CONTRACEPTIVE TECHNOLOGY UPDATE®

THE TRUSTED SOURCE FOR CONTRACEPTIVE AND STI NEWS AND RESEARCH SINCE 1980

MAY 2019 Vol. 40, No. 5; p. 49-60

INSIDE

RELIAS MEDIA

Advanced Research Underway on Potential Copper IUD

Flexible frame copper IUD viewed as possible LARC option

Women in the United States who prefer to use a nonhormonal, long-acting, reversible contraceptive (LARC) currently have a single option — the copper T380A intrauterine device (IUD). The copper IUD is a popular choice for many women, with global statistics indicating the device is used by more than 200 million women.[1]

Patient enrollment has begun in the United States for Phase III trials of the VeraCept IUD, a new copper IUD with a flexible frame. This IUD's design accommodates the uterine contour and features a lower total load of copper to improve comfort and reduce bleeding. The frame is made of nitinol, an alloy of nickel and titanium.

During insertion, the device is placed just inside the internal cervical os and bilaterally at the tubal ostea. The device measures 30 mm by 32 mm. By comparison, the copper T380 measures 32 mm horizontally and 36 mm vertically.[2] The VeraCept has 175 mm^2 of copper surface area, which is less than the 380 mm^2 surface area of the T380A.

The T380A IUD has a typical use failure rate of 0.8 per 100 women.[3] By comparison, the two 52-mg levonorgestrel IUDs have typical use failure rates of 0.1 per 100 women.[3]

A Phase II trial of the VeraCept device involved 286 women at 12 U.S. centers with 4,263 cycles evaluated for pregnancy. About 60% of the women enrolled were nulliparous. Over 24 months of observation, one pregnancy occurred (Pearl Index 0.30; 95% confidence interval, 0.01-1.70). Placement was successful in 283 women, with a reported mean pain score of 1.44 at insertion. At one year, 177 women elected to continue using the device, with 135 of them (76.2%) continuing use until 24 months. About 15% of women stopped using the device early because of adverse events.[4]

The current Phase III trial is designed as a prospective, multi-center, single-arm, open-label clinical study to three years, with possible extension up to five years.

Financial Disclosure: Consulting Editor **Robert A. Hatcher**, MD, MPH, Nurse Planner **Melanie Deal**, MS, WHNP-BC, FNP-BC, Author **Rebecca Bowers**, Executive Editor **Shelly Morrow Mark**, Copy Editor **Josh Scalzetti**, and Editorial Group Manager **Terrey L. Hatcher** report no consultant, stockholder, speaker's bureau, research, or other financial relationships with companies having ties to this field of study.

CONTRACEPTIVE TECHNOLOGY UPDATE®

***Contraceptive Technology Update*® (ISSN 0274-726X), is published monthly by Relias LLC, 1010 Sync St., Ste. 100, Morrisville, NC 27560-5468. Periodicals Postage Paid at Morrisville, NC, and additional mailing offices. POSTMASTER: Send address changes to: *Contraceptive Technology Update*, Relias LLC, 1010 Sync St., Ste. 100, Morrisville, NC 27560-5468.**

SUBSCRIBER INFORMATION:
Customer Service: (800) 688-2421
customerservice@reliasmedia.com
ReliasMedia.com

SUBSCRIPTION PRICES:
Print: 1 year with free *AMA PRA Category 1 Credits*™: $479. Add $19.99 for shipping & handling. Canada: $509 per year plus GST. Elsewhere: $509 per year.
Online only: 1 year (Single user) with free *AMA PRA Category 1 Credits*™: $431.

MULTIPLE COPIES: Discounts are available for group subscriptions, multiple copies, site licenses, or electronic distribution. For pricing information, please contact our Group Account Managers at groups@reliasmedia.com or (866) 213-0844.

Back issues: $75. Missing issues will be fulfilled by customer service free of charge when contacted within one month of the missing issue's date.
GST Registration Number: R128870672.

ACCREDITATION: Relias LLC is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation. Contact hours [1.5] will be awarded to participants who meet the criteria for successful completion. California Board of Registered Nursing, Provider CEP#13791.

Relias LLC is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. Relias LLC designates this enduring material for a maximum of 1.5 *AMA PRA Category 1 Credits*™. Physicians should claim only credit commensurate with the extent of their participation in the activity.

This activity is intended for OB/GYNs, nurses, nurse practitioners, and other family planners. It is in effect for 36 months from the date of publication.

Opinions expressed are not necessarily those of this publication. Mention of products or services does not constitute endorsement. Clinical, legal, tax, and other comments are offered for general guidance only; professional counsel should be sought for specific situations.

AUTHOR: Rebecca Bowers
EXECUTIVE EDITOR: Shelly Morrow Mark
COPY EDITOR: Josh Scalzetti
EDITORIAL GROUP MANAGER: Terrey L. Hatcher
ACCREDITATIONS MANAGER: Amy M. Johnson, MSN, RN, CPN

Women who are post-menarcheal and pre-menopausal up to age 45, who are at risk for pregnancy, and who desire a long-term intrauterine contraceptive for birth control are eligible for the study. The study's estimated completion date is in 2024.

Review the Current Option

The copper-containing IUD that is currently available was introduced in the United States in 1988. It is an extremely effective form of birth control, with a failure rate of 0.3% to 0.6%.[5] The device features a copper surface area of 380 mm^2. Each arm of the device has a solid copper sleeve, with copper wire wrapped around the 36-mm vertical stem. A monofilament polyethylene thread is tied through the base to create two 10.5-cm long, white tailstrings for device detection and removal. The device is designed for use by women whose uterine cavities sound to a depth of 6-9 cm.[5]

Most medical conditions do not create restrictions for copper IUD use, according to the *U.S. Medical Eligibility Criteria for Contraceptive Use*.[6] Because the copper IUD is a nonhormonal contraception method, it can be used by women with medical contraindications to progestogens, such as women with hepatic dysfunction progestin-sensitive tumors, as well as those who prefer to avoid using synthetic hormones.[5] The category 4 conditions (conditions that represent an unacceptable health risk if the method is used) for IUD placement include pregnancy, cervical/uterine/pelvic infection or cancer (cervical or endometrial), distorted uterine cavities, and undiagnosed abnormal uterine bleeding.[5]

Many women choose to continue using the copper IUD. In the CHOICE study of contraceptive methods, researchers found that among copper IUD users, 23%, 35.8%, and 44.1% had stopped using the device at 24 months, 48 months, and 60 months, respectively.[7] In international studies, one-quarter to one-third of women used the device for 10 years.[8] Although the copper IUD is approved by the Food and Drug Administration for up to 10 years of use, many family planning organizations routinely allow use of the device for 12 years before recommending removal. Results from a small study indicate that the copper IUD could provide contraception effectively for 20 years.[9]

The copper IUD is the most effective method of emergency contraception, with a 0.1% risk of pregnancy. It provides ongoing contraception, regardless of the point during the menstrual cycle when it is inserted or the number of days since unprotected intercourse.[6]

Dealing With Side Effects

Typically, copper IUDs do not cause a change in menstrual frequency, but currently available products can increase menstrual flow and cramping abdominal pain. Research indicates about 10% to 13% of users will have the IUD removed because of bleeding during the first year of use.[10] With the potential for increased bleeding and cramping associated with copper IUDs, developers of the new IUD hope it will offer improvement.

In a randomized, subject-blinded comparison of the VeraCept IUD and the copper T380, data indicate use of the VeraCept device resulted in less pain at insertion, fewer device expulsions, and increased total continu-

EXECUTIVE SUMMARY

Patient enrollment has begun in the United States for Phase III trials of a new copper intrauterine device (IUD) with a flexible frame. The IUD's design accommodates the uterine contour and features a lower total load of copper to improve comfort and reduce bleeding. The frame is made of nitinol, an alloy of nickel and titanium.

- The Phase III trial is designed as a prospective, multi-center, single-arm, open-label clinical study to three years, with possible extension up to five years.
- Women in the United States who prefer to use a nonhormonal, long-acting, reversible contraceptive currently have a single option — the copper T380A IUD.

ation compared to the T380, with a similar level of contraceptive efficacy.[11]

How can clinicians help patients cope with bleeding? Randomized controlled trials indicate that the use of nonsteroidal anti-inflammatory drugs reduces heavy or prolonged menstrual bleeding from copper IUDs. Antifibrinolytic agents also may reduce bleeding.[12,13] Treatment can ease distress and improve continuation rates, as well as prevent iron deficiency in women who use IUDs. ■

REFERENCES

1. United Nations, Department of Economic and Social Affairs, Population Division. *Trends in Contraceptive Use Worldwide 2015*. Available at: https://bit.ly/21QJ8Zx. Accessed March 20, 2019.
2. Turok DK, Gawron LM, Lawson S. New developments in long-acting reversible contraception: The promise of intrauterine devices and implants to improve family planning services. *Fertil Steril* 2016;106:1273-1281.
3. Dean G, Schwarz EB. Intrauterine devices. In: Hatcher RA, Trussell J, Nelson AL, et al. *Contraceptive Technology*: 21st revised edition. New York: Ayer Company Publishers; 2018.
4. Turok D, Nelson A. Phase 2 efficacy, safety and tolerability results of the veracept low-dose copper intrauterine contraceptive: 24-month data. *Contraception* 2018;98:355.
5. Nelson AL, Massoudi N. New developments in intrauterine device use: Focus on the US. *Open Access J Contracept* 2016;7:127-141.
6. Curtis KM, Tepper NK, Jatlaoui TC, et al. U.S. Medical Eligibility Criteria for Contraceptive Use, 2016. *MMWR Recomm Rep* 2016;65:1-103.
7. Diedrich JT, Madden T, Zhao Q, Peipert JF. Long-term utilization and continuation of intrauterine devices. *Am J Obstet Gynecol* 2015;213:822.
8. Kaneshiro B, Aeby T. Long-term safety, efficacy, and patient acceptability of the intrauterine Copper T-380A contraceptive device. *Int J Womens Health* 2010;2:211-220.
9. Sivin I. Utility and drawbacks of continuous use of a copper T IUD for 20 years. *Contraception* 2007;75(Suppl6):S70-S75.
10. Hubacher D, Reyes V, Lillo S, et al. Preventing copper intrauterine device removals due to side effects among first-time users: Randomized trial to study the effect of prophylactic ibuprofen. *Hum Reprod* 2006;21:1467-1472.
11. Reeves MF, Katz BH, Canela JM, et al. A randomized comparison of a novel nitinol-frame low-dose-copper intrauterine contraceptive and a copper T380S intrauterine contraceptive. *Contraception* 2017;95:544-548.
12. Grimes DA, Hubacher D, Lopez LM, Schulz KF. Non-steroidal anti-inflammatory drugs for heavy bleeding or pain associated with intrauterine-device use. *Cochrane Database Syst Rev* 2006;(4):CD006034.
13. Godfrey EM, Folger SG, Jeng G, et al. Treatment of bleeding irregularities in women with copper-containing IUDs: A systematic review. *Contraception* 2013;87:549-566.

Reproductive Health Advocates Push Back Against Proposed Title X Plans

Proposed changes to the federal regulations governing the Title X Family Planning program have mobilized reproductive health advocates to fight in court against the move.

On March 4, the Trump administration published a final regulation that is a new version of the Reagan administration's "domestic gag rule." With the rule's publication in the *Federal Register*, a 60-day clock is ticking until provisions of the rule start going into effect.

If implemented, the regulation will bar abortion referral, undermine patients' rights to comprehensive counseling about pregnancy options, and exclude from Title X organizations that provide abortion using non-federal funds. In addition, the rule also will change the services and providers that could receive support through Title X

EXECUTIVE SUMMARY

On March 4, the Trump administration published a final regulation that is a new version of the Reagan administration's "domestic gag rule." With the rule's publication in the *Federal Register*, a 60-day clock is ticking until provisions of the rule start going into effect.

- If implemented, the regulation will bar abortion referral, undermine patients' rights to receive comprehensive counseling about pregnancy options, and exclude organizations from Title X if they provide abortion using non-federal funds. The rule also will change the services and providers that could receive support through Title X in ways that would shift the program away from its mission of providing high-quality and comprehensive family planning.
- Groups, including 23 states, several family planning organizations, and the American Medical Association, have sued to block the new regulations from implementation.

in ways that would shift the program away from its mission of providing high-quality and comprehensive family planning. (*Read an analysis of the regulation: See the August 2018 Washington Watch column, "Trump Administration Revives Title X 'Domestic Gag Rule,'" available at: https://bit.ly/2O2zJQh.*)

"In every way, this rule attempts to shred the integrity of an evidence-based program with a nearly 50-year track record of public health success," says **Clare Coleman**, president and chief executive officer of the National Family Planning & Reproductive Health Association. "The Trump administration's rule not only contradicts medical ethics and healthcare quality standards, it defies widely shared, fundamental American values on the importance of confidentiality, dignity, and respect."

Groups, including 23 states, several family planning organizations, and the American Medical Association (AMA), have sued to block the new regulations from implementation based on statutory and constitutional claims. The federal courts may consider the statutory claims and decide to block the regulations from going into effect until the cases can be heard. The courts will need to take action on the request for a stay before May 3, 2019.

If the regulation is enacted, physicians would be prohibited from having open, frank conversations with their patients about all of their healthcare options, a situation termed "untenable" by AMA President **Barbara McAneny**, MD.

"The new rule imposes a government gag rule on what information physicians can provide to their patients," said McAneny in a statement. "The administration wants to allow Title X clinics not to provide full information to patients about all of their health care options and block physicians from providing appropriate referrals for care."

Title X Funding Is Key to Family Planning

Since its enactment in 1970, Title X has served as the sole federal program dedicated to supporting family planning care delivery.

The program serves more than 4 million low-income, uninsured, and underserved patients and is administered by the federal Health and Human Services' Office of Population Affairs. In Fiscal Year 2018, the program had a funding level of $286.5 million.[1]

In 2017, about 4,000 clinics across the country relied on Title X funding. These funds go to sites such as community health centers, state health departments, and Planned Parenthood centers, as well as to faith-based, school-based, and other nonprofit organizations. According to federal documents, in 2017 approximately 19% of revenue for family planning services for participating clinics involved Title X grants. These funds were used to pay for the direct costs of family planning services as well as to cover general operating costs, such as rent, staff salaries, health information technology, and staff training.[1]

The current Title X network provides the backbone of needed services for many at-risk women. According to the Guttmacher Institute, in 2015, 64% of U.S. counties had at least one family planning center supported by Title X. Ninety percent of women who needed publicly funded family planning care lived in those counties. Data indicate that in 21% of all counties, a Title X site was the only health center delivering publicly funded contraceptive care to at least 10 women annually.[2]

"The Title X rule is designed to destroy our nation's family planning provider network and deprive millions of poor and low-income people of access to the contraception and other preventive healthcare they need," said Coleman.

Legal Action Mounts

The new regulation comes during a funding cycle for Title X grantees due to end March 31. Applications for new

grants have already been submitted and were expected to begin April 1, 2019, under the previous regulations. Those applicants selected for funding will need to choose between complying with the new regulations or withdrawing from the Title X program.

The new requirements are extensive, calling for entities supported by Title X to be separate both physically and financially from any entity that provides abortion using non-federal funds. That separation would include separate physical spaces, accounting records, patient health records, staff, phone numbers, email addresses, signage, and more.

Title X plays a "vital role" in the fabric of America's family planning safety net, reads a statement issued by the American College of Obstetricians and Gynecologists and 18 other professional reproductive health societies.

"The final regulation is the latest of numerous recent decisions — from rolling back insurance coverage for contraceptives to attempting to eliminate funding for evidence-based teen pregnancy prevention programs — that unravel the threads of this safety net," the statement reads. "Together, these decisions compound, leaving women and families with increasingly fewer options for obtaining medically accurate, affordable, and timely access to contraception and preventive care."

Robert Hatcher, MD, MPH, professor emeritus of gynecology and obstetrics at Emory University School of Medicine in Atlanta and chairman of the *Contraceptive Technology Update* Editorial Advisory Board, says, "Once again, efforts to decrease the delivery of contraceptives and abortion services will make the availability of contraception more difficult for less-advantaged women. But the needs of less-advantaged women are not really the concern of the Trump administration. These proposed Title X plans are, in my opinion, a disgrace." ■

REFERENCES

1. Sobel L, Salganicoff A, Frederiksen B. New Title X regulations: Implications for women and family planning providers. *Kaiser Issue Brief*. March 2019. Available at: https://bit.ly/2Je72RB. Accessed March 21, 2019.
2. Hasstedt K. What the Trump Administration's final regulatory changes mean for Title X. *Health Affairs Blog*, March 5, 2019. doi:10.1377/hblog20190304.267855.

HPV Immunizations Making Mark on Disease

In a multi-year analysis of cervical precancers, data show declines in the incidence of cancers caused by human papillomavirus (HPV) strains 16 and 18, which have been targeted by vaccination.[1] The National Cancer Institute states that most cervical cancers are caused by HPV.[2]

Researchers affiliated with the Centers for Disease Control and Prevention's (CDC) Human Papillomavirus Vaccine Impact Monitoring Project analyzed more than 10,000 archived specimens. The specimens were collected between 2008 and 2014 from reproductive-age women who had received a diagnosis of grade 2 or 3 cervical intraepithelial neoplasia or adenocarcinoma in situ (CIN2+). Investigators tested the samples for 37 HPV types. They then looked at the proportion and estimated number of cases by HPV types over time.

The analysis indicates that the number of cases of CIN2+ dropped 21%, from 2,344 in 2008 to 1,857 in 2014. Researchers reported that the estimated number of cases attributed to HPV types 16 and 18 decreased from 1,235 in 2008 to 819 cases in 2014.[1]

> "THIS IS CLEAR EVIDENCE THAT THE HPV VACCINE IS WORKING TO PREVENT CERVICAL DISEASE IN YOUNG WOMEN IN THE UNITED STATES."

Among women who were vaccinated against HPV, data reflect that the proportion of CIN2+ cases that tested positive for HPV 16/18 fell from 55.2% to 33.3%. In comparison, for unvaccinated women, the proportion of CIN2+ cases that tested positive for HPV 16/18 decreased from 51.0% to 47.3%. Among women whose vaccination status was unknown, the proportion declined from 53.7% to 45.8%. Researchers believe the decreases among unvaccinated women suggest herd protection.[1]

"This is clear evidence that the HPV vaccine is working to prevent cervical disease in young women in the United States," says **Nancy McClung**, PhD, RN, an epidemic

EXECUTIVE SUMMARY

In a multi-year analysis of cervical precancers, data indicate that the incidence of cancers caused by human papillomavirus (HPV) types 16 and 18, which have been targeted by vaccination, has declined.

- Researchers analyzed more than 10,000 archived specimens that were collected between 2008 and 2014 from reproductive-age women who had received a diagnosis of grade 2 or 3 cervical intraepithelial neoplasia or adenocarcinoma in situ (CIN2+). Samples were tested for 37 HPV types, with investigators looking at the proportion and estimated number of cases by HPV types over time.
- The number of cases of CIN2+ dropped 21%, from 2,344 in 2008 to 1,857 in 2014, data indicate. Researchers report the estimated number of cases attributed to HPV types 16 and 18 declined from 1,235 in 2008 to 819 cases in 2014.

intelligence service officer at the CDC. "In the coming years, we should see even greater impact as more women are vaccinated during early adolescence and before exposure to HPV."

Vaccine Makes Impact

In the current study, researchers reported that almost every age group experienced decreases in the proportion of CIN2+ cases that tested positive for HPV 16/18. However, no declines were found among women ages 35-39, the oldest age group. Researchers concluded that most of the women in this age group were not eligible to receive the HPV vaccine because of their age.

Although non-Hispanic whites and blacks experienced decreases in the proportion of precancers that were positive for HPV 16/18, Hispanic and Asian women did not. Although the women who were included in this study may have been less likely to be vaccinated against HPV, recent reports indicate robust uptake of the HPV vaccine among Hispanic and Asian teens, which should diminish racial and ethnic disparities.[1]

Keep Recommendations Coming

The CDC recommends that all boys and girls who are 11 or 12 years of age receive HPV vaccination. The vaccine series can be started as early as age 9. A catch-up vaccine is recommended for males through age 21 and for females through age 26. In addition, the HPV vaccine is recommended for gay and bisexual men through age 26. The vaccine also is recommended for men and women who have compromised immune systems through age 26 if they did not receive the complete vaccination at a younger age.

In October 2018, the Food and Drug Administration approved the use of the nine-valent HPV vaccine in women and men ages 27 through 45. The Advisory Committee on Immunization Practices is reviewing results from health economic analyses, as well as other data related to this policy question, with further discussion slated for its June 2019 meeting.

How can healthcare providers help to increase the HPV vaccination rates? According to the CDC, the main reason parents choose to vaccinate their children is because a healthcare provider recommended the vaccine. Clinicians can strongly recommend the vaccination against HPV to parents of children 11-12 years of age at the same time and in the same way that they recommend the meningococcal and Tdap vaccines.

More than 60 global organizations, led by the International Papillomavirus Society, have joined together to reduce the burden of HPV-related cancer. The society recently observed March 4 as International HPV Awareness Day to bring attention to the importance of vaccination and screening.

Increasing awareness of the HPV virus and the steps people can take to reduce risk is "critical," notes **Margaret Stanley**, OBE FMedSci, president of the International Papillomavirus Society and emeritus professor of epithelial biology at the University of Cambridge.

"By understanding the virus and by talking openly, we can remove the misunderstandings and stigma that often act as a barrier to appropriate healthcare and put people at real risk," said Stanley in a press statement.

Although policy and public attention have focused on HPV's role in cervical cancer, it is important to remember that in the United States, high-risk HPV types cause 3% of all cancers in women and 2% of all cancers in men, which together result in approximately 43,000 HPV-related cancers each year.[2] In the United States, most oropharyngeal cancers (70%) are caused by HPV. The number of new cases is increasing each year, and oropharyngeal cancers are now the most common HPV-related cancer in the United States.[2]

"The virus is carried by men as well as women, and males are also at risk of HPV-related cancers," notes **Joel Palefsky**, MD, professor of medicine at the University of

California, San Francisco's Department of Infectious Diseases and advocacy chair for the International Papillomavirus Society. "Everyone is potentially affected by HPV — and everyone can do something to reduce the risks simply by sharing information and lifting the lid on HPV." ■

REFERENCES

1. McClung NM, Gargano JW, Bennett NM, et al. Trends in human papillomavirus vaccine types 16 and 18 in cervical precancers, 2008-2014. *Cancer Epidemiol Biomarkers Prev* 2019;28:602-609.
2. National Cancer Institute. HPV and cancer. Fact sheet. Available at: https://bit.ly/2SJMHDc. Accessed March 21, 2019.

National Plan Aimed at Ending HIV in the United States

A national plan is aimed at ending the HIV epidemic in the United States. The plan entails four main strategies: diagnosing HIV as early as possible after infection, treating HIV rapidly and effectively to achieve sustained viral suppression, protecting people at risk for HIV using prevention approaches such as pre-exposure prophylaxis, and responding quickly to growing HIV clusters to stop new infections.

"After a decades-long struggle, the path to eliminate America's HIV epidemic is clear," says **Eugene McCray**, MD, director of the Centers for Disease Control and Prevention (CDC) Division of HIV/AIDS Prevention. "Expanding efforts across the country will close gaps, overcome threats, and turn around troublesome trends."

Although the number of HIV infections in the United States has dropped by more than two-thirds since the height of the AIDS epidemic in the mid-1980s, new CDC research indicates that the estimated number of new infections has leveled off.[1]

For the report, researchers examined trends from 2010 to 2016. The report indicates that after five years of substantial decreases, the number of HIV infections began to level off in 2013 at a rate of approximately 39,000 infections per year.

Differences Among Groups

Data from the report indicate that although the number of infections remained stable among gay and bisexual men, trends varied by race/ethnicity and age. Such trends are important in addressing the epidemic, since gay and bisexual men account for about 70% of new infections.

> THE CDC ESTIMATES THAT EFFECTIVE HIV PREVENTION AND TREATMENT MEASURES ARE NOT ADEQUATELY REACHING THOSE WHO COULD BENEFIT MOST FROM THEM.

The number of infections remained stable among black gay and bisexual men, yet it rose 30% among Latino gay and bisexual men. Infections among white gay and bisexual men decreased 16%, the data indicate.

By race/ethnicity and age, infections fell more than 30% among black gay and bisexual males 13 to 24 years of age, yet they remained stable among Latino gay and bisexual males in the same age group. The data suggest that infection rates rose about 65% among both black and Latino gay and bisexual males 25 to 34 years of age.

Among heterosexual populations, infections fell about 17% among both men and women combined. The number of infections for injection drug users decreased about 30%, but has stabilized in more recent years.[1]

Time to Use Proven Techniques

Why has the decline in the number of HIV infections plateaued? The CDC estimates that effective prevention and treatment measures for HIV are not adequately reaching those who could benefit most from them. Those who live in rural areas and in the South are among those disproportionately affected.

Research indicates that intensified local HIV prevention efforts have proven effective already. Decreases in infections have occurred in urban areas, such as New York and Washington, DC, that

EXECUTIVE SUMMARY

The goal of a new national plan is to end the HIV epidemic in the United States. The plan entails four main strategies: diagnosing HIV as early as possible after infection, treating HIV rapidly and effectively to achieve sustained viral suppression, protecting people at risk for HIV using prevention approaches such as pre-exposure prophylaxis, and responding quickly to growing HIV clusters to stop new infections.

- Although the number of HIV infections in the United States has dropped by more than two-thirds since the height of the AIDS epidemic in the mid-1980s, new research from the Centers for Disease Control and Prevention indicates that the estimated number of new infections has leveled off.

have committed to ending new infections. From 2010 to 2016, infection rates dropped about 23% in New York and about 40% in Washington, DC.[1]

The new national program is designed to increase the use of proven strategies quickly in the 48 counties that have the highest HIV burden, as well as in Washington, DC; San Juan, Puerto Rico; and seven states with a disproportionate rural HIV burden. The program's goal is to reduce new HIV infections by 90% over a 10-year period.

The CDC plans to work with other national agencies, local and state governments, communities, and people with HIV to expand new prevention and treatment efforts in the targeted areas. It will establish HIV elimination teams in areas with a high burden of HIV infections, with experts in epidemiology, healthcare systems, and disease investigation who will work together with local stakeholders.

The CDC also will work with national, state, and local health agencies to increase the capacity to diagnose all HIV infections in the high-burden areas. By using new systems, the effort will help make HIV testing routine in clinical settings and more accessible in non-clinical settings. Support will be given to enact quick HIV treatment and develop systems for helping people with HIV stay in care.

"We have an historic opportunity to improve the precision of prevention," notes **Jonathan Mermin**, MD, MPH, director of the CDC's National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention. "This infusion of resources will finally relegate America's HIV epidemic to the pages of history."

The CDC recommends at least annual testing for people at high risk for HIV, which includes men who have sex with men and injection drug users. It is estimated that in 2015, about 15% of persons in the United States living with HIV were unaware of their infection. However, this same population accounted for about 40% of annual HIV transmissions.[2,3] ■

REFERENCES

1. Centers for Disease Control and Prevention. Estimated HIV incidence and prevalence in the United States, 2010-2016. *HIV Surveillance Supplemental Report* 2019;24:1-89.
2. Gopalappa C, Farnham PG, Chen YH, Sansom SL. Progression and transmission of HIV/AIDS (PATH 2.0). *Med Decis Making* 2017;37:224-233.
3. Centers for Disease Control and Prevention. Estimated HIV incidence and prevalence in the United States, 2010-2015. *HIV Surveillance Supplemental Report* 2018;23(No. 1). Available at: https://bit.ly/2GUIGaI. Accessed March 21, 2019.

Test in Development to Detect Preterm Birth

Almost 10% of births are preterm and occur before 37 weeks' gestation. Scientists at Brigham and Women's Hospital have published early results of an investigative blood test designed to predict which women may be at increased risk and which ones may be at lower-than-average risk for spontaneous preterm delivery.[1]

The scientists have identified five circulating microparticle proteins in blood samples taken in the first trimester of pregnancy that may give clues about the risk of spontaneous preterm birth.[2] Secreted by cells, the circulating microparticles contain RNAs, proteins, and other molecules that one cell can transmit to another. Although this type of communication between cells has been examined primarily in cancer research, Brigham and Women's Hospital scientists now are studying its mechanism in placental implantation. Because proteins found in circulating microparticles can be detected in patients' blood samples, researchers say they may represent a promising biomarker.

For the current paper, the team examined blood samples that were collected near the end of the first trimester of pregnancy. The samples came from three biobanks in Seattle, Boston, and Pittsburgh. Investigators compared samples taken from 87 women who delivered at or before 35 weeks to those from 174 women who were the same age and at the same week of pregnancy at the time of testing as the

first group, but who delivered at term.[1]

The test looked at plasma-derived, exosomal proteins obtained in the first trimester to determine the risk of spontaneous preterm delivery later in pregnancy. The test for first-time mothers correctly identified patients who delivered preterm with 86% specificity and 63% sensitivity levels.[1]

Researchers plan to validate the findings with a larger national dataset, as well as to make further refinements to the test. They also plan to include additional risk factors, such as maternal characteristics, to improve the accuracy of the test. By using the same testing method, scientists also plan to look for prognostic markers for other conditions related to pregnancy, such as gestational diabetes, to develop a comprehensive test that will offer a detailed look at risk during pregnancy.

"A lot of the issues in pregnancy that result in spontaneous preterm birth begin at the end of the first trimester when the placenta becomes vascularized," says **Thomas McElrath**, MD, PhD, a maternal fetal medicine specialist in the Brigham and Women's Hospital's Department of Obstetrics and Gynecology and corresponding author. "Our goal is to develop prognostic markers for our patients to help make predictions and, ultimately, help us tailor treatment to the individual and offer highly personalized care to every woman from early on in her pregnancy."

ALMOST 10% OF BIRTHS OCCUR BEFORE 37 WEEKS' GESTATION.

Problems Come With Preterm Birth

Babies who are born too early have higher rates of death and disability. Data from the Centers for Disease Control and Prevention show that 17% of infant deaths in 2015 were attributed to preterm birth and low birth weight.[3] Infants who are born too early may experience trouble with breathing or feeding, developmental delay, cerebral palsy, vision problems, and hearing problems.

Currently, there is not a reliable way to predict which pregnancies will result in premature delivery. Clinicians have been challenged to predict delivery dates accurately for all types of pregnancies, especially in low-resource settings.

Healthcare providers can help pregnant women take steps to help reduce their risk of preterm delivery and take care of their general health. The Centers for Disease Control and Prevention suggests encouraging women to do the following:

- stop smoking;
- seek prenatal care promptly as soon as a woman thinks she is pregnant, and then seek routine care throughout pregnancy;
- seek medical attention for warning symptoms and signs of preterm labor; and
- discuss with a healthcare provider the use of progesterone treatment if

EXECUTIVE SUMMARY

Scientists at Brigham and Women's Hospital have published early results of an investigative blood test designed to predict which women may be at increased risk and which ones may be at lower-than-average risk for spontaneous preterm delivery. The researchers have identified circulating microparticle proteins found in blood samples taken in the first trimester of pregnancy that may provide clues about the risk of spontaneous preterm birth.

- Almost 10% of births are preterm and occur before 37 weeks' gestation. Currently, there is no reliable way to predict which pregnancies will end prematurely. Accurately predicting delivery dates for all types of pregnancies has been a challenge for clinicians, especially those in low-resource settings.

a woman has had a previous preterm birth. ■

REFERENCES

1. McElrath TF, Cantonwine DE, Jeyabalan A, et al. Circulating microparticle proteins obtained in the late first trimester predict spontaneous preterm birth at less than 35 weeks' gestation: A panel validation with specific characterization by parity. *Am J Obstet Gynecol* 2019 Jan. 25. doi:10.1016/j.ajog.2019.01.220. [Epub ahead of print].
2. Cantonwine DE, Zhang Z, Rosenblatt K, et al. Evaluation of proteomic biomarkers associated with circulating microparticles as an effective means to stratify the risk of spontaneous preterm birth. *Am J Obstet Gynecol* 2016;214:631.e1-631.e11.
3. Xu J, Murphy SL, Kochanek KD, Arias E. Mortality in the United States, 2015. NCHS data brief, no. 267. Hyattsville, MD: National Center for Health Statistics. Available at: https://bit.ly/2icuU9p. Accessed March 21, 2019.

Report Details Effect of Mifepristone Labeling Change

In 2016, the Food and Drug Administration (FDA) issued new labeling for the abortion drug mifepristone, which lowered the recommended dosage, extended the time frame for when a woman could take the pill, and reduced the required number of provider visits.

New research indicates that for Texas providers and patients, the labeling change increased access options and brought the proportion of medication abortions in the state into alignment with national data.[1]

Texas abortion rights advocates have fought an uphill battle in the state since legislative measures were implemented to hobble access. In 2013, legislators passed House Bill 2 (HB 2), which imposed restrictions on medication abortion and required providers to follow the original mifepristone label. The bill also decreased the gestational age limit to 49 days and required four provider visits. Figures indicate that medication abortions decreased 70% in the first six months following the law's implementation, primarily because of the new legislation, clinic closures, and confusion regarding the legality of abortion.[2]

With the issuance of the new drug labeling, the restrictions set forth by HB 2 were nullified. According to the new research conducted by the Texas Policy Evaluation Project (TxPEP), medication abortion comprised 28% of all abortions before the 2013 legislation, 10% after HB 2's implementation, and 33% after the FDA label change. To perform the analyses, researchers collected data directly from licensed non-hospital abortion facilities at three time points and supplemented the data with abortion statistics publicly available from the Texas Department of State Health Services.

"The new FDA label has allowed Texas providers to offer medication abortion in a way that is consistent with the best medical evidence, rather than being forced to comply with an outdated label imposed by HB 2," says **Sarah Baum**, MPH, TxPEP investigator, associate at Ibis Reproductive Health, and lead author of the study. "This has increased options for Texas women and brought the proportion of medication abortions in the state in alignment with national data."

The Texas Policy Evaluation Project is an effort to document and analyze the effects of the reproductive health-related measures passed by the Texas legislature. The project team involves researchers at the University of Texas at Austin Population Research Center, the University of

EXECUTIVE SUMMARY

New research indicates that for Texas providers and patients, the 2016 Food and Drug Administration's (FDA) new labeling for the abortion drug mifepristone increased access options and brought the proportion of medication abortions in the state in alignment with national data.

- Texas abortion rights advocates have fought an uphill battle in the state since legislative measures were implemented to hobble access. In 2013, legislators passed House Bill 2 (HB 2), which imposed restrictions on medication abortion and required providers to follow the original mifepristone label.
- Data indicate that medication abortion comprised 28% of all abortions before the 2013 legislation, 10% after HB 2's implementation, and 33% after the FDA label change.

California San Francisco, Ibis Reproductive Health, and the University of Alabama at Birmingham.

The label change also brought the medication abortion prescribing guidelines in Texas in line with evidence-based practice, lowering the number of required provider visits from four to two and extending the period when patients can take the abortion medication from seven weeks to 10 weeks of pregnancy.

"With the label change, many Texas women have regained access to medication abortion, a method some women prefer," said **Kari White**, PhD, MPH, a TxPEP investigator. "However, the smaller network of open facilities in Texas following HB 2 means that some women still need to travel considerable distances just to take a pill that is established to be safe and effective."

Advocates Push for Access

Although the FDA labeling change made an impact on access to medication abortion for women in Texas, barriers still remain. In Texas, about 900,000 reproductive-age women live more than 150 miles from an abortion clinic, in part because of clinic closures brought about by HB 2, according to TxPEP statistics. Currently, 20 clinics provide abortion services in Texas, down from more than 40 prior to the 2013 legislation. Although medication abortion may be available in the state, a ban on providing medication abortion via telemedicine remains. Also, women must undergo a mandatory ultrasound exam during a visit at least 24 hours before taking the first pill. Insurance is prohibited from covering abortion in the state.

A 2014 practice bulletin from the American College of Obstetricians and Gynecologists states that medication abortion can be provided safely and effectively via telemedicine with a high level of patient satisfaction.[3] According to the Guttmacher Institute, routine ultrasound is not considered to be medically necessary as part of a first-trimester abortion, and it can add significantly to the procedure's cost.

The dosing regimen for mifepristone calls for 200 mg (one tablet) to be taken by mouth on day one. At 24-48 hours after taking mifepristone, 800 mcg (four tablets) of misoprostol is taken buccally (in the cheek pouch) at a location that is appropriate for the patient. About seven to 14 days after taking mifepristone, the patient is advised to follow up with her healthcare provider. ■

REFERENCES

1. Baum SE, White K, Hopkins K, et al. Rebound of medication abortion in Texas following updated mifepristone label. *Contraception* 2019 Jan. 23. doi: 10.1016/j.contraception.2019.01.001. [Epub ahead of print].
2. Grossman D, Baum S, Fuentes L, et al. Change in abortion services after implementation of a restrictive law in Texas. *Contraception* 2014;90:496-501.
3. American College of Obstetricians and Gynecologists. Practice bulletin no. 143: Medical management of first-trimester abortion. *Obstet Gynecol* 2014;123:676-692.

COMING IN FUTURE MONTHS

- Researchers examine why contraception fails
- Are all UTI tests necessary?
- Simple urine test may detect preeclampsia
- Understanding attitudes about HPV vaccination

CONTRACEPTIVE TECHNOLOGY UPDATE®

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.

CME/CE 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 ReliasMedia.com and click on My Account to view your available CE activities. Tests are taken after each issue. First-time users must register on the site using the subscriber number 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 test, 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 emailed to you.

CME/CE QUESTIONS

1. **The currently available copper intrauterine device is approved by the FDA for how many years of use?**

   a. Three
   b. Five
   c. Seven
   d. 10

2. **Gay and bisexual men account for what percentage of new HIV infections in the United States?**

   a. 25%
   b. 35%
   c. 70%
   d. 80%

3. **In 2015, what percentage of U.S. infant deaths were attributed to preterm birth and low birth weight?**

   a. 17%
   b. 25%
   c. 33%
   d. 42%

4. **What is the recommended dosage of mifepristone for day one in the medication abortion regimen?**

   a. 200 mg (one tablet)
   b. 400 mg (two tablets)
   c. 600 mg (three tablets)
   d. 800 mg (four tablets)

CME/CE OBJECTIVES

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

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