Massachusetts Institute of Technology

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TRANSLATING RESEARCH INTO ACTION

# Policy Briefcase No. 3

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## Cheap and Effective Ways to Change Adolescents' Sexual Behavior

About 2.7 million more people become infected with HIV/AIDS every year in sub-Saharan Africa. Despite the recent focus on treatment, only one in six people who need treatment get it, and prevention remains critical to combating the disease (UNAIDS, 2006). Yet there is remarkably little evidence on the relative effectiveness of alternative prevention strategies. Results from recent randomized evaluations suggest that relatively cheap, simple to administer, socially acceptable, and effective prevention strategies exist. Unfortunately, these are not the main strategies currently being employed. This means, however, that there is an opportunity to significantly improve prevention efforts if policy responds to the emerging evidence about what works—and what does not.

This briefcase reports the results of a recent randomized evaluation that assessed the relative effectiveness of four school-based approaches to HIV/AIDS education in Kenya (Duflo, Dupas, Kremer, and Sinei, 2006; Dupas, 2006). Teaching the standard HIV curriculum had only a small impact on attitudes and knowledge and did not reduce teen childbearing, though mothers were more likely to be married as a result. More active learning—through condom debates and essay writing competitions—looks promising, but needs more follow-up. Providing free school uniforms reduced both dropouts and teenage childbirths. Informing students about the high HIV prevalence rate among older men led to a dramatic change in behavior—a 65 percent drop in the number of primary school girls having babies with older men.

Not only are these programs effective, they are also cheap. Providing two school uniforms over three years costs US$12 per girl, and informing teenagers of the risks of "sugar daddy" relationships costs less than a dollar per student.

### Summary Results

| Program | What was done | Key impacts | Cost per student | Cost per pregnancy averted |
|---|---|---|---|---|
| Teacher training | Trained primary school teachers on HIV/AIDS government curriculum | Increased tolerance<br>No impact on childbearing<br>Increased marriage rate among girls who began childbearing | US$2 | No evidence that averts pregnancy |
| Debates and essays | Encouraged schools to organize student debates on condoms and essay writing contests on ways students could protect themselves from HIV/AIDS | Increased students' knowledge<br>Increased likelihood of boys reporting having used a condom<br>Did not change self-reported sexual activity | US$1 | Not yet available |
| "Sugar daddy talk" | Showed video about dangers of cross-generational relationships with older men (video did not mention HIV/AIDS)<br>Provided information on HIV infection rates by sex and age (relative risk) | Reduced teenage childbearing with older men by reducing the number of girls involved in unprotected sexual relationships with older men | US$1 | US$91 |
| Reduced cost of education | Provided primary school students with free uniforms to reduce the cost of education, thereby encouraging girls to stay in school longer | Reduced dropout rates<br>Reduced teenage childbearing and marriage | US$11 (boys)<br>US$12 (girls) | US$750 |

More detail on this study can be found in Duflo, Dupas, Kremer, and Sinei (2006); and in Dupas (2006)—available at www.povertyactionlab.org

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# HIV/AIDS Prevention in Schools: Four Strategies

Kenya's HIV/AIDS curriculum was developed in 1999 with assistance from UNICEF and based on extensive consultation with civil society; but, by 2003, many schools lacked teachers trained in the curriculum and were not using the curriculum. This provided an opportunity to test whether, if properly implemented, the curriculum would have the intended impact and to test the impact of other school-based approaches. Four different strategies were evaluated by a partnership of Kenyan Government agencies, an NGO, and academics (Box 1), in 328 randomly selected schools in Western Province.

## 1. *Teaching the standard HIV curriculum had no impact on knowledge or childbearing*

Teachers from a random sample of schools were trained in ways to deliver the government curriculum, which covers facts about the disease and life skills (how to say "No") and encourages abstinence until marriage and faithfulness afterwards. Training had an impact on teaching, with HIV mentioned in class every three weeks compared to every five weeks in the comparison group.

Implementing the curriculum had little impact on students' knowledge about the disease and did not affect childbearing rates. It did make girls report more tolerant attitudes toward those with AIDS and increased the likelihood that girls who had begun childbearing were married. The impact on HIV rates is unclear, as higher marriage rates may be associated with fewer but older partners (who have higher infection rates).

## 2. *More active student debates increased knowledge*

As elsewhere, discussing condoms in primary schools is controversial, and the Kenyan curriculum does not call for teachers to promote condom use. Yet children often start school late, and many in grades 7 and 8 are in their mid-teens. The compromise embedded in the national curriculum, which builds on a Kenyan tradition of school debates and promotes active learning, allows schools to organize student debates on whether or not "school children should be taught how to use condoms."

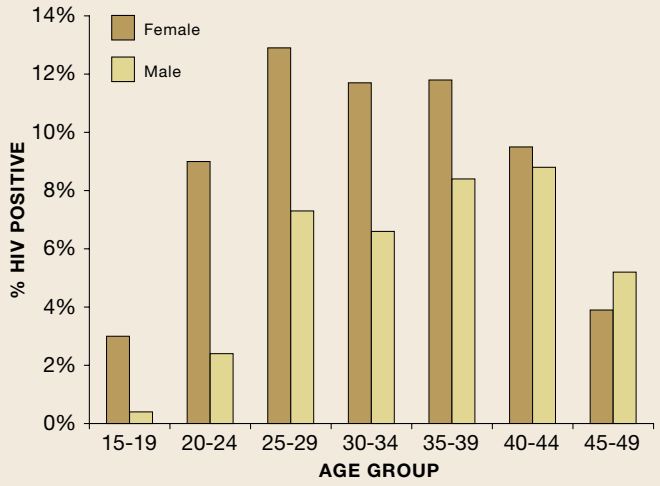
Encouraging schools to hold these debates, as well as essay competitions on "ways to protect yourself from HIV now and in the future," increased students' knowledge about condoms, and increased the number of boys reporting using a condom during their last sexual encounter from 21 percent to 26 percent. However, data on self-reported behavior needs to be treated with caution, as it does not always match changes in actual behavior—subjects may report what they think the interviewer wants to hear (Aral and Peterman, 1996; Mellanby et al., 1995). Results on childbearing are not yet available.

## 3. *Providing information on the risk of "sugar daddies" had a dramatic impact*

Infection rates among men and women of different ages are very different (Figure 1). While primary school children in Kenya know quite a lot about HIV, they do not know how large a gap in infection rates exists by age. Gift giving is a common part of sexual relationships in Kenya, and older men tend to give better gifts. Cross-generational relationships between teenage girls and "sugar daddies" are also common, and these relationships expose girls to great risk of contracting HIV. To reduce their incidence, a 40-minute session held by an NGO worker, and designed to explain the risks, was introduced in some schools.

Childbearing with older men fell by 65 percent, with no offsetting increase in childbearing with same-age partners. Self-reported data give some clues to the dynamics of this shift. The self-reported sexual activity of teenage girls went

**Figure 1: HIV Rates Are Very Different by Age**




Source: The Kenya Demographic and Health Survey (Central Bureau of Statistics, Kenya, 2004)

### Box 1: A Partnership for Testing Effective Prevention Strategies in Schools

The evaluation was a collaboration of International Child Support (ICS) Africa; the Kenyan Ministry of Education, Science and Technology (MoEST); the National AIDS Control Council of Kenya (NACC); and academics from Jomo Kenyatta University of Agriculture and Technology in Kenya, Dartmouth College, Harvard University, and the Abdul Latif Jameel Poverty Action Lab at the Massachusetts Institute of Technology. The findings reported here are based on Duflo, Dupas, Kremer, and Sinei (2006); and on Dupas (2006).

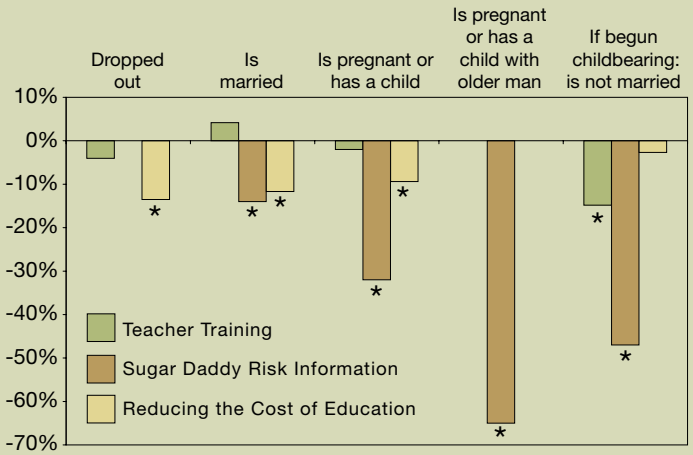
up, but girls shifted to same-age partners, who themselves reported increased condom use (the boys knew the girls were more likely to be infected than they were). Again, self-reported evidence should only be seen as suggestive of the reasons behind this dramatic decline in childbearing.

### 4. *Helping girls stay in school reduced childbearing*

While there are no school fees in Kenya, purchasing a school uniform is expensive and stops many from attending. In some schools, students were provided free uniforms. This reduced dropout rates by 17 percent for boys and 14 percent for girls, and reduced teenage childbearing and marriage among girls by 9 percent and 12 percent, respectively.

**Impacts of Each Program on Girls' Behavior**

(Percentage change relative to girls in comparison group)




*Indicates that the difference with the comparison group is significant at 10%

### *Childbearing as a measure of behavior change*

Behavior change was measured by a reduction in teenage childbearing as a proxy outcome for unsafe sexual behavior. Even in the absence of HIV, reducing pregnancy among primary school students is arguably a goal in its own right. In the next stage of the research, the authors hope to use biomarker tests to determine if HIV or other sexually transmitted infection rates are affected by the different programs. However, the results of the project so far suggest important shifts in behavior are possible.

## Cost Effectiveness

The cost per teenage childbirth averted can be compared for the different interventions.

***Standard HIV Curriculum*** — Teaching the standard curriculum had no impact on childbearing, though it did increase marriage rates among girls who had children.

***Debates and Essays*** — The cost was US$109 per school and US$1.10 per student. Childbearing data are not yet available for this program, so the cost per childbirth averted can not yet be calculated.

***Relative Risk Information Campaign*** — The cost per school was US$28.20 and the cost per student US$0.80. Based on these numbers, the estimated cost per childbirth averted was US$91.

***Reduced Cost of Education*** — On average, boys' uniforms cost US$5.40, while girls' uniforms cost US$6. Each student received two uniforms over three years, giving a total program cost of US$10.80 per male student and US$12 per female student. If we assume the drop in childbearing came from girls staying in school, the program cost was US$750 per childbirth averted. However, families also benefited from free uniforms (an income transfer), so the cost to society was more like US$300 per childbirth averted. The program also had educational benefits which are not factored into this calculation.

## POLICY LESSONS:
## A way through the ideological impasse

The debate about how to help prevent HIV/AIDS infection has too often degenerated into ideological battles based on little hard evidence. This research finds that there are cheap and effective ways to change the behavior of adolescents that should be acceptable to all those seeking to address the suffering caused by HIV/AIDS. For just 80 cents per student, students can be warned about the high prevalence rates of older men, and the evidence shows they will respond by dramatically reducing the number of teenage childbirths with older men. One such childbirth—with all the dangers that such behavior involves—can be prevented for just US$91. Similarly, helping girls to stay in school by giving them a free school uniform is effective in reducing teen pregnancy. The program is relatively cheap (US$12 per girl), and the program cost per teenage childbirth averted is just US$750. Finally, while all the evidence is not yet in, more active learning models such as debates and essay writing contests show promise. Again, the program is cheap at just US$1.10 per child.

The finding that adolescent sexual behavior will respond to these relatively simple, scalable interventions is very encouraging. But it is equally important that policy responds to emerging evidence about what works in the area of prevention.

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The Abdul Latif Jameel Poverty Action Lab (J-PAL) at the MIT Department of Economics is dedicated to fighting poverty by ensuring that policy decisions are based on scientific evidence. We achieve this objective by undertaking, promoting the use of, and disseminating the results of randomized evaluations of poverty programs. If you would like to be added to our mailing list, please contact us at povertyactionlab@mit.edu or 617 324 0108.

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