

SCHOOL-BASED HEALTH CARE PROVIDERS' EXPERIENCES, ATTITUDES, AND
BELIEFS ABOUT INTRAUTERINE CONTRACEPTION

By

Katie Davis, M.S.

RESEARCH PROJECT II

Barbara Gerson, Ph.D.
Research Advisor

Submitted in partial fulfillment of the requirements for the degree of
Doctor of Psychology
in the Ferkauf Graduate School of Psychology
Yeshiva University
New York

May 1, 2014

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Acknowledgements

I am deeply indebted to my advisor, Dr. Barbara Gerson, who challenged me to think deeply and creatively not only while working on this project but throughout the entirety of my graduate education. She guided me with selflessness and humor through the intellectual twists and turns of this project, helping me answer the questions that emerged and reassuring me when the data took me in unexpected directions. She truly helped me develop the skills of intellectual engagement and mental discipline that will provide the foundation for my future success.

I would also like to thank Dr. Abe Givner for his constant guidance and support throughout my training. Somehow he never lost his patience even when I tried my darndest to test it, and he gently reminded me time and again to set the bar high and to jump over it with confidence. It is no wonder generations of Ferkauf alumni look back on Dr. Givner as the single most valuable figure in their graduate experience; I, for sure, will be no exception.

Finally, thank you to Dr. Susan Rubin for sparking my research interests in public health and pregnancy prevention, and to Dr. Tracy Prout for helping me squeeze in my defense just under the wire so that I could work with her one quick time before I graduate.

Abstract

Increasing use of IUC could decrease adolescent pregnancy rates. This study explored New York City school-based health care providers' experiences, attitudes, and beliefs about IUC counseling for adolescents. Eight school-based health care providers were interviewed with a semi-structured interview guide based on an implementation science theoretical framework. The interviews were analyzed according to a grounded theory approach. Facilitators and barriers to counseling were identified, and findings were interpreted using a model that explains clinical behavior change: the Capability, Opportunity, and Motivation-Behavior Change model. Facilitators to IUC counseling include knowledge that nulliparous adolescents are appropriate IUC candidates (capability) and opportunity factors, such as a clinical environment supportive of adolescent contraception, IUC inserter availability in clinic, and health educator availability in clinic. Factors enabling motivation include belief in the overall positive consequences of IUC use; this is particularly influenced by a provider's past experience counseling adolescents for IUC. School-based health care settings are structured in a way that is ideal for IUC counseling. Knowledge, skills, clinical environment, and provider attitudes all influence the likelihood that a provider will counsel IUC for adolescents. Interventions to increase counseling for IUC in school-based settings must be geared primarily at adequately staffing clinics and making IUC more readily available for insertion.

Chapter I

Introduction

Although the US adolescent pregnancy rate is high, use of the most effective reversible contraceptives including intrauterine contraception (IUC) is low. Poor contraception adherence contributes to unintended pregnancy. Intrauterine contraception is user-independent, and so adherence is not an issue. Thus, increasing use of IUC has the potential to dramatically decrease adolescent pregnancy rates. The purpose of this current qualitative interview study was to investigate perceptions and attitudes of school-based health care providers who counsel adolescents on sexual health behaviors about adolescent IUC use. Based on the findings, ideas for interventions to increase the likelihood that school-based providers discuss IUC during contraception counseling with adolescents are suggested.

This study is an extension of work done by the current researcher as part of the Rubin, Davis, & McKee study “New York City Physicians’ Views of Providing Long-Acting Reversible Contraception to Adolescents” (2013), which explored New York City primary care physicians’ experiences, attitudes, and beliefs about counseling and provision of long-acting reversible contraception for adolescents. Results from the prior research will be discussed in detail in the sections that follow.

Defining teen pregnancy in the United States as a public health problem

Despite high reported contraception use by U.S. adolescents, teen pregnancy rates are among the highest in the industrialized world. In 2006, approximately 750,000 U.S. adolescents became pregnant (Kost, Henshaw, & Carlin, 2010). The vast majority of these pregnancies were unplanned or unintended, and approximately half ended in abortion (Finer & Henshaw, 2006). Adolescents in the United States have similar levels of sexual activity as do adolescents in other developed countries, such as Sweden, France, Canada, and Great Britain. However, teen pregnancy rates are significantly higher in the U.S. than in other developed countries. 1995 data reveals that adolescent pregnancy rates were 83.6 per 1000 or roughly 0.083% in the U.S., as compared with 0.047% in the United Kingdom, 0.454% in Canada, 0.0249 in Sweden, and 0.020% in France (Kohler, Manhart, & Lafferty, 2008).

A 2006 study outlined a number of alarming patterns describing teen childbearing in the United States (Hoffman, 2006). The research demonstrated that adolescents have more unintended pregnancies each year than any other age demographic in the U.S. They also found that the majority of adolescent pregnancies each year are unintended. There is a strong correlation between teen parenting and adverse outcomes to the adolescent mother. Compared with women who postpone childbearing until after their teenage years, adolescents who become mothers are more likely to suffer adverse health and social consequences. Parenthood is a leading cause of school drop out among adolescent women. The study did not reach a definitive conclusion regarding whether the relationship between teen parenting and various adverse outcomes is actually causal, but it theorized that the

relationship is largely mediated by the adverse economic conditions associated with the pregnancy. Given the increasing demands in schooling necessary to qualify for a well-paying job, the relationship between teen pregnancy, academic failure, and poverty is cause for concern.

Children of adolescent mothers experience adverse health and social conditions similar to their mothers, and experience a poorer quality of life than do their peers born to older mothers (Santelli, Ott, Lyon, Rogers, Summers, & Schleifer, 2006). Children of adolescent mothers do not perform as well as children of older mothers on measures of child development, school readiness, cognition, language and communication, and interpersonal skills (Terry-Humen, Manlove, & Moore, 2005). Children of teen mothers are more likely to drop out of high school. Approximately 67% of children born to adolescent mothers earned a high school diploma, compared to 81% of children of older mothers (Hoffman, 2006). Finally, daughters born to teen mothers are three times more likely to become parenting teens themselves when compared to daughters of older mothers (National Campaign to Prevent Teen Pregnancy, 2010).

Pregnancy rates and contraception use among sexually active teens in New York City

Over the past decade, teen pregnancy rates in New York City have consistently exceeded the national rate by approximately 20%. Between 2000 and 2009, data was collected and published by the New York City Health Department's Bureau of Maternal, Infant, and Reproductive Health (2011) examining trends and disparities in teen pregnancy in New York City. Results from the report indicated

that the vast majority (87%) of teen pregnancies that occur annually in New York City are unintended.

Teen pregnancy rates vary by neighborhood and socioeconomic status. Adolescents in high-poverty neighborhoods are three times more likely to become pregnant than their same-aged peers in low-poverty neighborhoods. Of the five boroughs, teen pregnancy rates are highest in the Bronx; in 2009, more than 1 in 10 adolescents in the Bronx became pregnant. Non-Hispanic Black adolescents have the highest pregnancy rates of any ethnic/racial minority; in 2009, more than 1 in 9 Black adolescents in New York City became pregnant (New York City Department of Health and Mental Hygiene, 2011).

Despite the alarmingly high teen pregnancy rates in New York City, data from the Youth Risk Behavior Survey indicated that sexually active adolescents in New York City overwhelmingly report using some form of contraception during intercourse (New York City Department of Health and Mental Hygiene, 2011). 73.4% of adolescents reported using a condom at last intercourse. An additional 15.6% reported using either hormonal (i.e. birth control pills, patch, vaginal ring, or injections) or long acting reversible contraception (i.e. implantable contraception or intrauterine contraception) at last intercourse. Only 8.5% of sexually active adolescents reported using dual contraception (defined as condom with either hormonal contraception or long acting reversible contraception), and only 13.7% of adolescents reported not using any form of contraception at last intercourse.

The apparent incongruity among the high percentage of teens who report using contraception and the high percentage of teens who become pregnant can be

explained by literature that suggests that inconsistent and incorrect contraceptive use is a significant direct cause of unintended pregnancy (Landry, Wei, & Frost, 2008). Poor contraception adherence can be attributed to factors such as forgetting, method unavailability, and misunderstanding of correct use (Smith & Oakley, 2005; Nelson, Westhoff, & Schnare, 2008).

Intrauterine contraception

A wide variety of contraception options exist for adolescent women. Options vary in terms of effectiveness. Contraceptive efficacy research typically evaluates methods of contraception based on notions of perfect use (i.e. effectiveness of a method when it is used consistently and correctly) and typical use (i.e. effectiveness of the method as it is commonly used). Planned Parenthood (2007) evaluates the efficacy of contraceptive methods based on the number of pregnancies that occur per 100 women using each particular method of contraception as it is typically used each year.

Some contraceptive methods prevent pregnancy if used at intercourse, and these methods typically result in 15-25 pregnancies per 100 women using these methods as their sole method of contraception each year (Planned Parenthood, 2007). These methods include spermicide, which is a substance that prevents pregnancy by stopping sperm from moving, diaphragms, which are shallow silicone cups inserted into the vagina to prevent pregnancy, male condoms, which are commonly made of latex or plastic, are worn on the penis, and form a barrier to prevent the sperm and the egg from meeting, female condoms, which are pouches

inserted into the vagina to form a barrier between the sperm and the egg, sponges, which are foam sponges inserted into the vagina to block the sperm from entering the uterus and prevent the sperm from moving, and cervical caps, which are silicone cups that fit over the cervix and block sperm from entering the uterus (World Health Organization, 2011).

Hormonal methods of contraception prevent pregnancy if the prescribed dosage is taken consistently. Some hormonal contraceptive methods contain the progestogen hormone, which thickens cervical mucus to block sperm and egg from meeting and prevents ovulation (World Health Organization, 2011). Progestogen-only hormonal methods include progestogen-only pills, which need to be taken at the same time every day, and progestogen-only injectables, which are injected into the muscle every two to three months. Other hormonal contraceptive methods contain progestogen and estrogen hormones, which interact to prevent ovulation (World Health Organization, 2011). Combined hormonal methods include combined oral contraceptive pills, which need to be taken at the same time every day, the vaginal ring, which is a small ring placed in the vagina each month for three weeks, and the birth control patch, which is a small patch that sticks to the skin of the buttocks, stomach, upper outer arm, or upper torso for three weeks of each month. Overall, hormonal methods of contraception result in 2-9 pregnancies per 100 women using these methods as their sole method of contraception each year (Planned Parenthood, 2007).

The most effective options are categorized as long acting reversible contraceptives (LARC). LARC is a group of user-independent contraception methods

that includes intrauterine contraception (IUC, also commonly called intrauterine devices, or IUDs) and etonogestral implants. Today, American women can use two forms of IUC: the Copper T380A (Copper T) and the levonorgestrel-releasing IUC (Mirena). The Cooper T is a small, flexible plastic device containing copper wire that is inserted into the uterus. The copper component damages sperm and prevents it from meeting the egg (World Health Organization, 2011). The Mirena is a t-shaped plastic device that is inserted into the uterus and steadily releases small amounts of levonorgestrel hormone each day. It prevents pregnancy by suppressing the growth of the endometrium, which is the lining of the uterus (World Health Organization, 2011). Implants are small, flexible rods or capsules placed under the skin of the upper arm and release progestogen hormone. They prevent pregnancy via the same mechanism as other progestogen-only methods (World Health Organization, 2011). Overall, fewer than 1 pregnancies result per 100 women using LARC methods each year (Planned Parenthood, 2007).

Many of the factors that lead to poor contraception adherence, such as forgetting, method unavailability, and misunderstanding of correct use of contraception, are averted using LARC methods. Research suggests that LARC methods have higher continuity rates than do user-dependent forms of contraception (Behringer et.al., 2011; Zibners, Cromer, & Hayes, 1999). Thus, increasing the use of LARC methods has the potential to decrease unintended adolescent pregnancies in the United States.

Implantable contraception is very infrequently provided to women in the United States due to primary care providers' limited knowledge and access to the

devices (Rubin, Davis, & McKee, 2013). However, IUC is readily available. Although both IUC products are safe, easy to use, and provide continuous protection from pregnancy for up to 10 years, only 5.5% of contracepting women in the United States report IUC use. (Hubacher, Finer, & Espey, 2011) The issue of low IUC utilization is multifactorial and includes product, provider, and practice guidelines issues.

In the 1970s, the Dalkon Shield IUC was the subject of widespread medical and legal controversies and negative media attention due to increased rates of pelvic inflammatory disease (PID) among users, which resulted in ectopic pregnancy, spontaneous abortion, and infertility for some users. (Hubacher, Finer, & Espey, 2011) The Dalkon Shield contained a porous, multifilament “tailstring”. On one end, the string was tied to the bottom of the device and on the other, it was tied in a knot, allowing the woman to check that the device was in place and assisting in its removal. When the device was placed in the uterus, the string passed through the cervix and into the vagina. Bacteria were able to enter the uterus from the vagina, causing PID and leading to sepsis. Today, IUC devices use monofilament tailstrings, which are designed to avoid the absorption of moisture and bacteria in the uterus (Sobol, 1991).

In 2001, the Food and Drug Administration was still cautious about IUC following numerous lawsuits that resulted from the problems caused by the Dalkon Shield, and began marketing the newly designed IUC with a note on the label indicating that the IUC was “recommended for women who have had at least one child” (Hubacher, Finer, & Espey, 2011). Although new research has demonstrated

higher safety with today's modern devices and the "recommended patient profile" label IUC no longer specifies "women who have had at least one child", it is unclear how effectively the new information regarding the safety of IUC has been disseminated to health providers and to the public.

Scant research currently exists on health care providers' experiences, attitudes, and beliefs about IUC provision to adolescents. A qualitative study by Rubin, Davis, & McKee (2013) identified "barriers" and "enablers" to IUC counseling and provision for adolescents among 28 primary care providers (including family physicians, generalist pediatricians, and obstetrician/gynecologists) in the Bronx. Overall, pediatricians expressed limited comfort with general contraception prescription and reported that they rarely discuss intrauterine contraception. Other family physicians and OB/GYNs expressed varying levels of comfort with IUC for adolescents. Cost of and access to the device itself were the biggest barriers identified by those primary care providers who insert IUC. The majority of physicians who participated noted the influence of family in their willingness to counsel and/or insert IUC for adolescents; specifically, they mentioned limited time alone with teens, parental resistance to IUC use, reluctance to insert IUC without parental permission/consent and the influence of insurance/billing limits to confidentiality. Many physicians who counsel and/or insert IUC for adolescents describe a tension or "competing concern" between their desire to promote pregnancy prevention vs. STI prevention. This includes "competing concerns" about sexually transmitted infection versus pregnancy prevention and IUC versus condom

use. Many thought that a “forgettable” form of contraception such as IUC results in teens forgetting to use condoms.

Enablers to IUC provision identified by primary care providers included being able to insert IUC themselves, having the device available in the clinic, and/or having easy access to an inserter. The “culture of the clinic” was reported to have an influence on all of these factors. Specifically, if colleagues were perceived to support IUC provision to teens, then an individual PCP appeared more likely to support IUC for adolescents. Conversely, if colleagues were not supportive, then there appeared to be significant reluctance on the part of an individual provider.

Practice guidelines factors also play a role in low IUC utilization. The IUC practice guidelines published by the American College of Obstetricians and Gynecologists (ACOG) are frequently consulted by providers and have been a leader of opinion and practice since they were first published in 1968. Until 1992, the language of the guidelines clearly reflected the negative attitudes about IUC that were a result of the Dalkon Shield legacy. The 1987 and 1992 bulletins both began with a statement on product liability and used restrictive language to describe an ideal candidate for IUC.

In contrast, the 2005 bulletin was written during a time of increasing recognition of the safety and efficacy of IUC, and stated that the devices offer safe, effective, and long-term contraception, and should be considered for all women who seek a reliable, reversible contraception that is effective before coitus. A specific ACOG Committee Opinion entitled “Intrauterine Device and Adolescents” was published in 2007 suggesting that IUC may be appropriate for most nulliparous and

multiparous adolescents (Hubacher, Finer, & Espey, 2011). Similar opinions are echoed by both the World Health Organization's and the U.S. Centers for Disease Control and Prevention's contraceptive use eligibility criteria (Hubacher, Finer, & Espey, 2011).

Although professional practice guidelines support the use of IUC among women who are under 18 years old or nulliparous, many providers continue to want clearer, more specific clinical guidelines supporting IUC use in adolescents (Rubin, Davis, & McKee, 2012).

School-based health centers and sexual health counseling

School-based health centers (SBHC) are partnerships between schools and community health centers to provide satellite health clinics in schools. SBHC provide broad services, including medical, mental health, and dental services (Kerns et.al., 2011).

Since SBHC offer students an option for obtaining health services that is likely to be responsive to their needs, SBHC should increase adolescents' use of health care (Kisker & Brown, 1996). The literature has documented that SBHC are well-used by students in the schools served, and that for many students, SBHC are their sole or primary source of health care (Kirby, Waszak, & Ziegler, 1991).

SBHC have historically been seen as a promising way of addressing unintended pregnancy for adolescents. SBHC provide adolescents with a wide range of sexual health services, including birth control information and referral, pregnancy testing, and pregnancy counseling (Kirby, Waszak, & Ziegler, 1991). If

practitioners in SBHC were to counsel IUC for students, it would increase the likelihood that students seek out the devices. This may help to decrease the rates of unintended adolescent pregnancy in New York.

Research has been mixed regarding whether SBHC have been effective in preventing adolescent pregnancy. A seminal study by Kirby, Waszak, & Ziegler (1991) examined 6 clinics in different rural and urban parts of the country. All of the clinics included in the study served low income populations with a large proportion of non-White students. Results were mixed regarding whether students with access to SBHC were significantly more likely to use condoms or the pill. Schools that emphasized AIDS education saw a significant increase in condom use. Schools that emphasized pregnancy prevention saw a significant increase in pill use. Otherwise, students in the clinic schools were not significantly more likely to have used birth control during last intercourse than students in the comparison schools. The study did not investigate IUC use. Results also suggested that access to SBHC was not associated with lower rates of pregnancy.

A study by Kisker & Brown (1996) followed Kirby's research and studied 24 SBHC established in large cities in 1987. Although the evaluation suggested that SBHC increased students' knowledge of health behaviors, they did not reduce the likelihood that the students would engage in high-risk behaviors. SBHC did not significantly increase the likelihood of contraception use, and they also had no significant impacts on pregnancy and birth rates. However, the data was collected in 1989 and 1990 when the centers were still relatively new.

More recent research offers a more optimistic picture of SBHC. A literature review by Strunk (2008) documented that SBHC increased contraception use among pregnant and parenting teens. However, the programs included in the review were based in alternative education programs, so generalizability to typical public schools is limited. Also, the review focused on pregnant and parenting teens, who are much more likely than nulligravida teens to be provided with IUC in primary care (Rubin, Davis, & McKee, 2012).

A study by Ethier et.al. (2011) compared sexual health behaviors among adolescents at 12 urban high schools in California, half of which had SBHC. Results suggested that, among sexually experienced female students from inner-city areas with high rates of teen births, access to SBHC was associated with increased hormonal and emergency contraception use. IUC was, again, not included as a method of contraception in the study. This study was unique in that it geared pregnancy prevention care to adolescent females, and it acknowledged that sexually active male students with access to the SBHC were not any more likely to receive reproductive health care services than those without access. On one hand, it is possible that SBHC are most effective when they focus pregnancy prevention efforts on female students. On the other hand, it is clear that more work needs to be done to determine the barriers that prevent male students from using the services and to increase the use of SBHC by male students.

Overall, the evidence suggests that increasing the use of IUC has the potential to decrease rates of unintended teen pregnancies in the U.S. and that teens are overwhelmingly receiving the bulk of their formal sex education in schools

(Lindberg, Santelli, & Singh, 2006; Mueller, Gavin, & Kulkarni, 2008). However, messages promoted through school-based sex education vary greatly (Woo et.al., 2011). IUC counseling in school-based settings has not yet been studied. Thus, it is critical to conduct research with school-based health care providers who counsel adolescents about sexual health behaviors, as well as to develop interventions to increase the likelihood that school-based providers discuss IUC during contraception counseling with adolescents.

Chapter II

Methods

The Sample

Participants were eight school-based health care providers who care for female adolescents, work in school-based health clinics on a fulltime basis, spend at least 80% of their work time providing outpatient clinical care, and practice at a facility associated with one of two selected hospitals (referred to as Hospital 1 and Hospital 2).

Providers were midwives, nurse practitioners, health educators, and pediatricians. Only one provider (the pediatrician) was a man; the rest were women. They were distributed across six school-based health clinics, each of which was affiliated with either Hospital 1 or Hospital 2. Six of the eight providers were formally trained in IUC counseling prior to beginning work in the school based health clinic; however, they had all been provided with formal continuing education and training by the hospitals with which their clinics are affiliated. Weekly hours of clinical face-to-face patient care ranged from 30 hours to 40 hours. Percentage of clinical time spent seeing adolescents ranged from 75% to 100%. Percentage of visits at which sexual and/or reproductive health issues are discussed ranged from 80% to 100%. They have all counseled adolescents for IUC. See Table 1 for demographic information on participants and Table 2 for clinical profiles of participants.

Table 1: Demographic information on participants

Provider	School	Hospital	Professional Field	Year Completed Training	Training Affiliated with a Religious Institution	Formally Trained in IUC Counseling
1	1	Hospital 2	Midwife, Family Nurse Practitioner	1986	No	Yes
2	2	Hospital 1	Family Nurse Practitioner, Physician Assistant	1997	Yes (Catholic)	Yes
3	3	Hospital 2	Nurse Practitioner	2000	No	Yes
4	4	Hospital 1	Family Nurse Practitioner	2006	No	No
5	4	Hospital 1	Health Educator	2003	No	No
6	5	Hospital 1	Pediatric Nurse Practitioner	2005	No	Yes
7	1	Hospital 2	Pediatrician	1996	No	Yes
8	6	Hospital 1	Family Nurse Practitioner	2004	No	Yes

Table 2: Clinical profiles of participants

Provider	Weekly Hours of Patient Care	Percentage of Time Seeing Adolescents	Percentage of Visits at which Sexual/Reproductive Health Issues are Discussed
1	35	100	95
2	35	100	100
3	37.5	100	100
4	35	100	100
5	30	100	100
6	32	75	80
7	40	100	99
8	40	80	100

The Interview

A qualitative exploratory interview study was conducted. The development of the interview guide, which is available in the Appendix, is described below.

The semi-structured interview guide was initially created by Susan Rubin, M.D., and colleagues (Rubin, Davis, & McKee, 2012) for use with primary care providers (i.e. pediatricians, family physicians, and OB/GYNs) in the study of providers' attitudes concerning LARC provision to adolescents.

Rubin's interview guide was based on an implementation science theoretical framework designed for use when developing interventions to change clinical practice. (Michie, et.al., 2005) The field of implementation science scientifically studies methods to promote systematic application of clinical research findings into routine practice. In line with the theoretical framework, Rubin's interview guide explored the following domains: knowledge, skills, professional role and influences, belief about positive and negative consequences, environmental constraints, motivation, decision process, and behavioral regulation.

The purpose of the interview guide was to identify which of the domains influence the behaviors of interest (i.e. counseling for/provision of LARC) and thus could represent opportunities for intervention. Rubin theorized that both personal factors (e.g. attitudes) and also structural level variables (e.g. LARC availability on site) influence the degree to which providers counsel and/or provide LARC to adolescents; the interview guide was set up to explore those variables in depth. In order to obtain more realistic (as opposed to idealistic) responses, Rubin wove a vignette throughout the interview guide. The interview guide was piloted with

seven PCPs (two pediatricians, two obstetrician/gynecologists, three family physicians) and modified accordingly.

Rubin's interview guide was modified for the present research. Specifically, the wording of particular questions was adjusted to reflect the school (rather than primary care) setting, and questions regarding Implanon and IUC insertion were dropped from the interview guide, as they probed for information that was outside the scope of the present study. Otherwise, the theoretical domains and the vignette were preserved.

Procedure

This study was approved by the Albert Einstein College of Medicine IRB/CCI.

Outreach was directed to all eligible clinics, of which there were 16 total. Providers were contacted via email and invited to participate. All providers that responded to outreach attempts were interviewed. Five subjects were recruited from Hospital 1, and three subjects were recruited from Hospital 2.

After obtaining oral informed consent, interviews were conducted in person by the researcher at the school-based health clinics. Interviews generally lasted 30 minutes. All interviews were audio-recorded and later transcribed.

Analysis

Grounded theory analysis was provided by a team comprised of the primary researcher (KD) and a psychology doctoral student (SB) who received specific training in qualitative research in a doctoral-level course.

The grounded theory method involves the discovery of theory through analysis of data. Researchers using grounded theory set out to gather data and then systematically develop the theory derived directly from the data (Walker & Myrick, 2006). Recently, the use of grounded theory analysis has evolved and methods have proliferated. Examination of many studies indicates that there is a wide range of methodologies all purporting to be using the grounded theory approach (Cutcliffe, 2005). This study followed the grounded theory approach described by Glaser (1978), in which the analyst fractures the data and groups it conceptually into codes that then become the theory, which explains what is happening in the data.

During data collection, KD reviewed transcripts periodically to preliminarily identify emerging themes and assess for saturation. At completion of data collection, KD conducted a line-by-line analysis of transcripts to develop codes summarizing the main ideas represented in the text. Categories were developed through grouping individual codes that could be subsumed by a higher-order definition. KD then refined a coding template that included individual codes and higher-order categories and developed an explicit codebook. In order to achieve reliability, KD and SB independently coded a subset of the data, and then worked together until reaching conceptual coherence of the coding attributes. KD then conducted line item analysis of all remaining interview data. An explicit effort was made to search for disconfirming cases. No cases deviated substantially from the model, potentially reflecting relative flexibility and broadness of the model.

After intensive reading of the completed coded data, KD conducted a process of abstraction until she determined that the Capability, Opportunity, Motivation-

Behavior System (COMB-B), which was developed to improve the design of behavior change interventions, was an appropriate interpretative conceptual model for understanding the outcomes. (Michie, 2011) COMB-B is comprised of three major components influencing behavior: capability (i.e. knowledge and skills), opportunity (factors outside the individual that make behavior possible or prompt it), and motivation (internal brain processes that direct behavior). This is the same conceptual model that described IUC provision to adolescents in primary care. (Rubin, Davis, & McKee, 2012) All present codes apply to this model.

Chapter III

Results

Perception of the problem

The providers who participated all reported that teen pregnancy was a problem among the patients served due to inconsistent and discontinuous contraception use. Table 3, summarizing repeating ideas about perception of the problem and some supporting sections of text, is provided.

All providers reported that the vast majority of their female adolescent patients were sexually active with male partners. They reported that a large proportion of those sexually active female adolescent patients were using some form of contraception. One provider said, "I would say 80% [use some form of contraception]."

However, all providers reported that many of those adolescent patients were not using their chosen method of contraception consistently (that is, remembering or choosing to use the method on a day to day basis). One provider said, "Some kids just can't get it right. They come in like every week missing pills or forgetting to take their NuvaRing out or taking their NuvaRing out too soon because they think it's time to get their period... And sometime you know they'll come in like a month late for their Depo and they just sort of lost track of what they need to do no matter how easy you make it for them... I think more than half report inconsistent use but they take condoms."

All providers also reported that many of those adolescent patients were not using their chosen method of contraception continuously (that is, month to month

or year to year continuation of the chosen method). One provider said, “You know, they give a lot of reasons. They forget they had side effects, their mother found them an someone told them that some terrible thing is going to happen to them if they kept using this method. And so they just stop or they have some issue and they get scared and they might stop using it.”

Finally, providers reported that their adolescent patients were coming to the clinic with unintended pregnancies, though many acknowledged that the clinic incidence was lower than general citywide incidence. One provider said, “We are seeing some pregnant... Sometimes the pregnancies that we have seen have not been students, like, who were using the clinic. They were actually students who came in wanting, like, brand new students in the clinic. So we have not seen pregnancy in our students who are consistent users or even, like, have a little bit more of a relationship with the clinic.”

Table 3: Perception of the problem

Repeating Idea	Text
A large proportion of sexually active female adolescent patients were using some form of contraception.	Almost all of them [use condoms].
	Popular for us, I know—Number one was—The numer one we did just the other day. I think it was Depo then NuvaRing, and patch. No the ring then the patch, the patch was the last one. So it’s still Depo. So I think a lot of them use Depo and the pills.

	<p>They say it's pulling out, what they use is pulling out Now some students just come in for EC [emergency contraception] but that is a point of birth control as well and we respect that.</p>
	<p>Consistently or ever?... I mean I would say ever, I would say 80% [use some form of contraception].</p>
<p>Many adolescent patients were not using their chosen method of contraception consistently.</p>	<p>[They use it] inconsistently. So how many would I say consistently use it? Less than half.</p>
	<p>Not all of them [use condoms consistently] because they come up with STDs.</p>
	<p>Some kids just can't get it right. They come in like every week missing pills or forgetting to take their NuvaRing out or taking their NuvaRing out too soon because they think it's time to get their period... And sometime you know they'll come in like a month late for their Depo and they just sort of lost track of what they need to do no matter how easy you make it for them... I think more than half report inconsistent use but they take condoms.</p>
	<p>And then a lot of them, they will choose a method that really is not right for their lifestyle, like, everyone wants the pill. You are not going to remember to take the pill. You cannot take your vitamins every day. You cannot get up, you know, on time every day. So then they will start messing it up and they start spotting.</p>

<p>Many adolescent patients were not using their chosen method of contraception continuously .</p>	<p>You know, they give a lot of reasons. They forget they had side effects, their mother found them and someone told them that some terrible thing is going to happen to them if they kept using this method. And so they just stop or they have some issue and they get scared and they might stop using it.</p>
	<p>I think there's a lot of stigma. I think sometimes students, we get them on something, we are all excited, we explain everything to them, and then they stop. And then sometimes they feel afraid to come back and kind of say, 'Oh, I stopped it,' or 'I want to [have something] different],' and there can be a little bit of that. Sometimes I think they are feeling, like, side effects that they don't like and their biggest fear is actually birth control. Gaining weight—they are gaining weight on their birth control and then I think sometimes we hear that they started a birth control method they shared it with a friend and the friend was like, 'Oh no! I heard this, I heard that,' so then they stop it and then they don't come back.</p>
	<p>I think they really change their minds frequently about which type of method they want... They use methods like irregularly... A lot of media that's really scary, like irresponsible reporting where they—the kids—come in and say, 'Well, I have been on the ring for like 8 months but I have heard that the ring now can cause this or the other or the Depo now gets your really fat,' so they listen to Spanish media and they are very influenced</p>

	by that.
	I think that some girls don't anticipate becoming sexually active if they break up with their partner... I think it is kind of a function of being a teenager is that they are not always thinking ahead to the next time they might be sexually active, so if they break up with a partner, they might not choose to continue.
Adolescent patients were coming to the clinic with unintended pregnancies, though the clinic incidence was lower than general citywide incidence.	We have a pretty low rate. I mean, it's less than once a month. I think I've diagnosed maybe four or five this year in nine months.
	So they just come in, most of them already know. But they just come here to just officially know and we do the pregnancy test, it comes out pregnant, and a lot of them just break down thought they already know because now it's official. And then we give them a couple of days because a lot of times, in that moment, they have no idea what they are going to do.
	They are [getting pregnant]. It usually comes in, I guess, waves so we have a—right now we have a few seniors that are pregnant... And it usually comes like around now. Around holidays, when they have like more of an open schedule. [We get] about 10 [per academic year].

<p>We are seeing some pregnant... Sometimes the pregnancies that we have seen have not been students, like, who were using the clinic. They were actually students who came in wanting, like, brand new students in the clinic. So we have not seen pregnancy in our students who are consistent users or even, like, have a little bit more of a relationship with the clinic.</p>

Facilitators and Barriers to Counseling

Providers gave insight into many factors that either increased the likelihood or decreased the likelihood that they would provide counseling for IUC to their adolescent patients. For the sake of brevity and clarity, these factors will henceforth be referred to as “facilitators” and “barriers,” respectively.

Barriers to counseling included any factors, internal to or external to the provider, which made counseling about IUC either undesirable or impossible for the provider. These factors could be objective, demographic, or situational factors inherent to the people involved or the environment or subjective, experiential, and emotional factors perceived and felt by the provider.

Facilitators for counseling included both the active presence of enabling factors or the passive absence of barriers to counseling. Again, these factors could be either objective, situational factors or subjective, experiential, and emotional factors.

Facilitators and barriers were organized in terms of whether they were patient-focused, provider-focused, or system-focused. Specific factors will be

discussed separately. Tables summarizing repeating ideas about specific facilitators and barriers and corresponding sections of text are provided.

Facilitators to IUC Counseling

Patient-focused.

Providers mentioned several ways in which the patients themselves facilitated IUC counseling.

Characteristic.

A patient characteristic was considered a facilitator for IUC counseling if it was an attribute that was perceived by the provider as making the patient an appropriate candidate for IUC. Six of eight providers mentioned one or more patient characteristics as facilitators in their interviews. See Table 4 for repeating ideas about patient characteristics as facilitators and supporting sections of text.

A specific example of such a characteristic noted by the providers is that other methods have failed due to poor adherence/user error and/or aspects of the patient's lifestyle put her at high risk for user error. One provider said, "But definitely students who are not consistent, who have multiple sex partners, who are consistently coming in for EC, so we kind of try to push something that they do not want to think about."

A second patient characteristic that was considered was impending high school graduation or age. Providers mentioned that they were more likely to counsel for IUC if the patient is graduating high school and moving to college and thus needs a form a contraception that will require less frequent contact with a

prescribing health care provider. One provider said, “Seniors this year, which we’ve tried to encourage them to consider an IUD or maybe a Depo because they go away to college, so we’ve been going in depth... We know their access to clinic might not be as favorable.” Also, some providers mentioned that the patient’s age might make her an appropriate candidate, i.e. she is subjectively considered by the provider as being “old enough” for long-acting methods. One provider said, “The older ones... I always try to bring it out every time I see them... So I do a little more of the reinforcing about the IUD methods in the older kids.”

Finally, providers reported being more likely to counsel for IUC if the patient is an inappropriate candidate for other forms of contraception (e.g. she is forgetful and thus an inappropriate candidate for birth control pills, she dislikes needles and thus is an inappropriate candidate for Depo-Provera shots), and thus, IUC is recommended by process of elimination. One provider said, “If they tell me they tried everything and nothing works for whatever reason, they forget or they had side effects, then I think that’s the kind of person I’m really gonna encourage to consider the IUD.”

Some patient characteristics were mentioned as facilitators for only specific brands of IUC. For example, some patients have medical contraindications for hormonal contraception, which makes them appropriate candidates for the Paragard Copper T non-hormonal IUC. One provider said, “You know, for girls who [have] recognized like clotting diseases, or, you know, we look at girls who have chronic illnesses and we have girls who have sickle cell anemia. You know, migraine with aura. I mean these girls who are really—combined hormonal contraceptives

are contraindicated... And with the IUD you get the same too, but you know, they have an option of ParaGard versus the Mirena. So, you know, they actually [are] probably kind of safer than other types in some respects... More predictable too, like with bleeding.”

Table 4: Patient characteristics as facilitators

Repeating Idea	Text
Other methods have failed due to poor adherence/user error and/or aspects of the patient’s lifestyle puts her at high risk for user error.	It wouldn’t be advisable for me to get someone the pill if they can’t remember. What’s the point? If you’re not going to remember that day two, you’re out. You’re going to get pregnant. There is no other way, and you can’t remember everyday.
	But definitely students who are not consistent, who have multiple sex partners, who are consistently coming in for EC, so we kind of try to push something that they do not want to think about.
The patient is graduating high school and moving to college and thus needs a form a contraception that will require less frequent contact with a prescribing health care provider.	A lot of the girls are a little bit older and they are going to college and they don’t have to worry about getting pills and where they’re gonna get their pills and who’s gonna give them their Depo shots.
	Except for the girls who are seniors who are going to college. They are a little more receptive to the IUD.
	Like I said the girls are going off to college or some of the girls who go away for the whole summer and when they go to their country and things like that I think maybe she would want an IUD.

	Seniors this year, which we've tried to encourage them to consider an IUD or maybe a Depo because they go away to college, so we've been going in depth... We know their access to clinic might not be as favorable.
The patient's age makes her an appropriate candidate.	Like I said their age. If they had a history of being kind of fickle with their birth control.
	The older ones... I always try to bring it out every time I see them... So I do a little more of the reinforcing about the IUD methods in the older kids.
The patient is an inappropriate candidate for other forms of contraception.	If they tell me they tried everything and nothing works for whatever reason, they forget or they had side effects, then I think that's the kind of person I'm really gonna encourage to consider the IUD.
	I saw a patient yesterday and she said she doesn't like the pill because she doesn't remember. She doesn't want the injection because she didn't like shots. She said she doesn't want the Nuva Ring because she doesn't want anything in side of her, and she doesn't want the patch because it's a patch and it's summer time... So I said, 'Yeah, you can get the IUD.'
	If I see someone who has failed almost all the methods then I will probably, you know, recommend—I would say, 'Why don't you consider an IUD?' and I'll go into it.

	<p>Because one of the things that I find is that, some kids will say, 'I absolutely hate needles and I don't want to get the Depo shot, but there's no possible way I could remember to take a birth control pill every single day.' And so sometimes it's just a matter of identifying what they perceive their barriers to be and then talking about it.</p>
<p>Some patient characteristics were mentioned as facilitators for only specific brands of IUC.</p>	<p>You know, for girls who [have] recognized like clotting diseases, or, you know, we look at girls who have chronic illnesses and we have girls who have sickle cell anemia. You know, migraine with aura. I mean these girls who are really—combined hormonal contraceptives are contraindicated... And with the IUD you get the same too, but you know, they have an option of ParaGard versus the Mirena. So, you know, they actually [are] probably kind of safer than other types in some respects... More predictable too, like with bleeding.</p>

Interest.

Patient interest was considered a facilitator for IUC counseling when the patient was perceived as being interested in IUC. Six of eight providers mentioned patient interest as a facilitator in their interviews. See Table 5 for repeating ideas about patient interest as a facilitator and supporting sections of text.

Providers noted that patient interest in IUC was inextricably connected to patient knowledge about IUC, i.e. knowledge was a prerequisite for demonstrating interest. One provider mentioned, "So the PCP or the OPMS processing the patient

always mention the options and they're knowledgeable enough about the options to sort of bring the subject up." Many providers mentioned that patient interest and knowledge is increasing because patients see television commercials advertising IUC, because their friends discuss IUC, and because health educators conduct classroom outreach. One provider said, "[I discuss IUC] if they're really interested and they want to set up an appointment... Those that are really interested in it have heard about it and have done their research already... [They hear about IUC by] word of mouth. So this word of mouth is a powerful tool. So if their friend had it and said, 'You should try this. It's good,' then they'll come and they'll ask for it."

Table 5: Patient interest as a facilitator

Repeating Idea	Text
Patient interest facilitates IUC counseling.	If they are interested in IUD then I will go in [depth with] them.").
	A lot of them like the privacy of it. You know, nobody knows about it and so it's easier for them.
Patient interest and knowledge is increasing.	So I kinda do a brief, 'This is the IUD, this is the 5-year and this is the 10-year. Have you heard about them?' 'Oh yeah, I saw a commercial on it.' So most students are telling me that they've heard about it. Like through commercials or something. 'So, oh, you're interested in the IUD? That's wonderful.'

<p>[I discuss IUC] if they're really interested and they want to set up an appointment... Those that are really interested in it have heard about it and have done their research already... [They hear about IUC by] word of mouth. So this word of mouth is a powerful tool. So if their friend had it and said, 'You should try this. It's good,' then they'll come and they'll ask for it.</p>
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Family.

The patient's family was considered a facilitator for IUC counseling when a specific family attribute made the patient a perceived appropriate IUC candidate. Six of eight providers mentioned the patient's family as a facilitator in their interviews. See Table 6 for repeating ideas about a patient's family as a facilitator with supporting sections of text.

The most cited example of such an attribute was that the patient's parents are unaware of or unsupportive of sexual activity, and so the contraceptive method needs to be discrete. One provider said, "It is just the kids in the past, when they have a confrontation, all the parents disagreeing has just been because the parent has been informed that or found out somehow, found some pills in her bags or somebody slipped in they know that the kid was sexually active and she said 'How dare you, putting my kid on the pill. So... [IUD] would be more discreet.'"

On the other hand, a few providers cited family as a facilitator if parents were aware and supportive of the patient's sexual activity and willing to discuss contraceptive options at home with the patient. One provider said, "Well, sometimes

a student will say, ‘I’ve heard about these or my mom suggested this as a possible option for me.’” One provider mentioned that the specific families who were actively involved in the clinic and familiar with the clinicians and the contraception options were more “on board” with long-acting contraceptive methods and therefore likely to facilitate IUC counseling. That provider said, “I would think that it is going to be like parents who do not want any type of birth control counseling, insertion, or dispensing them at the sites, but we do not get that because I think that, for the most part, it allows the parents and guardians... [to] know what services are offered.”

Table 6: Patient’s family as a facilitator

Repeating Idea	Text
The patient’s parents are unaware or unsupportive of sexual activity, and so the contraceptive method needs to be discrete.	You know, if your mom finds it— Did your mom go through your bag, that sort of thing? Oh yeah. Well then if your mom goes through your bag, you cannot have the pill, you cannot have the patch, which she will see, you know, whatever. If your mom is the type of mom who is always charting your period, then you cannot get the Depo
	Or if mom is not on board or does not know they’re sexually active and they need some form of birth control and they graduate from the school we won’t be able to help them, [so] we give them resources or we try to push the IUD.

	It is just the kids in the past, when they have a confrontation, all the parents disagreeing has just been because the parent has been informed that or found out somehow, found some pills in her bags or somebody slipped in they know that the kid was sexually active and she said 'How dare you, putting my kid on the pill. So... [IUD] would be more discreet.
Parents were aware and supportive of the patient's sexual activity and willing to discuss contraceptive options at home with the patient.	Well, sometimes a student will say, 'I've heard about these or my mom suggested this as a possible option for me.'
	I would think that it is going to be like parents who do not want any type of birth control counseling, insertion, or dispensing them at the sites, but we do not get that because I think that, for the most part, it allows the parents and guardians... [to] know what services are offered

Provider-focused.

Providers mentioned several ways in which they themselves facilitated IUC counseling.

Knowledge.

The provider's knowledge was considered a facilitator for IUC counseling when the provider perceived himself or herself to be knowledgeable about research regarding IUC efficacy and safety. Seven of eight providers mentioned provider knowledge as a facilitator in their interviews. See Table 7 for repeating ideas about provider knowledge as a facilitator and supporting sections of text.

Knowledge increased the practitioners' comfort level and made them more likely to counsel for IUC. One provider said, "I think I'm pretty good. I feel confident."

Table 8: Provider knowledge as a facilitator

Repeating Idea	Text
Knowledge increases the provider's comfort level and confidence, and therefore, makes the provider more likely to counsel for IUC.	I think I'm pretty good. I feel confident.
	[I feel] very comfortable.
	Before I wasn't doing the IUD counseling... It's been more and in the past couple of months I have been making sure that I educate in all of my counseling sessions... I think it is more information that we were receiving and more training that our program was receiving.

Personal Motivation.

Provider motivation was considered a facilitator for IUC counseling when the provider is motivated to counsel due to perceived IUC compatibility with general professional goals. All providers mentioned provider motivation as a facilitator in their interviews. See Table 8 for repeating ideas about provider motivation as a facilitator and supporting sections of text.

Specific professional goals that increased motivation were building trust and educating adolescents (One provider said, "I want them to know what they are getting into and I think this is what is gonna build in trust and I want them to continue being our patients. We want to be as honest as possible and also we don't want them to come in like, 'You didn't tell me about this.'"), preventing teen pregnancy (One provider said, "I just like—I wanna prevent pregnancies... so that's

what guides my conversation... I would start with the most effective methods... The methods that would have less user error. I would start with like the LARCs. I would recommend the IUD and then I would go on and talk about the Implanon.. I wanna refer her for like an IUD. That’s what I really try to do.”), and increasing socioeconomic status of students (One provider said, “She’ll keep it there for five or ten years and then she’ll go ahead and graduate and do the things she need to do with her life.”

Table 7: Provider motivation as a facilitator

Repeating Idea	Text
Providers wanted to build trust and educate adolescents.	I want them to know what they are getting into and I think this is what is gonna build in trust and I want them to continue being our patients. We want to be as honest as possible and also we don’t want them to come in like, ‘You didn’t tell me about this.’
Providers wanted to prevent teen pregnancy.	I just like—I wanna prevent pregnancies... so that’s what guides my conversation... I would start with the most effective methods... The methods that would have less user error. I would start with like the LARCs. I would recommend the IUD and then I would go on and talk about the Implanon.. I wanna refer her for like an IUD. That’s what I really try to do.
	I place a higher priority because I think it is the easiest method. I think with IUDs it is—it is like more guaranteed way of preventing a pregnancy

Providers wanted to increase socioeconomic status of students.	She'll keep it there for five or ten years and then she'll go ahead and graduate and do the things she need to do with her life.
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System-focused.

Providers mentioned several ways in which aspects of the broader health care system facilitated IUC counseling.

Health educator on site.

A health educator was defined as a full-time staff member present in the clinic whose sole job is to counsel and educate students about health topics including reproductive health and pregnancy prevention. Having a health educator on site was mentioned as a facilitator for counseling. Three of eight providers mentioned having a health educator on site as a facilitator in their interviews. See Table 9 for repeating ideas about a health educator on site as a facilitator and supporting sections of text.

Only Hospital 1 clinics had health educators on staff.; all 3 of the participants who mentioned having a health educator on site as a facilitator for counseling worked at Hospital 1 clinics. One provider said, “[I feel] less confident with the IUDs... but we have a health educator here who usually does the IUD counseling. “

Respondents suggested that health educators increase the likelihood of counseling most when they regularly conduct classroom and community outreach. One provider said, “Good thing about it is that when they go into the classroom it is not just individuals, so it is a group of kids, and so sometimes a conversation comes

out of it and then a lot of the girlfriends talking about it, and then I am also educating the males on it as well.”

Table 9: Health educator on site as a facilitator

Repeating Idea	Text
Health educators facilitated IUC counseling.	[I feel] less confident with the IUDs... but we have a health educator here who usually does the IUD counseling.
	Between me and the health educators, they are pretty well counseled.
	She said she wants to switch her method and I call the health educator and she was available and she said yes and then she'll sit down and go over all the methods with her and help her make a decision... So that's basically her primary job is to teach the girls about health education... Sexual health education and she also does in the classroom.
Health educators increase the likelihood of counseling most when they regularly conduct classroom and community outreach.	Good thing about it is that when they go into the classroom it is not just individuals, so it is a group of kids, and so sometimes a conversation comes out of it and then a lot of the girlfriends talking about it, and then I am also educating the males on it as well.
	I mean, because I play the health educator role, like I said, I am able to go into the classrooms, so besides the one-on-one, I think one thing I would say in our clinic, so if you don't have this position, how do you give out this information instead of just the students that come in or to go to other students who maybe want the information and are just scared to come down?

Inserter on site.

An inserter was defined as someone on clinic staff who is available at least on a part-time basis to do IUC insertion on site in the school clinic. Having an inserter on site was mentioned as a facilitator for counseling. Three of eight providers mentioned having an inserter on site as a facilitator in their interviews. See Table 10 for repeating ideas about an inserter on site as a facilitator and supporting sections of text.

Only Hospital 2 clinics had inserters on staff, and all 3 of the participants who mentioned having an inserter on site as a facilitator for counseling worked at Hospital 2 clinics. One provider said, “I honestly don’t think there is—If someone wants an IUD, they get an appointment. That’s it. There is no—you know, and everyone’s talked from beginning to end about it.”

Table 10: Inserter on site as a facilitator

Repeating Idea	Text
Inseters on site facilitated IUC counseling.	And that she can come in anytime because we offered it here so it is—it does make it a little bit more convenient.
	I honestly don’t think there is—If someone wants an IUD, they get an appointment. That’s it. There is no—you know, and everyone’s talked from beginning to end about it
	As far as, like emphasis, and the fact that we can do it on site, so it is easy access to us. I do not have to refer them out. So it is like something like the method that I highly encourage.

Professional guidelines.

Professional guidelines were considered facilitators for IUC counseling when the staff member is aware of and influenced by professional guidelines that support adolescents' use of IUC. Five of eight providers mentioned professional guidelines as a facilitator in their interviews. See Table 11 for repeating ideas about professional guidelines as facilitators and supporting sections of text.

One provider said, "It is kind of reassuring when you get like experts in [an] expert panel who have inserted or have like information on, you know, like a database of kids who have gone [on] IUDs, and they can kind of, like, you know, give you like a profile on what the risks are and how long they are."

Some providers were aware of medical professional guidelines that include adolescents in current criteria for IUC eligibility. One provider said, "Well you know, years ago with the IUD, you weren't able to get IUD unless you had a baby. So, now, the guidelines have ultimately changed... This is all new. This is all cutting edge and, like, we started doing it actually within the year. This is all new. I can say guidelines are still in progress. Oh yes, [they] definitely [guide my clinical practice]."

The vast majority of providers mentioned a training program they referred to as "RECAP," which increased awareness of guidelines supporting adolescents' use of IUC. One provider said, "I mean, you know we've had a lot of work that's been done for the RECAP program, [which] has provided us with all the evidence that there is no harm, for example, in using it in a kid who has multiple partners if she is good about removing it."

The Managing Contraception guidebook was also cited as a useful source of information that guides clinical practice and increases the likelihood of IUC counseling (One provider said, “Oh, well I know that there are guidelines for IUD use in adolescents... I would look up Managing Contraception. I don’t know if you’re familiar with that guidebook.”), as were numerous other reproductive health articles and evidence-based studies supporting adolescents’ IUC use (One provider said, “I have been reading reproductive health articles and... evidence based studies.”).

Table 11: Professional guidelines as facilitators

Repeating Idea	Text
Professional guidelines facilitated IUC counseling.	Certainly in school health we have had access to the evidence.
	It is kind of reassuring when you get like experts in [an] expert panel who have inserted or have like information on, you know, like a database of kids who have gone [on] IUDs, and they can kind of, like, you know, give you like a profile on what the risks are and how long they are
Medical professional guidelines that included adolescents in criteria for IUC eligibility.	Well you know, years ago with the IUD, you weren’t able to get IUD unless you had a baby. So, now, the guidelines have ultimately changed... This is all new. This is all cutting edge and, like, we started doing it actually within the year. This is all new. I can say guidelines are still in progress. Oh yes, [they] definitely [guide my clinical practice].

The RECAP training program increased awareness of guidelines supporting adolescents' use of IUC.	I mean, you know we've had a lot of work that's been done for the RECAP program, [which] has provided us with all the evidence that there is no harm, for example, in using it in a kid who has multiple partners if she is good about removing it.
The Managing Contraception guidebook was a useful source of information that guides clinical practice and increases the likelihood of IUC counseling.	Oh, well I know that there are guidelines for IUD use in adolescents... I would look up Managing Contraception. I don't know if you're familiar with that guidebook.
Reproductive health articles and evidence-based studies supported adolescents' IUC use.	I have been reading reproductive health articles and... evidence based studies.

Program support.

Program support was considered a facilitator for IUC counseling when the hospital's school-based health program offers financial and other resources to facilitate and support counseling. All eight providers mentioned program support as a facilitator in their interviews. See Table 12 for repeating ideas about program support as a facilitator and supporting sections of text.

Many programs provided training and education for staff. One specific training program that was frequently mentioned was the RECAP program, which is a reproductive education program sponsored by Hospital 1 but attended by practitioners from both hospitals. One provider said, "We are all trained, you know, to do the same thing... Whoever they see, we mention [IUC]."

Providers also mentioned reduced barriers and scheduling assistance in making referrals to outside clinics for insertion (One provider said, "We were given

an in-service on how to screen potential candidates to see if they were eligible to get an IUD. We were given packets of information, so that we could just fill out certain pieces of information [and] fax it to the clinic that would be doing the insertion. Also included in those packets were directions for the teen on how to get to the clinic. I mean, it was all pretty much just handed to us.”), and visual aids, educational materials, and demonstration models to improve instruction about IUC.

Other program supports included funding to directly support reproductive health counseling, access to the device, scheduling assistance and time set aside specifically for reproductive health counseling, and adequate support staff. One provider said, “If you don’t have the funding and you don’t have the device and you don’t have the training then it’s just not going to happen. So that’s the key. I think that’s really it.”

Table 12: Program support as a facilitator

Repeating Idea	Text
Staff training and education facilitated IUC counseling.	But I think that because of that RECAP program, most of the centers that have anything to do with the Department of Education have had that training.
	We are all trained, you know, to do the same thing... Whoever they see, we mention it.

<p>Clinics had reduced barriers and scheduling assistance in making referrals to outside clinics for insertion.</p>	<p>I think that the way that [Hospital 1] has set up their adolescent referral it seems to be pretty—I think that it's set up so that adolescents can access this kind of birth control. I know it seems like, you know, avenues have been cleared, I guess. Wait. How am I trying to say this? I feel like barriers have been reduced to try to get adolescents to use IUDs if they do use them.</p>
	<p>We were given an in-service on how to screen potential candidates to see if they were eligible to get an IUD. We were given packets of information, so that we could just fill out certain pieces of information [and] fax it to the clinic that would be doing the insertion. Also included in those packets were directions for the teen on how to get to the clinic. I mean, it was all pretty much just handed to us.</p>
	<p>I can call E, our practice administrator at the family planning [clinic], and she can make an appointment for us. Or I can say this is... where you can walk in today [and] make yourself an appointment and usually they try to go with a friend, so either way, I can either make the appointment or say you just walk by. It depends on their preference. They made it easier now. It used to be a little more difficult, but now it's easier. They just made it available more.</p>

Visual aids, educational materials, and demonstration models improved instruction about IUC.	Well, we have a lot of literature here in charts. So when I have to counsel about IUD, I pull the charts out and the information sheets and Mirena and ParaGard and just review it and then we have like a split chart which shows you each one side by side and it helps you make the decision between the two.
	They tell me when they look at the pictures... Oh, they ask about it. They ask about it.
	I would ask does she know anything about IUDs and also go over the two different types of IUDs. How they place... we do have demos, like I said. I actually show them how it's put in. I have the copper one with me, so I would show what it looks like and if they feel it
	Well, I think we have a waiting room that has a projector. We have a TV that's connected to a computer that we can either find something online or have that playing in the waiting room. Or we can make PowerPoints... Just kind a have a little bit of that cause they are sitting there and they are probably going to look at the screen and then maybe that will encourage them to come and ask more questions about that
	The one I have, it's a picture of different kinds of birth control, and it's got pictures of it and whenever I point out the IUD, if they say 'What's that?' or 'Tell me more,' then I'll offer more counseling.
	I mean, they purchase the materials.

The program provided funding to directly support reproductive health counseling, access to the device, scheduling assistance and time set aside specifically for reproductive health counseling, and adequate support staff.	If you don't have the funding and you don't have the device and you don't have the training then it's just not going to happen. So that's the key. I think that's really it
	I think the policies are sound, you know. We do limit them to one session a week, so we have adequate staffing because, you know, it requires time and care.
	We have dedicated time every week to IUDs here... They designate time specifically for that. It is protected time.

Culture of the clinic.

The culture of the clinic was considered a facilitator for IUC counseling when the provider perceived interpersonal collegial support within the clinic for IUC counseling. All eight providers mentioned culture of the clinic as a facilitator in their interviews. See Table 13 for repeating ideas about the culture of the clinic as a facilitator and supporting sections of text.

Perceptions of a supportive clinic culture were based on the presence of specific champions for IUC (One provider said, "Because of X and Y I think that if you go to anyone at the school-based... I think everyone's pretty on board about it."), supportive administration, and IUC counseling being the "norm" for clinic staff (One provider said, "Everybody from the psychologist to the health educator. Even the front desk lady [supports IUC counseling]."). Several practitioners deemed the clinic culture to be supportive simply based on their experiencing no interpersonal "push

back” from colleagues. One provider said, “So I really feel like I’m not getting any—nobody’s pushing back if I’m recommending an IUD or the teen wants an IUD and they’re a medical candidate for it.”

Table 13: Culture of the clinic as a facilitator

Repeating Idea	Text
There are specific champions of IUC within the clinic.	XX has been the one—and YY—have been the ones that have been championing this for as long as I’ve been with the school health which has been since 2008. So it’s been a big push and you know because of X’s experience and the work that she has been doing for so many years, I think that she’s the one I think that’s brought this to the forefront, as in we need to be able to do this for adolescents.
	Because of X and Y I think that if you go to anyone at the school-based... I think everyone’s pretty on board about it.
	We have a family planning clinic that is attached to our program and the had at that clinic, the medical director, and the medical director of the school based program... They are very, very pro, pro IUDs. So our influence comes from our management staff.
The clinic has supportive administration.	Well administration is extremely important.
	The administration of the program supports it
IUC counseling is the "norm" for clinic staff.	Everybody from the psychologist to the health educator. Even the front desk lady [supports IUC counseling].
	It’s the norm.

	They're all for it... Everyone's facilitating it.
	Everybody is basically using the same lesson and going through the same process.
	I think our program has been very progressive when it comes to reproductive health.
	In [the] school program, that is the norm... I think a lot of people do place it high—and I think they kind of like advocate for IUDs and the program.
There is no interpersonal "push back" from colleagues in the clinic.	So I really feel like I'm not getting any—nobody's pushing back if I'm recommending an IUD or the teen wants an IUD and they're a medical candidate for it.

Culture of the profession.

The culture of the profession was considered a facilitator for IUC counseling when the provider perceived interpersonal collegial support within the professional community for IUC counseling. Four of eight providers mentioned culture of the profession as a facilitator in their interviews. See Table 14 for repeating ideas about the culture of the profession as a facilitator and supporting sections of text.

One provider said, "We're all doing adolescent health so I would think that we're up and coming so I think that we're all doing the same thing."

Perceptions of a supportive professional culture were based on increasing discussions about IUC at conferences. One provider said, "I do know that when we go to these regional school-based health center meetings, there are programs that seem to be pioneering in all this like Plan B and IUD and Implanon stuff."

The New York citywide culture was noted as particularly supportive of IUC counseling. One provider said, “I mean, we live in a very liberal part of the state.”

Table 14: Culture of the profession as a facilitator

Repeating Idea	Text
The provider perceived interpersonal collegial support within the professional community for IUC counseling.	We’re all doing adolescent health so I would think that we’re up and coming so I think that we’re all doing the same thing.
	I think a lot of the other school based health centers have the same training as we do.
Perceptions of a supportive professional culture were based on increasing discussions about IUC at conferences	I do know that when we go to these regional school-based health center meetings, there are programs that seem to be pioneering in all this like Plan B and IUD and Implanon stuff
	I think it [counseling for IUC is the norm nationally]. Yeah, because people [at] the last conference I went to about contraception was so excited about this.
The New York citywide culture was noted as particularly supportive of IUC counseling.	I mean, we live in a very liberal part of the state.
	Hospital 1 has special training called RECAP, and a few school based health centers in [the] New York City area are involved. So I would think that these are probably equal

Barriers

Patient-focused.

Providers mentioned several ways in which patients introduced barriers to IUC counseling.

Interest.

Patient interest was considered a barrier for IUC counseling when the provider perceived the patient as being disinterested in IUC or specifically interested in another form of contraception. All providers mentioned patient interest as a barrier in their interviews. See Table 15 for repeating ideas about patient interest as a barrier and supporting sections of text.

Providers typically reported that they gave a brief description of all methods, and then provided more in-depth counseling only for methods for which the patients expressed interest. They did not typically discuss in-depth IUC if the patient did not specifically express interest or if the patient expressed interest in a different method. One provider said, “Everyone wants the pill... The average girl who comes in here does not want an IUD. So once we get that off the table, I do not discuss it anymore. Most of the girls want what is behind me [in the cabinet that holds various forms of contraception].” Many providers also deliberately discontinued counseling if the patient expressed disinterest in IUC. One provider said, “If they say no, that’s not for me, then I move on from it.”

Providers reported that patients were strongly influenced by the media and their friends, who encouraged the use of other methods. One provider said, “They come in usually having seen an ad or talk to a friend or... You know, there is no point in going through everything if they don’t—if they want something in particular.”

Providers also reported that patients expressed disinterest in IUC due to the side effects of period changes (i.e. Mirena may stop periods and the patient wants to get her period each month, Paragard may lead to heavier, irregular periods and

patient wants lighter, more regular periods). Providers also reported that patients expressed disinterest in IUC due to other side effects, such as cramping. One provider said, “They’re afraid of, like, side effects... They hear a lot about the IUDs that they really hurt.”

Providers reported that patients expressed disinterest in IUC for other reasons, such as: patients thought the procedure for insertion was too “invasive”, patients do not want something inserted inside of them, and patients did not want to get a pelvic examination. One provider said, “The girls are opposed to something invasive like that... You know, she does not want pelvic or some sort of gyn-like exam, then I am not going to push it.”

Finally, providers reported that patients did not want to go to an outside clinic for insertion. One provider said, “When I mention to girls that they would have to go offsite to get the method, then they kind of lose interest.”

Table 15: Patient interest as a barrier

Repeating Idea	Text
Providers did not discuss in-depth IUC if the patient did not specifically express interest or if the patient expressed interest in a different method.	Everyone wants the pill... The average girl who comes in here does not want an IUD. So once we get that off the table, I do not discuss it anymore. Most of the girls want what is behind me [in the cabinet that holds various forms of contraception].
	The pill. They really want the pill
Providers deliberately discontinued counseling if the patient expressed disinterest in IUC.	Average to below average because they don’t really—that’s like their last choice, really. They don’t like it for some reason.
	If they say no, that's not for me, then I move on from it.

<p>Patients were influenced by the media and their friends, who encouraged the use of other methods.</p>	<p>They come in usually having seen an ad or talk to a friend or... You know, there is no point in going through everything if they don't—if they want something in particular.</p>
	<p>Some girls want the shot because of friends. I just had like three of them come in as a group this week and all three of them got the shot because one of the girls in the group had the shot. Though most of them were definitely afraid of needles. They just want what their friends have. Then some girls want the pills because all their friends are on the pill and they know there is no way in heck that they are going to be able to remember everyday but they want the pill.</p>
	<p>So you know, most of the time people think of birth control and now they come in and say the pills and a lot of them will say the patch. Because I think that's the most popular ones that are being advertised.</p>
	<p>Sometimes they like pills.... Sometimes pills and Depo, the shot, those are the only two that they know about.. I think now because they see more commercials, like, when I say, 'Oh, have you heard of the ring?' they've heard it because they have seen it on a commercial, but they don't know a lot of people who are using it. So I think the pills and the Depo are methods that they hear more about.</p>
<p>Patients expressed disinterest in IUC due to menstrual changes and other side effects.</p>	<p>They're afraid of, like, side effects... They hear a lot about the IUDs that they really hurt.</p>

Patients thought the procedure was too long-term and "invasive."	Most in the furthest they go with something that long term would be in Depo. Because even after 3 months they can change their mind and just never come back and see me. They do not need to come after the next shot.
	Some people find it to be so, you know. Too long of a time to have an object inside so it's really—because of the preferences it's really had to say.
	The girls are opposed to something invasive like that... You know, she does not want pelvic or some sort of gyn-like exam, then I am not going to push it.
	She does not want an internal exam, that is for sure.
Patients did not want to go to an outside clinic for insertion.	Once you say, 'I got to refer you,' 'If you want it I got to refer you,' it kind of goes off the radar.
	When I mention to girls that they would have to go offsite to get the method, then they kind of lose interest.
	They really are afraid of like having to go somewhere.

Family.

The patient's family was considered a barrier for IUC counseling when a specific family attribute made the patient a perceived inappropriate IUC candidate. Six of eight providers mentioned the patient's family as a barrier in their interviews. See Table 16 for repeating ideas about a patient's family as a barrier and supporting sections of text.

The most cited example of such an attribute was that the patient’s parents are unaware or unsupportive of sexual activity, and the provider worried that the parents would find out and react negatively to the patient’s IUC. Providers frequently worried about parents becoming aware of IUC from bills from insurance companies arriving at home after IUC insertion at an outside clinic. One provider said, “There are [confidentiality issues] if the tests are sent to their address.” Providers also worried about parents finding out from changes in the patient’s period. One provider said, “On Paragard she could have heavier bleeding and also if she chooses a five-year Mirena she could have short or no periods at all, and if her mother is looking at her periods and parents don’t know that she is sexually active, that can influence her in a negative way.”

On the other hand, a family was considered a barrier if parents were aware and supportive of other birth control options, such as the pill. One provider said, “Some of like—there is—because I think this group in particular are sexually, very sexually active and it’s like open. It’s not like taboo... They do come and get their shots like around the clock and plus their moms are aware... Parents are aware that they are on some type of birth control... Being open kind of fosters them being more responsible about it.”

Table 16: Patient’s family as a barrier

Repeating Idea	Text
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<p>The patient's parents are unaware or unsupportive of sexual activity, and so the provider worried that the parents would find out and react negatively to the patient's IUC.</p>	<p>I think some of the support staff are a little concerned about the confidentiality issues of, you know, what if something happens and they called the mother and she finds out that we're putting an IUD and you know what's gonna happen? I think there were some concerns about that.</p>
	<p>I mean, I guess there's a potential if her parents don't know that she's sexually active and they find out that she has an implantable contraceptive, they might be upset.</p>
	<p>A lot of the time the strings won't be felt because they usually curl up around the cervix and they might not be able to feel it. And then if they come in like... 'Where is the IUD? Did it come out? Is it really there?' So now you are going to get a sonogram and as far as sending the girl for sonogram in the outside world and without insurance being, you know, needed or, you know, it is always these kinds of things you worry about breaking confidentiality.</p>
	<p>There are [confidentiality issues] if the tests are sent to their address.</p>
	<p>On Paragard she could have heavier bleeding and also if she chooses a five-year Mirena she could have short or no periods at all, and if her mother is looking at her periods and parents don't know that she is sexually active, that can influence her in a negative way."</p>

Parents were aware and supportive of other birth control options.	Some of like—there is—because I think this group in particular are sexually, very sexually active and it's like open. It's not like taboo... They do come and get their shots like around the clock and plus their moms are aware... Parents are aware that they are on some type of birth control... Being open kind of fosters them being more responsible about it... I think it's their ethnicity. I think we have a higher percentage of Hispanic ethnicity and I think they tend to be more open when it comes to sex.
	I meant the kids will come in or their parents too. They come in they tell us that, 'Oh, they said once I use certain birth control that I would never be able to have kids,' and stuff like that.
	Mostly friends and family, I think that's where they were getting information... So I think the pills and the Depo are methods that they hear more about... It's what she has heard from her family. Or she has a cousin who used it or she has friends using it and she wanted to know ore or something like that.

Characteristic.

A patient characteristic was considered a barrier for IUC counseling if it were an attribute that was perceived by the provider as making the patient an inappropriate candidate for IUC. All eight providers mentioned one or more patient characteristics as barriers in their interviews. See Table 17 for repeating ideas about patient characteristics as barriers and supporting sections of text.

Providers did not feel a patient was an appropriate candidate for IUC if the patient has never used birth control or the patient has never had a pelvic exam; it was felt that the patient would not be able to tolerate the procedure especially if patient is not yet sexually active. One provider said:

If a kid comes in and wants pills or wants a patch or wants a ring, I think that's a much more realistic thing, especially for a kid who's never used birth control... If I'm counseling someone who has no knowledge of the methods, I mention the IUD. I always give everyone a sheet that summarizes all of them, but I feel like it's not usually the first line for someone who's never used birth control... You know, it involves two or three visits. A lot of these girls have never had pelvic exams. They don't understand the process and they'll say 'You mean I'd have to take my underwear off?' They don't really understand that it is a procedure, that they're gonna have some discomfort and then there are a host of other issues that come up. So for someone who's never been sexually active or who is interested in a particular method like a pill or a patch or a ring, that's usually the best way to start. I always say, 'If this doesn't work out for any reason we can always talk about other things.'

In a similar vein, one provider felt that younger adolescents are inappropriate candidates for IUC. That provider said, "You know, for the very, very young girls... I do not—I just I—I feel uncomfortable with that... I just feel like, you know, those really young ones, I do not want to risk that."

A frequently reported concern was the presence of a current STI, history of STI, or a high risk of contracting an STI. One provider said, "I have a girl here who like every other month she has gonorrhea or chlamydia and we treat her, then it clears, sometimes it does not, and she gets re-infected and it just continues and we counseled her with this and with that. I do not think I would send her for an IUD."

A patient was considered an inappropriate candidate if she was doing well on different method. One provider said, “If it’s someone who, you know, has been doing well on a method or you took pills in the past and liked it and didn’t have a problem, I’ll mention that it’s an option but I normally won’t spend as much time on it.”

A patient who would likely fail to report medically dangerous problems if they come up was also considered inappropriate. One provider said, “Then there are kids that aren’t mature enough to report a problem and to deal with, you know, if let’s say, for example, they are having pain or bleeding and might not be the most diligent about coming in... I do [feel like that’s different with IUC versus other forms of contraception] because they’re eventually gonna run out of a pill or a patch... They’re not going to run out of this and if you’re ignoring something that needs to be addressed, they could wind up with a bad problem.”

Finally, the patient was considered inappropriate if she has painful periods, had medical contraindications, or an anatomical abnormality such as a small cervix that makes insertion difficult. One provider said, “Well if she has a medical contraindication, you know, there are some kids that have issues that they shouldn’t use an IUD. Some autoimmune kids, you know, we have to be careful about their immunosuppression. Diabetic patients that have very uncontrolled diabetes and feel uncomfortable inserting an IUD until her sugars are more under control.” Another provider said, “We have like one provider putting IUDs in for like over 25 years. And she feels like the Mirena is a little bit more difficult insertion for them... because of [the] wider barrel.”

Table 17: Patient characteristics as barriers

Repeating Idea	Text
<p>The patient was an inappropriate candidate for IUC if the patient has never used birth control or the patient has never had a pelvic exam.</p>	<p>If a kid comes in and wants pills or wants a patch or wants a ring, I think that's a much more realistic thing, especially for a kid who's never used birth control... If I'm counseling someone who has no knowledge of the methods, I mention the IUD. I always give everyone a sheet that summarizes all of them, but I feel like it's not usually the first line for someone who's never used birth control... You know, it involves two or three visits. A lot of these girls have never had pelvic exams. They don't understand the process and they'll say 'You mean I'd have to take my underwear off?' They don't really understand that it is a procedure, that they're gonna have some discomfort and then there are a host of other issues that come up. So for someone who's never been sexually active or who is interested in a particular method like a pill or a patch or a ring, that's usually the best way to start. I always say, 'If this doesn't work out for any reason we can always talk about other things.'</p>
<p>Younger adolescents are inappropriate candidates for IUC.</p>	<p>You know, for the very, very young girls... I do not—I just I—I feel uncomfortable with that... I just feel like, you know, those really young ones, I do not want to risk that.</p>
<p>A patient is an inappropriate candidate if she has a current STI or history of STI, or if she is at high risk of contracting an STI.</p>	<p>I do worry about kids who don't use condoms and have multiple partners.</p>

	<p>I have a girl here who like every other month she has gonorrhea or chlamydia and we treat her, then it clears, sometimes it does not, and she gets re-infected and it just continues and we counseled her with this and with that. I do not think I would send her for an IUD.</p>
	<p>A current STI... If she has a sexually transmitted infection at the time and she decides that she wants it. And I guess if she was using Mirena then any kind of contraindication to the hormonal contraception</p>
<p>Patients are inappropriate candidates if they are doing well on different method.</p>	<p>If it's someone who, you know, has been doing well on a method or you took pills in the past and liked it and didn't have a problem, I'll mention that it's an option but I normally won't spend as much time on it.</p>
<p>Patients are considered inappropriate candidates if they would likely fail to report medically dangerous problems if they come up.</p>	<p>Then there are kids that aren't mature enough to report a problem and to deal with, you know, if let's say, for example, they are having pain or bleeding and might not be the most diligent about coming in... I do [feel like that's different with IUC versus other forms of contraception] because they're eventually gonna run out of a pill or a patch... They're not going to run out of this and if you're ignoring something that needs to be addressed, they could wind up with a bad problem.</p>

<p>The patient is considered inappropriate if she has painful periods, there are medical contraindications, or the patient has a small cervix or another anatomical problem that makes insertion difficult.</p>	<p>Well if she has a medical contraindication, you know, there are some kids that have issues that they shouldn't use an IUD. Some autoimmune kids, you know, we have to be careful about their immunosuppression. Diabetic patients that have very uncontrolled diabetes and feel uncomfortable inserting an IUD until her sugars are more under control.</p>
	<p>Maybe she—if she has a history of crazy—history of a ruptured uterus, maybe not. Or... if she has a history of clots. The Mirena's not for her [if] she has had headaches like migraines. Like really bad migraines... If she was told in the past that something was wrong with the uterus. And just assess how she would react over the period.</p>
	<p>We have like one privoder putting IUDs in for like over 25 years. And she feels like the Mirena is a little bit more difficult insertion for them... because of [the] wider barrel.</p>
	<p>Like she had like an anatomical problem like bifid uterus.</p>

Provider focused.

Providers mentioned several ways in which they themselves introduced barriers to IUC counseling, specifically in terms of a perceived lack of knowledge or a view of IUC as being risky in some way.

Knowledge.

Provider knowledge was considered a barrier for IUC counseling when a provider feels that that his/her knowledge about IUC efficacy/safety is insufficient to effectively counsel for IUC. Though seven providers mentioned knowledge as a facilitator, four of eight providers still believed, despite increased knowledge due to training, their knowledge was still insufficient, and so they mentioned provider knowledge as a barrier in their interviews. See Table 18 for repeating ideas about provider knowledge as a barrier and supporting sections of text.

When a provider perceived himself/herself as lacking knowledge, the practitioners' comfort level decreased, and that practitioner was less likely to counsel for IUC. One provider said, "Well, I've been trained, but I don't counsel that often, so I feel like I can benefit from more training or just a refresher course. I don't feel that confident in my abilities, and I do have a handout that I give patients, but I often feel like I have to look at it to kind of remind myself about certain features of the IUD."

Table 18: Provider knowledge as a barrier

Repeating Idea	Text
Lack of knowledge leads to decreased confidence and infrequent counseling.	[I feel] less confident so with the IUDs since I do not do that often.
	I feel okay. I mean, I know there's room for improvement, but I feel—I take a lot of time. So I feel like I could—I would give myself maybe like a B-. Like I feel like I could improve.

	Well, I've been trained, but I don't counsel that often, so I feel like I can benefit from more training or just a refresher course. I don't feel that confident in my abilities, and I do have a handout that I give patients, but I often feel like I have to look at it to kind of remind myself about certain features of the IUD.
	I think that I would first bone up on my own knowledge of IUDs and just get a little bit more confident in counseling for them, and then I would just start offering it more.
	I feel not greatly confident because... I don't know, maybe I am just, because I always want to question my interview technique.

Perception of Risk.

Perception of risk was considered a barrier for IUC counseling when a provider perceives IUC insertion to be a risky procedure for the patient. Three of eight providers mentioned risk as a barrier in their interviews. See Table 19 for repeating ideas about perception of risk as a barrier and supporting sections of text.

Specific examples of risks noted by the providers were: insertion is an invasive and/or painful procedure; there is a risk of bleeding, perforation, and infection; and IUC is a difficult method to discontinue if there are problems. IUC is a difficult method to discontinue if there are problems. One provider said:

Well, the IUD's an invasive procedure and there's always a risk of infection or bleeding or perforation. So you know, you're doing something that has potential problems. Now most of the time kids do very well, it's not a problem, the worst thing that happens is it falls out easily or we have to take it out if they're having difficulties. But it is something that does carry a measure of risk and also, you know, they could potentially have a problem six

months, nine months down the line... But I think that it is a lot easier to stop using a pill or a patch than it is to have to deal with an IUD problem.

Table 19: Perception of risk as a barrier

Repeating Idea	Text
Insertion is an invasive and/or painful procedure.	It's not something that I'm gonna push down someone's throat to get it because it's a painful procedure.
There is a risk of bleeding, perforation, and infection.	Well, the IUD's an invasive procedure and there's always a risk of infection or bleeding or perforation. So you know, you're doing something that has potential problems. Now most of the time kids do very well, it's not a problem, the worst thing that happens is it falls out easily or we have to take it out if they're having difficulties. But it is something that does carry a measure of risk and also, you know, they could potentially have a problem six months, nine months down the line... But I think that it is a lot easier to stop using a pill or a patch than it is to have to deal with an IUD problem.
	Risk, perforation, infection.
	Well, the IUD is invasive. But the biggest risk like I said would be the perforation, the infection.
	With the IUD, she is likely going to get a PID and who knows what would go from there.
IUC is a difficult method to discontinue if there are problems.	She'll come in everyday complaining, complaining, complaining and she wants this out and she'll do whatever it takes to get there.

System focused.

Providers mentioned several ways in which there were broader systemic barriers to IUC counseling.

No health educator on site.

As mentioned earlier, a health educator was defined as a full-time staff member present in clinic whose sole job is to counsel and educate students about health topics including reproductive health and pregnancy prevention, and not having a health educator on site was mentioned as a barrier for counseling. Three of eight providers mentioned issues related to the lack of a health educator on site as a barrier in their interviews. See Table 20 for repeating ideas about a lack of a health educator as a barrier and supporting sections of text.

Providers mentioned the lack of classroom and community outreach as one such barrier. One provider said, “In this school, I don’t know what the form of education—I know that they do healthy lifestyle modules here with the health education teachers.... I don’t know what exactly they say but I think that with the seniors that they talk about it... We’ve done classroom outreach but not specifically with the health educators in our school... I couldn’t really outreach to the school... I don’t think I could do anything more. I mean, I can’t put IUD posters in the hallway. That’s a no-no. That’s not gonna happen.”

Practitioners also reported that many issues vie for time in a clinical encounter, and they are unable to include comprehensive contraception counseling without the assistance of a health educator. One provider said:

Time... It gets really chaotic sometimes... I have somebody in my room for reproductive health and somebody else with a fever there, in the clinic full of patients, so it really does get really—sometimes time is a factor... Maybe on those busy days just a time factor... We used

to have a health educator and it takes a long time to really talk to a kid about contraceptive methods with choices. It really takes a long time especially for the first visit. So you know that's really been difficult for me since they took away the health educator. She used to spend two hours with them sometimes. And that's what they need... I feel like I need help. You know, I cannot sit here with a 12-year-old and tell her about these methods and help her comprehend me in a 15-minute session.

Table 20: Lack of a health educator on site as a barrier

Repeating Idea	Text
Lack of classroom and community outreach is a barrier.	In this school, I don't know what the form of education—I know that they do healthy lifestyle modules here with the health education teachers.... I don't know what exactly they say but I think that with the seniors that they talk about it... We've done classroom outreach but not specifically with the health educators in our school... I couldn't really outreach to the school... I don't think I could do anything more. I mean, I can't put IUD posters in the hallway. That's a no-no. That's not gonna happen.
	The only thing I can think of is better advertising. I mean... We are not the man in power to really go into the classrooms... access every student to tell what the services are... What's needed is this kind of like more public advertising... in the community and the school.... [We] really need to get into the community and the classroom and just—not just the IUDs. To support the service that we offer, like people know what is available.

<p>Many issues vie for time in a clinical encounter, and providers are unable to include comprehensive contraception counseling without the assistance of a health educator.</p>	<p>Time... It gets really chaotic sometimes... I have somebody in my room for reproductive health and somebody else with a fever there, in the clinic full of patients, so it really does get really—sometimes time is a factor... Maybe on those busy days just a time factor... We used to have a health educator and it takes a long time to really talk to a kid about contraceptive methods with choices. It really takes a long time especially for the first visit. So you know that's really been difficult for me since they took away the health educator. She used to spend two hours with them sometimes. And that's what they need... I feel like I need help. You know, I cannot sit here with a 12-year-old and tell her about these methods and help her comprehend me in a 15-minute session.</p>
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No inserter on site.

As mentioned earlier, an inserter was defined as someone on clinic staff who is available at least on a part-time basis to do IUC insertion on site in the school clinic, and not having an inserter on site was mentioned as a barrier for counseling. Five of eight providers mentioned the lack of an inserter on site as a barrier in their interviews. See Table 21 for repeating ideas about the lack of an inserter on site as a barrier and supporting sections of text.

One provider said, "I don't have IUDs available. I don't know how to insert them... If they're still on the fence then I bring up IUDs."

Table 21: Lack of an inserter on site as a barrier

Repeating Idea	Text
The lack of an inserter on site is a barrier.	Most important is that it is not put in here. It is not taken out of her. So if it is one of those things where you think you are going to wake up tomorrow and want it out, it cannot happen here. We are going to have to refer you.
	Most of the girls want what is behind me. So that they can start on their own, stop on their own, if there is a problem they can come right here.
	Then the inconvenience of having to make an appointment and go to someplace else.
	We have to send them to another location... It's not a big issue but it is a small issue... But it would be more convenient if we [inserted] here.
	I think if we have the ability to make it more convenient for them they might use it.
	I don't have IUDs available. I don't know how to insert them... If they're still on the fence then I bring up IUDs
	Even though I explain to them that, like it is an adolescent-friendly health center, blah, blah, blah, I would be coordinating the appointment for you, there are a little that just going offsite I feel like they're kind of reluctant

Waiting time for insertion.

Waiting time for insertion was considered a barrier for IUC counseling when a provider perceived inconvenience associated with IUC insertion. Six of eight

providers mentioned the wait for insertion as a barrier in their interviews. See Table 22 for repeating ideas about waiting time for insertion as a barrier and supporting sections of text.

Wait for insertion was relevant even for providers who worked at clinics with an inserter on site; providers with and without inserters on site mentioned that it is difficult to schedule an appointment for insertion and that the device itself has to be ordered, and so it is not immediately available for insertion. One provider said, “I think from speaking mainly from students in the school, they like the idea of the IUD, but there is a lot of failure about going through the whole process of the IUD.”

Providers reported that they wanted patients to leave with a method “in hand”, and they liked to save IUC for a later discussion if IUC could not take care of their contraception needs immediately. One provider said, “IUD is not the first priority. I will go for the birth control because I want them to leave with something sometimes... So it might be easier to go more and ask in like the second or third encounter with contraception.” Another said, “I don’t have IUDs available... So the ones that I talk about first are the ones that I have physically available, because I feel like that’s a big, you know, kids will start using them if you give it to them.”

Table 22: Waiting time for insertion as a barrier

Repeating Idea	Text
It is difficult to schedule an appointment for insertion and that the device itself has to be ordered, and so it is not immediately available for insertion.	It will take a couple of days.

	I think from speaking mainly from students in the school, they like the idea of the IUD, but there is a lot of failure about going through the whole process of the IUD.
Providers wanted patients to leave with a method “in hand”, and they liked to save IUC for a later discussion if IUC could not take care of their contraception needs immediately.	IUD is not the first priority. I will go for the birth control because I want them to leave with something sometimes... So it might be easier to go more and ask in like the second or third encounter with contraception.
	I don't have IUDs available... So the ones that I talk about first are the ones that I have physically available, because I feel like that's a big, you know, kids will start using them if you give it to them.

Culture of the profession.

Culture of the profession was considered a barrier for IUC counseling when the provider perceived a lack of interpersonal collegial support within the professional community for IUC counseling. Six of eight providers mentioned the culture of the profession as a barrier. See Table 23 for repeating ideas about the culture of the profession as a barrier with supporting sections of text.

Providers mentioned that IUC is not encouraged as a contraception option for adolescents in graduate programs for physicians and allied health professionals. Therefore, IUC is not on their radar when they begin working and the medical community is assumed to be less supportive of IUC counseling. One provider said, “I would like to see more of an acceptance of the LARCs [in medical schools].”

Table 23: Culture of the profession as a barrier

Repeating Idea	Text
IUC is not encouraged as a contraception option for adolescents in graduate programs for physicians and allied health professionals.	For years, we were taught to offer the pill.
	For years, it had been even for a medical school they come here and offer the pills... I would like to see more of an acceptance of the LARCs.

Chapter IV

Discussion

The current study attempts to enrich the existing literature and policy regarding the role of IUC in decreasing adolescent pregnancy, and more specifically, to explore the facilitators and barriers to adolescents' accessing IUC in the health care system. This study of urban school-based health providers provides important insights into clinical practices around counseling of intrauterine contraception to adolescents.

Despite high reported contraception use by adolescents in the U.S., teen pregnancy rates are among the highest in the industrialized world (Kohler, Manhart, & Lafferty, 2008). Teen pregnancy rates in New York City are particularly high. More than 1 in 10 adolescents in the Bronx became pregnant in 2009. More than 1 in 9 Black adolescents in New York City became pregnant in 2009. For the past decade, teen pregnancy rates in New York City have exceeded the national rate by 20% (NYC DOH, 2011).

Inconsistent and incorrect contraception use has been cited as a significant direct cause of unintended pregnancy (Landry, Wei, & Frost, 2008). Poor contraception adherence has been attributed to factors such as forgetting, misunderstanding of correct use, not admitting to being sexually active, having difficulties planning ahead, immaturity and irresponsibility, and fearing side effects of contraceptive methods (Smith & Oakley, 2005; Nelson, Westhoff, & Schnare, 2008; Kohli & Nyberg, 1995). Even in the school-based settings studied in this

current research with lower pregnancy rates, providers are noticing these same patterns of inconsistent and discontinuous contraception use. For example, providers mentioned that adolescent patients were frequently failing to use their chosen method on a day to day basis, which resulted in unintended pregnancies.

Many of the problems relating to inconsistent and discontinuous use can be obviated by using long acting reversible contraception (LARC), i.e. IUC and etonogestral implants. LARC methods have higher continuity rates than do user-dependent forms of contraception (Behringer et.al., 2011; Zibners, Cromer, & Hayes, 1999). Thus, increasing the use of LARC methods has the potential to decrease rates of unintended teen pregnancies in the U.S.

Although LARC methods are safe, easy to use, and provide continuous protection from pregnancy for up to 10 years, very few women in the U.S. report LARC use (Mosher & Jones, 2010). The issue of low IUC utilization, the preferred LARC method, is multifactorial and includes product, provider, and practice guidelines issues. In particular, many primary care providers (PCPs) do not provide IUC for adolescents because PCPs perceive low patient interest (Rubin, Davis, & McKee, 2013).

Teens are overwhelmingly receiving the bulk of their formal sex education in schools (Lindberg, Santelli, & Singh, 2006; Mueller, Gavin, & Kulkarni, 2008). However, messages promoted through school-based sex education vary greatly (Woo et.al., 2011). IUC counseling in school-based settings has not yet been studied. Thus, the current study conducted research with school-based health care providers who counsel adolescents about sexual health behaviors.

The results of the current study provide a basis for designing future interventions to increase adolescents' access to IUC in school-based health clinics. This is crucial, as optimizing access to reliable, user-independent forms of reversible contraception would be a concrete step in addressing the persistent public health issue of adolescent pregnancy.

Explanatory Model of Provider Counseling Behavior

The Capability, Opportunity, Motivation-Behavior System theory (Michie, van Stralen, & West, 2011) was identified as an interpretative model for understanding the facilitators and barriers to IUC counseling. As mentioned earlier, this model was specifically chosen because it was developed in the field of health psychology to improve the design of behavior change interventions. The Capability, Opportunity, Motivation-Behavior System is comprised of three major components that influence behavior: (1) Capability - *"having the necessary knowledge and skills"*; (2) Opportunity - *"factors that lie outside the individual that make the behavior possible or prompt it"*; and (3) Motivation - *"those brain processes that energize and direct behavior"*. The Capability, Opportunity, Motivation-Behavior System is the same conceptual model that was used to describe IUC provision to adolescents in primary care. (Rubin, Davis, & McKee, 2013)

Capability in this model includes a provider's knowledge and belief that an adolescent regardless of parity could be an IUC candidate and the provider's skills to discuss and/or insert IUC. Capability factors are objective and factual. Capability is the prerequisite that activates other components of the explanatory model.

In general, school-based providers' level of capability was quite high, as both hospitals' programs provided regularly scheduled formal training and continuing education programs for providers that kept providers up-to-date with research supporting the efficacy of IUC, professional guidelines supporting the provision of IUC for adolescents, and best practices for reproductive health counseling. For example, all providers participated in the Hospital 1-sponsored RECAP program, which specifically trains school-based staff in reproductive and sexual health counseling. Furthermore, all participants reported knowledge of professional guidelines supporting adolescents' IUC use, which guided clinical practice. Overall, all respondents were aware of current criteria for IUC eligibility, and they practiced based on those criteria.

During interviews, providers cited objective, factual knowledge of IUC safety and side effects. They were familiar with current research and professional guidelines regarding adolescents' use of IUC. They readily and accurately cited risk factors and medical contraindications associated with IUC use, as well as the relative infrequency of those risk factors and medical contraindications within the general population.

Despite this, only four of eight providers also reported that they subjectively perceived themselves to be knowledgeable and capable; some providers reported that more formal training would be helpful in increasing their self-confidence in terms of their ability to counsel for IUC. For example, one provider mentioned that the training and educational materials provided by the program were very helpful in increasing her knowledge about IUC. She said, "We were given an in-service on how

to screen potential candidates to see if they were eligible to get an IUD. We were given packets of information, so that we could just fill out certain pieces of information [and] fax it to the clinic that would be doing the insertion. Also included in those packets were directions for the teen on how to get to the clinic. I mean, it was all pretty much just handed to us.” However, she still reported that she did not feel confident in her abilities to counsel effectively, and so she shied away from discussing IUC with her patients. She said:

I feel okay. I mean, I know there’s room for improvement, but I feel—I take a lot of time. So I feel like I could—I would give myself maybe like a B-. Like I feel like I could improve... Well, I’ve been trained, but I don’t counsel that often, so I feel like I can benefit from more training or just a refresher course. I don’t feel that confident in my abilities, and I do have a handout that I give patients, but I often feel like I have to look at it to kind of remind myself about certain features of the IUD... I think that I would first bone up on my own knowledge of IUDs and just get a little bit more confident in counseling for them, and then I would just start offering it more.

In sum, though she has received extensive training and has been provided with a great deal of educational support from her clinic, counseling for IUC is not routine or automatic for her. It is unclear what came first—whether her lack of confidence stems from the fact that she counsels so infrequently, or if the infrequency of counseling leads to a decrease in confidence—but the issue is likely cyclical and multifactorial. Capability here is negatively influenced by a shortage of situations in which she can practice her skills and develop her confidence.

Opportunity involves factors outside of the individual provider, or objective “environmental issues” that influence behavior. The school-based health programs studied were formally structured in a way to maximize opportunity for IUC counseling. Programs provided funding to support IUC counseling and increased

access to the devices for insertion; they facilitated scheduling of insertions at outside clinics; they provided adequate support staff; they designated time specifically for counseling; and they supplied clinics with visual aids, educational materials, and demonstration models to enhance counseling. In addition, the “culture of the clinic” was also cited as a major opportunity facilitator by all providers. All respondents mentioned having colleagues who are supportive of IUC provision to adolescents, and most respondents mentioned a specific reproductive health champion within the program. This supportive culture and professional environment that actively encourages IUC counseling makes an individual provider more likely to counsel about IUC.

On the other hand, a principal component of opportunity was the perception that very few adolescents are interested in IUC. Though the programs are well resourced and create an extremely supportive professional culture, the patients reportedly are poorly informed about IUC, and therefore, they have misperceptions about IUC, lack of interest in IUC, and unwillingness to discuss IUC as a viable option with providers. Thus, many respondents reported that they limit their counseling to adolescents who express interest in IUC.

Providers indicated that resistance and potential resistance to IUC use combined with limited time alone with adolescents influenced their willingness to counsel or insert the devices. Many reported that they had many issues to cover in the clinical encounter, and they wanted the patients to leave with a reliable method of contraception in hand. One provider said, “If they are interested in IUD then I will go in [depth with] them... [However], they don’t really—that’s like their last choice,

really. They don't like it for some reason... If they say no, that's not for me, then I move on from it." That same provider, like many others, attributed lack of interest primarily to media influences; the patients were more aware of, and thus more interested in, contraception methods that were advertised. The provider said, "So you know, most of the time people think of birth control and now they come in and say the pills and a lot of them will say the patch. Because I think that's the most popular ones that are being advertised." Many providers noted that advertisements stimulated conversation about specific forms of contraception among peers, which further influenced interest.

The presence of a health educator on site was discussed by participants as a major facilitator for IUC counseling, since health educators provide crucial community and classroom outreach sessions, which increase opportunity by increasing patient knowledge and interest. Health educators inform patients about IUC, which makes the patient more knowledgeable and interested, and increases the opportunity for counseling. Furthermore, health educators have more time in their schedules to talk about IUC in depth, which also significantly increases the opportunity for counseling. Other providers mentioned that many issues vie for time in the clinical encounter, and so they cannot include comprehensive contraception counseling due to time constraints; the health educator does not have many competing issues to cover, so there is greater opportunity for IUC counseling to be covered in depth with a health educator on site. Providers described different levels of opportunity based on the hospital that operates their clinics and whether or not those hospitals included health educators on staff; specifically, one hospital

hires health educators as full-time staff members, which increases the opportunity for and frequency of IUC counseling, and the other hospital does not, which decreases the opportunity for and frequency of IUC counseling.

Conversely, the lack of an inserter on site on a regular basis was another major opportunity barrier identified by providers. Again, providers described different access to inserters based on the hospital that operates their clinics; specifically, one hospital schedules an inserter on site on a weekly basis, which facilitates access to IUC, and the other hospital does not provide inserters on site, which hinders access to IUC. The lack of consistent access to an inserter is a major barrier since, when a patient wants IUC but there is no inserter on site, scheduling the insertion itself often necessitates another office visit or referral to a different site. This may lead to patient discomfort (ie. procedure is performed by an unfamiliar clinician in an unfamiliar clinic, “They really are afraid of like having to go somewhere”), scheduling conflicts (ie. patients need to miss school for insertion appointment at outside clinic), and confidentiality issues (ie. inserting clinic may bill through insurance and bill gets sent home to parents, or parents must give permission for student to miss school to go to appointment at outside inserting clinic). The lack of an inserter on site is intimately connected to decreasing patient interest; the patients reportedly do not want to travel to an outside clinics for insertion, which further decreases the opportunity for counseling. Furthermore, providers feel uncomfortable when they feel that patients cannot “walk out the door” with a reliable method in place.

Providers varied in the degree to which they felt family and/or perceived

parental concerns influenced the opportunity to counsel for IUC. Some providers noted parental resistance to IUC use, while others felt parents in the community to be supportive of IUC. Though there were no systems limitations to inserting IUC at the clinics such as requirement of parental permission/consent or insurance/billing limits to confidentiality, parents still frequently factored into providers' decision-making processes. A few respondents said they were uncomfortable with the idea of IUC use (compared with prescribing other contraception methods) without parental permission or consent. For example, one provider said, "I feel uncomfortable with that because the parent is not aware and I understand this is reproductive healthcare but you're—I just don't feel comfortable with that." Again, though there were no systems issues interfering with IUC counseling in this case (i.e. confidentiality agreements specified that contraception counseling and prescription could occur without parental consent), the provider reported subjective feelings of discomfort encouraging IUC use to adolescents without parental approval. Some clinicians mentioned that they specifically attempt to engage and educate the parents in order to make parents more supportive of contraception counseling and provision and, by extension, to increase opportunity for IUC counseling. One clinician, in particular, reported that the clinic was successful at engaging parents, and the parents who were active and involved in the clinic were more supportive of (and thus facilitated) IUC counseling.

Motivation involves internal factors within the provider that influence behavior. Though in Michie's conceptual model motivation is defined as "those brain processes that energize and direct behavior", for the purpose of this research,

that definition is expanded to include any subjective, experiential, or emotional factors that are perceived uniquely by the individual provider and that influence the provider's behavior. Motivation is the most complex and challenging, yet arguably the most crucial and influential, component of the Capability, Opportunity, Motivation-Behavior system.

Motivation in the context of the conceptual model should be distinguished from the code "Provider Motivation"; motivation within the conceptual model is the grand sum of internal factors that drive behavior, where as provider motivation within the coding system is more specifically the compatibility of IUC counseling with an individual provider's broader professional goals.

Motivation to prevent teen pregnancy was high among all participants. All providers perceived teen pregnancy to be a major public health problem in the populations served. They all reported that adolescent girls in the schools were getting pregnant each academic year, and the unintended pregnancies were in large part attributable to inconsistent and discontinuous contraception use. However, past experience with IUC was a moderating variable for overall motivation; those with positive past experiences were more likely to counsel for IUC than those with negative past experiences, even though motivation to prevent teen pregnancy was approximately equal among all providers. Positive past experiences led to the belief that most girls tolerate IUC well, and so the provider had fewer reservations about counseling. One provider said, "The majority are okay... For the most part, they tolerate it fine." On the other hand, when a provider has had negative past

experiences with IUC, either professionally or in his/her own personal life, that provider had more reservations about IUC counseling. One provider said:

We have girls who had spontaneous expulsions, spontaneous partial expulsions. We've had girls who had difficult insertions. We had one girl who actually had localized bleeding where she had to be hospitalized... We have girls who the next thing want them out because they are in pain... and there are girls who want them out for some reason because they feel it, their partners feel it... So, what I mean, and I probably think for the most part like if you do larger volumes of IUDs they become like a very small percentage. But the numbers we are seeing if we have, like 8, 10 girls getting an IUD per year we are seeing more [problems]. Also, perception of risk was a moderating variable for overall motivation; those who perceived insertion to be a risky procedure were less likely to counsel for IUC than those who believed the level of risk was relatively low. Interestingly, the provider who reported negative past experiences did not perceive a high level of risk associated with IUC insertion, since he was aware that scientific literature points to IUC safety. Providers who had less experience in general with IUC were the ones who perceived a higher level of risk associated with the device.

Behavior around IUD counseling

Capability, opportunity and motivation all influence providers' counseling of adolescents about IUC. Counseling ranges from infrequent (One provider said, "I'll be honest with you. I don't go into it as much as I do with the other ones, so maybe 40% I guess. It could be more, could be more.") to everyday: (Another provider said, "Every time we talk about birth control options, we talk about them... I place a higher priority because I think it is the easiest method.")

Case example

Several providers described the process by which their behavior related to IUC counseling to adolescents changed as a result of capability, opportunity, and motivation factors. For example:

Before I wasn't doing IUD counseling. I think in the past year or so it's been more, and in the past couple of months I have been making sure that I educated about—educate in all of my counseling sessions... I think it is more information that we were receiving and more training that our program was receiving. I think also—actually it's probably been two years now that we have been doing it more... So we were able to refer students to get IUDs for free and our program has done a wonderful thing... We have a provider that's actually inserting IUDs... I know M has been doing it for a while and I think that [the] program was a little hesitant, but I think we are doing it now and pioneering it. So yes. So I think because we were receiving our training and then we were part of this program and then we were encouraged to refer students for IUDs... I have been making a habit of it then because for a while I think as a provider, I thought obviously for the older kids, but it is not, it's for anyone. So I know I have done that change for myself.

The provider noted an increase in opportunity due to reduced barriers for insertion (ability to refer students to have IUC inserted for free, added presence of an inserter on site) and also due to champions within the program and an overall culture of the clinic supporting IUC counseling. She also reported an increase in capability due to professional education and training. The training provided knowledge of research and professional guidelines supporting adolescents' IUC use, which resulted in an increase in motivation due to a decreased perception of risk and an increased subjective level of comfort referring younger patients for IUC.

Advantage of Health Care in School Based Settings

School based health centers have historically been seen as a promising way of addressing unintended pregnancy for adolescents. School based health centers

provide adolescents with a wide range of sexual health services, including birth control information and referral, pregnancy testing, and pregnancy counseling (Kirby, Waszak, & Ziegler, 1991). The literature has documented that school based health centers are well-used by students in the schools served, and that for many students, school based health centers are their sole or primary source of health care (Kirby, Waszak, & Ziegler, 1991). Though research has been mixed regarding whether school based health centers have been effective in preventing adolescent pregnancy, the results from this study indicate that school-based health practitioners report that they provide much contraception counseling for high-risk youth.

This is the first known study of its kind to specifically investigate the dynamics of IUC counseling for adolescents among school based health practitioners, and one of the first to investigate the frequency of IUC counseling for adolescents among practitioners in general. Practitioners reported that data collected by school-based health programs strongly suggest that adolescent female patients of school based health clinics are less likely to get pregnant than are their same-aged peers who are not patients of school based health clinics. Also, results from this qualitative study suggest that school based health providers are more likely than their non-school based counterparts to provide IUC counseling to adolescents (Rubin, Davis, & McKee, 2013). This is due to a number of factors.

First, since the practitioners in the clinics studied are all employees of major research hospitals, they have access to the most current contraception research and guidelines, and are thus innovators of adolescent IUC provision in the Diffusion of

Innovations Model (Rogers, 1962). That is, they have advanced education, training, and the availability of health systems, are active seekers of new ideas, and are eager to implement innovations. One provider noted, "I think that it's not always trickled down to the general community of providers, but certainly in school health we have had access to the evidence."

Furthermore, the practitioners studied all reported that their clinics were formed with the clear mission to target low-income youth who are at high risk for teen pregnancy. The clinics and the practitioners who work in them have a focused goal of preventing teen pregnancy. (According to one provider, "That's [pregnancy prevention] the basis of our program.") The clinics are structured financially to support the mission of pregnancy prevention; they are supported by local and grant funding, which relieves them of productivity demands from their parent hospitals. Thus, they can provide services free of charge, eliminating financial and confidentiality barriers that typically beleaguer adolescent patients and practitioners in community clinics. One provider noted, "We have local funding. We have grants... We have productivity demands... but it does not affect my salary. I think that is why, I mean, like, we do have IUDs... So it is only supportive of that."

Also, their location within the school makes providers more aware of, more highly motivated, and better positioned to discontinue the cycle of teen pregnancy, academic failure, and poverty. Contraception counseling is at the top of their priority list in terms of time spent in the clinical encounter. Most providers reported that they discuss sexual and reproductive health issues at 100% of their clinical encounters. Specific efforts are made at student, family, and community engagement

and education. It is likely that the clinical staff is a self-selected population; those practitioners that are most strongly motivated to work with adolescents in poverty and prevent teen pregnancy seek jobs within school based health clinics. Therefore, overall, the cultures of the clinics are quite progressive and strongly supportive of IUC counseling. Specifically, provider 2 said, “Everybody from the psychologist to the health educator. Even the front desk lady [supports IUC counseling],” and another provider said, “I think our program has been very progressive when it comes to reproductive health.”

Also, the location within the school positions the clinics even more favorably than clinics like Planned Parenthood, which have similar advantages in terms of funding and confidentiality agreements. Since providers are located in the school, the patient population is a “captive audience.” That is, since the clinic is physically located in the same place that the patients spend most of their day, care can be provided more consistently, health status can be continuously monitored, and issues of scheduling conflicts and no-shows are eliminated. Also, though not specifically discussed in this study, it is likely that the clinic and its providers are more familiar to the students, so stigma is reduced, and patients are more likely to seek services. The location within the school likely makes the clinic, its providers, and its services seem less threatening to the patients.

Providers reported statistics and program data indicating that the school based health clinics were effective in decreasing the incidence of teen pregnancy in the populations served. One provider noted, “I have to say... we do not really—we get less than one pregnancy a month... for girls who use the clinic. I mean, this is a

large school... 6% to 7% [in our clinic] compared to like 15%, you know, 20% [citywide]... For the pregnancy, I think [they are] just more aware in this, the birth control is more available... But there's really not a high pregnancy rate."

Taken together, the data suggest that school based health clinics are structured to strongly support IUC counseling with financial resources, educational materials, and professional development opportunities for staff, as well as with interpersonal collegial supports; these supports were not reported for non-school based practitioners (Rubin, Davis, & McKee, 2013). The data suggest that, due to their ties with major research hospitals and their targeted and progressive goals of helping high-risk youth, school-based health practitioners place a higher priority on devoting clinical time to contraception counseling in general, and by extension, on IUC counseling, than do their non-school based counterparts.

Implications for Clinical Practice

Based on teen pregnancy rates as reported by participants, it seems that school based health centers make a difference and are effective in preventing teen pregnancy. The results of this qualitative interview study suggest that this difference is attributable to trained providers, peer support, and support from the school and hospital in the form of funding and support staff. A number of concrete interventions are suggested.

School based clinics should be set up in schools in which students are at high risk for teen pregnancy. Clinics should be affiliated with research and teaching hospitals. Clinics should receive supports from both the hospital and the host school.

Supports should come in the form of financial resources, educational materials, adequate support staff, scheduling assistance, confidentiality agreements, and professional development opportunities for staff.

Each clinic should be staffed with both a health educator and an inserter. Health educators will counsel and educate students about IUC. They will conduct classroom and community outreach. They will help to reduce barriers of time limitations faced by the other providers (i.e. nurses, physician assistants, and medical doctors) in the clinic. Each clinic should also be staffed with a full-time staff member who can do IUC insertions on a daily basis. Inserters on site will eliminate the inconvenience associated with IUC insertion. They will allow for clinic to take care of patients' contraception needs immediately.

In terms of professional development opportunities, the clinics should continue to provide formal training and education to providers. These training should include mock counseling sessions to give providers the opportunity to practice counseling. This will help to increase providers' confidence in IUC counseling skills. Clinics should also provide regular peer supervision. This will also serve to increase provider confidence. Increasing confidence will likely increase the frequency of IUC counseling. If the provider feels more confident, he/she will be more likely to counsel adolescents for IUC.

Clinics should conduct both classroom outreach and community outreach. In this study, participants reported that advertisements have been effective in increasing interest in other forms of contraception. Thus, outreach should be conducted in the form of talks and public service announcements (i.e. print ads and

commercials that can be shown on bulletin boards, school publications, and televisions in school). This will increase patient and parent awareness, knowledge, and interest, and it will increase discussions among patients, peers, and parents about IUC. It will also decrease the barrier of family opposition to IUC.

In terms of broader systemic changes, medical schools and other healthcare graduate programs should provide formal training in IUC counseling. Programs should provide students with updated knowledge about IUC eligibility, research supporting the efficacy of IUC, professional guidelines supporting the provision of IUC for adolescents, and best practices for reproductive health counseling.

Finally, school-based mental health practitioners should include reproductive health topics in their repertoire of counseling skills. Though reproductive health is largely a public health topic, counseling about reproductive issues certainly falls within the scope of mental health. This should not be off-limits to mental health professionals, as unplanned pregnancy ties into issues of parent-child attachment, educational attainment, and general psychological well being. It is time that mental health professionals, particularly school-based mental health professionals, become knowledgeable and comfortable addressing these topics with clients.

Methodological Limitations

The present study has several limitations. First, the sample size is quite small. Since the school-based health care movement is relatively young, not many school-based health clinics have yet been established in New York City high schools, and those that have been established are small in terms of number of staff members.

Second, despite the theoretically controversial nature of our research topic and the interviewer's efforts to minimize social desirability bias, interviewees knew that the interviewer's major research interest is IUC and adolescents. This likely resulted in respondents overestimating their inclusion of user-independent options during contraception counseling. Furthermore, due to selection bias, it is possible that respondents who volunteered to participate more frequently counsel or insert IUC as compared to those who did not participate. Third is generalizability. Laws concerning provision of reproductive health care to adolescents and parental involvement mandates vary by state. The clinics studied are located in New York City, which is a historically Democratic urban center; thus, the school-based health clinics studied receive funding and other governmental supports that eliminate barriers to IUC provision that are faced by health care providers in other settings. Providers in other geographic regions or health care settings likely face additional barriers to counseling.

Despite these limitations, this study has strengths including the rigor with which the interview guide was developed, the coding conducted, and the findings analyzed with respect to the established COM-B behavior change wheel. (Michie, van Stralen, & West, 2011) Both the interview guide and interpretative conceptual model used an established implementation science theory approach. Further research should investigate the ways in which the COM-B model, in addition to being a model of behavior, could provide a basis for designing and evaluating concrete interventions to increase provision of IUC for adolescents. Specifically, a

quantitative study could compare statistics on patient IUC use pre- and post-implementation of the interventions aforementioned.

In conclusion, there are numerous barriers to adolescents' accessing IUC within the current healthcare system. These include financial concerns, the clinical care environment, and providers' knowledge, attitudes, and beliefs. Providers weigh many factors when considering provision of forgettable contraception to adolescents, and they vary significantly in their comfort level with contraception provision overall. However, the school-based healthcare model appears to be a promising one for reducing barriers and increasing adolescents' access to IUC due to both the progressive nature of the model and the convenience with which the clinics are accessed by the patients.

A concrete step to address the persistent public health issue of adolescent pregnancy is optimizing access to reliable, forgettable forms of reversible contraception. Increasing access to IUC in school-based health clinics will increase the likelihood that each individual adolescent is able to select the most effective method that is right for her. Interventions to increase IUC access for adolescents in school-based clinics must be tailored to individual practices, up to date, and evidence based. Future research should also design and evaluate concrete interventions to increase IUC counseling among school based practitioners. Future research should also study the effect of school based practitioners' IUC counseling on adolescents' actual contraception use and counseling's impact on pregnancy and birth rates.

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Appendix A: Summary of Codes

Level 1	Level 2	Level 3	Definition	Specific examples	Relevant transcripts	Notes	Notes
Enabler	Patient	Characteristic	Attribute that is perceived as making the patient an appropriate candidate for IUC	Other methods have failed due to poor adherence/user error, patient is graduating high school and moving to college. He/she puts them at high risk for user error, age, weight, medical contraindications for hormonal methods make Paragard appropriate.	1, 3, 4, 5, 6, 7		
Enabler	Patient	Interest	Patient is perceived as being interested in IUC	Interest/knowledge is increasing because patients see commercials, classroom outreach, patients like that periods would become more regular/lighter with Mirena	2, 3, 4, 5, 6, 7, 8	Patient interest and knowledge are interrelated and subsumed under one code	Interest/knowledge is increasing because patients see commercials, classroom outreach
Enabler	Patient	Family	Family attribute that makes patient a perceived appropriate IUC candidate	Parents are unaware/unsupportive of sexual activity and so contraceptive method needs to be discrete, parents are aware of sexual activity and available to provide support at home, providers involve families in clinic which makes them more	1, 2, 4, 6, 7, 8		
Enabler	Provider	Knowledge	Provider is knowledgeable about research regarding IUC efficacy and safety	Provider is motivated to educate adolescents, prevent teen pregnancy, do not have to worry about user error	1, 2, 3, 4, 5, 6, 7, 8		
Enabler	Provider	Motivation	Provider is motivated to counsel due to perceived IUC compatibility with general professional goals	Training and education for staff (RECAP), funding, access to devices, facilitate scheduling insertion at outside clinic, adequate support staff, visual aids, educational materials, demos, devices for insertion, designate time specifically for	1, 2, 3, 4, 5, 6, 7, 8		
Enabler	System	Program support	Program offers financial and other resources to facilitate/support counseling	Managing Contraceptions guidebook, includes reproductive health articles and evidence	2, 4, 5	Particularly enabling when they conduct classroom outreach	
Enabler	System	Health educator on site	Presence of a staff member in clinic whose sole job is to conduct outreach and to counsel/educate students about health topics		3, 5, 6, 7, 8		
Enabler	System	Guidelines	Staff member is aware of and influenced by professional guidelines that support adolescents' use of IUC		1, 3, 7		
Enabler	System	Insertion on site	Someone on clinic staff is available to do IUC insertion on site		4, 6, 7, 8		
Enabler	System	Culture of profession	Perceived interpersonal collegial support within professional community for IUC counseling				
Enabler	System	Culture of clinic	Perceived interpersonal collegial support within clinic for IUC counseling		1, 2, 3, 4, 5, 6, 7, 8		
Barrier	Patient	Interest	Patient is perceived as not interested in IUC	Champions, supportive administration, norm for clinic, no push back	1, 2, 3, 4, 5, 6, 7, 8		
Barrier	Patient	Family	Family attribute that makes patient a perceived inappropriate IUC candidate	Influenced by media, family, want periods each month, cramping, do not want something inside, think insertion is invasive, do not want pelvic exam, do not want heavier/irregular periods with Paragard, want other methods, do not want to go to parent, not aware of IUC, discuss contraception and sexual health openly so no need to hide, family negatively affects interest/knowledge, patients want what family has, do not want bills from insurance companies sent to parents after	2, 4, 5, 6, 7, 8		
Barrier	Patient	Characteristic	Attribute that is perceived as making the patient an inappropriate candidate for IUC	Never used birth control, never had pelvic exam, doing well on different method, will not report problems if they come up, current STI, history of STI, will not be able to tolerate procedure, not yet sexually active, painful periods, medical	1, 3, 4, 5, 6, 7, 8		
Barrier	Provider	Knowledge	Provider either lacks knowledge about efficacy/safety or possesses inaccurate knowledge about efficacy/safety of IUC	Not confident	2, 3, 6, 8		
Barrier	Provider	Risk	Provider perceives risk to him/herself or the patient if he/she is to provide counseling for IUC	Insertion is an invasive procedure, painful procedure, risk of bleeding, perforation, infection, hard to discontinue if problems	1, 2, 3		
Barrier	System	Waiting time for insertion	Provider perceives inconvenience associated with IUC insertion	IUD is not immediately physically available, wants the patient to leave with a method in hand, scheduling issues, have to go to another site for insertion, save IUD for later discussion if problems cannot be taken care of immediately	1, 2, 4, 5, 6, 8	May be relevant even if there is an inserter on site!	
Barrier	System	No inserter on site	Nobody on clinic staff is available/qualified to do IUC insertion on site; insertion requires outside referral		2, 4, 5, 6, 8	Contraception counseling is time-intensive; health educator allows for other practitioners to free up time in the clinical encounter; cannot spend too much time on contraception counseling	
Barrier	System	No health educator on site	No staff member in clinic whose sole job is to conduct outreach and to counsel/educate students about health topics		3, 7, 8		
Barrier	System	Culture of profession	Perceived lack of interpersonal collegial support/collegial disapproval within professional community for IUC counseling	IUC is not as well known or accessible for practitioners outside NYC, not taught as an option in medical schools	5, 6, 8		

Appendix B: Research Project I

Defining teen pregnancy in the United States as a public health problem

Despite high reported contraception use by U.S. adolescents, teen pregnancy rates are among the highest in the industrialized world. In 2006, approximately 750,000 U.S. adolescents became pregnant (Kost, Henshaw, & Carlin, 2010). 82% of these pregnancies were unplanned or unintended, and 39-51% ended in abortion (Finer & Henshaw, 2006). Adolescents in the United States have similar levels of sexual activity as do adolescents in other developed countries, such as Sweden, France, Canada, and Great Britain. However, teen pregnancy rates are significantly higher in the U.S. than in other developed countries. 1995 data reveals that adolescent pregnancy rates were 83.6 per 1000 in the U.S. (roughly 8.4%), as compared with 47.0 in the United Kingdom, 45.4 in Canada, 24.9 in Sweden, and 20.2 in France (Kohler, Manhart, & Lafferty, 2008).

A 2006 study conducted by Saul Hoffman outlined a number of alarming patterns describing teen childbearing in the United States. The research demonstrated that adolescents have more unintended pregnancies each year than any other age demographic in the U.S. 80% of adolescent pregnancies each year are unintended. A strong correlation exists between teen parenting and adverse outcomes to the adolescent mother. Compared with women who postpone childbearing until after their teenage years, adolescents who become mothers are more likely to suffer adverse health and social consequences. Parenthood is a leading cause of school drop out among adolescent women. Fewer than 2% of teen

mothers attain a college degree by age 30. The study did not reach a definitive conclusion regarding whether the relationship between teen parenting and various adverse outcomes is actually causal, but it theorized that the relationship is largely mediated by the adverse economic conditions associated with the pregnancy. Given the increasing demands in schooling necessary to qualify for a well-paying job, the relationship between teen pregnancy, academic failure, and poverty is cause for concern.

Children of adolescent mothers experience similar adverse health and social conditions to their mothers, and experience a poorer quality of life than do their peers born to older mothers (Santelli et.al., 2006). Children of adolescent mothers do not perform as well as children of older mothers on measures of child development, school readiness, cognition, language and communication, and interpersonal skills (Terry-Humen, Manlove, & Moore, 2005). Children of teen mothers are more likely to drop out of high school. Approximately 67% of children born to adolescent mothers earned a high school diploma compared to 81% of children of older mothers (Hoffman, 2006). Finally, daughters born to teen mothers are three times more likely to become parenting teens themselves when compared to daughters of older mothers (National Campaign to Prevent Teen Pregnancy, 2010).

Pregnancy rates and contraception use among sexually active teens in New York City

Over the past decade, teen pregnancy rates in New York City have consistently exceeded the national rate by approximately 20%. Between 2000 and

2009, data was collected and published by the New York City Health Department's Bureau of Maternal, Infant, and Reproductive Health (2011) examining trends and disparities in teen pregnancy in New York City. Results from the report indicated that the vast majority (87%) of teen pregnancies that occur annually in New York City are unintended.

Teen pregnancy rates vary by neighborhood and socioeconomic status. Adolescents in high-poverty neighborhoods are three times more likely to become pregnant than their same-aged peers in low-poverty neighborhoods. Of the five boroughs, teen pregnancy rates are highest in the Bronx; in 2009, 105.6 per 1000 (more than 1 in 10) adolescents in the Bronx became pregnant. Non-Hispanic Black adolescents have the highest pregnancy rates of any ethnic/racial minority; in 2009, 123.4 per 1000 (more than 1 in 9) Black adolescents became pregnant.

Despite the alarmingly high teen pregnancy rates in New York City, data from the Youth Risk Behavior Survey indicated that sexually active adolescents in New York City overwhelmingly report using some form of contraception during intercourse (New York City Department of Health and Mental Hygiene, 2011). 73.4% of adolescents reported using a condom at last intercourse. 15.6% reported using either hormonal (i.e. birth control pills, patch, vaginal ring, or injections) or long acting reversible contraception (i.e. implantable contraception or intrauterine contraception) at last intercourse. Only 8.5% of sexually active adolescents reported using dual contraception (defined as condom with either hormonal contraception or long acting reversible contraception), and 13.7% of adolescents reported not using any form of contraception at last intercourse.

The apparent incongruity among the high percentage of teens that report using contraception and the high percentage of teens that become pregnant can be explained by literature that suggests that inconsistent and incorrect contraceptive use is a significant direct cause of unintended pregnancy (Landry, Wei, & Frost, 2008). Poor contraception adherence can be attributed to factors such as forgetting, method unavailability, and misunderstanding of correct use (Smith & Oakley, 2005; Nelson, Westhoff, & Schnare, 2008).

Psychological and psychoeducational influences on adolescents' contraception use

The decision to use contraception is not an easy one to make for many adolescents. However, not using contraception and using contraception incorrectly are main factors contributing to the high rates of teen pregnancy in the United States (Landry, Wei, & Frost, 2008). There are many reasons put forth as to why adolescents choose to have intercourse without correctly using contraception, including not admitting to being sexually active, having difficulties in making long-term plans and planning ahead, immaturity and irresponsibility, and fearing side effects of contraceptive methods such as weight gain and upset stomach (Kohli & Nyberg, 1995).

The most pervasive explanation is that teens do not use contraception because of ignorance about how to gain access and use contraceptive technology (Kohli & Nyberg, 1995). Data from the 1988 National Survey of Adolescent Males indicates that 91-96% of adolescent males received their formal sex education in

schools (Lindberg, Santelli, & Singh, 2006). Although similar research was not conducted on adolescent women specifically, it is assumed that similar statistics also hold for female teens. Since this data predates the nationwide proliferation of school-based sex education over the past two decades (Mueller, Gavin, & Kulkarni, 2008), it is likely that teens are still overwhelmingly receiving their formal sex education in schools. Many efforts to delay the initiation of sexual intercourse and to improve the use of birth control have relied on health education delivered through the school system (Woo et.al., 2011).

Formal school-based sex education programs aimed at reducing risks of teenage pregnancy generally promote one of two major types of messages: comprehensive sex education (CSE) messages and abstinence-only (AO) messages (Kohler, Manhart, & Lafferty, 2008). Although there is no standard for what is considered “comprehensive,” (Woo et.al., 2011) CSE programs generally cover abstinence as a positive choice, but they also teach medically factual information about contraception and avoidance of STI when sexually active. Some topics that might be addressed include puberty, HIV, implications of teenage pregnancy, how to resist peer pressure, sexual orientation, sexual abuse, and abortion.

In addition to trying to prevent teen pregnancy, most CSE programs also have the goal of counseling adolescents to engage in behaviors that will protect against sexually transmitted infections (STI). Only pregnancy prevention will be discussed in this review, with the recognition that STI prevention is a concurrent issue in comprehensive sex education.

AO programs teach that sex should be delayed until marriage. The concept of “abstinence only” is complex, in that there does not exist one universal definition of abstinence. In this paper, abstinence will be defined as refraining from heterosexual vaginal sexual intercourse until marriage. This definition is widespread among public health and education professionals, who typically have the goal of preventing until marriage behaviors that result in pregnancy (Santelli et.al., 2006). However, this definition might not be accepted by people who define abstinence in moral or political terms; people who do so frequently include other sexual behaviors in the definition of abstinence, including touching, kissing, oral sex, and anal sex, and view abstinence as an attitude, commitment, or responsibility (Santelli et.al., 2006).

Although abstinence is, theoretically, a fully protective method against pregnancy, the data shows that, in actuality, teens fail in remaining completely abstinent, and teens who choose abstinence as their sole method of birth control are at high risk of becoming pregnant. Data indicates that the median age at first sexual encounter is considerably earlier than the median age at first marriage, specifically 17.4 years vs. 25.3 years for females and 17.7 years vs. 27.1 years for males (Santelli et.al., 2006). In an examination of adolescents who had taken public “virginity pledges,” Bearman & Bruckner (2001) found that most pledgers (88%) had vaginal intercourse before marriage. Although pledgers were more likely to delay initiation of first sexual encounter by approximately 18 months and have fewer sexual partners compared to non-pledgers, pledgers who failed at abstinence were less likely to use contraception when they did initiate sexual intercourse.

Support for school-based comprehensive sex education programs

Public opinion polls reveal overwhelming support for school-based sex education, and most adolescents and their parents argue that adolescents need information about both abstinence and birth control (National Campaign to Prevent Teen Pregnancy, 2003). Data suggests that 93% of Americans (Mueller, Gavin, & Kulkarni, 2008) and 90% of middle school and high school parents nationwide (Santelli et.al., 2006) support some form of sex education being taught in schools. A majority of parents also agree that broad information on sexual issues pertaining to teen pregnancy be discussed, such as how to use and where to get contraceptives (86%), abortion (85%), and that teens be able to obtain various methods of contraception from clinics and doctors without parents' permission (71%). Data also suggests that most parents do not think that CSE programs send a "mixed message" when they present abstinence as a positive choice but also educate teens about various methods of birth control (Santelli et.al., 2006). A study by Eisenberg et.al. (2008) indicates that 89% of parents support CSE, regardless of age, race, ethnicity, religion, education, political ideology, and income.

A number of medical organizations, including the American Academy of Pediatrics, the American Medical Association, the American Public Health Association, and the American College of Obstetricians and Gynecologists, have recommended that adolescents be counseled about sex in a way that provides them with the information and skills needed to make healthy decisions about sexual behavior (Mueller, Gavin, & Kulkarni, 2008).

Furthermore, peer-reviewed professional literature also demonstrates the efficacy of CSE relative to both AO education and no education. Several studies conducted during the 1970s through the 1990s, before the major shift in focus from CSE to AO, demonstrated that CSE programs appeared to have little to no effect on the likelihood of youth engaging in sexual intercourse. However, they appeared to be somewhat influential in the contraceptive decisions of adolescents, with some studies showing that CSE had a positive effect on contraceptive use at the first sexual encounter (Mueller, Gavin, & Kulkarni, 2008).

A number of recent rigorous and systematic reviews examined the evidence supporting both AO and CSE programs. A review by Kirby et.al. (2001) analyzed 28 separate program reviews and determined that CSE effectively promotes both abstinence and safe sex, while on the other hand, there was no evidence to support that AO is effective in delaying the first sexual encounter. All studies selected for review used an experimental or quasi-experimental design, measured behavioral effects, were conducted in the U.S. or Canada since 1980, and targeted teens under the age of 18. A comparable review by Manlove, Romano-Papillo, & Ikramullah (2004) yielded similar conclusions.

Mueller, Gavin, & Kulkarni (2008) analyzed data from the 2002 National Survey of Family Growth. The study examined associations between exposure to sex education and youth's sexual risk behaviors, specifically age at first sexual encounter and use of birth control at first sexual encounter. The data suggested that both adolescent females and adolescent males who received sex education were more likely to delay sex. Also, adolescent females who received sex education were

more likely to use an effective and modern method of birth control (vs. withdrawal, natural family planning, or rhythm method) the first time they had intercourse.

Kohler, Manhart, & Lafferty (2008) also examined data from the 2002 National Survey of Family Growth. Their key findings indicate that CSE results in a 50% reduction in occurrence of teen pregnancy when compared to AO and a 40% reduction when compared to no sex education. Furthermore, there is no evidence to support that AO is associated with fewer teen pregnancies than no sex education.

Overall, the evidence suggests that neither AO nor CSE is effective in promoting abstinence. However, CSE is effective in delaying a teen's first sexual encounter until after 15 years of age, which is consistent with the national goal of increasing the proportion of adolescents who abstain from sex until after age 15, as stated in the Healthy People 2010 objectives (Centers for Disease Control and Prevention, 2010). It is more effective in increasing girls' use of contraception at the first sexual encounter and at preventing teen pregnancies than AO education or no sexual education.

Current federal policy and local programs

Although CSE appears to be broadly supported by the professional literature, by health professionals, and by public opinion, AO education is increasingly replacing CSE nationwide on both federal and local, policy and practice levels. This trend occurs in the absence of scientific evidence documenting the effectiveness of the AO approach. The debate is not evidence-based, but rather influenced by values

and politics, as the AO industry lobby continues to be well-funded and politically influential (Constantine, 2008).

Federal and state government support for family planning programs is available to adolescents through Title X of the Public Health Service Act, which stresses that abstinence should be discussed with all adolescent clients. Since 1996, there have been major expansions in funding for AO programs and restrictions on teaching other information (Lindberg, Santelli, & Singh, 2006). In 2004, the Office of Population Affairs announced that priorities for Title X would include extramarital abstinence education and counseling, increasing parental involvement in the decisions of minors to seek family planning services, reporting of statutory rape, and working with faith-based organizations. These changes in priorities are expected to weaken efforts to promote reproductive health services, such as providing condoms and other contraceptive services (Santelli et.al., 2006).

Survey data on health educational practice in the United States in the year 2000 reveals that 92% of middle schools and 96% of high schools taught abstinence as the best way to avoid pregnancy, while 62% and 87% respectively included classes about methods of contraception. Also, only 21% of middle school teachers and 55% of high school teachers of sex education reported teaching the correct use of condoms (Centers for Disease Control and Prevention, 2001).

A study by Lindberg, Santelli, & Singh (2006) analyzed national survey data focusing on sexual and family formation behaviors. The data revealed information about receipt of sex education at schools and community organizations and concurrent adolescent behaviors. Evidence from the study indicated that, between

1995 and 2002, the proportion of adolescents who received formal instruction about birth control declined significantly (from 81% to 66% of males and from 87% to 70% of females), while abstinence education became significantly more common. 54% of males and 62% of females received birth control instruction before their first sexual encounter. Declines in birth control education were particularly marked for black males, adolescents living in nonmetropolitan areas, and adolescents with incomes below 200% of the national poverty level.

Sex Education in New York City

There is an extensive history on the slow acceptance of formal sex education in New York City. In the late 1930s, the New York City Board of Education rejected a proposal for the introduction of “sex instruction, in the mild form of a study of mammalian reproduction” in public schools. In response, the United Parents Associations (UPA) passed a resolution in favor of a continuous sex education program that covered biological, family life, and life process topics. The resolution led to little action (NARAL, 2010).

In 1967, the UPA president once again stressed the need for sex education in New York City public schools. The first sex education programming for grades PK-12 was then instituted, called “Family Living, Including Sex Education (FL/SE)”. At the same time, New York State passed a law requiring health education in public schools. Since the health education law did not include any sexuality education references, the FL/SE program did not receive sufficient support, and the curriculum failed to reach all students (NARAL, 2010).

In 1987, the first mandatory sex education in New York State was put into action in all public schools in the form of a mandated HIV/AIDS curriculum for grades K-12. By 1989, most schools had failed to comply with the requirements. In 1991, both HIV/AIDS education and condom availability were mandated in New York City public schools. The New York State Board of Regents also adopted a policy on HIV/AIDS instruction and stressed teaching abstinence as the most important means of prevention (NARAL, 2010).

In 2003, Assemblyman Scott Stringer published the report “Failing Grade: Health Education in NYC Schools”, highlighting the “enormous discrepancy between State and City health education mandates... and actual practice in public school districts” (Stringer, 2003, p.1). The report recommended a full-scale evaluation of health education in New York City public schools and the design of an up-to-date CSE curriculum. Reports from the New York AIDS Coalition published similar findings and recommendations (NARAL, 2010).

Between 2005 and 2007, New York City public schools consulted with sex education researcher Dr. Douglas Kirby. Based on Kirby’s recommendations, the Office of Fitness and Health Education began recommending (but not mandating) the use of *Health Smart* and *Reducing the Risk* curricula in public middle and high schools (NARAL, 2010; NYC DOE, 2011a).

In the summer of 2011, Chancellor Dennis Walcott required that sex education be taught during one semester in both middle and high school. *Reducing the Risk* is still being recommended but not mandated. (NYC DOE, 2011a) While the

mandate made headlines, it is unclear how different actual practice will be in schools, as the mandate is notably vague.

The *Health Smart* curriculum, which is recommended for middle schools, covers topics related to comprehensive sex education and other behaviors to promote healthy living. The seven major subjects taught are abstinence and puberty, emotional and mental health, HIV, STD, and pregnancy prevention, improving health behaviors, nutrition and physical activity, tobacco, alcohol, and drug prevention, and violence and injury prevention (ETR Associates, 2010).

Reducing the Risk, which is recommended for high schools, is a sex education curriculum based on social learning theory, social influence theory, and cognitive-behavioral theory. The main behavioral goal of reducing unprotected sex is taught through lessons on both abstinence and contraception. Experiential activities are meant to build students' negotiation, communication, and decision making skills. The publishers of *Reducing the Risk* claim to reduce risk-taking behavior by helping adolescents learn and personalize relevant information, recognize and anticipate risky situations, establish norms for positive behaviors, and learn and practice skills to cope with social pressures. Goals include providing youth with information about teen pregnancy, abstinence, birth control, and HIV/STD, helping youth identify their own vulnerability to pregnancy and HIV, and allowing youth to learn and practice refusal skills, delaying skills, and protection skills. The curriculum encourages the discussion of abstinence and contraception between the parent and child. The *Reducing the Risk* curriculum consists of 16 lessons, each lasting between 45 and 90 minutes. Main topics covered in each lesson are: introduction to pregnancy

prevention, HIV prevention, abstinence, using refusal skills, delaying tactics, avoiding high-risk situations, getting and using protection, skills integration, preventing HIV and other STDs, implementing protection from STDs and pregnancy, sticking with abstinence and protection, and skills integration (ETR Associates, 2010b).

Three major studies investigated the efficacy of *Reducing the Risk*. The first (Kirby et.al., 1991), which began in 1988, investigated the implementation of *Reducing the Risk* in 13 rural and urban high schools in California. Students were 62% White and the rest students of color, and 37% of students had engaged in sexual activity at pretest. The curriculum was implemented as part of a required health class for 9th and 10th graders. Teachers who volunteered to participate attended a three-day training. The curriculum was assessed using student, parent, and teacher surveys before implementation, immediately after implementation, 6 months after, and 12 months after, with a comparison group of students who received the standard sex education class that was already offered in the school. Findings suggested that *Reducing the Risk* significantly increased teens' knowledge and communication with parents regarding abstinence and contraception, delayed the onset of intercourse among 24% of sexually inexperienced teens, and reduced the rate of unprotected sexual intercourse by 40%.

A second study (Hubbard, Giese, & Raney, 1998), which was conducted in 1994, examined *Reducing the Risk* in predominantly rural high schools in Arkansas. Students were 85% White and the rest students of color, and 41% had engaged in sexual intercourse at pretest. As was the case in the California study, *Reducing the*

Risk was implemented as part of a required health education class, teachers attended a three-day training, and the comparison group received the standard sex education class that was offered in school. The degree of implementation was assessed using teacher questionnaires; according to teacher report, 29% completed all 16 lessons, 29% completed 15 lessons, 14% completed 12 lessons, and 28% completed 11 lessons. The curriculum was assessed using student questionnaires. Findings suggested that *Reducing the Risk* delayed the initiation of sexual intercourse in sexually inexperienced students significantly more than the regular sex education curriculum. Also, sexually active students who received *Reducing the Risk* were significantly more likely to use protection and to communicate with parents about sex issues than were their peers in the control group.

A third study (Zimmerman et.al., 2008), which was conducted between 1995 and 1997 in urban schools in Kentucky and Ohio, compared the standard *Reducing the Risk* curriculum to an adapted *Reducing the Risk* curriculum for high sensation seekers and impulsive decision makers and to a non-skills-based HIV prevention curriculum. Students were 51.1% White and the rest students of color, and 39.2% had engaged in sexual intercourse at pretest. Teachers in both *Reducing the Risk* groups attended a two-and-a-half-day training, and peer leaders assisted teachers in games and other activities. Students were surveyed immediately after implementation, 3-6 months after implementation, and 12-18 months after implementation. Findings suggested that students in both *Reducing the Risk* groups were significantly less likely to initiate sexual activity than their peers in the comparison group. Positive effects of *Reducing the Risk* interventions were greater

for Black students than for White students. Finally, the authors concluded that, since the modified *Reducing the Risk* curriculum did not result in either a greater reduction in sexual initiation or a greater increase in condom use than the standard *Reducing the Risk* curriculum, the standard *Reducing the Risk* curriculum was sufficient for engaging high sensation-seeking and impulsive students.

While informative, these studies are not necessarily generalizable to New York City public schools today. The demographics of the populations studied do not mirror those of New York City public schools, since the rate of sexual activity in New York City is 48%, higher than that of the populations studied, and since the percent of White students in New York City public schools is 12.19%, which is lower than the populations studied (NARAL, 2010; NYC DOE, 2011b). Furthermore, since the studies are over a decade old, it is important that more current research be conducted to determine whether the *Reducing the Risk* curriculum remains effective in New York City public high schools.

Intrauterine contraception

A wide variety of contraception options exist for adolescent women. Options vary in terms of effectiveness. Contraceptive efficacy research typically evaluates methods of contraception based on notions of perfect use (i.e. effectiveness of a method when it is used consistently and correctly) and typical use (i.e. effectiveness of the method as it is commonly used). Planned Parenthood (2007) evaluates the efficacy of contraceptive methods based on the number of pregnancies that occur

per 100 women using each particular method of contraception as commonly used each year.

Some contraceptive methods prevent pregnancy if used at intercourse, and these methods typically result in 15-25 pregnancies per 100 women using these methods as their sole method of contraception each year (Planned Parenthood, 2007). These methods include spermicide, which is a substance that prevents pregnancy by stopping sperm from moving, diaphragms, which are shallow silicone cups inserted into the vagina to prevent pregnancy, male condoms, which are commonly made of latex or plastic, are worn on the penis, and form a barrier to prevent the sperm and the egg from meeting, female condoms, which are pouches inserted into the vagina to form a barrier between the sperm and the egg, sponges, which are foam sponges inserted into the vagina to block the sperm from entering the uterus and prevent the sperm from moving, and cervical caps, which are silicone cups that fit over the cervix and block sperm from entering the uterus (World Health Organization, 2011).

Hormonal methods of contraception prevent pregnancy if the prescribed dosage is taken consistently. Some hormonal contraceptive methods contain the progestogen hormone, which thickens cervical mucus to block sperm and egg from meeting and prevents ovulation (World Health Organization, 2011). Progestogen-only hormonal methods include progestogen-only pills, which need to be taken at the same time every day, and progestogen-only injectables, which are injected into the muscle every two to three months. Other hormonal contraceptive methods contain progestogen and estrogen hormones, which interact to prevent ovulation

(World Health Organization, 2011). Combined hormonal methods include combined oral contraceptive pills, which need to be taken at the same time every day, the vaginal ring, which is a small ring placed in the vagina each month for three weeks, and the birth control patch, which is a small patch that sticks to the skin of the buttocks, stomach, upper outer arm, or upper torso for three weeks of each month. Overall, hormonal methods of contraception result in 2-9 pregnancies per 100 women using these methods as their sole method of contraception each year (Planned Parenthood, 2007).

The most effective options are categorized as long acting reversible contraceptives (LARC). LARC is a group of user-independent contraception methods that includes intrauterine contraception (IUC, also commonly called intrauterine devices, or IUDs) and etonogestral implants. Today, American women can use two forms of IUC: the Copper T380A (Copper T) and the levonorgestrel-releasing IUC (Mirena). The Cooper T is a small, flexible plastic device containing copper wire that is inserted into the uterus. The copper component damages sperm and prevents it from meeting the egg (World Health Organization, 2011). The Mirena is a t-shaped plastic device that is inserted into the uterus and steadily releases small amounts of levonorgestrel hormone each day. It prevents pregnancy by suppressing the growth of the endometrium, which is the lining of the uterus (World Health Organization, 2011). Implants are small, flexible rods or capsules placed under the skin of the upper arm and release progestogen hormone. They prevent pregnancy via the same mechanism as other progestogen-only methods (World Health Organization, 2011).

Overall, fewer than 1 pregnancies result per 100 women using LARC methods each year (Planned Parenthood, 2007).

Many of the factors that lead to poor contraception adherence, such as forgetting, method unavailability, and misunderstanding of correct use of contraception, are averted using LARC methods. Research suggests that LARC methods have higher continuity rates than do user-dependent forms of contraception (Behringer et.al., 2011; Zibners, Cromer, & Hayes, 1999). Thus, increasing the use of LARC methods has the potential to decrease unintended adolescent pregnancies in the United States.

Implantable contraception is very infrequently provided to women in the United States due to primary care providers' limited knowledge and access to the devices (Rubin, Davis, & McKee, 2012). However, IUC is more readily available. Although both IUC products are safe, easy to use, and provide continuous protection from pregnancy for up to 10 years, only 5.5% of contracepting women in the United States report IUC use. (Hubacher, Finer, & Espey, 2011) The issue of low IUC utilization is multifactorial and includes product, provider, and practice guidelines issues.

In the 1970s, the Dalkon Shield IUC was the subject of widespread medical and legal controversies and negative media attention due to increased rates of pelvic inflammatory disease (PID) among users, which resulted in ectopic pregnancy, spontaneous abortion, and infertility for some users. (Hubacher, Finer, & Espey, 2011) The Dalkon Shield contained a porous, multifilament "tailstring". On one end, the string was tied to the bottom of the device and on the other, it was tied

in a knot, allowing the woman to check that the device was in place and assisting in its removal. When the device was placed in the uterus, the string passed through the cervix and into the vagina. Bacteria were able to enter the uterus from the vagina, causing PID and leading to sepsis. Today, IUC devices use monofilament tailstrings, which are designed to avoid the absorption of moisture and bacteria in the uterus (Sobol, 1991).

In 2001, the Food and Drug Administration was still cautious about IUC following numerous lawsuits that resulted from the problems caused by the Dalkon Shield, and began marketing the newly designed IUC with a note on the label indicating that the IUC was “recommended for women who have had at least one child” (Hubacher, Finer, & Espey, 2011). Although new research has demonstrated higher safety with today’s modern devices and the “recommended patient profile” label IUC no longer specifies “women who have had at least one child”, it is unclear how effectively the new information regarding the safety of IUC has been disseminated to health providers and to the public.

Scant research currently exists on health care providers’ experiences, attitudes, and beliefs about IUC provision to adolescents. A qualitative study by Rubin, Davis, & McKee (2012) identified barriers and facilitators to IUC counseling and provision for adolescents among primary care providers (including family physicians, generalist pediatricians, and obstetrician/gynecologists) in the Bronx. Overall, pediatricians expressed limited comfort with general contraception prescription and rarely discuss intrauterine contraception. Other family physicians and OBGYNs expressed varying levels of comfort with IUC for adolescents. Cost of

and access to the device itself were the biggest barriers identified by those primary care providers who insert IUC. A number of physicians noted the influence of family in their willingness to counsel and/or insert IUC for adolescents; specifically, they mentioned limited time alone with teens, parental resistance to IUC use, reluctance to insert IUC without parental permission/consent and the influence of insurance/billing limits to confidentiality. Many physicians who counsel and/or insert IUC for adolescents describe a tension or “competing concern” between their desire to promote pregnancy prevention vs. STI prevention. This includes “competing concerns” about sexually transmitted infection versus pregnancy prevention and IUC versus condom use. Many thought that a “forgettable” form of contraception such as IUC equates into forgetting to use condoms.

Enablers to IUC provision identified by primary care providers included being able to insert IUC themselves, having the device available in the clinic, and/or having easy access to an inserter. The “culture of the clinic” was reported to have an influence on all of these factors. Specifically, if colleagues were perceived to support IUC provision to teens, then an individual PCP appeared more likely to support IUC for adolescents. Conversely, if colleagues were not supportive, then there appeared to be significant reluctance on the part of an individual provider.

Practice guidelines factors also play a role in low IUC utilization. The IUC practice guidelines published by the American College of Obstetricians and Gynecologists (ACOG) have been frequently consulted by providers and have been a leader of opinion and practice since they were first published in 1968. Until 1992, the language of the guidelines clearly reflected the negative attitudes about IUC that

were a result of the Dalkon Shield legacy. The 1987 and 1992 bulletins both began with a statement on product liability and used restrictive language to describe an ideal candidate for IUC.

In contrast, the 2005 bulletin was written during a time of increasing recognition of the safety and efficacy of IUC, and stated that the devices offer safe, effective, and long-term contraception, and should be considered for all women who seek a reliable, reversible contraception that is effective before coitus. A specific ACOG Committee Opinion entitled “Intrauterine Device and Adolescents” was published in 2007 suggesting that IUC may be appropriate for selected nulliparous and multiparous adolescents (Hubacher, Finer, & Espey, 2011). Similar opinions are echoed by both the World Health Organization’s and the U.S. Centers for Disease Control and Prevention’s contraceptive use eligibility criteria (Hubacher, Finer, & Espey, 2011).

Although professional practice guidelines support the use of IUC among women who are under 18 years old or nulliparous, many providers continue to want clearer, more specific clinical guidelines supporting IUC use in adolescents (Rubin, Davis, & McKee, 2012).

Dissemination of medical information

The Diffusion of Innovations Model (Rogers, 1962) has been used in a variety of disciplines, including public health, to understand how innovations are adopted and diffused in various cultures. It conceptualizes the interpersonal and social process of the spread and adoption of health behaviors.

The innovation-decision process is a five-step procedure completed by an individual. First, the person has awareness and knowledge of an innovation, then forms an attitude about it, next decides to accept or reject it, implements it, and finally confirms the decision to implement.

The research supporting that IUC is an appropriate, safe, and effective method for adolescents is relatively recent, and so it may be considered an innovative public health practice. Thus, based on the Diffusion of Innovations Model, it stands to reason that the information supporting adolescent IUC use has not yet spread throughout society and translated into usual school-based practice. Each sexual health practitioner passes through the innovation-decision process before counseling an adolescent about IUC.

Innovative information may reach individuals via numerous communication channels, which are the means by which messages are passed directly from one person to another. Mass media channels are the most rapid and effective ways to create knowledge about an innovation, and include radio, television, and newspapers. Mass media channels have not yet played a substantial role in the diffusion of IUC information. Interpersonal channels involve a face-to-face exchange between people. They are most effective in persuading individuals to adopt new ideas, and are more typically utilized in the health field than mass media channels, particularly in the diffusion of IUC information. The passing of IUC information from a school-based health counselor to an adolescent would be considered communication via an interpersonal channel.

Five adopter categories are used to classify members of a system in the diffusion of an innovative practice. Innovators are active seekers of new ideas and are the first to adopt an innovation. Early adopters are very interested in the innovation but are not the first to implement. The early majority implements after the early adopters and typically need external motivation to get involved. The late majority are skeptical, and they will not adopt an innovation until most of the people in the system have done so. Finally, laggards are the last to become involved, usually because they have limited communication networks.

Early adopters in the diffusion of adolescent IUC use include health practitioners and physicians who have proper education, training, and the availability of health systems. IUC provision has not yet been universally implemented by physicians (Rubin, Davis, & McKee, 2012). Thus, the early adoption process is ongoing.

Since the early adopters have not yet implemented IUC provision for adolescents, it is highly unlikely that people in subsequent adopter categories are providing IUC for adolescents. The late majority includes health educators, who will learn about IUC provision for adolescents once the health practitioners have adopted the innovation.

School-based health centers and sexual health counseling

School-based health centers (SBHC) are partnerships between schools and community health centers to provide satellite health clinics in schools. SBHC provide broad services, including medical, mental health, and dental services (Kerns

et.al., 2011). Practitioners in SBHC are typically employees of hospitals or community health centers, and thus, are likely to be early adopters of adolescent IUC provision in the Diffusion of Innovations Model.

Since SBHC offer students an option for obtaining health services that is probably more responsive to their needs, theoretically, SBHC should increase adolescents' use of health care (Kisker & Brown, 1996). The literature has documented that SBHC are well-used by students in the schools served, and that for many students, SBHC are their sole or primary source of health care (Kirby, Waszak, & Ziegler, 1991).

SBHC have historically been seen as a promising way of addressing unintended pregnancy for adolescents. SBHC provide adolescents with a wide range of sexual health services, including birth control information and referral, pregnancy testing, and pregnancy counseling (Kirby, Waszak, & Ziegler, 1991). Although most SBHC provide reproductive health services or referral to off-site providers, services among centers vary greatly based on time, space, and funding (Ethier et.al., 2011). If practitioners in SBHC were to counsel IUC for students, it would increase the likelihood that students seek out the devices. This may help to decrease the rates of unintended adolescent pregnancy in New York.

Research has been mixed regarding whether SBHC have been effective in preventing adolescent pregnancy. A seminal study by Kirby, Waszak, & Ziegler (1991) examined 6 clinics in different rural and urban parts of the country. All of the clinics included in the study served low income populations with a large proportion of non-White students. Results were mixed regarding whether students

with access to SBHC were significantly more likely to use condoms or the pill. The study did not investigate IUC use. Results also suggested that access to SBHC was not associated with lower rates of pregnancy.

A study by Kisker & Brown (1996) followed Kirby's research and studied 24 SBHC established in large cities in 1987. Although the evaluation suggested that SBHC increased students' knowledge of health behaviors, they did not influence the likelihood that the students would engage in high-risk behaviors. SBHC did not significantly increase the likelihood of contraception use, and they also had no significant impacts on pregnancy and birth rates. However, the data was collected in 1989 and 1990 when the centers were still relatively new.

More recent research offers a more optimistic picture of SBHC. A literature review by Strunk (2008) documented that SBHC increased contraception use among pregnant and parenting teens. However, the programs included in the review were based in alternative education programs, so generalizability to typical public schools is limited. Also, the review focused on pregnant and parenting teens, who are much more likely than nulligravida teens to be provided with IUC in primary care (Rubin, Davis, & McKee, 2012).

A study by Ethier et.al. (2011) compared sexual health behaviors among adolescents at 12 urban high schools in California, half of which had SBHC. Results suggested that, among sexually experienced female students from inner-city areas with high rates of teen births, access to SBHC was associated with increased hormonal and emergency contraception use. IUC was, again, not included as a method of contraception in the study. This study was unique in that it geared

pregnancy prevention care to adolescent females, and it acknowledged that sexually active male students with access to the SBHC were not any more likely to receive reproductive health care services than those without access. On one hand, it is possible that SBHC are most effective when they focus pregnancy prevention efforts on female students. On the other hand, it is clear that more work needs to be done to determine the barriers that prevent male students from using the services and to increase the use of SBHC by male students.

Future directions

Despite high reported contraception use by adolescents in the U.S., teen pregnancy rates are among the highest in the industrialized world (Kohler, Manhart, & Lafferty, 2008). Teen pregnancy rates in New York City are particularly high. More than 1 in 10 adolescents in the Bronx became pregnant in 2009. More than 1 in 9 Black adolescents in New York City became pregnant in 2009. For the past decade, teen pregnancy rates in New York City have exceeded the national rate by 20% (NYC DOH, 2011).

Inconsistent and incorrect contraception use is a significant direct cause of unintended pregnancy (Landry, Wei, & Frost, 2008). Poor contraception adherence can be attributed to factors such as forgetting, misunderstanding of correct use, not admitting to being sexually active, having difficulties planning ahead, immaturity and irresponsibility, and fearing side effects of contraceptive methods (Smith & Oakley, 2005; Nelson, Westhoff, & Schnare, 2008; Kohli & Nyberg, 1995). Many of these factors can be obviated using long acting reversible contraception (LARC), i.e.

IUC and etonogestral implants. LARC methods have higher continuity rates than do user-dependent forms of contraception (Behringer et.al., 2011; Zibners, Cromer, & Hayes, 1999). Thus, increasing the use of LARC methods has the potential to decrease rates of unintended teen pregnancies in the U.S.

Although LARC methods are safe, easy to use, and provide continuous protection from pregnancy for up to 10 years, very few women in the U.S. report LARC use. The issue of low IUC utilization, the preferred LARC method, is multifactorial and includes product, provider, and practice guidelines issues. In particular, many primary care providers (PCPs) do not provide IUC for adolescents because PCPs perceive low patient interest (Rubin, Davis, & McKee, 2012).

Teens are overwhelmingly receiving the bulk of their formal sex education in schools (Lindberg, Santelli, & Singh, 2006; Mueller, Gavin, & Kulkarni, 2008). However, messages promoted through school-based sex education vary greatly (Woo et.al., 2011). IUC counseling in school-based settings has not yet been studied. Thus, it is critical to conduct research with school-based health care providers who counsel adolescents about sexual health behaviors, as well as to develop interventions to increase the likelihood that school-based providers discuss IUC during contraception counseling with adolescents.

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