CONTRACEPTIVE TECHNOLOGY UPDATE®

Interpreting News and Research on Contraceptives and STIs

September 2012: Vol. 33, No. 9
Pages 97-108

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Financial Disclosure:
Consulting Editor **Robert A. Hatcher**, MD, MPH, Author **Rebecca Bowers**, and Executive Editor **Joy Dickinson** report no consultant, stockholder, speaker's bureau, research, or other financial relationships with companies having ties to this field of study. **Sharon Schnare** (Nurse Reviewer) discloses that she is a retained consultant and a speaker for Barr Laboratories, Berlex, and Organon; she is a consultant for 3M Pharmaceuticals; and she is a speaker for FEI Women's Health, Ortho-McNeil Pharmaceuticals, and Wyeth-Ayerst Pharmaceuticals. **Melanie Gold**, guest columnist, discloses that she is a speaker for the Susan Keller Program sponsored by Novartis Pharmaceutical Corp. **Anita Brakman** has no relevant relationships to disclose.

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Little absolute risk of stroke, heart attack in hormonal contraceptives

Most have acceptable increased risk, given their multiple benefits

Add new information to your contraceptive counseling databank: Findings from a just-published study indicate the absolute risk of increased thrombotic stroke and myocardial infarction (MI) associated with the use of hormonal contraception is low, although the relative risks vary depending on whether higher doses of estrogen are used.[1]

While several studies have assessed the risk of venous thromboembolism (VTE) associated with the use of hormonal contraceptives, few studies have examined thrombotic stroke and myocardial infarction.[2-9] *(To review research on VTE risks, see the following* Contraceptive Technology Update *articles: "Set to change: Patch, drospirenone OC labels," February 2012, p. 13; "Data emerges on drospirenone pills: how to counsel on their use," July 2011, p. 73; and "Review data on Pill use and thrombosis risk," July 2011, p. 75.)* While complications are less frequent than venous complications among young women, the short- and long-term consequences of arterial complications often are more serious. The risks for MI increase with age, but they are greatly magnified by the combination of age, smoking, and hypertension.[10]

The current research paper, a 15-year historical cohort study, fol-

EXECUTIVE SUMMARY

Findings from a just-published study indicate the absolute risk of increased thrombotic stroke and myocardial infarction associated with the use of hormonal contraception is low, although the relative risks vary depending on whether higher doses of estrogen are used.

- While several studies have assessed the risk of venous thromboembolism associated with the use of hormonal contraceptives, few studies have examined thrombotic stroke and myocardial infarction.
- Risk of arterial thrombotic events can be minimized or eliminated by abstaining from smoking and by checking blood pressure, with avoidance of hormonal contraceptive use if blood pressure is raised.

lowed nonpregnant Danish women ages 15-49 with no history of cardiovascular disease or cancer. Researchers pulled data from four national registries on hormonal contraception, clinical end points, and potential confounders to perform the analysis.

The researchers looked at data from some 1.6 million Danish women, all of whom were free of thrombotic disease at baseline, from 1995 to 2009. The reference group included nonusers, defined as women who had never used hormonal contraception, as well as former users.

Risks of arterial thrombotic events were assessed, with stratification according to estrogen dose (50 mcg, 30 to 40 mcg, or 20 mcg of ethinyl estradiol or progestin-only contraceptive), progestin type, route of administration, and duration of use. Estimates of relative risk were adjusted for age, calendar year, education, smoking, and status with respect to hypertension, heart disease, diabetes, and hyperlipidemia, with conditions defined by the use or nonuse of medications for such treatment.

The analysis indicates there were 3,311 strokes (21.4 per 100,000 person years) and 1,725 myocardial infarctions (10.1 per 100,000 person-years) over the course of the study.

Researchers state the relative risks of stroke and myocardial infarctions were increased by a factor of 1.3 to 2.3 among users of estrogen-progestin oral contraceptives using a low dose of ethinyl estradiol (30 to 40 mcg), with only small differences according to the progestin (which included norethindrone, levonorgestrel, norgestimate, desogestrel, drospirenone, and cyproterone acetate), as compared with nonuse.

For combined oral contraceptives containing 20 mcg of ethinyl estradiol, the analysis indicates relative risks of stroke and acute MI increased by a factor of 0.9 to about 1.7, with only small differences according to progestin, compared with nonuse. The respective relative risks for stroke and MI respectively, by progestin were desogestrel, 1.5 (95% confidence interval [CI], 1.3 to 1.9) and 1.6 (95% CI, 1.1 to 2.1); gestodene, 1.7 (95% CI, 1.4 to 2.1) and 1.2 (95% CI, 0.8 to 1.9); and drospirenone, 0.9 (95% CI, 0.2 to 3.5) and 0.0.

Other methods, smoking eyed

For the levonorgestrel intrauterine device and subcutaneous implant, the relative risk of thrombotic stroke and MI were not significantly increased for any of the progestin-only formulations studied. For the transdermal patch, the relative risk was 3.2 for stroke (95% CI, 0.8 to 12.6); for the vaginal ring, the relative risk was 2.5 for stroke (95% CI, 1.4 to 4.4) The number of myocardial infarctions was too low among patch and ring users to provide reliable estimates, investigators state.[1]

In looking at women who smoked compared

Contraceptive Technology Update® (ISSN 0274-726X), including STI Quarterly™, is published monthly by AHC Media, a division of Thompson Media Group LLC, 3525 Piedmont Road, NE, Building Six, Suite 400, Atlanta, GA 30305. Telephone: (404) 262-7436. Periodicals Postage Paid at Atlanta, GA 30304 and at additional mailing offices.

POSTMASTER: Send address changes to Contraceptive Technology Update®, P.O. Box 105109, Atlanta, GA 30348.

Subscriber Information

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with those who did not, the relative risks of thrombotic stroke and MI were 1.57 (95% CI, 1.31 to 1.87) and 3.62 (95% CI, 2.69 to 4.87), respectively.

The current study describes the well-established association of combined hormonal contraception and arterial thrombosis, which are rare events in healthy young women, notes **Jeffrey Jensen,** MD, MPH, Leon Speroff Professor & Vice Chair, Research, in the Department of Obstetrics & Gynecology at Portland-based Oregon Health & Science University. "The limitations of the database design used in this research have been previously described," says Jensen. "Large prospective studies have not shown an increase in relative risk with vaginal ring users."[11]

Women, clinicians, and the public should be reassured not only by the current study, but by the "vast body" of evidence from epidemiologic studies of hormonal contraception that have been done over the past five decades, states **Diana Petitti,** MD, MPH, professor of biomedical informatics at Phoenix-based Arizona State University, in an editorial accompanying the current study.[12]

This wealth of evidence documents the small magnitude of the problem of arterial thrombotic events in women using combined hormonal contraceptives, notes Petitti. Such risk could be minimized or eliminated by abstaining from smoking and by checking blood pressure, with avoidance of hormonal contraceptive use if blood pressure is raised, Petitti states in the editorial.

"Decades of research shows that we have not been able to eliminate entirely the risk of thrombotic disease in users of combined estrogen-progestin hormonal contraceptives, and then the issue becomes how safe is safe enough and whether or not we have information that allows us to bound the magnitude of those risks and to identify the people in whom the risks are the highest," observes Petitti. "I don't think we need any more research in order to do either of those two things."

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Women at high HIV risk can keep using methods

Hormonal contraceptives affirmed

The Centers for Disease Control and Prevention (CDC) has updated the U.S. Medical Eligibility Criteria for Contraceptive Use (US MEC) to affirm the use of hormonal contraceptives in women at risk for or living with HIV. However, a clarification has been added that notes the body of evidence concerning the association between

progestin-only injectable use and HIV acquisition is inconclusive. Therefore, women at high risk for HIV infection who use progestin-only injectables should use condoms and other strategies to prevent HIV, the guidance states.[1]

Recent research has suggested that women using progestin-only injectables (primarily depot medroxyprogesterone acetate [DMPA]) or combined oral contraceptives might have an increased risk for HIV acquisition and transmission to noninfected partners.[2] *(To read more about the research, see the* Contraceptive Technology Update *article, "Potential link found between hormonal contraception, HIV risk," November 2011, p. 121.)*

The CDC held a teleconference in March 2012 to allow reviewers with expertise in HIV infection or family planning to examine scientific evidence, as well as information on unintended pregnancy, contraceptive use, HIV infection, and maternal risk in the United States, to inform its guidance. The U.S. criteria, released in June 2012, now fall in line with similar information issued by the World Health Organization, which earlier this year clarified its original classification of DMPA use in women at high risk of HIV. *(*CTU *reported on the move. See "Update: Women at high HIV risk can continue hormonal contraceptives," May 2012, p. 49.)*

"Contraception is critically important to prevent unintended pregnancy among women at risk for HIV infection or infected with HIV and such women can continue to use all hormonal contraceptive methods without restriction," the CDC advises. "However, HIV infection preventive measures, such as voluntary testing and counseling, access and adherence to [antiretroviral] drugs, and correct and consistent use of condoms, should be strongly encouraged among all women at risk for HIV acquisition and women living with HIV infection."

Clarification extended

The new CDC guidance also addresses possible drug interactions between hormonal contraceptives and antiretroviral drugs. Because antiretroviral drugs often are indicated in patients with HIV infection without AIDS, the revised guidelines note that this warning applies to all patients with HIV infection.

The previous US guidance included a clarification for the recommendations on hormonal contraceptive methods for women with AIDS regarding the potential for drug interactions between hormonal contraceptives and antiretroviral (ARV) drugs. However, current guidance from the U.S. Department of Health and Human Services recommends that many patients with HIV infection also should take ARV drugs, including any patient with a CD4 count at or below 500 cells/mm.[3] The CDC now has added a clarification regarding potential drug interactions between hormonal contraception and ARV drugs to the recommendations for women with HIV.[1] *(Check the drug interactions section for specific ARV drugs; go to the CDC's US MEC web site, http://1.usa.gov/chY2AV. Click on "Summary Chart of U.S. Medical Eligibility Criteria for Contraceptive Use," under "CDC Resources" to see the criteria in chart form.)*

Counsel on condom use

In 2010, an estimated 10,000 new HIV infections occurred among U.S. women, according to CDC estimates.[1] One in 139 women will be diagnosed with HIV during her lifetime, statistics indicate.[4] *(Use the fact sheet included in the online issue for patient education.)*

When talking with women about their chosen contraceptive method, explain that none of the methods of birth control outside of condoms protect against HIV or sexually transmitted infection (STIs), says **Naomi Tepper**, medical officer in the Division of Reproductive Health at CDC.

"It is really important that women who are using these methods for pregnancy prevention use condoms to protect against HIV and STIs if they are at risk for those infections," observes Tepper. "If they are with a partner who either is infected, or who maybe doesn't know their status, it is

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- Women at high risk for HIV infection who use progestin-only injectables should use condoms and other strategies to prevent HIV. The clarification was added in light of inconclusive evidence concerning the association between injectable use and HIV acquisition.
- A clarification also has been added regarding potential drug interactions between hormonal contraception and antiretroviral (ARV) drugs. The change was made in light of current recommendations that many patients with HIV infection also should take ARV drugs, including any patient with a CD4 count at or below 500 cells/mm.

important that women are counseled that they need to protect against pregnancy if they don't want to become pregnant, but also need to protect against sexually transmitted infection and HIV."

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MRI said safe for use with contraceptive devices

New research indicates that use of magnetic resonance imaging (MRI) is safe for use in women who rely on such contraceptive methods as intrauterine devices (IUDs) and implants, as well as in women who have tubal microimplants inserted during hysteroscopic sterilization.[1]

This review provides reassurance for women using contraceptive devices and clinicians regarding the safety of MRI, says **Andrew Kaunitz**, MD, professor and associate chair in the Obstetrics and Gynecology Department at the University of Florida College of Medicine — Jacksonville.

As the use of IUDs, subdermal implants, and hysteroscopic sterilization with tubal microimplants continues to increase, addressing the safety of these contraceptive devices when women undergo MRI is relevant, Kaunitz observes. Potential safety concerns during MRI relate to the potential for the intense magnetic field associated with this imaging approach to cause devices to move or become overheated.

To perform the current analysis, Portuguese authors reviewed reports published between 1985 and 2010 that assessed use of MRI in women using contraceptive devices. What prompted the research team's investigation of this subject? "In my hospital, I noticed a woman with a copper intrauterine device that went to consultation with a gynecological ultrasound, which showed that the IUD was embedded in the myometrium thickness," notes the paper's lead author, **Lúcia Correia**, MD, a physician at the Maternidade Dr. Alfredo da Costa Hospital in Lisbon, Portugal.

The woman had undergone a magnetic resonance imaging procedure, Correia says. From this case, and to understand whether it was a coincidence or if there was a cause-effect relationship, her scientific team began a literature review and published its findings, she states.

In 2005, the American Society for Testing and Materials (ASTM) developed the following three categories to classify MRI use in medical decides:

- **MR Safe:** devices presenting no risks in all MR environments. This group includes devices made of nonconductive and nonmagnetic elements, such as plastic, silicone, or glass devices.
- **MR Conditional:** devices presenting no risks in magnetic resonance-specific environments, under specific use conditions. Field conditions that define the MR environment characterization include static magnetic field strength, spatial gradient, time rate of change of the magnetic field, radiofrequency fields, and specific absorption rate.
- **MR Unsafe:** devices presenting risks in all magnetic resonance environments. Performing MRIs in these cases is contraindicated. This group includes all electromagnetic devices.[2]

Due to its polyethylene structure, the levonorgestrel intrauterine device (Bayer HealthCare Pharmaceuticals, Wayne, NJ) is included in the group of MR Safe devices, according to the ASTM. Its use does not pose any risk to women in case MRI is performed, the new analysis states.[1]

Even though copper is not ferromagnetic, there

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New research indicates that use of magnetic resonance imaging (MRI) is safe for use in women who rely on such contraceptive methods as intrauterine devices (IUDs) and implants, as well as in women who have tubal microimplants inserted during hysteroscopic sterilization.

- The analysis found four reports, none of which identified device movement or clinically important overheating associated with MRI and copper IUDs. The levonorgestrel IUD is classified as an MR Safe device.
- The absence of metallic elements and the plastic composition of the Implanon implant classify it as an MR Safe device.

have been some concerns regarding use of MRI on women using a copper IUD (ParaGard CU-IUD, Teva Women's Health, Sellersville, PA). The presence of a device including a metal component in a patient submitted to MRI can lead to injuries deriving from its movement/deflection or from an increase in the device's temperature, the authors of the current paper note. In the case of the copper IUD, this movement/deflection could result in injuries to the endometrium, as well as lead to the possibility of generating image artifacts that would compromise the MRI's diagnostic capability.[3]

The current analysis found four reports, none of which identified device movement or clinically important overheating associated with MRI and copper IUDs, says Kaunitz. The authors conclude that the copper IUD is rated as MR Conditional.[4-7]

Although not noted by the authors of this review, the plastic frames of the copper and levonorgestrel IUDs contain the metallic element barium to make them radiopaque with conventional X-rays, notes Kaunitz. Barium presents no safety concerns with MRI, states Kaunitz.

Can MRI be safely used in women with the contraceptive implant Implanon (Merck & Co., Whitehouse Station, NJ)? According to the current paper, the absence of metallic elements and the plastic composition of the implant both justify its classification as an MR Safe device, meaning that under no circumstances will its use pose a risk for women submitted to an MRI.

When it is not possible to clinically identify the location of an Implanon implant, the MRI is considered a second-line diagnostic examination after soft tissue ultrasound, the authors note.

Kaunitz notes the study authors did not consider Nexplanon, the second generation implant. In contrast to Implanon, which is not radio-opaque and contains no barium, Nexplanon includes barium, which makes it radio-opaque. "Although high resolution ultrasound or MRI may be needed to image nonpalpable Implanon implants, Nexplanon implants should be visible with conventional X-rays," says Kaunitz. "This is why barium was added to Nexplanon."

Tubal microimplants used for hysteroscopic sterilization (Essure, Conceptus, San Carlos, CA) contain stainless steel, nickel, and titanium. Two published reports did not identify clinically important microimplant movement or heating associated with magnetic resonance,[3,8] Kaunitz notes.

"Published studies on the application of MRI on women using Cu-IUD and Essure have all concluded that it is a safe procedure, provided that the MRI is of a maximum of 3.0 Tesla; thus, Cu-IUD and Essure are classified as MR Conditional," authors of the current paper state. "The only identified effect was a slight increase in the temperature of the device and its surroundings — in vivo, these effects were shown to be nonsignificant."

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Safety, acceptability of Shang Ring in focus

Findings of a small study indicate that Shang Ring, a device in development, is safe and acceptable to men, which might aid in increasing access to voluntary adult male circumcision in areas at high risk of HIV.[1]

The Shang Ring, manufactured by Wu Hu SNNDA Medical Treatment Appliance Technology Co., Wu Hu City, China, is a disposable circumcision device consisting of two concentric plastic rings. Its design eliminates the need to make scalpel cuts directly on the penis. (Contraceptive Technology Update *reported on the device in the article, "Circumcision devices eyed in HIV prevention," April 2012, p. 40.)* The latest finding by researchers from EngenderHealth in New York City, Weill Cornell Medical College in New York City, FHI 360

in Research Triangle Park, NC, and Homa Bay District Hospital in Kenya, Africa, confirms that the Shang Ring is safe to use and demonstrates that should men exceed the recommended timing for removing the device, there are no serious consequences.

Look for more data to emerge from analysis of the ring as a potential circumcision device, says **Mark Barone**, DVM, MS, senior clinical advisor at EngenderHealth and lead author of the current research paper. Investigators have completed a randomized study, which looked at men using the Shang Ring versus conventional circumcision. At press time, results were scheduled to be presented at the XIX International AIDS Conference in July 2012.[2] Scientists also have finished a larger demonstration study with some 1,000 men in Kenya and Zambia, which examined potential adverse events associated with ring use, he states.

Such investigations are needed for the Shang Ring to be included in guidance from the Geneva, Switzerland-based World Health Organization (WHO) as an accepted device for adult male circumcision.

Now that research has proven that voluntary adult medical male circumcision reduces heterosexual transmission of HIV from women to men by approximately 60%[3-5], countries that have a high HIV burden and a low proportion of circumcised men are looking for intervention options. Reaching large numbers of men with voluntary adult medical male circumcision services will require innovations, including simpler and quicker methods that are safe, says the WHO.[6]

Through a grant to FHI 360 from the Seattle-based Bill & Melinda Gates Foundation, EngenderHealth and Cornell are working with FHI 360 to study how the Shang Ring could transform the provision of male circumcision services in Africa. The current research paper could not have been successful without the support and active participation of Kenyan researchers, and especially the male circumcision team in Homa Bay, said **David Sokal**, MD, a scientist at FHI 360.

Easy to use

The current published study results affirm that acceptability is very high among men having a circumcision with the Shang Ring, said **Philip Li**, MD, associate research professor of urology, and reproductive medicine at Weill Cornell Medical College and director of microsurgical research and training at Cornell's Institute for Reproductive Medicine. The data also indicates that delaying removal of the ring poses no adverse risks, Li noted in a release accompanying the paper's publication. Unlike surgical circumcision that requires only one visit, the procedure done with the Shang Ring requires that the device stay in place for seven days after the procedure.

Clinicians who performed male circumcision using the Shang Ring said the method was 'very easy' compared to a conventional surgical technique, researchers note.

"One of the beauties of the Shang Ring is the quick time of the procedure," Barone observes. "The procedure time is very, very short relative to the time of the conventional techniques, meaning that many more men can be circumcised in a shorter period of time. Also the skill level that is required for the Shang Ring is also less than that required for the conventional procedures."

EXECUTIVE SUMMARY

Findings of a small study indicate that Shang Ring, a device in development, is safe and acceptable to men, which might aid in increasing access to voluntary adult male circumcision in areas at high risk of HIV.

- The Shang Ring is a disposable circumcision device consisting of two concentric plastic rings. Its design eliminates the need to make scalpel cuts directly on the penis.
- Now that research has proven that voluntary adult medical male circumcision reduces heterosexual transmission of HIV from women to men by approximately 60%, countries that have a high HIV burden and a low proportion of circumcised men are looking for intervention options.

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Task force says quiz all women about abuse

Be sure to screen all women between the ages of 14 and 46 for intimate partner violence (IPV), advises new research.[1] The U.S. Preventive Services Task Force has issued draft guidance based on the new evidence, noting that such strategies as having women fill out a questionnaire in the waiting room or clinicians asking a few brief questions during a check-up are effective for spotting those who are facing partner violence.[2]

Based on the evidence, the task force, in a draft recommendation, calls for healthcare professionals to screen all women between ages 14 and 46 for IPV and provide or refer women who have experienced abuse to programs and support. Final guidance will be issued after the task force reviews comments submitted during the comment period of June 10, 2012, through July 11, 2012.

Why is it so important that clinicians include such screening in their encounters with women? Because intimate partner violence, which includes a range of abusive behaviors perpetrated by someone who is or was involved in an intimate relationship with the victim, is common, says **Heidi Nelson**, MD, MPH, a research professor in the Departments of Medical Informatics and Clinical Epidemiology and Medicine at Oregon Health & Science University in Portland. Approximately 1.3 to 5.3 million women in the United States experience such violent acts each year[3-4], notes Nelson, who served as lead author of the new research.

"The National Intimate Partner and Sexual Violence Survey indicated that 30% of women experience physical violence, 9% rape, 17% sexual violence other than rape, and 48% psychological aggression from their intimate partners over their lifetimes," says Nelson.

In addition to social problems, intimate partner violence causes important health problems that are relevant to effective patient care and healthcare delivery, says Nelson. These problems include immediate health effects, such as injuries and death from physical and sexual assault; sexually transmitted infections including HIV; pelvic inflammatory disease; unintended pregnancy; and psychological distress.

Women who are assaulted during pregnancy might see adverse effects in their own health as well as their newborns, states Nelson. Intimate partner violence is associated with preterm birth, low birth weight, and decreased mean gestational age.[5-7]

Intimate partner violence can have long-lasting repercussions, Nelson comments. Long-term physical and mental health conditions associated with IPV include chronic pain, neurologic disorders, gastrointestinal disorders, migraine headaches, post-traumatic stress disorder, depression, anxiety disorders, substance abuse, and suicide.

Signs not always clear

Not all signs of abuse are obvious, says **Susan Sorenson**, PhD, a professor in the School of Social Policy & Practice at the University of Pennsylvania and director of the Evelyn Jacobs Ortner Center on Family Violence in Philadelphia. Some abusers hit their victims in the abdomen, which is usually covered with clothing. Others inflict damage onto the head, which is usually covered with hair, and some use strangulation, which can be difficult to detect visually, particularly on women with dark skin, notes Sorenson.

"So, the most straightforward approach is to begin, as we do with other health problems, by asking the patient," states Sorenson. "We have screening instruments that can identify current

EXECUTIVE SUMMARY

Screen all women between the ages of 14 and 46 for intimate partner violence, advises new research. The U.S. Preventive Services Task Force has issued draft guidance based on the new evidence. The task force noted that strategies such as having women fill out a questionnaire in the waiting room or clinicians asking a few brief questions during a check-up are effective for spotting those who are facing partner violence.

- Intimate partner violence, which includes a range of abusive behaviors perpetrated by someone who is or was involved in an intimate relationship with the victim, is common.
- Approximately 1.3 to 5.3 million women in the United States experience such violent acts each year.

and past abuse or increased risk for abuse, and the task force is to be commended for encouraging clinicians to use them with all women of childbearing age."

Women of childbearing age are not the only ones who are abused by a partner, observes Sorenson. However, the task force recommendation is a "good start," she notes.

What works?

Screening instruments that include one or more brief questions about IPV are accurate in identifying women at risk for intimate partner violence, says Nelson. Her team's review of 15 studies published since 2002 evaluated 13 screening instruments; of these, six instruments were considered highly accurate (sensitivity and specific greater than 80%). Counseling interventions for women exposed to IPV resulted in reduced IPV and improved health outcomes, Nelson states. *(To read the full article, published in the* Annals of Internal Medicine*, go to http://bit.ly/LkItsG. Also watch a Centers for Disease Control and Prevention (CDC) Public Health Grand Rounds presentation, "Breaking the Silence: Public Health's Role in Intimate Partner Violence Prevention," at http://bit.ly/MrSJiG. Use a CDC IPV fact sheet with patients; download it from http://1.usa.gov/AmcbVW.)*

"Our review of four trials of counseling reported reduced IPV and improved birth outcomes for pregnant women, reduced IPV for new mothers, and reduced pregnancy coercion and unsafe relationships for women in family planning clinics," she notes. "Adverse effects of IPV screening were minimal for most women when evaluated in 14 studies, although some women experienced discomfort, loss of privacy, emotional distress, and concerns about further abuse."

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Teen TOPICS

Risk differences seen among youth of color

By **Anita Brakman**, MS
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In June 2012, the Centers for Disease Control and Prevention (CDC) released the U.S. Youth Risk Behavior Surveillance Summary (YRBS) for 2011.[1] In the first paragraph, say the most significant finding from the report. While the statistics indicate that much is unchanged since 2009 among youth as a whole, when it comes to sexual matters, health risk disparities remain among

minority youth.

In collaboration with state, territorial, and local education and health agencies, as well as tribal governments, the CDC conducts the national school-based survey every two years to monitor priority health risk behaviors, as well as to analyze the prevalence of conditions such as obesity and asthma among young people. The 2011 survey included data from 47 states, six territories, two tribal governments, and 22 local surveys of students in grades 9-12. It was conducted from October 2010 to February 2012. While the survey measures several categories of risk behavior, the data on behaviors that contribute to unintended pregnancy and sexually transmitted infections (STIs) might be most useful to clinicians providing reproductive and sexual health service to youth.

Examining the data as a whole, reported rates of most sexual behaviors have not changed significantly since the last survey in 2009. Forty-seven percent of students reported they have ever had sexual intercourse, and fewer than 34% reported having been sexually active within the last three months. Both of these percentages decreased since data was first collected in 1991, but they have been unchanged for the last decade.

The trend is similar when looking at pregnancy and STI rates. Reported rates of condom usage and using a contraceptive method to prevent pregnancy have increased among sexually active students since the early '90s, but there have been no significant strides in recent years. Forty-percent of sexually active students currently report using condoms at last intercourse, and 87% report using a contraceptive method to prevent pregnancy. The percentages were 37% and 89% in 2003, respectively, with a margin of error revealing that these small differences are statistically insignificant.

Education lacking

One significant change reported was a decline in the percentage of students who reported ever having been taught about AIDS or HIV infection in school.

Eighty-four percent of students reported they have been taught about these topics, but that percentage declined from 87% in 2009. It is part of a declining trend that has been noted since the peak of 92% reported in 1997. With nearly half of students reporting they have intercourse and more than half reporting not using condoms at last sex, the decline in education about HIV and AIDS is disturbing and problematic. Given the declining education about HIV and AIDS in schools, it is essential that healthcare professionals enhance their provision of education and counseling to adolescents about healthy sexual behaviors and risk reduction.

The lack of education around HIV and AIDS is most pronounced among Hispanic students, who reported even less education in this area compared to their black and white peers. Fewer than 13% of black students and 14% of white students (statistically the same) reported never being taught about these topics, while 23% of Hispanic students reported lacking this content in school. This difference highlights that while trends may be moving toward healthier sexual behaviors overall among teens, stark differences still exist. These may explain some of the ongoing health risk disparities among minority youth.

Check the differences

Some overall trends also can mask these differences among minority youth.

For example, 82% of Hispanic students report using a contraceptive method to prevent pregnancy at last sex, part of a positive trend among this group over the past 20 years. However, these students still are at much higher risk than the 87% of black students and 90% of white students currently protecting themselves and their partners in this way.

The data on black students shows an overall decrease in those reporting ever engaging in intercourse, dropping from 82% to 60% between 1991 and 2011. Unfortunately, trends for condom use and contraceptive methods for pregnancy prevention are not as encouraging. Black students' reports of condom use at last sex has been declining from 70% in 1999 to 65% in

2011. Similarly, the percentage of black students reporting they used no contraceptive method to prevent pregnancy at last sex had a small, statistically insignificant increase from 11% in 2003 to 13% in 2011. This data suggests that while fewer black students report they are having sex, those who are sexually active might be at higher risk for pregnancy and STIs than black students in the past. White and Hispanic students' reported behaviors seem to be more congruent, with overall decreases in reported sex corresponding with reported increases in condom use and pregnancy prevention.

More information needed

Comparing the data for youth of color alongside white counterparts highlights health disparities. Unfortunately, the YRBS does not report data among other racial or ethnic groups, and it does not reflect those that are biracial or multiracial. Additionally, the survey does not collect data on respondents' poverty level, parental employment status, documentation or immigration status, parental educational attainment, or other indicators that might create a more nuanced picture of why these disparities exist or how lack of education or access to health information or services play a part in health outcomes.

Large studies such as the YRBS cannot tell providers all they need to know about caring for individual youth. Learning more about your local patient population and taking an individual sexual history remain keys to identifying the healthy behaviors and potential risks for each adolescent patient in your practice.

Tools such as the American Medical Association's Guidelines for Adolescent Preventive Services (GAPS) psychosocial screening tool *(available at http://bit.ly/SFxE9H)* and HEEADSSS *(the screening acronym for Home, Education/employment, Eating, Activities, Drugs, Sexuality, Suicide, and Safety)* can aid in taking adolescent histories with a more focused approach. Nevertheless, the YRBS data is useful in providing a context for understanding individual patients and comparing individuals with the U.S. population as a whole.

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CNE/CME QUESTIONS

After reading *Contraceptive Technology Update*, the participant will be able to:

- identify clinical, legal, or scientific issues related to development and provisions of contraceptive technology or other reproductive services;
- describe how those issues affect services and patient care;
- integrate practical solutions to problems and information into daily practices, according to advice from nationally recognized family planning experts;
- provide practical information that is evidence-based to help clinicians deliver contraceptives sensitively and effectively.

1. The risks for myocardial infarction increase with age, but are greatly magnified by the combination of what factors?
   A. Age, smoking, and hypertension
   B. Age, smoking, and type of progestin in combined hormonal contraceptive
   C. Age, smoking, and type of estrogen in combined hormonal contraceptive
   D. Family history, smoking, and obesity

2. The June 2012 update to the U.S. Medical Eligibility Criteria for Contraceptive Use, women at high risk for HIV infection who use progestin-only injectables should
   A. Switch to a nonhormonal method
   B. Use condoms and other strategies to prevent HIV
   C. Start immediate use of antiretroviral therapy
   D. Strongly consider use of a long-acting reversible method of contraception, such as an intrauterine device or implant

3. Research indicates that use of magnetic resonance imaging is safe for users of:
   A. Copper T intrauterine devices, but not in women with levonorgestrel intrauterine devices
   B. Tubal microimplants inserted during hysteroscopic sterilization, but not in women who use copper T intrauterine devices
   C. Intrauterine devices and implants, as well as in women who have tubal microimplants inserted during hysteroscopic sterilization
   D. Contraceptive implants, but not tubal microimplants inserted during hysteroscopic sterilization

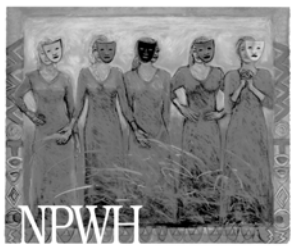
4. About how many women each year are victims of intimate partner violence in the United States?
   A. Less than 100,000
   B. 250,000
   C. 750,000
   D. 1.3 to 5.3 million

CNE/CME INSTRUCTIONS

To earn credit for this activity, please follow these instructions.

1. Read and study the activity, using the provided references for further research.
2. Log on to www.cmecity.com to take a post-test; tests can be taken after each issue or collectively at the end of the semester. First-time users will have to register on the site using the 8-digit subscriber number printed on their mailing label, invoice or renewal notice.
3. Pass the online tests with a score of 100%; you will be allowed to answer the questions as many times as needed to achieve a score of 100%.
4. After successfully completing the last test of the semester, your browser will be automatically directed to the activity evaluation form, which you will submit online.
5. Once the completed evaluation is received, a credit letter will be e-mailed to you instantly. ■

Contraceptive Technology Update is endorsed by the National Association of Nurse Practitioners in Women's Health and the Association of Reproductive Health Professionals as a vital information source for healthcare professionals.



S·T·I
QUARTERLY

First rapid over-the-counter home HIV test given OK — Expect to see on shelves in October

The Food and Drug Administration (FDA) has cleared the OraQuick In-Home HIV Test for sale directly to consumers, which makes it the first and only rapid over-the-counter (OTC) HIV test approved in the United States. The test can detect antibodies to HIV-1 and HIV-2 with an oral swab, and it provides a confidential in-home testing option with results in as little as 20 minutes.

The OraQuick In-Home HIV Test is an over-the-counter version of Bethlehem, PA-based OraSure Technologies' OraQuick ADVANCE HIV 1/2 Antibody Test, a rapid HIV test used in hospitals, clinics, community-based organizations, and clinician offices. The OTC test is expected to be available for purchase in October 2012 at more than 30,000 U.S. retail outlets throughout the country and online, say OraSure officials. Pricing for the new test has not yet been determined; however, it is expected to be higher than the $17.50 list price of the version used in hospitals, clinics, and physician offices due to the consumer education and customer support needed for the OTC product. *(*Contraceptive Technology Update *previously reported on the test, See "Research explores at-home HIV testing," September 2011, p. 103.)*

Each test kit will include detailed information on HIV and HIV testing, including step-by-step directions on how to use the OraQuick test. The company also is developing a toll-free customer support center and comprehensive consumer website. The round-the-clock support center will be staffed with representatives who can answer questions in English and Spanish about HIV/AIDS, describe how to use the test and interpret the results, and provide direct referral to care if needed. A comprehensive consumer website will be launched in October to provide access to resources and referral to follow-up counseling and medical care.

Some 1.2 million people in the United States are living with HIV infection, and about one in five are not aware they are infected, according to the Centers for Disease Control and Prevention. The federal agency estimates there are 50,000 new HIV infections every year; many of these new infections are transmitted from people who are unaware of their HIV status.

"Knowing your status is an important factor in the effort to prevent the spread of HIV," said **Karen Midthun**, MD, director of the FDA's Center for Biologics Evaluation and Research, in a press release accompanying the approval. "The availability of an

EXECUTIVE SUMMARY

The Food and Drug Administration has cleared the OraQuick In-Home HIV Test for sale directly to consumers, which makes it the first and only rapid over-the-counter HIV test approved in the United States. The test can detect antibodies to HIV-1 and HIV-2 with an oral swab and provides a confidential in-home testing option with results in as little as 20 minutes.

- The test is an over-the-counter version of the OraQuick ADVANCE HIV 1/2 Antibody Test, a rapid HIV test used in hospitals, clinics, community-based organizations, and clinician offices.
- The new test is expected to be available for purchase in October 2012 at more than 30,000 U.S. retail outlets throughout the country and online.

Statement of Financial Disclosure:
Consulting Editor **Robert A. Hatcher**, MD, MPH, Author **Rebecca Bowers**, and Executive Editor **Joy Dickinson** report no consultant, stockholder, speaker's bureau, research, or other financial relationships with companies having ties to this field of study. **Sharon Schnare** (Nurse Reviewer) discloses that she is a retained consultant and a speaker for Barr Laboratories, Berlex, and Organon; she is a consultant for 3M Pharmaceuticals; and she is a speaker for FEI Women's Health, Ortho-McNeil Pharmaceuticals, and Wyeth-Ayerst Pharmaceuticals.

over-the-counter home-use rapid HIV test kit provides another option for individuals to get tested so that they can seek medical care, if appropriate."

The federal agency's approval was announced two months after a 17-member FDA advisory panel voted unanimously that the benefits of the test were greater than any possible risks. *(Editor's note: An additional step in HIV prevention has emerged with the FDA's July 2012 approval of once-daily oral Truvada, in conjunction with condoms and other safer-sex measures, for use for HIV prevention in men who have sex with men, persons in discordant couples, and other individuals at risk for acquiring HIV through sexual activity.* Contraceptive Technology Update *issued an ebulletin on the approval. To receive future bulletins, provide your email address to AHC Media customer service at (800) 688-2421 or customerservice@ahcmedia.com. Look to the upcoming issue for further information on pre-exposure prophylaxis.)*

How does it work?

The approved package labeling calls for an OraQuick In-Home HIV Test user to be age 17 or older to use the diagnostic device. Bolded information explains that "a positive result with this test does not mean that you are definitely infected with HIV, but rather that additional testing should be done in a medical setting. A negative result with this test does not mean that you are definitely not infected with HIV, particularly when exposure may have been within the previous three months." Users who want to be tested earlier than the three-month period are advised to see their local healthcare provider. Those who do not know where to be tested can call the OraQuick support center to get in touch with a local healthcare provider or clinic. The support center will be using information provided by the CDC's National Prevention Information Network (NPIN) referral system dataset. To add your facility to the NPIN list, go to its web page, http://hivtest.cdc.gov/Default.aspx. Click on "Add Your Testing Site."

Package instructions call for test users to not eat, drink, or use oral care products, such as mouthwash, toothpaste, or whitening strips, 30 minutes before starting the test. Users should remove dental products such as dentures or any other products that cover the gums prior to the oral collection.

The test is designed to allow individuals to collect an oral fluid sample by swabbing the upper and lower gums inside of their mouths, then place the sample into a developer vial. Test results are available within 20 to 40 minutes.

Check the results

Clinical trial data submitted for the FDA approval shows that 5,662 persons were screened and processed through two visits before receiving a test kit. At the first visit, trial participants underwent screening and informed consent; blood samples were collected for testing with an FDA-approved enzyme immunoassay, with the sample retained for further testing by Western blot if required. At the second visit, participants were presented with the OraQuick product. They could decide whether to take the test home for use, thus the situation mimicked real-world use in that participants were allowed to opt out of the study similar to a consumer choosing not to purchase the product after reading the box.

In the clinical trial, the specificity of the test registered relatively high, 99.98% (95% confidence interval [CI]: 99.90–100%), and above the FDA committee's recommended threshold. However, sensitivity dropped in comparison to professional use of the kit to 92.98% (95% CI: 86.64–96.92%), with 86.64% for the lower bound of the 95% CI. Sensitivity is a measurement expression for the tests for false-negative results.

The expected performance of 92% for test sensitivity (the percentage of results that will be positive when HIV is present) means that one false negative result would be expected out of every 12 test results in HIV-infected individuals. Be sure to counsel that patients should never use a negative test result to decide on whether to engage in behavior that puts them at risk for HIV infection.

The expected performance of 99.98% for test specificity (the percentage of results that will be negative when HIV is not present) means that one false positive would be expected out of every 5,000 test results in uninfected individuals.

"We believe the rapid antibody HIV test recently approved by the Food and Drug Administration for sale over the counter holds great promise as a self-directed tool for people to learn their HIV status," said **Judith Aberg**, MD, chair of the Arlington, VA-based HIV Medicine Association in a statement accompanying the FDA approval. "We also urge continued research and education in heavily affected areas and with low income and minority populations disproportionately affected by HIV to determine how the test instructions and accompanying support materials can raise the accuracy of the test results closer to the level obtained by professionals."

Results of a recently published meta-analysis, which compared studies worldwide, showed that OraQuick HIV1/2 test had the same accuracy (99%) as blood-based specimens in adults for high-risk populations. The test sensitivity was slightly reduced (97%) for low-risk populations.[1]

Public health impact?

The oral HIV test has become one of the most popular tests because of its acceptability and ease of use, observed **Nitika Pant Pai**, MD, MPH, PhD, a medi-

cal scientist at the Research Institute of the McGill University Health Centre and assistant professor of medicine at McGill University, both in Montreal. The oral test is non-invasive, pain-free, and convenient, and it produces results in 20 minutes. Pai served as lead author for the meta-analysis, and she has performed research on point-of-care tests.

Getting people to show up for HIV testing at public clinics has been difficult because of visibility, stigma, lack of privacy, and discrimination, noted Pai in a release accompanying the meta-analysis publication. A confidential testing option such as self-testing could bring an end to the stigmatization associated with HIV testing, she says.

"There is a huge global momentum for alternate HIV self-testing strategies that can inform people of their status," stated Pai.

Public health officials already are looking at different ways to integrate at-home testing into ongoing efforts to stem the AIDS epidemic in the United States. At the May 2012 FDA Blood Products Advisory Committee meeting, **Kevin Cranston**, director of the Bureau of Infectious Diseases in Massachusetts's Department of Public Health, said his agency proposes a local project in the large urban center of Massachusetts to make the kit available to a number of at-risk communities, as well as marketing to young gay and bisexual men to promote quarterly home testing to those at high risk.

"The Mass Department of Public Health is convinced that this device and the option of rapid determination of HIV status in an anonymous home-based setting would be a valuable adjunct to existing public efforts to control the HIV epidemic and give HIV-positive persons early access to the benefits of medical care," Cranston told committee members.

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CDC eyes HIV testing in selected pharmacies

Your neighborhood pharmacy now offers checks for high blood pressure, cholesterol levels, and diabetes; testing for HIV might be the next addition in service. In a pilot project with the Centers for Disease Control and Prevention (CDC), 24 rural and urban pharmacies will undergo training to deliver confidential rapid HIV screening.

There are an estimated 1.1 million Americans who are living with HIV, and nearly one in five do not know it, says **Kevin Fenton**, MD, CDC's director of the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Testing is the only way to identify the more than 200,000 Americans living with HIV who are unaware that they are infected, states Fenton. Because of their convenience and easy accessibility, community pharmacies and retail clinics can play a critical role in ensuring more Americans get tested for HIV, Fenton notes.

"Millions of Americans visit pharmacies every week, and research tells us that 30% of the U.S. population lives within a 10-minute drive of a retail clinic," says Fenton. "By bringing HIV testing into pharmacies, we believe we can reach more people by making testing more accessible and may also reduce the stigma associated with HIV."

Many places provide testing for HIV infection, such as local health departments, clinics, physicians' offices, hospitals, and sites specifically designed to offer such screening. Why add pharmacies to the list? Compared to healthcare settings and conventional testing sites, such locations might provide an environment that is more accessible to those who might be anxious about seeking their HIV status, CDC officials note.

"Our goal is to make HIV testing as routine as a blood pressure check," said **Jonathan Mermin**, MD, director of CDC's Division of HIV/AIDS Prevention, in a statement announcing the pilot project. "This initiative is one example of how we can make testing routine and help identify the hundreds of thousands of Americans who are unaware that they are infected."

During the two-year initiative, CDC will provide training for staff in community pharmacies and retail clinics in 12 urban areas and 12 rural areas with high HIV prevalence or significant unmet HIV testing needs. The training will focus on how to deliver rapid HIV testing and counseling and link those who are diagnosed with the virus to care and treatment.

EXECUTIVE SUMMARY

The Centers for Disease Control and Prevention has kicked off a pilot project that offers staff training to deliver confidential rapid HIV screening. The project includes 24 rural and urban pharmacies.

- An estimated 1.1 million Americans are living with HIV, and nearly one in five do not know it. Testing is the only way to identify the more than 200,000 Americans living with HIV who are unaware that they are infected.
- Because of their convenience and easy accessibility, community pharmacies and retail clinics can play a critical role in ensuring more Americans get tested for HIV, officials say.

Based on lessons learned during the pilot, CDC will develop a comprehensive toolkit that pharmacists and retail clinic staff from around the country can use as a model to implement HIV testing in their own settings, says Fenton. The project falls in line with CDC's 2006 testing recommendations,[1] which advocate routine voluntary HIV screening as a normal part of medical practice.

Free testing offered

The pilot program kicked off in June 2012, with seven locations offering the free testing. Sites include Walgreens locations in Washington, DC, Chicago, and Lithonia, GA; East Pines Pharmacy in Riverdale, MD; Mike's Pharmacy in Oakland, CA; and a federal Indian Health Service location in Billings, MT.

Each of the locations has been allotted enough tests to check 200 to 300 people.[2] The CDC said it planned to add 17 more pharmacies to the pilot program by the end of the summer.

Each pharmacy has a private area that is suitable for HIV screening. If a test comes out as a preliminary positive, the patient will be referred to a local health care provider for confirmation and care, as well as provided a list of community-based organizations to help address other health or social issues.

Opportunities exist

In 2010, an estimated 47,129 people were diagnosed with HIV infection in the United States; in that same year, an estimated 33,015 people were diagnosed with AIDS, the CDC reports.[3] Since the epidemic began, an estimated 1,129,127 people in the United States have been diagnosed with AIDS.

Women accounted for 23% of estimated new HIV infections in 2009 and 25% of those living with HIV infection in 2008, the CDC notes. HIV infections among women are primarily attributed to heterosexual contact or injection drug use.[3]

"We know that getting people tested, diagnosed, and linked to care are critical steps in reducing new HIV infections," said Fenton in the program announcement. "By bringing HIV testing into pharmacies, we believe we can reach more people by making testing more accessible and also reduce the stigma associated with HIV."

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Webcast available online for bacterial vaginosis

Listen to the online presentation of "It's Not Just the Pathogen Anymore: The Genital Microbiome and Implications for Sexually Transmitted Infections," the latest in the quarterly STD Prevention Science Series 2012 co-sponsored by the Division of STD Prevention of the Centers for Disease Control and Prevention and the American Sexually Transmitted Diseases Association.

The quarterly series features lectures on cutting-edge issues by international scientists and program experts and is designed to deliver the latest research and best practices for STD prevention. Go to the American Sexually Transmitted Diseases Association web site, www.astda.org. Under "News & Events," select "STD Science Series."

Presenter for the current series offering is Jeanne Marrazzo, MD, MPH, professor of medicine at the University of Washington in Seattle. Marrazzo provides background on bacterial vaginosis (BV) and discusses recent developments in current understanding of the epidemiologic and microbiologic data that inform understanding of BV.

Bacterial vaginosis involves loss of the "normal" hydrogen peroxide-producing lactobacilli and acquisition of complex bacterial communities. A common cause of vaginitis, BV increases women's risk of pelvic inflammatory disease, adverse pregnancy outcomes, and risk of STD/HIV acquisition. Recent evidence in populations at high risk for HIV acquisition suggests that BV increases affected women's risk of transmitting HIV to their male sex partners. While the etiology of BV is unclear, such sexual components as sex without a condom, multiple partners, sex with women, and sex with an uncircumcised male partner have been linked to the condition. Treatment failure is common and is facilitated by unprotected sex.

The presentation notes that while Gardnerella vaginalis plays a major role in BV, other BV-associated bacteria in the Clostridiales order are considerably more specific for BV and might predict BV persistence when detected pre-treatment.

Women with BV might have an abnormal vaginal discharge with an unpleasant odor. Some women report a strong fish-like odor, especially after intercourse. Discharge, if present, is usually white or gray. Two different antibiotics, metronidazole or clindamycin, are recommended for treatment. ■

HIV among Women

August 2011

Fast Facts

In 2009, 23% of new HIV infections in the US were among women.

Black and Latina women are disproportionately affected at all stages of HIV infection compared with women of other races/ethnicities.

For women, the most common methods of HIV transmission were high-risk heterosexual contact and injection drug use.

According to 2009 HIV surveillance data, women[1] represented 24% of all diagnoses of HIV infection among United States (US) adults and adolescents in 40 states with long-established, confidential name-based reporting. In 2008, an estimated 25% of adults and adolescents living with HIV infection were female. Black and Latina women are disproportionately affected at all stages of HIV infection compared with women of other races/ethnicities.

The Numbers

New HIV Infections[2]

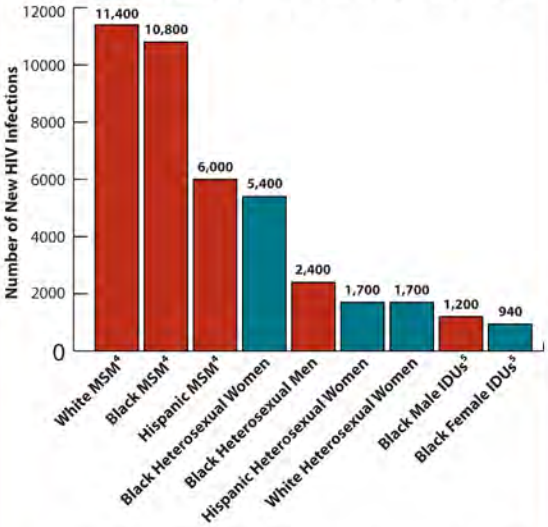
In 2009, there were an estimated 11,200 new HIV infections among women in the United States. That year, women comprised 51% of the US population and 23% of those newly infected with HIV.

- Of the total number of new HIV infections in US women in 2009, 57% occurred in blacks, 21% were in whites, and 16% were in Hispanics/Latinas.
- In 2009, the rate of new HIV infections among black women was 15 times that of white women, and over 3 times the rate among Hispanic/Latina women.

HIV and AIDS Diagnoses[3] and Deaths

- At some point in her lifetime, 1 in 139 women will be diagnosed with HIV infection. Black and Hispanic/Latina women are at increased risk of being diagnosed with HIV infection (1 in 32 black women and 1 in 106 Hispanic/Latina women will be diagnosed with HIV, compared with 1 in 182 Native Hawaiian/other Pacific Islander women; 1 in 217 American Indian/Alaska Native women; and 1 in 526 for both white and Asian women).
- From 2006 through 2009, estimated diagnoses of HIV infection among women decreased from 10,851 to 9,973. It is unknown whether this decrease is due to an actual decrease in new HIV infections (incidence) or whether the decrease reflects HIV testing trends.
- Women accounted for more than 25% of the estimated 34,247 AIDS diagnoses in 2009 and represent nearly 20% of cumulative AIDS diagnoses (including children) in the United States to date. There were 8,647 AIDS diagnoses among women in 2009 compared with 9,639 AIDS diagnoses among women in 2006.
- For women living with a diagnosis of HIV infection, the most common methods of transmission were high-risk heterosexual contact[6] and injection drug use.
- In 2008, 4,796 (28%) of the estimated 17,374 persons with a diagnosis of HIV infection who died in the 40 states and 5 US dependent areas were women. Deaths attributed to HIV among

Estimates of New HIV Infections, by Race/Ethnicity, Risk Group, and Gender for the Most Affected US Populations, 2009



Subpopulations representing 2 percent or less of the overall US epidemic are not reflected in this chart.

Source: Prejean J, et al. Estimated HIV incidence in the United States, 2006–2009. *PLoS One* 2011;6(8):1–13.

[1] Unless otherwise noted, this fact sheet defines women as adult and adolescent females aged 13 and older.
[2] New HIV infections refers to HIV incidence, or the number of people that are newly infected with HIV.
[3] HIV and AIDS diagnoses indicates when a person is diagnosed with HIV infection or AIDS but does not indicate when the person was infected.
[4] The term men who have sex with men (MSM) is used in CDC surveillance systems. It indicates the behaviors that transmit HIV infection, rather than how individuals self-identify in terms of their sexuality.
[5] IDU is an acronym for injection drug user.
[6] Heterosexual contact with a person known to have, or to be at high risk for, HIV infection.

National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Division of HIV/AIDS Prevention

Source: National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention; Division of HIV/AIDS Prevention, Atlanta.
September 2012 / Online Supplement to CONTRACEPTIVE TECHNOLOGY UPDATE®

women of color are disproportionately high: from 2000–2007, HIV infection was among the top 10 leading causes of death for black females aged 10–54 and Hispanic/Latina females aged 15–54.

Prevention Challenges

Like other affected populations, women face a number of risk factors that may contribute to their risk for HIV infection.

- Most women are infected with HIV through **heterosexual sex**. Some women become infected because they may be unaware of a male partner's risk factors for HIV infection or have a lack of HIV knowledge and lower perception of risk. Relationship dynamics also play a role. For example, some women may not insist on condom use because they fear that their partner will physically abuse or leave them.
- Both unprotected vaginal and anal sex pose a risk for HIV transmission. **Unprotected anal sex** presents an even greater risk for HIV transmission for women than unprotected vaginal sex.
- Women who have experienced **sexual abuse** may be more likely than women with no abuse history to use drugs as a coping mechanism, have difficulty refusing unwanted sex, exchange sex for drugs, or engage in high-risk sexual activities.
- **Injection drug and other substance use** increase HIV risk through sharing injection equipment contaminated with HIV or engaging in high-risk behaviors, such as unprotected sex, when under the influence of drugs or alcohol.
- The presence of some **sexually transmitted diseases** greatly increases the likelihood of acquiring or transmitting HIV. Rates of gonorrhea and syphilis are higher among women of color than among white women.
- **Socioeconomic issues** associated with poverty, including limited access to high-quality health care; the exchange of sex for drugs, money, or to meet other needs; and higher levels of substance use can directly or indirectly increase HIV risk factors.

What CDC Is Doing

CDC recognizes the importance of incorporating culture- and gender-relevant material into current HIV interventions. CDC has increased the availability of effective behavioral interventions for populations at increased risk for HIV infection, including women living with HIV infection or AIDS and those who are at risk for infection, by supporting research studies to develop new interventions and to adapt existing interventions. CDC also supports the national dissemination of effective HIV behavioral interventions for women. For example:

- **SIHLE (Sistering, Informing, Healing, Living, and Empowering)** is a group-level intervention aimed at reducing risk behaviors among sexually active black teenagers aged 14–18.
- **Sister to Sister** is a brief, one-on-one, skills-based behavioral intervention for sexually active African American women aged 18 to 45 years to reduce sexual risk behaviors and prevent HIV and other sexually transmitted infections.
- **WILLOW (Women Involved in Life Learning from Other Women)** is a social-skills building and educational intervention for adult heterosexual women, aged 18 to 50 years, living with HIV infection.

CDC also developed **Take Charge. Take the Test. (TCTT)**, a phase of the *Act Against AIDS* campaign designed to increase HIV testing among African American women aged 18–34.

CDC also continues to

- Partner with organizations such as the Black Women's Health Imperative, Congressional Black Caucus Foundation, and others to address HIV among African American women through the *Act Against AIDS Leadership Initiative;*
- Fund HIV testing and prevention programs in state and local health departments and community-based organizations;
- Be actively involved in the research of microbicides—creams or gels that can be applied vaginally or anally before sexual contact to prevent HIV transmission;
- Support clinical trials of pre-exposure prophylaxis (PrEP), including a CDC trial in Botswana which found that PrEP reduced the risk of heterosexual transmission of HIV by roughly 63% in the study group overall; and
- Work to further reduce mother-to-child HIV transmission in the US by supporting perinatal HIV prevention campaigns, enhanced surveillance for HIV-infected mothers and babies, education programs, and capacity building among health care providers and public health practitioners.

Additional Resources:

CDC HIV and AIDS
www.cdc.gov/hiv
Visit CDC's HIV and AIDS Web site.

CDC-INFO
1-800-CDC-INFO or 1-800 (232-4636)
cdcinfo@cdc.gov
Get information about personal risk, prevention, and testing.

CDC National HIV Testing Resources
www.hivtest.org
Text your ZIP code to KNOW IT or 566948.
Locate an HIV testing site near you.

CDC National Prevention Information Network (CDC NPIN)
1-800-458-5231
www.cdcnpin.org
Find CDC resources and technical assistance.

AIDSinfo
1-800-448-0440
www.aidsinfo.nih.gov
Locate resources on HIV and AIDS treatment and clinical trials.

For more information, visit the CDC HIV Web site at www.cdc.gov/hiv

Source: National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention; Division of HIV/AIDS Prevention, Atlanta.