

**SEXUAL AND  
REPRODUCTIVE  
HEALTH  
FOR YOUTH**

**REVIEW OF  
EVIDENCE FOR  
PREVENTION**

**SCL/SPH**

**SIGRID VIVO  
PAULA LÓPEZ-PEÑA  
DRINA SARIC**

cover design: Otilia Martin editor: Nathaniel Barrett



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# **SEXUAL AND REPRODUCTIVE HEALTH FOR YOUTH:** A REVIEW OF EVIDENCE FOR PREVENTION\*

**SIGRID VIVO  
PAULA LÓPEZ-PEÑA  
DRINA SARIC**



**Social Protection  
and Health Division**

*\* The opinions expressed in this publication are those of the authors and do not necessarily reflect the views of the Inter-American Development Bank, its board of directors, or the technical advisors.*



## ACKNOWLEDGMENTS

This publication was created by the Inter-American Development Bank (IDB) in response to demand from the countries in our region and in support of the configuration of tools for the design of effective sexual and reproductive health initiatives serving at-risk youth.

There is no shortage of efforts in the region to implement youth programs aimed at preventing teen pregnancy, sexually transmitted diseases, or behaviors that represent a risk to health. Under the Best Practices Initiative, led by the IDB and UNESCO, programs such as *“Somos Diferentes, Somos Iguales: Un Entorno Favorable para Centroamérica”*<sup>1</sup> in Nicaragua, *“PrevenSIDA Street Initiatives”* in Mexico, and *“Desarrollo de Iniciativas Comunitarias Impulsadas por los Jóvenes en Conjunto con otras Generaciones, Tendientes a Promover una Visión Positiva y Afectiva Sana y Responsable de la Sexualidad”*<sup>2</sup> in Costa Rica, demonstrate the excellence of current work, the presence of widespread regional concern, and the potential for further intervention.

However, the lack of rigorous evidence in Latin America and the Caribbean encourages us to take a step further and evaluate the impact of programs, so that we can create a more effective response that is tailored to the needs of the target population. This publication is intended to strengthen and support public policies in the region through the analysis and systematization of rigorous evidence. It was a team project aligned with the efforts of other divisions within the IDB, which we hope will contribute in some way to the monumental efforts of a multitude of regional governments, non-governmental organizations, and other institutions that have chosen to target youth as the critical human capital that will determine the future of the region.

We would like to express our deep appreciation to the **Korean Fund for Poverty Reduction** and to the **Finnish Technical Assistance Fund** for making this project possible and providing continued support for the generation of knowledge in the area of youth, once again making the Paris Declaration a reality.

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1 “Somos Diferentes, Somos Iguales: A Favorable Environment for Central America” (English translation of the name of the program).

2 “Community Development Initiatives Led by Young People Together with Other Generations” (English translation of the name of the program).



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# SEXUAL AND REPRODUCTIVE HEALTH FOR YOUTH: A REVIEW OF EVIDENCE FOR PREVENTION

## Summary:

*This report systematizes existing knowledge of effective interventions in the area of juvenile sexual and reproductive health. Its goal is to provide information for designing effective programs, particularly those related to teen pregnancy, sexually transmitted diseases and risky sexual behaviors in Latin America and the Caribbean. Drawing on rigorous evidence, this innovative tool is designed to support operations by focusing on the identification and analysis of promising practices. Additionally, the document provides background information on key characteristics and operational components of the various chosen interventions. Among the main findings highlighted by this study are the lack of a single recipe for the design of effective interventions and the importance of tailoring the intervention to fit the targeted population and its cultural context. Innovative and noteworthy components of the selected programs include communication techniques that promote and encourage youth participation; thematic reinforcement through socio-emotional development; creation of incentives for risk aversion through the promotion of self-regulation mechanisms; and attention to the interaction and influence of parents and peers. Challenges for effective interventions include such issues as sustainability, cost effectiveness, expansion, replicability, and demonstrated validity of results—with regard to this last point, the design and evaluation of impact mechanisms are especially important. Finally, the paper identifies several innovative lines of experimental research in the social sciences: studies of the influence of peers, of juvenile brain plasticity and the window of opportunity it provides for behavioral change, and of incentive mechanisms based on inter-temporal preferences, all offer promising tools for the promotion of healthy development.*

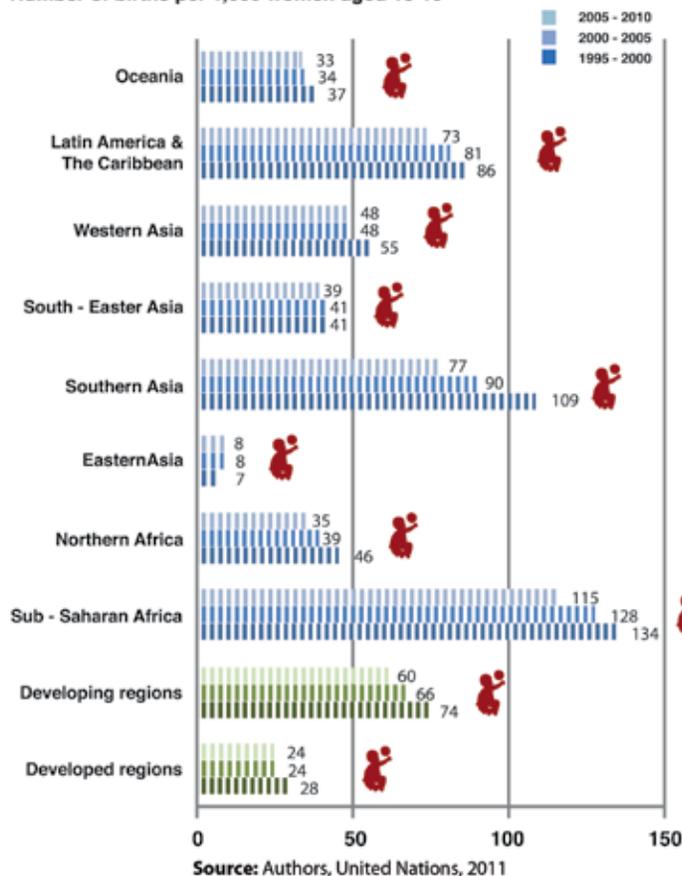
JEL Classification: I14, I18, J13 y J18



## I. Motivation

**GRAPH 1**

Number of births per 1,000 women aged 15-19



With less than a decade left to realize their commitments to the Millennium Development Goals (MDGs), countries of the Latin American and Caribbean region (LAC) have focused a spotlight on the consequences of high-risk sexual behavior, including human immunodeficiency virus (HIV), other sexually transmitted infections (STDs), and unintended pregnancies. Of the eight MDGs, six are related to reproductive health, with key objectives related to reducing child mortality, improving maternal health, and combating HIV/AIDS. In these areas, the results achieved so far are insufficient for meeting the Goals (see Annex 6).

According to the World Health Organization, approximately 260 million cases of **STDs** were diagnosed in the region in 1999, accumulating at a rate of approximately 38 million new infections per year.<sup>1</sup> Of these,

almost half are concentrated in young people between the ages of 15 and 24. The epidemic spread of **HIV/AIDS** among young people is alarming. It is estimated that more than 2.1 million people are living with HIV/AIDS in Latin America and the Caribbean. Among them, 250,000 are youth between the ages of 15 and 24, of whom 52% are male and 48% are female.<sup>2</sup> Five countries account for two-thirds of HIV/AIDS cases in the region: **Argentina, Brazil, Colombia, Haiti, and Mexico.**

The epidemics in LAC are fueled by varying combinations of unsafe sex (both homosexual and heterosexual) and intravenous drug use. Economic instability, social norms and gender discrimination also contribute to the spread of HIV and STDs. Poverty and economic instability have been identified as central to women's decision to engage in transactional or commercial sex work. Social norms and traditional gender roles in many LAC countries limit women's ability to negotiate condom use and to make decisions about engaging in sex, making them vulnerable to sexual assault. At the same time, young men are also pressured to prove their masculinity by engaging in sex at an early age, having multiple sex partners, and sometimes using physical force against women. Higher rates of new infections are increasingly being reported among young women, compared with men of the same age cohort. This may be due to increased testing of

<sup>1</sup> World Health Organization (2001). Non availability of STD key data reflects the critical need of Monitoring and Surveillance Systems in the region.

<sup>2</sup> Estimates for 2009. See United Nations Children's Fund (2011).

pregnant women as part of strong preventive measures against mother-to-child transmission of HIV, and to particular high-risk behaviors among young women, such as unprotected transactional sex and cross-generational relationships.<sup>3</sup> Although there is an enormous economic and social cost associated with these infections, for young people the challenge is magnified by the fact that risky sexual behavior often has no immediate consequences, aggravating the spread of disease and exerting a *multiplier factor*.

## BOX 1: ADOLESCENCIA: TIEMPO DE DECISIONES

**Adolescence: Time of Decisions** is a comprehensive school-based sex education program that encourages interaction between parents, teachers, doctors and teens. Medical staff make referrals to health services, provide information sessions, answer student questions, and serve as a resource for students, parents and teachers. The program was evaluated for its impact among students between the ages of 12 and 17. While the evaluation was quasi-experimental, it showed that the onset of sexual intercourse in the treatment group was postponed in relation to the comparison group. Also, treatment group students increased their use of family planning methods. The evaluation found a reduction in the incidence of pregnancy and the incidence of abortions among youth in the participating schools.

In the regional context, difficulties in reducing teen pregnancy rates are particularly concerning. The **adolescent fertility rate**<sup>4</sup> for the region is 73 per thousand births, between 2005 and 2010.<sup>5</sup> The prevalence of pregnancy and motherhood among teens poses widespread health and social challenges to the region and has lifelong consequences for the affected teens as well as for their children and communities. Teenage pregnancy poses a higher risk to maternal and child health and predisposes girls to drop out before completing school. This limits their employment opportunities and future income, and puts pressure on social services in the form of cash subsidies and social benefits. All of these outcomes can affect a country's economic growth, income distribution and poverty levels. It is estimated that the net social costs over the life of a population cohort of adolescent mothers ranges between US\$1.6 million in the case of Guyana, and US\$335 million for the Dominican Republic<sup>6</sup> (see table 1). Conversely, effective investments in sexual and reproductive health translate into better educational and employment opportunities for women, as well as increased savings, income and investment in human capital and the home.

3 HIV/AIDS LAC health profile USAID, 2011.

4 The teen birth or fertility rate is the number of births per 1000 women ages 15 to 19. Also note that in some regions the birth rate is defined over a different age range (e.g., under age 19).

5 United Nations, 2011.

6 World Bank, 2003. These figures are obtained by estimating costs of losses in human capital associated with the high-risk sexual behavior that leads to teen pregnancy. The cost of adolescent pregnancy includes not only the immediate needs of the mother and child, but also the costs to her family, the father and his family, taxpayers, and society. These costs are not limited to the birth period, but include both financial costs—paid by the mother, family, or taxpayers over the life of the mother and child—and economic costs in the form of forgone earnings of both mother and child (when he/she becomes an adult) and the loss of the benefits of alternative uses of the transfers to support adolescent mothers and their children. The additional costs incurred by an adolescent mother may include lower lifetime earnings of the mother, lower tax revenues, fewer remarriage possibilities, child support, higher health care costs, disadvantaged children, higher demands on the social system, social exclusion and poor mental health.

**Table 1. Estimated Costs of Adolescent Pregnancy Relative to Young Adult Pregnancy (US\$)**

Type of cost	Annual per birth, (US\$)		Annual per cohort, (thousands of US\$)		Lifetime per cohort (millions of US\$)	
	Financial	Economic	Financial	Economic	Financial	Economic
Barbados	262	303	118	137	4.6	6.4
Dominican Republic	60	165	2,595	7,130	85.8	336.3
Guyana	28	33	28	34	1.0	1.6
Jamaica	122	167	587	805	22.2	38.0
St. Kitts and Nevis	234	363	33	51	1.1	2.4
St. Lucia	98	162	55	91	1.8	4.3
Trinidad y Tobago	130	216	156	260	5.0	12.6

Note: Excludes the forgone of the child when he/she is an adult in the labor force

Source: World Bank, 2003

Although the social and economic benefits of investment in sexual and reproductive health are well known, we lack crucial evidence concerning the effectiveness of interventions for youth populations in this area. Within both the international and regional contexts, we suffer from a lack of robust knowledge generated through the rigorous assessment of initiatives and the replication of initiatives with demonstrated success in different areas. Such empirical knowledge is urgently needed to provide guidance for effective and efficient public decision-making. Health policy makers are faced with a wide array of challenges, including the difficulties of measuring results, the lack of understanding regarding mechanisms of impact, and the considerable cost and budget implications of designing, implementing or expanding promising interventions. The creation of empirical knowledge, evidence and arguments is vital to the sustainable success of reproductive health agendas that address the most vulnerable populations.

In 2005, an important effort to systematize and analyze existing knowledge<sup>7</sup> was carried out through a systematic literature review that searched for rigorous evidence relevant to the prevention of teen pregnancy, STDs and HIV in developing countries<sup>8</sup>. The common denominator of these successful interventions is their **comprehensive approach** to the problem. They cover both sex education and life skills, such as access to youth-friendly health services, family planning methods, and counseling, among others. One of the ten programs with demonstrated effectiveness was conducted in Latin America (*"Adolescencia: Tiempo de Decisiones,"* in Chile). Most recently Kirby et al. (2007) and Cochrane Collaboration (2010) have presented a review that includes new evidence from settings in developed and developing countries. This review indicates progress in the evaluation of programs in developing countries, although evidence is limited and in many cases lacks methodological rigor.

7 Advocates for Youth, 2005.

8 The Advocates for Youth study reviewed about 200 programs that had been implemented in developing countries, and singled out 10 programs that had demonstrated success in one of the following outcomes: delayed sexual initiation, increased use of condoms, reduced number of sexual partners, increased use of modern contraceptive methods, increased abstinence among sexually experienced youth, reduced STDs, and reduced pregnancy.

Likewise, an updated literature review finds strong evidence that conditional cash-transfer programs have had significant effects in reducing the probability of teen pregnancy and number of children (quasi-experimental evaluation of Oportunidades, Mexico<sup>9</sup>) and reducing teen pregnancies and early marriage (experimental evaluation of Zomba, Malawi<sup>10</sup>) *despite the fact that their design does not specifically address sexual and reproductive health interventions*. The Zomba program was subsequently implemented without making use of conditional cash transfers, and yet reductions in teen pregnancy continued to be documented. Similar reductions were detected in Chile following the expansion of the school day,<sup>11</sup> and in Kenya, in response to information regarding the risk of HIV/AIDS infection<sup>12</sup> and, in a separate case, in response to the provision of free student uniforms<sup>13</sup>.

Existing knowledge is still quite limited and comes mostly from middle/high-income countries. The main obstacles to the acquisition of rigorously based knowledge include the following:

**Program Replicability:** the success of several programs varies from site to site or in different evaluations, indicating that curriculum and programming are not the sole ingredients of a successful intervention. Implementation methods, staffing, and the tailoring of programs to fit the needs of the target population are all important considerations<sup>14</sup>.

**Program Sustainability:** The high cost of interventions and therefore the questionable long-term sustainability of programs are particularly important to consider (the Cas-Carrera Program, a very intensive and effective program for reducing teen pregnancy, costs around US\$4,700 per participant per year).

**Effects Sustainability:** Interventions that are proven to be effective in the short term (Colombian Profamilia; Be Proud! Be Responsible!) are not necessarily effective in the long term (impact evaluations conducted 3-6 months after intervention need to be followed up to check for consistency of results).

**Mechanisms of Impact:** Programs are conceived and implemented holistically, sometimes concealing the relative importance of key components and therefore the precise mechanisms of impact (for example, what is more effective: timely provision of contraceptives, health counseling or life skills curricula?). In a large sample of the programs reviewed there is no clear identification of the logical framework or analysis of how components interact to achieve the program's main goals. Without this information, the following dilemma arises: is it better to do a little of everything, or to intensify specific components? If the latter, which components should be intensified and under what operating conditions? Faced with the reality of limited resources, such information would seem to be crucial.

**Data Reliability:** Last but not least, we note the special challenges of making accurate measurements among young populations and issues of validation when dealing with highly sensitive information,

9 Sosa-Rubi S. et al., 2011.

10 Baird et al., 2009 and 2011.

11 Kruger and Berthelon, 2009.

12 Dupas, 2005 and 2011.

13 Duflo et al., 2006 and 2011.

14 both programs were not conditioned to cash-transfers.

mostly self-reported, in addition to the more general difficulties of measuring health care system performance in the area of reproductive health (e.g., attended births is an indicator whose methodology changes from country to country)<sup>15</sup>. These challenges include the high sensitivity of the survey content, the special characteristics of the youth population (very mobile, highly influenced by social and cultural context, and in many cases having the legal status of minors), as well as the general lack of key conditions needed to implement accurate surveys (e.g. lack of privacy—in most cases survey is carried out in presence of a relative). All these justify the need to invest resources in design, planning and information management, ensuring conditions of privacy and confidentiality. The validity of information is also an issue of concern for the researcher, for in most cases it is supplied by the youth themselves and is influenced by external survey conditions. Few of the reviewed studies validate the information of interest, leading to concerns about the reliability and trustworthiness of the results of many investigations.

Because of this lack of sound evidence, arguments about interventions often resort to casuistry and in most cases lack a basic logical framework. Such arguments reflect widespread ignorance about a variety of important issues: whether to make specific, focused actions or comprehensive programs; which parts of these programs are the most effective and which are sustainable; and what intensity is needed to have significant impacts. In particular, learning more about the medium and long-term effects of programs implemented through conditional cash transfers is high on the agenda for public policy makers. In response to these needs, this report makes an effort to systematize existing knowledge, identify promising practices, and provide reference information for further reading. It also highlights innovative lines of research coming out of experimentation in the social sciences that is relevant to reproductive health strategies.

The report is structured in **eight parts**. Following this introduction, the **second section** includes a basic review of the elements that should be considered when designing a program focused on teen pregnancy. The **third, fourth and fifth sections**, highlight the major findings of programs that offer evidence of positive impacts on adolescent pregnancy. The **sixth section** reports on programs that promote sexual abstinence behavior among youth and the impact of social contact in this area. The **seventh section** introduces the latest trends in youth at risk research, including important variables to take into account when working with youth and reproductive health. The **eighth section** summarizes the main findings of this report. Finally, programs are detailed in the **annexes** for easy reference.

## II. Searching for the right ingredients

There are precedents for systematic reviews of evidence concerning interventions that improve sexual and reproductive health among young people (Advocates for Youth, 2005; Advocates for Youth, 2007; Kirby Emerging Answers, 2007; Kirby et al., 2007; Cochrane Collaboration 2010; and Mathematica 2010; currently considered the “gold standard”). The general lack of rigorous evidence from both developed and developing countries<sup>16</sup> is accentuated in LAC and translates into an urgent need for the rigorous

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15 Campbell et al., 2006.

16 Advocates for Youth, 2005.

evaluation of programs that could be replicated effectively in the various countries of the region, as well as a need to discourage ineffective programs.

## BOX 2: AMPLIFYING RISK EFFECTS -THE SNOWBALL EFFECT

Risk behaviour Risk behaviors stem from multiple factors and often have interrelated causes with multiple downstream adverse effects. In most cases, youth risk behaviors across multiple dimensions are related—for example, youth with substance abuse problems may also perform poorly in school and may engage in sexual risk behaviors. However, above and beyond this shared “web” of causation, some risk behaviors, when they occur together, can synergistically increase exposure to harmful outcomes. This is the case with the concurrency of **substance abuse and gang affiliation**. Evidence shows that this risk behavior amplifies high-risk sexual behavior, early childbearing, and poor reproductive health outcomes.

**Sexual intercourse with multiple partners** at the same time (concurrency) can facilitate the rapid spread of sexually transmitted diseases, including HIV. **Substance abuse** can also amplify sexual risk behavior and in some contexts is considered a social disinhibitor and a symbol of “manliness.” Consumption of alcohol and other drugs before engaging in sexual intercourse can interfere with the decision to use condoms and/or other forms of contraception, can inhibit women’s bargaining power to negotiate condom use, and may result in incorrect use. Further, sex with drug-using partners can amplify the risk of HIV and other sexually transmitted infections. It is also connected to early sexual experiences and therefore to a high likelihood of STD infection and teenage pregnancy (WHO, 2005). Having partners who are in gangs seems to be associated with pregnancy among females (Minnis et al, 2008) when the male partner’s perceived pregnancy intentions mediate the effect of his gang membership on pregnancy risk.

Finally it is worthwhile to highlight the effect of **future expectations/hopes on the delay of childbearing** and/or engagement in risk behaviors (see evidence of the effects of job training in DR and improving school quality in Chile). Improving future prospects raises the cost of taking risks today, a simple effect with very important policy implications.

In the review of evidence conducted in this study (see Annex 4 for more methodological detail), interventions were categorized as effective when their evaluation recorded a statistically significant change in selected outcome indicators. In past reviews we have found variations in degree of scientific rigor (e.g. measurement bias considerations) and heterogeneity in defining indicators. Within the framework of this study, we will consider an intervention to have been successful if it has been shown to reduce the incidence or probability of **adolescent pregnancy** or **STDs**, or to reduce the rate of **risky sexual behavior** among young people (concurrent sexual partners, unprotected sex).<sup>17</sup> This analysis does not consider key elements such as cost/effectiveness ratio, validity, coverage, replicability, and long-term sustainability—all important elements that must be taken into account when deciding whether and how to implement a particular program. In Boxes 4, 5 and 7 we summarize the selected programs that have been consistently referenced in different reviews and different programs in terms of target population, setting, and type of intervention (among other traits). These summaries offer a convenient way to get information about different programs of interest.

As result, the programs analyzed here are heterogeneous with respect to intensity, duration, effect size, and cost. However, one common denominator<sup>18</sup> in the results of the program literature review

17 see Annex 5.

18 Bautista et al., 2011.

indicates the following common elements: (i) programs are implemented in **similar settings**<sup>19</sup> (schools, clinics, or community organizations); (ii) they provide a **comprehensive**, multidisciplinary or multi-level **perspective** of various interventions (e.g. combining sex education, life skills training, access to health services, and provision of contraceptives)<sup>20</sup>; and, on the downside, (iii) they suffer from **lack of precision** in their ways of measuring impacts, mainly due to inconsistent reporting of indicators and to measurement biases entailed by the mode of administering surveys (mostly self-reported information). Finally, although interventions that extend over time have shown the best long-term results, we cannot say that shorter programs have no long-term lasting effects, because follow-ups have not been conducted.

Specific information based on rigorous evaluation of what works in preventing teen pregnancy and sexually transmitted diseases is critical for making informed decisions about what types of programs to implement in a specific context and for a specific target population. At the same time, we find no magic bullet for prevention and no substitute for careful analysis of the multiple variables that impact these problems. We also stress the need for long-term preventive efforts focused on young people, starting in early childhood, which can generate incentives capable of competing against the desire to engage in risky behaviors. Today, **there are no definitive general solutions, but we do have promising interventions with the potential for replication**<sup>21</sup>. These may not offer perfect protection, but they do help substantially in protecting and preventing youth from engaging in behaviors that are harmful to their health. With the hope of providing some guidance for improved intervention and promoting the generation of empirical knowledge in the LAC region, the following sections present an analysis of existing knowledge (based primarily on USA-evaluated interventions).

### III. Effective interventions for reducing teen pregnancy

The interventions considered in this section utilize a range of approaches for the prevention of teen pregnancy, such as encouraging teens to wait to have sex, providing information on contraception, teaching refusal skills, or discussing the health consequences of sexual activity. This section focuses solely on interventions designed to address adolescent pregnancy, and does not cover interventions that have been designed to address other health reproductive outcomes related to sexual activity that may impact adolescent pregnancy. This is the case, for example, with the *Abecedarian Project*, a comprehensive child development intervention with significant and sustainable impacts in reproductive health (see Annex for characterizations of the reviewed programs, including impact on risk of adolescent pregnancy, HIV and STDs, settings and populations served).

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19 They are often well designed for implementation in schools, where they can potentially reach large numbers of youth, yet they can also be implemented in clinic and community settings where they can reach other youth, including potentially higher risk youth who have dropped out of school.

20 Comprehensive interventions have shown success but disentangling what elements contributed to this success has been challenging, hindering knowledge of the mechanisms of impact.

21 Given the importance of adapting to the context of the intervention.

## BOX 3: EVIDENCE BASED FINANCING: USA TEEN PREGNANCY CAMPAIGN

In 2010 the **National Campaign to Prevent Teen Pregnancy** commissioned a systematic review to support medically accurate and age appropriate programs that reduce teen pregnancy. Under this initiative, a total of US\$75 Millions were available on a competitive basis for the purpose of replicating evidence-based programs that have been proven through rigorous evaluation to reduce teen pregnancy, behavioral risks underlying teenage pregnancy, or other associated risk factors. The review, which was conducted by Mathematica Policy Research, is considered to be the “gold standard” in terms of the strength and rigor of its methodology. The initiative has promoted not just proven effectiveness but rigorous generation of knowledge and replicability.

**Proven Effective Programs** selected for funding are:

- |   |                   |
|---|-------------------|
| 1. Aban Aya Youth Project   |                   |
| 2. Adult Identity Mentoring (Project AIM)   |                   |
| 3. All4You!   |                   |
| 4. Assisting in Rehabilitating Kids (ARK)   |                   |
| 5. Be Proud! Be Responsible!  |                   |
| 6. Be Proud! Be Responsible! Be Protective!   |                   |
| 7. Becoming a Responsible Teen (BART)   |                   |
| 8. Carrera Program  |                   |
| 9. ¡Cuidate!  |                   |
| 10. Draw the Line/Respect the Line  |                   |
| 11. FOCUS   |                   |
| 12. Horizons  |                   |
| 13. It's Your Game: Keep it Real  |                   |
| 14. Making a Difference!  |                   |
| 15. Making Proud Choices!   |                   |
| 16. Project TALC  |                   |
| 17. Promoting Health Among Teens! Abstinence  |                   |
|   | only intervention |
| 18. Promoting Health Among Teens! Comprehensive abstinence and safer sex intervention |                   |
| 19. Reducing the Risk   |                   |
| 20. Rikers Health Advocacy Program (RHAP)   |                   |
| 21. Safer Sex   |                   |
| 22. Raising Healthy Children. Seattle Social Development Project                      |                   |
| 23. Sexual Health and Adolescent Risk Prevention (SHARP)                              |                   |
| 24. SiHLE   |                   |
| 25. Sisters Saving Sisters  |                   |
| 26. Teen Health Project   |                   |
| 27. Teen Outreach Program   |                   |
| 28. What Could You Do?nn  |                   |

We have identified **(11) interventions** that have had a direct impact on reproductive health outcomes, that is, which effectively reduced the probability of reporting early pregnancy or teenage mother/fatherhood (see Box 4 for a summary of teen pregnancy prevention programs). Of these (11), (9) had an effect on other indicators of interest, including (7) on reducing the incidence of unprotected sex or the use of contraceptives methods, (6) on sexual initiation, (2) on the number of sexual partners, and (3) on the use of public health services. However, none of the programs increased likelihood to have just one sexual partner and only one reduced the frequency of sex.

In this sample, more than half (6) of the programs made use of experimental designs, (5) of which were considered high-quality assessments; (4) had a sustained impact over the long term; (3) had impacts on a subgroup population, and (6) were designed to address high-risk or vulnerable populations. Also, we would like to emphasize that several of the interventions were focused on race (5) or gender (5), and that the interventions were channeled through schools, CBOs/clinics, and the community.

The selected programs have diverse natures and objectives, as well as diverse target populations: **California's Adolescent Sibling Pregnancy Prevention Program** is designed specifically to prevent

teen pregnancy among high-risk youth; *SiHLE* emphasizes ethnic and gender pride and enhances awareness of HIV risk reduction strategies; *Teen Outreach Program* is a youth development program designed to prevent adolescent problem behaviors; and programs such as *CAS-Carrera*, *Self-Center* and *Raising Healthy Children* are curricula-based programs focused on different age cohorts. The programs encompass heterogeneous content and initiatives, and vary in their intensity, age range (children, adolescents, and young adults), culture, setting (urban/rural), and duration. Most programs are comprehensive and include many interacting components. In alignment with other reviews, we find that the concurrent use of interventions such as education, skill-building and contraception promotion reduces the risk of unintended pregnancy in adolescents but offers little evidence about the **individual effects of these intervention’s components or their interaction**. Overall evidence remains inconclusive and there is no one “ideal” program model when it comes to positively affecting adolescent reproductive health. The most that can be said is that a variety of program models, with multiple interventions across the life course, have been proven successful to some extent for some outcomes and some populations. Thus, it is not possible to establish a systematic pattern of “best practices.” Given the lack of knowledge about the leverage of individual components or interventions, we can only sketch the **systematized elements and patterns** extracted from existing evidence—in many cases heterogeneity is the main shared characteristic.

Still, with these caveats in mind, we offer the following characterizations of the eleven selected programs:

- **Age** groups targeted by the programs include children *Abecedarian*, adolescents *Self Center* and young adults *SiHLE*. Programs are age-specific and were not replicated for different age cohorts.
- Program **intensity** varies considerably: school-based programs tend to be longer and extend throughout the school year (and across grades). For example, see *CAS-Carrera* (3-7 years, 4 hours a week). Clinic- and community center-based programs tend to be shorter, with a minimum of 4 sessions of 4 hours each *SiHLE*.
- **Program costs** also vary with quality and intensity (e.g. compare *CAS-Carrera*, approx. US\$4500, to *SiHLE*, approx. US\$300, per person).
- Some of these programs have **indirect effects** on other outcomes of interest, such as alcohol consumption, academic performance and/or dropout rates. *Raising Healthy Children* also affected school performance and reduced levels of crime and alcohol consumption. *SiHLE* reduced the incidence of STDs in the long run, and *Abecedarian*<sup>22</sup> impacted marijuana use, while increasing job quality among participants. *Teen Outreach* was designed to prevent risky behaviors such school failure besides teen pregnancy).
- School-based interventions may be part of the **curriculum**, e.g. included in general science, social studies, or biology courses *School/Community Program*, *Teen Outreach*, or may consist of extra-curricular recreational or sports activities *Raising Healthy Children*. Also, some health

22 *Abecedarian* is an early childhood program that was not officially included in the review of this section because the objective of the program was not to reduce adolescent pregnancy but children underdevelopment. The program serves children up to 5 years through extended and intensive exposure with professionals trained in simulations and health and early education, and has shown important impacts on long term behavior outcomes.

services can be linked with a school *Self Center*.

- A number of programs integrate **incentives** in order to encourage participation. Such incentives include **free public health services** *Self Center*, **free transportation** *Adolescent Sibling Pregnancy Prevention Program*; *School/Community Program*, and access to **medical insurance** *Sibling Pregnancy Prevention Program*.
- Three of the **interventions** that achieved long-term results included activities geared toward **parent training** (e.g. *Project TALC*, *Adolescencia*). Although this approach is promising, such programs have varying kinds of intervention and no single component has been evaluated. Other programs, such as *Raising Healthy Children*, *Peer-led Sex Education*, and *School/Community Program*, train young people to act as transmitters, educators, and facilitators of positive “social contagion.”
- **Several programs are successful for one gender but not the other.** *Draw the Line/Respect the Line* has been found to have greater impacts on males, while *CAS-Carrera* has been found to have greater impacts on females. Other programs are gender-specific; for example *SiHLE* was designed for females. The finding of gender specific impacts is justified in many cases by the influence of social and contextual norms, as well as the fact of having a gender specific design. For example *CAS-Carrera* argues such strong social pressure on urban youth males to be involved in early sexual relations and parenthood, that in order to have a greater impact on beneficiaries, it is recommended to start intervention at an earlier age. Likewise, researchers and designers of the *Program Draw the Line / Respect the Line* argue that the program approximates to mechanisms for delaying sexual initiation among young males, but requiring further research and adapting these mechanisms for women. Others programs are designed including the gender perspective, including *SiHLE*, for example, was designed for young women, while the program *Be Proud, Be Responsible!* is offered to the male population, finding its counterpart adapted to the female population in *Be Proud, Be Responsible, Be Protective!*
- Some programs were evaluated specifically for their effectiveness with **multiple racial and ethnic groups**. These include *Project TALC*, *CAS-Carrera* and *Teen Outreach Program* (evaluated primarily with **Latinos and African Americans**).
- Several programs had **varying success depending on the site or evaluation**, indicating that curriculum and programming are not the sole elements of a successful intervention. **Implementation methods, staffing, and the tailoring of programs to meet the needs of the targeted population** are all important considerations. Programs that have had differential success at different sites or in different evaluations include *Be Proud! Be Responsible!*, Postponing Sexual Involvement, Washington State Client Centered Pregnancy Prevention Programs, the Teenage Parent Demonstration, and the Quantum Opportunities Program. The *¡Cuidate!* Program (derived from *Be Proud! Be Responsible!*) was tested in a study that took place in Philadelphia, PA with 553 mostly Puerto Rican youth (249 boys and 304 girls) aged 13 to 18. The study was repeated with 829 youth in Monterrey, Mexico (371 boys and 459 girls) and impacts on outcomes vary between these settings. This is also the case for the *School/Community Program*, replicated in Geary County and Franklin County, Kansas, USA.

- **There was no uniformity of content.** In clinics, services are more homogeneous and have common elements (sex education, counseling, medical treatment and provision of family planning methods), which are usually offered by qualified or trained teachers. School- and community center-based programs involved activities ranging from cultural and recreational activities (e.g., see *SiHLE*, *CAS-Carrera* and *Tailoring Family Planning*) to individualized support that promotes non-cognitive development or life skills (*California's Adolescent Sibling Pregnancy Prevention Program*).
- The longest and most intensive interventions belonged to the most **comprehensive programs**, and showed significant impacts in reducing teen pregnancy and other variables of interest. However, these programs were also the most expensive and most difficult to replicate.

Most studies are limited by the **quality of their information**. Studies use self-reported measures, but biological measures of sexually transmitted infections and administrative data (for example, birth records) are also considered. Measures with limitations in terms of their quality or interpretation (for example, reports from males of their female partners' use of birth control pills or scales of behavioral risk and contraceptive use, which combine multiple measures into a single "black box" scale) are excluded from the review.

Despite the scarcity of evidence concerning this type of intervention, studies suggest that the programs whose core foundation is **non-cognitive development** (promoting confidence, self-esteem, negotiation skills, etc.), especially when reinforced by **socio-emotional factors** and combined with "hard" skills (education and professional development), can increase the use of family planning methods and reduce pregnancy rates. In most of the interventions reviewed non-cognitive components were vague and diluted in the intervention, so we still do not know the specific weight of non-cognitive components on changing behavior.

As already mentioned there is no rigorous evidence of how **individual components** work separately or in combination with other services. Only abstinence and access to health services or contraceptive provision have been shown to lack individual impact. Existing evidence (Kirby et al., 2007; Mathematica, 2010) suggests that interventions linked to timely access to services, with development of hard skills (sex education) can reduce rates of teen pregnancy. Reductions may be also linked to soft skills and, accordingly, to behavioral changes. However, we need to generate evidence before we can provide specific guidance to policy makers.

Finally, Kirby et al. (2007) suggest that **skill-based programs** were more effective for changing behavior than knowledge-based programs. However, most of the programs aimed to change attitudes and beliefs (especially in culturally tailored programs and abstinence programs)<sup>23</sup>. Supporting this argument, Banerjee and Duflo, (2011) suggest that low usage of modern contraception among poor women is not necessarily

<sup>23</sup> Jemmott et al., 2010, notes that a common shortcoming of behavior-change interventions is that efficacy is demonstrated in the short term but disappears at longer-term follow-up (especially for abstinence interventions). Unlike many risk behaviors (e.g. cigarette smoking, drug use), sexual intercourse is an age-graded behavior.

a sign of lack of access and those programs that have reduced fertility rates are based on interventions intended more to change behavior than to increase contraceptive supply (see discussion about Matlab program in Banerjee and Duflo, 2011). The study of the Colombian Profamilia program also concludes that the program had very little effect on overall fertility.<sup>24</sup> Authors conclude that contraceptive access may make people happy by giving them a much more convenient way to control their fertility than available alternatives. *But it appears to do little by itself to **reduce fertility**.* What better access to contraceptives can do, however, is **help teenagers postpone pregnancies**. Results suggest that programs that promote access should also include components that incentivate changing behavior and so demand of contraceptives. Unfortunately, in many countries, teenagers are barred from accessing family-planning services unless their parents give official consent.

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<sup>24</sup> Access to Profamilia led women to have only about 5 percent fewer children in their lifetimes, which is less than one-tenth of the total fertility decline since the 1960s.

## BOX 4: SUMMARY - BENCHMARK PROGRAMS IN PREVENTION OF TEEN PREGNANCY

**(1) CAS-Carrera Program** (after school or community based program, randomized control trial): Women 13-18 Comprehensive intervention based in community centers, from sex and reproductive education to labor issues, with highly trained facilitators. Intensive exposure: 3-7 years/3-4 hours a day.

**(2) Raising Healthy Children / Seattle Development Program** (school based, quasi-experimental): Adolescents up to 12 years. Comprehensive intervention in urban schools with trained teachers and youth. Intensive exposure: 3-7 years/3-4 hours a day.

**(3) TALC Project** (clinic based, randomized control trial): Youth 11-18, with a parent with HIV/AIDS. Support from social workers/students in health centers. Extended exposure of 4 to 6 years, once per week. Joint activities with parents and children regarding sexual and reproductive health and other therapies related to HIV/AIDS.

**(4) Teen Outreach Program** (school based, randomized control trials): Youth 12-18, with academic difficulties. Sessions in schools, content incorporated into the curriculum and facilitated by teachers, guidance staff or trained youth workers. Comprehensive information, emphasis on academic performance and less about sexual and reproductive health. Exposure: 20 hours/year.

**(5) School/Community program for sexual risk reduction among teen** (school based, quasi-experimental): Adolescents up to 12th grade. Intensive sessions in school with teachers, trained peers, and professionals. Content incorporated into curricula of other subjects. Connection with health center and counseling.

**(6) Self Center** (school linked Reproductive Health Services, quasi-experimental): Adolescent and young adult women in urban areas. Counseling services on the topics of reproductive health and sexual education, either individual or group, in the nursing clinic and/or linked with the health center. Trained professionals.

**(7) California's Adolescent Sibling Pregnancy and Prevention Program** (school or community based or CBOs or clinics, quasi-experimental): Youth from 11 to 17 years. Combination of sex and reproductive education services with self-esteem building, academic support and sports, in a community center. Intensive exposure with qualified personnel.

**(8) SIHLE** (CBOs or clinics, randomized control trial): Youth 14 to 18, urban and suburban areas. Services offered in health care centers by trained professionals in interactive sessions lasting 4 hours. Content focuses on sexual and reproductive health, gender issues and empowerment.

**(9) Tailoring Family Planning Services to the Special Needs of Adolescents** (CBOs or clinics, randomized control trial): Youth up to 18 years. Training in health care centers offered by counselors or healthcare professionals. Content on psycho-social development.

**(10) Adolescencia: Tiempo de decisiones** (school based, quasi-experimental): Students from 12 to 17 years. Sessions in schools, facilitated by trained professionals and permanent counseling. Content related to health, HIV SIDA, education and rights.

**(11) Peer-led sex education (England)** (school based, randomized control trial): 13-14 year-old. Interactive school sessions guided by volunteer peer-educators. Mixed-sex groups of two-and four pupils. Content: sexual communication, condom use, pregnancy, STI (including HIV), contraception, and local sexual health services.

**Source:** Authors, prepared based on program descriptions

### IV. Interventions proven to reduce STDs

In addition to their many unwanted effects, early pregnancies are also a sign of risky sex, which in many countries means a higher risk of contracting STDs and HIV/AIDS. Compared to older adults, adolescents (age 10-19) and young adults (age 20-24) are at higher risk for acquiring STDs for a number of reasons. Aside from social and economic factors, some physiological factors can increase vulnerability: for instance, adolescent women may be more susceptible to infection by some STDs (e.g. *chlamydia trachomatis*)

due to increased cervical ectopy<sup>25</sup>. The higher prevalence of STDs among adolescents also reflects multiple barriers to quality STD prevention services, including lack of insurance or other ability to pay, lack of transportation, discomfort with facilities and services designed for adults, and concerns about confidentiality. Consequently, proven effective interventions are needed for the prevention of STD/HIV among this especially vulnerable age group.

We have identified **(8) interventions** that have contributed to the reduction of STDs. These programs are mostly implemented in school or health clinic settings. Most of them include sexual education, counseling and provision of condoms. Also, role-playing, group dynamics, and peer interaction are common central elements of STD/HIV prevention programs. As in the previous section, these interventions vary in content, setting, age group and cultural approach. However, most include problem-solving and life-skills components that enhance confidence and negotiation skills, as well as role-playing or group dynamic activities that promote individual self-regulation. These programs develop the skills for enacting change, but also support the maintenance of low-risk behavior with models, peer examples, and social reinforcement. They are also designed to increase confidence in the ability to negotiate abstinence and other behaviors. Thus negotiation skills, as well as more positive attitudes/beliefs about abstinence, and a stronger sense of pride and responsibility for making a difference, are important to promoting lower incidence of STD/HIV risk-associated sexual behavior.

The interventions can be characterized as follows:

- Six out of eight include **experimental evaluation**.
- All programs are **urban specific**.
- Most are **multiethnic** and **culture specific** (e.g. *Aids Prevention for Adolescents in Schools*, *SAFE*, *Horizons*, *Sisters Saving Sisters*, *HIV Risk Reduction for African-American & Latin Adolescent Women*).
- Three programs (*Raising Healthy Children*, *Aids Prevention*, and *What Could You Do?*) are school based while the rest are clinic and community based or linked. Proven effective school-based HIV/STD prevention programs combine education programs designed specifically to address sexual risk behaviors with **youth development programs** that provide more general skills, helping adolescents to engage in healthy behaviors and solve problems.
- Two programs (*Sisters Saving Sisters* and *What Could You Do?*) are **gender specific**.

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<sup>25</sup> In cervical ectopy the layer of delicate cells that line the cervical canal extend onto the outer surface of the cervix, which is usually covered with stronger tissue. Thus the cervix is more easily damaged and has a tendency to bleed. This disorder often occurs in association with long-term use of oral contraceptives or after the cervix has been stretched during childbirth.

- School and community based interventions allow **access to high-risk populations** as well as links to preventative medical services. For example, *Horizons*, a clinic and community based intervention, provides vouchers for male partners toward the cost of STD services.
- All programs provide **effective knowledge**, aiming to enact changes in attitudes and beliefs and thereby generate changes in behavior.
- Two programs (*HIV Risk Reduction* and *Women's Health Project*) are distinguished by their **session intensity**: 250 minutes per session.
- Three programs (*Sisters Saving Sisters*, *Aids Prevention*, and *HIV Risk Reduction*) have **short-term impacts** (less than one year); four (*What Could You Do?*, *Horizons*, *SAFE*, and *Women's Health Project*) have **sustained impacts**; in the case of *Focus*, sustained impact is detected only for a sub-group of the targeted population.
- All programs require **qualified and trained personnel** except one (*What Could You Do?*), which is based on an interactive information video. This program is also expected to have lower cost of implementation.
- Two programs (*Raising Healthy Children* and *SiHLE*) from the previous list have contributed to STD/HIV prevention while addressing adolescent pregnancy. Both are ethnic and age specific; *SiHLE* is also gender specific. Both interventions are intense and have sustained impacts.

Research shows that well-designed and well-implemented HIV/STD prevention programs can decrease sexual risk behaviors among students by **delaying first sexual intercourse**<sup>26</sup>, **reducing the number of sex partners**<sup>27</sup>, **decreasing the number of times students have unprotected sex**<sup>28</sup>, and **increasing condom use**<sup>29</sup>, Pascaline Dupas and Michael Kremer,<sup>30</sup> after conducting several simultaneous experiments in Kenya, suggest that adolescents make carefully calculated if not fully informed choices about whom to have sex with and under what conditions, a finding that calls attention to promising interventions intended to change behavior (e.g. by impacting preferences) rather than just provide knowledge/information. A common pattern that follows this revision is the emphasis on non-cognitive development through interventions that promote life skills and self-regulation.

The CDC review (2010)<sup>31</sup> suggests several key common attributes among effective HIV/STD prevention programs: a) delivery by trained instructors, b) age-appropriateness (curricula specified for different age

26 CDC, 2010; Tortolero et al., 2010; Coyle et al., 2004; Sikkema et al., 2005; and Jemmot et al., 2010.

27 Jemmot et al., 2010; Villaruel, 2006; Koniak-Griffin, 2003.

28 Coyle et al., 2006; Jemmot et al., 2005.

29 Coyle et al., 2006; Jemmot et al., 2005; DiClemente et al., 2004 and 2009.

30 See Dupas, 2011; Duflo et al., 2006; Duflo et al., 2011; Kristof and WuDunn, 2009; Banerjee and Duflo, 2011; for further details on interventions and discussion.

31 A review of 48 research studies found that about two-thirds of the HIV/STD prevention programs studied had a significant impact on reducing sexual risk behaviors, including a delay in first sexual intercourse, a decline in the number of sex partners, and an increase in condom or contraceptive use.

groups), c) inclusion of skill-building, support for healthy behaviors in school environments, and combined involvement of parents, youth-serving organizations, and health organizations.

A promising approach to HIV prevention is found in youth development programs that teach children and adolescents the skills required for avoiding health risks, including sexual high-risk behaviors. These programs teach youth how to solve problems, communicate with others, and plan for the future, and help them to develop positive connections with their parents, schools, and communities. Finally the CDC review suggests that effective HIV/STD prevention programs are also cost-effective. An economic analysis of one school-based sexual risk reduction program found that for every dollar invested in the program, \$2.65 was saved in medical costs and lost productivity (Wang et al., 2000). Other studies have found similar savings for HIV prevention programs focusing on youth who are at disproportionate risk for HIV, including young gay and bisexual men and urban African-American male adolescents<sup>32</sup>.

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32 Tao et al., 1998; Kahn et al., 2001; Pinkerton et al., 2000.

## BOX 5 - SUMMARY: BENCHMARK PROGRAMS IN PREVENTING STDs

**(1) AIDS Prevention for Adolescents in School (school based, quasi-experimental):** Focuses on increased likelihood to have just one sexual partner, reduction of risky partners, and increased use of condoms. Six 1-hour sessions about HIV and STD. Training for teachers.

**(2) HIV Risk Reduction for African-American & Latin Adolescent Women (clinic based, quasi-experimental):** Focuses on reducing number of sexual partners and risky sexual encounters. One 4-hour session at health care center that covers HIV/AIDS, family planning, sexual health, and risky situations.

**(3) Project SAFE – Sexual Awareness for Everyone (clinic based, randomized control trial):** Focuses on reducing chlamydia and gonorrhea reports among young women. Three sessions of 3-4 hours each at health care centers covering HIV and STDs. Conducted by women counselors with same ethnicity. STD treatments and check-ups after 6, 12, 18 and 24 months.

**(4) Horizons (CBO, clinic, randomized control trial):** Focuses on reducing probability of chlamydia reports among women age 15-21. Two 4-hour group sessions (held on Saturdays) at health care centers. Topics include self-esteem, STDs, and condom use. Monetary support for couples to pursue STD treatment.

**(5) Sisters Saving Sisters (CBO or clinic based, randomized control trial):** Focuses on reducing probability of chlamydia, gonorrhea and trichomoniasis reports among young Latin and African-American women. One session of 250 min. at health community center. Content: negotiation skills, condom use, and information about alcohol and drugs abuse. Trained counselors. Low cost.

**(6) What Could You Do? (clinic or community based, randomized control trial):** Focuses on reducing probability of STD reports among women age 14-18 years. 45 min. video about sexual encounters, reproductive health, and STDs. Does not require trained personnel. Digitalized format and material available.

**(7) Women's Health Project (clinic based, randomized control trial):** Focuses on HIV/STD risk-reduction among sexually experienced African-American and Latino adolescent girls. Information sessions at clinic. Group discussions, videotapes, games, and experiential exercises guided by trained women facilitators.

**(8) Focus (community or clinic based, randomized control trial):** Focuses on prevention of STDs and unintended pregnancies among young women age 17-22 through increased knowledge about pregnancy, STDs, and contraceptives. Seeks to modify attitudes and build skills that impact on sexual behavior. Four 2-hour sessions. Follow up at 14 months.

**Source:** Authors, prepared based on program descriptions

## BOX 6: CONCURRENCY, A RISK FACTOR THAT LEADS TO STD?

Concurrency, or sexual intercourse with multiple overlapping partners, can facilitate the rapid spread of sexually transmitted diseases, including HIV (Morris & Kretzschmar, 1997). Although debates linger about the exact role of concurrency in propagating the HIV epidemic (Lurie & Rosenthal, 2010; Mah & Halperins, 2010), concurrent sexual partnerships have been identified as a key factor in the HIV epidemics of southern and eastern Africa, and interventions that address this effect are justified in claiming the majority of prevention resources.

Sexual practices vary widely, and individuals who have multiple sexual partners may or may not engage in concurrent sexual partnerships. Researchers distinguish serial monogamy, in which an individual may have multiple sexual partners without any overlapping partnerships from concurrency. Individuals who are involved in concurrent relationships may or may not have a high number of lifetime sexual partners since some concurrent partnerships are long-term, stable, or “closed” relationships, as is the case with polygamy. There is some controversy about the nature of various cultural norms for multiple partners and the risks entailed by these relationships.

Although these types of partnerships are not mutually exclusive, different risks are associated with multiple versus concurrent sexual partnerships. For the individual with multiple but not concurrent partners, the risk of acquiring HIV is directly related to the number of sexual partners they have over time. However, in concurrent partnerships the partner’s behavior or participation in concurrent sexual relationships has a profound effect on their role as a transmitter of HIV. Because of this, an individual’s risk cannot be calculated solely on the basis of his or her behavior: the partner’s behavior must be assessed as well. For example, an individual may have only one sexual partner, but if that partner is connected to a wider sexual network through concurrent sexual relationships, then the individual is at higher risk of acquiring HIV.

Without question, further research and evidence in the region is needed, and programs should take concurrency and its policy implications into account.

### V. Interventions proven to reduce high-risk sexual behaviors

This section focuses on interventions that have proven at least to **increase use of contraceptives** or **reduce number of sexual partners**. Most of the interventions cited have had high quality evaluations with regard to **short-term impact**.

Along these lines, we have identified **(15) interventions** that have impacted the relevant outcomes of interest. As in previous sections, the evidence allows us to identify common characteristics. In addition to these commonalities, however, there is significant variability in program intensity. Some programs provide one 5-hour session while others provide 14 sessions of 1 or 2 hours each. In general the selected programs last a short time (less than a month) and impacts are measured in the short- and medium-term (between 3 and 12 months). Just two programs have a follow up at 18 months and only one presented evaluation results after 24 months. Due to different impact evaluation periods and variable intensity of implementation (number and length of sessions, which may also vary within the same program), it is not possible to establish a correlation between intensity, capability of personnel, place of delivery (school, health care units, or community centers), and duration of program effects. For a quick assessment, Box 7 provides a summary of selected programs (See Annex 3 for further description).

The common elements observed in interventions that are proven to reduce concurrency and/or increase use of contraceptives by youth are as follows:

- **Small group activities**, guided by trained professionals or facilitators, include group discussions, audio-visual materials (e.g. videos), demonstrations, and role-playing.
- **Common content:** All are sexual education programs, and include information on STDs and HIV, correct use of condoms and contraceptives, pregnancy prevention, negotiation skills, and assertive communication.
- **Specific Content:** context-specific information tailored to ethnicity and culture, addressing gender roles, family structures, alcohol abuse and sexual intercourse. Programs are goal-oriented and utilize motivational therapy and voluntary services for the community.
- Delivered by **trained instructors**.
- **Age-appropriate:** specific information tailored to age group.
- Additional components include **skill-building**, support of healthy behaviors in school environments, and **involvement of parents, peers and community**.

Other noteworthy characteristics include:

- Several programs are versions or adaptations of others. For example, *All4you!* and *Making Proud Choices!* were inspired by *Be Proud! Be Responsible!* And a third program (*Be Proud! Be Responsible! Be Protective!*) adapts *Be Proud! Be Responsible!* to target adolescent mothers and pregnant girls.
- *Cuidate!* is focused on Latino populations. The same program, partially adjusted, was replicated in Mexico with different outcomes.
- Programs of low intensity (less than 15 hours) can be effective (e.g. *FOCUS*). Other programs such as *Be Proud! Be Responsible! Be Protective!* and *Be Proud! Be Responsible!* lead to reports of significantly fewer sexual partners in the previous three months. More long run evaluations are required, however, for information about the **sustainability** of these interventions and their long-term effects.
- Some programs are **gender specific** (*FOCUS*, *Be Proud! Be Responsible! Be Protective!*, *CHARM* and *Be Proud! Be Responsible!*)
- Programs based on comprehensive abstinence and safer sex, such as *Promoting Health Among Teens*, are effective at reducing the number of sexual partners among the African-American population
- Programs are targeted to different grades of vulnerability, as determined by **age range and risk**. *Rikers Health Advocacy Program* and *HIV Reduction Among Detained Adolescents* target high-risk adolescents in juvenile detention facilities
- **Intensive programs** such as *SiHLE* that are proven to reduce teen pregnancy also have important effects on contraceptive use.
- **Reducing Risk Behaviors and Saving Money.** CDC affirms that Effective HIV/STD prevention

programs also are cost-effective. As noted above, an economic analysis of one school-based sexual risk reduction program found that for every dollar invested in the program, \$2.65 was saved in medical costs and lost productivity (Wann et al., 2000).

## BOX 7 - SUMMARY OF BENCHMARK PROGRAMS FOR PREVENTION HIGH-RISK SEXUAL BEHAVIORS

- (1) All4You! (school based, community linked, randomized control trial):** Designed to reduce the risk of HIV, other STDs, and unintended pregnancy among high-school aged youth who are attending court and community alternative schools. Classroom lessons are drawn from the Be Proud! Be Responsible! curriculum and the Safer Choices curriculum.
- (2) Be Proud!, Be Responsible! (community based, randomized control trial):** Intended to delay initiation of sex among sexually inexperienced youth, reduce unprotected sex among sexually active inner-city youth, and help young people make responsible decisions about their sexual behavior. Emphasizes sense of community, accountability, and pride: protecting families and community. Focus is on HIV/AIDS.
- (3) Be Proud!, Be Responsible! Be Protective! (community based, randomized control trial):** Emphasizes the role of maternal protectiveness, and encourages adolescents to make healthy sexual decisions and decrease risky sexual behavior. Also encourages adolescents to take on sexual responsibility and accountability and increases awareness of the effect of HIV/AIDS on their children.
- (4) Becoming a Responsible Teen or BART (afterschool program or community-based organization, randomized control trial):** HIV prevention intervention designed originally for African-American adolescents. Aims to improve communication and negotiation skills related to condom use and increase knowledge of HIV/AIDS.
- (5) Cuidate! (community based settings, quasi-experimental):** Incorporates salient aspects of Latino culture, including the importance of family and gender-role expectations (e.g., machismo, re-described as a man's responsibility to care for and protect his partner and family). Cultural beliefs are used to frame abstinence and condom use as culturally accepted and effective ways to prevent sexually transmitted diseases, including HIV.
- (6) FOCUS (specialized setting, randomized control trial):** Designed to prevent STDs and unintended pregnancies among young women. Originally delivered to female U.S. Marine Corps recruits during their first week of training. Focuses on key elements of information, motivation, and behavioral skills.
- (7) HIV Reduction Among Detained Adolescents (specialized settings/population, randomized control trial):** Single-session, group-based intervention designed to reduce sexual risk behaviors, including alcohol-related sexual risk behaviors, and increase condom use.
- (8) Making Proud Choices (afterschool program or community based, randomized control trial):** A comprehensive sex education curriculum that aims to reduce young adolescents' risk of acquiring HIV and other STDs as well as their risk of pregnancy. Designed to increase knowledge about HIV, STDs, and pregnancy prevention, promote skills supportive of abstinence and safer-sex practices, and increase adolescents' ability to use condoms correctly.
- (9) Promoting Health among Teens! (afterschool program or community based, randomized control trial):** Designed to improve awareness and knowledge about HIV/STDs; increase understanding of why abstinence can prevent pregnancy, STDs, and HIV; strengthen behavioral beliefs that support condom use; and build refusal and negotiation skills for practicing abstinence as well as for effective use of condoms.
- (10) Reducing the Risk (school based, randomized control trial):** Designed to affect knowledge, beliefs, values, and intentions related to abstinence, unprotected sexual activity, unintended teen pregnancy, and STD contraction among high school students. Curriculum emphasizes refusal skills and alternative behaviors that support abstinence.
- (11) Rikers Health Advocacy Program (special populations/settings, quasi-experimental):** designed to promote problem-solving skills for HIV/AIDS prevention among high-risk youth, particularly drug users and youth in correctional facilities. Features a "Problem-Solving Therapy" approach, including skills of problem orientation, defining and formulating a problem, generating alternative solutions, decision making, and implementing a solution.

**(12) Safer Sex (clinic based, randomized control trial):** intended to reduce the incidence of STDs and improve condom use among high-risk female adolescents. Delivered to participants individually by a female health educator.

**(13) It Is Your Game, Keep It Real (school based, randomized control trial):** a computer-based curriculum for middle school children developed to prevent HIV, STDs, and pregnancy. Children attend classroom sessions composed of group activities and individualized computer-based sessions. The primary aims of the program include the delay of sexual initiation and the reduction of risk for those who are sexually active.

**(14) Children's Health And Responsible Mothering or CHARM (schools, randomized control trial):** promotes self-esteem and physical and emotional well-being.

**(15) Draw the Line, Respect the Line (school, randomized control trial):** designed for students, focuses on postponing sexual activity or using protection if they are sexually active. The curriculum addresses social pressures on sexual behavior and provides models of and practice with communication and negotiation skills.

**Source:** Authors, based on program descriptions

## VI. “Abstinence only” programs

While early sexual initiation (before the age of 15) is associated with a greater likelihood of contracting HIV/AIDS and other STDs (UNAIDS 2009), **interventions that promote *abstinence only until marriage* among youth have not been demonstrated to improve long-term sexual and reproductive health outcomes or to reduce risky sexual behaviors** after sexual initiation.<sup>33</sup> Brückner & Bearman (2005), Santelli et al. (2006), Hauser (2004), and Committee on HIV Prevention Strategies in the United States (2000) all find that withholding key information from youth tends to lead to negative effects on behavior. Under the premise “**there is no safer sex than no sex**”, total abstinence has been associated with better protection for youth (Haignere et al., 1999). However, abstinence only education does not provide knowledge about contraceptive use or high-risk sexual behaviors, tending instead to focus on postponing sexual intercourse (until marriage), even by means of misleading or inaccurate information.

Evidence on the impact of the abstinence-only-until-marriage approach was considered fairly mixed up until 2007,<sup>34</sup> when a long awaited, congressionally mandated evaluation (Trenholm, 2007) of federally funded, abstinence-only-until-marriage education programs found that they have no beneficial impact on young people’s sexual behavior. The comprehensive, nine-year study by Mathematica Policy Research examined four abstinence-only education programs that state officials and experts had identified as “promising” and as representative of abstinence-only programs nationally.<sup>35</sup> Program recipients were no more likely than non-recipients to delay sexual initiation, and when they did become sexually active, program recipients had the same number of sexual partners and were no more likely to use condoms

33 Of the 28 interventions reviewed, 9 sought to promote abstinence among young people or measured their impact only in terms of this variable.

34 Mostly due to poor evaluation methodologies.

34 Participating youth—from a mix of urban and rural settings and from various socioeconomic backgrounds—were enrolled over three consecutive school years between 1999 and 2001 and randomly assigned to the program group or to a control group that received only the usual services available in the community. Follow-up data were collected from more than 2,000 students in 2005 and 2006—four to six years after they were first enrolled in the study.

34 Participating youth—from a mix of urban and rural settings and from various socioeconomic backgrounds—were enrolled over three consecutive school years between 1999 and 2001 and randomly assigned to the program group or to a control group that received only the usual services available in the community. Follow-up data were collected from more than 2,000 students in 2005 and 2006—four to six years after they were first enrolled in the study.

or other forms of contraception. In addition, the prevalence of STDs was not found to differ significantly between “abstinent” and “not abstinent,” despite fewer sexual partners on average, the delay in sexual initiation, and likelihood of confining sexual intercourse within marriage (all factors associated in the literature with a lower risk level). This is linked to the fact that those exposed to abstinence-only programs (and that claim to be committed to that goal) are more likely not to use contraception when they become sexually active, are less likely to make use of STD diagnostic services, and are more likely to resort to sexual alternatives to vaginal intercourse that involve an exchange of fluids—i.e. oral and anal sex (Brückner & Bearman, 2005).

### BOX 8: DRAWING THE LINE: WHAT WE MEAN BY “ABSTINENCE ONLY”?

There is still a debate about how an “abstinence only” program should be defined. According to this debate, conclusions about abstinence education should not be over-generalized. Collins et al. (2002) establish the following way to differentiate abstinence programs:

Abstinence-Plus Education	Abstinence-Only Education
Abstinence-Plus Education programs explore the context for and meanings involved sex.	Abstinence-only education includes discussions of values, character building, and, in some cases, refusal skills.
<ul style="list-style-type: none"> <li>• Promote abstinence from sex</li> <li>• Acknowledge that many teenagers will become sexually active</li> <li>• Teach about contraception and condom use</li> <li>• Include discussions about contraception, abortion, sexually transmitted diseases and HIV</li> </ul>	<ul style="list-style-type: none"> <li>• Promote abstinence from sex</li> <li>• Do not acknowledge that many teenagers will become sexually active</li> <li>• Do not teach about contraception or condom use</li> <li>• Avoid discussions of abortion</li> <li>• Cites sexually transmitted diseases and HIV as reasons to remain abstinent</li> </ul>

Evidence supports short-term impacts of abstinence programs (e.g., see **Promoting Health Among Teens!**). Jemmot et al. (2007) suggest that theory-based abstinence-only interventions might be effective with young adolescents in the short term but ineffective with older youth or people in committed relationships. For the latter, other approaches that emphasize limiting the number of sexual partners and using condoms, including the comprehensive interventions mentioned in this review, might be more effective. Tackling the problem of STDs among young people requires an array of approaches implemented in a variety of venues, and present results suggest that theory-based abstinence-only interventions can be part of this mix. Using theory-based abstinence

## VII. Research tendencies

This section presents a brief description of the most recent research topics related to youth behavior, for which the accumulative evidence is still in debate. These research findings have a potential impact on reproductive health policy design; consequently further analysis, information and implication reports are required.

## **A window of opportunity: malleability and maturation of the adolescent's brain in second decade of life**

New findings in the field of neuroscience show that the brain reaches maturity during the second decade of life, not by the age of 10 to 12 years as the scientific community had believed until very recently. This discovery poses a challenge to government policies that seek to ensure the healthy development of young people. Previously youths were considered simply budding adults and accordingly public policy sought to protect only their socioeconomic development. But scientific advances now show that the process of neurological formation is not yet complete until adulthood and therefore public policies must also consider risk factors that might adversely affect this crucial stage of cognitive development.

*...So exploiting this window of opportunity is very important. Better outcomes of self-regulation and executive function in adolescence are associated with lower rates of delinquency, drug use, sexual risks, and obesity (Heckman et al., 2006; Cunha and Heckman, 2007; Duckworth and Heckman, 2009; Lokken et al., 2009).*

## **Incentives for change: intertemporal preferences**

O'Donoghue and Rabin (2000) argue that teens make risky decisions seeking instant gratification and disregarding future adverse effects. Moreover they repeat decisions that have costly repercussions, because as long as young people do not experience the negative effects of their risky behaviors, they cannot learn from them. Because of this systematic error, adolescents tend to overindulge and pamper themselves in the present. This new approach suggests that we can study risky behavior in a more systematic way, deciphering adolescent decision-making processes through carefully designed studies that identify the most important factors influencing, inhibiting, or reinforcing risky behavior among youths. Banarjee and Duflo (2011) suggest that adolescents make carefully calculated if not fully informed choices about whom to have sex with and under what conditions; this work highlights the promise of interventions designed to change behaviors by impacting intertemporal preferences rather than just providing knowledge/information.

*...So changing intertemporal preferences among youth may have a significant impact on sexual and reproductive behavior (children childbearing, risk aversion, etc.).*

## **Tell me who you hang around with and I'll tell you who you are: the social "contagion" effect**

Adolescents' interpersonal lives are undergoing dramatic societal changes, including greater interactions with peers, the development of a youth culture that reinforces the world of peers, and more involvement in romantic and sexual relationships. Talk, play, and leisure activities with peers are becoming a more substantial forum for adolescents' preparation for adulthood. In this context (Larson et al., 2002), social-psychological theories of health behavior suggest that adolescents' sexual behaviors are influenced by the sexual attitudes and behaviors of their friends.

Recently, Christakis and Fowler have published a series of studies (2007; 2008a; 2008b; 2008c; 2009) examining the effect of social networks on individual behavior, primarily as related to health indicators such as weight gain, smoking, or drinking. According to the results, social networks can be considered a major factor in the health status of individuals. For example, they found that individuals do not become obese

or smokers in isolation; rather, these are group phenomena. The degree of influence or “contagiousness” of this type of behavior goes beyond direct friends, reaching up to three levels of influence. Evidence of

## SUCCESSFUL PROGRAMS

- 1) Focus on specific behavioral goals;
- 2) Are based on theoretical approaches;
- 3) Deliver clear messages about sexual activity and/or contraceptive use;
- 4) Provide basic information about risks associated with teen sexual activity and methods to avoid pregnancy or STDs;
- 5) Address social pressures toward having sex;
- 6) Provide activities to practice communication and refusal skills;
- 7) Incorporate multiple teaching methods and personalize information to individual needs;
- 8) Are tailored to participants’ age-level, culture, and level of sexual experience;
- 9) Are long enough to cover all information and activities; and
- 10) Provide appropriate training for teachers or peer leaders who are committed to the program.

**Source:** Kirby, 2001

this effect has been found not only in the analysis of obesity (2007), but also in the consumption of cigarettes and alcohol (2008a)—even happiness and loneliness exhibit this effect (2008c). Other studies have reinforced Christakis and Fowler’s research results, finding significant effects of groups of friends and peers on adolescent sexual behavior and the initiation of sexual activity or sexual debut, as well as on non-affective sexual relations. Boyer et al. (2000) found that perceptions of higher STD risk, perceptions that friends engage in risk behaviors, perceptions that friends will not support their STD risk-reduction efforts, knowledge of someone of a similar age who has had an STD and has no intention of using condoms are all significantly associated with sexual behavioral risk.

*These findings suggest that adolescents’ normative peer perception as well as their peer affiliation need to be targeted by health education and risk reduction programs. Specifically programs that assist adolescents in developing appropriate decision-making and peer-negotiating skills may play an important role in reducing their overall level of sexual risk and concomitant outcomes.*

## VIII. Main Findings

### *Regarding youth behavior:*

- For young people risky sexual behavior often has no immediate consequences, aggravating the spread of disease and exerting a multiplier factor. Amplified risks are mainly related to teen pregnancy and sexual transmitted diseases, HIV included.
- There are no definitive general solutions, but there are some promising interventions with the possibility of replication. Specific information based on rigorous evaluation of what works in preventing teen pregnancy and sexually transmitted diseases is critical for making informed decisions about what types of programs should be recommended for implementation in a specific context and specific target population.
- The programs reviewed in this document have had demonstrated success in one of the following outcomes: delayed sexual initiation, increased use of condoms, reduced number of sexual partners, increased use of modern contraceptive methods, increased abstinence among sexually experienced youth, reduced STDs, and reduced pregnancy. The interventions were categorized as effective when their evaluation recorded a statistically significant change in selected outcome indicators.
- Even though the benefits of investment in sexual and reproductive health are well known—especially in youth populations and in the Latin American and Caribbean region—we still face wide gaps in the evidence pertaining to the effectiveness of interventions in this area. Several systematic reviews of the literature have searched for rigorous evidence on programs for the prevention of teen pregnancy, STDs and HIV; however the majority of interventions they describe did not have significant impact, were not replicated outside their local context, or had different impacts depending on the setting and context of the program. The Latin American and Caribbean region urgently needs to produce more rigorous evidence on reproductive and health interventions. Current evidence comes mainly from developed or middle-income countries, while evidence from developing countries comes mainly from Africa.

### *Regarding program/policy design:*

- Critical issues such as **reliability**, **sustainability of intervention**, and **analyzability of the mechanisms** of impact are crucial for coming to understand what works in sexual and reproductive health. Reliability is limited by validity of youth self-reported information, and sustainability is limited by the high cost of key interventions as well as persistence of effects in the long run. Because most programs are comprehensive, information is lacking about the individual impact of key components and their mechanisms of interaction.
- The following were considered as key elements of programs that focused on the reduction of teen pregnancy: a) selection and targeting of intervention age (e.g. information needs differ according to age); b) place of delivery: community, clinic and school based interventions;

- c) intensity, ranging from few sessions to school year programs (clinic and community center based programs tend to be shorter than school based); d) trained and qualified personnel, including teachers, outside professionals, or peers acting as facilitators; e) incentives to participation: in cash or in kind, e.g. free public health services, free transportation, access to medical insurance; f) parent involvement, as part of sessions or as trainee; g) comprehensiveness of content designed to impact teen pregnancy and other variables, varying from sex education, counseling, medical treatment, and provision of family planning methods to the development of soft skills and peer counseling training (implementing the “social contagion” effect).
- High-risk sexual behavior interventions had an impact on at least one of the following indicators: number of sexual partners, condom use (in the last sexual encounter). The program design in this group is more homogeneous in spite of wide variability in intensity. The common elements are: a) small group activities guided by trained professionals or facilitators; b) general content: STDs and HIV, correct use of condoms and contraceptives, pregnancy prevention, negotiation skills, and assertive communication; c) context-specific content: cultural elements, gender roles and family structures, alcohol abuse and sexual intercourse, motivational therapy and goal orientation.
  - Some programs were designed for, or were effective with, only one gender. Similarly, programs were found to be effective with specific races/ethnic populations, though this does not preclude effectiveness with other populations. Programs that are age specific are not advisable for implementation in other age groups.
  - It is difficult to differentiate youth development programs from sex education programs. Though many of the programs suggest the promotion of socio-emotional capacity, self-regulatory devices, effective counseling, etc., the actual descriptions of their activities are in many cases vague and incomplete.
  - Several sex education programs involving fewer than 15 hours of contact time have been found to positively affect reproductive health outcomes (*BART, Be Proud! Be Responsive!, Making Proud Choices*).
  - Higher amounts of unsupervised time are associated with risky sexual behaviors. In order to minimize such unsupervised time, many communities have instituted after-school programs for teens and pre-teens (Manlove et al., 2004; Cohen et al., 2002). Adult supervision has been linked to decreased sexual activity among teens. Also, after-school and evening programs get teens involved in alternative activities, that is, activities other than sex. Finally, programs that focus teens on education- and career-related activities can motivate youth to plan for their futures and avoid behaviors — such as risky sexual activities — that can put those futures in jeopardy.
  - Teens who believe that they have promising futures have incentives to postpone sexual involvement, use contraception more consistently, and avoid unwanted pregnancies or births.

This perspective helps explain why education and career opportunities may help teens steer away from risky sexual behavior. Teens with higher educational aspirations are less likely to become sexually active at a young age or to have a child (Afexentiou & Hawley, 1997; Moore et al., 1998; Smith, 1997). In addition, teens with higher grade point averages are more likely to delay sexual initiation (Resnick et al., 1997) and to use contraception the first time they have sex (Manning, Longmore, & Giordano, 2000). By contrast, adolescents who drop out of school are more likely to become pregnant (Manlove, 1998).

**Regarding information and other related evidence:**

- The evidence suggests that providing information increases awareness—about reproductive health, drugs, etc.—but does not change behavior in a meaningful way. There is not enough information to confirm the link between family planning clinics, school-based health clinics and school-linked clinics to an increase of sexual activity rates. The inclusion of teenagers’ parents in information and prevention programs is effective.
- Sexual intercourse with multiple partners at the same time (concurrency) can facilitate the rapid spread of sexually transmitted diseases, including HIV.
- “Only” based programs such as abstinence-only (Threnholm et al., 2007), supply of contraceptives (Swann et al., 2003) or information alone do not seem to work (Banarjee and Duflo, 2011).
- Interventions with larger effects on behavior include socio-emotional and “self-regulatory” components (*CAS-Carrera*, *SiHLE*). New findings in the field of neuroscience show that the brain reaches maturity during the second decade of life, not by the age of 10 to 12 years, as had been believed until very recently. This opens a new window of opportunity for policy makers.
- Given that adolescents’ interpersonal lives are undergoing dramatic societal changes, including greater interactions with peers, interventions and programs can play a role in reinforcing positive, pro-social experiences with peers. To increase the likelihood of success, interventions must target cohorts rather than focusing exclusively on individual teenagers and should address group norms for sexual behavior as well as the perceptions, skills and behaviors of individuals. As perceived respect from friends for having sex appears to be a risk factor for early sexual debut, programs can emphasize an array of pro-social behaviors (i.e., healthy alternatives to sexual intercourse) as ways to gain respect from friends, a widely desired goal (Sieving et al., 2006).
- Finally it is important to consider that **one size does not fit all**: programs need to be adjusted and tailored to fit specific problems, contexts and populations.

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**ANNEX 1:**

INTERVENTIONS PROVEN EFFECTIVE FOR REDUCING THE RISK  
OF REPORTING PREGNANCY

**ANNEX 2:**

INTERVENTIONS PROVEN EFFECTIVE FOR REDUCING STDS PREVALENCE

**ANNEX 3:**

INTERVENTIONS PROVEN EFFECTIVE FOR PREVENTING  
HIGH-RISK SEXUAL BEHAVIORS

**ANNEX 4:**

METHODOLOGICAL CRITERIA FOR WEIGHING STUDIES OF EFFECTIVENESS

**ANNEX 5:**

DIMENSIONS OF IMPACT ON SEXUAL AND REPRODUCTIVE HEALTH:  
COMPENDIUM OF REVISED PROGRAMS

**ANNEX 6:**

PROGRESS OF MILLENNIUM DEVELOPMENT GOALS IN LAC

## Children Aid Society (CAS) / Carrera Program (USA) ⇒ to reduce teen pregnancy in the long run

**Outcome:** *3 years into the program, lower incidence of reported teen pregnancy.*

**Type of intervention:** Comprehensive, individualized follow-up (academic, professional, health, etc.) and support.

**Components:** Job Club – career services and academic assistance (e.g. tutoring); holistic sex education (including abstinence and contraceptives); art workshops and individual sports activities.

**Target group:** African American and Latino women aged 13-18 from disadvantaged socio-economic backgrounds in urban areas.

**Duration:** Extended (3-7 years)

**Intensity:** Intense (3-4 hours/day, at least 4 days per week, 10-11 months/year).

**Setting:** Community center, after school hours, with high-quality infrastructure including facilities, hygiene, and required materials; staff available for consultation, monitoring at the center.

**Staffing requirements:** Highly qualified staff (masters required for academic, health and mental health monitoring and for other key components)

**Innovative elements:** (i) Job Club and the improvement of technical capacities: each young person is assigned a weekly stipend for Job Club participation that must be deposited in a savings account; (ii) academic support and preparation for higher studies and family life, including sex education; (iii) opportunities for self-expression: art and sports activities that promote self-improvement and help set achievable goals.

**Design:** Quasi-experimental, implemented in 7 New York communities.

**Further information:** Philliber et al. (2002); CAS-Carrera Program: <http://www.stopteenpregnancy.com/contact/>

**KEY:** *Develops high-quality, long-term relationships with participating teens (“parallel family system”) while reinforcing relationships with family.*

## Raising Healthy Children / Seattle Development Program (USA) ⇒ to reduce teen pregnancy in the long run by investing in childhood and early adolescence

**Outcome:** *At age 18, lower concurrency. At age 21, lower concurrency and lower teen pregnancy rate. At age 24 and 27, lower risk of having ever been diagnosed with an STD.*

**Type of intervention:** Holistic and extended (age 6 to 12) at school.

**Components:** Children: Development of life-skills, resistance to peer pressure, communication, problem solving. Parents: Voluntary training in conflict reduction, family communication, abstinence from controlled substances. Teachers: Interactive education, school management, cooperative learning. Educators: Annual training.

**Target group:** African American children aged 6-12 from disadvantaged socio-economic backgrounds in urban and sub-urban areas.

**Duration:** 6-year intervention in elementary school (1st to 6th grade) and with parents; 3 to 5 sessions, approx. 4 hours each.

**Setting:** School.

**Staffing requirements:** Teachers trained in interactive and cooperative teaching.

**Innovative elements:** (i) multiple sessions help parents develop effective guidelines for their child’s behavior – i.e. how to reinforce positive behavior, respond properly to negative behavior – and engage parents in education, discussions about risk behavior; (ii) curriculum for 6th-grade children focuses on how to resist peer pressure that may lead to problem behavior.

**Design:** Quasi-experimental, implemented in Seattle, Washington.

**Further information:** Hawkins et al. (2008), Hawkins, et al. (1999), Lonczak, et al. (2002); <http://www.sdr.org/rhcsurvey.asp#3>

**KEY:** *Focuses on extended intervention and strengthening the family system. Highly effective long-term intervention; long-term goal of RHC is to increase academic success and reduce adolescent antisocial behavior and chronic mental health, using a social development model.*

## Project TALC (United States) ⇨ to reduce teen pregnancy in high-risk youth in the long run

**Outcome:** *4 years into the program, significantly lower incidence of reported teen pregnancy (11-18 years).*

**Type of intervention:** Children-focused sessions on HIV and its effects. 8 small-group sessions with parents: working toward acceptance of parents' health status; how to maintain a healthy life style; how to inform children about health status.

**Target group:** Youth living with HIV/AIDS-infected parent.

**Duration:** 4 to 6 years.

**Intensity:** Once a week (Saturdays).

**Setting:** Implemented in community centers.

**Staffing requirements:** Social workers and psychology students (masters candidates). Excellence and qualifications of staff do not seem to be key elements.

**Innovative elements:** (i) joint parent-child activities and discussions to elicit opinions regarding risk behaviors, teenage pregnancy, etc.; (ii) counseling to overcome parent loss and to help youth adapt to their new custodian, anti-stress therapy, life-skills, training in condom use.

**Design:** Randomized control trial. Three hundred seven financially-needy, AIDS-infected parents and 412 adolescent children constituted the study sample for this investigation. The majority (80%) of the parents were mothers.

**Further information:** Rotheram-Borus et al. (2003); <http://chipts.ucla.edu/interventions/manuals/intervhra1.html>

**KEY:** **Emphasis on reducing emotional stress for parents and children; education in healthy lifestyles and behaviors.**

## Teen Outreach Program (USA) ⇨ to reduce teen pregnancy in the short run

**Outcome:** *9 months into the program, lower incidence of reported pregnancy (12-18 years) and other risk behaviors (school suspension, course failure).*

**Type of intervention:** National youth development program to reduce teen pregnancy and school dropout.

**Components:** Services supervised by community volunteers, class discussion on experiences, discussions and activities focusing on social and developmental issues, teacher training.

**Target group:** Middle and high school students (12-18 years) known to engage in risk behaviors and/or have school problems; multi-ethnic groups and teen mothers; rural, urban and sub-urban areas.

**Intensity:** 20 hours/, between 9 months.

**Setting:** High-level community service learning plus in-class discussions.

**Staffing requirements:** Teachers, counselors or young staff trained to facilitate curriculum discussions. Does not seem to require highly qualified staff.

**Design:** Quasi-experimental, implemented in 30 U.S. schools from 1986 to 1987. Replicated with positive reviews.

**Innovative elements:** (i) focuses on communication, assertiveness, relationships, goal setting, influences, discussion skills, sexual health and development (less than 15% of classroom time dedicated to the last component seems to support the hypothesis that providing information is not essential or sufficient for impact); (ii) intervention may be included in the school curriculum or implemented during after-school hours at community centers (youth organizations, local health departments, social service agencies, etc.).

**Further information:** Allen et al. (1997); [http://wymancenter.org/wyman\\_top.php](http://wymancenter.org/wyman_top.php)

**KEY:** **Promotion of learning skills and class discussion to involve the youth and guide their personal thinking.**

## School/Community Program for Sexual Risk Reduction Among Teens (USA) ⇨ to reduce teen pregnancy in the long run

**Outcome:** After two years, reduced teen pregnancy rates from 77% to 37%.

**Type of intervention:** Targets sexual health with a strong link between school and community clinic.

**Components:** Sex and reproductive education and health, family planning, counseling. Teacher training in sex education; parent and community leader training; peer training. Medical services made available at school, including counseling, provision of contraceptives, referral and transportation for medical visits at the community clinic.

**Target group:** Multi-ethnic children and youth from rural schools.

**Duration:** Pre-school up to 12th grade.

**Intensity:** Sex education integrated into other subjects: biology, social science and others. Five 2-hour sessions with parents.

**Setting:** School and link to clinic.

**Staffing requirements:** Qualified staff, peer and teacher training.

**Design:** Quasi-experimental in rural counties of South Carolina. It was replicated.

**Innovative elements:** Contents included in other subject-matter curricula.

**Further information:** Sociometrics, Program Archive on Sexuality, Health and Adolescence, Tel: 1-800-846-3475. <http://www.socio.com>

**KEY:** Includes pertinent content in regular academic subject matters, establishes link between schools and health centers.

## Self-Center (School-linked Reproductive Health Services), (USA) ⇨ to reduce pregnancy among school-age youth in the long run

**Outcome:** After 3 years, 30% reduction in teen pregnancy rate.

**Type of intervention:** Focuses on sex and reproductive health, linked to clinic.

**Components:** Free medical assistance for sex and reproductive health. Health professionals provide daily education and counseling services at school. Sex education sessions in homeroom classes at school and at clinics. Daily individual or group counseling sessions delivered by a social worker or health professional at the school infirmary. Additional topics: Personal responsibility, definition of life goals and communication with parents.

**Target group:** Young African American women from disadvantaged backgrounds attending school in urban areas.

**Duration:** 3 years.

**Intensity:** Open discussion sessions in class and daily counseling sessions.

**Setting:** School.

**Staffing requirements:** Qualified staff and teacher training.

**Innovative elements:** Linkage and counseling with clinics. Free consultation in couple clinics.

**Design:** Quasi-experimental. In four intermediate counties in Baltimore, Maryland.

**Further information:** Sociometrics, Program Archive on Sexuality, Health and Adolescence, Tel: 1-800-846-3475. <http://www.socio.com>

**KEY:** Develops a link between school and health professionals, establishes continuous counseling availability.

## California's Adolescent Sibling Pregnancy Prevention Program (USA) ⇨ to reduce teen pregnancy in the long run

**Outcome:** After 9 months, 43% reduction in pregnancy reports.

**Type of intervention:** Comprehensive, emphasizing topics related to pregnancy prevention and risk behaviors.

**Components:** Individualized provision of services, including: Transportation for reproductive health care and support to obtain medical insurance, incentives to prevent risk behaviors. It also provides: Tutoring, advocacy at expulsion and court hearings, assistance in meetings with teachers and parents, sports and group activities to improve social skills (field trips, training). Topic-based content and sex education counseling, including abstinence and contraception.

**Target group:** Young, economically disadvantaged Hispanic young women aged 11-17.

**Duration:** Nine (9) months.

**Intensity:** Variable, at least one session in person per month, depending on the content chosen.

**Setting:** 44 nonprofit agencies including childcare facilities, schools and clinics.

**Staffing requirements:** Qualified in clinics and trained in schools and community centers.

**Innovative elements:** Includes training sessions for siblings of pregnant and parenting teens.

**Design:** Quasi-experimental, urban and rural areas of the state of California.

**Further information:** California Department of Health Services, Maternal & Child health Branch, Tel. 1-866-241-0395.

**KEY:** Link between clinics, schools and community centers. Training to siblings and parents. Transportation for health care, support to obtain medical insurance and incentives to prevent risk behaviors.

### SIHLE (Sisters Informing, Healing, Living, and Empowering), (USA) ⇒ to reduce teen pregnancy in the long run

**Outcome:** *After 6 and 12 months, significant reduction in the risk of reporting pregnancy.*

**Type of intervention:** Female-specific, culturally relevant HIV prevention program.

**Components:** Sessions include role playing, discussion and condom use demonstration, in addition to other topics such as poetry and art by African American women.

**Target group:** Sexually active African American young women (aged 14-18) from urban and sub-urban areas.

**Duration:** Four (4) sessions.

**Intensity:** One month: 4 hours of interactive sessions on consecutive Saturdays.

**Setting:** Family medicine clinic

**Staffing requirements:** Health professional and 2 trained peers (African American young women).

**Innovative elements:** Culturally relevant topics, role-playing and discussions on the importance of safe sex and reproductive health, as well as HIV prevention.

**Design:** Experimental, with follow-up after 6 and 12 months.

**Further information:** Sociometrics, Program Archive on Sexuality, Health and Adolescence. Tel: 1-800-846-3475. <http://www.socio.com>

**KEY:** Intensive and consecutive sessions conducted by qualified, culturally identified staff.

### Tailoring Family Planning Services to the Special Needs of Adolescents (USA) ⇒ to reduce teen pregnancy in the long run

**Outcome:** *Significant reduction (approx. 45%) of pregnancies compared to the control group.*

**Type of intervention:** Consultations on psychosocial issues and individualized sexual and reproductive health. Involvement of family members and friends.

**Components:** Education and counseling services on contraceptives, individualized psychosocial information (including insurance, among others). Personal information form required. Additional counseling support. Follow-up appointment six weeks after the second half of the first session. Encouragement of involvement by parents, friends, and partners during counseling sessions. Reassurance as to confidentiality.

**Target group:** Sub-urban and rural, white, teenage females, age 17 and younger. Developmentally delayed teenage females.

**Duration:** Follow-up appointment six weeks after the second part of the first session. Incentive to request appointments between 6 and 12 months following the first visit.

**Intensity:** Multiple appointments. First appointment divided into two visits: a) one-on-one education and counseling (including use of videos and other visual aids), b) medical services in the second visit no more than two weeks later for examination and prescription of contraceptives.

**Setting:** Medicine clinics.

**Staffing requirements:** Skilled counselors and health staff, psychosocial training for all the staff involved.

**Innovative elements:** Clear definition of sessions and related follow-up. Encouragement of involvement by parents, friends, and partners during counseling sessions. Reassurance as to confidentiality.

**Design:** Quasi-experimental in non-metropolitan Pennsylvania.

**Further information:** Sociometrics, Program Archive on Sexuality, Health and Adolescence. Tel: 1-800-846-3475. <http://www.socio.com>

**KEY:** Appointment follow-up. Training for counselors and health educators, training on adolescent psychosocial development for every staff member. Reassurance as to confidentiality. Individualized psychosocial support. Involvement of family members and friends.

## Adolescencia: Tiempo de Decisiones (Chile) ⇨ to provide sexual education at school

**Outcome:** *Decrease in age of sexual debut, teen pregnancy and abortion, and increase in family planning.*

**Type of intervention:** Program developed by Centro de Medicina Reproductiva y Desarrollo Integral del Adolescente or CEMERA (Center for Reproductive Health and Integral Development for Youth), health program at Chile University. Focuses on strengthening relations between youth, parents, teachers and health professionals.

**Components:** Information and question-and-answer sessions for students concerning: youth and health, HIV/AIDS, education, rights. School counselors offer support to students, teachers and parents, and connect them with health care centers. Training for teachers in student and parental guidance.

**Target group:** Urban students age 12-17 in Santiago, Chile.

**Intensity:** Multiple appointments during school year and permanent school counselors.

**Setting:** School.

**Staffing requirements:** Health professionals and skilled counselors.

**Innovative elements:** Regular meetings, organized by CEMERA, to obtain feedback from students and teachers about the process.

**Design:** Quasi-experimental, students age 12-17, urban schools in Chile.

**More Information:** <http://www.comminit.com/la/node/41765> ; <http://www.advocatesforyouth.org/>

**KEY:** Includes pertinent content in school curricula and establishes link with health center and trained counseling. Permanent feedback process.

## Peer-led Sex Education (England) ⇨ to reduce teenage pregnancy among adolescent students

**Outcome:** *After 24 months reduced concurrency among girls and fewer unintended pregnancies. Girls and boys were more satisfied with peer-led than teacher-led sex education.*

**Type of intervention:** Educational sessions at 15 schools, guided by peer-educators. Teachers were not present in the classroom.

**Components:** Interactive school sessions: curriculum content related to sexual communication and condom use, pregnancy, STDs (including HIV), contraception, and local sexual health services. Volunteer peer-educators, usually high academic achievers from more advantaged backgrounds than target group.

**Target group:** Classes of year 9 students (age 13–14) from the same schools as peers-facilitators.

**Intensity:** Three sessions, around 1 hour each, using participatory learning methods and activities in mixed-sex groups of two and four pupils.

**Setting:** School.

**Staffing requirements:** Peer-educators aged 16–17, trained by external team.

**Innovative elements:** Peer-educators, specific curriculum for year 9 level, small groups, no teachers/adults in sessions.

**Design:** Fifteen (15) experimental schools and 14 control schools. Randomized assignment to peer-led sex education (intervention), or to continuation with teacher-led sex education (control). Intervention was at age 13–14 (in 1998 and 1999), and follow-up at age 15–16 years was completed in 2001.

**More Information:** Stephenson et al. (2004).

**KEY:** Educational sessions guided by trained peer-educators, working in mixed-sex small groups of students.

## Abecedarian Project (USA) ⇒ to reduce teenage pregnancy in the long run

**Outcome:** *After 21 years of first treatment, decrease teen pregnancy in the long term. Also decrease period of time between pregnancies.*

**Type of intervention:** Comprehensive Child Development Intervention, effects on reproductive health.

**Components:** Full-time educational intervention in a high quality child care setting, from infancy through age five. Individualized educational games that focus on social, emotional, and cognitive development, with a particular emphasis on language. Individualized curriculum packets, devised to meet each school child's needs, delivered every other week to parents. Encouragement to parents to work with their school children for 15 minutes each day.

**Targeting:** African Americans infants 0 to 5 years and low income families.

**Intensity:** Three (3) years, daily, full time.

**Setting:** Community Center, EEUU.

**Staffing requirements:** High qualified. Trained in early child development.

**Elements of Innovation:** Early stimulation and support for school entry.

**Design:** Randomized control trial, Experimental design, randomized prospective trial, with two possible treatment phases (during preschool and during the primary grades. Family assessment, based on 13 socio-demographic factors, identified families at baseline (infants n=111); cognitive tests at 48 months, to match children within preschool treatment and control groups (n=111); follow-up at age 21 (n=104).

**More Information:** FPG Child Development Institute, University of North Carolina at Chapel Hill: [www.fgt.unc.edu/~abc/](http://www.fgt.unc.edu/~abc/).

**KEY:** Long-term intervention focused on early childhood. Early stimulation and counseling to parents from the early childhood.

## AIDS Prevention for Adolescents in School (USA) ⇨ to reduce risky sexual intercourse and incidence of STDs

**Outcome:** *Increased monogamy, reduced number of high-risk sexual partners, increased condom use, favorable trend toward reduced incidence of STDs over the long term.*

**Type of intervention:** Educational sessions, role-play, and experiential activities for high-school students.

**Components:** School-based curriculum about HIV and STDs. Experiential activities aimed at enhancing students' ability to reduce risk behaviors, thus improving health-related decisions. Emphasizes delaying the initiation of sexual intercourse and consistent use of contraceptives (condoms). Provision of 8-hour in-service training for teachers prior to implementation is recommended.

**Target group:** Urban high-school students, multiethnic population.

**Duration:** Six (6) sessions.

**Intensity:** One hour sessions implemented on consecutive days.

**Setting:** School.

**Staffing requirements:** Trained teachers.

**Innovative elements:** Experiential activities aimed at enhancing students' ability to reduce risk behaviors, thus improving health-related decisions.

**Design:** Quasi-experimental design in four New York high schools.

**Further information:** Sociometrics, Program Archive on Sexuality, Health and Adolescence; <http://www.socio.com>

**KEY:** Various methods (role-play, activities, etc.) for sex education and reduction of unsafe sexual behavior.

## HIV Risk Reduction for African American and Latina Adolescent Women (USA) ⇨ to reduce the incidence of STDs

**Outcome:** *12 months into the program: lower risk of testing positive for STDs (11% as compared to 18% in the control group). Short-term outcome: Reduced number of sex partners and reduced incidence of unprotected sexual intercourse.*

**Type of intervention:** Clinic-based HIV risk-reduction education and counseling program.

**Components:** Based on behavioral theory and formative research. Education on HIV and STDs. Confidential medical care, family planning, and condom use counseling.

**Target group:** Economically disadvantaged Latina and African American adolescent females.

**Duration:** One session.

**Intensity:** 250-minute group session; 8 hours training for facilitators.

**Setting:** Medical clinics.

**Staffing requirements:** Trained facilitators.

**Innovative elements:** Session intensity.

**Design:** Experimental evaluation, follow-up at 3, 6, and 12 months after the intervention. Participants receive an economic incentive for participating in baseline and follow-up surveys.

**Further information:** School of Nursing, University of Pennsylvania, [jemmott@nursing.upenn.edu](mailto:jemmott@nursing.upenn.edu).

**KEY:** Intensive session and educational content focused on reducing HIV risks and other risky behaviors.

## Project SAFE – Sexual Awareness for Everyone (USA) ⇨ to reduce the incidence of STDs in the medium and long run

**Outcome:** *Lower risk of contracting chlamydia and gonorrhea (34% at 6 months, 49% at 12 months, 38% overall). Short-term outcome: reduced number of sex partners, reduced incidence of unprotected sex, compliance with treatment protocols.*

**Type of intervention:** Education sessions (discussions and interactive games) and training for HIV risk behavior modeling.

**Components:** Information, educational sessions about HIV and STDs. Focuses on recognizing risk, committing to change, and building skills. STD screening, counseling and treatment. Interactive teaching (including discussions, role-plays, and behavior modeling). Follow-up screening visits at 6 and 12 months after the first visit and/or whenever one participant tests positive for an STD.

**Target group:** Latina and African American women aged 15-24.

**Duration:** Three (3) weeks. Optional support groups meet once a month for five months.

**Intensity:** 3-4 hours, once a week. Small-group sessions.

**Setting:** Health clinic.

**Staffing requirements:** Trained facilitators of the same gender and race/ethnicity as participants.

**Innovative elements:** STD screening, counseling and treatment; follow-up continues several months after first visit. Facilitator socio-cultural identification and training.

**Design:** Randomized Control Trial. Participants receive an economic incentive for participating in baseline and follow-up surveys. Replicated program.

**Further information:** Sociometrics, Program Archive on Sexuality, Health and Adolescence. <http://www.socio.com>

**KEY:** Information, educational sessions on risk behaviors, STD treatment and long-term follow-up.

### Horizons (USA) ⇒ to reduce incidence of reported STDs and promote safer sexual behaviors

**Outcome:** *On average, 6 and 12 months into the program, lower incidence of chlamydia reports; more consistent use of condoms, including most recent occasion of sexual intercourse.*

**Type of intervention:** Group sessions, discussions in integral thematic blocks, counseling, and follow-up.

**Components:** Four thematic blocks related to self-esteem (fostering a sense of cultural and gender pride), information on STDs, methods for reducing the risk of contracting STDs/HIV, and the importance of consistently using condoms. Telephone follow-ups (15 minute calls, one every other month) reinforce information. \$20 vouchers to cover healthcare and STD costs of participants' sexual partners.

**Target group:** African American women aged 15-21.

**Intensity:** Two 4-hour group sessions (2 consecutive Saturdays).

**Setting:** Implemented at reproductive health clinics by health educators.

**Staffing requirements:** No specific information available.

**Innovative elements:** \$20 vouchers to cover healthcare and STD costs of participants' sexual partners; telephone follow-up calls to reinforce prevention information presented in group sessions.

**Further information:** DiClemente et al. (2009).

**KEY:** Information, identity strengthening, and new contacts; facilitation of sexual partners' access to STD screening and treatment.

### Sisters Saving Sisters (USA) ⇒ to reduce the incidence of reported STDs and associated risks (including unprotected sexual intercourse and number of sex partners)

**Outcome:** *12 months into the program, more consistent use of condom over the past 3 months, lower number of sexual partners, and lower incidence of reported Gonorrhea, Chlamydia, or Trichomonas.*

**Type of intervention:** Role-plays and interactive discussion in small groups.

**Components:** Information session on STDs and group discussions on obstacles to condom use, including alcohol and drug use. Training of local facilitators.

**Target group:** African American and Latina adolescent females.

**Intensity:** One 250-minute session delivered to groups of 2-10 participants each.

**Setting:** Intervention implemented at community level.

**Staffing requirements:** Facilitators, who must have at least a baccalaureate degree and experience working with adolescents from marginal groups, undergo 8-hour training session to learn program content and become familiar with the context of implementation.

**Innovative elements:** Education in handling and use of condoms with anatomical models, condom use negotiation skills; discussions of obstacles to condom use (alcohol and drug use).

**Further information:** Jemmott et al. (2005).

**KEY:** Interactive techniques and demonstrations on sexual health issues. Low-cost intervention.

## What could you do? (USA) ⇒ to reduce the incidence of reported STDs in the short run

**Outcome:** *6 months into the program, lower risk of having been diagnosed with an STD.*

**Type of intervention:** Interactive video (allowing viewer to choose/skip sections).

**Components:** Video on likely sexual scenarios, with specific choice points among various sexual behaviors, including information on STDs and sexual health.

**Target group:** Women aged 15-18.

**Intensity:** 45 minutes to watch the video. Time will depend on the options chosen by the viewer.

**Setting:** Medical clinics or doctor's offices. The video may also be used at schools, if privacy can be ensured.

**Staffing requirements:** No direct participation of educators or skilled providers required.

**Innovative elements:** Easy-to-replicate methodology. Thematic blocks in the video: (1) Sexual scenarios; (2) Risk reduction; (3) Reproductive health; (4) STDs.

**Further information:** Downs et al. (2004). Theoretically based interactive digital video disc (DVD) <http://www.whatcouldyoudo.org/>

**KEY:** May be used at schools. No skilled educators required. Digitized or downloadable program materials in PDF format, including the users guide and original evaluation instruments available at <http://www.socio.com/passt19.php>.

## Women's Health Project (USA) ⇒ to reduce unprotected sexual intercourse

**Outcome:** *Reduced self-reported frequency of unprotected sexual intercourse; secondary outcomes include impacts on the frequency of sexual intercourse while intoxicated, the number of sexual partners, biologically confirmed STDs, the intention to use condoms, beliefs about using condoms, and condom use knowledge.*

**Type of intervention:** Education and information sessions at clinics.

**Components:** Three interventions based on cognitive-behavioral theories and elicitation research: an information-based HIV/STD intervention provides necessary information for practice of safer sex; a skill-based HIV/STD intervention provides information and teaches necessary skills related to practice of safer sex; or a health promotion control intervention concerned with health issues unrelated to sexual behavior.

**Target group:** Sexually experienced African American and Latino adolescent girls recruited from the adolescent medical clinic of a children's hospital serving a low-income inner-city community.

**Duration:** Three (3) sessions.

**Intensity:** 250-minute sessions.

**Setting:** Health clinic.

**Staffing requirements:** Trained staff.

**Innovative elements:** A skill-based HIV/STD intervention provides information and teaches skills for practice of safer sex

**Design:** Experimental. Randomized controlled trial with 3-, 6-, and 12-month follow-ups.

**Further information:** Jemmott et al. (2005).

<http://www.psych.umn.edu/courses/spring07/borgida/psy5202/readings/jemmott%202005.pdf>

**KEY:** Skill and information based intervention

**FOCUS (USA) ⇒ to provide correct information, increase motivation and build behavioral skills related to reproductive health**

**Outcome:** *After 14 months, reduction in STD reports and unintended pregnancies.*

**Type of intervention:** Intervention to decrease risk of STDs and the associated negative reproductive health outcomes in women aboard military ships. Educational sessions and group discussion seeks to modify attitudes and build skills that impact sexual behavior

**Components:** The intervention emphasizes correct information, motivation and behavioral skills related to reproductive health, in addition to non-invasive urine-based pregnancy testing and STD screening using amplified DNA techniques to detect trachomatis and gonorrhea.

**Target group:** Originally delivered to female U.S. Marine Corps recruits during their first week of training.

Intensity: Four (4) sessions/2 hours each.

**Setting:** Military vessels (U.S. Marine Corps).

**Staffing requirements:** Research assistants or facilitators with health experience.

**Innovative elements:** Specialized setting and design for junior enlisted women marines.

**Design:** Randomized control trial, follow-up at 14 months.

**Further information:** <http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA386486>

**KEY:** **Specialized setting and curriculum, includes information, motivation and behavioral skills building coupled with non-invasive screening for STDs.**

## All4You! ⇨ to reduce frequency of unprotected sex

**Outcome:** *Six months after intervention: increased regularity in condom use and reports of less frequent sex (during previous 3 months).*

**Type of intervention:** Classroom curriculum as well as service-learning activities designed to reduce the frequency of unprotected sex among students in alternative high schools.

**Components:** Classroom lessons drawn from the Be Proud! Be Responsible! curriculum and the Safer Choices curriculum. Lessons address HIV, STD, and pregnancy prevention; vulnerability to HIV, STDs, and pregnancy; negotiation skills; and condom use skills. All lessons are highly interactive and include activities such as role-plays, demonstrations, discussions, and games. Service-learning component includes five visits to volunteer sites, including schools, senior centers, and service organizations.

**Target group:** Students in alternative high schools.

**Duration:** Nine (9) classroom lessons.

**Intensity:** Fourteen (14) sessions, 26 hours total.

**Setting:** High schools.

**Staffing requirements:** Health professionals.

**Innovative elements:** Use of quality proven curriculum, highly interactive lessons, and service-learning component that prepares students to participate in a variety of service activities. Participants also given opportunity to reflect on their service.

**Design:** Randomized control trial. Schools assigned to the treatment group implemented the All4You curriculum. In most treatment schools, All4You was the only form of sex education provided to students. Further information: Coyle et al. (2006).

**KEY:** **Strong and specialized content, highly interactive lessons and open discussions during service-learning component.**

## Be Proud! Be Responsible! (USA) ⇨ to reduce concurrency and increase use of contraceptives

**Outcome:** *After 3 months, reduced concurrency and increased condom use.*

**Type of intervention:** Cognitive-behavioral program developed to lower the prevalence of HIV/AIDS within inner-city, African-American communities. Has shown impact on participants' knowledge of HIV/AIDS and on their attitudes and intentions regarding risky sexual behaviors (such as intention to use condoms). Two extended versions of the curriculum exist: Making Proud Choices! is the safer-sex-based extension and Making a Difference! is the abstinence-based extension.

**Components:** Based on modules that address facts, attitudes, and beliefs surrounding HIV and AIDS. Modules also teach condom use skills and negotiation/refusal techniques. The intervention is designed to be informative and entertaining and includes group discussion, games, mini-lectures, videos, condom demonstrations, role-plays, and other interactive activities.

**Target group:** Low-income African-American adolescents.

**Duration:** Six (6) culturally appropriate, hour-long modules.

**Intensity:** One (1) session of 5 hours or six (6) sessions of 1 hour or 2 sessions of 3 hours.

**Setting:** Community based.

**Staffing requirements:** 16-24 hours training of facilitators depending on previous knowledge/experience

**Innovative elements:** Helps young people make responsible decisions about their sexual behavior, emphasizes sense of community, accountability, pride, and protection of families and community.

**Design:** Randomized control trial. Several impact evaluations available.

**Further information:** Jemmott et al. (1999); Kennedy et al. (2000).

**KEY:** **Cognitive-behavioral program with impacts on knowledge of HIV/AIDS and attitudes regarding risky sexual behaviors, based on informative and entertaining group discussions.**

<sup>1</sup> The program FOCUS was described in Annex 2. The program Be Proud! Be Responsible! Be Protective!, is an extension of Be Proud! Be Responsible!, which was renamed to reflect the new focus on maternal protectiveness as an impetus to reduce or eliminate sexual risk behavior. It also encourages adolescents to take on sexual responsibility and accountability and increases awareness of the effect of HIV/AIDS on their children. This community-based program uses 4 sessions of 2 hours each.

## Becoming a Responsible Teen or BART (USA) ⇒ to provide HIV education with behavior skills training

**Outcome:** *After 12 months: students had greater knowledge of AIDS and were engaging less frequently in unprotected vaginal intercourse. Delayed sexual debut among youth who entered the program having never had sex before.*

**Type of intervention:** HIV-prevention program designed for African-American high school students, combines HIV education with behavior skills training. Program participants are not only expected to leave the program equipped to make sound choices for themselves, they are encouraged to “spread the word” about HIV/AIDS to their friends.

**Components:** Curriculum consists of informative sessions about HIV/AIDS and trains students in relevant behavior skills. Skills-training topics include correct condom use, sexual assertion, refusal, informational provision, self-management, problem-solving, and risk recognition. Abstinence is woven throughout the curriculum and is identified as the only sure way to prevent HIV-acquisition. Program activities include games, role-playing, discussions, and video-watching.

**Target group:** African-American high school students.  
Intensity: Eight (8) sessions, 90-120 minutes in length.

**Setting:** School.

**Innovative elements:** Combines HIV education with behavior skills training.

**Design:** Randomized control trial.

**Further information:** St. Lawrence, et al. (1995).

**KEY:** HIV education with behavior skills training.

## Cuídate (Safer Sex Program), (Mexico) ⇒ to impact sexual behavior and use of contraceptives among Mexican youth

**Outcome:** *After 12 and 48 months: decrease in age of sexual debut, and increased use of condoms or some other type of contraception during first sexual encounter.*

**Type of intervention:** Sexual risk reduction intervention, slightly modified version of a program tested among Latinos in the United States: ¡Cuídate! Promueve tu Salud (Take Care of Yourself! Promote Your Health). Adolescents recruited from schools and randomly assigned to either a six-hour Cúdate safer sex intervention or a six-hour health promotion (control group).

**Components:** Role-play curriculum adapted to Mexican context, use of Mexican music to emphasize program messages, deliver information about pregnancy and contraceptive use. Parent component focused on parent-adolescent general and sex communication. Both parents and adolescents assigned to the control group received guidance on healthy behaviors such as eating a healthy diet and getting sufficient exercise and sleep, as well as information for deterring smoking, alcohol, and drug use.

**Target group:** Mexican youth (n = 829) in Monterrey, from four schools affiliated with the Universidad Autónoma de Nueva León (UANL).

**Intensity:** All group sessions were conducted on two consecutive Saturdays at the schools. Follow-up assessments were conducted with all participants at 3-, 6-, and 12-month intervals

**Setting:** School.

**Staffing requirements:** Trained facilitators in a small group format.

**Innovative elements:** Curriculum and use of Mexican music to emphasize messages

**Design:** A randomized controlled trial using students age 13-17; 708 adolescents or 85% of those who participated in the original study (n = 829) completed the 48-month follow-up: 394 adolescents (86.8%) in the Cúdate group and 314 adolescents (83.7%) in the control group. There were more female than male participants (57% vs. 43%)

**More Information:** Villarruel et al. (2010).

**KEY:** Curricula adapted to cultural context, parent-adolescent communication component.

## HIV Reduction Among Detained Adolescents (USA) ⇨ to reduce sexual risk behaviors

**Outcome:** *After 3, 6, and 12 months, increased consistency in condom use.*

**Type of intervention:** Designed to reduce sexual risk behaviors, including alcohol-related sexual risk behaviors, and increase condom use. Provides additional evidence that theory-based interventions are effective at reducing risky sex in this population, but limited evidence of intervention effects on alcohol-use outcomes.

**Components:** (1) a theory-based sexual risk reduction intervention, (2) group-based alcohol risk reduction motivational enhancement therapy component, or (3) an information-only control. All interventions were presented in same-sex groups.

**Target group:** Detained adolescents.

**Intensity:** Single session, lasting 2-4 hours; group-based intervention.

**Setting:** Juvenile detention facilities.

**Staffing requirements:** Trained facilitators in small group format.

**Innovative elements:** Specialized settings and population. Feasibility of integrating alcohol-specific sexual risk content into a theory-based sexual risk-reduction intervention.

**Design:** A randomized controlled trial.

**More Information:** Bryan et al. (2009).

**KEY:** *Feasibility of integrating alcohol-specific sexual risk content into a theory-based sexual risk-reduction intervention in specialized settings and population.*

## Making Proud Choices! (USA) ⇨ to reduce sexual risk behaviors

**Outcome:** *After 12 months, increased consistency in condom use, strong impact on students who were sexually experienced before the intervention, and decreased unprotected sex and sex in general compared with control groups.*

**Type of intervention:** Program is a safer-sex approach to HIV/AIDS and teen pregnancy prevention, designed to increase knowledge about HIV, STDs, and pregnancy prevention, promote skills supportive of abstinence and safer-sex practices, and increase adolescents' ability to use condoms correctly.

**Components:** Modules address facts, attitudes, and beliefs surrounding HIV/AIDS and teen pregnancy, and teach condom use skills and negotiation-refusal techniques. Program activities include role-playing and videos. Adapts and extends the Be Proud! Be Responsible! curriculum. Emphasizes adolescents' goals and dreams and the potential of sexual behavior to thwart those dreams.

**Target group:** Inner-city, African-American adolescents, low income families.

**Intensity:** Eight modules culturally appropriate, hour-long modules.

**Setting:** Schools

**Staffing requirements:** 6-24 hours of training, depending on previous knowledge and experience.

**Innovative elements:** Differs from Be Proud! Be Responsible! in that it deals not only with HIV/AIDS prevention but also pregnancy prevention. Acknowledges that abstinence from sex is preferred, but highlights condom use as a way to reduce the risk of STDs and pregnancy.

**Design:** A randomized controlled trial.

**More Information:** Link to program curriculum: <http://www.selectmedia.org/curriculum.asp?curid=3>. See also: Jemmott, et al. (1998).

**KEY:** *Acknowledges that abstinence from sex is preferred, emphasizes adolescents' goals and dreams and the potential of sexual behavior to thwart those dreams.*

## Promoting Health among Teens (USA) ⇨ to reduce sexual risk behaviors

**Outcome:** *After 3, 6, 12, 18 and 24 months, less concurrency. Abstinence-only intervention reduced sexual initiation.*

**Type of intervention:** Designed to improve awareness and knowledge about HIV/STDs; increase understanding of how abstinence can prevent pregnancy and HIV/STDs; strengthen behavioral beliefs that support condom use; and build refusal and negotiation skills for practicing abstinence as well as for effective use of condoms.

**Components:** Four discrete interventions: abstinence-only intervention targets reduced sexual intercourse; safer sex-only intervention targets increased condom use; comprehensive interventions targets sexual intercourse and condom use; and health-promotion control intervention targets health issues unrelated to sexual behavior.

**Target group:** African-American students in grades 6 and 7.

**Intensity:** 2-3 Saturdays, 8-12 hours each day

**Setting:** Urban public schools.

**Staffing requirements:** Facilitators, 2.5 training days.

**Innovative elements:** Components include abstinence-only, safer sex-only and comprehensive interventions.

**Design:** A randomized controlled trial.

**More Information:** Jemmott et al. (2010).

**KEY:** Theory-based abstinence-only interventions may have an important role in preventing adolescent sexual involvement.

### Reducing the Risk (USA) ⇨ to reduce sexual risk behaviors

**Outcome:** *After 18 months, delay in sexual debut, while sexually active students were more likely to protect themselves from STD/HIV and to increase parent-child communication about sexual issues.*

**Type of intervention:** Designed to affect knowledge, beliefs, values, and intentions related to abstinence, unprotected sexual activity, unintended teen pregnancy, and STD contagion among high school students.

**Components:** Curriculum emphasizes refusal skills and alternative behaviors that support abstinence.

**Target group:** High school students.

**Intensity:** 16 sessions, 45 minutes each.

**Setting:** School.

**Staffing requirements:** Training available on request.

**Innovative elements:** Emphasis on refusal skills and alternative behaviors that support abstinence.

**Design:** Quasi-experimental design.

**More Information:** Hubbard et al. (2009).

**KEY:** Emphasis on refusal skills and alternative behaviors that support abstinence and promote parent-child communication about sexual issues.

### Rikers Health Advocacy Program (USA) ⇨ to reduce sexual risk behaviors

**Outcome:** *After 5 months, improved consistency in condom use.*

**Type of intervention:** Designed to promote problem-solving skills for HIV/AIDS prevention among high-risk youth, particularly drug users and youth in correctional facilities.

**Components:** Features a “Problem-Solving Therapy” approach, including skills related to defining and formulating a problem, generating alternative solutions, decision making, and implementing a solution.

**Target group:** Youth in correctional facilities.

**Intensity:** 4 sessions of 1 hour each, delivered within 2 weeks.

**Setting:** Correctional facilities.

**Staffing requirements:** Male facilitator.

**Innovative elements:** Special populations/settings and focus on “Problem-Solving Therapy” approach.

**Design:** Quasi-experimental design.

**KEY:** “Problem-Solving Therapy” approach.

### Safer Sex (USA) ⇨ to reduce multiple concurrent sexual partners

**Outcome:** *Six months after intervention, participants were significantly less likely to report having another sexual partner (in addition to their main partner) in the previous six months.*

**Type of intervention:** A clinic-based intervention intended to reduce the incidence of STDs and improve condom use among high-risk female adolescents, delivered in a clinic to individual participants by a female health educator.

**Components:** Video, educational session, booster sessions, standardized intervention manual.

**Target group:** High-risk female adolescents.

**Intensity:** Four (4) sessions, including one 40-minute session followed by booster sessions at one, three, and six months. One-on-one meetings.

**Setting:** Health clinic.

**Staffing requirements:** Female health educator: in the original implementation, the developer trained health

educators who facilitated the program and gave them a standardized intervention manual.

**Innovative elements:** Participants meet one-on-one with a female health educator in a clinic, and are then invited back for booster sessions at one, three, and six months after the initial educational session. During these sessions, participants meet with a female health educator to reassess their level of sexual risk, discuss sexual history, and review the videotape and program materials. Participants are offered condoms and written materials.

**Design:** Randomized control trial: participants randomly assigned to either a treatment group that received the intervention or a control group that received the usual clinic services. Surveys were administered before the intervention (baseline) and during follow-up visits one, three, six, and twelve months after the initial intervention.

**Further information:** Lydia.Shrier@childrens.harvard.edu; [http://www.hhs.gov/ophs/oah/prevention/research/programs/safer\\_sex.html](http://www.hhs.gov/ophs/oah/prevention/research/programs/safer_sex.html).

**KEY:** Individually tailored, follow-up sessions provided by a trained facilitator.

### It Is Your Game, Keep It Real (USA) ⇨ to delay sexual initiation

**Outcome:** After one year, participants are less likely to initiate sex compared to control group. Effect is especially strong for Hispanic teens. Note: evaluation study conducted with predominantly Latino and African-American youth.

**Type of intervention:** Computer-based curriculum for middle school children, developed to prevent HIV, STDs, and pregnancy. Children attend classroom sessions composed of group activities and individualized computer-based sessions.

**Components:** 1) Classroom-based component (includes role modeling, journaling, group discussion), 2) parent-child homework activities, 3) computer-based activities (includes interactive activities, virtual mall, videos, quizzes).

**Target group:** English-speaking seventh grade students from low-income, urban schools.

**Duration:** 2-year program, 7th and 8th grades.

Intensity: 24-lesson curriculum, six homework activities.

**Setting:** Schools.

**Staffing requirements:** The full structural intervention provides access to five training sessions (three hours each) for implementers, and three school staff presentations.

**Innovative elements:** Parent-child homework component designed to facilitate parent-child dialogue; computer-based component includes embedded interactive activities and peer role models.

**Design:** Experimental, randomized control trial. Five schools were randomly selected to implement the intervention and five schools were randomly selected for a control group that continued with regular health classes. Surveys were administered before the program (baseline), after the program ended in the spring of 8th grade, and a year later in spring of 9th grade.

**Further information:** Presentation at SexTech 2009: [http://www.sextech.org/downloads/presentations/Disseminating\\_an\\_evidence-based\\_HIV\\_prevention\\_program\\_for\\_middle\\_school\\_The\\_Its\\_Your\\_Game\\_curriculum\\_website.pdf](http://www.sextech.org/downloads/presentations/Disseminating_an_evidence-based_HIV_prevention_program_for_middle_school_The_Its_Your_Game_curriculum_website.pdf)

[http://www.hhs.gov/ophs/oah/prevention/research/programs/its\\_your\\_game\\_keep\\_it\\_real.html](http://www.hhs.gov/ophs/oah/prevention/research/programs/its_your_game_keep_it_real.html)

**KEY:** Integrates individual and group components.

### Project CHARM (Children's Health and Responsible Mothering), (USA) ⇨ to reduce HIV risk among pregnant adolescents and young mothers

**Outcome:** After six months, female students reported having significantly fewer sexual partners. Also found increased AIDS knowledge and intention to use condoms.

**Type of intervention:** An HIV risk-reduction curriculum designed for pregnant adolescents and young mothers.

**Components:** Curriculum emphasizes the role of maternal protectiveness in motivating adolescents to reduce risky sexual behavior, to develop sexual responsibility and accountability, and to become aware of the effects of HIV/AIDS on inner-city communities. Special topics include the impact of HIV/AIDS on pregnant women and their children, HIV/AIDS prevention during pregnancy and the postpartum period, and special concerns of young mothers that may influence sexual risk taking.

**Target group:** Latin and African-American pregnant adolescents and young mothers.

**Intensity:** One session: eight hours of interactive, culturally appropriate instruction.

**Setting:** Schools with pregnant minors/young parents.

**Staffing requirements:** Trained facilitators.

Innovative elements: Emphasizes role of maternal protectiveness of pregnant adolescents and young mothers.

**Design:** In an experimental study, schools with pregnant minors/young parents were randomly assigned to implement either Project CHARM or a health-promoting control intervention.

**Further information:** <http://www.childtrends.org/lifecourse/programs/charm.htm>.

**KEY:** Focus on adolescent mothers, gender-specific (female only), African-American, and Latino.

## Draw the Line/ Respect the Line (USA) ⇨ to reduce sexual behavior among middle school adolescents

**Outcome:** After 36 months, delayed sexual initiation among boys but not girls. Participants also had greater knowledge, more positive attitudes toward not having sex, and were less likely to be in situations that could lead to sexual behaviors.

**Type of intervention:** Theoretically based curriculum designed to reduce age for sexual debut and to increase condom use among those who do have sexual intercourse. Also the program was designed to affect mediating variables (e.g., attitudes, perceived norms).

**Components:** Interactive school sessions: curriculum designed for sixth grade (limit setting and refusal skills in nonsexual situations), seventh grade (sexual intercourse, STDs, pregnancy, interpersonal skills), and eighth grade (HIV, condoms and other contraceptive methods, practice of refusal skills). Curricula included core concepts for Latino culture.

**Target group:** Youths in sixth, seventh, and eighth grades. Predominantly Latino.

**Intensity:** 3-year curriculum-based program. Sequential 20-session program: 5 for sixth, 8 for seventh and 7 for eighth-grade.

**Setting:** School.

**Staffing requirements:** Experienced health educators using instructional strategies (e.g., small and large group discussions, paired and small-group skill practice, stories, individual activities).

**Innovative elements:** Specific curriculum for each grade and core concepts for Latino students.

**Design:** Randomized controlled trial involved 19 schools in northern California. A cohort of 2829 sixth graders was tracked for 36 months.

**More Information:** Coyle et al. (2004).

**KEY:** Interactive school sessions with grade-adapted curriculum.

## ANNEX 4: METHODOLOGICAL CRITERIA FOR WEIGHING STUDIES OF EFFECTIVENESS

To produce this document, six main systematic reviews studies were analyzed: *Advocates for Youth, 2005*; *Advocates for Youth, 2007*; *Kirby Emerging Answers, 2007*; *Kirby et al., 2007*; *Cochrane Collaboration, 2010*; and *Mathematica, 2010*. Selected interventions from Latin America and the Caribbean “Best Practices” report were also taken into account, as were relevant websites (see below). In addition, the document is backed by findings from rigorous, results-based research and enriched by new tendencies in reproductive and sexual health, neuroscience, and behavioral economics. Findings are in agreement with the IDB social strategy and conceptual framework.

To facilitate a clear and conclusive analysis, authors selected evidence from interventions that had demonstrated a direct impact on reproductive health outcomes, including effective reductions of the probability of reporting an early pregnancy or teenage mother/fatherhood, and reductions of STDs or high-risk sexual behaviors (including increased use of contraceptives or reduced number of sexual partners). Along these lines, interventions proven to reduce high-risk sexual behaviors are not only characterized by short-term and sustained impacts on behavior, but commonly also have impacts on attitudes and beliefs.

“Promising practices” interventions were selected according the following criteria: (1) they have been identified by the systematic reviews considered in this document; (2) their proven effects are aligned with their logical framework or objectives; (3) they have the possibility of culture-appropriate specification (i.e. potential to be replicated in the Latin-American Region); and (4) their measurement methodology is considered robust (not included data reported by third persons, as well as subjective information and indicators).

The methodological criteria for weighing studies of effectiveness were drawn mainly from four different sources:

- **Mathematica, 2010.** *Evaluation of Adolescent Pregnancy Prevention Approaches.* This review identified 28 programs in total, reflecting a range of program models and target populations. Studies were identified by a review of reference lists from earlier research syntheses, a public call for studies to solicit new and unpublished research, a search of relevant research and policy organizations’ websites, and keyword searches of electronic databases. Nearly 1,000 potentially relevant studies were identified. Studies targeting different behaviors (reducing early school dropout, teen mother support visits, etc.) were excluded. The review measured each intervention’s impact on at least one indicator of risky sexual behavior or health outcome (initiation and frequency of sexual activity, number of sexual partners, contraceptive use, STD rates, pregnancy or childbirth). In addition, selected studies were required to demonstrate: experimental design (following standards established by the U.S. Department of Education) or quasi-experimental design with comparison group; statistical equivalence between the intervention and control groups or comparison to a baseline (of observable traits); at least two subjects in each group or arm of the study; and no systematic differences in the data collection method between different treatment and comparison or control groups.

- **Advocates for Youth, 2008:** *Science and Success in Developing Countries: Sex Education and Other Programs that Work to Prevent Teen Pregnancy, HIV and STDs.* This review includes programs that have been shown to reduce teen pregnancy or STDs or that have had a positive impact on at least two risky sexual behaviors. All studies needed to meet the following requirements: published in peer-reviewed journals; evaluated using experimental or quasi-experimental design, including at least 100 individuals in the treatment and comparison or control groups; collected information on the program’s impact on both groups at least 3 months after the start of the intervention; demonstrated at least two positive changes in youth behavior in the treatment group compared to the control (delayed sexual initiation, less frequent intercourse, fewer sexual partners and/or monogamy, increased consistency and frequency in use of condoms or other effective contraceptive methods, lower incidence of unprotected sex) or reduced rates of teen pregnancy and STDs/HIV.

• **Kirby, 2007:** *Emerging Answers*. For this review, studies did not need to be published in a peer-reviewed journal. Requirements included: experimental or quasi-experimental design with reasonably well matched treatment and comparison groups; minimum sample size not less than 100 individuals; use of baseline and follow-up; measures of impact on sexual behavior (specifically, sexual initiation, frequency of sex, number of sexual partners) or composite measures of sexual risk (such as frequency of unprotected sex), use of contraceptives or condoms, teen pregnancy and birth rates, and/or STDs; measures of the impact on any behavior that may change over the short term for at least 3 months (frequency of sex, number of sexual partners, condom use, contraceptive use, etc.) or measures of the impact on behaviors that change less quickly for at least 6 months (sexual initiation, pregnancy or STD rates); performance of appropriate statistical analysis.

The effects were considered significant if: (a) there were statistically significant changes in impact indicators at  $p < 0.05$  level (except when there was a sufficiently large sample size to set the level of significance at  $p < 0.01$ ); and (b) this significance was found in the entire study population or a subset comprising at least one-third (e.g., ethnic or racial groups, sexually inexperienced populations, etc.).

• **Cochrane Collaboration, 2010:** *Interventions for Preventing Unintended Pregnancies among Adolescents*. This review assessed and summarized the effects of adolescent pregnancy prevention interventions on: [i] their knowledge and attitudes related to the risks of unintended pregnancies; [ii] delay in initiation of sexual intercourse; [iii] consistent use of birth control methods; and [iv] reduction in unintended pregnancies. To reduce publication bias (Cook 1993, Dickerson 1990), authors considered all published and unpublished randomized controlled studies that assessed the effectiveness of interventions to reduce unintended pregnancy among adolescents, written in any language. Studies conducted in both developed and less developed countries (WHO 1995) were also considered.

### Other Research Syntheses of Interest

1. Advocates for Youth. 2008. *Science and Success*, 2nd edition. Washington, DC: Advocates for Youth.
2. Guide to Community Preventive Services. Prevention of HIV/AIDS, other STDs and Pregnancy: Group-based abstinence education interventions for adolescents. ([http://www.thecommunityguide.org/hiv/abstinence\\_ed.html](http://www.thecommunityguide.org/hiv/abstinence_ed.html)).
3. Guide to Community Preventive Services. Prevention of HIV/AIDS, other STIs and Pregnancy: Group-based comprehensive risk reduction interventions for adolescents. (<http://www.thecommunityguide.org/hiv/riskreduction.html>).
4. Kim, C., & R. Rector. 2008. *Abstinence education: Assessing the evidence*. Washington, DC: The Heritage Foundation. (<http://www.heritage.org/research/reports/2008/04/abstinence-education-assessing-the-evidence>)
5. Kirby, D. (2007). *Emerging Answers 2007: Research Findings on Programs to Reduce Teen Pregnancy and Sexually Transmitted Diseases*. Washington, DC: National Campaign to Prevent Teen and Unplanned Pregnancy.
6. Oringanje, C., M. Meremikwu, H. Eko, E. Esu, A. Meremikwu, and J. Ehiri. 2009. Interventions for preventing unintended pregnancies among adolescents. *Cochrane Database of Systematic Reviews* (4): CD005215.
7. Scher, L., R. Maynard, and M. Stagner. 2006. Interventions intended to reduce pregnancy-related outcomes among adolescents. *Campbell Systematic Reviews*, Number 12.
8. Cochrane Collaboration ([www.cochrane.org](http://www.cochrane.org))

### Relevant Websites:

- Advocates for Youth; [www.advocatesforyouth.org](http://www.advocatesforyouth.org)
- Centers for Disease Control and Prevention (HIV/STD Prevention Research Synthesis); [www.cdc.gov](http://www.cdc.gov)
- Guttmacher Institute; [www.guttmacher.org](http://www.guttmacher.org)
- Healthy Teen Network; [www.healthyteenetwork.org](http://www.healthyteenetwork.org)
- National Abstinence Clearinghouse; [www.abstinence.net](http://www.abstinence.net)
- National Abstinence Education Association; [www.abstinenceassociation.org](http://www.abstinenceassociation.org)
- National Campaign to Prevent Teen and Unplanned Pregnancy; [www.thenationalcampaign.org](http://www.thenationalcampaign.org)

## OTHER METHODOLOGICAL CONSIDERATIONS

All the interventions covered in this review had impact assessments that comply with the following standards: (i) experimental or quasi-experimental design, (ii) results published in scientific journals with review committees, (iii) sample size greater than 100 individuals in each study arm, and (iv) recorded information on one or more of the following impact indicators:

- **Sexually Transmitted Diseases.** Target variable (high priority)
- **History of pregnancy or paternity/maternity.** Target variable (high priority)
- **Number of sexual partners or concurrent sexual partners.** This variable is believed to be a potential catalyst for epidemics of STDs (Rosenberg et al., 1999)
- **Use of condoms or other contraceptives.** Intermediate variable widely accepted as a determinant of sexual and reproductive outcomes (UNICEF, UNAIDS, WHO and UNFPA, 2009).

Program	Impact on Adolescents' Risk for Pregnancy, HIV & STIs												Settings & Populations Served								
	Delayed Initiation of Sex	Reduced frequency of sex	Reduced number of sex partners	Increased Monogamy	Reduced incidence of unprotected sex	Increased use of condoms	Increased use of contraception	Increased use of sexual health care/ treatment compliance	Reduce incidence of STDs	Decreased number or rate of teen pregnancy/birth	Urban	Sub-urban	Rural	Community	School	Clinic	Children 3-11	Adolescents 12-17	Young adults 18-24	Hispanic	Sex
Reduce extreme poverty by half 15school			★	★											X	H		X	X	X	Both
Reducing the Risk	★				★	★									X	H		X		X	Both
School/Community program for Sexual Risk reduction among Teens	★								★			X			X	EMH	X	X	X	X	Both
Self-Center – School (Linked Reproductive health Care)	★				★	★						X			X	EMH	X	X	X		Both
Teen Outreach Program												X	H		X	H		X	X	X	Both
Abecedarian project												X					X				Both
Be Proud! Be responsible! A Safer sex curriculum		★	★			★						X					X	X	X		Males
California's Adolescent Sibling pregnancy Prevention Program	★										★						X	X	X	X	Both
Children's Aid Society – CAS- Carreira Program	★ (sexually active)										★				X	EMH				X	Females
Cuidate!		★	★		★	★						X	X	X				X			Both
Making Proud Choices!	★	★		★	★												X				Both
HIV Risk reduction for African American and Latin Adolescent Women			★		★					★					X	EMH	X		X	X	Females
Project Safe (Sexual Awareness for Everyone)			★	★						★					X	EH	X		X		Females
SiHLE (Sisters Informing, Healing, Living, and Empowering)			★		★					★					X	EH					Females
Tailoring Family Planning Services to the Special Needs of Adolescents						★					★			X	EH					X	Females

Program	Impact on Adolescents' Risk for Pregnancy, HIV & STIs											Settings & Populations Served									
	Delayed Initiation of Sex	Reduced frequency of Sex	Reduced Number of sex partners	Increased Monogamy	Reduced Incidence of unprotected sex	Increased use of condoms	Increased use of contraception	Increased use of sexual Health Care/ treatment compliance	Reduce incidence of STDs	Decreased number or rate of teen pregnancy/birth	Urban	Sub-urban	Rural	Community	School	Clinic	Children 3-11	Adolescents 12-17	Young adults 18-24	Hispanic	Sex
All4You!		★			★	★									X				X	X	Both
Be Proud! Be Responsible! Be Protective!			★																X	X	Females
FOCUS: Preventing STI and Unwanted Pregnancies among Young Women			★													X			X		Females
HORIZONS						★										X			X		Females
Project TALC (Teens and Adults Learning to Communicate)									★							X		X			Both
Promoting Health Among Teens! Comprehensive Abstinence and Safer Sex Intervention	★		★												X			X			Both
Raising Healthy Children (formerly known as the Seattle Social Development Project)	★		★							★					X						Both
Rikers Health Advocacy Program (RHAP)						★												X	X	X	Male
Safer Sex																		X			Females
Sisters Saving Sisters			★	★		★												X	X	X	Females
What Could You Do?	★													X				X			Females
Becoming a responsible teen (BART)	★	★				★					★					X		X			Both
Cuidate (safer sex program) Mexico.	★					★					★							X	X		Both
Draw the Line/ Respect the Line	★														X			X		X	Both
Peer-led sex education (England).		★													X						Both
It's Your Game: Keep it Real (IYG).	★														X			X		X	Both

Program	Impact on Adolescents' Risk for Pregnancy, HIV & STIs										Settings & Populations Served											
	Delayed initiation of Sex	Reduced frequency of Sex	Reduced Number of sex partners	Increased Monogamy	Reduced Incidence of unprotected sex	Increased use of condoms	Increased use of contraception	Increased use of sexual Health Care/treatment compliance	Reduced incidence of STDs	Decreased number or rate of teen pregnancy/birth	Urban	Sub-urban	Rural	Community	School	Clinic	Children 3-11	Adolescents 12-17	Young adults 18-24	Hispanic	Sex	
Adolescencia Tiempo de Decisiones (Chile)	★					★									X M							Both
Women's Health Project			★		★											X		X				Females
Project CHARM (Children's Health and Responsible Mothering)			★			★									X MH			X	X	X		Females

E: Elementary School

M: Middle School

H: High School

Goals and Targets	Baseline (1990)	Advance	Progress towards the target if current trends persist
<b>GOAL 1:</b>	<b>Eradicate extreme poverty and hunger</b>		
Reduce extreme poverty by half 1/	11.3	6.3 (2010)	Expected to be met
Productive and decent employment for all 2/	13.4	6.9 (2009)	Insufficient
Reduce hunger by half 3/	12	8.0 (2007)	Insufficient
<b>GOAL 2:</b>	<b>Achieve universal primary education</b>		
Universal primary schooling 4/	85.7	95.0 (2009)	Insufficient
<b>GOAL 3:</b>	<b>Promote gender equality and empower women</b>		
Equal girl's enrolment in primary school 5/	0.98	0.97 (2009)	Very close
Women's share of paid employment 6/	36.4	43.0 (2009)	Sufficient
Women's equal representation in parliaments 7/	11.9	23.0 (2011)	Insufficient
<b>GOAL 4:</b>	<b>Reduce child mortality</b>		
Reduce child mortality by two thirds 8/	52	23 (2009)	Very close
<b>GOAL 5:</b>	<b>Improve maternal health</b>		
Reduce maternal mortality by three quarters 9/	140	85 (2008)	Insufficient
Universal access to reproductive health 10/	62.0	72.9 (2008)	Insufficient
<b>GOAL 6:</b>	<b>Combat HIV/AIDS, malaria and other diseases</b>		
Halt and reverse spread of HIV / AIDS 11/	0.3	0.5 (2009)	Insufficient
Halt and reverse spread of tuberculosis 12/	13.0	3.3 (2009)	Already
<b>GOAL 7:</b>	<b>Ensure environmental sustainability</b>		
Reverse loss of forests 13/	52	47.4 (2010)	Insufficient
Halve proportion without improved drinking water 14/	85	93 (2008)	Already
Halve proportion without sanitation 15/	69	80 (2008)	Expected to be met
Improve the lives of slum-dwellers 16/	37.7	23.5 (2010)	Insufficient
<b>GOAL 8:</b>	<b>Develop a global partnership for development</b>		
Internet users 17/	0.1	32.9 (2009)	Already

Source: IADB, SCL division, based on UN "MDG Report 2011", "MDG Report Statistical Annex 2011", and "MDG Progress Chart 2011"

1/ % of people living on less than \$1.25 (2005 PPP) per day (updated using trends SEDLAC estimates)
2/ % of employed people living below \$1 (PPP) per day
3/ % of population below minimum level of dietary energy consumption
4/ Net enrolment ratio in primary education (%)
5/ Ratio of girls to boys gross enrolment ratios in primary
6/ % of employees in non-agricultural wage employment who are women
7/ % of parliamentary seats occupied by women (Single or Lower House only)
8/ Deaths of children before reaching the age of five per 1,000 live births
9/ Maternal deaths per 100,000 live births
10/ % using contraception among women aged 15-49 who are married or in union
11/ Estimated adult (15-49) HIV prevalence (%)
12/ Number of deaths per 100,000 population (excluding HIV infected)
13/ % of land area covered by forest
14/ % of population using an improved drinking water source
15/ % of population using an improved sanitation facility
16/ % of urban population living in slums
17/ Number of Internet users per 100 population