

# what works best in HIV prevention globally?

## what does HIV look like internationally?

With 39 million people living with HIV worldwide, the HIV/AIDS epidemic threatens every aspect of global economic development.<sup>1,2</sup> In 2005, over 4 million people were newly infected with HIV, and almost 3 million died of an AIDS-related illness.<sup>2</sup> HIV/AIDS is among the top 10 causes of death in developing countries, and the leading cause of death in Sub-Saharan Africa.

*Although Sub-Saharan Africa is the hardest-hit region, HIV is spreading into parts of Asia and Eastern Europe with alarming speed. HIV is transmitted primarily through three mechanisms: sexual intercourse (about 80% of infections worldwide);<sup>3</sup> exposure to infected blood or blood products, including injecting drug use; and transmission by HIV+ mothers to their newborns.*

The international community recognizes the urgency of stopping the AIDS epidemic, yet funding, political will, accountability and human resources have fallen short of needs. Although known interventions could prevent nearly two-thirds of new infections projected to occur between 2002 and 2010, fewer than one in five people at high risk of infection have access to the most basic prevention services.<sup>4</sup>

## how is prevention tailored?

Prevention studies and national experiences over the past 20 years strongly suggest that strategies are likely to be most effective when they are carefully tailored to the nature and stage of the epidemic in a specific country or community. Despite a limited amount of rigorous evaluation on prevention programs, evidence demonstrates that tailoring prevention strategies to a region's epidemic profile is most effective and cost-effective.<sup>5</sup>

- **Low-level epidemics** occur in regions where the HIV prevalence in the general population is low (less than 1%) and the highest prevalence in a key population is also low (less than 5%). Key populations include sex workers, men who have sex with men (MSM) and injecting drug users (IDUs).
- **Concentrated epidemics** occur in regions where the HIV prevalence in the general population is less than 1% and the highest prevalence in a key population is more than 5%.
- **Generalized low-level epidemics** occur in regions where the HIV prevalence in the general population is 1%-10% and the highest prevalence in a key population is 5% or over.
- **Generalized high-level epidemics** occur in regions where the HIV prevalence in the general population is 10% or over and the highest prevalence in a key population is 5% or over.

*The following activities are relevant across all epidemic profiles:*

- surveillance of risk behaviors, sexually transmitted infections (STIs) and HIV
- school-based sex education
- information, education, and communication (IEC)
- peer-based programs
- voluntary counseling and testing (VCT)
- STI screening and treatment
- condom promotion, distribution and social marketing
- harm reduction for IDUs
- prevention of mother-to-child transmission (MTCT)
- blood safety practices and universal precautions

## low-level epidemic

Providing widespread VCT, screening for STIs and postexposure prophylaxis may not be cost-effective in a low-level epidemic. In this setting, such as in the Middle East and North Africa, HIV/AIDS control strategies should emphasize:

- individual-level interventions that target key populations
- limited education through the mass media
- prevention programs for HIV+ persons
- VCT that is available to key populations with the highest levels of risk behavior and infection rates
- MTCT prevention to known HIV+ mothers
- addressing market inefficiencies in condom procurement and distribution—including strategies such as bulk purchases and incentives
- responding to community attitudes toward sexual activity, as they may dictate people's response to sex education materials.

## Says who?

1. The information in this fact sheet is taken directly from the following chapter: Bertozzi S, Padian NS, Wegbreit J, et al. HIV/AIDS Prevention and Treatment. In: *Disease Control Priorities in Developing Countries*. April 2006. <http://files.dcp2.org/pdf/DCP/DCP18.pdf>

2. UNAIDS (Joint United Nations Programme on HIV/AIDS). 2006 Report on the global AIDS epidemic. [www.unaids.org/en/HIV\\_data/2006GlobalReport/default.asp](http://www.unaids.org/en/HIV_data/2006GlobalReport/default.asp)

3. Askew I, Berer M. The contribution of sexual and reproductive health services to the fight against HIV/AIDS: A review. *Reproductive Health Matters*. 2003;11:51-73.

4. Stover J, Bertozzi S, Gutierrez JP, et al. The global impact of scaling-up HIV/AIDS prevention programs in low- and middle-income countries. *Science*. 2006;311:1474-1476.

5. Wegbreit J, Bertozzi S, Demaria LM, et al. Effectiveness of HIV prevention strategies in resource-poor countries: tailoring the intervention to the context. *AIDS*. 2006;20:1217-1235.

## **concentrated epidemic**

In a concentrated epidemic, as in East Asia and the Pacific, Europe and Central Asia, Latin America and the Caribbean, and South Asia, prevention priorities should include:

- promotion of VCT among key populations
- HIV screening of pregnant women, guided by individuals' risk profiles
- peer-based programs for key populations to educate individuals at risk, promote safer behaviors and distribute condoms
- needle exchange and drug substitution programs for IDUs
- STI screening and treatment for key risk groups
- targeted distribution and promotion of condoms to key populations, linked to VCT and STI care.

*Contextual factors—such as government acceptance of needle exchange programs, incarceration of drug users and harassment of sex workers—will likely have a major impact on the effectiveness of prevention efforts. HIV/AIDS is typically concentrated in socially or economically marginalized populations in concentrated epidemics, so attention to socioeconomic factors and to stigmatization of key populations will be vital.*

## **generalized low-level epidemic**

Here, as in some countries in Sub-Saharan Africa (Tanzania), targeted interventions must be maintained or strengthened. Interventions for broader populations must be aggressively implemented. Prevention priorities should include:

- maintaining surveillance in the entire population, with a focus on young people
- extending mass media IEC beyond basic education
- providing routine VCT and STI screening and treatment beyond key populations
- strengthened condom distribution to ensure universal access
- offering HIV screening to all pregnant women
- broadening peer approaches and targeted IEC to include all populations with higher rates of STIs and risk behavior.

*Contextual factors remain critical, but population level factors now have greater priority. The most important is likely to be the status of women, especially with regard to their ability to control their sexual interactions, to negotiate VCT, to be protected from abuse and to have property rights following the death of a spouse.*

## **generalized high-level epidemic**

In a generalized high-level epidemic, such as in some countries in Sub-Saharan Africa (Botswana and Zimbabwe), an attack on all fronts is required. Prevention efforts should focus on broadly based, population-level interventions that can mobilize an entire society. Prevention should include:

- offering routine, universal VCT and STI screening and universal treatment
- distributing condoms free in all possible venues
- providing VCT for couples seeking to have children
- counseling pregnant women and new mothers to make informed choices for breastfeeding
- implementing individual-level approaches to innovative mass strategies with accompanying evaluations of effectiveness
- using the mass media as a tool for mobilizing society and changing social norms
- using venues to reach large numbers of people for a range of interventions—workplaces, transit venues, political rallies, schools, universities and military camps

*In a generalized high-level epidemic, contextual factors—such as poverty and the fragility of the health care infrastructure—will dramatically affect service provision at every level. The status of women becomes an overriding concern in this setting, requiring priority action to radically alter gender norms and reduce the economic, social, legal and physical vulnerability of girls and women.*

## **what needs to be done?**

The magnitude and seriousness of the global pandemic calls for action. The appropriate mix and distribution of prevention and treatment interventions depends on the stage of the epidemic in a given country and the context in which it occurs. In the absence of firm data to guide program objectives, national strategies may not accurately reflect the priorities dictated by the particular epidemic profile, resulting in highly inefficient investments in HIV/AIDS prevention and care. This waste undoubtedly exacerbates funding shortfalls and results in unnecessary HIV infections and premature deaths.

PREPARED BY NANCY PADIAN PHD\*, STEFANO BERTOZZI, PHD\*\*; \*WOMENS GLOBAL HEALTH IMPERATIVE, UCSF; \*\*INSTITUTO NACIONAL DE SALUD PUBLICA, MEXICO