



What is the “evidence” in evidence-based HIV prevention?

By Monica Ruiz, amfAR and Judy Auerbach, San Francisco AIDS Foundation*

Over the past 20 years, research and practice have demonstrated the effectiveness of a range of biomedical, behavioral, and social interventions for preventing the transmission and acquisition of HIV. These interventions include: targeting sexual risk behavior (e.g., delaying the onset of sexual activity, decreasing the number of sex partners, and increasing the use of condoms); targeting risky drug use behavior (e.g., harm reduction programs that provide sterile injection equipment to drug users); and using therapeutic or other biomedical agents to reduce risk of infection (e.g., administering AZT or nevirapine to prevent mother to child transmission). Implementation of these interventions in diverse settings around the world has resulted in significantly reduced rates of new infection in many locales. In order to have the greatest impact on the global AIDS epidemic, it is essential to further adopt and scale-up such proven interventions, as well as continue to develop and evaluate the evidence for new prevention methods with significant potential.

The meaning and importance of “evidence”

“Evidence” in the case of HIV prevention refers to the data provided from rigorously designed, tested, and evaluated research studies and programs that demonstrate that particular interventions can produce significant reductions in poor outcomes or associated risk factors or, conversely, can produce significant increases in health-promoting outcomes.¹ Evidence is important because, in times of dwindling resources, it is both fiscally and socially responsible to implement interventions and programs that have the greatest likelihood of producing positive effects, that is, those that are known to work. This is particularly relevant in the case of HIV prevention, where the “positive effects” of an effective intervention translate into fewer people becoming infected, getting sick, and dying from AIDS.

Assessing evidence to know what works

There are a few things to keep in mind when assessing evidence to know what works. One has to do with the conditions under which the evidence is obtained, and here, the terms “efficacy” and “effectiveness” are relevant. Efficacy refers to the impact of an intervention under ideal, experimental conditions, such as a controlled research study. Effectiveness refers to the impact of an intervention under “real world” or field conditions -- that is, more normal circumstances.² For some HIV prevention interventions we have only efficacy data (e.g., from a limited number of small studies); for others we have effectiveness data (e.g., from implementation of an intervention at country-level).

Often, gathering the optimal amount of evidence is not feasible, and policy decisions must be based on partial or imperfect evidence. Nonetheless, there are certain criteria that can be applied to the available data to determine the strength of evidence necessary for widespread implementation and scale-up of interventions:³

- Interventions should be feasible, practical, cost-effective, and have good potential for sustainability;
- There should be a low potential for adverse short- and long-term, individual-level and community-level outcomes that could be attributed to the implementation of the intervention;
- The intervention should be acceptable and relevant to the target population;
- There should be sufficient time to allow for the collection of data demonstrating the degree to which the intervention works, as well as the impact the intervention has on broader community health;
- The intervention should have the potential for additional health or social benefits that could result from its implementation.

The weight of evidence also matters. The more data there are to support a particular finding, the stronger that finding will be. This is why “replicability”—different researchers repeating the study and finding similar results—is a fundamental tenet of science.

Finally, it is important to recognize that contextual variables—including the stage of the epidemic, populations most affected, sexual norms and practices, etc.—vary across locations and influence which approaches work well in which locations. Evidence from interventions implemented in one context may not always apply to others.

“Evidence-based” versus “evidence-informed”

“Evidence-based” and “evidence-informed” are two terms that have been used somewhat interchangeably in considerations of public policy formulation—yet, in fact they are quite different. While “evidence-based” reflects a direct application of scientific evidence to program implementation or policy, “evidence-informed” reflects the need to allow for other social and cultural factors that influence policy decisions.⁴ The crucial point common to both of these terms is that the evidence of what works and what does not work should play a central role in shaping the program or policy decisions that are implemented.

However, recently the use of the term “evidence-informed” has taken a controversial turn. This was most visible at the May 2006 UNGASS meeting, where several participating nations requested that the draft Political Declaration language pertaining to “evidence-based prevention strategies” be changed to “evidence-informed prevention strategies.” This change was proposed by governments that support prevention strategies for which little or no evidence of efficacy exists (such as abstinence-only sex education) and that oppose strategies that have proven to be effective but that are contrary to their ideological perspectives (e.g., harm reduction for drug users). In this scenario, having evidence “inform” but not be the basis of policy allows for decisions to be made that are in direct opposition to the weight of scientific evidence.

It is always important to be sensitive to social, cultural, political, and environmental contexts when designing and implementing prevention strategies, as implied in the definition of “evidence-informed.” However, it also is essential to recognize that those local contexts often produce the very conditions – such as gender inequity, violence, and stigma – that facilitate HIV risk, and that these need to be confronted, rather than allowed to shape (or “inform”) prevention

policy. Given this, the public health community generally prefers to use the term “evidence-based” to emphasize the application of high-quality, rigorously produced data—rather than opinion—to HIV prevention programming and policymaking.

Scaling-up evidence-based HIV prevention efforts

Given the magnitude of HIV/AIDS as a global public health emergency, the absence of a cure for HIV infection, and the lack of sufficient resources to ensure widespread treatment access for those infected, the global community cannot afford to stray from prevention strategies that are proven effective and that have the greatest potential for reducing the spread of infection. Indeed, such interventions must be scaled-up and made more widely accessible. UNAIDS estimates that in 2005 in low- and middle-income countries, only 9% of men who have sex with men received any type of HIV prevention service; fewer than 20% of injecting drug users received prevention services, with fewer than 10% in Eastern Europe and Central Asia where drug use fuels the epidemic; and only 9% of pregnant women were provided services to prevent mother-to-child transmission.⁵ We must do better than this, and we can.

If a comprehensive, evidence-based prevention package that includes such things as school-based HIV/AIDS education; outreach programs for commercial sex workers and their clients, out-of-school youth, and homosexual men; public sector condom promotion and distribution; treatment for sexually transmitted infections; harm reduction programs; and preventing mother-to-child transmission⁶ were appropriately scaled-up, annual HIV incidence could be reduced by more than half by the year 2020.⁷

Conclusion

The evidence-base for HIV prevention continues to improve as new behavioral, biomedical, and social prevention strategies are developed and tested.⁸ The utilization of this growing evidence base is vital to multilateral efforts to stem rising HIV infection rates around the world. Promoting evidence-based prevention strategies not only supports the fight to end the HIV/AIDS pandemic, but also serves to ensure the maintenance of sound public health standards and the respect for the human rights of all men, women, and children at risk of or living with HIV infection.

**With valuable input from Sonia Kandathil, Maurice Middleburg and colleagues at the Global Health Council; and Mark Barone and colleagues at EngenderHealth.*

1. Penn State Prevention Research Center Technical Assistance Fact Sheet 1: Evidence Based Programs. Accessed: June 25 2006
http://www.prevention.psu.edu/pubs/documents/EBP_factsheet.pdf.
2. Last J. A Dictionary of Epidemiology. 3rd ed. New York, NY:: Oxford University Press,, 1995.
3. Ross DA et al. The weight of the evidence: a methodology for assessing the strength of evidence on the effectiveness of HIV prevention interventions among young people.

Chapter 4. Preventing HIV/AIDS in young people: A systematic review of the evidence from developing countries. WHO Technical Report Series. Ross DA DB, Ferguson BJ