CONTRACEPTIVE TECHNOLOGY UPDATE®
35TH ANNIVERSARY

INSIDE

AHC Media

APRIL 2015 Vol. 36, No. 4; p. 37-48

Data reaffirm the effectiveness of LNG, copper intrauterine devices

20-mcg LNG IUD associated with lower risk of pregnancy

Findings from a recent analysis of data from a large, multi-country study of women using levonorgestrel or copper intrauterine devices (IUDs) indicate that while both forms of contraception have high levels of efficacy, the levonorgestrel device daily releasing 20 mcg (Mirena LNG IUD, Bayer Healthcare Pharmaceuticals, Wayne, NJ) was associated with a significantly lower risk of pregnancy, including ectopic pregnancy, than copper IUDs.[1]

The study, called the European Active Surveillance Study for Intrauterine Devices, included more than 61,000 women from Austria, Finland, Germany, Poland, Sweden, and the United Kingdom. A prospective, controlled, long-term cohort study, the study is believed to be the largest to date to document contraceptive efficacy, adverse events, and potential risk factors for uterine perforation in intrauterine contraceptive users.

Recruitment of study participants between ages 18-50 was conducted through a network of healthcare professionals, such as gynecologists and midwives who regularly insert IUDs, who practice in private offices or specialized clinics. All women with a newly inserted IUD were eligible for enrollment. Because the study was conducted in Europe, where more types of copper IUDs are available, the copper IUD cohort included more than 30 types of copper devices. Thirty-seven percent of the women in the copper IUD cohort used Nova-T (200 or 380) devices (Bayer, Wuppertal, Germany). Other devices included the T Safe Cu 380 (Williams Supply, Rhymney, South Wales) with 18% using it, and Multiload CU (250 or 375) (Multilan AG, Dublin, Ireland) with 14% using it.[1] Following a baseline survey, study participants and their physicians completed one follow-up questionnaire after 12 months. A multi-faceted follow-up procedure minimized loss to follow-up.

Financial Disclosure: Consulting Editor **Robert A. Hatcher**, MD, MPH, Editor **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. **Melanie Deal**, nurse reviewer, discloses that she formerly was on the speakers bureau for Merck & Co.

CONTRACEPTIVE TECHNOLOGY UPDATE®

Contraceptive Technology Update®
ISSN 0274-726X, is published monthly by
AHC Media, LLC
One Atlanta Plaza
950 East Paces Ferry Road NE, Suite 2850
Atlanta, GA 30326.
Periodicals Postage Paid at Atlanta, GA 30304 and at additional mailing offices.

POSTMASTER: Send address changes to:
Contraceptive Technology Update
P.O. Box 550669
Atlanta, GA 30355.

SUBSCRIBER INFORMATION:
Customer Service: (800) 688-2421.
customerservice@ahcmedia.com.
www.ahcmedia.com
Hours of operation: 8:30 a.m. - 6 p.m. Monday-Thursday; 8:30 a.m. - 4:30 p.m. Friday, EST.

EDITORIAL QUESTIONS OR COMMENTS?
Call Joy Daugherty Dickinson (404) 262-5410
or Email: joy.dickinson@ahcmedia.com.

SUBSCRIPTION PRICES:
Print: 1 year with free *AMA PRA Category 1 Credits™*: $479.
Add $19.99 for shipping & handling.
Online only: 1 year (Single user) with free *AMA PRA Category 1 Credits™*: $429

MULTIPLE COPIES: Discounts are available for group subscriptions, multiple copies, site-licenses or electronic distribution. For pricing information, call Tria Kreutzer at 404-262-5482. Canada: $509 per year plus GST. Elsewhere: $509 per year.

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: AHC Media is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

This activity has been approved for 15 nursing contact hours using a 60-minute contact hour.
Provider approved by the California Board of Registered Nursing, Provider #14749, for 15 Contact Hours.
AHC Media is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

AHC Media designates this enduring material for a maximum of *18 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 24 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.

EDITOR: Rebecca Bowers
EXECUTIVE EDITOR: Joy Daugherty Dickinson (404) 262-5410
CONTINUING EDUCATION & EDITORIAL DIRECTOR: Lee Landenberger

The analysis includes validated follow-up information on 58,324 women: 41,001 women used the levonorgestrel IUD, and 17,323 women selected copper IUDs, resulting in 44,633 and 17,703 woman years of observation, respectively.

A total of 118 contraceptive failures occurred in the trial; 26 in the levonorgestrel device group and 92 in the copper device group. Data indicate that both types of IUDs were highly effective with overall Pearl indices of 0.06 (95% confidence interval [CI]: 0.04-0.09) and 0.52 (95% CI: 0.42-0.64) for levonorgestrel device and copper device groups, respectively. The adjusted hazard ratio for levonorgestrel device versus copper device group was 0.16 (95% CI: 0.10-0.25). Twenty-one pregnancies were ectopic (seven in the levonorgestrel device group and 14 in the copper device group), yielding an adjusted hazard ratio for ectopic pregnancy of 0.26 (95% CI: 0.10-0.66).[1]

This study contains new information, says **Anita Nelson**, MD, professor in the Obstetrics and Gynecology Department at the David Geffen School of Medicine at the University of California in Los Angeles. Previous studies from Europe had not isolated the efficacy of the T380A copper IUD from the lower dose T200 IUDs, which used to be more frequently used in those countries, says Nelson. However, because both of the IUDs are very effective, the choice for levonorgestrel or copper intrauterine contraception probably still depends upon the woman's preference in bleeding patterns, she notes.

Several aspects of this study are of interest to **Robert Hatcher**, MD, MPH, professor emeritus of gynecology and obstetrics at Emory University School of Medicine in Atlanta. First, it is a very large study: 58,324 women between ages 18-50 were included in the final analysis. There was very small loss to follow-up during the one-year follow-up period: 1.7% for LNG users and 2.8% for copper IUD users.[1]

Second, most of the women receiving copper IUDs received a device with a copper surface area of 300 mm^2, but Hatcher says it is curious that the failure rate for women with a larger surface area (300 mm^2 or more) actually was slightly higher than the failure rate in the women receiving a copper

EXECUTIVE SUMMARY

Findings from a recent analysis of data from a large, multi-country study of women using levonorgestrel or copper intrauterine devices (IUDs) indicate that while both forms of contraception have high levels of efficacy, the levonorgestrel device daily releasing 20 mcg was associated with a significantly lower risk of pregnancy, including ectopic pregnancy, than copper IUDs.

- The European Active Surveillance Study for Intrauterine Devices included more than 61,000 women.
- A prospective, controlled, long-term cohort study, the study is believed to be the largest to date to document contraceptive efficacy, adverse events, and potential risk factors for uterine perforation in intrauterine contraceptive users.

IUD with a copper surface area of less than 300 mm^2. The Pearl indices for copper IUD with less than 300 mm^2 was 0.56 (95% CI: 0.24-1.09), and 0.62 (95% CI: 0.50-0.78) for 300 mm^2 or greater.[1]

Third, there is quite a debate these days as to whether women should be taught to check for the strings of their IUDs, says Hatcher. This study very strongly suggests that women should be taught, he notes. Among users of LNG IUDs who became pregnant, exactly 50% (13 of 26) occurred after an unrecognized IUD expulsion, and 16 of 92 of pregnancies in users of copper IUDs occurred after unrecognized IUD expulsion, Hatcher points out. "Both *A Clinical Guide for Contraception* and *Contraceptive Technology* recommend quite clearly that women check for their IUD strings after each menstrual flow,"[2,3] says Hatcher.

The LARC (Long-Acting Reversible Contraception) Program of the American College of Obstetricians and Gynecologists (ACOG) has just published a resource highlighting "hands-on" clinical training opportunities for LARC methods, including information about training for the copper IUD, LNG IUD, and contraceptive implant. *(Visit http://bit.ly/1vH4NK2 for the resource.)*

Structured, hands-on LARC insertion training outside of academic environments is sometimes difficult to find, particularly for IUD insertion, noted **Eve Espey**, MD, MPH, chairman of the ACOG LARC Work Group in a LARC program update. Suggestions about other training opportunities, including sessions at professional conferences and other meetings, can be sent to Shirley Kailas at skailas@acog.org.

Free, accredited on-demand webinars covering a wide range of topics related to LARC provision are available at http://bit.ly/1J3LVKQ. All webinars are free, and ACOG membership is not required. A variety of LARC-related sessions, as well as the ACOG LARC Program's annual family planning session in partnership with the Association of Reproductive Health Professionals, will be offered at the ACOG Annual Clinical and Scientific Meeting in San Francisco May 2-6. *(Visit http://bit.ly/1AgcCrP for meeting information.)*

For information on postpartum insertion of IUDs, check out free online training developed by Cardea, a training, organizational development research group with offices in Texas, California, and Washington, for the Washington State Department of Health in Olympia. Presented by Sarah Prager, MD, MAS, vice chair of the ACOG Committee on Health Care for Underserved Women, the online training addresses intrauterine and subdermal contraception immediately following childbirth. The course addresses indications for immediate postpartum LARC insertion, features videos to demonstrate best practices for postpartum IUD insertion, including how to construct a postpartum uterus model for simulation training, and describes complications and appropriate management strategies. It is designed for providers, counselors, and administrative staff who work in prenatal care or labor and delivery settings. *(Visit http://bit.ly/16ZoO2i for more information.)*

REFERENCES

1. Heinemann K, Reed S, Moehner S, et al. Comparative contraceptive effectiveness of levonorgestrel-releasing and copper intrauterine devices: The European Active Surveillance Study for Intrauterine Devices. *Contraception* 2015; doi:10.1016/j.contraception.2015.01.011.
2. Speroff L, Darney PD. *A Clinical Guide for Contraception*. Philadelphia: Lippincott Williams & Wilkins; 2011.
3. Dean G, Schwarz EB. Intrauterine contraceptives (IUCs). In: Hatcher RA, Trussell J, Nelson AL, et al. *Contraceptive Technology*: 20th revised edition. New York: Ardent Media; 2011. ■

HPV screening: Option to cytology-based options

Primary human papillomavirus (HPV) screening can be considered as an alternative to current U.S. cytology-based cervical cancer screening methods, according to new interim guidance from the Society of Gynecologic Oncology and the American Society for Colposcopy and Cervical Pathology.[1]

The interim guidance recommends:

• Primary HPV testing can be considered for women starting at age 25.

• Women younger than age 25 should continue to follow current guidelines that recommend cytology alone beginning at age 21.

• Women with a negative primary HPV test result should not be retested again for three years. This screening interval is the same one recommended under current guidelines for a normal cytology test result.

• An HPV test that reads positive for HPV 16 and 18, two types associated with a higher risk of future disease, should be followed with colposcopy, a test that allows

EXECUTIVE SUMMARY

Primary human papillomavirus (HPV) screening can be considered as an alternative to current U.S. cytology-based cervical cancer screening methods, according to new interim guidance from two leading medical societies.

- Primary HPV testing can be considered for women starting at age 25. Women younger than age 25 should continue to follow current guidelines that recommend cytology alone beginning at age 21.
- Women with a negative primary HPV test result don't need to be retested again for three years. This screening interval is the same one recommended under current guidelines for a normal cytology test result.
- An HPV test that reads positive for HPV 16 and 18 should be followed with colposcopy. A test that is positive for HPV types other than 16 and 18 should be followed by reflex cytology testing.

the cervix to be examined under illumination and magnification.

• A test that is positive for HPV types other than 16 and 18 should be followed by reflex cytology testing.[1]

The two groups reviewed 11 studies, the latest including end-of-trial data from the ATHENA HPV trial by Roche Diagnostics in Pleasanton, CA. Findings from this study, which enrolled more than 47,000 women in a longitudinal, three-year study of Roche's cobas HPV Test, indicate that primary HPV screening is an effective screening strategy in women 25 years and older.[2] The Food and Drug Administration (FDA) approved the cobas test as a first-line primary screening test for cervical cancer in women ages 25 and older in April 2014.

There are four commercially available HPV tests in the United States: Hybrid Capture 2 from Qiagen, Gaithersburg, MD; CLART HPV2 Assay from Genomica, Madrid, Spain; APTIMA HPV Test from Hologic/Gen-Probe, San Diego; and the cobas HPV Test. The cobas test is the only test that has regulatory approval for primary HPV screening.

How important is it that clinicians use the approved test for primary screening in light of the recently published guidance and clinical data? "Very important," says **Warner Huh**, MD, director of gynecologic oncology at the University of Alabama at Birmingham and a co-author of the interim report. "We don't know what the performance of these other assays are in the setting of primary HPV screening and one of them, Qiagen, does not offer genotyping results, which is important for the algorithm in our guidance document," says Huh. "Also, since this is a new form of screening, an FDA-approved test should be used specifically for this indication."

How are the two societies getting out the word about the new interim guidance? According to **Herschel Lawson**, MD, chief medical officer of the American Society for Colposcopy and Cervical Pathology, a variety of methods is being used, including social media, press mentions, email, inclusion in Society-sponsored continuing medication education course materials, and information on the society's website (http://www.asccp.org). Online webinars will be available soon without charge and with continuing education credit available, Lawson states. Lectures at a variety of scientific and clinical meetings are planned as well.

In 2012, oncology, pathology, and obstetrical/gynecological societies issued guidance recommending cytology every three years, or cytology plus HPV cotesting every five years, for women ages 30-64 with negative screening results, observes **Andrew Kaunitz**, MD, University of Florida Research Foundation professor and associate chairman of the Department of Obstetrics and Gynecology at the University of Florida College of Medicine — Jacksonville. For women ages 21 through 29, the guidelines recommend a Pap test every three years, with an HPV test only if the Pap is abnormal. Screening is not recommended for women younger than age 21.

According to Providing Quality Family Planning Services — Recommendations of CDC and the U.S. Office of Population Affairs, providers should offer cervical cancer screening to clients receiving related preventive health services. This guidance states to screen women ages 21-65 with cervical cytology (Pap smear) every three years, or for women ages 30-65, screening with a combination of cytology and HPV testing every five years.[3] The recommendation acknowledges that screening women ages 21-65 every three years with cytology provides a reasonable balance between benefits and harm. HPV testing combined with cytology every five years in women ages 30-65 offers a comparable balance of benefits and harm, and it provides a reasonable alternative for women in this age group who would prefer to extend the screening interval.[3]

Kaunitz points to a recently published commentary that raises concerns that extending the cotesting

screening interval from three to five years increases the number of women who will be diagnosed with and die from cervical cancer.[4] A model used in the current United States Preventive Services Task Force estimates that among 1,000 women compliant with screening, increasing the interval results in an additional 2.71 and 0.61 women being diagnosed with, and dying from cervical cancer, respectively.[5]

"It can be perplexing for clinicians and our patients when guidelines change," says Kaunitz. "In aggregate, however, these new publications suggest it is time to reconsider the five-year interval."

Results of a newly released survey conducted by the National Association of Nurse Practitioners in Women's Health and HealthyWomen, an independent women's information source in Red Bank, NJ, suggest that women and their healthcare providers are resistant to change when it comes to revising cervical cancer screening protocols. The survey recorded information from more than 2,000 women and 750 healthcare providers nationwide.[6] *(Go to http://bit.ly/1ErTEfh for more information on survey results.)*

Findings of the survey suggest women and providers favor routine cervical cancer screening and advocate continued use of the Pap test. More than 90% (91%) of healthcare providers say they believe the Pap test should remain part of frontline screening for the foreseeable future; 90% of women surveyed said they believe that the Pap test is important to their overall health and well-being.

Co-testing with the HPV test has been widely adopted by healthcare providers, particularly among nurse practitioners and obstetrician/gynecologists; 83% say it adds value to their patients' health. About three-quarters (74%) of healthcare providers indicate that most of their patients would be most comfortable receiving both Pap and HPV tests. Twelve percent of healthcare providers noted their patients would be most comfortable with Pap test alone, with 2% indicating HPV test alone. Most healthcare providers said they prefer to see their patients every 1-3 years for cervical cancer screening; 76% of women said they are screened every one to three years.

"The data in this survey show that women and their healthcare providers truly value regular cervical cancer screening and are reluctant to change how often tests that we know to be successful are used," said **Beth Battaglino**, RN, president and chief executive officer of HealthyWomen in a statement accompanying the survey findings. "Women should have these important conversations about cervical cancer screening with their healthcare providers to determine the best approach for their individual health needs."

REFERENCES

1. Huh WK, Ault KA, Chelmow D, et al. Use of primary high-risk human papillomavirus testing for cervical cancer screening: Interim clinical guidance. *Gynecol Oncol* 2015; doi: 10.1016/j.ygyno.2014.12.022.
2. Monsonego J, Cox JT, Behrens C, et al. Prevalence of high-risk human papilloma virus genotypes and associated risk of cervical precancerous lesions in a large U.S. screening population: Data from the ATHENA trial. *Gynecol Oncol* 2015; doi:10.1016/j.ygyno.2015.01.551.
3. Gavin L, Moskosky S, Carter M, et al. Centers for Disease Control and Prevention (CDC). Providing quality family planning services: Recommendations of CDC and the U.S. Office of Population Affairs. *MMWR* 2014; 63(RR-04):1-54.
4. Kinney W, Wright TC, Dinkelspiel HE, et al. Increased cervical cancer risk associated with screening at longer intervals. *Obstet Gynecol* 2015; 125(2):311-315.
5. Kulasingam SL, Havrilesky LJ, Ghebre R, et al. Screening for cervical cancer: A modeling study for the US Preventive Services Task Force. *J Low Genit Tract Dis* 2013; 17:193-202.
6. National Association of Nurse Practitioners in Women's Health and HealthyWomen. *Cervical Cancer Today: A National Survey of Attitudes and Behaviors.* Washington DC, Red Bank, NJ; 2015. ■

Scientists eye impact of expedited partner therapy

Results of a Washington state public health intervention promoting the use of free expedited partner therapy (EPT) indicate it substantially increased use of the medicine and might have cut rates of chlamydia and gonorrhea infection.[1]

Researchers randomly assigned 23 of 25 local health jurisdictions in Washington to one of four study groups, rolled out the program sequentially at 6-8 month intervals, and compared outcomes between groups and within groups before and after the intervention. Heterosexual individuals with gonorrhea or chlamydial infection were eligible. The study made free patient-delivered partner therapy available to clinicians and provided public health partner services based on clinician referral. The main study outcomes were chlamydia test positivity among women ages 14-25 in 219 sentinel

EXECUTIVE SUMMARY

Results of a public health intervention promoting the use of free expedited partner therapy (EPT) indicate it substantially increased use of the medicine and might have cut rates of chlamydia and gonorrhea infection.

- Researchers randomly assigned 23 of 25 local health jurisdictions in Washington state to one of four study groups, rolled out the program sequentially at 6-8 month intervals, and compared outcomes between groups and within groups before and after the intervention.
- Twenty-eight states and the District of Columbia allow healthcare practitioners to provide at least some sexually transmitted infection (STI) treatment for the partner of a patient diagnosed with an STI without first examining the partner. Six states allow treatment for all or most STIs, while 22 states and the District of Columbia permit treatment for specific STIs.

clinics and incidence of reported gonorrhea in women, both measured at the community level.[1]

Study results indicate that the percentage of persons receiving EPT from clinicians increased from 18% to 34% (p less than 0.001) and the percentage receiving partner services rose from 25% to 45% (p less than 0.001). Chlamydia test positivity and gonorrhea incidence in women decreased over the study period, from 8.2% to 6.5% and from 59.6 to 26.4 per 100,000, respectively. After adjusting for temporal trends, scientists state the intervention was associated with an approximately 10% reduction in chlamydia positivity and gonorrhea incidence, though the confidence bounds on these outcomes both crossed 1 chlamydia positivity prevalence ratio = 0.89, 95% confidence interval [CI] 0.77-1.04, p = 0.15; gonorrhea incidence rate ratio = 0.91, 95% CI 0.71-1.16, p = 0.45).[1]

"Given existing evidence and guidelines in support of EPT, we believe that continued and expanded use of the intervention is warranted, and that the design of our program can be a model for health departments seeking to increase EPT use," the researchers state.

EPT for sexually transmitted infections (STIs) has been in existence for some time. In 2006, the Centers for Disease Control and Prevention (CDC) recommended that healthcare providers who treat patients for chlamydia and gonorrhea also provide treatment for the patient's partner, even if he or she has not been seen by the provider. However, it has taken time for state laws and regulations to be amended to permit such action.

According to a February 2015 review from the Guttmacher Institute, most state policies follow the CDC guidelines and recommend this course of treatment for gonorrhea and chlamydia infections. In other cases, states allow EPT for the treatment of all STIs or only for specific infections, such as gonorrhea, chlamydia or trichomoniasis. Several of these states encourage or require the healthcare practitioner to provide information about STIs to the patient to give to their partner, the review notes.[2]

Where do states stand when it comes to EPT? According to the Guttmacher Institute review, 28 states and the District of Columbia allow healthcare practitioners to provide at least some STI treatment for the partner of a patient diagnosed with an STI without first examining the partner. Six states allow treatment for all or most STIs, while 22 states and the District of Columbia permit treatment for specific STIs.[2] *(To see where states stand, see graphic, p. 43.)*

The Guttmacher Institute review notes 22 states and the District of Columbia allow treatment for chlamydia. Eighteen states and the District of Columbia allow treatment for gonorrhea. New Mexico, Wisconsin, and the District of Columbia permit treatment for trichomoniasis. Thirteen states and the District of Columbia encourage or require healthcare practitioners to provide patients with information about STIs to give to their partner.[2]

Results from a 2013 study showed that in states where laws and policies explicitly authorize EPT, receipt of EPT was significantly higher than where the law simply makes EPT permissible by default.[3] When states have laws allowing EPT, 13.3% of patients reported receiving such therapy, compared to 5.4% where there were no pertinent laws and EPT was permissible, and 1% where there were no EPT laws and EPT potentially was allowable.[3]

In 2014, Michigan joined the ranks of states that allow EPT, while Alabama passed legislation authorizing Alabama Department of Public Health clinics to allow such therapy, says **Stephanie Arnold Pang**, director of policy and communications at the National Coalition of STD Directors. The District of Columbia issued legislation in early 2014 to authorize EPT. EPT advocates in West Virginia are moving to reintroduce EPT legislation in 2015 after similar legislation was vetoed in 2014 due to technicalities, Pang notes.

EXPEDITED PARTNER THERAPY

STATE	PERMITS TREATMENT OF A PATIENT'S PARTNER FOR:				INFORMATION FOR A PATIENT'S PARTNER
	All or Most STIs	Chlamydia	Gonorrhea	Trichomoniasis	
Alaska	X				
Arizona	X				
Arkansas*		X	X		
California	X				
Connecticut		X	X		
District of Columbia		X	X	X	Required
Hawaii		X	X		
Idaho		X	X		
Illinois		X	X		Required
Indiana		X	X		Required
Iowa		X	X		
Louisiana		X	X		Required
Maine†	X				Required
Massachusetts		X			Encouraged
Michigan Ω					
Minnesota‡		X	X		
Missouri		X	X		
Nebraska		X	X		Required
Nevada‡		X	X		
New Mexico†		X	X	X	Encouraged
New York		X			Required
North Carolina‡		X	X		
North Dakota	X				
Oregon†		X	X		Encouraged
Rhode Island		X	X		
Tennessee†		X			Required
Texas	X				
Utah		X	X		
Vermont		XΨ			Required
Wisconsin		X	X	X	Required
TOTAL	**6**	**22+DC**	**18+DC**	**2+DC**	**13+DC**

* State policy is limited to heterosexual partners.
† Allows treatment of a partner exposed to the infection in the 60 days before the patient was diagnosed.
‡ Requires providers to follow CDC guidelines, which recommend expedited partner treatment for the heterosexual partners of a patient with chlamydia and gonorrhea.
Ψ The state is developing regulations to expand partner therapy to additional conditions.
Ω The state is developing guidelines on conditions eligible for therapy.

Source: Guttmacher Institute. Partner treatment for STIs. State Policies in Brief (as of February 2015), 2015, accessed February 2015.

REFERENCES

1. Golden MR, Kerani RP, Stenger M, et al. Uptake and population-level impact of expedited partner therapy (EPT) on *Chlamydia trachomatis* and *Neisseria gonorrhoeae*: The Washington State Community-Level Randomized Trial of EPT. *PLoS Med* 2015; doi: 10.1371/journal.pmed.1001777.
2. Guttmacher Institute. *Partner Treatment for STIs*. Accessed at http://bit.ly/1AXqBCx.
3. Cramer R, Leichliter JS, Stenger MR, et al. The legal aspects of expedited partner therapy practice: Do state laws and policies really matter?" *Sex Transm Dis* 2013; 40(8):657-662. ■

Remind all women about importance of folic acid

While fortifying grain foods with the B vitamin folic acid has saved about 1,300 babies every year from being born with serious birth defects of the brain and spine known as neural tube defects (NTDs), women of reproductive age still should be counseled to take a multivitamin with folic acid every day.[1] Why? Even with fortified grain products, many women still might not be getting enough of the vitamin.

Neural tube defects are serious birth defects of the brain or spine that occur when a developing embryo's neural tube, which forms the brain and the spine, fails to close by the 28th day of pregnancy, explains

EXECUTIVE SUMMARY

While fortifying grain foods with the B vitamin folic acid has saved about 1,300 babies every year from being born with serious birth defects of the brain and spine known as neural tube defects, women of reproductive age still should be counseled to take a multivitamin with folic acid every day.

- Even with fortified grain products, many women still might not be getting enough of the vitamin.
- Recommendations call for all women of childbearing age, whether planning a pregnancy or not, to obtain 400 mcg of folic acid daily from fortified foods, supplements, or both, in addition to consuming folate-rich foods from a varied diet.

Jennifer Williams, MSN, MPH, FNP-BC, nurse epidemiologist with the Centers for Disease Control and Prevention's (CDC's) National Center for Birth Defects and Developmental Disabilities. Williams served as lead author of a recently published analysis that looked at the number of neural tube defects each year in the United States since mandatory folic acid fortification in enriched grains was implemented in 1998.[1]

The two most common neural tube defects are spina bifida and anencephaly, notes Williams. Anencephaly is a fatal condition that occurs when the neural tube that forms the brain does not close. The baby will lack parts or all of the brain, skull, and scalp. Spina bifida occurs when there is lack of closure at the lower end of embryo's neural tube. With this condition, there is an opening in the backbone with exposure of the meninges, often accompanied by spinal cord herniation, Williams notes. Spina bifida can cause physical and intellectual disabilities that range from mild to severe.

"In mild cases, loss of some sensation or movement can occur; in severe cases there is loss of mobility and varying degrees of loss of bowel and bladder control," says Williams. "Hydrocephalus is common in children with spina bifida."

The CDC urges all women of childbearing age, whether planning a pregnancy or not, to obtain 400 mcg of folic acid daily from fortified foods, supplements, or both, in addition to consuming folate-rich foods from a varied diet. Getting the recommended amount of folic acid is an important way to help prevent these serious birth defects, Williams says.

To perform the current analysis, scientists looked at information from birth defects tracking systems to estimate the number of babies with an NTD in the years before and after folic acid fortification (1995-2011). The decline in the prevalence of such defects during the period after fortification suggests that folic acid fortification efforts have led to the prevention of many, but not all, neural tube defects, the analysis concludes.[1] The number of babies born in the United States with neural tube defects has declined by 35% since 1998, the analysis shows.[1]

The number of babies born with an NTD each year differs by the mother's race/ethnicity, analysis findings indicate.[1] Hispanic mothers continue to be at the highest risk for having a baby with an NTD. One strategy to combat this risk might be to fortify masa flour with folic acid at the same level as enriched cereal grain products to help women get the proper intake. Implementation of corn masa flour fortification would likely prevent an additional 40 cases each year, research indicates.[2]

Healthcare providers should counsel all women of reproductive age, whether or not they are planning to have children, about the importance of folic acid supplementation, says **Godfrey Oakley**, MD, professor of epidemiology at Emory University in Atlanta and director of its Center for Spina Bifida Research, Prevention, and Policy. The Center is focused on helping countries develop and implement regulations that require folic acid, as well as iron, zinc, and vitamin B12, be added to flour, corn, and rice products. Its primary goal is worldwide prevention of spina bifida by 2022.

Spina bifida and anencephaly occur before a women knows she is pregnant; therefore, it is important to counsel all women of reproductive age who could become pregnant, says Oakley. Because approximately one-half of pregnancies occur in women not planning to be pregnant, including women using contraceptives, all women of reproductive age need such counseling, states Oakley.

"I think that all or almost all oral contraceptives should have folic acid in them to protect the fetus from spina bifida and anencephaly when there is a contraceptive failure," states Oakley. "Such a product is especially needed in countries that do not require folic acid to be added to a centrally processed and widely eaten food, such as the flour that is required to have folic acid in it in the U.S., Canada, and 70 other countries."

The United States has two oral contraceptives with folic acid supplementation: Beyaz and

Safyral from San Francisco-based Bayer Healthcare Pharmaceuticals. Actavis of Parsippany, NJ, is seeking regulatory approval to produce generic equivalents of both pills.

How can you help women of reproductive age to obtain their daily levels of folic acid? Williams suggests that you offer the following three options:

• Take a vitamin supplement containing 400 mcg of folic acid every day.

• Eat a bowl of breakfast cereal every day that has 100% of the daily value (DV) of folic acid.

• Eat a diet with plenty of enriched cereal grain products (bread, rice, pasta, etc.) and other items such as beans, peas, leafy greens, and orange juice.

To emphasize the importance of daily folic acid intake, use a free patient handout from the CDC. Download it at http://1.usa.gov/1k0jOev.

REFERENCES

1. Williams J, Mai CT, Mulinare J, et al. Updated estimates of neural tube defects prevented by mandatory folic acid fortification — United States, 1995-2011. *MMWR* 2015; 64(1):1-5.
2. Tinker SC, Devine O, Mai C, et al. Estimate of the potential impact of folic acid fortification of corn masa flour on the prevention of neural tube defects. *Birth Defects Res A Clin Mol Teratol* 2013; 97:649-657.

More emphasis needed on vaccination for HPV — What is your approach?

A just-published analysis of national data indicates about half of U.S. girls receive the human papillomavirus (HPV) vaccine at the recommended age.[1] Results of the study indicate just 14% of girls who received the vaccine received the three-part series between ages 11-12 in 2008, with that number increasing to 55% by 2012. Half of the girls surveyed received the vaccine after age 12, figures suggest.[1]

The researchers analyzed data from the annual National Immunization Survey of Teens, a survey conducted by the Centers for Disease Control and Prevention (CDC). The CDC data spanned information from 2008 to 2012 on girls' ages when the vaccine series was started and completed.

"It has been reported in the literature that HPV prevalence increases with each year of age between 14-24 years," says **Mahbubur Rahman**, MMBBS, PhD, MPH, who led the research team and is associate professor in the Department of Obstetrics and Gynecology at the University of Texas Medical Branch at Galveston. "Also, the efficacy of the HPV vaccine is highest when it is given before the onset of sexual activity."

The Advisory Committee on Immunization Practices (ACIP) has recommended that the vaccine be administered at 11-12 years of age before most adolescents become sexually active, notes Rahman. Researchers at the university wanted to determine what percentage of adolescent girls receive the HPV vaccine at the recommended age, based on nationally representative large sample size and provider-verified age of the vaccine recipients. More efforts are needed to increase HPV vaccine uptake among adolescent girls, as only half of them receive this vaccine at the age recommended by ACIP, the researchers conclude.

Research suggests vaccination could promote unsafe sexual activity among females by lowering perceived risks of acquiring a sexually transmitted infection (STI) or implicitly endorsing sexual activity by recognizing the need for the shot.[2-3]

Receiving the HPV vaccine does not increase rates of STIs in adolescent females, findings from a new study suggest.[4]

To perform the study, researchers enrolled 21,000 girls who were vaccinated and matched them with 186,000 unvaccinated girls who were the same age, had the same insurance plan, and lived in the same U.S. geographic region. Scientists tracked outcomes for STIs on a quarterly basis for a year before and a year after vaccination.

Analysis of data indicates that in the vaccinated and unvaccinated groups, STIs increased at the same pace as the girls grew older. The vaccinated girls did have slightly higher STI rates before and after vaccination when compared with the unvaccinated group. This finding might have developed because girls choosing to receive the vaccine were more likely to already be sexually active than those choosing not to be vaccinated, researchers state. However, the rate of increase in STIs was identical between vaccinated and unvaccinated females, which suggests that the girls' sexual behaviors were not altered by the vaccine. Any behaviors resulting in infections that did occur were independent of the vaccine, they conclude.[4]

Study co-author **Seth Seabury**, PhD, associate professor of research

in the Department of Emergency Medicine at the Los Angeles-based Keck School of Medicine and a fellow in the Leonard D. Schaeffer Center for Health Policy and Economics at the University of Southern California in Los Angeles, said, "If providing girls with the HPV vaccine caused an increase in risky sexual behavior, we would expect to have seen a steeper increase in STI rates in the quarters following administration of the vaccine. We found no such increase, causing us to conclude that there was no association between using the vaccine and unsafe sexual practices."

Because the HPV vaccine is one of the few medications developed that can prevent cancer, you can reassure parents, physicians, and policymakers that the vaccine does not promote unsafe sexual practices among girls and young women, says study co-author **Anupam Jena**, MD, PhD, assistant professor of healthcare policy at Harvard Medical School, internist at Massachusetts General Hospital, both in Boston, and faculty research fellow, National Bureau of Economic Research in Cambridge, MA.

With the introduction of the new nine-valent HPV vaccine, remind patients and their parents that the new vaccine covers even more oncogenic HPV strains than the quadrivalent version, says **Anita Nelson**, MD, professor in the Obstetrics and Gynecology Department at the David Geffen School of Medicine at the University of California in Los Angeles. The Food and Drug Administration approved Merck Sharp & Dohme Corp.'s Gardasil 9 vaccine in December 2014. The new vaccine covers nine HPV types: HPV 6 and HPV 11, the two low-risk types that cause most cases of genital warts, as well as seven high-risk types: HPV 16, 18, 31, 33, 45, 52, and 58.

REFERENCES

1. Rahman M, McGrath CJ, Hirth JM, et al. Age at HPV vaccine initiation and completion among US adolescent girls: Trend from 2008 to 2012. *Vaccine* 2015; 33(5):585-587.
2. Williams K, Forster A, Marlow L, et al. Attitudes towards human papillomavirus vaccination: A qualitative study of vaccinated and unvaccinated girls aged 17-18 years. *J Fam Plann Reprod Health Care* 2011; 37(1):22-25.
3. Schuler CL, Reiter PL, Smith JS, et al. Human papillomavirus vaccine and behavioural disinhibition. *Sex Transm Infect* 2011; 87(4):349-353.
4. Jena AB, Goldman DP, Seabury SA. Incidence of sexually transmitted infections after human papillomavirus vaccination among adolescent females. *JAMA Intern Med* 2015; doi:10.1001/jamainternmed.2014.7886. ■

Research focuses on health implications tied to PCOS

Women diagnosed with polycystic ovary syndrome (PCOS) face an elevated risk of developing heart disease, diabetes, mental health conditions, reproductive disorders, and cancer of the lining of the uterus than healthy women, a new study indicates.[1]

PCOS is a common cause of infrequent bleeding and is the most common endocrinopathy of reproductive-age women.[2] Between one in 10 and one in 20 women of childbearing age has PCOS. Five million U.S. women might be affected.[3]

Polycystic ovary syndrome occurs when a woman's body generates higher than normal levels of testosterone and other androgen hormones. This hormone imbalance can cause irregular or absent menstrual periods, infertility, weight gain, acne, excess hair on the face and body, or thinning hair on the scalp.

PCOS has "profound implications" for a women's reproductive health as well as her long-term risk of chronic illness, said study lead author, **Roger Hart**, MD, MRCOG, FRANZCOG, CREI, in a statement accompanying the study's publication. "Our study indicates women who have PCOS have twice as many hospital admissions as women without the condition," said Hart, professor of reproductive medicine at the University of Western Australia and medical director of Fertility Specialists of Western Australia, both in Perth. "Additional health care resources should be directed to address the risks facing this population."

For the population-based retrospective cohort study, researchers examined records for 2,566 women

COMING IN FUTURE MONTHS

- Science evaluates long-term effectiveness of LARC methods
- STI diagnosis by smartphone? Research eyes application
- Contraceptive injection: Review latest research
- New research sheds light on trichomonas infection

ages 15 and older who were diagnosed with PCOS during a hospital visit in Western Australia between 1997 and 2011. These records were compared to hospitalization records for 25,660 women of similar ages, who were identified using voter registration records. Scientists tracked the hospitalization records until the women reached a median age of 35.8.

Women who were diagnosed with PCOS were more likely to be hospitalized for reasons unrelated to reproductive health or injury than their counterparts. Women who had PCOS were more likely to have miscarriages, ectopic pregnancies, and other gynecological conditions. These same women also had a higher rate of endometrial cancer, findings indicate.[1]

Women diagnosed with PCOS were hospitalized more often for mental health disorders than other study participants. Diagnosis of PCOS also was associated with a higher risk of late onset diabetes, high blood pressure, heart disease, asthma, and musculoskeletal disorders.[1]

"We found women who have PCOS are particularly prone to developing metabolic and cardiovascular disease," said Hart. "Since only 25% of the women we studied were older than 40, we anticipate the rate of diagnosis would rise as these women continue to age."

Guidance issued in 2013 by the Endocrine Society directs providers to use the Rotterdam criteria for diagnosing PCOS, which calls for presence of two of the following criteria: androgen excess, ovulatory dysfunction, or polycystic ovaries.[4]

Establishing a diagnosis of PCOS can be problematic in adolescents and menopausal women, the guidance notes. Hyperandrogenism is central to the presentation in adolescents, while there is no consistent phenotype in postmenopausal women, it notes. Providers should exclude alternate androgen-excess disorders and risk factors for endometrial cancer, mood disorders, obstructive sleep apnea, diabetes, and cardiovascular disease in their evaluation of women with PCOS.[4] Obesity is a common feature of PCOS. The prevalence of obesity is 50% overall.[5]

Hormonal contraceptives are the first-line management for menstrual abnormalities and hirsutism/acne in PCOS, the guidance advises. Hormonal contraceptives and metformin are the treatment options in adolescents with PCOS.[4]

While estrogen/progestin contraceptives provide benefits in terms of menstrual dysfunction and prevent endometrial hyperplasia and endometrial cancer, there are women who can't remember to take pills or who have reasons to avoid pills, says **Robert Hatcher**, MD, MPH, professor emeritus of gynecology and obstetrics at Emory University School of Medicine in Atlanta. Menstrual dysfunction and endometrial carcinoma also are prevented by the levonorgestrel intrauterine device (Mirena LNG IUD, Bayer Healthcare Pharmaceuticals, Wayne, NJ). However, switching from combined pills to an LNG IUD might cause acne to become worse, he notes.

"On occasion, women with PCOS who have an LNG IUD in place and experience a return of acne may be placed on a very low-dose combined pill to improve their acne," says Hatcher. "The most common reason a woman with PCOS is using an LNG IUD is because she wants the greater effectiveness of the device."

REFERENCES

1. Hart R, Doherty DA. The potential implications of a PCOS diagnosis on a woman's long-term health using data linkage. *J Clin Endocrinol Metab* 2014; doi: 10.1210/jc.2014-3886.
2. Nelson AL, Baldwin SB. Menstrual disorders. In: Hatcher RA, Trussell J, Nelson AL, et al. *Contraceptive Technology*: 20th revised edition. New York: Ardent Media; 2011.
3. U.S. Department of Health and Human Services. Office of Women's Health. *Polycystic Ovary Syndrome (PCOS)*. Accessed at http://1.usa.gov/1zMqyaL.
4. Legro RS, Arslanian SA, Ehrmann DA, et al. Diagnosis and treatment of polycystic ovary syndrome: An Endocrine Society Clinical Practice Guideline. *J Clin Endocrinol Metab* 2013; 98(12):4565-4592.
5. Fritz MA, Speroff L. *Clinical Gynecologic Endocrinology and Infertility*. 8th ed. Philadelphia: Lippincott Williams & Wilkins; 2010. ■

EXECUTIVE SUMMARY

Women diagnosed with polycystic ovary syndrome (PCOS) face an elevated risk of developing heart disease, diabetes, mental health conditions, reproductive disorders, and cancer of the lining of the uterus.

- PCOS is a common cause of infrequent bleeding and is the most common endocrinopathy of reproductive-age women. Five million U.S. women might be affected.
- Hormonal contraceptives are the first-line management for menstrual abnormalities and hirsutism/acne in PCOS.

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.

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. Scan the QR code to the right or log on to the AHCMedia.com site to take a post-test. Go to "MyAHC" and then "My Courses" to view your available CE activities. Tests are taken after each issue. First-time users will have to register on the site using the 8-digit 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 e-mailed to you instantly.

CNE/CME QUESTIONS

1. Which of the four commercially available human papillomavirus tests in the United States is approved as a first-line primary screening test for cervical cancer?

A. Cobas HPV Test
B. Hybrid Capture 2
C. CLART HPV2 Assay
D. APTIMA HPV Test

2. What is the daily dose of levonorgestrel in the intrauterine device studied in the European Active Surveillance Study for Intrauterine Devices?

A. 15 mcg
B. 20 mcg
C. 25 mcg
D. 30 mcg

3. What is the recommended daily intake of folic acid for women of childbearing age, whether planning a pregnancy or not?

A. 600 mcg
B. 500 mcg
C. 400 mcg
D. 300 mcg

4. What is the most common endocrinopathy of reproductive-age women, according to *Contraceptive Technology*?

A. Ovarian insufficiency
B. Hyperthyroidism
C. Graves' disease
D. Polycystic ovary syndrome

CNE/CME 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.