

how is science used in HIV prevention?

is science needed?

Yes. While prevention science will not give “the answer,” science fills in critical pieces of the prevention puzzle. Science used in conjunction with an agency’s experience with clients can strengthen, inspire, target, and best use limited resources in HIV prevention programs. This fact sheet will cover some of the basic elements of prevention science, what they mean, and their implications for service.

Using science in prevention is now mandated in many areas. In 1994, the Centers for Disease Control and Prevention (CDC) radically changed how it makes prevention program awards. The CDC’s guidance recommends that HIV Prevention Community Planning Groups (CPGs) use epidemiology, evaluation and behavioral science theories, findings, and methodologies in developing programs.¹

Science that is applicable to HIV prevention can be broken down into five general categories: epidemiology, basic behavioral science, behavior change theory, intervention science, and evaluation methodology.

how is epidemiology useful?

Epidemiology is the study of the occurrence of infections or disease in a population. It can tell you how many people are newly infected with HIV, what subpopulations have been infected, and who might be expected to be infected by HIV in the future. Behavioral epidemiology can tell you about the frequency of risk behaviors.² Using local epidemiology can help program planners target specific audiences and behavior risks that are most in need of prevention in their community. It can also help planners be more thoughtful about how to best use limited resources. Health departments and the CDC can help by collecting local data for all populations.³

how is behavioral science useful?

Basic behavioral science explores the social, behavioral and cultural influences that help explain why people put themselves at risk, and why people continue to get infected with HIV. Research on human sexuality is key to understanding how people change risky sexual behaviors and can help in program design.⁴ It does not tell service providers what to do, but can suggest new ways of thinking about program elements.

For example, recent research has shown that childhood sexual abuse is a predictor for risky sexual behavior in adulthood.⁵ Knowing this, program managers can incorporate questions on early abuse into needs assessments, add a segment on childhood abuse to multi-session education interventions, develop new programs for adults who were abused and/or give special training to direct service staff on sexual abuse issues.

how is behavior change theory useful?

Behavior change theory provides a framework to ideas on why and how people change behaviors that put them at risk for HIV infection. Using behavior change theories can help when crafting an intervention, to support each component in a model as the intervention is designed.^{6,7}

For example, Paulo Freire’s theory of Popular Education states that teachers and students should learn from one another.⁸ Using this theory, a program can use discussion groups as opposed to lectures. This format can strengthen the intervention by empowering people to personally develop their own solutions to change their environment.

Says who?

1. Valdiserri RO, Aultman TV, Curran JW. Community planning: a national strategy to improve HIV prevention programs. *Journal of Community Health*. 1995;20:87-100.

2. Rothman KJ. *Modern Epidemiology*. Boston, MA: Little, Brown and Company; 1986.

3. A database of epidemiological data for states and some cities is available on the Internet at: http://hivinsite.ucsf.edu/cgi-msql/usa_db1.pl

4. Kelly JA, Kalichman SC. Increased attention to human sexuality can improve HIV-AIDS prevention efforts: key research issues and directions. *Journal of Consulting and Clinical Psychology*. 1995;63:907-918.

5. Jinich S, Stall R, Acree M, et al. Childhood sexual abuse predicts HIV risk sexual behavior in adult gay and bisexual men. Presented at the 11th International Conference on AIDS, Vancouver, BC. 1996. Abstract Mo.D.1718.

6. Valdiserri RO, West GR, Moore M, et al. Structuring HIV prevention service delivery systems on the basis of social science theory. *Journal of Community Health*. 1992;17:259-269.

7. Herlocher T, Hoff C, DeCarlo P. Can theory help in HIV prevention? Fact sheet prepared by the Center for AIDS Prevention Studies, UCSF. August 1995.

8. Wallerstein N. Powerlessness, empowerment, and health: implications for health promotion programs. *American Journal of Health Promotion*. 1992;6:197-205.

how is intervention science useful?

Intervention science explores which components of programs are more effective and which programs work well in certain populations. For example, in a recent study, the riskiest people did not attend small group educational sessions. A program for gay/bisexual men in Portland, OR conducted outreach in bars and at community events, home meetings, and safer sex workshops. While most men attended outreach activities, few men were likely to attend safer sex workshops.⁹

Scientific study of the program showed that outreach was most likely to reach the riskiest men—younger men and men who reported unprotected anal intercourse.⁹ Interventions aimed at high risk-taking populations can rely on intensive individual outreach/counseling and/or innovative, minimally structured community-level social activities to help draw their intended audience.

how is evaluation methodology useful?

Evaluation encourages critical thinking about the process of designing interventions, and should not only occur at the end of an intervention. Good evaluation produces information about needs, service use patterns, impacts and outcomes. It also gives a voice to clients' experiences, and allows service providers to learn about their programs so that they can make necessary changes to increase their effectiveness.¹⁰ An agency can hire a consultant or researcher for evaluation, or can conduct its own evaluation.

For example, Tri-City Health Center in Fremont, CA surveyed suburban street youth to evaluate the effectiveness of their program of outreach and educational workshops. In response to youth feedback, Tri-City cancelled their scheduled workshops and added a drop-in center providing HIV education as well as support in areas such as dropping out of school, joblessness, substance abuse, abusive relationships and living with HIV.¹¹

how do people access science?

No one should need an advanced degree to understand prevention science. Several organizations exist to help translate and summarize research into understandable and usable forms. CPGs are directed to incorporate prevention science in their comprehensive plans, which are available through local and state health departments.¹² Local universities (especially schools of public health and social work, departments of sociology, psychiatry/psychology, or anthropology) are an excellent contact for research assistance.¹³ Mailing lists and newsletters from organizations that specialize in prevention science and technical assistance can also be invaluable resources.¹⁴

what still needs to be done?

To more closely link the efforts of researchers and service providers: 1) Researchers should share findings with local CBOs and with the CDC and DPHs, as well as become active members of CPGs. 2) CBOs should be more aggressive and proactive in using information outside of their agencies. 3) State DPHs and the CDC should recognize and act upon their role as translators of science. 4) National Institutes of Health, the CDC and private funders should provide adequate funding for integrating prevention science into prevention programs. 5) CBOs and researchers should forge long term partnerships to conduct collaborative projects.¹⁵

Using science in service provision is a specialized field. Most scientists are not trained in the real world application of research. Likewise, most service providers are not trained in research methods. A comprehensive HIV prevention strategy uses many elements to protect as many people at risk for HIV as possible. By closing the gap between HIV prevention science and prevention practice, we can ensure that our best efforts won't be wasted, and we can make a difference in the fight against HIV.

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9. Hoff CC, Kegeles S., Acree M, et al. Gay men at highest risk are best reached through outreach in bars and community events. Presented at the 11th International Conference on AIDS, Vancouver, BC. 1996. Abstract Tu.D.360.

10. San Francisco HIV Prevention Plan. Report prepared by the San Francisco HIV Prevention Planning Council and the Department of Public Health AIDS Office. 1996.

11. Carver LJ, Harper GW. Responding to the HIV prevention needs of suburban street youth. Presented at the 11th International Conference on AIDS, Vancouver, BC. 1996. Abstract Th.D.4921.

12. For information on your local or state Community Planning group, please contact Lynne Greabell at NASTAD (202) 434-8090.

13. A directory of universities is available on the Internet at <http://info.risc.uni-linz.ac.at/CGI/scripts/ph.cgi/lookup?>

14. • CDC (800) 458-5231 (www.cdc.gov/nchstp/hiv_aids/dhap.htm)
• American Psychological Association (202) 336-6042
• National Minority AIDS Council (202) 483-6622
• National Association of People With AIDS (202) 898-0414
• Academy for Educational Development (202) 884-8700
• National Alliance of State and Territorial AIDS Directors (202) 434-8090
• Council of State & Territorial Epidemiologist (770) 458-3811
• The US Conference of Mayors (202) 293-7330
• GMHC Education Department (212) 807-7517 (www.gmhc.org)
• CAPS (415) 597-9100 (www.caps.ucsf.edu/capsweb)
• Rural Prevention Center (812) 855-1718 (www.indiana.edu/~aids)

15. Goldstein E, Wrubel J, Faigeles B, et al. Is research important for non-governmental organizations in the United States? Presented at the 11th International Conference on AIDS, Vancouver, BC. 1996. Abstract Th.C.4779.