

For HIV-Positive Black Men, Having Partners of Both Sexes May Be a Marker for Risky Sexual Behaviors

HIV-positive black men who have sex with both men and women engage in more high-risk behaviors than do those who have sex only with men or only with women, according to a U.S. multisite study.¹ For example, in the past year, higher proportions of these men than of the other two groups have paid for sex, received payment for sex and used noninjection drugs. While high-risk behaviors have been well documented in research on HIV-positive individuals, the investigators point out that few studies have concentrated on black men, even though they account for three in 10 HIV-positive adults and adolescents in the United States.

To examine the relationships between high-risk behaviors and choice of sexual partners among HIV-positive black men, the researchers analyzed data reported to the Centers for Disease Control and Prevention by 19 health departments (located in 18 states) between June 2000 and January 2004. The analytic sample consisted of 2,038 black men who had been sexually active in the past year. Respondents were interviewed about their social and demographic characteristics and medical history, in addition to their sexual behaviors and related risk behaviors. The partner that the respondent felt most committed to was considered “steady,” while any other partners were “nonsteady.” The researchers assessed differences in men’s characteristics and behaviors by partner type using chi-square tests and analyses of variance.

Men were, on average, 40 years old, and 26% had less than a high school education. Six in 10 were unemployed, and about half had a yearly household income of less than \$10,000. On average, men had known that they were HIV-positive for about five years; 63% had AIDS. In the past year, four in 10 reported only a steady partner or only nonsteady partners, and 19% had had both types of partners. Some 58% of men had had sex only with women, 36% only with men and 5% with at least one man and one woman.

Men in this last group had had an average of eight partners, roughly double the number reported by men who had had only male or

female partners. Compared with these two groups, men who had had partners of both genders were more likely to report having used noninjection drugs (50–64% vs. 75%), having paid for sex (30–37% vs. 72%) and having been paid for sex (15–33% vs. 56%).

Sixty-five percent of men who had had sex only with women had had a steady female partner, compared with 25% of men reporting partners of both genders. Among those reporting a steady female partner, significantly higher proportions of men who had had partners of both genders than of those who had had only female partners reported that they did not know their partner’s HIV serostatus (43% vs. 14%) and that their last sexual encounter with this partner had included anal intercourse (21% vs. 4%) or unprotected vaginal intercourse (46% vs. 28%). In contrast, a lower proportion of the former than of the latter reported that this partner was HIV-positive (14% vs. 31%).

Nonsteady female partners were reported by 78% of men who had had partners of both genders and by 52% of men who had had sex only with women. More than four in 10 in each group reported not knowing their most recent partner’s HIV serostatus. Smaller proportions of men reporting only female partners than of men reporting male and female sex partners had used drugs at last sex (25% vs. 46%) and had had anal intercourse on that occasion (6% vs. 13%).

A higher proportion of men who had had sex only with men than of men who had had partners of both genders reported having a steady male partner in the last year (62% vs. 44%). These two groups did not differ significantly in their sexual behaviors. However, men who had had only male partners were less likely than those who had had both male and female partners to report substance use at last sex (13% vs. 25–27%) and to not know their partner’s HIV status (15% vs. 27%); they were more likely to say that their steady partner was HIV-positive (52% vs. 25%).

As in the analysis focusing on female partners, men who had had sex with both men and women were more likely to have had a

nonsteady male partner than were men who had had sex only with men (78% vs. 61%). Among those with nonsteady male partners, a higher proportion of men who had had male and female partners than of men who had had only male partners reported drug use at last sex (36% vs. 23%). Two-thirds of men reporting partners of both genders had had insertive anal intercourse with their nonsteady male partner, compared with four in 10 men who had had sex only with men; 41% and 55%, respectively, reported having had receptive anal intercourse with this type of partner.

The researchers acknowledge that these findings, which may not hold true for all HIV-positive black men in the United States, may have been influenced by social desirability bias. They note, however, that the high-risk behavior of men with male and female partners may be “contributing to new infections and fueling the epidemic” in black communities. The investigators add that since HIV-positive black men often face unemployment, poverty and stigma related to HIV and same-gender sexual behavior, among other issues, interventions that go beyond reducing sexual risk behaviors may best meet the “urgent need for prevention interventions for this population.”—S. Ramashwar

REFERENCE

1. Spikes PS et al., Sexual risk behaviors among HIV-positive black men who have sex with women, with men, or with men and women: implications for intervention development, *American Journal of Public Health*, 2009, 99(6):1072–1078.

Singapore: Teenagers' Odds Of Sex Linked to Exposure To STDs in the Media

Although the vast majority of teenagers in a clinic-based study in Singapore knew that AIDS is incurable, this knowledge was not a predictor of sexual initiation; however, those who had read or seen media portrayals of individuals with HIV, AIDS or other STDs were considerably less likely to be sexually

experienced than were those who had not.¹ Among males, the strongest predictor of sexual initiation during adolescence was exposure to pornographic materials, which also was positively—although more moderately—associated with sexual experience among females. For females, the strongest predictor of sexual initiation was a history of sexual abuse.

The study, conducted in 2006–2008, compared a sample of never-married 14–19-year-olds visiting Singapore's only public STD clinic with a sample of sexually inexperienced youths attending a primary care clinic; members of the control group were matched to STD clinic clients according to age, gender and ethnicity. STD clinic clients were eligible to participate only if they reported that their most recent sexual encounter (vaginal, oral or anal intercourse) had been voluntary. In all, 500 teenagers from each clinic—264 males and 236 females—were included in the study. Participants completed a face-to-face interview, along with a self-administered questionnaire (on sensitive topics), to provide information on their background characteristics, sexual behavior and related attitudes, and exposure to sexual content in the media.

Univariate analyses revealed a number of differences between sexually experienced and inexperienced adolescents. The former were more likely than the latter to report characteristics suggesting socioeconomic disadvantage and to say that they had engaged in a variety of risk behaviors. The two groups were equally unlikely to think that AIDS is curable (6–7% of males and 6% of females in each group gave this response) and to believe that it is possible to tell that a person has HIV or AIDS just from appearances (19–24% of males and 15–19% of females). However, sexually experienced teenagers reported a more liberal attitude toward premarital sex and less confidence in their ability to resist peer pressure to have sex. Questions about parental relationships, peer characteristics and the school environment generally yielded similar responses from the two groups; a notable exception was that a greater proportion of sexually experienced participants than of controls believed that at least half of their peers had already had sex (46% vs. 13% among males and 52% vs. 14% among females).

Measures of exposure to media with sexual content also were largely similar in the two

groups. However, sexually experienced adolescents were more likely than controls to report ever having read or watched pornography (95% vs. 79% among males and 73% vs. 37% among females); males with sexual experience also were less likely than others to say that they had read about people with STDs or had seen TV shows, movies or videos including such individuals (16% vs. 46%). Finally, sexually experienced females were more likely than controls to have a history of sexual abuse (23% vs. 3%) and gave their parents lower scores on an index measuring authoritativeness.

In separate analyses for female and male respondents, the researchers used bivariate logistic regression to identify potential predictors of adolescent sexual experience. Most of the characteristics examined were significant in these calculations and were entered into multivariate models. Exceptions included knowledge about AIDS (e.g., that it is not curable) and degree of exposure to media with sexual content.

The strongest predictor of teenage sexual initiation emerging from the multivariate analysis for males was exposure to pornography: The odds of sexual experience were almost six times as high among male participants who had ever read or watched pornographic material as among those who had not (odds ratio, 5.8). Males' likelihood of being sexually experienced also was positively associated with drinking and smoking (1.8–1.9), and with living in low-cost housing, reporting involvement in gang activities, approving of premarital sex, perceiving that a majority of their friends had had sex and lacking confidence in their ability to resist peer pressure to have sex (3.3–3.8); it was negatively associated having seen or read media portrayals of individuals with STDs (0.3).

Among females, having a history of sexual abuse was the strongest predictor of sexual experience: Participants reporting such a history had markedly higher odds than others of having initiated sex (odds ratio, 7.8). The likelihood of being sexually experienced also was elevated among females who had dropped out of school, used alcohol, did not consider their mother a confidante, thought that the majority of their friends were sexually experienced or had ever read or watched pornography (2.1–3.2); lived in low-cost housing or did not feel that they could resist peer pressure to have sex (4.5–5.6); or had a

liberal attitude toward premarital sex (6.3). Like their male counterparts, females who had read or seen media portrayals of people with STDs had reduced odds of having had sex (0.2).

The researchers observe that the clinic-based setting of their study limits the generalizability of its findings, and that biases inherent in self-reported data may have affected the results. Nonetheless, they believe that several of their findings may have implications for teenagers' healthy sexual development. They note that adolescents' feeling that they cannot resist peer pressure to have sex, a risk factor for both females and males in this sample, is potentially modifiable and should be a target of education interventions. Further, given that sexual initiation was not related to participants' knowledge about AIDS but was negatively associated with exposure to media portrayals of individuals with STDs, the researchers recommend that TV shows be used as a vehicle for information about STDs and life skills education. Finally, they suggest that “the strong association of pornography with adolescent sexual initiation” calls for steps “to monitor, to reduce, or to restrict access to explicit sexual media and pornography for adolescents.”

—D. Hollander

REFERENCE

1. Wong M-L et al., Premarital sexual intercourse among adolescents in an Asian country: multilevel ecological factors, *Pediatrics*, 2009, 124:e44–e52, <<http://www.pediatrics.org/cgi/content/full/124/1/e44>>, accessed July 8, 2009.

Young Adult Black Men With Depression Have Elevated STD Prevalence

Depression is linked to an elevated risk of STD infection for black men between the ages of 18 and 28, but not for their white peers or for women of either race, according to a study based on two waves of data from the National Longitudinal Study of Adolescent Health (Add Health).¹ In adjusted analyses, the prevalence of STD infection was twice as high among young adult black men who were depressed as among those who were not; it was three times as high among those who were depressed both during adolescence and in young adulthood as among their young adult counterparts who

were not depressed. Depression was associated with the likelihood that some subgroups of young men and women had had multiple partners, but was not related to condom use.

Add Health began with a nationally representative sample of students in grades 7–12 in 1995 and has followed them into young adulthood. To study the relationship between depression and both STD risk and sexual risk behavior, researchers analyzed data from Wave 1 and Wave 3 (conducted in 2001–2002). Both waves collected information on a wide array of participants' characteristics and behaviors, and at Wave 3, respondents were asked to provide a urine sample, to be tested for chlamydia, gonorrhea and trichomoniasis. Black and white participants for whom sample weights were available and who had test results for all three STDs were included in the analyses. The researchers compared STD prevalence among various subgroups of these 8,794 young adults in bivariable analyses and then calculated prevalence ratios to assess relationships, for subgroups defined by sex and race, between depression and three outcomes: current STD infection, multiple partners in the past year and inconsistent condom use in the past year.

The sample was evenly divided between males and females, who were, on average, about 22 years old at Wave 3; eight in 10 were white, and the rest were black. Three-quarters had had vaginal intercourse by age 18, and 4% said at Wave 1 that they had had an STD. Mental health measures included in the survey suggested that 4% of young adults had major depression at both waves; these participants were categorized as having chronic depression. Seven percent were depressed only at Wave 3 and were classified as having had recent depression. Fewer than one in 10 had received counseling or been treated medically for depression or stress in the last year; the proportions were lower for blacks (10% and 5%, respectively) than for whites (21% and 17%).

At Wave 3, some 6% of respondents tested positive for an STD. The likelihood of having an infection was elevated among women (odds ratio, 1.6), blacks (7.0) and young adults with either chronic or recent depression (1.5 for each). It also was raised for those who were married, whose socioeconomic characteristics suggested some degree of

disadvantage, who had first had intercourse at age 16 or earlier, and who reported having had an STD at Wave 1 (1.3–3.3).

In analyses that adjusted for potentially confounding socioeconomic and behavioral characteristics, both recently and chronically depressed black men were more likely to have an STD than were those with no depression detected at Wave 3 (prevalence ratios, 2.4 and 3.1, respectively). Depression was not associated with STD prevalence among white men or among black women; white women with chronic depression had a reduced prevalence of STD in young adulthood (0.2).

Associations between depression and having multiple partners were more common among women than among men. White women with recent depression were more likely than those with no depression to have had two or more, six or more, or 10 or more partners in the past year (odds ratios, 1.5, 2.1 and 6.9); those who were chronically depressed had elevated odds of reporting 10 or more partners (8.4). Black women with recent depression had elevated odds of having had at least six partners in the past year (2.6), and those with chronic depression had sharply reduced odds of reporting this outcome (0.1). No associations were found for white men, but black men with chronic depression were at risk of having had six or more partners (2.5) and 10 or more (2.2).

Neither inconsistent condom use nor non-use of the method was associated with depression in any of the subgroups defined by sex and race.

“The most important limitation” of the study, in the researchers' view, was that because of data constraints, it is not “fully longitudinal” and therefore does not permit assessment of causal relationships. Nonetheless, the investigators conclude that their findings highlight “the need for improved integration of mental health and [STD] diagnosis, treatment and prevention” services for young people, especially blacks. “Addressing depression,” they remark, “may lead to improved physical health,” including reduced STD risks.—*D. Hollander*

REFERENCE

1. Khan MR et al., Depression, sexually transmitted infection, and sexual risk behavior among young adults in the United States, *Archives of Pediatrics and Adolescent Medicine*, 2009, 163(7):644–652.

Infants' HIV May Be Linked to Prechewed Food From Infected Caregivers

Infants who eat food that has been prechewed by an HIV-positive caregiver may be at risk for HIV infection, a series of U.S. case reports suggests.¹ Researchers identified three cases in which young, HIV-negative children were infected with the virus after frequent feedings of premasticated food; in each case, no other likely routes of transmission were present. Although the investigators believe that such transmission is likely rare, the findings raise concerns because prechewing food is a common practice in many developed and developing countries.

The investigators studied two cases in Miami and one in Memphis. In all three instances, health care providers had interviewed parents and relatives, reviewed medical histories and collected blood samples to establish that an infant born HIV-negative who was given prechewed food by an HIV-infected family member eventually tested positive for the virus.

The first case concerned a 15-month-old Miami boy who had been fed prechewed food by his recently deceased, HIV-positive great-aunt for about five months. The boy's mother had not known that her aunt had HIV, although she had noticed that her aunt's gums sometimes bled into the food she gave the boy. The infant was tested for HIV following a pediatrician visit for recurrent diarrhea and ear infection. Because the test was positive, the boy and his mother, both previously HIV-negative, were subsequently tested multiple times using HIV-1 antibody tests and Western blots; on each occasion, he tested positive for HIV, while she remained negative.

Because the great-aunt had died and no blood samples from her were available, the researchers were unable to confirm that her strain of HIV was genetically identical to the boy's. Researchers did test a sample from the great-aunt's sexual partner, an HIV-infected intravenous drug user, and found that his HIV strain was not related to the boy's; this did not exclude the great-aunt as the source of infection, however, as she could have become infected from some other source.

The second case, which occurred in 1995 in the same city, involved a child born to an HIV-positive mother. Despite a lack of

perinatal prophylactic treatment, the child had tested negative for the virus at 20 and 21 months of age, and showed no signs of immunosuppression. By 39 months, however, the child had developed medical problems consistent with possible HIV infection: Tests revealed the presence of HIV and severe immunosuppression. A phylogenetic analysis of virus samples confirmed that mother-to-child transmission had likely occurred. The mother reported that she had fed the child premasticated food but did not remember whether she had good oral health at the time.

The third case, which prompted the researchers' investigation, took place in Memphis in 2004. A nine-month-old girl born to an HIV-infected mother developed a variety of health issues and tested positive for HIV. Because of the mother's HIV status, the infant had received prophylactic antiretroviral medication for six weeks following delivery and had been tested for HIV several times during her first four months. All of these earlier tests for HIV had been negative. She had not been breast-fed; however, the mother, who occasionally had bleeding gums and had taken her HIV medication inconsistently during and after the pregnancy, had begun giving her daughter prechewed food when the child was about four months old. Phylogenetic analysis provided strong evidence that the mother had passed HIV on to her infant.

In this case, as in the previous two, interviews with caregivers and physical examinations failed to uncover any other likely means of transmission, such as injury, transfusion or sexual abuse leading the investigators to conclude that the infants, who were teething or suffering oral illness, were infected via prechewed food containing blood from an HIV-positive parent or relative.

The researchers note that prechewing food may be more common than health care providers realize. Although data on this topic are limited, 11% of mothers in a U.S. survey reported having fed prechewed food to their 10-month-old infant; three-fifths of respondents in a Chinese study said they had fed their child prechewed food, and one-fifth had done so regularly.

Although mother-to-child transmission of other infectious microorganisms has been associated with prechewed food in some parts of the developing world, such transmission of HIV is "probably rare," the

researchers contend, as it requires "a convergence of risk factors affecting both the caregiver and the child." Detecting any cases that do occur is difficult, particularly in developing countries, because such transmission may be attributed to breast-feeding. They caution health care providers to take cultural beliefs and available resources into consideration before counseling HIV-positive parents and relatives against prechewing food, but emphasize that "it is crucial to educate caregivers who are infected with HIV about prechewing"—especially those who have active bleeding in the mouth—"because they may be unaware of its potential health risks."

—S. Ramashwar

REFERENCE

1. Gaur AH et al., Practice of feeding premasticated food to infants: a potential risk factor for HIV transmission, *Pediatrics*, 2009, 124(2):658–666.

HIV-Infected Men Who Have Sex with Men: Risky Sex Linked to Early Abuse

A history of childhood sexual abuse was common and appeared to be linked to risky behavior during adulthood among a sample of HIV-infected men who have sex with men and who participated in safer-sex seminars in 2005–2006.¹ Close to half of the men in the sample reported having been abused as children; most of this group, or about a third of the entire sample, said that the abuse had occurred with some frequency. The frequency of abuse was positively associated with men's reported number of recent sexual contacts and recent acts of unprotected anal intercourse. Men reporting a history of abuse were more likely than others to be black or Latino.

To be eligible for participation in the seminars, which were conducted in six major cities with high rates of HIV infection, men had to be HIV-positive, be at least 18 years old and say that they had had unprotected anal sex with a man at least once in the previous year. The analyses are based on the 593 participants who completed a self-administered baseline questionnaire and answered the questions about childhood sexual abuse. In bivariate analyses, researchers compared men who reported a history of abuse with those who did not; in multivariate analyses, they

explored the relationships between abuse and selected sexual behaviors.

Forty-seven percent of the men said that at least once during childhood or adolescence, an older man or woman had forced them to have unwanted sexual activity; 15% reported that abuse had occurred once or rarely, 17% that it had happened sometimes and 15% that it had occurred often. Some 58% of those who had experienced abuse reported that the perpetrator was a man, 14% had been victimized by a woman and 28% had been abused by both.

In terms of demographic characteristics, men who had been abused and men who had not differed chiefly with regard to race and ethnicity: The proportions who were Latino and black were significantly greater among men with a history of abuse (28% and 47%, respectively) than among those reporting no childhood abuse (18% and 43%); 20% of men reporting abuse were white, compared with 32% of men not reporting abuse. Education also differed by group: Forty-three percent of men who had been abused, but only 34% of others, had no more than a high school education. Age differences were significant but small; employment status and income were comparable in the two groups.

The two groups registered sharp differences on measures assessing mental health and substance use. Men reporting abuse were significantly more likely than others to score at the high end of scales measuring compulsive sexual behavior (40% vs. 26%), negative feelings about their homosexuality (41% vs. 25%), and depression and anxiety (39% vs. 24%); they also were more likely than men not reporting abuse to give their level of comfort with sex a low rating (63% vs. 52%). Reports of problems with drugs, either currently or in the past, were more common among men who said they had been abused than among others (41% vs. 28%); the same was true of problems with alcohol (33% vs. 28%). About half of each group reported having used alcohol during anal sex during the last 90 days, but a higher proportion of men reporting abuse than of others said that they had used methamphetamines at least some of the time during anal sex (19% vs. 14%).

Reports of sexual orientation and sexual risk measures also varied by abuse status. The proportion of participants who said that they were gay or they were attracted to men

was significantly lower among those who had been abused (77%) than among those who had not (84%). Consistent with those reports, abused men were less likely than others to say that their most recent partners in the past three months were exclusively or mostly men (84% vs. 93%). The two groups were similar in the proportions who said that they had had any intercourse, anal intercourse and unsafe anal intercourse (i.e., unprotected receptive or insertive anal sex with a partner who was HIV-negative or whose HIV status was unknown) during the previous three months. However, the median numbers of total acts of intercourse and total acts of anal intercourse (safe or unsafe) were larger among men reporting childhood abuse (24 and 15, respectively) than among those not reporting this experience (18 and 12). Men in the abuse group had received their HIV diagnosis somewhat longer ago than others (median, 12 vs. 11 years), but rates of STD diagnosis or treatment in the last three months did not differ between the groups.

Multivariate analyses showed a history of childhood abuse to be significantly related to sexual activity and unsafe sexual activity. Men who had been abused reported more sexual contacts in the past three months than others (rate ratio, 1.2 if abuse had occurred once or rarely, 1.3 if it had been occasional and 1.3 if it had been frequent). They also reported more acts of anal intercourse (1.2 for onetime or infrequent abuse, 1.4 for frequent abuse) and of unsafe anal intercourse (2.0 for occasional and 1.5 for frequent abuse).

While acknowledging that their sample is limited geographically and by participants' risk profiles, the researchers nonetheless conclude that their findings "provide compelling evidence for an association of childhood sexual abuse with frequencies of sexual behavior." They advocate for "community-level programs aimed at reducing rates of childhood sexual abuse or mitigating the long-term effects of abuse in [men who have sex with men]," and they particularly point to the need for heightened awareness of childhood sexual abuse in minority communities.

—D. Hollander

REFERENCE

1. Welles SL et al., History of childhood sexual abuse and unsafe anal intercourse in a 6-city study of HIV-positive men who have sex with men, *American Journal of Public Health*, 2009, 99(6):1079–1086.

Many HIV-Infected Women Do Not Get Pap Tests As Often as Recommended

HIV treatment guidelines issued in 1995 recommend that infected women have a yearly Pap test, but findings from a large HIV and AIDS surveillance project suggest that many HIV-positive women do not do so.¹ Nearly one-quarter of HIV-infected women interviewed in 18 states in 2000–2004 had not had a Pap test in the preceding year. The older a woman was, the greater her likelihood of having missed a Pap test; women who had a low CD4 cell count, those whose count was unknown and those whose most recent pelvic exam had been performed somewhere other than their usual source of HIV care had relatively high odds of not having had a Pap test in the previous year. Cervical screening is particularly important for HIV-infected women because they have a higher rate of human papillomavirus (HPV) infection than HIV-negative women and are more likely to be infected with a strain of HPV that increases the risk of cervical cancer.

Researchers used data from a convenience sample of women, identified through both facility- and population-based recruitment, who participated in interviews at least one month after receiving their HIV diagnosis. Only women for whom the date of the last Pap test was known or could be calculated were included in the analyses; 2,417 women (95% of those interviewed) met this criterion. The analysts used multivariate logistic regression to identify characteristics associated with women's not having had a Pap test in the previous year.

Close to one in five women in the sample were younger than 30, seven in 10 were in their 30s or 40s, and the rest were 50 or older. The majority (69%) of the women were black, and most of the rest were white or Hispanic. Fifty-nine percent had finished high school, and 55% reported an annual household income of less than \$10,000. Some 46% had a low CD4 cell count (i.e., less than 200 per microliter), and for another 36%, the count was unknown. Four in 10 women had a history of abnormal Pap test findings; in the past year, 18% had had an STD, and 7% had been pregnant. More than half had AIDS. Eighty-three percent of the women had health insurance, 74% went

to a community or public health facility for their HIV care and 45% said that they had had their last pelvic exam at a site other than their usual source of HIV care.

Overall, 23% of women had not had a Pap test in the previous year. For every decade of a woman's age, her odds of not having had a test increased by 30% (odds ratio, 1.3). The odds also were elevated among women whose CD4 cell count was less than 200 (1.6) or unknown (1.4). Women who had ever had an abnormal Pap test result and those who had been pregnant in the last year had reduced odds of not having had a test in the last year (0.6 for each). Recent STD history was significant, but only for women who did not have AIDS; in this group, those who had had an STD during the last year were less likely than others not to have had a Pap test during that time (0.4). Women whose last pelvic exam had occurred at a site other than their usual source of HIV care had elevated odds of not having had a Pap test in the last year, but the increase varied by race or ethnicity: It was much larger for Hispanic women (4.8) than for white women (2.3), black women (1.7) or those of other racial or ethnic backgrounds (2.1).

The researchers acknowledge a number of study limitations, among them the use of a convenience sample of women in only 18 states, the lack of information about whether women had been offered a Pap test during the previous year, the facility-based recruitment strategy and the use of self-reported data on Pap testing. However, partly because of some of the limitations, the researchers suspect that their findings overestimate the proportion of HIV-infected women who get Pap tests with the recommended frequency. They conclude, therefore, that professionals providing HIV care should ensure that infected women receive Pap tests annually. They also stress the need to educate health care providers about the Pap test guidelines for HIV-positive women and to educate women about how often they should be tested. "Finally," they write, "integrating gynecologic care into primary HIV care may be an important tool for increasing adherence to the recommended cervical cancer screening among HIV-infected women."—D. Hollander

REFERENCE

1. Oster AM, Sullivan PS and Blair JM, Prevalence of cervical cancer screening of HIV-infected women in the United States, *Journal of Acquired Immune Deficiency Syndromes*, 2009, 51(4):430–436.