Chapter 5: Prevention and Services for Adolescents and Young People

The interventions in this section should also be viewed in conjunction with other topics where young women are included. Studies with adolescent-specific data are also included in the following sections: Prevention for Women; Prevention Among Key Affected Populations; Testing; Treatment; Safe Motherhood; Strengthening the Enabling Environment; and Care and Support.

HIV among adolescents is a growing concern. UNAIDS notes that adolescent girls and young women are a key population in danger of being left behind in the AIDS response. Worldwide, there are approximately four million young people aged 14 to 24 living with HIV and 29% of those are adolescents aged 15 to 19 (WHO, 2014 cited in Bekker et al., 2015). Every week, more than 5,000 adolescent girls and young women acquire HIV (UNAIDS, 2015e). In Sub-Saharan Africa, 7 in 10 new infections in 15 to 19 year olds are among girls. Further, AIDS is now the leading cause of death among 10 to 19 year olds in Africa and the second leading cause of death among adolescents globally (UNAIDS, 2015e). Estimates for July 2015 show that 82% of all adolescents ages 10 to 19 living with HIV are in Sub-Saharan Africa (UNICEF, 2015c). At a time when HIV incidence overall is on the decline, adolescents and young people – particularly girls and young women – remain vulnerable.

But there is cause for optimism. HIV incidence among young people has been reduced 37% between 2005 and 2015. In eastern and southern Africa, where vulnerability to HIV is high among young people, the percentage of girls who were sexually active before age 15 declined from 16.6% to 14.3%; among boys that percentage also declined from 14.5% to 10.9% between 2005 and 2015 (UNAIDS, 2015a). Over that same time period, condom use increased from 21.1% to 22% among boys and from 21.6% to 32.5% among girls (UNAIDS, 2015a). These trends show encouraging declines in behavior that may put young people at risk, but young women and girls continue to face difficulty

The needs of very young adolescents (10–14 years old) differ greatly from those of older adolescents (15–18 years old) and young adults (19–24 years old), therefore the following interventions and their components must be implemented in age-appropriate ways. However, adolescent sexual behavior does not follow age restrictions: some adolescents may experience early sexual debut, others may remain abstinent until they are older. In these sections, the terms "adolescents" and "young people" are used to refer to those aged 10 to 19 and 20 to 24, respectively.

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navigating these risks due to the power imbalances that result from being young and female. While WHO has not issued HIV-specific guidance, some technical briefs have been issued to address the needs of young people and key populations (WHO et al., 2015).

Gender and Age Contribute to Power Imbalances that Increase Young Women and Girls' Vulnerability

Young women are particularly vulnerable to the multiple risks that result from the power imbalance of inequitable gender norms, including early sexual initiation, coerced sex, and early marriage. "The disproportionate HIV incidence in young – often poor – women underscores how social and economic inequalities shape the HIV epidemic" (Richardson et al., 2014: para 2), with high gender inequality a significant predictor of a heterosexual HIV epidemic (Richardson et al., 2014). A recent study in Uganda found that HIV incidence was four times greater among adolescent women, ages 15 to 19, compared to adolescent men of the same age, suggesting that "HIV risk is high as soon as young women initiate sexual intercourse" (Santelli et al., 2013: 398). Countries with severe gender inequality are more than 15 times more likely to have a heterosexually driven epidemic compared to countries with near gender parity (Richardson et al., 2014).

Gender norms typically dictate that boys are expected to be sexually aware, while girls are expected to be sexually submissive, placing both boys and girls at risk of HIV acquisition. Parents promote gender inequitable sexual relationships through citing proverbs such as, "a man is an axe so he can be borrowed," with boys noting that this means "that as a boy I am not confined to one girl" (Boy cited in Malinga-Musamba and Ntshwarang, 2014: 236). Others in India agreed that having "many partners proves the masculinity of a man" (Pradhan and Ram, 2010: 350). Increasing gender equality can have a direct impact on HIV risk; a study in South Africa found that among 1,204 young women, ages 15 to 24, consistent condom use was associated with higher gender equality in relationships with a male partner (Jama Shai et al., 2010). A study of in-depth interviews with 18 to 24 year old young women in South Africa found that the majority expected financial independence, freedom to make decisions, including over sexuality; however, they were in relationships marked by intimate partner violence, infidelity or lack of condom use, demonstrating the tension between current gender norms and legal changes that have emphasized gender equality. Those young women who did not believe in their autonomy were at higher risk for relationships of violence, infidelity and no condom use (Pettifor et al., 2012b). [See also *Strengthening the Enabling Environment: Transforming Gender Norms* and *Addressing Violence Against Women*]

Young women frequently have limited power in sexual relations, and many young women experience sexual coercion, often from older partners. For example, a 2008 study interviewed pregnant and never-pregnant women under the age of 17—twenty-four in rural Rakai District, Uganda and thirty-two in urban Jamaica—about their sexual experiences and found that many young women were pressured to have sex at an early

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age, did not make a conscious decision to do so, and later regretted it. In Jamaica, all of the interviewed young women indicated that they "should have been older the first time they had sex" (Geary et al., 2008: 18).

A study among out-of-school youth in Uganda aged 13 to 19 found that young people, themselves, felt that they started to have sex "too early" (Nobelius et al., 2010b: 666). In addition, girls reported that from the time their breasts began to develop, boys repeatedly requested sex. Boys also reported being pressured to engage in sex before they really wanted sex or felt ready for sex in order to prove their masculinity and because they were unsure if it was physically safe for them to delay sex (Nobelius et al., 2010b). In Nigeria, another study found similar misconceptions about the dangers of delaying sex, with boys worried that delaying sex meant they would never be able to have sex and girls worried that delaying sex would close their vagina (Oladepo and Fayemi, 2011). Ensuring that young people have the appropriate information and available services to protect themselves—before their first sexual experience—is therefore vitally important.

Age-Disparate Relationships and Early Sexual Debut Put Young Women at Risk

Large age differences (5-10 years or more) between younger women and older men result in unfavorable power imbalances for women that put them at risk for HIV acquisition. A study of adolescents in South Africa found that those with partners more than five years older were 4.5 times more likely to have acquired HIV (Kharsany et al., 2014). A study in Tanzania found that among 2,019 women aged 20 to 44, those who had their first sexual intercourse before age 18 were more likely to be living with HIV than women who had their first intercourse between 18 and 19 years of age (Ghebremichael et al., 2009b). Another study in Mali found that girls who became sexually active before the age of 15 had older partners, frequent coercive relationships and poorer communication skills; all associated with increased risk for acquiring HIV (Boileau et al., 2009). In a study of 1,675 sexually experienced girls aged 15 to 24, initiating sex after age 15, as compared to before age 15, was associated with having used a condom at first sex (Mmari et al., 2013).

> *"You have to weigh it up if a blouse is worth giving him sex. Obviously it is not. So if a guy wants sex just because he bought me a blouse I will tell him to take it back!" – Young woman, aged 19 in Zimbabwe (cited in Masvawure, 2010: 866)*

Age-disparate relationships are sometimes transactional in nature so that girls and young women can meet their basic needs. For example, in an area in Tanzania, "most girls over about age 14 considered that they needed a sexual partner who could give them money for peanuts or sugarcane to calm their hunger…Many schoolgirls reported that they spent the money they received for sex on school requirements, such as books, pens, shoes, uniforms and food at school" (Wamoyi et al., 2010: paragraph 35). In Zimbabwe, a study of 2,593 young women aged 18 to 22 found that food insufficiency was associated with HIV prevalence (Pascoe et al., 2015).

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Focus group discussions and interviews with young women in Uganda found that, despite knowing the risks of acquiring HIV, they reported that their parents expected them to engage in transactional sex with older men to gain cash to reduce the financial burdens on the family (Nicholas, 2010; Wamoyi et al., 2011). At the same time, in some societies, men are expected to give material goods or money as a sign of love and a serious relationship in exchange for sex; women and girls who get no material gain from sex are viewed with contempt (Wamoyi et al., 2011; Nobelius et al., 2010a). With an absence of explicit negotiation, plus a sense of male entitlement, men perceive that gifts of cash result in a women or girl accepting sex on his terms. In addition, provision of basic necessities or pocket money is higher for brothers than for sisters, forcing young women to engage in transactional sex to gain access to goods (Jewkes et al., 2012). Cash transfers to prevent HIV acquisition, particularly among adolescent girls in Sub-Saharan Africa can help reduce the need for these transactional relationships and are currently a subject of active research and debate. For example a randomized controlled trial has been completed in South Africa to assess whether cash transfers for school attendance is associated with reduced HIV acquisition, but results have yet to be reported (HTPN065, cited in Pettitfor et al., 2012). Though questions remain, "there is now sufficient evidence to include social protection programming as a key strategy…to contribute to HIV prevention among adolescents" (Cluver et al., 2015: para 1).

Girls' education is associated with delayed sexual debut, which may play a crucial role in improving their self-esteem and options, enabling them to say no to unwanted sex (Todesco and Gay, forthcoming 2016). Many girls, however, are not in school. In 2012, 31 million females of primary school age and 32 million girls aged 12 to 15 were out of school (UNICEF, 2015d). Data from Uganda from 1993 to 2013 found that school enrollment rose steadily during these years and increasing school enrollment was associated with declining risk for acquiring HIV among both boys and girls 15 to 19 years of age, with young men in school reporting fewer recent sexual partners and lower rates of sexual concurrency (Santelli et al., 2015a). Nine surveys from 1999 to 2011 with 18,244 sexually experienced adolescents in Uganda found an estimated 71% of the decline in HIV incidence among adolescent women due to increased school enrollment. Increased school enrollment coincided with the new Ugandan national policy of universal primary education and the abolishment of school fees (Santelli et al., 2015b). Additional data from Uganda found that secondary school completion rates delayed sexual debut and lowered their lifetime risk of HIV acquisition (Alsan and Cutler, 2013). Another recent study that used 2010-2011 DHS data from Malawi and Uganda found that a one year increase in schooling decreases the probability of an adult woman testing positive for HIV by 6% in Malawi and by 3% in Uganda (Behrman, 2015). [See also *Strengthening the Enabling Environment: Advancing Education]*

Violence and Sexual Coercion of Young Women and Girls Must be Eliminated

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Delay of sexual debut is a key intervention to enable young women to complete school and increase their economic opportunities; enable more informed decision-making about when to have sex, with who and how; and acquire the skills to communicate their desires about preventing HIV infection, unintended pregnancies, and other issues to protect their rights (Abdool Karim et al., 2010a: S123). However, a study in Nigeria found that forced sex was a main reason for sexual debut among adolescent girls and forced sex was associated with self-reporting of living with HIV (Folayan et al., 2014b). Intimate partner violence is widespread among adolescents; in 6 countries where data were available on intimate partner violence, more than 1 in 3 adolescent girls has experienced such violence in the past 12 months (Cameroon, Haiti, India, Malawi, Namibia and Zimbabwe) (All in to End Adolescent AIDS, 2015d).

> *"I have the right to say no to sex." (South African woman aged 24 cited in Pettifor et al., 2012: 482).*

Power disparities put young women at greater risk of sexual coercion and rape. Anecdotal evidence suggests that men who are aware of AIDS are targeting younger girls and, assuming they are 'risk free,' are less likely to use condoms with young partners. Recent studies of young girls who have had transactional sex and acquired HIV found that they had inequitable relationships and were more likely to have experienced violence (Jewkes et al., 2012). Studies in South Africa and Zimbabwe have found high levels of rape and sexual abuse and recent WHO estimates on lifetime prevalence of intimate partner violence among ever-partnered women aged 15 to 19 was 29.4% globally (WHO et al., 2013). SASA, a community based gender norms and prevention of violence randomized trial (Abramsky et al., 2014), also showed that children who lived in these communities were less likely to be exposed to acts of intimate partner violence (Raising Voices et al., 2015), which may reduce the intergenerational impacts of violence. *[See also Strengthening the Enabling Environment: Addressing Violence Against Women]* In many countries, few men who have sex with young girls, with or without coercion, are prosecuted. Interventions that encourage adolescents to adopt protective behavior and those that address the power disparities between young girls and older male partners are of the utmost importance in further efforts to protect adolescents from acquiring HIV.

Efforts are Needed to End Early Marriage/Child Marriage

One-third of women in the developing world are married before the age of 18 and one in nine are married before the age of 15, with the largest number of child brides in South Asia (ICRW, 2016). Women with little education are more likely to have married as children, even in countries where the prevalence of child marriage is low (UNICEF, 2011b). And women who marry as children are more likely to think that a husband is justified in beating his wife (UNICEF, 2011b). In addition, cross-sectional analysis performed on data from a nationally representative household study of 124,385 Indian women aged 15 to 49 found that women married as minors were significantly more likely

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than those married as adults to report experiencing marital violence (Raj et al., 2010). *[See Strengthening the Enabling Environment: Violence against Women]*

Girls in child marriages are financially dependent on their husbands and typically cannot leave because they cannot repay their dowry, thus they have extremely limited power to refuse sex, negotiate condom use or access HIV testing and services (Nour, 2006). Increased sexual experience is often associated with increased age and therefore young girls married to older men are at an increased risk of HIV transmission. Data collected in Zambia and Kenya (year(s) not specified) showed that "young married girls are more likely to be [living with HIV] than their unmarried peers because they have sex more often, use condoms less often, are unable to refuse sex, and have partners who are more likely to be HIV-positive" (Clark, 2003; Luke and Kurz, 2002 cited in Mathur et al., 2003: 9). Girls and their families and communities need to know that early marriage does not necessarily offer protection against HIV transmission.

Parliament in Malawi, a country where 1 in 2 girls are married by the age of 18, recently raised the legal age of marriage to 18. However, it remains legal for 15 to 18 year olds to marry with parental permission and marriage of those under 15 is not expressly illegal, merely discouraged (Girls Not Brides, 2016). It is, however, an important first step. It is also important to change social and economic environments, which can be significant in changing practices. "The practice of child marriage practically disappeared from many East Asian countries within two to three decades, largely due to the process of social, economic and policy changes" (Malhotra et al., 2011: 25).

Reducing child marriage can reduce HIV risk for young women and girls. A review of 23 child marriage prevention programs found that successful approaches that empowered girls and offered incentives to parents and girls to prevent child marriage reduced the incidence (Lee-Rife et al., 2012).

More HIV Programming is Needed for Adolescents and Young People Who Are Also Part of Other Key Populations

Young key populations experience more unprotected sex, unintended pregnancy and violence compared to older populations (Delany-Moretlwe et al., 2015). In addition, a recent comprehensive literature review from 1999 to 2014 of adherence and retention in care found that outside the US and other resource-rich countries, there were no studies reporting on adolescents or young people who identified as sex workers, were transgender, used drugs or had been in prison (Lall et al., 2015).

A UNESCO review found that data of key populations, especially those of adolescents who inject drugs, is lacking (UNESCO, 2012c, UNICEF, 2010d). Where there is data, it is alarming. In Myanmar, HIV prevalence was 7% among 15 to 19 year olds who injected drugs (UNICEF, 2013a). UNICEF has issued guidance on the need for strategic information for young key populations (UNICEF et al., 2013b).

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Adolescence is a critical time during which many young people initiate their first romantic and sexual relationships (UNESCO, 2013) and develop awareness of sexual orientation (Delany-Moretlwe et al., 2015). Gender norms not only affect adolescent girls, but also young adolescent boys (Gibbs et al., 2012), as well as transgender adolescents. Sexual orientation and gender identity is a wide and fluid spectrum, not a lifestyle choice, and sexuality education programs in resource-rich and resource-poor areas have neglected to cover this topic (Plan, 2015). While there has been some success with livelihood interventions such as the IMAGE study (Kim et al., 2009c), little research is available as well on the intersection of masculinities and livelihoods and how this informs HIV risk and how livelihood interventions could be gender transformative for men and boys (Gibbs et al., 2012). At a consultation in Thailand in 2012, some young transgendered people reported that they had unprotected sex to validate their gender identity and signify trust and love (Schunter et al., 2014; Delany-Moretlwe et al., 2015). Yet little or no support exists for these adolescents (Plan, 2015). WHO recommends that health care workers should receive appropriate recurrent training "to ensure that they have the skills and understanding to provide services to adult and adolescent transgender people based on all persons' right to health, confidentiality, and non-discrimination" (WHO, 2015b: 10)."

The GFTAM has noted that in a 2015 review of 46 country concept notes and 15 regional concept notes that "access to services for key populations under the age of 18 was rarely addressed" (Global Fund to Fight AIDS, HIV and IWHC, 2015: 14; McClure et al., 2015). Adolescents may also belong to multiple groups (for example, adolescent girls who sell sex). WHO 2013 guidance on adolescents notes that sex work by definition only involves adults and that sex work among those under age 18 is considered sexual exploitation (WHO, 2013:13). Little research is conducted among adolescent sex workers as they "are considered victims of sexual exploitation and trafficking by international conventions, thus conferring obligations to refer them to the relevant authorities for social protection (Goldenberg et al., 2011 cited in Busza et al., 2014: 86). Yet behavioral surveillance indicates that in India 17% of female sex workers initiate selling sex before the age of 15 years (Baggaley et al., 2015). In some cases, adolescents enter into sex work to pay school fees (Busza et al., 2014).

Further Programming is Needed for Adolescents and Young People Living with HIV

"HIV prevention and decreasing HIV-related deaths depend critically on reaching adolescents" (Bekker et al., 2015: para 3).

As treatment access has improved, a number of children born with HIV have reached adolescence and young adulthood and they have unique needs for information and services that also must be addressed. Treatment statistics for HIV typically segregate data into ages 10 to 14 and 15 years and older, obscuring the needs of adolescents ages 10 to 19 (Wood et al., 2015).

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Some experts recommend data disaggregation between ages 10 to 14; 15 to 17; and 18 to 19 (Kurth et al., 2015). A recent review of evidence on interventions commonly accepted as best practices found that significant numbers of adolescents are not adequately reached; ineffective interventions continue to be implemented; and effective interventions are delivered ineffectively or with inadequate scale or resources to have an impact (Chandra-Mouli et al., 2015b). In 2015, UNAIDS and WHO released global standards for quality health care services for adolescents, but they were not HIV-specific (WHO and UNAIDS, 2015). "The epidemic in adolescent girls reflects the strong combined impact of gender and income inequality, early sexual debut, age disparate sexual relationships, and heightened biological vulnerability…" (Kasedde et al., 2013: 160). Yet adolescents have received insufficient attention in HIV prevention, treatment and care (Kasedde et al., 2014). Few national AIDS strategies have explicit programming for adolescents (Kasedde et al., 2013) and only 32 countries have measurable targets in their policies related to adolescents (Dick and Ferguson, 2015).

There is Renewed Global Attention to Adolescents and Young People

Encouragingly, there is renewed global attention to adolescents among bi- and multi-lateral organizations as well as private foundations to address the growing HIV and sexual and reproductive health needs of adolescents and young people. Two major intiatives are All In and DREAMS. UNICEF has begun the All In campaign to end the AIDS epidemic among adolescents ages 10 to 19 by 2030. The campaign proposes to end AIDS-related deaths among adolescents by 65%; reduce new infections among adolescent girls and reduce stigma (All In to End Adolescent AIDS, 2015b). PEPFAR, in partnership with the Bill & Melinda Gates Foundation, Girl Effect, Johnson & Johnson, Gilead Sciences and ViiV Healthcare and others, have launched the DREAMS Initiative to reduce new HIV infections in adolescent girls and young women in 10 countries in eastern and southern Africa – Kenya, Lesotho, Malawi, Mozambique, South Africa, Swaziland, Uganda, Tanzania, Zambia and Zimbabwe – where nearly half of all new HIV infections among adolescent girls and young women occurred in 2014. In addition, in March 2016, the US released the Global Strategy to Empower Adolescent Girls.

There is tremendous variation among young people globally and "what works" will necessarily be context-specific. Given the multiple influences on the lives of adolescents, from family to community to society, it is important to look beyond the health sector for interventions to reach adolescent girls. Evidence for programming for adolescent girls falls under a range of interventions in at least three areas: (1) strengthening the enabling environment, including education attainment, promoting gender-equitable norms, reducing violence; (2) providing information and services, including comprehensive sex education and non-stigmatizing service provision; and (3) ensuring social support, including caring relationships with adults and psychological and other support for orphans and vulnerable children (Hardee et al., 2014). Further guidance and technical briefs to address the needs of young people and key populations have been published by WHO (WHO, 2015h; WHO, 2015i; WHO, 2015j; WHO, 2015k).

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Successful and promising interventions that work specifically for adolescents, in addition to those found in other sections as noted above, are further broken down here into two main categories:

A. Mitigating Risk
B. Increasing Access to Services

What Works in Prevention and Services for Adolescents and Young People

5A. *Prevention and Services for Adolescents and Young People:* Mitigating Risk

Young People Need Information

A review of the global literature on adolescents found that "there is a significant unmet need for information, education, and services for sexual and reproductive health for married and unmarried young people" (Shaw, 2009: 135; Gay et al., 2015). In Sub-Saharan African countries with available data (2014), only 30% of young women and 27% of young men had comprehensive correct knowledge of HIV (United Nations, 2015). In order to change behavior, young people need to know what the risks are and how to protect themselves. And they need this information early enough to make a difference in outcomes. "Young women, who bear an increasing share of HIV infection, must be reached early – ideally before their first sexual experience (which is coerced for many girls in high risk settings) and in time to address other factors, for example, school dropout, which put them at risk for acquiring HIV" (Bruce et al., 2011: 8). Young women who can stay in school have increased knowledge about HIV; Women with post-primary education are five times more likely than illiterate women to be educated on the topic of HIV and AIDS (UNESCO, 2010). Equitable expansion of schooling for girls may contribute to the reduction of girls' vulnerability to HIV infection (Jukes et al., 2008). In 1996, Botswana reformed secondary school, expanding access to grade 10. A study found that each additional year of secondary schooling caused by this policy change led to an absolute reduction in the cumulative risk of HIV infection of 8.1 percentage points, with effects particularly large for women (De Neve, et al., 2015). Similarly, education subsidies in Kenya were correlated with reduced rates of STIs among young women

"I want to know if I can have a boyfriend because every time I ask my mum she tells me not to. I would also love to learn about safe sex and safe motherhood" (14 year old adolescent girl living with HIV, Zambia cited in Mburu et al., 2013).

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(Duflo et al., 2015). Increasing girls' access to secondary education could have a large protective benefit in terms of HIV, in addition to other benefits for educated girls. *[See also Strengthening the Enabling Environment: Advancing Education]*

For boys, integrating information about voluntary medical male circumcision (VMMC) within child and adolescent programs could increase uptake (Roxby et al., 2014). Focus group discussions with circumcised and uncircumcised boys in South Africa in 2012 and 2013 found that boys who understood that VMMC reduced the risk of HIV acquisition and who also believed that VMMC would improve their sexual desirability and performance stated that this messaging would increase uptake of VMMC (George et al., 2014). *[See also Prevention for Women: Voluntary Medical Male Circumcision]*

Misinformation about sex is dangerous and must be corrected. For example, young people (and adults) need to have a realistic understanding of the risks of differing sexual practices so they may avoid the behaviors that may put them at increased risk for HIV. A study of girls in Senegal found that they engaged in anal, oral and manual sex to remain technically virgins for their wedding night, yet provide pleasure both for themselves and their boyfriends (van Eerdewijk, 2009). Anal sex can increase the risk of HIV transmission (Powers et al., 2008), "yet anal sex continues not to be targeted – nor even specifically mentioned – in most prevention campaigns…." (Halperin et al., 2009b: S57). On the other hand, transmission via oral–genital contact is extremely low, with a study of 135 HIV-negative people (110 women and 25 men in Spain) whose only risk to exposure was unprotected orogenital sex with their HIV-positive partner, with 210 person-years of follow-up and 19,000 unprotected orogenital exposures with the HIV-positive partner and no single HIV seroconversion (del Romero et al., 2002). Sexual health information also needs to clear up misperceptions by youth such as that those with HIV and/or TB will be thin (Puoane et al., 2010) and other misinformation that may lead to stigma or discrimination.

Improving Condom Use Among Young People is Essential

Improving condom use among young people is critical—data show that if condom use is established during adolescence, it is more likely to be sustained in the long-term (Schutt-Aine and Maddaleno, 2003). However, in a third of countries in Africa, fewer than half of all adolescent women reported knowing where to obtain condoms (Woog et al., 2015).

"If we use condoms, we do not get pregnant; so, we can go to school and prepare our future" –Adolescent girl in Liberia (cited in Atwood et al., 2011)

A recent review of condoms in sub-Saharan Africa found that gender-power dynamics continue to constrain the use of condoms by young women, with increased economic resources under the control of young women correlated with increased condom use

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(Maticka-Tyndale, 2012). The proportion of adolescent women age 15 to 19 who reported having sexual intercourse in the past year has increased in more than half of countries surveyed, with less than 15% reporting current condom use (Kothari et al., 2012). Of girls aged 15 to 24 reporting higher risk sex, 42% reported condom use. Among boys, this was 59% (UNICEF, 2015d). A recent study from 509 Tanzanian youth aged 15 to 24 found that young women were more likely than males to report that they did not use condoms because their partner does not like condoms or did not want to use them (Hattori, 2014). Given the risks faced by young women, "adolescent girls and young women deserve a larger share of resources and policy attention than they have been receiving" (Bruce et al., 2011: 2). Obtaining a condom is challenging even for adults: in 2013, in sub-Saharan Africa, only eight male condoms were available per year for each sexually active individual (UNAIDS, 2015c). But creating programs specifically optimized and costed for adolescents has yet to be developed (Stover et al., 2014b).

Comprehensive Sex Education Programs Are Effective

The right to effective comprehensive sexuality education is upheld in the Convention on the Rights of the Child (UNESCO, 2013). School-based comprehensive sex education programs are effective ways to reach a large number of (but not all) young people. Despite the fears of some community leaders and parents that sex education will encourage young people to engage in sex, evidence shows that sex education can delay sexual debut, and can increase condom or contraceptive use by sexually active adolescents (UNESCO, 2009a, Mavedzenge et al., 2010a; Kirby, 2001; Coyle et al., 1999; Hubbard et al., 1998, cited in Satcher, 2001; Grunseit, 1997). Sex education programs that address gender and power in sexuality are more effective in preventing HIV acquisition than those that do not (Haberland, 2015). Achieving behavior change is difficult and many interventions achieve only moderate, if statistically significant, results that include behavior change.

A review from UNESCO of studies of 87 sex education studies, including 29 in developing countries, found a number of positive outcomes: delayed initiation of sexual intercourse, decreased number of sexual partners, increased use of condoms and decreased sexual risk taking. Not every intervention resulted in a decreased risk of HIV acquisition. However, no studies showed hastened initiation of sex, no studies showed an increased number of sexual partners, and no studies showed decreased use of condoms. Only one study of the 29 showed increased sexual risk taking, with the remainder of studies showing no harmful effects of sex education (UNESCO, 2009a).

One community randomized trial in rural Tanzania found a significant impact on knowledge and reported attitudes and behavioral outcomes but had no consistent biological outcome as measured by seroconversion to HIV-positive over the three year period (Ross et al., 2007a) and again for a longer period of time between 1999 and 2008 and again during follow-up nine years after program initiation (Doyle et al., 2010a; MEMA Kwa Vijana, 2008a and b). Biological outcomes were not sustained due to a lack

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of attention to gender norms (Wight et al., 2012). Yet a review of studies that included comprehensive sex and HIV education programs in developing and developed countries found that two-thirds of the studies reported that adolescents who received sex education were significantly more likely than those who did not receive the intervention to have better knowledge and to engage in protective behaviors (Kirby et al., 2007a).

Views on appropriate programs for adolescents vary. However, strong evidence supports comprehensive sex education that includes promotion of delayed sexual initiation, and also information on contraception including condoms so that when they do start having sex, young people will be protected from unwanted outcomes. Evidence from studies around adolescent access to contraception has found that confidentiality is key (Gay et al., 2015) and adolescents avoid services where confidentiality is not guaranteed (WHO, 2015a).

School-based interventions are logistically well suited to educate youth about sexual activity as schools reach large numbers of young people in an environment already equipped to facilitate learning (Fonner et al., 2014). Yet despite extensive evidence on the importance in preventing HIV acquisition, "comprehensive sex education is a long way from being institutionalized in most low and middle-income countries where the HIV epidemic poses a disproportionate burden of scaled-up, sustainable programmes within educational curricula" (UNESCO, 2012d). Yet some countries have been successful: Nigeria approved a policy to integrate sex education into the curriculum of all Nigerian schools. However, the curriculum had to be approved at the state level and states could tailor the curriculum. Yet Nigeria has successfully scaled up, with a sex education curriculum delivered in 34 out of 36 states and institutionalized pre-service training on sex education. Thailand has also increased coverage of sex education, but not with sufficient hours per student to have the most effective impact (UNESCO, 2012d). Colombia has scaled up sex education to 71 out of 94 Education Departments (UNFPA, 2014). Rutgers WFP, in collaboration with the government of Pakistan scaled up rights based sexuality education in 1,188 schools (Svanemyr et al., 2015). Guidance is available from UNESCO on how to implement and scale up comprehensive sex education (UNESCO, 2012d).

Trying to address age appropriate sex education is challenging, especially in countries where students are years behind in school (Haberland and Rogow, 2015). And most sex education curricula do not address non-sexual modes of transmission, such as injecting drug use, despite data showing that injecting drug use can start early in adolescence (UNESCO, 2012c). Yet while the age distribution of the 12.7 million people who inject drugs globally has not been assessed, "evidence suggests that people who inject drugs begin their injecting practices…often in adolescence" (Krug et al., 2015: para 1). In Ukraine, 12% of the estimated 272,000 people who inject drugs began injecting drug use before age 15 and 72% began when they were under age 18 (Maksymenko and Shebardina, 2015b). In addition, same sex relationships are often omitted from sex

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education curricula (Kurth et al., 2015). In Brazil, a multicultural human rights approach to sexuality education is being promoted, which analyzes the sexuality rights dynamic for each group and community and analyzes inequality in access to services and power, using the statistics of gender diversity among Brazilian youth (Paiva and Silva, 2015).

Effective Sex and HIV Education Programs Have Key Characteristics

The evidence shows that key characteristics of effective sex education programs involve experts in research on human sexuality; assess the reproductive health needs and behaviors of those young people who get the education programs; specify health goals, types of behavior affecting these goals, the risk and protective factors affecting the types of behavior, and activities that change the risk and protective factors; design activities that are sensitive to community values and consistent with available resources; pilot test the program and obtain on-going feedback; focus on clear goals of HIV prevention; address situations that might lead to unwanted or unprotected intercourse and how to avoid these and how to get out of them; focus on knowledge, values, norms, attitudes and skills; employ participatory teaching methods; provide scientifically accurate information about the risk of unprotected sexual intercourse and the effectiveness of different methods of protection; address perceptions of risk; address personal values and norms; address peer norms; and address skills and self-efficacy (UNESCO, 2009b). These curriculum-based, adult-led efforts that follow specific guidelines have also been referred to as "Kirby characteristics' (Pettifor et al., 2013: S158) based on the comprehensive work of Doug Kirby, one of the world's leading experts in the subject. In addition to the above characteristics, discussion of gender norms that can put both male and female adolescents at risk is also critical to successful efforts (Haberland, 2015; Pulerwitz et al., 2006; Barker et al., 2010b; Peacock, 2009).

If school-based sexuality education is to have maximum impact, it must be taught by trained teachers (Todesco and Gay, forthcoming 2016). In Brazil, more than 60% of schools provide HIV prevention activities, with 43% of these schools having trained teachers and 18% of the high schools with HIV prevention activities also distributing condoms. While not necessarily directly attributable to teachers alone, Brazil has had success in increasing condom use, with a 2008 study showing 81% of adolescents in some schools using condoms during sexual intercourse (Bretas et al., 2008).

"None of the girls could ask questions because they said only boys were at risk. This was our sexual education. I was refused by the clinic when I went for HIV testing. They said it was because I was too young and not married. But I know that I am also too young to die

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> *of AIDS." —Rachel Judhistari, founder of Indonesian Independent Youth Alliance (UNAIDS, 2011a: 115)*

Young people also want sexuality education programs to address issues of importance to them. A review of research conducted in 13 African countries presenting child and adolescent (7 to 19 years old) perspectives on HIV prevention, together with programmatic work by Save the Children Sweden and the Swedish Association for Sexuality Education, found that sexuality education as taught in schools fails to address issues of concern, such as love, relationships, and how to negotiate safe sex, as well as the need for easier access to confidential health services (Thomsen, 2007). Information can be powerful for young people. A study in Kenya found that providing adolescent girls with information on the relative risk of HIV infection with older partners led to a 28% reduction in unprotected sex. Only 29% of girls and 25% of boys knew that older men were more likely to be HIV-positive than adolescent boys (Dupas, 2011).

Effective Sex and HIV Education Programs Are Cost-Effective and Should Be Scaled Up

> *"Being free and comfortable with your sexuality is sexual health; and you have an enjoyable life without worries and regret, and you live life to the fullest based on your rights" (Young woman living with HIV from Asia and the Pacific responding to how to define her sexual and reproductive rights cited in Athena et al., 2015: 11)*

Sex and HIV education can be cost saving as well as cost-effective. A review of government-implemented sexuality education programs in Nigeria, India and Estonia found that sexuality education programs were a relatively inexpensive way to avert the higher costs of HIV treatment. The cost per student reached in 2009 for the duration of the entire curriculum in US dollars was $6.90 per student in Lagos State in Nigeria; $13.50 per student in the State of Orissa in India; and $32.90 per student in Estonia with national coverage. However, if only budgetary outlays are considered, i.e. the costs in addition to regular expenses on teacher salaries, costs per student reached were only US$0.60 in Nigeria, US$2.50 in India and US$8 in Estonia. The result of the cost-effectiveness study conducted in Estonia estimate that sexuality education averted 1,970 HIV infections between 2000 and 2009, as well as 4,280 unintended pregnancies and 7,240 STIs. The costs of the sexuality education program (US$5.6 million) were compared with the averted treatment costs of HIV infections averted (estimated lifetime treatment cost per person, US$67,825). It was estimated that the sexuality education program could be considered not only cost-effective but cost saving if it had prevented 83 or more HIV infections, a mere 4% of the HIV infections averted (UNESCO, 2011).

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Youth need to be reached with sex and HIV education in a variety of venues—in school, out of school, at work—in both rural and urban areas. Studies have also explored the use of internet platforms for HIV prevention education that could be more widely utilized (Villegas et al., 2014). Continued efforts are needed to improve quality of the content, teaching and facilitation methods of sex and HIV education and information, along with policies that support access to effective sex and HIV education programs for young people. Some countries have scaled up sexuality education. But more countries need policies concerning adolescents, with increased clarity for different age groups within adolescence (Bruce et al., 2011). In addition, programs are needed which address the structural factors that affect young people's vulnerability and risks, such as gender norms and violence against women. *[See also Strengthening the Enabling Environment]*

Abstinence-Only Education Has Been Largely Ineffective in Changing Behavior

"Programs promoting abstinence were found to be ineffective at increasing abstinent behavior and were possibly harmful," according to the Cochrane Collaborative Review Group on HIV Infection and AIDS (2004: 4). These conclusions were based on systematic reviews and a meta-analysis of high methodological quality, which met pre-determined criteria of methodological rigor. Sixty reviews met the criteria (Cochrane Collaborative Review Group on HIV Infection and AIDS, 2004). Cochrane reviews are the "gold standard" of study syntheses. Further, a review of 87 sexuality education programs found no strong evidence that abstinence-only programs delay sexual initiation, hasten a return to abstinence, or reduce the number of sexual partners among adolescents (UNESCO, 2009b; Kirby, 2007). However, a study conducted from 2001 to 2004 in the U.S. found that an abstinence-only curriculum (as opposed to an abstinence-only until marriage curriculum) which did not portray sex in a negative light, did not use a moralistic tone and did not disparage the efficacy of condoms did result in a significant delay of sexual debut among adolescents between the ages 12 and 14. Among the group that received abstinence-only education, 20.6% of the participants reported coitus in the previous three months, compared to 29% in the control group. The abstinence-only intervention did not affect condom use (Jemmott III et al., 2010). A recent meta-analysis found a statistically significant association between promoting abstinence messages and increased frequency of sexual interactions (Johnson et al., 2011 cited in Protogerou and Johnson, 2014). A review of the effectiveness of the government of Kenya's HIV curriculum, which stresses abstinence until marriage, found that the program did not reduce STIs in a cohort of 9,500 girls and 9,800 boys over seven years. Students were followed from age 13.4 to 20.5 years of age (Duflo et al., 2015).

Peer Education Can Be Useful As Part of a Larger Effort

Peer education by youth living with HIV can reinforce messages about protective behavior and can be part of a larger intervention. But there is little evidence demonstrating the effectiveness of peer education in preventing HIV among adolescents. A synthesis of studies from 24 peer-evaluated programs 1997 to 2008 for youth in low- and middle-income countries found that peer education did increase condom use, but had

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no impact on STI rates (Maticka-Tyndale and Barnett, 2010). Peer education in Rwanda did not result in any differences in outcomes for students exposed to peer-led HIV prevention from those who were not exposed (Michielsen et al., 2012). Peer education in South Africa increased knowledge of HIV but did not have a significant impact on behavior (Swartz et al., 2012). Peer education to promote HIV prevention in one study in Zimbabwe with 4,684 students did not result in decrease in HIV prevalence (Cowan et al., 2010). Others have also noted that peer education among youth has not had an impact (Harrison et al., 2010). Many young people prefer to get information from trusted sources such as health care providers or teachers (Biddlecom et al., 2007). It is possible that peers may not always be seen as a "trusted" source. As for evaluating youth programs, it is helpful to evaluate the effectiveness of youth programs by using biomarkers, such as HIV or STI incidence and/or prevalence and pregnancy whenever possible and "not just indicators for knowledge or self-reported behavior" (DeMaria et al., 2009: 485 – *translated from the original Spanish by Jill Gay*). A meta-analysis of peer education programs found that evaluation quality was low, with questions remaining on the nature and degree of youth participation (Vina-Torres and Svanmeyr, 2015: S56).

Programs also need to help parents talk to children about sex. There is some evidence that good communication with parents is associated with delayed sexual debut. Studies in Jamaica, Mexico, South Africa, and Uganda found that parents can be an important source of information about sex and that parents themselves want these skills to talk with their children (Hutchinson et al., 2012; Remes et al., 2010; Givudian et al., 1996 cited in Weiss et al., 1996; Abdool Karim et al., 1991 cited in Wojcicki and Malala, 2001; Damalie, 2001). A study in Kenya with 403 parents of 10 to 12 year old children found that HIV communication was more likely to have occurred if parents had received information to educate their child about sex (Poulsen et al., 2010).

Ultimately, enabling young people to delay their first sexual experience, to negotiate condom use when they do have sex, to be able to refuse sex, and to reduce the number of concurrent sexual partners are critically important in protecting young women from acquiring HIV. Finding new and promising ways to get accurate information to more adolescents—particularly adolescents who are not in school—is also important, and youth-friendly technologies such as text messaging and other communication strategies should be further explored.

5A. What Works—*Prevention and Services for Adolescents and Young People:* Mitigating Risk

1. Sex and HIV education with certain characteristics (see introduction) prior to the onset of

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sexual activity may be effective in preventing transmission of HIV by increasing age at first sex and, for those who are sexually active, increasing condom use, testing, and reducing the number of sexual partners.

2. Training for teachers to conduct age-appropriate participatory sexuality and HIV education can improve students' knowledge and skills.
3. Mass media and social marketing campaigns provide young people with HIV information and are modestly effective in persuading both female and male adolescents to change risky behaviors.
4. Promoting gender equitable norms among adolescents can reduce HIV risk behavior.
5. Community or school-based HIV education can reduce stigmatizing attitudes towards those living with HIV.
6. Communication between adults and young people about reproductive health information can increase protective behaviors.
7. Increased employment opportunities, microfinance, or small-scale income generating activities can reduce risky behavior – particularly among young women.

Promising Strategies:

8. Promoting condoms for pregnancy prevention may increase condom use for safe sex among young people.
9. Unconditional cash transfers to parents' households may lead to increased age of sexual debut and/or reduce transactional sex.
10. Voluntary medical male circumcision (VMMC) may be effectively integrated into school programs.
11. Promoting condom use at sexual debut may increase consistent condom use during adolescence and beyond.
12. Empowerment training for adolescent girls can increase skills to confront sexual assaults.

5A. Evidence

1. **Sex and HIV education with certain characteristics (see introduction) prior to the onset of sexual activity may be effective in preventing transmission of HIV by increasing age at first sex and, for those who are sexually active, increasing condom use, testing, and reducing the number of sexual partners.**

    - A meta-analysis comprising 33 studies from **low- and middle-income countries** between 1990 and 2010 found that school-based sex education had a significant effect in reducing HIV-related risk, with significantly greater knowledge, self-efficacy related to refusing sex or using condoms, fewer sexual partners and delayed sexual debut following school-based sex education. Most studies included both male and female participants; three studies evaluated school-based sex education for girls only. No school-based sex education found detrimental effects of school based sex education on increased risky sexual behavior (Fonner et al., 2014)

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(Gray I). (*sex education, sexual partners, condom use, sex behavior, low- and middle-income countries)*

- A meta-review of successful HIV prevention interventions (both in school and out of school) that included training, skills negotiation and communication techniques, found that interventions increased HIV-related knowledge, increased beliefs enabling safer sex, such as favorable attitudes, increased age of sexual debut, increased condom use and decreased the number of sexual partners. Eleven qualitative reviews and meta-analysis from studies from 1985 until 2011 included studies of adolescents ages 10 to 19 from Sub-Saharan Africa, but mostly from the USA. Some of the five meta analyses and 6 qualitative reviews included randomized controlled trials. Positive outcomes were in terms of knowledge, favorable intentions, delay of sexual intercourse or abstinence, decreased number of sexual partners and actual condom use. (Protogerou and Johnson, 2014). (Gray I) (*sex education, sexual partners, condom use, sex behavior, Sub-Saharan Africa, United States)*

- A meta-analysis of educational and behavioral interventions advocating sexual risk reduction and using interpersonal contact, with a review of 98 interventions with 51,240 participants aged 11 to 19, found that relative to controls, interventions increased condom use and increased acquisition of condoms. Interventions also reduced or delayed penetrative sex. Studies until Jan. 1, 2009 were included if they were RCTs or used a quasi-experimental design with rigorous controls, with 78% of the studies conducted in the **United States** but also in **Africa**. Interventions were conducted in groups for a median of 13 sessions of 75 minutes each with one facilitator. Interventions included condoms skills training and interpersonal skills training. Differences by sex did not reach statistical significance. Benefits were durable for as long as three years post intervention, with particular success among adolescents who were institutionalized, such as detainees; the intervention had fourteen sessions of at least 45 minutes to one hour; and the intervention did not emphasize abstinence. Motivational training had a larger effect on condom use in studies with higher judged methodological quality (Johnson et al., 2011). (Gray I) (*sex education, sexual partners, condom use, sex behavior, United States, Africa)*

- A review of 28 HIV prevention studies among youth from 1990 to 2008 in **Sub-Saharan Africa** found that for those participants who were virgins at the time of exposure to the intervention, participants reported higher rates of abstinence after the intervention, less sexual intercourse in the past months and higher intentions to use a condom, which is a "validated predictor of actual condom use" (Albarracin et al., 2005 cited in Michelsen et al., 2010: 1194). Interventions included intensive sexual health education; combining teacher led activities with peer led activities; use of media to relay messages; and provision of youth friendly health services. Of the 28 studies, 11 were randomized trials, five had a pre/post design controlling for exposure level and 12 used a parallel group design, comparing interventions groups with control groups (Michielsen et al., 2010). However, only two studies of 28 studies reported biological outcomes of the interventions and many of the studies had suboptimal study designs (Michielsen et al., 2010). (Gray I) (*sex education, sexual partners, condom use, sex behavior, Sub-Saharan Africa)*

- A review by UNESCO of 87 sex and HIV education programs in developing and developed countries found that 23 studies showed a delayed initiation of sex (40 had no significant impact); 16 decreased the number of sexual partners (20 had no significant impact); 23 increased condom use (35 had no significant impact) and 16 studies reduced sexual risk taking, one increased sexual risk taking and 13 had no significant impact. Evaluated programs were curriculum and group-based; focused on sexual behavior; focused on young people; had

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a experimental or quasi-experimental design; a sample size of at least 100; measured impact on sexual behaviors for at least three to six months and were published after 1990 (UNESCO, 2009b). (Gray I) *(sex education, sexual partners, condom use, sex behavior)*

- A review evaluating 83 sex and HIV education programs in developing and developed countries that were based on a written curriculum and were implemented among groups of youth in schools, clinics or other community settings found that two-thirds of the studies found a significant positive impact on one or more sexual behaviors or outcomes, while only seven percent found a significant negative impact. One-third of the programs had a positive impact on two or more behaviors or outcomes. The 83 studies generally reported on one or more of six aspects of sexual behavior: initiation of sex, frequency of sex, number of sexual partners, condom use, contraceptive use in general, and composite measures of sexual risk-taking (e.g., frequency of sex without condoms). A few studies reported on pregnancy and STI rates. *Initiation of Sex*. Of the 52 studies that measured impact on this behavior, 22 (42 percent) found that the programs significantly delayed the initiation of sex among one or more groups for at least six months, 29 (55 percent) found no significant impact, and one (in the United States) found the program hastened the initiation of sex. *Frequency of Sex*. Of the 31 studies that measured impact on frequency, nine (29 percent) reduced the frequency, 19 (61 percent) found no significant change in frequency, and three (all in developed countries) found increased frequency among any major groups at any point in time. *Number of Sexual Partners.* Of 34 studies measuring this factor, 12 (35 percent) found a decrease in the number of sexual partners, while 21 (62 percent) found no significant impact. *Condom Use.* Of the 54 studies measuring program impact on condom use, almost half (48 percent) showed increased condom use; none found decreased condom use. *Contraceptive Use in General*. Of the 15 studies measuring impact, six showed increased contraceptive use, eight showed no impact, and one (in the United States) showed decreased contraceptive use. *Sexual Risk Taking*. Some studies (28) developed composite measures of sexual activity and condom use (e.g., frequency of sex without condoms). Half of them found significantly reduced sexual risk-taking. None of them found increased sexual risk- taking. *Pregnancy Rates*. Of the 13 studies that measured pregnancy rates, three found significant positive effects, nine found insignificant effects, and one (in the United States) found significant negative effects. *STI Rates.* Of the 10 studies that measured impact on STI rates, two found a positive impact, six found no significant impact, and two found a negative impact. For example, in Tanzania, a sexuality education intervention reduced the number of sexual partners among boys and increased condom use among both boys and girls. This evaluation used an experimental design and found positive behavioral impacts over a three-year period (Ross et al., 2003 cited in Kirby et al., 2007a). Skills based programs were more effective at changing behavior than were the knowledge-based programs. In the programs reviewed, female adolescents constituted between 44% and 100% of participants (Kirby et al, 2007a; Kirby et al., 2007b; Kirby et al., 2006; Kirby, 2009). (Gray I) *(sex education, sexual partners, condom use, contraception, sex behavior)*

- A review of 23 studies that evaluated interventions in **Sub-Saharan African** schools, health services or communities from 2005 to 2008 found that curriculum-based, adult led interventions that included the characteristics recommended by Kirby, 2009 reduced sexual risk behaviors (Mavedzenge et al., 2010). (Gray I) *(sex education, sexual partners, condom use, contraception, sex behavior)*

- A cross-sectional, longitudinal study in the **Bahamas** in 2011 found that grade six students attending schools where the Focus on Youth in the Caribbean (FOYC) intervention had been implemented in 2004 and 2005 had a higher level of HIV knowledge and reproductive health

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skills, a greater intention to use protection during sex, and increased self-efficacy regarding their ability to prevent HIV infection, compared to grade six students from schools where a control program had been implemented. Male students from the FOYC schools had significantly higher levels of intention to use protection when having sex, compared to male students from the control schools. Male students from the FOYC schools were also found to have higher knowledge of preventive reproductive health skills, higher self-efficacy and a greater intention to engage in risky behaviors compared to female students from these schools. In addition, this study also compared data from 1,724 students attending the FOYC schools in 2011 to data from a randomized, control trial in 2004/2005 of 1,360 students that participated in the FOYC intervention when it was first implemented in these schools. The cohort of students from 2011 was found to have a higher level of HIV/AIDS knowledge, reproductive health skills, self-efficacy, and intention to use protection compared to the cohort of students from 2004/2005, indicating that "new cohorts of students benefited from the extensive training and/or experience in teaching the FOYC curriculum received by teachers, guidance counselors and administrators in schools which had delivered the FOYC intervention… several years earlier." However, these positive effects were only found among male students, as data from female students did not vary between 2004/2005 and 2011 (Wang et al., 2013). (Gray IIIa) (*sex education, sexual partners, condom use, contraception, sex behavior, Bahamas*)

- A community-randomized trial with a cohort of 9,645 adolescents in 20 communities in Mwanza Region, **Tanzania** that included multiple components to improve the sexual health of adolescents, resulted in statistically significant improvements in knowledge, reported attitudes, reported STI symptoms, and some behavior change but no change in HIV seroconversion rates. The intervention included comprehensive sex education, youth-friendly services, community-based condom promotion and distribution by youth, and a range of community-wide, youth-focused activities. All students age 14 or older in grades 4 to 6 in 1998 were eligible for enrollment and the final follow-up took place three years after recruitment, in 2001-2002. There were statistically significant differences among young men – but not young women – in the intervention group compared to the control group in sexual debut and having more than one sex partner in the past year. Initiation of condom use was higher for both young men and women in the intervention groups although condom use at last sex remained low, at below 30%. "Reported behavioral effects were stronger in male than female participants, possibly because young women were exposed to older male participants who had not benefited from the programme" (Ross et al., 2007a: 1951). Furthermore, "the interventions that were tested within the trial were all directly targeted to adolescents themselves. Cultural norms, however, such as gendered and age-related power relationships and marriage and fertility norms within marriage and fertility norms within the wider community, compromise the ability of adolescents to change their sexual behavior. Community-wide interventions aimed at changing societal norms may be particularly important" (Ross et al., 2007a: 1952). However, an analysis done about the impact in 2012 found that without addressing transactional sex, gender norms and other structural interventions the project could not have a long lasting durable effect (Wight et al., 2012). (Gray II) *(sex education, behavior change, seroconversion, Tanzania)*

- A cluster randomized controlled trial with 1,360 sixth grade youth in the **Bahamas** found that a program on sex education for students and parents resulted in 1.49 higher condom use rates 36 months following the intervention. The intervention consisted of 10 primary sessions, delivered weekly and two annual boosters. A video on parent-child communication about sex was followed by role-playing and condom demonstrations. The control group received

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education on environmental issues, such as wetlands (Chen et al., 2010b). (Gray II) *(sex education, behavior change, Bahamas)*

- A teacher- led school HIV prevention program in 2010 that targeted students in two **South African** sites (Capetown and Mankweng) and one **Tanzanian** site (Dar es Salaam) found that students in the intervention program in Dar es Salaam were less likely to have their sexual debut during the intervention, however the intervention had no effect in South Africa. The study included 5,352 students in Capetown (53.2% females in the intervention group and 53.4% females in the control group) 2,590 in Mankweng (53.9% females in the intervention group and 56.7% females in the control groups) and 4,197 in Dar es Salaam (52% females in the intervention group and 53.7% females in the control group). Schools were paired based on demographics, and were randomly assigned to the intervention group or the control group. The study measured knowledge and attitudes towards HIV, perceived social norms, and self-efficacy. The intervention involved 11 to 17 hours of teacher-led classroom sessions, presentations, group discussions and role-playing, as well as homework assignments that required parental help. Condom demonstrations were only included in the Capetown schools and drama exercises were only included at the Dar es Salaam site. In Capetown and Mankweng, the intervention sessions were led by life orientation teachers, while in Tanzania the sessions were led by science teachers. The topics discussed in these sessions included sexuality and reproduction, substance use, condom use, gender roles, intimate partner violence, self- image, emotional and physical development, sexual risk assessment, misconceptions, healthy life style, sexual decision making, contraception, reproductive health rights, HIV/AIDS and other STIs. At baseline, 13% of students in Capetown had experienced sexual debut and, of these students, 44% had used a condom during their last sexual experience. In Dar es Salaam, 17% of the students had experienced their sexual debut and 37% of these students had used condoms during their last sexual experience. In Mankweng, 5% of the students had had their sexual debut and only 20% of them had used condoms during their last sexual experience. Follow up occurred 12 to 15 months after baseline. In Dar es Salaam, students in the intervention group were less likely to have their sexual debut during the study, and males were less likely than females to report having had sexual debut during the study. In Capetown and Makweng, there were no changes regarding sexual debut. Over all knowledge scores improved in Mankweng and Dar es Salaam, but in Capetown they did not change. This is most likely because Capetown already has a variety of HIV/AIDS educational programs, thus students in both the control and study group had already been exposed to HIV prevention programs before the intervention. In comparison, the Tanzanian students had not had previous exposure to HIV prevention in an educational setting (Mathews, et al., 2012). (Gray IIIa) *(sex education, behavior change, South Africa, Tanzania)*

- Secondary students in **Kenya** who received HIV education as primary school students in the 18,500 primary schools had greater positive attitudes for HIV testing and used safer sex practices than those who did not get HIV/AIDS education. From Dec. 2005 to Jan. 2006, all students in forms 1 through 3 (equivalent to US grades 9 to 11) in 154 randomly selected secondary schools in five of Kenya's eight provinces were invited to complete questionnaires. Questionnaires were given to 6,874 students for whom it could be established that they received HIV education in primary school and 6,287 students who did not have HIV education in primary school. Among students who had had HIV education in primary school, 20.2% had ever tested for HIV, compared to 10.3% for students who had not had HIV education in primary school, a significant difference. For students that had had HIV education in primary school, there was a delay in sexual initiation, reduced numbers of partners and

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higher condom use among female students (Maticka-Tyndale, 2010). (Gray IIIa) (*adolescents, sex education, sexual partners, testing, Kenya*)

- A study conducted with adolescents aged 15 to 24 years old in **Thailand** to examine intention of using HIV counseling and testing services found that teaching young people about HIV counseling and testing services and where to access these services can increase intention to test for HIV. A majority of the adolescents who participated in this study were high school students between the ages of 15 and 19 years old. Of the 2,536 adolescents who participated in the study, 738 reported having had sexual intercourse at least once before and 159 reported having had their sexual debut before the age of 15 years old. Additionally, students who identified as gay, lesbian, bisexual, or transgender, students between the ages of 20 and 24 years old, and those who were living with their significant other had a higher rate of sexual experience. Of the 81.77% sexually active adolescents who had never utilized HIV counseling and treatment services, 74.06% reported an intention to use HIV counseling and treatment services and 25.94% reported no intention of utilizing HIV counseling and treatment services. Adolescents with multiple sex partners and consistent condom use were more likely to utilize HIV counseling and testing services. Similarly, having a higher score of expectation of youth friendly HIV testing and counseling services, a higher score on attitude toward HIV testing, a higher perceived risk of HIV, willingness to pay for services, and access to HIV counseling information were all significantly associated with an increase in intention to use HIV counseling and treatment services (Wiwattanacheewin et al., 2015). (Gray IIIb) *(adolescents, sex education, testing, Thailand)*

- A cross- sectional study of 8,183 adolescents (4,146 males and 4,037 females) aged 11 to 17 in **Kenya** found that adolescents that attended schools where the Primary School Action for Better Health program had been implemented were less likely to report sexual debut than the youth that were not involved in the program. The program trained teachers to provide an HIV educational program in the schools that focused on preventing HIV infection and negotiating safe sex. Sexual debut was delayed among students of both sexes that attended schools where the intervention was implemented and where teachers had been trained to deliver HIV education (Tenkorang & Maticka-Tyndale, 2014). (Gray IIIb)

- A quasi-experimental study using 4,795 questionnaires from adolescents who participated in a school-based sex education program in public schools in four municipalities in the state of Minas Gerais, **Brazil** found that the program succeeded in more than doubling consistent condom use with casual partners from 58.3% prior to the program to more than 71% following the program, with no effect on age at first intercourse or on adolescents engagement in sexual activities (Andrade et al., 2009). (Gray IIIb) *(sex education, condom use, Brazil)*

- A review of comprehensive sex education programs for females 10–20 years of age in **Kenya** found four of five well-designed programs according to the criteria by UNESCO, 2009b, with delay of sexual debut, increased condom use, decrease in number of partners, decrease in adolescent pregnancy and use of health clinics by youth. The programs reached 18,500 primary schools in one program; 6,160 schools for another program, along with out-of-school youth; another program reached one district in Western Kenya; the reach of the fourth program was unknown. (Agbemenu and Schlenk, 2011). (Gray IIIb) *(sex education, condom use, sexual partners, pregnancy, Kenya)*

- A study of 1,581 low-income fourth-graders in **Mexico's** marginalized Hidalgo and Campeche States found that a communications-centered life skills program taught by comprehensively trained teachers in elementary schools improved communication attitudes,

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self-efficacy, intentions, and perceived socio-cultural norms about communications. The 30-hour "I Want to, I Can… Prevent HIV/AIDS" program used gender-sensitive, participatory methods to teach fourth-graders a range of life skills. The program introduced games to teach children about human physiology, anatomy, sexuality, and HIV/AIDS. The program had a significant impact on communication about sexuality, and it changed the perception in the community that parents should not talk to their children about sex (Pick et al., 2007). (Gray IV) *(adolescents, sex education, Mexico)*

2. Training for teachers to conduct age-appropriate participatory sexuality and HIV education can improve students' knowledge and skills.

- A review by UNESCO of 87 sex and HIV education programs in developing and developed countries found that to have maximum impact, school-based sexuality education must be taught by trained teachers (UNESCO, 2009b). (Gray I) *(adolescents, sex education, teachers, training programs)*

- A project in **Uganda** with students ages 13 to 14 that included teacher training found that students whose teachers who had received training reported a significant decline both in having sexual intercourse in the past month and in the average number of sexual partners. Among students in the sample from the intervention schools, those who had been sexually active fell from 43% in 1994 (123 of 287) to 11% in 1996 (31 of 280). Teachers were the main source of information for adolescents (Shuey et al., 1999 cited in James-Traore et al., 2004). (Gray IIIa) *(adolescents, teachers, training programs, Uganda)*

- A study in **Yemen** with 2,510 students who received school-based HIV prevention found that they were significantly more likely to provide care and support for people with HIV compared to a cohort control sample of 2,274 students. Those who had not participated in the intervention suggested either killing or punishing people living with HIV. For the intervention group, school coordinators were trained in a nine-day workshop of eight hours per day; peer educators were recruited on a volunteer basis and trained in a 10 day of eight hours per day; and school management was trained during a five day, 7 hours per day workshop (Al-Iryani et al., 2011). (Gray IIIa) (*adolescents, teachers, training programs, prevention, Yemen)*

- A 2006-2007 study in the **Cameroon** with 2,279 adolescents ages 15 to 17 found that HIV teacher training resulted in students being significantly more likely to have used a condom during their last sexual intercourse. Respondents were also significantly more likely to have had an HIV test. Girls aged 15 to 17 years old were between 7 and 10 percentage points less likely to have started childbearing. Within the five Cameroonian provinces of Adamaoua, Nord, Extrème Nord, Sud, and Centre, roughly 2000 teachers of varied disciplines participated in HIV teacher training sessions. Disciplines within which the module was taught were languages, civic education, history and geography, physical education, and life sciences, with nine teachers selected from each to participate in the training program. The teachers were granted a *per diem* of $100, costing $2,700 per school. Trained teachers were taught to explain HIV/AIDS, explain prevention, transmission, and treatment, promote voluntary counseling, debunk various folk myths concerning transmission and curing of HIV/AIDS, explain opportunistic infections and other STDs, and most importantly, how to use condoms (Arcand & Wouabe 2010). (Gray IV) (*adolescents, teachers, training programs, prevention, Cameroon*)

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3. Mass media and social marketing campaigns provide young people with HIV information and are modestly effective in persuading both female and male adolescents to change risky behaviors.

- A systematic review of the effectiveness of 24 mass media interventions on HIV-related knowledge, attitudes and behaviors was undertaken in 2006. The intervention studies were published from 1990 through 2004 and reported data from developing countries comparing outcomes using (i) pre- and post-intervention data, (ii) treatment versus control (comparison) groups or (iii) post-intervention data across levels of exposure. The most frequently reported outcomes were condom use (17 studies) and knowledge of modes of HIV transmission (15), followed by reduction in high-risk sexual behavior (eight), perceived risk of contracting HIV (six), interpersonal communication about AIDS or condom use (six), self-efficacy to negotiate condom use (four) and abstaining from sexual relations (three). The review yielded mixed results, and where statistically significant, the effect size was small to moderate (in some cases as low as 1-2% point increase). On two of the seven outcomes, at least half of the studies did show a positive impact of the mass media: knowledge of HIV transmission and reduction in high-risk sexual behavior. Further rigorous evaluation on comprehensive programs is required to provide a more definitive answer to the question of media effects on HIV/AIDS-related behavior in developing countries (Bertrand et al., 2006). (Gray I) *(mass media, condom use, transmission, sex behavior)*

- JSI evaluated the African Youth Alliance (AYA) Programs in **Uganda** (implemented 2001-2005), **Tanzania** (2002-2005), and **Ghana** (2001-2005) using post-intervention analysis between and intervention sites to determine the impact AYA's comprehensive integrated program on SRH behavior. The AYA Program had six components, namely, (1) policy and advocacy coordination; (2) institutional capacity building; (3) coordination and dissemination; (4) BCC (behavior change communication), including life planning skills and enter-education activities such as sports, dance, and rap; (5) Youth Friendly Services; and (6) Integration of adolescent sexual and reproductive health (ASRH) with livelihood skills training. The study compared knowledge, attitudes, and behavioral outcomes between intervention and control sites of 3,416 youth (17 to 22 year old) in Ghana, 1,900 in Tanzania, and 3,176 in Uganda and found a significant positive impact of AYA on condom use, contraceptive use, partner reduction and several self-efficacy and knowledge antecedents to behavior. Areas with little evidence of AYA impact included delay of sexual debut and abstinence among females and males and partner reduction among males. The impact of AYA was greater on young women than on young men, although in many cases, the knowledge of unexposed men was much higher than that of unexposed women. In Ghana, AYA significantly improved the confidence of young women in obtaining condoms and in insisting that a partner use a condom. The number young women who reported having ever used a condom, used a condom at last sex, used a condom at first sex, and who claimed to have had fewer than two sex partners in the last year also significantly increased. In Tanzania, young women expressed a significant increase in positive attitudes toward condom users, confidence in putting on a condom correctly, and confidence that they can insist that a partner use a condom. Tanzanian females exposed to AYA also were significantly more likely to report fewer than two sexual partners in the last year, condom use at first sex, condom use at last sex, having ever used a condom, and consistent uses of condoms. Among males in Tanzania, consistent use of condoms, condom use at first sex, and modern contraceptive use at first sex significantly increased, although their use remained low (28, 44, and 43 percent, respectively). The study limitations included a lack of comparable baseline data (Williams et al 2007). An evaluation of the in-school Life Planning Skills component of African Youth Alliance's program in **Botswana**

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found that the program increased knowledge of HIV transmission, improved risk reduction behaviors among those who felt at risk (getting tested for HIV, reducing partners, using condoms, or abstaining), and increased both the intention to use and actual use of condoms. Due to the program's success, the AYA Life Planning Skills manual was adopted for use in secondary schools nationwide in 2004 (African Youth Alliance 2007). (Gray IIIa) *(adolescents, condoms, sex behavior, Uganda, Tanzania, Ghana, Botswana)*

- A survey of 933 university students (mostly ages 20 to 24) in Harare, **Zimbabwe** found that students who had participated in SHAPE (Sustainability, Hope, Action, Prevention, Education), a comprehensive HIV education program that organized workshops, topical seminars, clubs, and sports teams for university and school-aged youth, were less likely to have ever had sex and had fewer sexual partners in the past year (mean 1.4 for SHAPE members vs. 2.2 for non-SHAPE respondents). SHAPE participants were more likely to have discussed HIV in the past month (95% to 83.4%), have been tested for HIV (85% vs. 76%), get treatment for AIDS, consider abstinence as a prevention practice for HIV, and more likely to have seen a female condom. SHAPE programs had been active at the University of Zimbabwe for two years prior to the survey. However, because the rate of consistent condom usage was only 70% for both participants and control students, it is possible that "the most vulnerable couples are those who believe they know each other well enough to forgo condoms." (Terry et al., 2006). (Gray IIIa) *(adolescents, condoms, sex behavior, sexual partners, female condom, Zimbabwe)*

- A cross-sectional study of 1,225 university students (518 males and 707 females) in **Nigeria** from 2013 to 2014 found that the students' main source of HIV-related knowledge was the mass media and that 73.4% of students with high knowledge scores of HIV and AIDS were willing to test for HIV, compared to 34.3% of the students with poor knowledge scores. The participants were from 15 to 32 years of age and 99.5% of them were single. A vast majority (97.1%) of the students had high knowledge of HIV and AIDS. Male participants had higher knowledge scores than females. Most (82%) understood that a person living with HIV cannot be readily identified based on their appearance, while 60.5% knew that there is no cure for HIV. 95% of students knew where they could get an HIV test, but only 30.4% of them had been tested for HIV in the 6 months before the study. 72.2% of the students (66.4% of males and 76.5% of females) were willing to test for HIV. The highest willingness to test for HIV/AIDS was among those from ages 21 to 25 (78.8%) and lowest for those age 15 or less (58.8%) (Abiodun et al., 2014). (Gray IIIb) (*adolescents, testing, mass media, Nigeria)*

- Of 330 university students in Ethiopia, 67.9% used the media as the source of information on where to obtain an HIV test. A cross sectional survey was conducted in 2010 (Addis et al., 2013). (Gray IIIb) *(media, testing, Ethiopia)*

- In 2002 MTV launched a **global** multicomponent HIV prevention campaign, "Staying Alive," reaching over 166 countries worldwide. An evaluation of this campaign focused on three diverse sites: Kathmandu, **Nepal**; São Paulo, **Brazil**; and Dakar, **Senegal**. Data were collected before and after campaign implementation through population-based household surveys. Using linear regression techniques, the evaluation examined the effects of campaign exposure on interpersonal communication about HIV and the effects of campaign exposure and interpersonal communication on beliefs about HIV prevention. Researchers found a consistent positive effect of exposure on interpersonal communication across all sites, though there were differences among sites with regard to whom the respondent talked about HIV. The analysis also found a consistent positive effect of exposure on HIV prevention beliefs across sites

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when interpersonal communication was simultaneously entered into the model. In two sites, researchers found a relationship between interpersonal communication and HIV prevention beliefs, controlling for exposure, though again, the effects differed by the type of person the communication was with. These similar findings in three diverse sites provide ecological validity of the findings that "Staying Alive" promoted interpersonal communication and influenced young people's beliefs about HIV prevention in a positive way, evidence for the potential of a global media campaign to have an impact on social norms (Geary et al., 2007). (Gray IV) *(adolescents, mass media, communication, Nepal, Brazil, Senegal)*

- Straight Talk (ST) mass media communication programs, which have been implemented in **Uganda** since 1993, comprise three main materials: multilingual Straight Talk Radio Shows, multilingual *Straight Talk* newspapers, and an English language *Young Talk* newspaper. Straight Talk also implemented a wide array of school-based activities to engender a youth-friendly school environment. The evaluation concludes that many Ugandan adolescents have benefited from ST activities, and that greater exposure was associated with greater benefits. Among both males and females, exposure to ST activities is associated with greater knowledge about sexual and reproductive health, more balanced attitudes toward condoms, and more communication with parents about sexual and reproductive health issues. The results also show that for girls, exposure to ST materials is further associated with greater self-assuredness, greater sense of gender equity, and the likelihood of having a boyfriend but not having a sexual relationship. Among males, ST exposure is associated with lower likelihood of sexual activity, greater likelihood of resuming abstinence, and a greater likelihood of taking relationships with girls seriously. Adolescents exposed to ST were more likely to have been tested for HIV than those never exposed (Adamchack et al., 2007). (Gray V) *(adolescents, mass media, condoms, communication, abstinence, Uganda)*

4. Promoting gender equitable norms among adolescents can reduce HIV risk behavior.

- A review of studies from 1990 to 2012 that used rigorous designs, such as randomized controlled trials or quasi-experimental studies that adjusted for baseline differences and measured the effect of the intervention on STIs, HIV, pregnancy or childbearing found that programs that addressed gender or power were five times as likely to be effective as those that did not address gender or power. Studies were included that were group- and curriculum-based and assessed effects on adolescents aged 19 or younger, including pregnancy, childbearing and acquisition of STIs including HIV. Of the 22 studies included, 14 were in the **United States**, 6 in **lower- and middle-income countries** and two in other **high-income countries**. Of the studies, 15 were randomized controlled trials. Curricula that included gender or power had to have one explicit lesson, topic or activity covering gender or power in sexual relationships, such as how harmful notions of femininity and masculinity affect behaviors and can be transformed; fostering young women's empowerment; gender and power dynamics of condom use; and fostered personal reflection (Haberland, 2015). (Gray I) (*sex education, pregnancy, gender norms, United States, low- and middle-income countries)*

- A cross-sectional study of 983 youth (551 girls and 432 boys) aged 14 to 17 in **South Africa** in 2003 examined gender beliefs and HIV risk factors and found that discussing condom use with a partner was the strongest predictor of condom use at last sexual experience, resulting in

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a seven-fold increase in condom use among males and a five-fold increase in condom use among females. Of the youth, 87.9% believed that condoms protect against STDs, HIV and pregnancy and 74.6% believe that abstinence from sex could prevent HIV, STDs and pregnancy. However, 57.4% of youth believed that a girl could not become pregnant from the first time she had sex and 63.3% believed that oral contraceptive pills could prevent both HIV and pregnancy. Among males, perceptions of male peer behavior were strongly associated with condom use at last sex and ever having participated in sexual activity. Males were more likely to agree that it was acceptable for a female to "propose love" or initiate a relationship, which was a strong indicator of male condom use. Males were also more concerned that a partner would stop the relationship if they refused sex and they were more likely to report that it was acceptable for a male to pressure a female into sex. Both males and females believed that condom use demonstrates love and respect for their partner, which was a strong predictor of condom use among males. Males were more likely to believe that if a female suggested condom use she had multiple partners. In addition, females who associated condom use with having multiple partners were more likely to use condoms during their last sexual experience. Another significant predictor of condom use among males was believing that it is acceptable for a girl to refuse sex if her partner refuses to use condoms. Among girls, a perception of higher risk for pregnancy was a significant predictor of condom use. Girls were also found to have a strong sense of self-efficacy regarding refusing sex if their partner refused to use condoms. HIV prevention interventions can strengthen and promoting gender equitable beliefs that already exist in this population (Harrison, et al, 2012). (Gray IIIb) *(adolescents, condoms, sex behavior, sexual partners, South Africa)*

- A cross-sectional study among 5,913 sexually active and non-sexually active adolescents ages 14 to 18 in Bolivia and Ecuador found that gender equality was correlated with easier communication with their partner about sex and they considered it less necessary to have sexual intercourse in order to maintain a relationship (De Meyer et al., 2014). (Gray IIIb) *(gender equality, sex behavior, Bolivia, Ecuador)*

5. Community or school-based HIV education can reduce stigmatizing attitudes towards those living with HIV.

- An intervention study conducted between 2010 and 2011 among youth migrant female workers in **China** found that free access to information about HIV increased knowledge about HIV. The intervention package consisted of no cost access to educational materials and no cost monthly lectures on HIV prevention. The study had 1,425 young women in the intervention arm and 2,139 young women in the control arm and received injury prevention information. All participants were female single manual workers, with ages ranging from 15 to 29 years of age with an average age of 20. Of the participants, 95% were younger than 25. At baseline, over 85% did not know that HIV could not be transmitted by mosquito bite, over 71% did not know that HIV could not be transmitted through shaking hands and under 37% knew that condoms could prevent HIV transmission during sexual intercourse. After six months, those in the intervention arm were significantly more likely to know that it is possible to acquire HIV from sex without a condom and sharing a meal cannot transmit that HIV. The proportion of correct answers to questions about HIV was significantly higher in the intervention as compared to the control group (Zhu et al., 2014). (Gray IIIa) *(stigma, sexual behavior, knowledge, China)*

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- A 2010 cross sectional study of 300 unmarried male students aged between 16 and 19 years of age in **Lao PDR** found that students with medium and high levels of knowledge were 4.3 times more likely to display positive attitudes towards people living with HIV. Safer sex was also observed among students with medium (2.8 times more likely) and high levels (1.9 times more likely) of knowledge of HIV (Thanavanh et al., 2013). (Gray IIIb) *(sex education, knowledge, stigma, sexual behavior, Lao PDR)*

- An HIV education school-based intervention program in 2011 that targeted 1,468 secondary-school students (702 boys and 766 girls) in Wuhan, **China** found a significant increase in accepting attitudes towards those living with HIV and AIDS. The program was implemented for 877 middle school students and 591 high school students, and consisted of a promotional video and a 30-minute lecture by Chinese medical graduates. The mean age of the students was 14.71 years and the majority of their parents were either factory workers or self-employed. Before the intervention 61.2% of middle school students and 68.7% of high school students said that they would like to help those living with HIV/AIDS, while after the intervention this increased to 75.3% of middle school students and 83.9% of high school students. In addition, 72.1% of middle school students and 81.7% of high school students initially wanted to take care of family members or classmates living with HIV, compared to 81% of middle school students and 87.5% of high school students after the intervention. At the start of the intervention 44.7% of middle school students and 82.8% of high school students understood that a person cannot be identified as living with HIV based on their appearance. This rate increased to 68.9% of middle school students and 85.7% of high school students after the education program. Regarding non-transmission modes of HIV/AIDS, only 37.1% of middle school students and 81.4% of high school students initially understood that they could not contract HIV from hugging, kissing or shaking hands with an individual living with HIV. After the intervention, this rate increased to 76.1% of middle-school students and 93.7% of high-school students. Similarly, before the intervention only 29 % of middle school students and 66.7% of high school students knew that they could not get HIV from sharing a toilet seat or swimming pool with a person living with HIV, compared to 74.1% of middle school students and 91.7% of high school students. At the start of the education program 47.3% of middle school students and 82.9% of high school students knew that they could not get HIV from sharing a classroom with a student living with HIV. After the program, this rate increased to 80.5% and 91.5% (Gao et al., 2012). (Gray IIIb) *(education, adolescents, stigma, China)*

- A study with 513 children, 274 boys and 239 girls ages eight to 14 in primary school in **Thailand** found that HIV prevention education, which included information on HIV transmission results led to more supportive attitudes towards children living with HIV and reduced stigma. Girls were more likely than boys to be more accepting of those children who are living with or affected by HIV. When parents told them not to play with children affected by HIV, children had more negative attitudes towards those with HIV. Although there was no significant difference in the knowledge score between schools at the time of the pre-intervention questionnaire, the knowledge score of the children in the program schools was higher than that of the non-program schools after they had received the information on how HIV is transmitted. The attitude score towards children with HIV was significantly improved in the program schools (Ishikawa et al., 2011a). (Gray IIIa) (*adolescents, sex education, stigma, Thailand*)

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- Discussions led by physician facilitators with 46 female and 54 male secondary school and college students in **Uganda** found that young people changed their attitude during the course of the one day workshop from viewing HIV as a death sentence to viewing HIV as an opportunity for early treatment (Gaffy et al., 2012). (Gray IIIb) *(education, adolescents, Uganda)*

- Women participants in a microcredit program with a participatory HIV/AIDS and gender empowerment education aspect for the poorest half of households in rural Limpopo Province, **South Africa** reported that meeting a healthy-looking HIV-positive young woman during an education session was crucial to understanding their vulnerability and the vulnerability of their families to HIV. One of the women surveyed reported that, "most people thought that HIV-positive people were skinny and sickly looking. We were scared because we found out that the virus can affect anyone indiscriminately… I will never forget her face; it reminds me about the seriousness of the virus and the need for protection" (Phetla et al., 2008: 512). (Gray V) *(self-perception, communication, South Africa)*

6. Communication between adults and young people about reproductive health information can increase protective behaviors.

- A study of 99 black female parents and their adolescent children conducted in **South Africa** in 2014 evaluating the impact of a six-week family-based intervention found that, according to the parent group, improving communication in the home had statistically significant positive effects on parent-child communication about sex, communication depth, responsiveness and openness. Eligible families included female caregivers with children between the ages of 10 and 14 years old, forming an intervention group of 57 participants and a waitlist control group of 42 participants. Families with parents who were living with HIV were eliminated from the data due to small sample size. The six-week intervention was conducted by female facilitators in sessions for the parents that focused on parent-child communication, parent-child sex communication, parent monitoring and involvement, and general parenting skills through presentations, role-play, homework, and small group discussions during which attendance ranged between 56 and 100%. General parenting, parent-youth relationship quality, gender role attitudes, parent-youth sex communication, and parent responsiveness to sex communication were measured for both youth and parents. Based on parent reports, the average intervention group member scored 22% higher in parent involvement and monitoring and 4% higher in relationship quality than the average waitlist group member. On average, intervention group youths scored 5% higher on relationship quality than the control group youths immediately post-intervention, which ultimately increased to 10% based on data collected at the six-month follow-up (Armistead et al., 2014). (Gray IIIa) *(adolescents, parents, communication, sexuality, South Africa)*

- A quasi-experimental study conducted in **South Africa** among 268 adolescents (93 males and 171 females) between the ages of 12 and 19 years old found that the age of sexual debut and condom use was significantly higher for young people who had participated in Agents of Change, a 20-week faith-based peer education program, than those who had not. The study consisted of an intervention group of 176 adolescents across 14 churches and a control group of 92 adolescents across 17 churches, a majority of whom were Christian and living in poor socioeconomic conditions. The goal of the Agents of Change program is to increase self-efficacy, encourage the use of positive peer pressure, and foster better child-parent relationships. The intervention was carried out by peer educators ranging in age from 15 to

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18 years old who operated under the supervision of trained facilitators, and consisted of 20 interactive life skills sessions spread out over the course of one year that addressed teenage pregnancy, sexual coercion, drugs, alcohol, health relationships, and HIV. Additionally, three sessions were held with parents to encourage collaboration, listening, information sharing, and improved communication. The Agents of Change program resulted in a 9.5% increase in delay of sexual debut among the adolescents, as well as a significant increase in condom use (Mash and Mash, 2012). (Gray IIIa) *(adolescents, parents, communication, sexuality, South Africa)*

- A study conducted in **South Africa** in 2013 found that a culturally-tailored worksite-based parenting program called *Let's Talk* could be effective in increasing parent child communication about sex and HIV. The study was conducted on 34 black African and 32 mixed-race parent child dyads; 34 dyads were randomly assigned to the intervention group, and 32 were assigned to the control group. Adolescents participating in the study were between the ages of 11 and 15 years old. The intervention was conducted for parents in 5 weekly 2-hour group sessions led by trained City peer HIV educators and focused on communication skills, discussing sensitive topics, building relationships, and empowering adolescents. The program included role-plays, discussions, and take-home activities for parents to practice with their children throughout the intervention. Communication about HIV and sex, comfort about talking about sex, and parents' self-efficacy for condom use and behaviors were measured at baseline and follow up. Of the parents who participated, 73% attended between four and five of the five total sessions. Parents in the intervention group reported discussing an average of 6 new HIV and sex-related topics with their adolescent children upon completion of the program. Although parent perception of parent-child communication increased among the intervention group, their children's perceptions of parent-child communication remained unchanged. Additionally, the intervention significantly increased self-efficacy for condom use among parents in the intervention group. Lastly, parents reported increased comfort with talking about sex with their children, and 71% of parents in the intervention group reported having discussed the steps of condom use with their children upon completion of *Let's Talk* (Bogart et al., 2013). (Gray IIIa) (*adolescents, parents, communication, sexuality, South Africa)*

- A cross-sectional analysis with data collected in 2004 from 6,3512 students in 40 schools in **South Africa** and **Tanzania** found that communication on sexuality issues between adolescents and significant adults resulted in increased condom use among in-school adolescents (Namisi et al., 2013). (Gray IIIb) (*adolescents, adults, communication, sexuality, South Africa, Tanzania)*

- A cross-sectional study of 210 female secondary school students in Limbe, **Cameroon** in 2012 found that a higher perceived family support of condom use resulted in higher overall condom use among the students. Of the students, 92.3% were single and 56.2% were sexually active. Of the students who were sexually active, 27.4% used condoms consistently, 39.1% had used condoms during their first sexual intercourse, 48.7% had used condoms during their last sexual intercourse and 48.9% had used condoms at least once before. There was a highly perceived benefit to condom use, with 79.5% of the students agreeing that consistent and correct use of condoms can prevent HIV. Of the students, 50.5% felt that they could freely discuss condom use with their parents or adult family members, 66.1% felt able to discuss HIV with their parents or guardians, 69.3% believed that parents should talk about sex with their children, and 82.5% believed that their parents are knowledgeable about HIV. In addition, 65.9% believed that their parents support condom use. The participants who

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indicated being able to discuss condom use with their parents were more likely to have used condoms during their first sexual intercourse compared to the students who could not discuss these issues with their parents. In addition, participants who were able to discuss condom use with their parents were also more likely to have used condoms at least once before the study (Tarkang, 2014). (Gray IIIb) *(adolescents, parents, communication, sexuality, condom use, Cameroon)*

- A study of 750 women and 870 young people in rural Limpopo Province, **South Africa** evaluated whether an intervention that paired a microfinance program with participatory HIV and gender empowerment education for women in the poorest half of households could impact communication about sexuality between the women participants and adolescents in their households. During mandatory bi-weekly meetings, the Intervention with Microfinance for AIDS and Gender Equality (IMAGE) used three pathways to encourage loan holders to engage with young people in their households about sexuality issues: 1) by teaching the women participants about HIV, 2) by allowing the women to recognize their responsibility in protecting young people from HIV, and 3) by giving the women participants guidance in changing social taboos and norms. Initially, many women were "hostile to receiving what they considered to be irrelevant information." A focus discussion group participant indicated "each time the facilitator starts the sessions we would say, "there she goes again with her condoms speech… [we] talked about AIDS and our children, we were bored." But by the end of the training, women stated, "We saw many role-plays that showed us how to communicate with our children. These were useful skills," (Phetla et al., 2008: 511). The study found "an overall increase in the frequency and comfort levels of participants' efforts to convey the risk HIV poses to their community" (Phetla et al., 2008: 509). The women who participated in the intervention spoke to children about sexuality issues significantly more often, and the content of their discussions changed. While previously the women warned their children with "vague admonitions," after the intervention, they provided concrete guidance to young people: 97.6% of the women who communicated with children about sexuality discussed condoms while 58.2% discussed HIV testing (Phetla et al., 2008: 511). Young people who lived with the women participants generally wanted to discuss sexuality with their parents (Phetla et al., 2008). (Gray IIIb) *(adolescents, communication, sexuality, South Africa)*

7. **Increased employment opportunities, microfinance, or small-scale income generating activities can reduce risky behavior – particularly among young people.** [*See Strengthening the Enabling Environment: Promoting Women's Employment, Income and Livelihood Opportunities]*

- A randomized controlled trial of a combined intervention, named SHAZ! in **Zimbabwe** with life skills, health education, vocational training, micro-grants and social support resulted in a statistically significant change in the risk of transactional sex and a higher likelihood of using a condom with a current partner. Of the out of school adolescent and young women, ages 16 to 22, 158 received the full intervention and the 157 control received just life skills education. Based on a pilot, which showed increased risk of HIV acquisition for those who participated (Dunbar et al., 2010), the project was redesigned with input from young women. Participants received condoms upon request and those who tested positive were referred to local clinics, where they were assisted with payment for CD4 tests required to enroll. Life skills drew upon Stepping Stones and the livelihoods intervention consisted of financial literary education and a choice of vocation training of six months. Social support consisted of counseling by trained staff and adult mentors. However, HIV incidence was the same between the two groups (Dunbar et al., 2014). (Gray II) *(training, microfinance, sex behavior, Zimbabwe)*

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Promising Strategies:

8. Promoting condoms for pregnancy prevention may increase condom use for safe sex among young people.

- An analytical cross-sectional study of 397 (202 women and 195 men) university students in Cali, **Colombia** in 2011 found that 33% of the students regularly used condoms and that those with a regular sexual partner were 19 times more likely to engage in regular condom use. The students ranged from 15 to 25 years old, and 96% of them were single. Of the students, 72% had a regular sexual partner and 31% had irregular sexual partners in the last year. Young men were more likely to have irregular sexual partners than young women. Among the students, 61% thought that it was all right for young women to suggest condom use. In addition, 46% had a general knowledge of condoms and 73% had an understanding of how to use condoms. In addition, 27% of them always used condoms as their means of contraception, while 57.1% always or occasionally used different forms of contraception instead of condoms. Young women liked condom use more than young men. However, the majority of those that used different forms of contraceptives were young women. Risk factors for non-regular condom use involved not having the intention to use condoms with a regular partner, participating in anal sexual practices, and using a different form of contraception. Choosing another form of contraception reduced the probability of regular condom use by 60%. Predictive factors associated with regular condom use involved having the intention to use a condom, high self-efficacy regarding condom use, having irregular sexual partners, and liking the use of condoms. Students that liked using condoms had a 53% likelihood of regular condom use, and a high self-efficacy was associated with a 66% likelihood of regular condom use. Reinforcing factors associated with regular condom use included believing that condoms intensify pleasure because one feels protected, and a knowledge that condom use is accepted among friends. Not using condoms or stopping condom use with a partner was associated with feelings of security, confidence, emotional stability, and a strong commitment to the relationship (Valencia and Canaval, 2012). (Gray IIIb) *(adolescents, condom use, pregnancy prevention, Colombia)*

- An analysis of survey data from **18 African countries** found that use of condoms for pregnancy prevention rose significantly in 13 of 18 countries between 1993 and 2001. Condom use among young African women increased by an average annual rate of 1.4 percent, with more than half of the users (58.5 percent) reporting that they were motivated by a desire to prevent pregnancy (Cleland et al., 2006b). (Gray IV) *(youth, condom use, pregnancy prevention, Africa)*

- Over 75% of 3,000 male and female college students ages 18 to 24 in **South Africa** surveyed reported condom use at last sexual intercourse, primarily to prevent pregnancy. Almost 87% of men and 89% of women in the survey felt that condoms were part of sex. Six focus group discussions with students found that condoms had become part of sex, highly acceptable and easily accessible. If a woman requested condoms, men and women agreed the man must comply. Some men were suspicious of women who agreed to unprotected sex. Students reported that they would rather use condoms than jeopardize their future. (Maharaj and Cleland, 2006). (Gray V) *(adolescents, condom use, pregnancy prevention, South Africa)*

- A study of 678 male adolescents from **Brazil** found that condoms were the preferred method of contraception for 95% of sexually active adolescents. Avoiding pregnancy is also a primary

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motivation for young men in steady relationships (Juarez and Martin, 2006). (Gray V) *(adolescents, condom use, pregnancy prevention, Brazil)*

9. Unconditional cash transfers to parents' households or to adolescent girls may lead to increased age of sexual debut and/or reduce transactional sex.

- A study conducted in **Kenya** from 2007 until 2009 on the impact of the Government of Kenya's Cash Transfer for Orphans and Vulnerable Children on the risk of HIV by postponing sexual debut among adolescents ages 15 to 25 years old found that the program reduced the odds of sexual debut by 23-31%. The Government of Kenya's Cash Transfer for Orphans and Vulnerable Children program provided unconditional cash transfers of $20USD per month to poor households that had at least one orphan or vulnerable child under the age of 18 years old. Unconditional cash transfer programs may be less costly to implement than conditional cash transfers, as they do not require monitoring school attendance. A majority of the adolescents who participated in the study were living in extreme poverty (living on less than 60 cents per day), and did not have access to a protected water source. Of the 1,442 adolescents who participated, 61% were male. Locations in seven districts were randomly assigned to either the control or treatment arm, and information on sexual debut, number of partners, vaginal intercourse, and unprotected sex acts were recorded in both 2009 and 2011. Although attrition was 17% between baseline and the first follow up due to election-related instability in two locations in which the study was taking place, the difference in attrition between the treatment and control arms was negligible. The Government of Kenya's Cash Transfer for Orphans and Vulnerable Children Program had a larger impact on females than males, and was found to reduce the odds of sexual debut among females by 42% and among males by 26% (Handa et al., 2014). (Gray II) *(cash transfers, sexual debut, orphans, Kenya)*

- A prospective, observational study of 3,401 children and adolescents (1,926 girls and 1,475 boys) ages 10 to 18 in two **South African** provinces from 2009 to 2012 found that government provided child-focused cash transfers were associated with a reduction in the incidence and prevalence of age-disparate and transactional sex among females. The study assessed the incidence and prevalence of a variety of risky sexual behaviors, including unprotected sex, multiple sexual partners, sex while drunk or after taking drugs, age-disparate sex and transactional sex among a group of 1,986 adolescents whose households received cash-transfers and a control group of 1,415 adolescents whose households did not receive cash transfers. Risky sexual behaviors were recorded at baseline and at a follow-up one year later. The likelihood of engaging in risky sexual behaviors increased with age in both genders. However, the receipt of a cash transfer did not show significant effects in sexual risky behaviors among boys. In adolescent girls, receipt of cash transfers was associated with a 2.5% incidence and 2.7% prevalence of transactional sex, while not having a cash-transfer was associated with a 5.5% incidence and 6.2% prevalence. In addition, receipt of cash transfers in adolescent girls' households was associated with 1.2% incidence and 1.7% prevalence of age-disparate sex in the past year, while not having a cash-transfer was associated with a 4.3% incidence and 4.8% prevalence (Cluver et al., 2013). (Gray IIIa) *(cash transfers, sexual debut, South Africa)*

- A prospective observational study of 2,668 adolescents aged 10 to 18 in **South Africa**, 56.7% girls, found that integration of provision of cash plus involved parenting (not defined) and supportive teachers reduced HIV risk behaviors. Cash alone was associated with reduced HIV

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risk for girls but not for boys. Integrated cash plus care was associated with halved HIV-risk behavior incidence for both boys and girls compared with no support and controlling for confounders. Girls in AIDS-affected families had higher HIV risk behavior but were less likely to access integrated social protection. Adolescents were randomly selected and interviewed for one hour between 2009 and 2010 and then again one year later. Providing skills to parents and teachers may be important to reduce HIV risk among adolescents. HIV risk was assessed by questions on transactional sex, multiple partners, sexual debut, age-disparate sex, all of which are associated with increased risk of HIV acquisition (Cluver et al., 2014). (Gray IIIb) *(cash transfers, sex behavior, South Africa*)

- A pilot cash transfer intervention conditional on school attendance paid to young women and their families in **South Africa** found that cash transfers to adolescents improved their relationships with caregivers, as they no longer had to depend on caregivers to meet all their needs. However, young men objected and stated that now that girls knew their HIV-negative status, they would "refuse to make relationships with us" (MacPhail et al., 2013). (Gray IV) *(cash transfers, sex behavior, South Africa)*

10. Voluntary medical male circumcision (VMMC) may be effectively integrated into school programs. *[See also Prevention for Women: Voluntary Medical Male Circumcision]*

- A study conducted in **South Africa** from 2011 to 2013 assessed the feasibility of recruiting male high school students for voluntary medical male circumcision and found that conducting voluntary medical male circumcision in high schools is safe, feasible, and acceptable. Over the course of the 24 months of the study, 5,165 male circumcisions were performed across 42 high schools with an overall coverage of 47%. All males above the age of 12 who had received proper parental consent and were not HIV positive were eligible for the voluntary medical male circumcision services. A majority of the study participants were between the ages of 15 and 19 years old, and there was a low rate of adverse events as a result of the procedures that were performed. The intervention was designed in three phases. The first phase addressed community involvement, and consisted of consultations with local leaders and community information sessions conducted in local churches to assess community support of the intervention. The second phase utilized voluntary medical male circumcision coordinators to promote awareness of voluntary medical male circumcision in the schools and make referrals to local voluntary medical male circumcision clinics. The third phase of the intervention utilized peer recruitment and decentralized HIV counseling and testing services. During the third phase, peer recruiters were trained to disseminate information about the benefits of voluntary medical male circumcision as well as details of the procedure to their classmates. Throughout the intervention, transportation was provided from the schools to clinics where the voluntary medical male circumcision procedures were conducted. The recruitment program and circumcision services were coordinated with school schedules, with the goal of optimizing voluntary medical male circumcision access and convenience. The second phase of recruitment resulted in a four-fold increase in voluntary medical male circumcision procedures among the students, contributing to a 5.4-fold increase in voluntary medical male circumcisions performed overall and an overall increase in the monthly average from 58 procedures per month to 308 procedures per month (Montague et al., 2014). (Gray IIIb) *(adolescents, male circumcision, South Africa)*

- A cross-sectional study conducted in **South Africa** in 2008 on 6,654 men and 6,796 women ages 15 to 49 years old found high rates of circumcision among men and high acceptability of

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male circumcision among both men and women. The study found better knowledge about the benefits of male circumcision to be positively associated with the acceptability of male circumcision. More specifically, 45.7% of men ages 15 to 24 years old indicated that they would consider being circumcised, and 34.1% reported knowledge of the protective effects of male circumcision on preventing the transmission of HIV. Among the female partners between the ages of 15 and 24 years old, 30.6% reported that their partner was circumcised and 60.6% reported that they would be supportive of their partner being circumcised. Overall, 53.3% of the men and women between the ages of 15 and 24 years old reported that they support all men being circumcised (Peltzer et al., 2014). (Gray IIIb) *(adolescents, male circumcision, South Africa)*

- A study conducted in **South Africa** from 2011 until 2012 found that voluntary medical male circumcisions can be completed safely in low-resource settings with traditionally low rates of male circumcision. This study was conducted on 602 males between the ages of 12 and 55 years old with a median age of 22 years old, a majority of whom lived in poverty and in communities with poor hygienic conditions. A majority (45.2%) of the participants were between the ages of 20 and 24 years old, and most were sexually active, HIV-negative, and single. Voluntary medical male circumcision procedures were performed out of three low-resource hospitals, and volunteers were provided with information on the surgery and post-operative wound care. There was a lower rate of adverse events among participants aged 12 to 24 years old as compared to older participants. A majority of the study participants (91.2%) credited partial protection from HIV and other sexually transmitted infections as the main reason for seeking out voluntary medical male circumcision services, and there was a high demand for voluntary medical male circumcision services among study participants between the ages of 12 and 24 years old (Phili et al., 2014). (Gray IIIb) *(male circumcision, South Africa)*

- By December 2013, the majority of the estimated six million boys and men who had been circumcised in 14 countries (Botswana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, Swaziland, Uganda, the United Republic of Tanzania, Zambia, Zimbabwe, and Ethiopia) were adolescents aged 10 to 19. Advantages of VMMC in adolescence include: maximum impact if performed before sexual debut; fewer barriers for sexual abstinence during healing; circumcision is seen as a normal procedure for adolescents in countries where there are traditional male circumcision rites and is a time when fostering equitable gender norms is more effective. Adolescents can use school holidays for the six-week healing period. WHO 2013 guidance notes that adolescents are a key target group for VMMC (Njeuhmeli et al., 2014). (Gray V) *(adolescents, male circumcision)*

11. Promoting condom use at sexual debut may increase consistent condom use during adolescence and beyond.

- A cross sectional study conducted across 23 districts in **Uganda** between 2003 and 2010 of 4,518 sexually active adolescents (2,235 males and 2,258 females) between the ages of 15 and 24 years old found that using a condom at sexual debut was highly associated with condom use in later years. Young people who used a condom at sexual debut were 9.63 times more likely to have used a condom at last intercourse, 3.48 times more likely to have used a condom at last intercourse with an irregular partner, and 11.12 times more likely to practice consistent condom use. A majority 74.8% of the youths reported having their first sexual intercourse when they were between the ages of 15 and 19 years old, and 25.6% of the youths had no perceived risk of acquiring HIV despite 49% of the youths reporting never having used a condom. Additionally, for every one-year increase in sexual debut, the likelihood of using a

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condom at sexual debut increased by 10%. Similarly, youths who were either married or living with or married to their partner showed a 91% increase in the odds of consistent condom use as compared to those who were not living with their sexual partner. Higher education levels were also associated with increased condom usage among the youths, and having a secondary school education increased the chances of consistent condom use by a factor of 8 (Valadez et al., 2014). (Gray IIIb) *(condoms, youth, Uganda)*

- A study of 802 sexually active young people ages 15 to 24 in **Ethiopia**, of whom more than 74% were women, found that once youth had started to use condoms, they were more likely to continue to use condoms in the future (Molla et al., 2007). (Gray IIIb) *(condoms, youth, Ethiopia)*

12. **Empowerment training for adolescent girls can increase skills to confront sexual assaults.** *[See Strengthening the Enabling Environment: Addressing Violence Against Women]*

5A. Gaps in Programming—Mitigating Risk

1. Effective programs (as described here) must be expanded to reach many more young people, especially young people who are most neglected such as very young adolescents, out-of-school youth, young people living with HIV, homeless and rural youth, as well as lesbian, MSM and transgender adolescents and other key populations.
2. Greater efforts are needed to help young people personalize HIV risks.
3. Sex education and condom promotion programs need to take into account the different motivations among young men and women for engaging in unsafe sex.
4. Clear policies and legislation supporting access to information and sexuality education are needed to reduce the risk of HIV transmission among young people.
5. Interventions are needed to counter gender norms, such as those which value girls' sexual ignorance and virginity, which place girls at risk for HIV transmission.
6. Interventions are needed to reduce cross-generational sex and marriage.
7. Further interventions are needed to help female OVCs reduce risky sexual behaviors and protect them from sexual violence.
8. Interventions are needed for adolescents to reduce acceptance of gender-based violence and stigma against people living with HIV.
9. Interventions are needed to bring men and women, youth and parents together to focus on the positive aspects of sexuality.
10. Teachers need increased training and clear educational policies regarding sexuality education to effectively provide HIV education.
11. Skills training is needed to improve confidence in negotiating condom use for girls and confidence in condom application for boys.
12. While mobile phones have been shown to be effective in increasing adherence for adults

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on antiretroviral therapy, more implementation science research is needed on how to effectively employ mobile phones and websites for adolescent HIV prevention, treatment and care and whether adolescents have adequate access via mobile phones.

13. Non-discriminatory education sector policies on HIV are needed, with regular reviews, updates and implementation.
14. Programs are needed to change family gender norms to give brothers and sisters equal access to household resources and pocket money, to reduce the need for transactional sex.
15. Interventions, policies and budgets are needed to reduce sexual coercion and rape of both boys and girls, create awareness in communities that violence against children is unacceptable, strengthen child statutory protection systems, and conceptualize and implement appropriate child protection services in developing countries. Access to post-exposure prophylaxis in case of rape when the perpetrator is HIV-positive is also needed.

1. **Effective programs (as described here) must be expanded to reach many more young people, especially young people who are most neglected such as very young adolescents, out-of-school youth, young people living with HIV, homeless and rural youth, as well as lesbian, MSM and transgender adolescents and other key populations.** *[See also Care and Support: Orphans and Vulnerable Children]* Studies found adolescent girls did not know that anal sex increased the risk of HIV acquisition, did not use condoms, and did not know that oral sex carries a low risk of HIV acquisition. Out-of school-youth were at high risk of early sexual debut. A scan of sex education curricula found that information on key aspects of sex such as information on condoms in addition to negative, fear-based curriculum were prevalent and that less than half of out of school youth were reached. In some countries, pornography was the principal source of information about sex and pornography often depicts condom-free sex and gender inequality, with men in domineering roles (Day, 2014).

    - Gap noted, for example, globally (Plan, 2015), in **Kenya, Lesotho, Malawi, Mozambique, South Africa, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe (**Pitorak et al., 2013); **Eastern and Southern Africa** (UNESCO, 2013; Stroeken et al., 2012); **Nigeria** (Aboki et al., 2014); **Burundi** (Athena et al., 2015); **Sierra Leone** (Day, 2014); **Kenya** (Rositch et al., 2012); **Uganda (**Hampada et al., 2014); **Kenya (**Harper et al., 2014); **Botswana** (Majelantle et al., 2014); **Bahamas** (Pinder-Butler et al., 2013**); Lao PDR** (Sychareun et al. 2011**); Pakistan** (Nasir, 2014; Farid-ul-Hasnain and Krantz, 2011); **Cameroon** (Tarkang, 2015; Tsala Dimbuene and Kuate Defo, 2011); **Jamaica** (Ishida et al., 2011); **Yemen** (Al-Serouri et al., 2010); **Zambia** (Carnevale et al., 2011); **Nepal** (Upreti et al., 2009); **Nicaragua** (Manji et al., 2007); **Ethiopia** (Sisay et al., 2014; Alemu et al., 2007; Erulkar et al., 2006); **over 30 countries in Africa and four countries in Asia** (Dixon-Mueller, 2009).

2. **Greater efforts are needed to help young people personalize HIV risks**. Studies found that knowledge about HIV prevention was superficial and that young people believed that they were not personally at risk of HIV acquisition despite risky behaviors and that

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condoms were not used because of "trust in partners." Another study found that one adolescent girl reported she did not need to test for HIV as the only people at risk for acquiring HIV were those "who go to beer halls and pubs – prostitutes" (Ferrand et al., 2011). Married adolescent girls who had not become pregnant were significantly less likely to have had HIV testing and counseling (HTC) yet reported high rates of coerced sex within marriage, associated with acquiring HIV. Adolescents in one study suggested visiting hospices or people who were sick with HIV to understand more about HIV.

- Gap noted, for example, in **Thailand** (Watthayu et al., 2015); **Tanzania** (Tolley et al., 2014; Lyimo et al., 2013); **Kenya** (Undie et al., 2012); **Ethiopia** (Cherie et al., 2012); Ghana (Amo-Adjei, 2012); **Zimbabwe** (Ferrand et al., 2011); **Uganda** (Mathur et al., 2015; Kayiki and Forste, 2011); **Taiwan** (Tung et al., 2010); **Malaysia** (Anwar et al., 2010); **South Africa** (Tenkorang et al., 2011; Anderson et al., 2007, Stadler et al., 2007); and **Burkina Faso, Ghana, Malawi** and **Uganda** (Biddlecom et al., 2007).

3. **Sex education and condom promotion programs need to take into account the different motivations among young men and women for engaging in unsafe sex.** Studies found that boys complained about reduced sensation with condoms to cover their fear of losing their erection when putting on a condom; girls believed that unsafe sex proved their love and trust in their partner.

   - Gap noted, for example, in **Thailand** (Vuttanont et al., 2006); **Brazil** (Mane et al., 2001, Juarez and Martin, 2006); **South Africa** (Moyo et al., 2008); **Mozambique** (Machel, 2001).

4. **Clear policies and legislation supporting access to information and sexuality education are needed to reduce the risk of HIV transmission among young people.** Studies found that sex education was lacking, particularly among street children who are at high risk of HIV acquisition.

   - Gap noted, for example, globally (Todesco and Gay, forthcoming 2016); in Iran (Hedayati-Moghaddam et al., 2015); **Antigua and Barbados; Bahamas; Bolivia; Columbia: Costa Rica; Chile; Dominica; Ecuador; El Salvador; Guyana; Haiti; Honduras; Jamaica; Mexico; Nicaragua; Panama; Paraguay; Peru; Venezuela; Dominican Republic; Santa Lucia; Suriname; Trinidad y Tobago; and Uruguay** (DeMaria et al., 2009); **India** (Menon, 2013; McManus and Dhar, 2008). Zimbabwe (Shroufi et al., 2013).

5. **Interventions are needed to counter gender norms, such as those which value girls' sexual ignorance and virginity, which place girls at risk for HIV transmission.** *[See also Strengthening the Enabling Environment: Transforming Gender Norms]* Studies found that gender norms valued sexual ignorance of girls and therefore girls were at risk of HIV acquisition. Some studies found that women did not know anything about HIV until they became HIV-positive. Girls are taught to surrender power to meet cultural expectations of being a good girl or good woman. Boys derive status from having multiple sexual partners.

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- Gap noted, for example, in South Africa (Jewkes and Morrell, 2012; Selikow et al., 2009); Ghana (Sommer and Acatia-Armah, 2012); **29 countries in Africa** and **Latin America** (Clark et al., 2006); a review of **more than 150 studies** (Collins and Rau, 2000; Gupta et al., 2003 cited in Gillespie and Kadiyala, 2005); **South Africa** (Bhana and Pattman, 2011); **Zimbabwe** (Feldman and Masophere, 2003); **Ethiopia, Malawi, and Haiti** (Mathur et al., 2003); and **Tanzania** (Silberschmidt and Rasch, 2001).

6. **Interventions are needed to reduce cross-generational sex and marriage.** Studies found that young women relied on older men to pay their school fees in exchange for sex. Numerous studies found significant numbers of young girls having sexual relationships with older men, who are more likely to be HIV-positive and seek sexual partnerships with younger women. Studies also found that due to poverty, parents encouraged transactional sex and that efforts are needed to address parental pressures.

    - Gap noted, for example, in a review of **Nigeria** (Aboki et al., 2014); **Swaziland** (All In to End Adolescent AIDS, 2015a); **45 quantitative and qualitative studies** in **Sub-Saharan Africa** (Hope, 2007**); Liberia** (Atwood et al., 2011); **Botswana, Namibia and Swaziland** (Cockcroft et al., 2010); **Botswana, Malawi and Mozambique** (Underwood et al., 2001); **Tanzania** (UNICEF et al., 2011a; Silberschmidt and Rasch, 2001); **Zimbabwe** (Munjoma et al., 2010); **Peru** (Sandoval et al., 2009); **Cameroon (**Hattori and DeRose, 2008); **Uganda** (Chimoyi and Musenge, 2014; Nobelius et al., 2011; Samara, 2010); **South Africa** (Ott al., 2011; Jewkes et al., 2002 cited in Jejeebhoy and Bott, 2003); **South Africa** and **Uganda** (Geary et al., 2008; Katz and Low-Beer, 2008); **Burkina Faso, Ghana, Malawi and Uganda** (Bankole et al., 2007); **Botswana** (PHR, 2007a); **Kenya** (Longfield et al., 2004); **Ghana** (Goparaju et al., 2003); **Zimbabwe** (Gregson et al., 2002).

7. **Further interventions are needed to help female OVCs reduce risky sexual behaviors and protect them from sexual violence.** *[See also Care and Support: Orphans and Vulnerable Children]* Studies found that female orphans had higher rates of early sexual debut and were more likely to have had coerced sex.

    - Gap noted, for example, in **Egypt** (Nada and Suliman, 2010); **Kenya** (Machera, 2009); **Rwanda** (Boris et al., 2008); **South Africa** (McGrath et al., 2009; Thurman et al., 2007); **South Africa and Swaziland** (Poulsen, 2006); **Tanzania** (UNICEF et al., 2011a); **Zimbabwe** (Kang et al., 2008; Birdthistle et al., 2008; Nyamukapa et al., 2008; Dunbar et al., 2010).

8. **Interventions are needed for adolescents to reduce acceptance of gender-based violence and stigma against people living with HIV.** A study found high rates of stigma among adolescent girls. A nationally representative survey of youth in Tanzania found high rates of acceptance for a husband to beat his wife if she goes out without telling him; argues with him; burns food; or refuses to have sex with him. In 35% of countries with data available, more than 50% of women and men report discriminatory attitudes toward people living with HIV (UNAIDS, 2015e).

    - Gap noted, for example, in **Brunei Darussalam; Indonesia; Malaysia; the Philippines** and **Timor-Leste** (UNESCO, 2012c); **Lao PDR** (Thanavanh et al., 2013); **India** (Kumar et al., 2012 cited in Thanavanh et al., 2013); **Cameroon** (Arcand & Wouabe 2010); **Tanzania**

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(UNICEF et al, 2011a); **Thailand** (Ishikawa et al., 2011a); **Bolivia, Chile and Mexico** (Lopez Torres et al., 2010).

9. **Interventions are needed to bring men and women, youth and parents together to focus on the positive aspects of sexuality.** Studies found sexual education focuses on disease, burdening girls with prohibitions, yet neglecting boys.

    - Gap noted, for example, in **South Africa** (Soon et al., 2013); **India** (Guilamo-Ramos et al., 2012); **Kenya** (Njoroge et al., 2010).

10. **Teachers need increased training and clear educational policies regarding sexuality education to effectively provide HIV education.** A study found that teachers did not have adequate training and support to provide HIV education; students preferred health personnel to provide AIDS education and that the Ministry of Education did not have clear policies on what can be taught.

    - Gap noted, for example, in **Kenya** (Njue et al., 2009).

11. **Skills training is needed to improve confidence in negotiating condom use for girls and confidence in condom application for boys.**

    - Gap noted, for example, in **Uganda** (Nobelius et al., 2012).

12. **While mobile phones have been shown to be effective in increasing adherence for adults on antiretroviral therapy, more implementation science research is needed on how to effectively employ mobile phones and websites for adolescent HIV prevention, treatment and care and whether adolescents have adequate access via mobile phones.**

    - Gap noted **globally** (Pettifor et al., 2013); in **Uganda** (Swahn et al., 2014; Wiens et al., 2012).

13. **Non-discriminatory education sector policies on HIV are needed, with regular reviews, updates and implementation.** Practices that require disclosure of HIV status for access to education should be prohibited and confidentiality policies are needed.

    - Gap noted **globally** (UNESCO and GNP+, 2012).

14. **Programs are needed to change family gender norms to give brothers and sisters equal access to household resources and pocket money, to reduce the need for transactional sex.**

    - Gap noted, for example, in **South Africa** (Jewkes et al., 2012).

15. **Interventions, policies and budgets are needed to reduce sexual coercion and rape of both boys and girls, create awareness in communities that violence against children is unacceptable, strengthen child statutory protection systems, and conceptualize and**

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implement appropriate child protection services in developing countries. Access to post-exposure prophylaxis in case of rape when the perpetrator is HIV-positive is also needed. *[See also Strengthening the Enabling Environment]* In most countries of Eastern and Southern Africa, the age of consent for sex is 16. Despite these restrictions, more than 10% of girls have had sexual debut before age 15. A study found that in a sample of more than 1,000 males and more than 1,000 females, large numbers had experienced high rates of physical punishment, emotional abuse and touching of sexual organs when not wanted or sex due to force or coercion prior to age 18 and that incident HIV infections were more common in women who suffered emotional abuse, sexual abuse and physical punishment. Sexual abuse in men was associated with alcohol abuse and depression. Other studies found high rates of sexual coercion and high-risk behaviors among street children. "Few children disclose abuse, fewer still seek services and report to authorities, virtually no children actually receive services and perpetrators rarely suffer consequences" (Sommarin et al., 2014: S213). Most research does not provide adolescent-specific data on violence, instead listing results for ages 15 to 49. Reviews have not found evidence that preventive responses have had an impact on rates of sexual abuse. Effective programs in the US and Canada have not been assessed for adaptation in other countries.

- Gap noted **globally** (Sommarin et al., 2014; Palmer, 2014) and for example, in **Eastern and Southern Africa** (UNESCO, 2013); Cambodia, Haiti, Kenya, Malawi, Swaziland, Tanzania and Zimbabwe (Summer et al., 2015); **Ghana** (Bingheimer and Reed, 2014); **Egypt, South Africa, Nigeria, Mauritania, Zimbabwe, Swaziland** (Meinck et al., 2015); **Nigeria** (Folayan et al., 2014a); **Ethiopia** (Mekuria et al., 2015); **Tanzania** (Mbaga et al., 2012); **Botswana, Lesotho, Malawi, Mozambique, Namibia, Swaziland, Zambia, Zimbabwe, Tanzania, South Africa** (Andersson et al., 2012); **South Africa** (Jewkes et al., 2010b); **Egypt** (Nada and Suliman, 2010); **India** (Bal et al., 2010); **Namibia, Swaziland, Uganda, Zambia and Zimbabwe** (Brown et al., 2009).

B. *Prevention for Young People:* Increasing Access to Services

While the literature on access to HIV services by adolescents is limited, the literature on access to sexual and reproductive health services more broadly demonstrates that youth-friendly approaches can increase use of reproductive health care services by female adolescents (Gay et al., 2015). Young people's service needs are frequently overlooked in HIV programming that is not specifically for young people.

> *"Young people living with HIV are almost invisible and our needs are given low priority" (Youth living with HIV interviewed in UNESCO and Global Network of People Living with HIV, 2012: 16).*

Adolescents have sex. A nationally representative sample of youth in South Africa found that 18% of young men and 8% of young women said they had had sex for the first time at age 14 or younger (Pettifor et al., 2009). As a result of a 2002 study of Zambian secondary school students, Warenius et al. (2007) noted that although "government policy in Zambia states that all sexually active men and women should have access to reproductive healthcare and information…in practice, young people have limited access to such services" (p. 534).

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Increasing services for adolescents need not reinvent the wheel, however; "strengthening the health care system to better serve adolescents requires taking a strategic look at ways to build capacity within the existing system…" (Boonstra, 2007).

Where once treatment for children with HIV was to prevent death, now the focus is on optimizing health for adulthood (Bamford and Lyall, 2015). "As young people increase as a proportion of the total population of HIV patients, retaining them in HIV care and on treatment will require that these services become more relevant to the needs of young people" (UNESCO, 2013: 37). Yet in Africa, where the majority of adolescents living with HIV live, "dedicated health services for young people are the exception rather than the rule, and little or no provision has been made…" for adolescents living with HIV (Lowenthal et al., 2014: 635). *[See also Structuring Health Services to Meet Women's Needs]*

Adolescents Fall Through the Cracks in Health Services

Adolescents have wide-ranging service needs. All adolescents and young people need access to basic health services, including access to condoms for pregnancy and disease prevention as well as access to HIV testing and counseling services. In addition, adolescents living with HIV – whether they acquired HIV through sexual transmission or who have grown up HIV-positive due to perinatal infection – have specific needs for health services as well and often these needs are not being met. The UN defines a child as someone under 18; yet youth, who are aged 15 to 24 exist "in an ambiguous state that as both child and adult" (Chandler, 2011: S346). "Adolescents and young adults, both in clinical practice and in research, tend to fall between the cracks of adult and pediatric medicine" (Kapogiannis et al., 2010: S1). Few countries where HIV is most prevalent have health providers who are specially trained on adolescent health (Mburu et al., 2013). *[See also Safe Motherhood and Prevention of Vertical Transmission]*

Increased Attention is Needed for Adolescent Girls Living with HIV

For adolescents who are living with HIV, clear guidelines are needed in some countries to address sexual and reproductive health issues (Obare et al., 2011). Adolescents living with HIV have complex needs as "they must simultaneously deal with 'adult' issues, such as disclosure, stigma and practicing safe sex while also addressing issues traditionally associated with adolescence such as body image, first sexual experience, peer pressure and forming personal identity" (Mahvu et al., 2013:para 3). Adolescents living with HIV also face discrimination from schools, health services and families (Thupayagale-Tshweneagae, 2010). "Despite the growing number of older children and adolescents who develop symptoms, there has been little focus on providing this group with specialized HIV care" (Ferrand et al., 2010: 428). Providers need training to provide nonjudgmental care. Instead, one study found that providers would say to adolescents living with HIV: "You are HIV-positive. You are not expected to have sex. You are not expected to have a baby" (cited in Obare et al., 2011: 158).

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Worldwide, HIV-related mortality increased by 50% among adolescents living with HIV between 2005 and 2012 (Denison et al., 2015). WHO ART treatment guidelines recognize that adolescents do worse than adults across all aspects of the treatment cascade (testing/knowing one's status; on ART; virally suppressed) and call for greater implementation of adolescent-friendly health services (WHO, 2015f). "Globally it is not known how many adolescents are receiving treatment and care for HIV…" (All In to End Adolescent AIDS, 2015d).

"We don't' have adolescent-friendly services because initially it was assumed that a child born with HIV was going to die in a few months, so even services were not designed for adolescents, meaning that their access to treatment is a challenging issue" (Health provider, Zambia, cited in Mburu et al., 2013: 180).

In addition to greater numbers of adolescents living with HIV, there will be a large and growing population of children who are HIV-negative but who were exposed to antiretroviral drugs when their HIV-positive mothers were pregnant or as infants, and these children will need to be followed to determine the long-term safety of these exposures (Hazra et al., 2010).

Increasing Access to Treatment and Support Services Helps Young People Live Positively

Access to treatment and support can reduce exposure to stigma for young people living with HIV and help them live positively. A qualitative study with 25 adolescents living with HIV and 15 caregivers of children living with HIV in South Africa found that "adolescents uniformly cited the availability of life prolonging medication as assisting them to cope with their HIV-positive serostatus" (Petersen et al., 2010: 975).

"…Now I drink [ART] so that I can live longer" (Adolescent girl age 17 living with HIV in Zambia cited in Denison et al., 2015: 4).

Focus group discussions held in Botswana with 18 adolescents living with HIV, 12 of whom were female, found that adolescents living with HIV reported that they adhere to antiretroviral treatment in order to protect themselves from stigma and discrimination. Keeping healthy through antiretroviral therapy keeps their HIV status secret: "This is my third year taking ARVs and nobody knows except my support group" (Thupayagale-Tshweneagae 2010: 262). Focus group discussions held in Kenya with 26 adolescents living with HIV, 10 of whom were female, found that clinic and clinic support groups helped them have optimism for the future. The adolescents stated that the clinic treated them well and was a source of support, as well as providing life saving treatment. The adolescents were "aware of what the virus could have cost them and grateful for what they still had" (Li et al., 2010c:753).

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Increasing access to HPV vaccinations and Pap smears is an important health service for young women. Adolescents living with HIV are particularly at risk of more dangerous strains of HPV, such as 56, which is associated with increased risks of development of invasive cancer (Moscicki et al., 2004a; Moscicki et al., 2004b; Brogly et al., 2007). The initiatives of HPV vaccinations in schools and communities targeting adolescents prior to sexual activity offer a new platform to reach adolescents with information, counseling and services on reproductive health and HIV (Kasedde et al., 2013). *[See also Meeting the Sexual and Reproductive Health Needs of Women Living With HIV]*

South Africa has instituted health services provision within schools (UNFPA, 2014) as a way to reach adolescents. In 2012, 3,242 consenting students from five randomly selected public sector high schools in rural South Africa were tested for HIV and found HIV prevalence of 6.8% for girls and 2.7% for boys. HIV prevalence increased from 4.6% in 12 to 15 year old girls and to 23.1% in girls over 20 years. In boys, HIV prevalence increased from 2.7% in those aged 12 to 15 to 11.1% over age 20. This effort demonstrated the feasibility of providing HIV testing and counseling from schools linked to HIV testing and counseling services within primary care clinics (Kharsany et al., 2014). HIV testing in schools may enable adolescent girls to access HIV testing prior to their first pregnancy, whereas the current approach of HIV testing during antenatal care misses that window (Kurth et al., 2015). However, providing services within schools, such as HIV testing and counseling, or provision of condoms, has been controversial, with parents disapproving in some communities (Kumi-Kyereme et al., 2014).

Further Analysis of Pre-Exposure Prophylaxis (PrEP) Is Needed for Use Among Adolescent Girls

PrEP is the use of antiretroviral medication by people who are HIV negative to prevent HIV acquisition, with adherence and regular HIV testing essential. High adherence to PrEP can effectively prevent HIV infection (Baeten et al., 2012; Choopanya et al., 2013; Grant et al., 2010, Thigpen et al., 2012 cited in UNAIDS, 2015e) and some of the the benefits of PrEP is that it is under personal control and not seen at the time of a sexual encounter so adolescent girls may decide on their own to use it (UNAIDS et al., 2015). A study in Kenya and South Africa in 2011 and 2012 with focus groups with adolescent girls aged 14 to 17 and young women 18 to 24 found that adolescent girls found PrEP appealing "because it would eliminate concerns about being seen while obtaining condoms from clinics and because they felt that PrEP could be used privately" (Mack et al., 2014: para17). Concerns were raised about whether a male sexual partner would allow use of PrEP, but many felt that obtaining pills would be easier than obtaining condoms. The need for privacy for adolescent girls is linked to community norms, which disapprove of adolescent girls being sexually active (Mack et al., 2014).

WHO now recommends that all people at substantial risk of HIV should be offered PrEP (WHO, 2015g:1). A global consultation of 58 experts convened by UNICEF in July 2015 endorsed the use of oral PrEP among older adolescents (not defined), to achieve the

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targets of UNICEF's All in to end adolescent HIV campaign (UNICEF, 2015). But no trials have been published to date for pre-exposure prophylaxis among adolescent girls under age 18 (Dellar et al., 2015).

Further evaluation is needed on the feasibility of PrEP use for adolescents. A recent PReP trial with young women in Zimbabwe, South African and Uganda was halted early due to low adherence rates, with lowest rates among young, single women (Marrazzo et al., 2015 cited in Cluver et al., 2015).). Most importantly, implementation of PrEP "should not come at the expense of other essential HIV or other key health programmes" (Beyrer et al., 2015: 1483).

Policy and Legal Barriers to Access Must be Overcome

Policy and legal barriers often prevent young people from accessing services. Many health services will not provide sexual and reproductive health services to unmarried women. In most countries, young people under the age of 18 need parental consent to obtain medical care, including HIV testing and counseling, despite the fact that counseling and testing can lead young people to change their behavior and many youth are sexually active before age 18. In some countries, health care providers are not allowed to maintain patient confidentially in youth under age 16 (UANIDS, 2011e; UNESCO, 2013). Laws that require providers to seek parental consent before testing minors or to provide test results to parents may make adolescents reluctant to seek services. Adolescents must feel comfortable accessing necessary prevention or care services.

> *"I will never tell my child about my HIV infection even when I am dying. I will never tell him" (mother living with HIV in China cited in Zhou et al., 2012: 820).*

Since more and more adolescents will have grown up with perinatally acquired HIV, HIV services should be available to all ages without parental consent in order to ensure access to needed services. Clinics can become safe havens for adolescents living with HIV, where adolescents can confide, as one female adolescent, age 16 from Zambia put it: "I really like going to the centre…because we talk" (cited in Hodgson et al., 2012: 1207). But services need to provide different meeting times for discussions based on different ages, with the needs for age 10 different than those of age 17 (Hodgson et al., 2012).

Adolescents who use drugs also need access to services to minimize their risk behavior and can have difficulty accessing services due to age restriction policies. In some countries, opioid substitution therapy is limited to those above age 18, despite the fact that injecting drug use may be initiated prior to age 18. In Albania, 32.2% of 121 young people who injected drugs stated that they initiated prior to age 15; in Romania, 26.7% of

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300 young people who injected drugs stated they initiated before age 18 (Busza et al., 2013).

> *"No one wants to start on methadone at age 18 because they will register you at once…they will give data on you everywhere, at school, local police and to doctors" (young woman in Kyrgyzstan cited in Krug et al., 2015: 73).*

National level policies and programs focused on adolescent service needs are desperately needed. For example, in Nigeria, none exists (Aboki et al., 2014). Ethical principles for international research on adolescents have been developed (Bekker et al., 2014) but research with adolescents remains challenging not only because adolescents and their guardians may need to consent and understand the consent process depending on national laws, but also because of national laws requiring the mandatory reporting of children experiencing abuse, neglect or living in child-headed households (Bekker et al., 2014).

Dedicated budget lines for adolescents, particularly those at highest risk of HIV acquisition or living with HIV, are also critical (UNICEF, 2013). Additionally, databases to monitor, for example, adolescent use of harm reduction and HIV prevention services with information on age, sex, services received, test results, etc. with codes to protect identity, can assess whether adolescents at risk are being reached (UNICEF, 2013). "….Programmes remain inadequate to the major challenges adolescents face" (Cluver et al., 2015: para 24).

Disaggregated Data Is Needed

Data collection, including in the Demographic and Health Surveys (DHS), is often grouped for either children age under 5 or those over age 15, with little or no data collection on ages 10 to 19 i.e. adolescents (Pitorak et al., 2013). Data on who accesses HIV services and who is lost to follow up need to be disaggregated by sex, age and key population – not just as adults or children. In addition, data should be disaggregated by marital status, as access to services and sexual behaviors differ in many countries based on marital status. Given the variability of experiences during these years, it is critical to differentiate between the needs of adolescents ages 11 to 14, those who are 15 to 17, and those who are over age 18 (Wilson et al., 2010a). Interventions during these ages could address healthy transitions to young adulthood in the post-pubescent ages (Sommer, 2011). A recent article reported on almost 15,000 patients lost to follow up – but by the categories "adults" and "children" with no ages given (Rachlis et al., 2015). A review of adolescent and young adult populations, ages 12 to 24 years of age, found that "there are limited data on ART adherence amongst" this population globally (Kim et al., 2014: 1945). Effective programs for young people need to understand how young people use services and what other barriers (e.g., community and provider attitudes) must be overcome. "Effectiveness is hindered by the lack of systematic attention to gender in

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designing programmes for most-at-risk young people. Most countries do not have accurate data on the population of young men and women, nor do they maintain records by sex of young people's use of services" (UNFPA Inter-Agency Task Team on HIV and Young People, 2008: 4). To ensure an accurate picture of the sexual and reproductive health needs of young people, basic data on adolescents should be disaggregated by gender with more precise age groups, such as ages 10–11; 12–14; 15–17; and 18–19 (Dixon-Mueller, 2007). Without this data, a multitude of questions about adolescent HIV service programming remains, including: What are the lifelong consequences of HIV and ART? What suboptimal ART options and formulations have adolescents been exposed to and what are the best ways forward? "Every year that goes by without dedicated surveillance of [perinatally HIV-infected adolescents] means that tens of thousands of children could be lost in the crowd" (Sohn and Hazra, 2013: para 38).

5B. What Works—*Prevention for Young People:* Increasing Access to Services

1. Adolescents can achieve viral suppression and remain adherent, with low loss to follow up.
2. Treatment support sessions can increase adherence among adolescents.
3. Providing clinic services that are youth-friendly, conveniently located, affordable, confidential and non-judgmental, can increase use of clinic reproductive health services, including HIV testing and counseling and treatment services.

Promising Strategies:

4. Youth-friendly condom distribution can help young people feel more comfortable accessing condoms.
5. Targeted education efforts can increase adolescent uptake of HIV testing and counseling and related services.
6. Young women living with HIV can safely deliver HIV-negative infants with appropriate treatment.
7. Integrating HIV testing and counseling into existing reproductive health services for young people may lead to increased uptake of HIV testing and counseling for youth ages 15 to 24.

B. Evidence

1. Adolescents can achieve viral suppression and remain adherent, with low loss to follow up.

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- A review of perinatally infected adolescents receiving care at 18 pediatric clinics in **Cambodia, India, Indonesia, Malaysia, Thailand** and **Vietnam** found that of 1,254 adolescents, of whom 95% had ever received ART, 1,061 were in active follow up. Among the adolescents who remained in follow up, the most recent median CD4 cell count was 657 and 718 of 830 adolescents tested had HIV RNA under 400 copies/ML, i.e. they were virally suppressed. Of the 1,254 adolescents, 47% were male, 1,060 were under the age of 12 at entry and the median time in follow up during their adolescence was 2.4 years. Besides the 1,061 in active follow up, 2.6% had died; 4.2% were lost to follow up; and 8.6% were transferred to other clinics. The adolescents were treated at public or university-based pediatric HIV referral clinics with highly trained staff and access to treatment. Successful treatment in early childhood resulted in successful outcomes for perinatally infected children during their adolescence. Of the adolescents, 93% attended school (Chokephaibulkit et al., 2014). (Gray IIIb) *(young people, treatment, adherence, Cambodia, India, Indonesia, Malaysia, Thailand, Vietnam)*

- A study in **Jamaica** found that adolescents who acquired HIV perinatally were successfully treated using HAART. There were 512 children and adolescents living with HIV who were enrolled in treatment and care programs. Of these adolescents, 88% (451) of them received HAART, 73% were less than 12 years old and 27% were greater than 13 years old. Among the 451 children on HAART, 70% received first line HAART, 29% received second line HAART, and 0.7% received salvage therapy. Among those who acquired HIV through sex rather than as a result of vertical transmission, half acquired HIV through forced intercourse. There has been increased infection detection through voluntary counseling and testing for all antenatal clinic attendees (Christie and Pierre et al., 2012). (Gray IIIb) *(young people, treatment, adherence, Jamaica)*

- A global review of adherence among adolescent and young populations, ages 12 to 24, with 50 studies reporting data from 53 countries and 10,725 patients, between 1999 and 2003 found that youth in **Africa** and **Asia** had a higher adherence rate of 84% than **South America**, with an adherence rate of 63%. The lowest average ART adherence was in **North America** with 53%. Studies after 2005 showed a higher adherence rate of 74% compared to 59% pre-2005. Of the 50 studies, 36 studies measured adherence by viral suppression, 13 by self-report and the rest by pharmacy refills. Studies did not include those who may have been eligible for ART but did not access treatment, became lost to follow up, or were not eligible for ART based on national guidelines. In addition, studies among high-risk key populations are lacking. (Kim et al., 2014). (Gray IIIb) *(young people, treatment, adherence, Africa, Asia, South America, North America)*

2. Treatment support sessions can increase adherence among adolescents.

- A study conducted in **South Africa** showed high levels of feasibility and acceptability of the VUKA intervention, a 6-session family-based intervention that was conducted with 65 adolescents over the course of three months to promote mental health among adolescents living with HIV. Adolescents who participated in VUKA experienced both a significant increase in HIV knowledge scores and a significant increase in ART adherence as measured by the last time they missed taking their medication, in addition to a significant decrease in perception of stigma surrounding adolescent HIV. Caregivers had positive responses to the intervention, and reported that VUKA helped them to discuss sensitive topics with their children, improved mental health, strengthened social support of both themselves and their children, and created a positive sense of identity among the adolescents living with HIV. The

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adolescents who participated in the study were between the ages of 10 and 13 years old, the majority was female. Of the 65 families that participated in the study, 95% of the caregivers who were responsible for the adolescents were female. VUKA was carried out with the goal of addressing psychosocial challenges related to HIV through a cartoon storyline, and was facilitated by trained lay people. The storyline follows a 12-year old orphan boy living with HIV, and seeks to address issues such as stigma, family loss, peer relationships, and identity. Additionally, the program provides detailed instructions for counselors to facilitate discussions about the cartoon in both group and individual family sessions that address disclosure of HIV status, coping with HIV, adherence to antiretroviral therapy, stigma, caregiver-child communication, puberty, decision-making, and social support. Of the 33 families who were randomly selected to participate in the VUKA program, 32 families attended at least one session. Additionally, 94% of the families attended 5 out of the 6 sessions and 55% attended all six sessions, demonstrating the high attendance rate and strong feasibility of implementing the program. (Bhana et al., 2014). (Gray II) *(treatment, adherence, support, adolescents, South Africa)*

- A cross-sectional study consisting of 262 adolescents aged 10 to 19 years old living with HIV in **Zimbabwe** found that direct parent involvement in clinic visits was associated with improved adherence to antiretroviral therapy among the adolescents. Adherence was categorized as optimal if it was reported as "excellent," and all other descriptions of adherence, including very good, good, poor, and very poor were categorized as suboptimal. A majority of the adolescents who participated in the study were males, and a majority of the adolescents reported feeling satisfied with their healthcare, comfortable communicating with their medical provider, and confident in their abilities to take medication, although these factors were more commonly reported in adolescents who had optimal adherence to their antiretroviral medications. Overall, 39% of the adolescents participating in the study reported suboptimal adherence to antiretroviral therapy. Adolescents whose parents or guardians stayed in the room during clinic visits, however, were 2.1 times more likely to have excellent adherence to their antiretroviral therapy regimens than adolescents who were not accompanied by a parent or guardian. Additionally, although neither group sessions run by peers nor counseling sessions run by individuals were associated with a significant change in adherence, adolescents who attended group sessions led by trained professionals were 1.8 times more likely to have excellent adherence (Gross et al., 2015). (Gray IIIb) *(treatment, adherence, support, adolescents, parents, Zimbabwe)*

- A quasi-experimental study with 16 patients (10 female, 2 bisexual, one MSM) in **Thailand** aged 18 to 24 with a history of drug adherence of less than 95% significantly improved drug adherence from a baseline of 88.5% to 100% by the end of a 17 week program to increase adherence using a modified cognitive behavioral therapy model. Median plasma HIV-RNA significantly decreased from 171,369 to 2,439 copes/ml. CD4 count increased from 328 to 366. The program included sessions on communication with providers, coping with side effects, obtaining and storing medications, and problem solving (Sriondee et al., 2015). (Gray IIIb) *(testing, treatment, adherence, support, adolescents, Thailand)*

- A study in **Zimbabwe** of 229 young people, median age 14 (ranging from age 6 to 18 years), 59% female, found that support group attendance was helpful to increase adherence for adolescents living with HIV. Of the 229 members of support groups, 80 were between the ages of 13 to 15 and 63 were over age 15. For those under age 14, 76% reported taking over 95% of their ART; for those over age 16, this declined to 55%. However, 91% reported that being a member of a support group was helpful. Adult caregivers reported that they felt ill equipped to support adolescents with adherence. Adherence by adolescents was self-reported.

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Adolescents attend a monthly community adolescent support group led by a nurse with individualized support from a community adolescent treatment supporter (CATS); a caregiver intervention and a group intervention to support adherence. CATS are older adolescents with HIV who are trained to support other adolescents living with HIV. CATS have been trained and mentored since 2009 to provide community based adherence monitoring and counseling for their peers living with HIV. A team of 20 adolescents living with HIV provided daily support for their peers living with HIV. In addition, the adolescents who participate as CATS have developed counseling skills, with five of the original team furthering their education in nursing and social work. Training programmes are also held for caregivers, health workers, teachers, churches, community members and other organizations. This work was planned and delivered by adolescents who were themselves living with HIV. Ten researchers, six female and all aged 16 to 18, collected the data. Of those enrolled in the support groups, 19% reported that they were unable to afford to eat at least two meals a day and 48% reported they would be unable to pay hospital fees if someone in their household became ill and two-thirds reported they had been absent from school due to lack of school fees. Adolescents felt stigmatized by their households and communities, having to work more than others or asked to eat or sleep separately. Some also found support through their teachers in schools. Of those who knew their HIV status, 65% had never told anyone else of their positive serostatus, including siblings. Adolescent girls rarely disclosed to boys they dated. Lack of bus fare was a key reason to not collect their ART and adhere (Mavhu et al., 2013 and www.africaid.co.uk). (Gray IIIb) *(adolescents, treatment, adherence, support, Zimbabwe)*

- A qualitative study with 32 adolescents living with HIV and 23 of their adult caregivers in Zambia found that clinic-sponsored groups for adolescents living with HIV assisted with adherence for those on ART (Denison et al., 2015). (Gray V) *(testing, treatment, adherence, support, adolescents, Zambia)*

3. Providing clinic services that are youth-friendly, conveniently located, affordable, confidential and non-judgmental, can increase use of clinic reproductive health services, including HIV testing and counseling and treatment services.

- A comparison of pre and post-ART attrition among 53,244 youth who had been tested and confirmed as HIV-positive, ages 15 to 24, found that youth attending clinics which provided sexual and reproductive health services, including condoms, as well as offering adolescent support groups, had higher rates of retention in HIV care following ART initiation than those youth who did not. The data was collected from 160 HIV clinics in Kenya, Mozambique, Tanzania and Rwanda. Of the 53,244 youth enrolled in HIV care, 14,844 initiated ART (Lamb et al., 2014). (Gray IIIb) *(youth, health services, Kenya, Mozambique, Tanzania, Rwanda)*

- A retrospective cohort study between 2004 and 2010 of 1,776 adolescents in **Zimbabwe** served by a partnership of Medecins sans Frontieres and the government public health sector services provided adolescent friendly services, which resulted in a similar mortality rate as the 9,360 adults despite HIV diagnosis in 97% of adolescents after presentation with clinical disease. The rate of loss to follow up was twice as high in adults when compared to adolescents. The median age of ART initiation was 13.3 years. Among those who were followed for 5 years of more, 5.8% of adolescents switched to a second line regimen as a result of treatment failure compared to 2.1% of adults. In 2007, following group discussions with adolescents to identify their needs and workshops to address stigmatizing behaviors among staff, adolescents were engaged in service planning decisions through nominated peer

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representatives. Adolescent specific activities included peer and non-peer counseling and a youth club. Activities for adolescents focused not only on medical issues, such as promoting adherence, but on social issues, such as bullying, stigma, disclosure and condom use. Activities for ages 10 to 15 focused on strengthening independence, with group activities on weekends. Those over age 15 were involved in meetings to determine to whom care should be delivered and were provided with training to be peer counselors. Adolescent defaulters were actively traced. The increase in numbers started on ART was highest for adolescents. The vast majority (97%) of the adolescents had been vertically infected and 94% had no history of previous ART use. Only 2.6% of the adolescents came to the clinic through VCT. Treatment outcomes were derived from a total of 22,127 person-years of follow up, of which 3,478 person-years were contributed by adolescents. By 2010, 23% of all actively followed patients were adolescents, a higher proportion than seen in other facilities in Zimbabwe (Shroufi et al., 2013). (Gray IIIb) *(adolescents, health services, treatment, support, Zimbabwe)*

- A survey of 445 young women with access to a youth-friendly clinic in **Mozambique** demonstrated high levels of knowledge to avoid risk of HIV acquisition and low rates of HIV compared to HIV prevalence in the same city. In 1999, Adolescent and Youth Friendly Services (SAAJ) was created in the capital city, Maputo. The service was part of a multidisciplinary project that provides young people with sexual and reproductive health services with a no cost clinic. In October 2001, the clinic offered HIV testing and counseling. From 1999 to 2003, approximately 23,000 adolescents attended the clinic. In 2002, a sample of 435 young women completed a questionnaire and lab exams. The level of HIV knowledge was high, with correct answers about the effectiveness of condoms at 96% and 74% knowing that healthy looking people can transmit HIV. Of the young women, 44.4% had sexual intercourse with occasional partners. Of the young women, only 4% tested positive for HIV, while the general seroprevalence for Maputo City was 17.3% (Melo et al., 2008). (Gray IIIb) *(HIV testing, youth, health services, Mozambique)*

- A review of HIV prevention interventions among youth from 80 developing countries found evidence that youth-friendly services increase young people's use of health services (Ross et al., 2006). (Gray IIIb) *(health services, youth)*

- A survey conducted between 2000 and 2002 in **Madagascar** evaluating the development and promotion of a network of youth-friendly, private sector clinics offering HIV testing, STI treatment, and other reproductive health services, found that the number of youth seeking services at these clinics rose dramatically, from 527 to 2,202 youth (predominately female), over two years. In addition to offering confidential, convenient, and affordable services by nonjudgmental providers to attract youth to the clinics, mass media and face-to-face communication campaigns using peer educators, television and radio spots, television talk shows, films, and mobile condom use demonstration teams were also effective in increasing use of the clinics (Neukom and Ashford, 2003). (Gray IIIb) *(adolescents, HIV testing, STIs, treatment, health services, mass media, Madagascar)*

- A qualitative study with providers in western **Kenya** found that providers reported that with forms that prompt providers to ask adolescents living with HIV to discuss contraception there was increased discussion of sensitive issues around sex and contraception (Hagey et al., 2015). (Gray IV) *(adolescents, health services, providers, Kenya)*

- Interviews with 26 program managers or service providers and 8 peer educators ages 18 – 15 from **Botswana, Uganda, Tanzania, Mozambique, Malawi, Zimbabwe, Kenya, Rwanda, South Africa** and **Swaziland** found that for adolescents living with HIV, creating clinical

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environments that were adolescent friendly were important, along with involving adolescents in the design of programs. Adolescents living with HIV want to be mentored by adults living with HIV (Pettitt et al., 2013). (Gray IV) *(adolescents, health services, treatment, support, Botswana, Uganda, Tanzania, Mozambique, Malawi, Zimbabwe, Kenya, Rwanda, South Africa and Swaziland)*

Promising Strategies:

4. Youth-friendly condom distribution can help young people feel more comfortable accessing condoms.

- A study in **Mexico** evaluating a program that made condoms available in schools found that 570 high school students used the program at least once during the three months in which the program operated in each school. More than 27% (158) used the program three of more times. On average, students used the program 2.09 times. Most stated that obtaining printed educational materials was one of the reasons to visit the program; however, sexually initiated students were more likely to report that obtaining condoms was one of the reasons to visit the program. The majority was satisfied with the program but 27.6% felt that more educational materials should be provided. In addition, significantly more males than females accessed the program. Nearly 33% of female users were planning to have unprotected sex compared to 12% of their male counterparts (Zellner et al., 2006). (Gray IIIb) *(condoms, adolescents, Mexico)*

- Two social marketing interventions conducted between 2000 and 2002 in **Cameroon** and **Rwanda** promoted the use of community-based, youth-friendly condom sellers, which contributed to a decrease in reported 'shyness' by both sexes in purchasing condoms. In Cameroon, youth-friendly condom sellers were trained and identified as youth-friendly condom 'outlets' and sold more than 40,000 condoms to youth in 2002. In Rwanda, peer educators collaborated with the community-based condom sales agents to identify and promote youth-friendly condom sellers in the rural areas, resulting in a significant increase in youth reporting "knowledge of a nearby condom source," and a decrease in reported shyness to buy condoms, from 79% to 56%, among females (Neukom and Ashford, 2003). (Gray IV) *(condoms, young people, self-perception, Cameroon, Rwanda)*

5. Targeted education efforts can increase adolescent uptake of HIV testing and counseling and related services.

- A study that analyzed cross-sectional data from two rounds of population–based, post-intervention surveys of 1,010 currently married young women ages 12 to 24 years in **Ethiopia** from 2008 to 2012 found that girls participating in an intervention program targeting married girls were 8 times more likely to receive voluntary counseling and testing than those that did not participate. In addition, married girls who participated in the program and whose husbands participated in a complementary intervention program for men were 18 times more likely to access voluntary counseling and testing than those that did not participate. Of the girls in the study, 70.3% had no education, 57% had married before age 15, and 47.6% had a husband older than them by 4 to 9 years. Of the currently married girls, 1.5% of them were between 12 and 14 years of age, 23.6% of them were between 15 and 19 years of age, and

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74.9% of them were between 20 and 24 years of age. The intervention program for married girls was composed of a 32-hour curriculum, which was broken down into meetings that occurred 3 times per week. The group focused on enhancing communication skills and self-esteem, encouraging voluntary counseling and testing, and educating the girls regarding sexually transmitted infections and HIV/AIDs, reproductive health, managing menstruation, antiretroviral therapy, safe motherhood, family planning, financial literacy and gender and power dynamics in the household. Women from rural communities were recruited and trained to lead the girls' groups as mentors. The husbands' group was not restricted to adolescents and allowed husbands of any age to join. Mentors for the husbands' group were also men recruited from the communities and trained. This group focused on improving partner communication to enable them to better support their wives and improve the well-being of their families as a whole. The group focused on non-violent and respectful relationships, sexually transmitted infections, HIV/AIDs, voluntary counseling and testing, antiretroviral treatment, alcohol and drugs, family planning, safe motherhood, and domestic and sexual violence. Both groups utilized interactive educational methods, such as group discussions, storytelling, illustrations and role-playing. Post-intervention follow-ups occurred in 2010 and 2012. These compared data from three different groups: households where only the women had participated in the intervention (11%), households where both partners had participated in the interventions (25.2%) and households where neither partner had participated in the interventions (61.8%). The women who did not participate in the program had a mean age of 20, making them younger than the women who had participated. In the group where neither partner participated in the intervention, 57% used family planning services and 11% used couples voluntary counseling and testing. Among the families where only the woman participated, 69% used family planning services and 46% used couples voluntary counseling and testing. In households where both partners participated in the intervention, 71% utilized family planning services and 65% went to couples voluntary counseling and testing (Erulkar and Tamrat, 2014). (Gray IIIa) *(adolescents, health services, testing, treatment, Ethiopia)*

- A cross-sectional study conducted in **Ethiopia** in 2011 found that knowledge about availability of antiretroviral drugs in voluntary counseling and testing sites, information about confidentiality, absence of perceived stigma, and higher knowledge about HIV were associated with increased utilization of voluntary counseling and testing services. The study was conducted on 711 university students with a mean age of 21.5 years old. A majority of the participants were male (73.3%) or single (91.6%). Among the study participants, 81.4% had perceived confidentiality of voluntary counseling and testing services. Additionally, 73.3% reported having heard about HIV counseling and testing services through the mass media, and 71.1% reported having heard about HIV testing and counseling services through healthcare workers. Although only 58.5% of the participants had utilized voluntary counseling and testing services in the past 12 months, 88% reported a willingness to utilize HIV testing and counseling services in the future. Students with knowledge about HIV were 3.69 times more likely to utilize HIV counseling and testing services than those who did not have knowledge about HIV, and students who knew about the availability of antiretroviral therapy in the voluntary testing and counseling site were 3.12 times more likely to utilize voluntary counseling and testing services than those who did not. Students who perceived risks associated with HIV/AIDS testing were 2.4 times more likely to utilize testing and counseling services than those who did not, and students who had perceived confidentiality of voluntary testing and counseling services were 3.0 times more likely to utilize voluntary testing and counseling serves than those who didn't perceive confidentiality of these services. Lastly, students who perceived stigma and discrimination were 0.013 times less likely to

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utilize voluntary counseling and testing services than those who did not perceive stigma (Tsegay et al., 2013). (Gray IIIb) *(adolescents, health services, testing, treatment, stigma, Ethiopia)*

6. **Young women living with HIV can safely deliver HIV-negative infants with appropriate treatment.** [*See also Safe Motherhood and Prevention of Vertical Transmission*]

- A study in **Brazil** with eleven HIV vertically infected adolescents who were followed from 2002 to 2009 at six medical centers and became pregnant single or multiple times and gave birth to 14 HIV-negative infants with one infant lost to follow up. Between 2000 and 2008 in Brazil, 4,900 pregnant adolescents aged 10 to 19 living with HIV were reported. Disclosure of diagnosis occurred at a median age of 12 years. Of the mothers of these pregnant adolescents, six were still alive but only one had received antiretroviral drugs during prenatal care. Many of the pregnant adolescents living with HIV were born before HIV prenatal screening became a standard of care for pregnant women. The eleven perinatally acquired HIV-positive pregnant adolescents had their sexual debut at a median age of fifteen years, similar to the general adolescent populations. The median duration of antiretroviral use was 7.8 years. Ten of the eleven patients had previously been exposed to zivudine during childhood. Antiretroviral drugs were used in 14 of the 15 pregnancies. The median CD4 count during pregnancy was 394. Antiretroviral management of these HIV positive adolescents was similar to that of women whose HIV is first discovered during pregnancy. All the pregnant adolescents had cesarean section prior to labor and before ruptured members. All newborns received zivudine during the first six weeks of life and none were breastfed. "…This third generation of HIV-exposed infants needs to be addressed within HIV-1 specialized adolescent care settings" (Cruz et al., 2010:2729). (Gray IIIb) *(pregnancy, adolescents, health care facilities, transmission, Brazil)*

7. **Integrating HIV testing and counseling into existing reproductive health services for young people may lead to increased uptake of HIV testing and counseling for youth ages 15 to 24.** *[See also HIV Testing and Counseling for Women]*

    - A cross-sectional, non- experimental evaluation of a program that integrated voluntary counseling and testing HIV services into sexual and reproductive health clinics at three sites in **Vietnam** found that the program increased the amount of youth (ages 15 to 24) who wanted an HIV test from 33% at baseline to 51% at a 24 month follow- up, and increased the amount of youth who had ever tested for HIV from 7.5% to 15%. The study was conducted from 2006 to 2009, and collected data from client exit interviews and interviews with community youth. The project was implemented by Maries Stopes International Vietnam, which aimed to enable access to effective voluntary and counseling services, facilitate emotional and medical support for clients living with HIV, and influence clients' HIV risk behaviors. Researchers used focus group discussions with community representatives, clinic clients, service providers, local health authorities and youth to better understand the community and develop a program that would best address the needs of potential client groups. Three project sites with already existing sexual and reproductive health clinics were chosen to receive the intervention. At each site, researchers recruited 20 peer educators who were then trained in communication skills and outreach and worked to refer youth to the clinics and distribute health materials. At baseline, data was collected for 813 community

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youth (383 males and 432 females) and 399 exit clients, and at the 24-month follow-up point, data was collected for 501 community youth (201 males and 299 females) and 399 exit clients. The study evaluated people's use of HIV testing and voluntary counseling and testing services and their knowledge of HIV/ AIDS, as well as behavioral indicators, such as alcohol use, sexual behaviors, whether friends were using drugs, and whether they had met a peer educator in the last 12 months. Clients requesting HIV voluntary counseling and testing during their current visit to clinics increased from 5% to 24.5%. In addition, the number of people getting tested for HIV at project supported clinics increased from 9.3% to 17.8%. The amount of people who had a repeat test in the 12 months before the study was 67.5% at follow-up, compared to 54.5% at baseline, and those willing to pay for a HIV test increased from 68.7% to 80.2%. At baseline 49.4% of the people had met a peer educator in the past 12 months, compared to 63.1% at follow-up. At follow-up, there was a significant increase in the number of community youth that knew that having sex with one uninfected partner (from 80.8% to 90.2%), practicing abstinence (from 51.4% to 69%), and consistently using condoms during sex (from 87.5% to 95.5%) are methods to prevent HIV transmission. At follow up, there was also a significant increase in the number of community youth who would purchase food from a vendor living with HIV/AIDS (from 32.5% to 45.5%), would care for relatives living with HIV/AIDS (from 64.9% to 83.2%) and who believed that a teacher living with HIV/AIDS could continue teaching (from 66.3% to 78.4%). In addition, at follow-up 96.6% of people believed that a spouse or partner should be informed of one's HIV status, compared to 89% at baseline. The number of community youth who considered themselves at risk for HIV increased from 23.2% at baseline to 33% at follow-up, and the number of youth who reported that they would use a condom or refuse sex if they knew their partner had STI symptoms increased from 72% to 90% (Ngo et al., 2013). (Gray IIIb) *(testing, treatment, adolescents, Vietnam)*

5B. Gaps in Programming—Increasing Access to Services

1. Interventions are needed to increase community involvement and investment in programs that promote the introduction and utilization of youth-friendly services.
2. Laws and practices that obstruct adolescents' access to services, such as parental consent requirements, age, and marital status requirements, must be aligned with the actual behavior of adolescents.
3. Adolescents living with HIV need information and services through adolescent-friendly HIV services on a number of topics, including disclosure, safer sex, contraception, safe motherhood and gender-based violence.
4. Increased efforts are needed to reduce stigma against adolescents living with HIV, particularly young key populations.
5. Mandatory pre-marital HIV testing may increase HIV stigma.
6. Actions are needed to increase young people's knowledge of when and where to access health services, including access to contraception and condoms.
7. Increased efforts are needed to address the needs of adolescents living with HIV who are

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pregnant and to create linkages between HIV centers and maternal health clinics.

8. Increased training is needed for providers to discuss sexuality and pleasure with adolescents and youth who seek sexual and reproductive health services.
9. Evaluated guidelines are needed to manage the transition from pediatric to adult care.
10. Sex and age disaggregated data is critical to assess which ages are falling through the cracks in data collection.
11. Further evaluation of the potential use of Pre-exposure Prophylaxis for adolescent women is needed.
12. Successful strategies are needed to increase adherence to ART among adolescents and reduce loss to follow up.
13. Evidence-based interventions are needed for adolescents who inject drugs.
14. Concerted efforts are needed to enable adolescents at risk to test confidentially for HIV and be immediately linked to services, with information on where and how to access services.
15. Additional research is needed on disease progression among children and adolescents who acquired HIV as infants.
16. Youth-friendly services are needed within schools to increase access to condoms and/or HIV testing for those who are sexually active.

1. **Interventions are needed to increase community involvement and investment in programs that promote the introduction and utilization of youth-friendly services.** A literature review found that in order to increase utilization of youth friendly services, efforts to change community attitudes on adolescent sexuality were needed.

    - Gap noted, for example, in a **literature review** of youth-friendly service programs (Gay et al., 2015; Speizer et al., 2003); **Kenya** (Hagey et al., 2015).

2. **Laws and practices that obstruct adolescents' access to services, such as parental consent requirements, age, and marital status requirements, must be aligned with the actual behavior of adolescents.** Studies found that legal requirements restricted adolescents from getting tested for HIV even if they were sexually active and at risk for HIV. "There is a strong evidence base that the stigma, discrimination and criminalization affecting adolescent key populations aged 10 to 17 is intensified due to domestic and international legal constructs that rely on law-enforcement based interventions dependent upon arrests, pre-trial detention, incarceration and compulsory 'rehabilitation' in institutional placements," particularly among adolescents who sell sex or inject drugs (Conner, 2015: para 1).

    - Gap noted, for example, in **Eastern and Southern Africa** (UNESCO, 2013); **Rwanda** (Binagwaho et al., 2012); **Swaziland** (All in End Adolescent AIDS, 2015a); **Albania, Moldova, Romania and Serbia** (Busza et al., 2013); **Kenya** (Agbemenu and Schlenk, 2011); **Zimbabwe** (Ferrand et al., 2011; Shroufi et al., 2013); **Tanzania** (Ferrand et al., 2010); **India, Botswana, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Thailand, Trinidad,**

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Uganda, Zambia and Zimbabwe (McCauley, 2004) and **South Africa** (HRW, 2003a); **Thailand** (Tulloch et al., 2014).

3. **Adolescents living with HIV need information and services through adolescent-friendly HIV services on a number of topics, including disclosure, safer sex, contraception, safe motherhood and gender-based violence.** Studies found that health providers were unprepared to discuss HIV and contraception with adolescents who acquired HIV through perinatal transmission, despite the fact that significant numbers of these adolescents were already sexually active. Another study found that these adolescents need skills to disclose their serostatus to sexual partner. WHO recommends that perinatally infected adolescents be advised of their positive serostatus by age 6 (WHO, 2013) but there is little guidance on disclosure for adolescents. Facilitated disclosure by parents and providers to adolescents living with HIV may lead to higher retention in HIV care (Arrive et al., 2012). Parents living with HIV whose adolescents may be living with HIV also need assistance to disclose to their adolescents, as parents fear rejection from their children. Positive health dignity and prevention interventions can help people living with HIV lead healthy lives and reduce HIV transmission, but tailored interventions for adolescents and their parents have not been evaluated for effectiveness, although a trial is currently ongoing (Cunningham, 2015; Mofeson and Cotton, 2013). One study found that 29% of young women aged 16 to 24 living with HIV reported being forced to have sex. No validated curriculum that was shown to be effective for reducing unsafe sex among adolescents living with HIV was found, although some manuals have been developed (Parker et al., 2013; UNESCO and GNP+, 2012).

    - Gap noted **globally** (Denno et al., 2015; Lowenthal et al., 2014; Pettifor et al., 2013; Evangeli and Foster, 2014); and for example, in **South Africa** (Hill et al., 2015; Fatti et al., 2014**); Zambia** (Stangl et al., 2015; FHI360, 2013; Hodgson et al., 2012; Baryamutuma and Baingana, 2011; Birungi et al., 2011b; Obare et al., 2009); **Ghana** (Gyamfi et al., 2015); **Kenya, Lesotho, Malawi, Mozambique, South Africa, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe (**Pitorak et al., 2013); **Uganda, Malawi, Zambia** and **India** (Kenny et al., 2012); **China** (Mu et al., 2015; Zhou et al., 2012); **Rwanda** (Test et al., 2012); **DRC** (Parker et al., 2013a and b); **Kenya** (Hagey et al., 2015; Obare et al., 2012); **Nigeria** (Folayan et al., 2014); **Brazil** (Cruz et al., 2015); **Uganda** (Lowenthal et al., 2014); and **Uganda** and **Kenya** (Birungi et al., 2009a; Birungi et al., 2009b; Birungi et al., 2009c).

4. **Increased efforts are needed to reduce stigma against adolescents living with HIV, particularly young key populations.** A study found that adolescents living with HIV kept silent about their HIV status to schools, friends and family so as to not experience stigma and discrimination.

    - Gap noted, for example, **globally** (Mutumba and Harper, 2015); in Zambia (Stangl et al., 2015); **Botswana** (Thupaygale-Tshweneagae, 2010: 262) and **Uganda** (Birungi et al., 2011b; Obare et al., 2009).

5. **Mandatory pre-marital HIV testing may increase HIV stigma.** A study found youth believed that mandatory pre-marital HIV testing would increase stigma against those who

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test HIV-positive with significant numbers believing that they were not personally at risk of acquiring HIV.

- Gap noted, for example, in **Nigeria** (Arulogun and Adefioye, 2010).

6. **Actions are needed to increase young people's knowledge of when and where to access health services, including access to contraception and condoms.** A UNESCO review found that young people lacked knowledge of where to access health services to meet their needs. Adolescents in numerous countries are sexually active, yet have low rates of contraceptive use. Adolescents need accurate detailed information about the level of risk of different sex acts (oral, genital and anal). Studies found that youth aged 15 to 24 were at high risk of either acquiring HIV or testing HIV-positive, yet less likely to report having been tested for HIV. Increased knowledge that HIV-positive infants can survive to adolescence is also needed so that these young people can get tested for HIV and access services. In some countries, HIV prevalence among both female and male adolescents who tested for HIV was as high as 16%. [*See also Meeting the Sexual and Reproductive Health Needs of Women Living with HIV*]

    - Gap noted in **Sub-Saharan Africa** (Fatusi and Hindin, 2010); **Ethiopia** (Lindstrom et al., 2010); **West Africa** (Arrive et al., 2012); **Zimbabwe** (Ferrand et al., 2011); **South Africa** (Ramirez-Avila et al., 2012; Khasany et al., 2012; Venkatesh et al., 2011a) and **Nigeria** (Yahaya et al., 2010); globally (UNESCO, 2009b).

7. **Increased efforts are needed to address the needs of adolescents living with HIV who are pregnant and to create linkages between HIV centers and maternal health clinics.** A study showed that use of maternal health services to prevent vertical transmission was lower than the proportion who attended prenatal care. In this study, less than half of pregnant adolescents attended four antenatal care visits. In addition, use of skilled attendance during or after abortion or miscarriage was low. [*See also Safe Motherhood and Prevention of Vertical Transmission and Structuring Health Services to Meet Women's Needs*]

    - Gap noted in **Kenya** (Birungi et al., 2011a).

8. **Increased training is needed for providers to discuss sexuality and pleasure with adolescent youth who need reproductive health services.** A analysis of fictional narratives written by young people aged ten to 24 concerning HIV found that young people criticized the lack of skills by providers to discuss issues of sex and pleasure as well as conceptualizing rape as a punishment for girls who do not abstain from sex.

    - Gap noted, for example, in **Eastern and Southern Africa** (UNESCO, 2013); **Senegal, Burkina Faso, Nigeria, Kenya, Namibia and Swaziland** (Winskell et al., 2011a).

9. **Evaluated guidelines are needed to manage the transition from pediatric to adult care.**

    - Gap noted **globally** (Lee and Hazra, 2015: Mofeson and Cotton, 2013).

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10. **Sex and age disaggregated data is critical to assess which ages are falling through the cracks in data collection.** Current HIV data collection masks critically needed data on adolescents ages 10 to 19. For example, a study that disaggregated ages found that loss to follow up for patients aged 10 to 24 was twice as high for ages 15 to 19 than for ages 10 to 14 (Koech et al., 2014).

    - Gap noted **globally** (Lowenthal et al., 2014; Sohn and Hazra, 2013) and for example, in **Zambia** (Denison et al., 2015); **Swaziland** (All in End Adolescent AIDS, 2015a) and **Kenya, Lesotho, Malawi, Mozambique, South Africa, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe (**Pitorak et al., 2013).

11. **Further evaluation of the potential use of Pre-exposure Prophylaxis for adolescent women is needed.** PrEP has been successfully used by people who inject drugs (Choopanya et al., 2013 cited in Pettitfor et al., 2015), but no studies were found among adolescents who inject drugs. ART is being formulated in vaginal rings (Baeten et al., 2016) which may increase use by adolescents without requiring daily pill taking (Brady et al., 2013 and Tolley et al., 2013 cited in Pettitfor et al., 2015); however, the initial pilot trial showed no effcicacy for those under age 21 but efficacy for those over age 21. One study of qualitative interviews with young women found that if given the option of PrEP, they would not use condoms (Corneli et al., 2015).

    - Gap noted **globally** (Celum et al., 2015; Pettitfor et al., 2015).

12. **Successful strategies are needed to increase adherence to ART among adolescents and reduce loss to follow up.** A study found that adolescents and young adults aged 15 to 24 living with HIV were more likely, following treatment initiation, to have higher viral loads, higher rates of virological failure and greater low to follow up from services. Another study found that adolescents (ages 9 to 19) had poorer virological outcomes compared to young adults (ages 20 to 28). A review found few estimates on viral suppression among ages 10 to 19 (All in End Adolescent AIDS, 2015c). A specialized HIV management program could not retain a substantial proportion of those who tested positive for HIV in care. A review of studies of adherence among adolescents and children in Lower and Middle Income countries found that most studies were cross-sectional with age data ranging from six months to 21, limiting the ability to define which strategies are key to increasing adherence among ages 10 to 19. Cognitive behavioral therapy can be further explored as a strategy to increase adherence in adolescent populations.

    - Gap noted, **globally** (Pettifor et al., 2013; WHO, 2013; Hudelson and Cluver, 2015; MacPherson et al., 2015; Parsons et al., 2014 cited in Celum et al., 2015); in **Rwanda** (Mutwa et al., 2013); **Zambia** (FHI360, 2013; Denison et al., 2015); **Kenya** (Koech et al., 2014); **Kenya, Mozambique, Tanzania and Rwanda** (Lamb et al., 2014); **Kenya, Lesotho, Malawi, Mozambique, South Africa, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe (**Pitorak et al., 2013); **South Africa** (Evans et al.,

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2013; Nkala et al., 2015; Naik et al., 2015; Nglazi et al., 2011); **Uganda** (Wiens et al., 2012 cited in Denison et al., 2015).

13. **Evidence-based interventions are needed for adolescents who inject drugs.** "There is a pronounced lack of data on young women who use or inject drugs, a key subpopulation with complex needs" (Larney et al., 2015: S106), **despite high rates of HIV.** In addition, "it is imperative that interventions not rely on law enforcement, but instead provide low-threshold, voluntary services, shelter and support…." (Conner, 2015: para 1).

    - Gap noted, **globally** (Larney et al., 2014, Conner, 2015); and in **India** (Armstrong et al., 2014); **Poland** (Czerwinski et al., 2013); **Estonia** (Vorobjov et al., 2013).

14. **Concerted efforts are needed to enable adolescents at risk to test confidentially for HIV and be immediately linked to services, with information on where and how to access services.** Access to and update of HIV testing and counseling (HTC) by adolescents is significantly lower than for adults. One study found that adolescents who were tested through provider-initiated testing (the WHO standard) had higher loss to follow up if they tested HIV-positive than adolescents who were tested through voluntary testing and counseling (Lamb et al., 2014). HTC must, according to WHO, include consent, confidentiality, counseling, correct test results and connections to treatment, care and prevention services. A recent report found that no data exists for HTC among ages 10 to 14 (All in to End Adolescent AIDS, 2015c). Access to HTC for adolescents who inject drugs is particularly challenging. HTC clients also need counseling on contraception and referral to services.

    - Gap noted **globally** (Pettitfor et al., 2013; WHO, 2013) and for example, for **Kenya, Lesotho, Malawi, Mozambique, South Africa, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe (**Pitorak et al., 2013); **Myanmar** (Saw et al., 2014); Kenya (Baumgartner et al., 2012); **South Africa** (Otwombe et al., 2015); Ethiopia (Feleke et al., 2013); **Uganda** (Graffy et al., 2012); **Jamaica** (All in to End Adolescent AIDS, 2015c).

15. **Additional research is needed on disease progression among children and adolescents who acquired HIV as infants.**

    - Gap noted **globally** (Idele et al., 2014).

16. **Youth-friendly services are needed within schools to increase access to condoms and/or HIV testing for those who are sexually active.** A study found that youth in numerous countries do not have information or access to condoms within school systems.

    - Gap noted, for example, **globally** (Todesco and Gay, forthcoming 2016); in **Rwanda** (Michielsen et al., 2014); **Zimbabwe** (Ferrand et al., 2011); **South Africa** (Kharsany et al., 2012; Venkatesh et al., 2011a) **Nigeria** (Yahaya et al., 2010) and **Antigua and Barbuda; Bahamas; Bolivia; Columbia: Costa Rica; Chile; Dominica; Ecuador; El Salvador; Guyana; Haiti; Honduras; Jamaica; Mexico; Nicaragua; Panama;**

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Paraguay; Peru; Venezuela; Dominican Republic; Santa Lucia; Suriname; Trinidad y Tobago; and Uruguay (DeMaria et al., 2009).

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· *Every effort has been made to ensure that all citations in this chapter are contained in this list and that this list is accurate. If something is missing or inaccurate, please see www.whatworksforwomen.org for a complete list. If missing or inaccurate there, please contact us.*

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