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Addressing adolescent sexual and reproductive health in a complex world

Adolescents and their sexual and reproductive health needs are in the global health spotlight. Today's adolescents—those 10 to 19 years of age (see box on page 2)—are remarkable for their numbers alone. There were 1.2 billion adolescents in the world in 2009, with projections for the cohort size to continue to grow until 2050.[1] Despite the perception that adolescence is a time of good health, many adolescents in lower- and middle-income countries—particularly girls—are at disproportionate risk for early pregnancy and its associated risks, unsafe abortion, HIV infection, and exposure to sexual violence. These risks are exacerbated by biological and cultural factors, including pervasive gender inequalities.

To address these risks, global health organizations and other advocates are calling for increased investments in adolescent sexual and reproductive health.[2–6] Because the formation of health behaviors begins at an early age, investing in programs that help adolescents develop the skills and knowledge to protect their health has the potential for significant long-term impact.[7] It is also seen as important to the overall health of communities, social and economic development,[8] and the achievement of global health goals.

The economic implications of investing in adolescent sexual and reproductive health are striking, particularly for girls who are disproportionately affected by poor health outcomes. A recent World Bank report quantified the opportunity cost of girls' exclusion from productive employment due to factors like early school dropout and teenage pregnancy. The lifetime cost of adolescent pregnancy of the current cohort of girls aged 15 to 19, as a share of annual gross domestic product (GDP), ranges from 1 percent in China to 30 percent in Uganda.[9] This economic impact is also intergenerational, with poor reproductive health outcomes in one generation adversely affecting the economic well-being of the next.[10]

This issue of *Outlook* provides an overview of the sexual and reproductive health needs of adolescents, gives examples of different approaches to addressing those needs, and highlights some of the most intractable challenges.

Adolescents: a diverse group with complex needs

The ten-year age range of adolescents makes them a heterogeneous group, with the sexual and reproductive health concerns of a 10-year-old likely very different from those of a 19-year-old. Likewise, the concerns of girls can be substantially different from those of boys and can vary widely both between and within regions. Certain groups of adolescents may be exceptionally vulnerable to adverse reproductive health outcomes and may be particularly hard to reach due to social marginalization, including adolescents who are married, not in school, sex workers or involved in transactional sex with older men, living with HIV, males who have sex with males, displaced populations, disabled adolescents, and in conflict situations.

The physical, cognitive, and emotional immaturity of adolescents can increase their risk and severity of adverse sexual and reproductive health outcomes compared with adults. In addition, adolescents may face more sexual and reproductive health challenges due to harmful

cultural norms that limit their rights and create inequalities based on age and gender.

- **Child marriage:** Child marriage is a prime example of a cultural norm with significant adverse reproductive health implications for girls. More than one-third of young women in developing countries (excluding China) were married as children (before age 18), with about one-third of these marriages actually occurring before age 15 (see Figure 1, page 3).[1] Child marriage increases the risk of HIV and sexually transmitted infection as well as partner violence, particularly when husbands are much older than wives. It also results in early childbearing and its associated risks for both mother and child.
- **Early pregnancy:** The health and social implications of early childbearing are well documented, including increased mortality and morbidity due to complications such as fistula and anemia, as well as lost educational and employment opportunities. Every year in developing countries there are 7.3 million births to girls under age 18, the vast majority of which occur within marriage. Complications of pregnancy and childbirth result in 70,000 deaths of adolescent girls.[2] While the adolescent birth rate has declined over time, it remains high, particularly in sub-Saharan Africa, at 121 births per 1,000 girls aged 15 to 19.[12] A portion of adolescent pregnancies are also aborted, often under unsafe conditions. The World Health Organization (WHO) estimates that there were approximately 3.2 million unsafe abortions in 2008 among adolescents aged 15 to 19, with almost half of these taking place in African countries.[13] Babies born to young mothers are also at risk, with stillbirth and death 50 percent more likely among babies born to teenage mothers than to women aged 20 to 29.[14]
- **Family planning challenges:** A contributing factor to high adolescent pregnancy rates is that many adolescents lack access to contraception or the ability to negotiate its use. In addition, many may have misperceptions or concerns about contraceptive side effects and their impact on future fertility. Sexually active adolescents who do not want to have a child soon and are not using contraception are considered to have an unmet need for contraception; this applies to 68 percent of sexually active 15- to 19-year-old girls in South Central and Southeast Asia and sub-Saharan Africa, and 48 percent in Latin America and the Caribbean.[15] Provider reluctance to supply contraception to adolescents; community perceptions that contraception leads to promiscuity; and expectations of early childbearing for married adolescents all exacerbate this problem.
- **HIV/STIs:** Another significant threat to adolescent health is infection with HIV and other sexually transmitted infections (STIs). Worldwide, approximately 2 million adolescents are living with HIV—increasingly including those who were infected at birth. Girls are disproportionately affected due to their increased biological and social susceptibility, which includes having older sexual partners who are more likely to be infected and exposure to early and forced sex.[1,16] The high burden of HIV infection in sub-Saharan Africa, which accounts for about 85 percent of infections in adolescents worldwide,[17] puts a strain on health systems, which are largely unprepared to help adolescents living with HIV access treatment or navigate their desires for fulfilling sexual and reproductive lives. Adolescents and young adults under 25 years old have the highest rates of curable STIs, with 1 in 20 adolescents developing a new STI each year and girls having six times the infection rate as boys.[18] STIs may be on the rise, according to a review of Demographic and Health Surveys (DHS) data trends from 41 countries.[19]
- **Violence:** Sexual and physical violence from male partners is a serious issue for many adolescent girls, particularly those who are married (see Figure 2, page 4). Globally, nearly 30 percent of 15- to 19-year-old girls have ever experienced intimate partner violence; rates for women aged 15 and older are particularly high in Africa and Southeast Asia. Sexual violence is

What is adolescence?

Adolescence is the period of time between the onset of puberty and adulthood, generally defined as ranging from 10 to 19 years of age. Since the characteristics and needs of adolescents vary enormously over this time span, adolescence is often further broken down into early adolescence, from 10 to 14, and late adolescence, from 15 to 19.

Adolescence is a time of remarkable physical and social change. Both girls and boys experience sexual maturation as well as significant cognitive changes during this period, including the development of logical and abstract thinking skills. In addition, susceptibility to peer pressure and risk-taking behavior peak and then gradually taper during adolescence; new research on brain development has given us more insight into these factors than ever before.[11] Social changes during adolescence can include transitioning out of school, entering the workforce, getting married, and having children, among others.

Other terms that overlap with "adolescent" include "youth," which generally refers to those 15 to 24 years of age, and "young people," which refers to the broader range of 10 to 24 years of age. This article focuses on the sexual and reproductive health needs of adolescents aged 10 to 19, though the specific data and program examples presented may include overlapping age groups.

associated with increased risks of adolescent pregnancy, HIV/STI infection, induced abortion, low birth weight and prematurity, as well as other physical and mental health problems.[20]

Harmful traditional practices are another form of violence that can adversely affect sexual and reproductive health. Despite overall declining rates of female genital cutting, approximately 3 million girls each year remain at risk of undergoing this dangerous practice, which is most prevalent in Africa.

- **Mental health issues:** The interaction between adolescent mental health and sexual and reproductive health is an emerging area of interest. Adolescents are particularly vulnerable to mental health issues; 75 percent of mental health problems present before age 24, and 50 percent present before age 14.[11] Mental health problems can arise as a consequence of sexual and reproductive health problems, including morbidity related to pregnancy and unsafe abortion, HIV and STIs, and exposure to sexual violence. Mental health issues also can lead to adverse health outcomes in that they are associated with risky sexual behaviors and impaired decision-making.[21]

Evidence-based program approaches

Although global data show some improvements in adolescent sexual and reproductive health indicators—including increasing age at marriage and declining birth rates[19]—targeted efforts are clearly still needed.

How to best meet the health needs of today's large cohort of adolescents is debatable. While evidence from programs over the past decades suggests that making health services more responsive to adolescents' particular needs and providing comprehensive sexuality education can have a positive impact on health behaviors and outcomes, there is controversy about whether these approaches alone are sufficient to achieve significant health benefits for adolescents.[22]

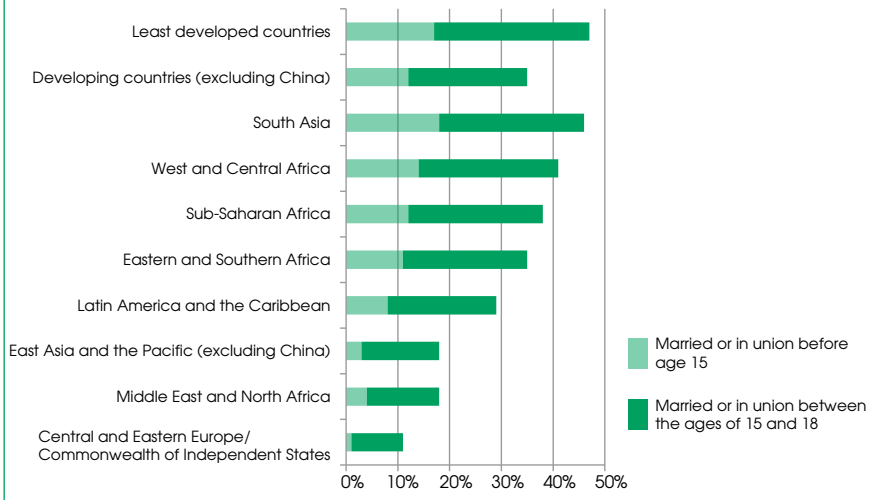
There is growing evidence supporting programs that address the underlying causes of poor health outcomes. Research has found that the strongest determinants of adolescent health are structural factors, such as national wealth, income inequality, and access to education, along with having safe and supportive families, peers, schools, and communities.[23] Data from sub-Saharan Africa that show that poverty, lower education, and rural residence are all related to higher adolescent birth rates help to illustrate this relationship.[24] Likewise, research shows that educated girls are less likely to get pregnant as teenagers and more likely to have correct and comprehensive information about HIV and AIDS.[25]

Multiple, complementary program approaches are likely needed to meet the diverse sexual and reproductive health needs of adolescents. This section provides examples of three types of evidence-based approaches: adolescent-friendly health services, comprehensive sexuality education, and multisectoral programs. A common strategy in all of these approaches is the active participation of adolescents in designing and implementing the programs, which helps ensure that they meet adolescent needs and foster skills and confidence among participants. It is important to note, however, that most of these programs have only been implemented on a small scale. The significant challenges of scaling up and sustaining programs to reach today's large adolescent population are briefly discussed in the next section.

"Adolescent-friendly" services within health care systems

The WHO has been a strong proponent of strengthening the capacity of existing health systems to better serve adolescents.[26,27] Evidence suggests that efforts to make services more available, accessible, and acceptable to adolescents can lead to increased use by adolescents.[28]

Figure 1. More than one-third of women in the developing world were married as children

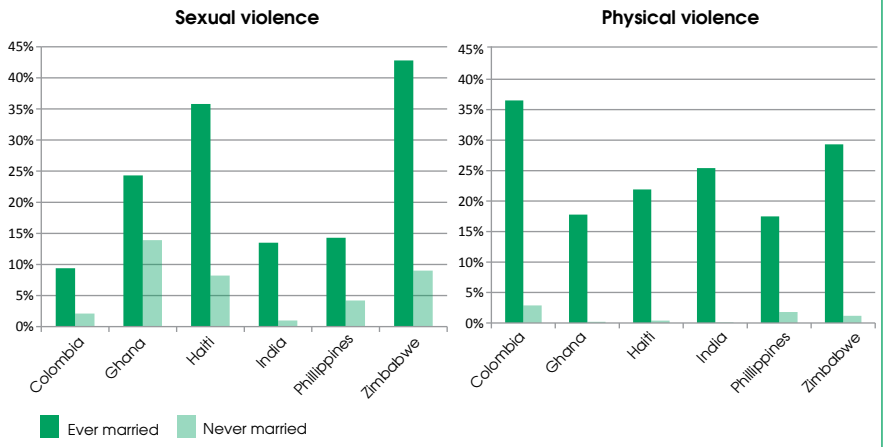


Percentage of women 20 to 24 years old who were first married or in union before ages 15 and 18, by region, based on Demographic Health Surveys, Multiple Indicator Cluster Surveys, and other national surveys, 2000–2010.

Note: Estimates are based on a subset of 105 countries, covering 90% of the 20–24-year-old female population of the developing world (excluding China, for which comparable data are not available). Regional estimates represent data from countries that cover at least 50% of the regional population. Data coverage was insufficient to calculate an average for industrialized countries.

Source: UNICEF global databases, 2011, based on Demographic Health Surveys, Multiple Indicator Cluster Surveys, and other national surveys, 2000–2010.[1]

Figure 2. Married girls are at increased risk for sexual and physical violence



Data from selected Demographic and Health Surveys between 2006 and 2011 for girls aged 15 to 19 years who report ever experiencing violence from a male partner.[29]

The activities that appear to contribute most to successful programs for adolescents are training service providers, making improvements to clinics to increase privacy and create a more adolescent-friendly environment, and conducting activities in the community that help generate awareness of and demand for services. In addition, being treated with respect and ensuring confidentiality are of particular importance to youth.[30]

All of these areas were addressed in a program to expand youth-friendly services in Ethiopia. Collaborating with the Ministry of Health, Pathfinder International trained providers at 120 service delivery sites to provide confidential comprehensive sexual and reproductive health services, including HIV/STI counseling and testing; contraceptive information and methods; antenatal, postnatal, and postabortion care; and sexual abuse and violence counseling, treatment, and referral. Site assessments, which included youth participants, identified gaps and resulted in action plans to improve facilities, such as providing private areas for youth services. Community outreach included targeted efforts to reduce bias and stigma through peer-to-peer counseling as well as outreach to local workplaces with large youth populations. Finally, the program promoted national, regional, and local policies in support of youth-friendly services.[31]

Pharmacies—which are perceived by adolescents as convenient, affordable, and anonymous—present another opportunity to reach adolescents through an established health system. Social marketing programs, which promote branded contraceptives and other health products as well as messaging to promote positive health behaviors, have greatly expanded the accessibility and affordability of health products through pharmacies and other community outlets. A review of these programs found that their cumulative effect on condom use could be substantial.[32] Newer social marketing approaches are expanding their reach to youth through the use of modern communication technologies and branding that links products to larger health initiatives. For example, HIV Free Generation/Kenya, which is funded by the US Agency for International Development (USAID) and many private-sector partners, capitalizes on youth engagement with technology and popular culture to promote unified, branded HIV prevention messages and products that are specially designed to resonate with youth. The communications component of the program goes far beyond traditional radio, television, and print venues, leveraging modern technology such as internet, cell phones, and video games to reach the 10- to 24-year-old target audience. The branded campaign is linked to a broad range of services designed to provide youth with access to sexual and reproductive health services, education, life skills training, financial literacy, and employment opportunities.

Comprehensive sexuality education

Appropriately designed, high-quality comprehensive sexuality education programs can have a beneficial impact on behaviors that are likely to prevent unintended pregnancy, pregnancy at a young age, and STI infection, including delaying sexual initiation, decreasing the number of sexual partners, and decreasing the frequency of sexual intercourse.[33–35] Sexuality education programs typically work within the existing educational system to provide both information about sexual and reproductive health and skills, such as partner communication and self-advocacy. Some programs are also starting to address issues of sexual and reproductive rights, gender equality, and gender-based violence, such as the "It's All One" curriculum.[33,36] Fears that talking about sex in these programs will lead to increased sexual activity have not been borne out in research.[35]

Brazil's Programa de Educação Afetivo-Sexual (PEAS): Um Novo Olhar [the Program for Sexual and Emotional Education: A New Perspective] adopted a rights-based approach that included information about both the risks and positive aspects of sexuality. The school-based program also emphasized gender equality and the development of adolescent decision-making and autonomy. Adolescents were involved in planning and implementing activities, which included outreach to parents and the local community within the school environment. Teacher training

was a main focus of the program, along with participatory interventions by adolescents focused on sexuality and reproductive health, including radio programs, school newspapers, and theatrical plays. An evaluation of the program found that, while there was no effect on age at sexual debut or the proportion of students who had ever been sexually active, participants were twice as likely to use a condom consistently with a casual partner and 68 percent more likely to have used modern contraception at last intercourse.[37]

Schools are assumed to be a logical place to reach large numbers of adolescents with sexuality education because the existing infrastructure serves this audience. These programs do not reach out-of-school children, however, especially girls who may have no or shortened educational opportunities. To address this gap, some groups have reached beyond school walls to offer sexuality education programs through workplaces, youth groups, faith communities, and community resources, such as radio stations. For example, Ipas partnered with youth-led organizations in Nepal to bring sexual and reproductive health and rights education—including information about safe abortion— to young migrant factory workers. The program not only helped to increase participant knowledge about family planning, abortion, and the rights of girls and women, but also trained a subset of participants as peer educators who could continue the education process in their communities.[38]

Some programs are taking advantage of adolescents' increasing access to electronic media as a way to reach them with sexual health information. For example, Ipas Mexico developed an interactive computer game, "When prevention fails: How to end a pregnancy using medication" to help young people learn how to access and safely use misoprostol to terminate an early pregnancy.

Wendy Stone

Multisectoral programs that address the social determinants of health

A new generation of multisectoral programs are demonstrating that addressing the social determinants of health, with an emphasis on rights and gender equality, can have a powerful, bidirectional impact on sexual and reproductive health outcomes. These programs recognize that sexual and reproductive health is influenced by—and influences—other aspects of life, including education, employment, and social connection. Multisectoral programs do not seek to replace other approaches, but rather to complement them and accelerate progress by creating synergies between health and other sectors.

Within the multisectoral approach, momentum is growing for programs that focus exclusively on the needs of girls, particularly those who are socially marginalized and therefore at higher risk.[5,6,9] Advocates for these programs argue that conventional health-sector programming often fails to acknowledge inequalities that affect girls' abilities to prevent pregnancy and disease.[39] An area of particular interest is reaching younger girls before or as they reach puberty (see box, page 6). Programs for girls often have a strong focus on rights and gender equality, a component that may be necessary to achieve significant and long-term change.[3,22] A number of multisectoral programs are also starting to address the critical issue of gender-based violence, though most have yet to be evaluated.[29] Evidence from early efforts to implement rights-based, girl-focused programs that address the social determinants of health show that these programs are making a difference.[40] Given this emphasis, most of the following examples focus on programs for girls.

BRAC's Empowerment and Livelihood for Adolescents (ELA) program in Uganda involved girls in an integrated program through community-based adolescent development clubs. The program provided safe spaces for girls to meet and helped them develop life skills and knowledge to reduce risky behaviors, vocational skills to help them establish small-scale enterprises, and financial literacy. The randomized controlled trial involved 4,800 girls and demonstrated positive results after two years, both for health-related and vocational indicators. Girls participating in the program had increased knowledge about HIV and pregnancy, and sexually active participants increased their condom use by 13 percent. The fertility rate among ELA participants fell by three percentage points (a 28.6 percent decrease). Participants were also more likely to be engaged in an income-generating activity than the control group.[41]

Programs to both prevent child marriage and address the sexual and reproductive health needs of married adolescents are particularly important, as this population has typically been underserved.[7] CARE's TESFA project in Amhara, Ethiopia, has successfully

tested one approach to reaching this vulnerable population. The project used community conversations with local gatekeepers, including husbands, in-laws, and religious leaders, as a way to get buy-in and identify married girls for the program. The pilot project then created safe spaces for these girls to meet for participant-led groups focused on sexual and reproductive health, economic empowerment, and other topics of interest to the community. Participants increased their use of health facilities as well as their savings and income-generation activities.[42] In Jamaica, the Women's Centre has had longstanding success working with adolescent mothers to delay second pregnancies and return to school. The program provides educational support to help young mothers return to school or successfully complete their exams so they can receive their diploma. Girls also receive job skills training, such as chicken and fish farming, bee keeping, and baby clothes manufacturing. The program also provides nutrition information and lunch, nursery care, and counseling. Program participants delayed second births by an average of 5.5 years and were more likely to complete their education and establish a career, find jobs, and receive higher pay compared to girls who did not participate in the program.[43]

Conditional cash transfer programs also are drawing attention as effective ways to influence sexual health outcomes. These programs offer a cash incentive on the condition that the recipient complies with a desired behavior, such as attending school. A randomized program in Malawi offers current schoolgirls and recent dropouts support for school fees as well as a direct payment (on average $10 per month) as long as the girls attend school. The program has found significant declines in early marriage, teen pregnancy, and self-reported sexual activity. Among those who were not in school at baseline, there was a 40 percent reduction in the marriage rate of participants versus controls. These participants were also 30 percent less likely to have become pregnant in the past year than controls.[44] Additional studies have documented the effect of cash transfers on lowering rates of HIV and herpes simplex virus 2,[45] increasing the age of marriage[46,47] and decreasing the total number of children born to program participants.[46] These programs may be difficult to sustain

Addressing the needs of young adolescent girls

There is growing interest in engaging young girls—those aged 10 to 14 and even younger—in programs that address their health and social well-being. This is a key age for development of health beliefs and behaviors and, for many girls, a time when they may be still in school and not yet married or sexually active. Reaching young girls with information and services before or as they reach puberty can help them develop skills and community connections to successfully navigate the many challenges of adolescence.[7,48]

Programs that focus on the needs of younger girls are showing good results. Biruh Tesfa is a Population Council "safe spaces" program in the urban slums of Ethiopia that involves girls as young as seven years old. Safe spaces programs address the needs of isolated adolescents for social support and adult mentoring. Participants, including domestic workers, daily manual laborers, and girls with disabilities, receive mentoring in basic literacy, life skills, financial literacy, and sexual and reproductive health. Vouchers for subsidized or free medical and HIV services help link girls to the health system. Participants in the program were twice as likely as controls to report social support, score highly on HIV knowledge questions, know where to be tested, and want to be tested than girls not in the program.[49]

Examples of other interventions that address the unique sexual and reproductive health needs of this younger population include:

- Menstrual hygiene: Many girls lack the supplies and facilities needed to manage menstruation, leaving them unable to attend school or work and creating social isolation. A United Nations Children's Fund (UNICEF) program in Nepal used a comic book and an adolescent-focused radio show to raise awareness about menstrual hygiene and taught girls how to make menstrual pads as a way to generate income.[50]
- Nutrition: Being malnourished and underweight can lead to poor maternal and child health outcomes. Incorporating nutrition education and snacks or meals into programs for girls can help them be better prepared physically for future healthy pregnancies.[51]
- HPV vaccine: Another intervention for early adolescent girls is the human papillomavirus (HPV) vaccine, which needs to be given before girls become sexually active (boys can also receive the vaccine). Early introduction efforts in India, Peru, Uganda, and Vietnam have demonstrated a high acceptability for the vaccine among parents because it protects against cancer, with little opposition based on the fact that the disease is sexually transmitted.[52] Engaging parents and girls in initial discussions about cervical cancer prevention, which is not viewed as controversial, may open channels of communication for discussion of potentially controversial topics, like sexual health.

As more programs focus on this younger age group, programs will need to develop age-appropriate implementation strategies as well as research methods and protocols that are specific to this age group, including the collection of age-disaggregated data.[48]

over time, however.

Efforts to change laws and policies that are detrimental to adolescent sexual and reproductive health also can have significant impact. For instance, establishing a minimum age for marriage might delay first pregnancies and the associated adverse health consequences of early childbearing.[53] Laws and policies related to legalization of abortion, protection from violence, and elimination of parental consent laws can also significantly affect adolescent reproductive health outcomes.[54]

Although the emphasis of many donors and programs has increasingly been on girls, addressing the needs of boys is also important. Program H, a gender-transformative approach, reaches young men aged 15 to 24 in 20 countries with a curriculum designed to encourage discussion and individual reflection about how men are socialized and the impact of this socialization, both positive and negative. Topics include sexual and reproductive health, HIV prevention and treatment, fatherhood, and violence, among others. The program has been shown to have a positive impact on gender attitudes, condom use, and self-reported STI symptoms.[55]

Challenges moving forward

Given the complexity of factors influencing adolescent sexual and reproductive health and the large number of adolescents who need access to information, life skills, and services, diverse approaches and programs are likely needed to make a significant impact.

- The greatest potential for improving health may lie in **reaching marginalized adolescents**.[56] Because these individuals are not likely to be well served by existing infrastructure, creative mechanisms will need to be tested to reach them. Efforts to engage them may need to reach beyond health centers and schools, to families (including spouses and mothers-in-law), traditional leaders, neighborhood markets, churches, and sources of essential supplies, such as water and wood. Research is needed, including the collection of age-disaggregated data, to better understand the health concerns and best ways to meet their needs.
- **Incorporating a rights and gender-equality approach and addressing the social determinants of health** are emerging as necessary strategies to achieve long-term change in adolescent health outcomes and reach the most disadvantaged populations. Programs that adopt these approaches often address multiple issues—for instance, health, education, and job skills—and are likely to involve government agencies and partners from multiple sectors. While such programs offer a high potential for effecting sustainable, normative change, they may be difficult and costly to implement and measure.
- As emphasis shifts toward programs that address girls and gender issues more broadly, **continuing to address sexual and reproductive health** is essential. One criticism of programs for girls has been that they sometimes fail to address sexual and reproductive health because it is viewed as too controversial by some donors and local stakeholders.[57] Engaging boys and men in positive ways to adopt positive gender norms and support gender equality and improved sexual and reproductive health outcomes will also be critical.[7]
- **Expanding the size and reach of programs—or "scaling up"—**will be necessary to reach a large enough proportion of adolescents to make a significant impact on improving health outcomes and changing cultural norms. Scaling up is a complex process, however, requiring time, resources, and planning, which ideally should happen during the initial program design stages.[58] Programs that are successful on a pilot basis may not be as effective when expanded to include more participants, or the approaches used may be too complicated or costly to replicate on a larger scale. Key issues to consider in scaling up programs include ensuring a high quality of care as programs become larger, ensuring equality in expansion of services so vulnerable populations are not further marginalized, and sustaining the level of financial commitment that is needed to maintain scaled-up services.[59]
- A longstanding challenge for development programs has been **ensuring the financial and technical sustainability of services** once pilot projects and large donor-funded initiatives end. Strategies that can help reduce overall program costs and ensure sustainability include introducing programs or mainstreaming a focus on adolescents within existing structures, and diversifying partnerships to include the private sector, community agencies, and academic institutions in addition to government agencies.[3,60]
- Even with sustainability strategies in place, a significant and long-term investment will be needed to fully address adolescent sexual and reproductive health needs. **Directing continued advocacy** toward governments and donors can highlight the potential high yield of investing in adolescents.

Conclusion

As global health leaders and governments chart a course of action beyond the 2015 Millennium Development Goals, the sexual and reproductive health needs of today's large population of adolescents must be recognized as a strategic priority. Strengthening health systems to meet adolescent sexual and reproductive health needs as well as providing comprehensive sexuality education programs are important strategies to pursue, but may not be sufficient to achieve long-term change. Multisectoral programs that address the social determinants of health, with emphasis on rights and gender equality have the potential to accelerate progress toward meeting the needs of adolescents, particularly those who are socially marginalized and therefore most vulnerable.

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