

AIDS Read. Author manuscript; available in PMC 2013 June 28.

Published in final edited form as: *AIDS Read.* 2009 February; 19(2): 79–C3.

African American Women and HIV/AIDS: A National Call for Targeted Health Communication Strategies to Address a Disparity

Monisha Arya, MD, MPH, Heidi L. Behforouz, MD, and Kasisomayajula Viswanath, PhD

Abstract

Dr Arya is assistant professor of medicine in the section of infectious diseases at the Baylor College of Medicine and a health services researcher at the Houston Center for Quality of Care and Utilization Studies in Houston. Dr Behforouz is assistant professor of medicine at Harvard Medical School, medical and executive director of the Prevention and Access to Care and Treatment Project, and associate physician in the Brigham Internal Medicine Associates at Brigham and Women's Hospital, Boston. Dr Viswanath is associate professor of society, human development and health at the Harvard School of Public Health and director of the Health Communication Core of the Dana-Farber/Harvard Cancer Center, Boston. At the time of manuscript submission, Dr Arya was a fellow in the division of infectious diseases at Beth Israel Deaconess Medical Center and Harvard Medical School.

African American women are disproportionately affected by the HIV/AIDS epidemic in the United States. To address this disparity, the CDC released a call for targeted communication campaigns in African American communities. The mass media is an HIV/AIDS information source used by African Americans, and media initiatives can be cost-effective for delivering HIV prevention messages. Needed is research in communities at risk to determine the messages needed and the preferred formats and channels with which to deliver the messages so that targeted communication campaigns can be part of the multifaceted approach to ending the HIV/AIDS disparity affecting African American women.

In 1998, President Clinton declared HIV/AIDS to be a "severe and ongoing crisis" in the African American community and launched the Minority HIV/AIDS Initiative with unprecedented funding support. At the time, African American women made up an alarming 60% of HIV/AIDS cases among women. A decade later, the disparity continues unabated. While African Americans make up only 13% of the US population, they account for nearly 50% of all HIV/AIDS cases. Further, African American women—representing only 13% of women in this country—still account for two-thirds of the HIV/AIDS cases among women (Figure 1), and HIV infection is the leading cause of death for African American women aged 25 to 34 years (Figure 2). Heterosexual transmission is the primary mode of HIV acquisition for African American women.

BARRIERS TO HIV PREVENTION

Unfortunately, no single prevention intervention will halt the epidemic for African American women. Since this epidemic in African American women is fueled by many factors, including differential access to health information; disparate health care resources and exposure to prevention interventions; and gender-, societal-, and cultural-mediated

barriers to prevention behaviors, initiatives to decrease the burden of HIV infection should take into account these factors and should use strategies that will reach African American communities.

Some of the barriers to HIV prevention reported by African American women are listed in the Table. ⁴⁻⁹ While comprehensive and complementary efforts will be needed to address many of the HIV prevention barriers faced by African American women, barriers that need immediate attention are the low perceived susceptibility to HIV infection and lack of access to HIV/AIDS information and health care resources, and targeted health communication strategies can be used to address them.

REACHING COMMUNITIES AT RISK

The US Department of Health and Human Services has placed new emphasis in its Healthy People 2010 objectives on using health communication strategies to eliminate health disparities and notes that "communication initiatives [should] adopt an audience-centered perspective." In line with this objective, the 2007 CDC report, A Heightened National Response to the HIV/AIDS Crisis Among African Americans, called for increased attention to the HIV/AIDS epidemic among African Americans and specifically highlighted expanded HIV testing and targeted communications as strategies to help address disparities in HIV transmission among this group. In This CDC report specifically calls for piloting campaigns to deliver messages and promote HIV testing as a "major" focus of the effort to reduce the spread of HIV in the African American community.

In populations in which the prevalence of HIV infection is high—as is the case for African American women—mass media campaigns can be cost-effective (Figure 3). 12 Health communication interventions can be effective by informing African American women about HIV/AIDS, framing the issue as a public health problem salient to their community, addressing social norms affecting the epidemic and affecting individual behaviors, and suggesting or modeling actions to be taken to mitigate their risk of acquiring HIV. Equally important, strategic communications can help African American women realize that they are disproportionately affected by and dying of HIV/AIDS, thereby increasing personal salience for the infection. African Americans do pay attention to health information provided by the media, a prerequisite underlying the call to use health communication strategies.¹³ Differences exist, however, in the types of media accessed and routinely used by African Americans for health information. Compared with white populations surveyed, African Americans view prime-time television more than cable or satellite television and read newspapers less. 13 For an HIV prevention health communication strategy to be effective, an understanding of the specific messages needed and the target audience's preferred formats and media channels for receiving these messages will be critical. ¹⁴ Recent research shows that it is not enough to know what messages to disseminate, but one also should know how to construct them.

There are many message formats used in the construction of messages. Formats may include fear appeals (ie, invoking fear to motivate people to change health behaviors), narratives (ie, using stories to present a health topic), and exemplars (ie, using real-life examples to present a health topic). The various message formats will appeal in different ways to different audiences, thus making it important to understand the preferences of—and the effect of a specific format on—the target audience. As previously noted, access to media differs across racial groups. Ensuring that the audience receives the message requires understanding the channels (eg, television, radio, billboards) used and preferred by the audience being targeted. Formative research, using an audience-centered perspective, can help guide the

selection of appropriate messages, formats, and channels to reach communities at risk for HIV/AIDS.

ROLE OF THE MEDIA

Exposure to and Effects of Mass and Small Media

While an extensive body of research exists on the use and effectiveness of HIV media campaigns abroad, and while media campaigns have been done at the local level in communities in the United States, what is lacking is a systematic evaluation in the published literature to guide us on the development, use, and effectiveness of media campaigns to reach African Americans who are at risk for HIV infection, a population disproportionately affected by the HIV epidemic.

Limited research—most of which was done in the 1990s and with very high-risk subgroups (eg, injection drug users, commercial sex workers)—has found that the media is a prominent source of HIV/AIDS information for African Americans. ¹⁶⁻²⁰ In these very high-risk populations with study samples that were predominantly African American, a majority of those surveyed reported first learning about HIV/AIDS through the media or reporting media sources equally as prominent as interpersonal sources. ^{19,20} These studies also found that African Americans were more likely than whites to use the media (compared with government agencies and professionals) for HIV/AIDS information. ^{16,17} A population-based survey done in the early 1990s in a city with a large, urban black population found television and newspapers to be the highest-ranked information sources for HIV/AIDS information. ²¹

More recent data with heterogeneous (ie, not simply evaluating only the highest-risk populations) African American populations suggest that the media is still a prominent source of HIV/AIDS information in this community. A 2004 Kaiser Family Foundation (KFF) survey of adults—with an oversample of African Americans—found that 71% of adults surveyed said that "most of what they know about HIV/AIDS" came from media sources, with only 9% saying that information came from health care professionals.²² In a subsequent 2004 KFF survey of 800 African American adults that aimed to determine the exposure to and effect of their own award-winning popular culture HIV mass-media campaigns (eg, "Rap It Up"), the following was found: 80% had seen the campaign messages; 63% agreed with the statement, the campaign "really made me think"; and 50% said the campaign "gets people talking."²³ Only 17% said the campaign message "goes in one ear and out the other," and only 7% said the campaign message "exaggerates the problem."

A recent study of older African American women found that television was the most commonly identified source of HIV/AIDS information (85%), with only 38% reporting receiving information from health professionals. 24 A recent, smaller focus group study (N = 47), with 89% of participants identified as African American, found that mass media sources, such as television, radio, and billboards were actually the "preferred" source of HIV/AIDS information. 25 These studies suggest that the mass media is reaching African Americans with HIV messages.

Small media, such as videotapes in clinical settings, also have reached African American populations and have influenced knowledge and behaviors. Videotaped interventions of testimonials showing footage of the "ravaging" effects of HIV/AIDS on the body and that include characters similar to the target audience are preferred by African American female audiences. ^{5,26} This type of health center–based media intervention has been shown to produce awareness of AIDS as a potentially personal threat, increase HIV testing, increase condom requests, and decrease rates of sexually transmitted infections. ^{27,28} These successful

strategies could be adopted by more health centers serving African American communities and could be studied in larger settings; additional research is needed on how to best reach those who do not routinely access care.

Clearly, media messages about HIV/AIDS that can reach African American communities disproportionately affected by the epidemic may still be a prominent source of information and have the ability to influence behaviors. Limited still is our knowledge of what specific messages are needed to influence HIV prevention behaviors in the current heterosexually acquired epidemic borne by African American women; furthermore, little is known about the target population's preference of message formats and media channels. For a media campaign to be successful, message construction is only one key; equal attention should be paid to making sure that the target audience is exposed to the messages. 14,29

Media Campaigns to Promote HIV Testing

Recent research has found that African Americans, in particular, are among the "late testers" (ie, those whose HIV infection is diagnosed late in the course of the disease) and, as such, may be unknowingly transmitting HIV for longer periods.30 It is estimated that HIV-positive persons *unaware* of their HIV status may account for 50% of new sexually transmitted cases of HIV infection in the United States.³¹ In addition, persons *aware* of their HIV-positive status usually will reduce high-risk behaviors.³² Since heterosexual transmission is the primary mode of HIV acquisition among African American women, increasing the uptake of HIV testing in African American communities could be a significant prevention intervention to curb the epidemic among women in these communities. Recognizing that HIV risk perception—and assessment of risk by health care providers—underestimates the true likelihood of HIV infection and that nearly a quarter of a million of the US population are unknowingly infected, the CDC has recommended that all persons aged 13 to 64 years be tested for HIV at medical encounters.³³

Studies are under way to evaluate initiatives to increase the uptake of HIV testing in health care centers, and preliminary results show that in communities with large African American populations, patients will accept HIV testing when offered. Concomitant with increasing testing during patient encounters in health care centers is the need to promote the message of HIV testing to those in the African American community who do not routinely have access to health care centers—a need that could be addressed by a mass media campaign developed from formative research of the message format and media channels preferred by the target audience. Identifying persons in the community with undiagnosed HIV infection, and linking them to care and antiretroviral therapy, could have profound effects on curbing the HIV epidemic for African American women—hence the CDC's emphasis on piloting campaigns to promote HIV testing as a "major" strategy for African American communities. American communities.

A recent, small pilot study involving focus groups with young black women in an urban, predominantly African American neighborhood of Boston was conducted to understand how a health communications strategy might be developed to address the HIV disparity in the community (author's unpublished data). This study focused not only on what HIV messages these women felt their community needed but also on *their* preferred media channels to deliver these messages to reach their at-risk community. Focus group participants felt they needed more information about HIV. As one woman stated, "We need to learn that it's out there ... it's in our community ... and we need to learn more about it ... we need to learn how to prevent it, so we need more information about it." In these discussions, HIV testing was a prominent theme with women indicating that HIV testing messages need to be more widespread. Women highlighted a need for men in their community to be tested for HIV. When women were asked what message should be promoted in their community in an effort

to address the HIV/AIDS epidemic, the majority of women put it very simply: "Get tested." Delivering HIV information to the community could be pursued via several channels. Women suggested community newspapers, signs in local food establishments, and slogans on clothing. In addition, women felt that having popular culture music artists discuss HIV in lyrics could be a powerful influence in their community. These data serve as a good starting point for a more extensive formative research study to develop media campaigns to promote HIV testing in the African American community.

The CDC is currently evaluating their "Take Charge. Take the Test" campaign, which is one of the few campaigns that published their experience using extensive formative research, guided by social marketing principles and health behavior models, to develop a mass media HIV testing campaign that specifically targeted African American women. This multichannel mass media campaign included partnership outreach and training, community events, posters, outdoor billboards, transit posters, and radio advertisements and was conducted in Philadelphia and Cleveland from October 2006 to October 2007. Messages in the campaign included, "You know him. But you can't know everything. Get a Free HIV Test." Preliminary evaluation of the campaign indicates an increase in calls to city HIV/ AIDS hotlines and an increase in the uptake of HIV testing, including the finding of HIV-positive test results among the African American women. The investigators note that an existing upward trend in HIV testing in Cleveland makes it difficult to differentiate the campaign's influence from other community influences (J. Johnston, personal communication, December 18, 2008).

Developing targeted messages about HIV testing—using formats and channels preferred by the target audience—may be a critical intervention in African American communities facing high HIV/AIDS prevalence. A 2005 Cochrane review found that media campaigns can be effective in promoting HIV testing.³⁷ While getting tested for HIV may not be considered a pure primary prevention method, knowing one's status may be a critical component for HIV prevention because knowledge of one's serostatus has been shown to reduce high-risk behaviors; detecting infected persons who are unaware of their status is in line with the CDC serostatus approach to fighting the epidemic.^{32,38,39} Given the mass media's role as an HIV information source in African American communities, the cost-effectiveness of using mass media as an HIV prevention intervention, and the success of mass media in promoting HIV testing, it is encouraging that the CDC has recommended "piloting separate campaigns that develop messages and promote HIV testing for men who have sex with men, women, youth, and heterosexual men as a major strategy in reducing the spread of AIDS in African American communities."¹¹

Moving Forward With a Communications Strategy

A multidimensional approach to HIV prevention is needed to mitigate the ongoing epidemic in African American communities. The CDC has called for a heightened response to the HIV/AIDS crisis among African Americans and has specifically highlighted expanded HIV testing and targeted communications as strategies to help address disparities in HIV transmission among this group. ¹¹ The US Healthy People 2010 goals also have a new focus on using health communication strategies to end health disparities. ¹⁰

The use of mass media, which has been cited by African Americans as a source of HIV/AIDS information and a cost-effective prevention intervention that also has been shown to increase the uptake of HIV testing, may be an effective strategy to inform this community about the raging epidemic currently in their community and to model HIV prevention behaviors, including getting tested.

Additional formative research is required to better understand the message content needed, the influence of message formats, and the media channels preferred by and available to African American communities at risk in today's epidemic. Because there is a staggering epidemic threatening the lives of young, African American women, critical to the development of any mass media campaign will be the inclusion of women with or at risk for HIV infection in the discussions and in the design of research on how best to reach these women and their male partners with media initiatives.

ENDING AN EPIDEMIC AT HOME

It is without a doubt that the United States with its talent and wealth should offer its intellectual and financial resources to the staggering 33 million persons infected with HIV abroad—a true crisis undermining the social fabric of many societies. ⁴⁰ It is, however, a tragedy of its own proportions that communities in the United States are being neglected. While praising President Bush's extraordinary initiative to fight HIV/AIDS abroad through the President's Emergency Plan for AIDS Relief (PEPFAR), the then President-elect Barack Obama said on World AIDS Day 2008 that the United States "must also recommit ourselves to addressing the AIDS crisis here in the United States with a strong national strategy of education, prevention, and treatment, *focusing on those communities at greatest risk* [emphasis added]."⁴¹ The devastating effect that HIV/AIDS is disproportionately having on African American women in the United States calls for heightened awareness, intellectual and financial dedication, and new strategies for prevention. Ensuring that appropriate HIV/AIDS messages are reaching this community may be an important component to eliminating the health disparity.

Acknowledgments

This article resulted in part from research support to Dr Arya by the Harvard University Center for AIDS Research (CFAR), an NIH-funded program (P30 AI060354).

References

- 1. William, J. [Accessed January 15, 2009] Clinton Presidential Library and Museum. Remarks by the President on HIV Crisis in Minority Communities. Oct 28. 1998 http://clinton6.nara.gov/1998/10/1998-10-28-remarks-by-the-president-on-hiv.html
- Centers for Disease Control and Prevention. [Accessed December 8, 2008] Fact sheet: HIV/AIDS among African Americans. Aug. 2008 http://www.cdc.gov/hiv/topics/aa/resources/factsheets/aa.htm
- 3. Centers for Disease Control and Prevention. [Accessed December 17, 2008] Fact sheet: HIV/AIDS among women. Aug. 2008 http://www.cdc.gov/hiv/topics/women/resources/factsheets/women.htm
- Centers for Disease Control and Prevention. HIV transmission among black women North Carolina, 2004. MMWR. 2005; 54:89–94. [PubMed: 15689856]
- 5. Essien EJ, Meshack AF, Peters RJ, et al. Strategies to prevent HIV transmission among heterosexual African-American women. Int J Equity Health. 2005; 4:4. [PubMed: 15774003]
- Gentry QM, Elifson K, Sterk C. Aiming for more relevant HIV risk reduction: a black feminist perspective for enhancing HIV intervention for low-income African American women. AIDS Educ Prev. 2005; 17:238–252. [PubMed: 16006210]
- Kalichman SC, Hunter TL, Kelly JA. Perceptions of AIDS susceptibility among minority and nonminority women at risk for HIV infection. J Consult Clin Psychol. 1992; 60:725–732. [PubMed: 1401388]
- 8. Forna FM, Fitzpatrick L, Adimora AA, et al. A case-control study of factors associated with HIV infection among black women. J Natl Med Assoc. 2006; 98:1798–1804. [PubMed: 17128690]
- 9. McNair LD, Prather CM. African American women and AIDS: factors influencing risk and reaction to HIV disease. J Black Psychol. 2004; 30:106–123.

 Department of Health and Human Services. [Accessed December 18, 2008] Healthy People 2010 Web site. http://www.healthypeople.gov

- 11. Centers for Disease Control and Prevention. [Accessed February 8, 2008] A heightened national response to the HIV/AIDS crisis among African Americans. Jun. 2007 http://www.cdc.gov/hiv/topics/aa/resources/reports/heightendresponse.htm
- 12. Cohen DA, Wu SY, Farley TA. Comparing the cost-effectiveness of HIV prevention interventions. J Acquir Immune Defic Syndr. 2004; 37:1404–1414. [PubMed: 15483470]
- 13. Viswanath, K. Public communications and its role in reducing and eliminating health disparities. In: Thomson, G.; Mitchell, F.; Williams, M., editors. Examining the Health Disparities Research Plan of the National Institutes of Health: Unfinished Business. National Academy Press; Washington, DC: 2006.
- 14. Palmgreen, P.; Noar, SM.; Zimmerman, RS. Mass media campaigns as a tool for HIV prevention. In: Edgar, TM.; Noar, SM.; Freimuth, VS., editors. Communication Perspectives on HIV/AIDS for the 21st Century. Lawrence Erlbaum Associates; New York: 2008.
- 15. Viswanath K, Emmons KM. Message effects and social determinants of health: its application to cancer disparities. J Communication. 2006; 56:S238–S264.
- Essien EJ, Ross MW, Linares AC, Osemene NI. Perception of reliability of human immunodeficiency virus/AIDS information sources. J Natl Med Assoc. 2000; 92:269–274. [PubMed: 10918761]
- 17. Wolitski RJ, Bensley L, Corby NH, et al. AIDS Community Demonstration Projects. Sources of AIDS information among low-risk and at-risk populations in five U.S. cities. J Community Health. 1996; 21:293–310. [PubMed: 8842891]
- 18. Hingson R, Strunin L, Craven DE, et al. Survey of AIDS knowledge and behavior changes among Massachusetts adults. Prev Med. 1989; 18:806–816. [PubMed: 2626414]
- Centers for Disease Control and Prevention. HIV-infection prevention messages for injecting drug users: sources of information and use of mass mediaBaltimore, 1989. MMWR. 1991; 40:465–469.
 [PubMed: 2062300]
- Wolitski RJ, Fishbein M, Johnson WD, et al. AIDS Community Demonstration Projects. Sources
 of HIV information among injecting drug users: association with gender, ethnicity, and risk
 behaviour. AIDS Care. 1996; 8:541–555. [PubMed: 8893905]
- 21. Cunningham WE, Davidson PL, Nakazono TT, Andersen RM. Do black and white adults use the same sources of information about AIDS prevention? Health Educ Behav. 1999; 26:703–713. [PubMed: 10533174]
- 22. Kaiser Family Foundation. [Accessed December 1, 2008] Survey of Americans on HIV/AIDS. Part three: experiences and opinions by race/ethnicity and age. Aug. 2004 http://www.kff.org/hivaids/upload/Survey-of-Americans-on-HIV-AIDS-Part-Three-Experiences-and-Opinions-by-Race-
- Kaiser Family Foundation. [Accessed December 19, 2008] Assessing Public Education Programming on HIV/AIDS: A National Survey of African Americans. Oct. 2004 http:// www.kff.org/entmedia/7181.cfm
- 24. Henderson SJ, Bernstein LB, George DM, et al. Older women and HIV: how much do they know and where are they getting their information? J Am Geriatr Soc. 2004; 52:1549–1553. [PubMed: 15341560]
- Hutchinson AB, Corbie-Smith G, Thomas SB, et al. Understanding the patient's perspective on rapid and routine HIV testing in an inner-city urgent care center. AIDS Educ Prev. 2004; 16:101– 114. [PubMed: 15134119]
- Roye CF, Hudson M. Developing a culturally appropriate video to promote dual-method use by urban teens: rationale and methodology. AIDS Educ Prev. 2003; 15:148–158. [PubMed: 12739791]
- Kalichman SC, Kelly JA, Hunter TL, et al. Culturally tailored HIV-AIDS risk-reduction messages targeted to African-American urban women: impact on risk sensitization and risk reduction. J Consult Clin Psychol. 1993; 61:291–295. [PubMed: 8473583]
- 28. O'Donnell CR, O'Donnell L, San Doval A, et al. Reductions in STD infections subsequent to an STD clinic visit. Using video-based patient education to supplement provider interactions. Sex Transm Dis. 1998; 25:161–168. [PubMed: 9524995]

 Hornik, RC. Public health communication: making sense of contradictory evidence. In: Hornik, RC., editor. Public Health Communication: Evidence for Behavior Change. Lawrence Erlbaum Associates; Mahwah, NJ: 2002.

- 30. Centers for Disease Control and Prevention. Late versus early testing of HIV16 sites, United States, 2000-2003. MMWR. 2003; 52:581–586. [PubMed: 12836626]
- 31. Marks G, Crepaz N, Janssen RS. Estimating sexual transmission of HIV from persons aware and unaware that they are infected with the virus in the USA. AIDS. 2006; 20:1447–1450. [PubMed: 16791020]
- 32. Marks G, Crepaz N, Senterfitt JW, Janssen RS. Meta-analysis of high-risk sexual behavior in persons aware and unaware they are infected with HIV in the United States: implications for HIV prevention programs. J Acquir Immune Defic Syndr. 2005; 39:446–453. [PubMed: 16010168]
- 33. Branson BM, Handsfield HH, Lampe MA, et al. Centers for Disease Control and Prevention. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. MMWR. 2006; 55(RR-14):1–17. quiz CE1-4. [PubMed: 16988643]
- Lyss SB, Branson BM, Kroc KA, et al. Detecting unsuspected HIV infection with a rapid wholeblood HIV test in an urban emergency department. J Acquir Immune Defic Syndr. 2007; 44:435– 442. [PubMed: 17224850]
- 35. Brown J, Shesser R, Simon G, et al. Routine HIV screening in the emergency department using the new US Centers for Disease Control and Prevention Guidelines: results from a high-prevalence area. J Acquir Immune Defic Syndr. 2007; 46:395–401. [PubMed: 18077831]
- 36. Lee NR, Spoeth S, Smith K, et al. Encouraging African-American women to "Take Charge. Take the Test": the audience segmentation process for CDC's HIV testing social marketing campaign. Soc Marketing Q. 2006; 12:16–28.
- 37. Vidanapathirana J, Abramson MJ, Forbes A, Fairley C. Mass media interventions for promoting HIV testing. Cochrane Database Syst Rev. 2005; (3):CD004775. [PubMed: 16034948]
- Centers for Disease Control and Prevention. Adoption of protective behaviors among persons with recent HIV infection and diagnosisAlabama, New Jersey, and Tennessee, 1997-1998. MMWR. 2000; 49:512–515. [PubMed: 10882290]
- 39. Janssen RS, Holtgrave DR, Valdiserri RO, et al. The serostatus approach to fighting the HIV epidemic: prevention strategies for infected individuals. Am J Public Health. 2001; 91:1019–1024. [PubMed: 11441723]
- UNAIDS. [Accessed December 2, 2008] Report on the global HIV/AIDS epidemic 2008: executive summary. Jul. 2008 http://data.unaids.org/pub/GlobalReport/2008/ JC1511_GR08_ExecutiveSummary_en.pdf GR08_ExecutiveSummary_en.pdf
- 41. Rhee, F. [Accessed December 2, 2008] Obama pledges fight against AIDS. Boston Globe Political Intelligence. Dec 1. 2008 Web log. http://boston.com/news/politics/politicalintelligence/2008/12/obama_pledges_f.html
- 42. Centers for Disease Control and Prevention. [Accessed January 15, 2009] HIV/AIDS surveillance in women. May 21. 2008 http://www.cdc.gov/hiv/topics/surveillance/resources/slides/women. Modified
- 43. Centers for Disease Control and Prevention. 10 Leading causes of deaths, United States. National Center for Injury Prevention and Control; http://webappa.cdc.gov/cgi-bin/broker.exe? _service=v8prod&_server=app-v-ehip-wisq.cdc.gov&_port=5081&_sessionid= [Accessed January 15, 2009]

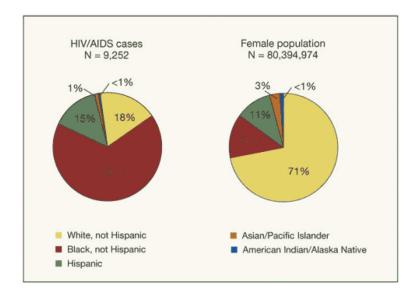


Figure 1. Proportion of HIV/AIDS cases and population among female adults and adolescents, by race/ethnicity, 2006, 33 states. (Reproduced from the Centers for Disease Control and Prevention.42)

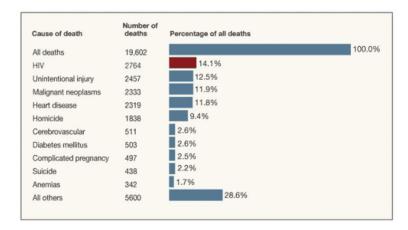


Figure 2. Ten leading causes of death in the United States among black, non-Hispanic females, aged 25 to 34 years, from 2000 to 2005. (Adapted from the Centers for Disease Control and Prevention.43)

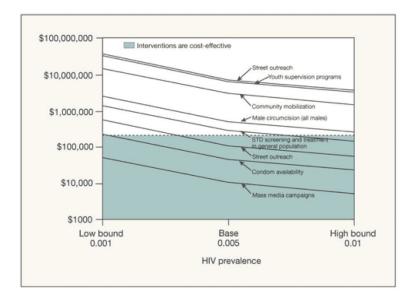


Figure 3.Comparing the cost-effectiveness of HIV prevention interventions: Sensitivity analysis of the prevalence for general interventions for HIV prevention. (STD, sexually transmitted disease.) (Reproduced with permission from Cohen DA et al. J Acquir Immune Defic Syndr. *2004.12*)