Parenting Among Adolescents and Young Adults with Human Immunodeficiency Virus Infection in the United States: Challenges, Unmet Needs, and Opportunities

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Abstract

Given the realistic expectations of HIV-infected adolescents and young adults (AYA) to have children and start families, steps must be taken to ensure that youth are prepared to deal with the challenges associated with their HIV and parenting. Literature reviews were conducted to identify published research and practice guidelines addressing parenting or becoming parents among HIV-infected AYA in the United States. Research articles or practice guidelines on this topic were not identified. Given the paucity of information available on this topic, this article provides a framework for the development of appropriate interventions and guidelines for use in clinical and community-based settings. First, the social, economic, and sexual and reproductive health challenges facing HIV-infected AYA in the United States are summarized. Next, family planning considerations, including age-appropriate disclosure of HIV status to those who are perinatally infected, and contraceptive and preconception counseling are described. The impact of early childbearing on young parents is discussed and considerations are outlined during the preconception, antenatal, and postnatal periods with regard to anti-retroviral medications and clinical care guidelines. The importance of transitioning AYA from pediatric or adolescent to adult-centered medical care is highlighted. Finally, a comprehensive approach is suggested that addresses not only medical needs but also emphasizes ways to mitigate the impact of social and economic factors on the health and well-being of these young parents and their children.

Introduction

THE ADMINISTRATION OF effective combination antiretroviral (ARV) therapy (cART) has significantly extended the life and improved the health of children living with Human Immunodeficiency Virus type 1 (HIV) infection, so that nearly all survive into adolescence and young adulthood. This unprecedented success is associated with concomitant challenges, as HIV becomes a chronic infection.¹ These challenges include disclosure of HIV status, adherence to life-saving cART, managing long-term toxicities of ARV drugs, and effectively addressing sexual and reproductive, and mental health in HIV-infected youth.^{1,2} One particular subset of HIV-infected adolescents and young adults (AYA) are those who become parents. Parenting can be more demanding and com-

plex in these youth than in non-HIV-infected AYA. There are very few resources tailored to the needs of AYA parents living with HIV infection. This article highlights challenges and areas of concern for AYA HIV-infected parents and serves as a framework for the development of appropriate interventions and guidelines for use in clinical and community settings.

HIV-infected AYA in the United States: the social context, teen pregnancy, and the need for policies to address challenges faced by AYA

At the end of 2013, about 9131 individuals in the United States were living with perinatally acquired HIV infection.³ In 2014, 13- to 24-year-olds accounted for an estimated 22% of all new HIV diagnoses in the United States (9731 cases).⁴

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Marked racial disparities in HIV incidence exist in the United States. In 2014, 44% of estimated new HIV diagnoses were among African Americans although African Americans constitute only 12% of the US population.⁵ In that same year, African Americans accounted for 56% of HIV incident cases among 13- to 24-year-olds compared to 22% for Hispanic and 17% for white individuals.⁶ In 2014, heterosexual contact accounted for about 92%, 85%, and 77% of diagnoses of HIV infection among African American, Hispanic, and white women 13–24 years old, respectively.⁶

Most AYA diagnosed with HIV infection in the United States live in urban,⁷ resource-poor environments,⁸ with scarce service delivery infrastructure and concomitant high rates of unemployment and violent crime.⁹ In 2007, nearly 82% of the AYA diagnosed with HIV were living in urban areas with populations of 500,000 or more.⁷ Violent crime, including murder, manslaughter, forcible rape, robbery, and aggravated assault, is more prevalent in urban areas.¹⁰ As a result, AYA with HIV infection often have to cope with high levels of stress not only related to their physical environment but also the social context in which they live, which may also include familial and intimate partner violence.

Data from the 2011 National Intimate Partner and Sexual Violence Survey show that 32% of multiracial women, 21% of non-Hispanic black women, and 21% of non-Hispanic white women were raped during their lifetimes.¹¹ Larger proportions of both women and men had experienced forms of sexual violence besides rape; the vast majority having experienced their first sexual violence event before 25 years of age.¹¹

Another problem facing AYA living in such environments is the high rate of substance use not only at the individual level (drug use being a risk factor for acquiring HIV infection) but also in their families and communities.¹² Brook et al. found that adolescent children of HIV-infected drug-abusing fathers were more likely to develop substance use during adolescence,¹³ which is associated with other risk behaviors during adolescence, including risky sexual behavior.^{14,15}

Given these challenges facing vulnerable youth, it is not surprising that despite recent declines in teen pregnancy rates in the United States, marked racial, ethnic, and economic disparities in teen birth rates persist.¹⁶ Socioeconomically disadvantaged youth of any race/ethnicity have the highest rates of teen pregnancy and childbirth.¹⁷ Although evidence is sparse, the pregnancy rate for HIV-infected teens may be substantially higher compared to non-HIV-infected adolescents nationally.¹⁸ Bansil et al. estimated about 336 deliveries to HIV-infected teens aged 13–19 years in the United States in 2004.¹⁹ As this estimate was based on a diagnosis of HIV infection coded on hospital discharge data, it likely represents an underestimate. Furthermore, this figure does not include adolescent fathers with HIV infection. In addition, other studies have shown that repeat pregnancies are common among HIV-infected AYA women.^{20–22}

The impact of socioeconomic disadvantage and environmental factors on the lives of AYA living with HIV has implications for public policy as well as for prevention and treatment programs. In a recent review of state policy regarding teen childbearing, Beltz et al. noted lower teen birth rates in states that offered access to family planning services and contraceptives with policies and practices to improve public sexual health education.²³ Although family planning services also benefit AYA who are HIV infected, acknowl-

edging the unique challenges faced by this group at a policy level would highlight the importance of addressing their particular needs.

Methods

We used two directed searches of the published literature and two targeted web searches to identify primary document sources for this article. Primary documents included published research articles, review articles, and practice guidelines for HIV-positive AYA. The databases searched were Medline (OVID), PsycINFO (OVID), ProQuest Social Sciences Premium Collection, and PubMed (NLM). Searches were conducted using subject heading terms (e.g., MeSH terms in OVID and NLM) as well as keyword searches of the title and abstract. Subject heading terms and keywords were chosen based on the conventions and disciplinary orientation of each database. Both web searches were conducted using keywords identified during the database searches. All documents were limited to adolescents or young adults, HIV positives, and the English language.

The first search of the published literature identified articles on HIV-positive AYA concerning parenting or becoming parents. Subject heading terms included parent/mother/father-child relationships, parenting, mother/father/child relationships, family, and childrearing/guidance. Keywords included childrearing practices, child guidance, parent(s), parenting, parent/mother/father child, care/giver(s), and guardian. Results from the literature search (citation and abstract) were indexed and collated by topic using ATLAS.ti, a textual analysis software program. A single reviewer assigned codes to each citation/abstract by article topic. Topics included HIV disclosure, social support, coping, substance use, parental HIV status, and mother-to-child transmission.

The second search of the published literature identified practice guidelines or recommendations for clinical practice concerning HIV-positive AYA. Subject heading and keyword terms included the following: practice guideline, guideline, guidance, recommendation(s), recommend. Only PubMed allowed us to search “guideline” as a publication type. Results in the second search were limited to review articles. A single individual reviewed the results and only those citations directly related to HIV-positive AYA were kept.

Results

The first literature search yielded 106 published articles and none addressed parenting or becoming parents for HIV-positive AYA. The majority of articles addressed parental HIV status and its impact on the health and well-being of children and/or adolescents. The second search generated 1779 potential citations but none concerned recommendations or guidelines for HIV-positive AYA about becoming parents. Neither web search identified websites addressing the specific topic of either search.

Discussion

Pregnancy desire and family planning considerations

An increasing number of studies on pregnancy prevention indicate that while youth may acknowledge that early childbearing has associated financial costs and hampers

attainment of life goals, many set aside these priorities in search of intimacy.²⁴ In some populations, pregnancy often precedes explicit desire and is viewed as a natural outgrowth of a caring relationship (not as a choice per se but reflecting a perception that a caring relationship exists).²⁴ Some have argued that the significance of childbearing in urban settings coupled with the desire to appear healthy despite living with HIV may even reinforce the urge to get pregnant.²⁵

Although ambivalence and feelings of low reproductive control have been associated with unintended pregnancy among younger African American women,²⁶ there is growing acknowledgment that unintended pregnancy is part of a larger global syndemic of HIV, sexually transmitted infections (STIs), and sexual violence occurring primarily in vulnerable populations.²⁷ Another study of HIV-infected women with substance abuse history showed that they identify childbearing with independence and hope.²⁸ Therefore, the sexual and reproductive rights of AYA living with HIV infection should be acknowledged and taken into account in efforts to prevent unintended pregnancy.

There is little evidence to suggest that pregnancy desire among HIV-infected youth manifests itself differently from the general population. Indeed, studies show that like their uninfected counterparts, the majority of HIV-infected AYA want children in the future.^{29,30} Long before sexual activity begins, youth with HIV infection need to be made aware of the reproductive health decisions they will face, including decisions about whether and when to have children.

AYA with HIV are usually in contact with healthcare providers more regularly than their uninfected peers. These providers have an important role in counseling their patients about sexual and reproductive healthcare, including family planning options or any possible increased risks that HIV-infected AYA may face should they become pregnant. However, providers should also expand their discussions to include not only topics related to horizontal transmission and unintended pregnancy prevention but also disclosure of HIV status to partners and the nature and quality of the AYAs romantic relationships.³¹

While providers struggle to increase use of contraception and condoms among AYA generally, there is a heightened need for targeted pregnancy and STI prevention services and counseling for AYA living with HIV not only for individual protection but also to prevent secondary transmission.³² The importance of consistent condom use, adherence to ARV regimens, and pre-exposure prophylaxis (PrEP) for committed uninfected partners should figure prominently in counseling programs.³³ The short duration and quality of romantic relationships may pose particular challenges for PrEP use among partners of youth with HIV infection.^{34,35} Some evidence suggests that counseling based on risk avoidance alone may be insufficient in effectively bringing about behavior change in HIV-negative AYA.²⁴

Given the multifaceted needs of AYA in general, counseling is recommended as an important adjunct to the interventions previously mentioned, when it takes into account the individual's personal, familial, peer, and social relationships.³⁶ Interventions that use motivational interviewing may be particularly effective for AYA living with HIV to address their multifaceted challenges and reduce risk behaviors.^{37,38}

Counseling on pregnancy prevention should include the full array of contraceptive choice options and prioritize lon-

ger acting methods such as implants and intrauterine devices.³² These methods have been proven safe and effective and are recommended for all youth, including those living with HIV.³² As HIV-infected AYA receive multiple medications, the addition of another daily medication for contraception may pose challenges with adherence, making longer acting methods more desirable.

When selecting an appropriate contraceptive method for HIV-infected AYA, the ARV drugs being used need to be considered as interactions between certain ARV drugs with some hormonal contraceptive methods may impair contraceptive efficacy³³ or efficacy of the ARV.³⁹ Examples include the combined oral, progestin-only pills, and contraceptive implants, which may interact with non-nucleoside reverse transcriptase inhibitors or ritonavir-boosted protease inhibitors. Updated recommendations on safe contraceptive options for women with HIV receiving ARVs are available through the Centers of Disease Control and Prevention Medical Eligibility Criteria for Contraceptive Use³⁹ and the Department of Health and Human Services Recommendations for ARV use in Pregnant Women with HIV infection to Reduce Perinatal Transmission.⁴⁰

Delayed disclosure of underlying HIV status by a provider, parent, or guardian to a neurodevelopmentally age-appropriate HIV-infected AYA can adversely affect the ability of that teen to seek and accept appropriate reproductive and sexual healthcare and can be associated with high-risk behaviors. Currently, there are no evidence-based practice guidelines for providers communicating on HIV disclosure for perinatally infected children, despite concerns about future sexual and risk behaviors.⁴¹

However, the legal right of minors to consent to sexual and reproductive health services, including contraceptive, prenatal, and STI services without parental involvement, has been granted by many states and most apply to minors as young as age 12.⁴² Thus, AYA with HIV infection who seek out reproductive health services on their own will be able to receive treatment and care in most states. Given that many AYA delay seeking care when they are sexually active,⁴³⁻⁴⁵ perinatally HIV-infected AYA whose providers/parents or guardians delay disclosure may be at high risk for unintended pregnancy, STIs, and secondary transmission to their sexual partner(s).

Concerns for the young male with HIV infection

Although most reproductive healthcare programs focus on the needs of women, there is growing concern to address the reproductive health needs of men. This interest stems largely from their roles as fathers and partners and is indicative of the widening appreciation for their reproductive and sexual health needs.⁴⁶ Family planning counseling is recommended for all AYA.³³ For males with HIV infection, reproductive health counseling should be a routine part of the clinical experience. However, the extent to which this counseling goes beyond condom use for safe sex and PrEP use with serodiscordant partners, and whether it addresses issues of contraception and pregnancy planning are unclear. Preconception counseling for AYA of both sexes is needed, which addresses contraception, prevention of HIV/STI transmission, and the importance of maintaining optimal health.^{40,47} Expanded counseling of this type targeted to the needs of AYA living with HIV will benefit all young adults regardless of their partner's HIV status.

Impact of early childbearing on young parents and their children

HIV-infected AYA face significant challenges parenting children while they are adolescents themselves, while also coping with a chronic illness. Like their HIV-negative counterparts, most will rely on their parents/guardians, immediate family, and relatives for child-related social support.^{48,49} Most of the parenting responsibilities is undertaken by the adolescent mother and her family.⁵⁰ Adolescent females with HIV face the added burden of having to manage their child's health in addition to their own HIV infection. This includes adhering to clinic visit schedules for their infant and their own postnatal appointments, as well as to administer medications to their infant, in addition to their own regimens. For AYA women who are more likely to depend on others for income and transportation, attending such clinic visits can become even more challenging.

Several lines of evidence from many settings indicate a decrease in adherence with ARV medications postnatally in HIV-infected mothers.⁵¹ Lambert et al. found higher default rates from postpartum care among women who had ceased postpartum ARV.⁵² This can significantly adversely impact parenting. Providers need to assure that women understand that postpartum adherence is important both for their own health and their child's health, encouraging women and infants to adhere with postpartum ARV, and with providing prophylactic ARVs for their infants in addition to the avoidance of breastfeeding. This represents an important opportunity to intervene.

Coordinating multiple services, such as social and mental health services, assistance with medication dispensing and HIV education, and coordinating mother and infant clinical care at one site may be beneficial to the young mother (a "1-stop shopping" model of care).⁵³ Appreciating that youth later in adolescence may be better informants about HIV treatment adherence than their caregivers, may enhance trusting relationships between healthcare providers and AYA.⁵⁴ Building trusting relationships and continuity with a group of clinical care providers may further enhance adherence.

Adolescent parenting is a barrier to completing high school for both parents, but is of particular concern for AYA mothers who, like their HIV-negative counterparts, will likely provide most of the early caregiving.⁵⁵ The National Campaign to Prevent Teen and Unplanned Pregnancy estimates that only 40% of teen mothers complete high school.⁵⁶ Teen fathers have a 25–30% lower probability of graduating from high school.^{57,58} Lack of educational attainment poses serious immediate and long-term financial burdens on adolescent parents and their families.

Changes in state and local policies and laws are needed to address these issues; however, in the absence of such policies, counseling in clinic settings should emphasize the importance of graduating from high school, and community services and resources in support of this goal should be made available to AYA parents. One approach might be to focus on life goals and how to achieve them. For example, interventions that teach goal setting skills, such as the CDC-defined evidence-based intervention for HIV-infected AYA Choosing Life: Empowerment, Actions, Results (CLEAR), may be a useful approach to assist with establishing and achieving such life goals.⁵⁹

Lower parental educational attainment can also have an impact on children. Compared to children of mothers in their

20s, children of adolescent parents start school at lower levels of readiness (lower mathematical and reading scores, language and communication skills, social skills, and physical and social well-being).⁶⁰ There is also growing evidence that children living with HIV-infected parents are at greater risk for mental health problems.^{61,62}

Mellins et al. found that in high-risk neighborhoods, adolescents with knowledge of mother's HIV infection and poorer maternal physical health had worse youth mental health outcomes (such as self-reported depression and maternal reports of youth behavior problems).⁶¹ However, differentiating between individual, familial, and environmental sources of stress is challenging. Factors associated with urban life may be more important for child psychological functioning than whether their parents are HIV infected.⁶¹ Ensuring that counseling programs for AYA living with HIV infection include information about the impact of early childbearing on their own lives and the lives of their children may mitigate these negative effects, by preventing pregnancy in some and providing support to others who get pregnant.

Preconception and antenatal period

Programs designed to prevent mother-to-child transmission of HIV (PMTCT) typically include HIV counseling and testing during antenatal care, and provision of ARV drugs to prevent in utero, intrapartum, and postpartum transmission.⁶³ However, preconception counseling is especially important. Pregnant women need to be on maximally suppressive cART, even before conception if contemplating pregnancy, and to receive all other appropriate prenatal care, including immunizations and dietary supplementation.⁴⁰

AYA women often initiate prenatal care late in pregnancy,⁶⁴ thus for those unaware of their HIV status and not receiving cART, there is a significant risk of HIV transmission to their fetus. Many HIV-infected women enter into conception without appropriate counseling.⁶⁵ This may be due to the fact that many are diagnosed with HIV when already pregnant and are adapting to a dual diagnosis.

Emerging evidence from African settings suggests that adolescent pregnant women have lower antenatal clinic attendance and ARV uptake for themselves and their babies, compared to women older than 19 years of age.⁶⁶ In addition, adolescent and young pregnant women living with HIV are at increased risk for mother-to-child transmission of HIV and for poorer maternal and infant outcomes, compared to older women with HIV.^{18,66} Results of three national surveys from South Africa from 2010 to 2012 showed no consistent reduction in mother-to-child transmission in adolescents, in contrast to adults.⁶⁷ HIV testing rates before pregnancy were lower in adolescents, and a lower proportion of HIV-infected adolescents than adults reported receiving any PMTCT intervention.⁶⁷ More research on this issue is needed in the United States.

Ways to increase retention of HIV-infected pregnant adolescents in care should explore counseling approaches, family and peer involvement and support, and use of mobile technologies to access/remind teens of their appointments (e.g., phones). Conditional cash transfers to pregnant AYA women were effective in increasing retention in care and adherence to PMTCT during antenatal period through 6

weeks postpartum in resource-limited settings;⁶⁸ whether this approach would have the same efficacy in the United States remains unexplored.

Postnatal period and beyond

The most important issues that need to be addressed during the postnatal period are infant prophylaxis, infant testing for HIV infection, and mode of infant feeding. Infants need to receive timely and appropriate ARV prophylaxis.⁴⁰ This is particularly important if the mother has not received antenatal prophylaxis or has high HIV viral load at the time of delivery.⁴⁰

Like all HIV-infected parents, adolescent parents will also need to adhere to a very involved schedule of infant visits, to include HIV testing visits and routine infant care, as well as a schedule of administering prophylactic medications to the infant. As mentioned, for the AYA HIV-infected parent, attending these visits can be more challenging if they are dependent on others for transportation or financial support.

Current US recommendations discourage breastfeeding because of the risk of HIV transmission to the infant and the availability of safe and sustainable infant feeding alternatives in the United States.⁶⁹ Premastication of food given to the infant should also be avoided.⁶⁹

Finally, an equally important element of postpartum care is the prevention of unintended pregnancy, promotion of adequate birth spacing, and reinforcing safe sexual practices. Thus, adding family planning counseling and contraceptive options in the immediate postpartum period is essential.

In the uncommon scenario where the infant is HIV infected, ARV medications need to be prescribed and administered accurately, promptly, and consistently, with close follow-up with a pediatric HIV provider.^{40,70} Neonatal and childhood adherence to ARV medications is pivotal to survival. A meta-analysis recently showed that only 72% of pregnant adult women are more than 80% adherent to cART, and that adherence is lower postpartum.⁵¹ There is some evidence demonstrating that maternal ARV adherence directly correlates with correct administration of ARVs in the HIV-infected infant.⁷¹ Thus, approaches to increase maternal ARV adherence may have a favorable impact on adherence to the infant's regimen as well.

Assistance to AYA with HIV-infected infants includes hands-on education as well as social support from peers, family members, case managers, and affiliated support services. The most common approach to adherence support has been next-step counseling, which is a brief theory-based intervention derived from motivational interviewing.⁷² Intensifying visit schedules when infants are newly diagnosed with HIV infection until virologic suppression is achieved may be beneficial.

Newer and investigational techniques to promote adherence in the HIV-infected AYA include customized text messaging and smart devices, such as an electronic pill cases that provide real-time monitoring of dose taking and the opportunity for intervention when doses are missed. Additional technologies, such as "smart" pill bottles with a variety of adherence strategies, are in development. When lack of adherence for the infant's medications is demonstrated, appropriate discussions should take into account the rights of both the mother and the infant and balance the clinician/patient trust with the obligation and responsibility to safeguard the infant's well-being.

Special attention should also be paid to the mental and physical health of mothers living with HIV during the first 2 years after the birth of an infected child.⁷³ Depressive symptoms were high and correlated with poor individual physical health.⁷³ HIV-infected women experience maternal trauma and feelings of guilt while their infants undergo HIV testing.⁷⁴ Mothers of children with maternally transmitted HIV may experience guilt or denial of their baby's PCR results.⁷⁵ Thus, provision of integrated mental health services to screen and treat co-occurring psychological comorbidities may be particularly important in this population.⁷⁶

Parents of HIV-infected infants will also need extensive support in dealing with disclosure of the infant's status to immediate family and friends as well as potentially to those who provide childcare (individuals and establishments).⁷⁷ Ideally, HIV care teams that integrate diverse professionals, including social workers and case managers, and psychologists, may be best equipped to address the myriad of psychosocial needs of HIV-infected AYA parents with infected infants. It is important to note, however, that diverse professional services are not always available to underserved populations, which may limit the impact of integration efforts.

As an HIV-infected child gets older, parents will need to decide when to disclose their status to them. Disclosure of serostatus to children is one of the main concerns and psychological stressors of all mothers with HIV disease.^{77,78} In a systematic review of disclosure to children younger than 12 years of age, Krauss et al. found there were health (e.g., adherence, HIV testing of children, quality of life) and planning benefits (e.g., life planning, future care for children) for both HIV-positive and HIV-negative children with caregiver disclosure.⁷⁹

Other challenges

AYA with chronic disease often face challenges transitioning from pediatric or adolescent to adult-centered medical care.^{80,81} This may be particularly difficult in the case of a pregnant or parenting HIV-infected adolescent. In their examination of the transition to adult medical care of HIV-infected AYA from the clinics of the Adolescent Trials Network, Gilliam et al. found that sites that viewed transition as a process rather than an event had more formalized structures in place to deal with transition.⁸² The stage of sexual and reproductive health should be one of the factors when planning such a transition.⁵³

Few guidelines for successful transition have been rigorously evaluated,⁸³ but common principles include availability of psychological and case management services at all transition stages,⁸⁴ development of a transition plan at least 1 year in advance, one or more meetings of pediatric and adult care providers before transfer, and the transition process taking into account the patient's educational, housing, and employment needs.⁸⁵ Planning early for the transition is particularly important for sexually active, pregnant, or parenting adolescents to facilitate transition to obstetric services.^{86,87}

The needs of parenting AYA living with HIV encompass individual, interpersonal, community, and policy concerns. The primary challenge facing healthcare providers is to address not only immediate medical needs but also to mitigate the impact of social, economic, and environmental factors on

the health and well-being of patients and their young children. Although practice guidelines are essential elements of standardized high-quality medical care for HIV-infected individuals, additional steps must be taken to ensure that AYA are prepared to deal with the challenges associated with their HIV and parenting.

Given the realistic expectations of HIV-infected AYA to have children and start families, sexual and reproductive health programs to support family planning as well as parenthood, which include education and skill building, are needed. Ideally, these programs should go beyond maternal and child healthcare to provide preconception health services and care and support for parents concerning healthy relationships, substance use, mental health issues, and community support services. One promising area of work is improving parental stress levels by screening for high levels of stress during clinical practice and implementing stress-reducing interventions.⁸⁸

Although men are rarely included in sexual and reproductive health counseling, a focus on the couple rather than the woman as the unit of care may increase the likelihood that protective rather than risk behaviors are more common in these relationships. Efforts to expand counseling approaches to appeal to AYA males with HIV, including young fathers with HIV, may benefit not only those males but also their female partners. In addition, parenthood programs that include family members may also be beneficial, so that HIV-infected AYA have support for healthy sexual and reproductive health choices.

Opportunities to educate AYA (both women and men) living with HIV about PMTCT before conception need to be more thoroughly explored. Incorporating reproductive health planning at every clinic visit of an AYA living with HIV is essential. Approaches to access AYA through newer technologies (such as social media, the Internet, or their mobile devices) need to be assessed and potentially implemented.

Although existing family planning services benefit AYA with HIV infection, guidance, intervention, and counseling materials need to be developed specifically for this population to address the unique challenges faced by this group. Counseling on pregnancy prevention should include the full array of contraceptive choice and STI prevention options, taking into account the special considerations that may apply for the choice of appropriate contraceptive methods.

The specific challenges of early childbearing for AYA living with HIV should be laid out and discussed with regard to their impact not only on the parents and their families but also on their potential offspring. Clinic-based HIV care teams that integrate professionals with diverse training and expertise will be better able to meet the many psychological, social, environmental, and clinical needs of AYA parents with HIV.

Innovative approaches to assess and improve adherence with ARV drugs and retention in care need to be thoroughly evaluated. Interventions to promote attainment of long-term goals, such as finishing high school and achieving a college education, and to mitigate the negative effects of early parenting on child outcomes need to also be developed. As HIV infection becomes a chronic illness, proactively addressing the reproductive health issues of young men and women living with HIV, including those of young parents, takes on increasing importance.

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