Long-, Medium-, and Short-term Outcomes

Table 1.

Reference, Year	Long-term outcomes			Medium-term outcomes			Short-term outcomes		
	Decrease teen or unintended pregnancy	Decrease abortion rates	Contraceptive use	Use of more effective contraceptives	Consistent use of contraception	Continuation of contraceptive use	Use, repeat use, or follow up use of services	Patient satisfaction	Knowledge
Study from review update									
Kavanaugh et al. ²⁹ 2013			↑			↓			
Studies from initial review ⁶									
Brindis et al. ⁷ 2005	↑ ^a		↑	↑	↑		↑		
Gupta et al. ⁴¹ 2001								↑	
Herz et al. ⁴⁰ 1988							↑		
Morrison et al. ³⁹ 1997								↑	
Wilson et al. ³⁸ 1994		↓							
Winter and Breckenmaker ⁸ 1991	↑		↑			↑		↔	↑
Total studies with positive impact	2/3	1/1	3/3	1/1	1/1	1/2	2/2	2/3	1/1

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

^aDecrease 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.

Summary of Key Question 6 Findings on Contextual Facilitators and Barriers to Young People Accessing Family Planning Services

Table 2.

Reference (Year)	Confidentiality	Accessibility	Peer involvement	Parental or familial involvement	Integration	Provider interaction	Cultural competence	Specialized training for staff	Preference for certain provider characteristics	Counseling ^c	Adolescent/young adult characteristics ^c
Adolescent report											
Brown et al. (2013)						+				+/-	
Chemick et al. (2015)	-	-			+	+/-				+	-
Dasari et al. (2016)										+/-	-
Hoopes et al. (2016)					+					+	+/-
Johnson et al. (2015)	+	+/-				+				+	-
Johnston et al. ^d (2015)						+					
Manski and Dennis (2014)	+			+						+	-
Matich et al. (2015)	+					+					
Miller et al. (2013)		+/-				+		+/-			
Weston et al. (2012)		-						-			+/-
Provider report											
Ashoor and Dhamidharka (2015)	-							-		-	
Gilmore et al. (2015)	-	-						+/-		+/-	
Hermann (2015)	+/-	-			+			-		+	-
Jaruseviciene et al. (2011)	+							+/-			

Reference (Year)	Confidentiality	Accessibility	Peer involvement	Parental or familial involvement	Integration	Provider interaction	Cultural competence	Specialized training for staff	Preference for certain provider characteristics	Counseling ^c	Adolescent/young adult characteristics ^c
Johnston et al. ^a (2015)	-	-									-
Kavanaugh et al. (2013) ^b		-						-		-	
Miller et al. (2011)		-				-		-		-	-
Rubin et al. (2013)	-	+/-				+		+/-		-	-
Wilkinson et al. (2013)	+/-					-					
Subtotal (18)	11	10	0	1	3	9	0	9	0	12	10
Total from initial review (14)	13	11	3	4	7	11	1	5	4	0	0
Total (32)	24	21	3	5	10	20	1	14	4	12	10

Notes: + Article described this as a contextual facilitator for youth access to quality family planning services; - Article described this as a contextual barrier for youth access to quality family planning services; +/- Article described this factor as both a facilitator and a barrier for youth access to quality family planning services (e.g., assurance of confidentiality is a facilitator, concern about breach of confidentiality is a barrier).

^a Article included both young people and providers in study population.

^b This article also described a cross-sectional study that addressed Key Question 2.

^c Factor did not appear in the initial review.