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INSIDE

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HPV vaccination: Many teens still not receiving the shot

What can clinicians do to increase numbers?

While the number of 13- to 17-year-old boys and girls receiving the human papillomavirus (HPV) vaccine increased slightly for the second year in a row, four out of 10 adolescent girls and six out of 10 adolescent boys have not started the recommended HPV vaccine series, according recent national data from the Centers for Disease Control and Prevention's (CDC's) 2014 National Immunization Survey — Teen.[1]

The latest estimates indicate that 60% of adolescent girls and 42% of adolescent boys have received one or more doses of HPV vaccine. *(See the CDC's infographic at http://1.usa.gov/1NPjO0o.)* These numbers are an increase of three percentage points for girls and eight percentage points for boys, according to data from the 2013 report, a random-digit-dialed survey of parents or guardians of teens ages 13-17. The 2014 survey included data for more than 20,000 adolescents.

"THE LARGE INCREASES IN THESE [GEOGRAPHIC] AREAS SHOW US THAT IT IS POSSIBLE TO MAKE REAL PROGRESS IN A VARIETY OF SETTINGS."
— ANNE SCHUCHAT, MD, CDC

Analysts found coverage with each HPV vaccine dose was higher among Hispanic girls than among white girls, while coverage with one and two doses of HPV vaccine higher among black girls than among white girls. Coverage with each HPV vaccine dose was higher among girls living below the poverty level compared with those living at or above the poverty level.[1]

Coverage with each HPV vaccine dose was higher among Hispanic boys than among white boys, and coverage with one dose of HPV vaccine was higher among black boys than among white boys, the analysis reveals.

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Coverage with each HPV vaccine dose was higher among boys living below the poverty level compared with those living at or above the poverty level.[1]

When looking at the state level, the analysis shows that for girls, state-level coverage with at least one dose of HPV vaccine ranged from 38.3% in Kansas to 76.0% in Rhode Island. For boys, state-level coverage with at least one dose of HPV vaccine coverage ranged from 23.2% in Indiana to 69.0% in Rhode Island.

Some increases large

While there was a three percentage point overall increase nationally for first-dose HPV vaccine coverage among adolescent girls, a handful of state and local areas achieved much larger increases in coverage, notes **Anne Schuchat**, MD, assistant surgeon general and director of the CDC's National Center for Immunization and Respiratory Diseases.

A handful of geographic areas made significant progress, with increases ranging from 13% to 23%, said Schuchat in a press conference. For example, four states saw notable increases in first-dose coverage: Illinois, Montana, North Carolina, and Utah. Chicago and Washington, DC, two of the six local areas surveyed by the CDC, also saw significant increases from 2013 to 2014; Philadelphia, which already had among the highest HPV first-dose coverage rates in 2013 at 77.5%, increased its rate to 80.3% in 2014.

"The large increases in these areas show us that it is possible to make real progress in a variety of settings," said Schuchat. "But the areas that saw significant improvements had conducted a number of activities aimed at raising coverage, and their experience suggests a combination of strategies is needed, since different approaches may reinforce each other."

What approaches work?

The Advisory Committee on Immunization Practices recommends that preteens (ages 11 or 12) receive one dose of quadrivalent meningococcal conjugate vaccine, one dose of HPV vaccine, and one dose of tetanus-diphtheria-acellular pertussis (Tdap) vaccine during a single visit. A persistent gap in coverage between HPV vaccination

EXECUTIVE SUMMARY

While the number of 13- to 17-year-old boys and girls receiving the HPV vaccine increased slightly for the second year in a row, four out of 10 adolescent girls and six out of 10 adolescent boys have not started the recommended HPV vaccine series, according to national data.

- Since 2008, the yearly national vaccination coverage estimate among female adolescents for one dose of HPV vaccine has been lower than the estimate for one dose of Tdap vaccine, another recommended adolescent vaccine, and the difference in coverage between the two vaccines remains large.
- Clinicians should look to the CDC's "You Are the Key" web portal for resources to provide a strong and effective recommendation for the HPV vaccine.

and other vaccinations recommended for adolescents is a sign of missed opportunities to protect adolescents from cancers caused by HPV infections, notes the CDC.

Since 2008, the yearly national vaccination coverage estimate among female adolescents for one dose of HPV vaccine has been lower than the estimate for one dose of Tdap vaccine, and the difference in coverage between the two vaccines remains large, according to CDC data. For example, Tdap coverage in 2014 increased 2.9% to 87.6%. From 2013 to 2014, HPV vaccination coverage for girls increased 3.3 percentage points from 56.7% to 60% in 2014; for boys, HPV vaccination coverage increased from 33.6% in 2013 to 41.7% in 2014, a growth of 8.1%.[1]

"I am frustrated that, in 2014, four out of 10 adolescent girls and six out of 10 adolescent boys had not even started the HPV vaccine series and are vulnerable to cancers caused by HPV," noted Schuchat. "High Tdap and quadrivalent meningococcal conjugate vaccine rates show it is possible to achieve rates with the current infrastructure, and that starts with reducing missed opportunities to give HPV vaccine."

What is the CDC doing to increase vaccination rates? The agency's approaches include establishing links between cancer groups and immunization groups, educating clinicians, adopting practice-based quality improvement efforts, providing feedback on how to improve coverage, conducting public communication campaigns, and using registries and immunization information systems to send reminders to parents about upcoming shots.

Clinicians should look to the CDC's "You Are the Key" web portal (http://1.usa.gov/1eGPIdM), which includes several resources to give clinicians guidance on how to provide a strong and effective recommendation for the HPV vaccine, says CDC spokesperson **Ian Branam**. The web site also includes patient education resources that clinicians can share with parents, he notes. The CDC recently issued additional guidance online for providers regarding 9-valent HPV vaccine use among persons who previously received HPV vaccination in an effort to address issues that might arise during the transition to 9-valent HPV vaccine. *(See guidance at http://1.usa.gov/1J24idk. Also see* Contraceptive Technology Update*'s coverage of the new vaccine, "New HPV vaccine covers 9 types of HPV, March 2015* STI Quarterly *supplement.)*

Focus on males

To enhance health services to young men, including HPV vaccination, the Washington, DC-based Partnership for Male Youth is leading the Young Male Well Visit Project with the Research Triangle Park, NC-based American Sexual Health Association, the Baltimore-based Healthy Teen Network, and the Washington, DC-based School Based Health Alliance.

One of the collaboration's first efforts is the release of two groundbreaking instruments designed to encourage better communication between adolescent and adult young males and their healthcare providers during the young male well visit.

The first instrument, *Your Health Is Your Power*, is designed for males ages 14-18. The self-assessment tool gives the patient information on what to expect from his clinical visit and includes questions designed to help him think about how he's feeling physically and mentally about such topics as diet and exercise, substance use, relationships, immunizations, and sexual health.

The second instrument is a provider checklist, designed as a companion piece to the self-assessment tool for young male patients. It triggers questions healthcare providers want to ask, even for patients in the office for a basic sports physical.

Covering the same topics as the patient self-assessment tool, this piece is designed so that multiple topics can be addressed efficiently during every medical visit. *(Download both instruments at http://bit.ly/1TvDVYl. Select "A Patient Self-Assessment Tool" for the patient tool and "The Checklist For Healthcare Providers" for the clinician tool.)*

This pair of instruments can make the most of clinical visits by prepping adolescent males on what to expect and giving their healthcare providers a concise checklist of targeted questions in several important health domains. These tools were developed through several collaborative activities, including a literature review and research with the target audiences.

Also, clinicians can now use a free health provider toolkit developed especially for adolescent and young adult males that addresses HPV vaccination among other issues. The toolkit is from a multi-disciplinary team of nationally known clinicians and researchers in pediatrics, family medicine, adolescent medicine, sexual and reproductive health, psychiatry, psychology, social work, substance use, trauma, violence, and urology. The toolkit is the Partnership's flagship effort in enhancing healthcare delivery for adolescent and young adult males.

The clinical toolkit is for healthcare providers who serve adolescent and young adult males ages 10-26. It is designed to address

adolescent and young males' unique healthcare needs. It contains four major clinical components:

• a downloadable checklist for healthcare providers that covers nine major domains where the healthcare needs of adolescent and young adult males are most pronounced and unique;

• a compilation of suggested patient interview questions for each domain;

• supporting materials for each domain consisting of background information, practice tools, and references;

• a video library of continuing medical education and patient education presentations on subjects covered by the toolkit.

The toolkit will be continually updated with suggestions from users and from focus groups of clinicians who will review the instrument, according to the Partnership for Male Youth. Comments may be submitted through the comment button at the top of each page. *(Access the toolkit components at http://bit.ly/1TvEC3S.)*

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Affordable Care Act makes impact on costs of many forms of birth control

Average out-of-pocket spending for the Pill and the intrauterine device (IUD) has seen a significant decrease since the implementation of the Affordable Care Act (ACA), new data show.[1] Results of an analysis of a large national insurer's prescription claims database indicate the average out-of-pocket expense for a pill prescription fell from $32.74 in the first six months of 2012 to $20.37 in the first six months of 2013, which is a 38% decline, while similar expenses for an IUD insertion fell from $262.38 to $84.30, a 68% drop.

"Our study found that before the mandate's implementation, the cost of contraceptives for women using them represented a significant portion (30-44%) of total out-of-pocket health care spending," said lead author **Nora Becker**, MPH, an MD/PhD candidate in the Perelman School of Medicine and the department of Health Care Management and Economics in the Wharton School at the University of Pennsylvania in Philadelphia. "We estimate that the ACA is saving the average pill user $255 per year, and the average woman receiving an IUD is saving $248."

If such savings are spread over an estimated 6.88 million privately insured oral contraceptive users in the United States, consumer annual contribution to spending on the Pill could be reduced by almost $1.5 billion annually, Becker noted in a press release accompanying the paper's publication.

Check the savings

The study's findings are based on a sample consisting of 17.6 million monthly observations for 790,895 women ages 13-45 from all states and the District of Columbia who were enrolled in a large national insurer group for at least one month from 2008 to 2013. The data were leased by the University of Pennsylvania on the condition that the insurer not be identified.

The analysis calculated what women paid out of pocket for contraceptive methods before and after the ACA ruling came into effect in mid-2012. While the analysis showed drops in average out-of-pocket expense in other forms of contraception — emergency contraception (93%), diaphragms and cervical caps (84%), the contraceptive implant (72%), and the contraceptive injection (68%) — little change was

EXECUTIVE SUMMARY

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• While the analysis showed drops in average out-of-pocket expense in other forms of contraception, little change was seen for the contraceptive vaginal ring (2%) and the contraceptive patch (3%).

seen for the contraceptive vaginal ring (2%) and the contraceptive patch (3%). The analysis says the contraceptive vaginal ring and the contraceptive patch still had median six-month costs of $35 and $60, respectively.

Why such low impact on cost savings? According to the Guttmacher Institute, while 2013 federal government information listed all covered methods, some insurers excluded the vaginal ring or patch by incorrectly claiming that they were medically equivalent to certain generic oral contraceptives, or they limited coverage to generic contraceptive products, even in cases in which a brand-name product had no generic equivalent, such as the vaginal ring.[2] The government issued clarification in May 2015 that all methods must be covered, closing such erroneous loopholes. *(The quarterly "Washington Watch" column in* Contraceptive Technology Update *reported on this update. See "Guidelines aim to improve contraceptive coverage," July 2015. Also, download a copy of the update at http://1.usa.gov/1E2hZpF.)*

The ACA calls for private health insurance plans to cover prescription contraceptives without a co-pay. So why did average out-of-pocket spending for contraceptives remain above zero in the analysis? Health plans phased in the requirement, so the change did not happen immediately for everyone, analysis authors note. Also, about one-third of all plans in 2013 were "grandfathered," which means they had not substantially changed their cost-sharing requirements since the ACA was signed into law in March 2010. Such plans gradually are being phased out. In addition, employers that requested an exemption for religious reasons were exempt from the ACA requirement.

More ground to cover

Insurance companies must cover all 18 Food and Drug Administration-approved birth control methods for women without a co-pay, with limited exception. Despite the drop in co-payment requirements, the potential of their existence and the uncertainty of their magnitude still throw a wrench into the system, observes **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. Because a woman might face a substantial co-pay, clinicians have to double check each case, she notes. That "double check" often prevents same-day provision of implants and IUDs in two ways, states Nelson.

"First, the answer may not be available quickly [a staff member has to inquire], and second, the clinician may have to order the IUD or implant in the patient's name and will not have a unit available to place that day," says Nelson. "We will need to get rid of all remnants of the copayment system before we will be able to meet current standards."

It is possible that by decreasing out-of-pocket expenses, more women will use contraception or switch to a longer-term method, said analysis co-author **Daniel Polsky**, PhD, executive director of the Leonard Davis Institute of Health Economics and professor of Medicine in the Perelman School of Medicine, both at the University of Pennsylvania. However, additional research is needed to determine the socioeconomic and health effects for women, he stated.

"In the long term, if we do, in fact, see an increase in the use of contraceptives, that could potentially lead to a lower overall fertility rate, and potentially increased economic opportunities for women and their families," said Polsky in a statement issued with the data publication.

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New teen data — What it means for your practice

A new analysis of national data carries good news: In 2011-2013, 44% of female teens and 47% of male teens ages 15-19 had experienced sexual intercourse, a percentage that has declined significantly — 14% for females, 22% for males — over the past 25 years.[1]

This decrease follows recent news that in 2013, the U.S. birth rate for teen-agers ages 15-19 dropped 57% from its peak in 1991, which parallels a decline in the teen pregnancy rate.[2-3] (Contraceptive Technology Update *reported on the data. See "Title X clinics see upswing in use of long-acting reversible contraceptives by teens," July 2015, and "Record low teen pregnancy — What is next?" June 2012.)*

According to the report from the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS), in the early teen years (ages 15 and 16)

EXECUTIVE SUMMARY

A new analysis of national data indicates that in 2011-2013, 44% of female teens and 47% of male teens ages 15-19 had experienced sexual intercourse, a percentage that has declined significantly — 14% for female, 22% for male — over the past 25 years.

- This finding follows recent news that in 2013, the U.S. birth rate for teenagers ages 15-19 dropped 57% from its peak in 1991, which parallels a decline in the teen pregnancy rate.
- By age 19, about two of three never-married teenagers have had sexual intercourse, with the majority of male and female teenagers using a contraceptive method at first sexual intercourse, data show. The methods teens most often used were the condom, withdrawal, and the oral contraceptive pill.

males were more likely than females to have had sexual intercourse. By age 17, the probabilities of having had sexual intercourse were similar for males and females, the report notes. For males, by age 15, 18% had ever had sexual intercourse. By age 17, this percentage increased to 44%, and by age 19, 69% of males had ever had sexual intercourse. When looking at female adolescent data, statistics indicate that by age 15, 13% had ever had sexual intercourse. By age 17, this percentage increased to 43%, and by age 19, 68% of females had ever had sexual intercourse.[1]

By age 19, about two of three never-married teens have had sexual intercourse, with most male and female teens using a contraceptive method at first sexual intercourse. The methods teens most often used were the condom, withdrawal, and the oral contraceptive pill, data indicate. Female adolescents who used a method of contraception at first sexual intercourse were less likely to have had a birth in their teens than those who didn't use contraception at first intercourse, statistics show.[1]

"Understanding these patterns and trends in sexual activity, contraceptive use, and their impact on teen pregnancy can help provide context regarding the recent decline in the U.S. teen birth rate," write the report's authors, **Gladys Martinez**, PhD, and **Joyce Abma**, PhD, demographers in the NCHS's Division of Vital Statistics' Reproductive Statistics Branch.

Have things changed?

How has contraceptive method use changed over the past decade among female teens who had sexual intercourse at least once? Highlights from the report reveal the following:

- In 2011-2013, 97% of female teens who had sexual intercourse at least once had used the condom at least once.
- Sixty percent of female teens had ever used withdrawal, and 54% had ever used the Pill in 2011-2013. The differences in pill and withdrawal use between 2002 and 2011-2013 were not statistically significant.
- Use of emergency contraception by female teens who had sexual intercourse at least once has increased over the past decade from 8% in 2002 to 22% in 2011-2013.
- Compared with 2006-2010, a smaller percentage of female teenagers ever used the patch in 2011-2013, (from 10% to 2%) and ever used the contraceptive injection (from 20% to 15%). In 2011-2013, approximately 3% of female teens who had sexual intercourse at least once had ever used an intrauterine device (IUD), and 2% had used a hormonal implant, similar to 2006-2010's percentages.[1]

Continue the progress

One of the nation's great success stories of the past two decades has been the historic declines in teen pregnancy and childbearing, says **Bill Albert,** chief program officer of The National Campaign to Prevent Teen and Unplanned Pregnancy in Washington, DC.

"Progress has been made in all 50 states and among all racial/ethnic groups," observes Albert. "Thanks to teens themselves, a tough social issue that many once considered intractable turns out not to be so."

There are only two ways to drive down the teen pregnancy rate: less sex and/or more contraception, notes Albert. Numerous data sets and analyses, including the most recent data from the NCHS, now show that the decline in teen pregnancy has been fueled by the "magic formula" of less sex and more contraception, Albert comments. "The new data also makes clear that the declines in teen sex and increases in contraceptive use have either slowed or come to a complete halt," says Albert. "This raises the very real specter that what goes down can go back up again. That is, without continued attention, investment, and action, one of the nation's great success stories of the past two decades could reverse."

So what can clinicians do to aid in furthering the progress? The new NCHS data suggest that awareness and use of IUDs and the implant, what Albert terms "no-bother birth control," are low, compared to other methods. Data indicated that uptake of these methods in the United States

is significantly less than in many other countries with lower rates of teen pregnancy and unplanned pregnancy.[4]

"Given their effectiveness and ease of use, IUDs and the implant are critical to helping women plan their pregnancies — largely because, once in place, they change the default from having to take constant action to avoid an unplanned pregnancy, such as taking a pill every day, to having to take action to become pregnant, i.e., through removal of the device," says Albert. "We believe that improving communication about IUDs and the implant — the words, the images, and the ideas — can have a significant positive impact on young women's perception of these methods and believe a significant shift in communication approaches is needed to counter existing misinformation, misperceptions, and concerns about IUDs and the implant."

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What impact does intimate partner violence have on reproductive decision-making?

Women who are victims of intimate partnership violence (IPV) are significantly less likely to use contraception after their most recent delivery, results from a federally funded study indicate.[1]

According to the Family Violence Prevention Fund (now Futures Without Violence), intimate partner violence (IPV) "is a pattern of assaultive behavior and coercive behavior that may include physical injury, psychological abuse, sexual assault, progressive isolation, stalking, deprivation, intimidation, and reproductive coercion. [Such] types of behavior are perpetrated by someone who is, was, or wishes to be involved in an intimate or dating relationship with an adult or adolescent, and is aimed at establishing control of one partner over the other."[2] Intimate partner violence is estimated to affect 25% of adult women in the United States alone, and it directly impacts their ability to use contraception, which results in many unintended pregnancies and sexually transmitted infections.[3]

In the current study, funded by the Department of Health and Human Services' Agency for Healthcare Research and Quality, investigators used the Pregnancy Risk Assessment Monitoring System, a population-based surveillance system, to analyze data on more than 193,000 U.S. women with live births between 2004 and 2008. Intimate partnership violence was determined by questions that asked about physical abuse by a current or former partner in the 12 months before or during pregnancy, with the outcome defined as postpartum contraceptive use (yes versus no). Multiple logistic regression analyses were conducted to assess the influence of experiencing IPV at different periods (preconception IPV, prenatal IPV, both preconception and prenatal IPV, preconception and/or prenatal IPV). Data were stratified to assess differential effects by race/ethnicity and receipt of birth control

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Women who are victims of intimate partnership violence (IPV) are significantly less likely to use contraception after their most recent delivery, results from a federally funded study indicate. Data analyses indicate that approximately 6.2% of women reported intimate partner violence, and 15.5% reported no postpartum contraceptive use.

- IPV is estimated to affect 25% of U.S. adult women and directly impacts their ability to use contraception, which results in many unintended pregnancies and sexually transmitted infections.
- The American College of Obstetricians and Gynecologists suggests that healthcare providers should screen women and adolescent girls for IPV and reproductive and sexual coercion at periodic intervals.

counseling.

Data analyses indicate that approximately 6.2% of women reported IPV, and 15.5% reported no postpartum contraceptive use.[1] Regardless of the timing of abuse, IPV-exposed women were significantly less likely to report contraceptive use after delivery, the report states. This finding was particularly prevalent for Hispanic women who reported no prenatal birth control counseling and women of all other racial/ethnic groups who received prenatal birth control counseling.

IPV is a serious public health problem and increases the likelihood of poor perinatal health, inadequate access to healthcare and services, and risky behaviors, says **Susan Cha**, MPH, a doctoral candidate in the Family Medicine and Population Health Department, Division of Epidemiology, at Virginia Commonwealth University's School of Medicine in Richmond. "Our study shows that experiencing IPV adversely affects women's use of contraceptive methods following a recent delivery," states Cha, who served as lead author of the current paper. "These findings support the need for better integration of violence prevention and contraceptive services; thus, health providers are encouraged to screen for IPV at regular visits, and educate their patients of available community resources and effective contraceptive options."

What can you do?

Due to the prevalence of IPV in the United States, clinicians, specifically gynecologists, always should screen for IPV during patient visits, whether the visit is for contraception prescriptions/advice or for other gynecological issues, including routine Pap smear exams, says **Julie Bergmann**, MPH, a doctoral candidate in the Division of Global Public Health within the Department of Medicine at the University of California, San Diego. However, contraceptive counseling is a great entry point for a discussion between patients and their providers about IPV, and clinicians should use this opportunity to screen and counsel patients accordingly, notes Bergmann, lead author of a recent literature review of how intimate partner violence affects U.S. condom and oral contraceptive use.[3]

Contraceptive counseling sessions offer a "prime opportunity" to intervene and link affected women to appropriate ancillary support services for sustained IPV-related help while averting adverse sexual and reproductive health consequences, notes senior author **Jamila Stockman**, PhD, MPH, assistant professor in the Division of Global Public Health within the Department of Medicine at the University of California, San Diego.

Because of the connection between reproductive health and violence, the American College of Obstetricians and Gynecologists suggests that "health care providers should screen women and adolescent girls for intimate partner violence and reproductive and sexual coercion at periodic intervals.[4] The Affordable Care Act offers coverage for screening and counseling for interpersonal and domestic violence without requiring a copayment, coinsurance, or deductible. The Department of Health and Human Services has adopted guidelines for women's preventive health services to help ensure that women can receive these services as part of a comprehensive set of recommended preventive health services. *(To see what other services are covered in the set, visit www.hrsa.gov/womensguidelines.)*

To reinforce the need for IPV screening, the U.S. Preventive Services Task Force released a recommendation in 2013 stating that "clinicians screen women of childbearing age for intimate partner violence (IPV) such as domestic violence and provide or refer women who screen positive to intervention services."[5] *(For more resources on IPV screening, see the* Contraceptive Technology Update *article, "Add screening for violence by intimate partners," April 2014.)*

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Experts advise: Check screening schedule for chlamydia at your organization

Remember when an annual Pap smear for a young woman also provided a chance for routine chlamydia screening? Results from a University of Michigan study of five clinics indicate that when Pap smear schedules were revised in 2009, the number of annual chlamydia screenings dropped in women ages 16-21.[1]

The U.S. Preventive Services Task Force recommends chlamydia screening for sexually active women aged younger than 24.[2] Early detection of the disease and treatment with antibiotics can prevent long-term effects such as pelvic inflammatory disease (PID) that can affect the fallopian tubes and lead to infertility or ectopic pregnancy.

In 2009, the American College of Obstetricians and Gynecologists recommended beginning cervical cancer screening at age 21.[3] The professional group previously had recommended beginning screening three years after first sexual intercourse or by age 21, whichever occurred first. Prior to 2009, clinicians often performed both screenings during the same exam.

Pap smear change

When the Pap smear schedule for young women was changed in 2009 to reduce the chance of unneeded follow-up tests, it made an impact on chlamydia screening, researchers found.[1]

"This research was prompted by our clinical work where we noticed a trend in decreased cervical cancer screening after the 2009 guideline change, as well as possible missed opportunities for chlamydia screening," says **Allison Ursu**, MD, clinical lecturer in the Department of Family Medicine at the University of Michigan in Ann Arbor. Ursu served as lead author of the current paper.

To perform the current analysis, Ursu and colleagues looked at the tests given to sexually active young women ages 16-21 with no chlamydia symptoms who came to the University's five family medicine clinics in the year before the new Pap test guideline and two years later. Those in the earlier group were nearly 14 times more likely to get a chlamydia test than those seen later, even though there was no drop in clinic visits by such patients. Women had higher odds of being screened for chlamydia before versus after the guideline change (odds ratio = 13.97; 95% confidence interval, 9.17-21.29; P<.001). The analysis indicates that both tests were performed together 60% of the time before the guideline change, but only 10% of the time two years later.[1]

Look at EMRs

Computer systems in clinics can be set to prompt providers during a visit to perform tests recommended for each patient.

A reminder in the MiChart system, a proprietary electronic health record system in use across all of the University of Michigan Health System's primary care clinics, has greatly increased chlamydia screening for teen and young adult women, say officials. More than 66% of sexually active patients with no symptoms are screened each year, they note. Researchers plan further analysis of the impact of the new reminder prompt on chlamydia infections, PID cases, and ectopic pregnancies seen among clinic patients.

Mack Ruffin, MD, MPH, senior author and Max and Buena Lichter Research Professor of Family Medicine at the University of Michigan, says, "Patients are very aware of Pap tests, and many still think they need one yearly. There's much less awareness of chlamydia screening. The takeaway from this study is that we have to find other opportunities to screen."

Reminder prompts within electronic medical records can be

EXECUTIVE SUMMARY

Results from a University of Michigan study of five clinics indicate that when Pap smear schedules were revised in 2009, the number of annual chlamydia screenings dropped in women ages 16-21.

- In 2009, the American College of Obstetricians and Gynecologists recommended beginning cervical cancer screening at age 21. The professional group previously had recommended beginning screening three years after first sexual intercourse or by age 21, whichever occurred first. Prior to 2009, clinicians often performed Pap smears and chlamydia screenings during the same exam.
- Computer systems now in use in clinics can be set to prompt providers during a visit to perform tests recommended for each patient, including chlamydia screening for teen and young adult women.

useful tools to improve chlamydia screening rates, but they are limited as standalone interventions, notes **Karen Hoover,** MD, MPH, a medical epidemiologist in the Centers for Disease Control and Prevention's (CDC's) Division of STD Prevention.

"Prompts have been shown to be most effective when packaged with other interventions such as provider training efforts and social marketing campaigns to increase patient demand of screening," Hoover says.

Missed opportunities

Hoover is familiar with missed opportunities. She and other CDC researchers performed a 2012 analysis of data from the 2006-2008 cycle of the National Survey of Family Growth, a nationally representative household survey. Their research showed 62%, which is more than nine million young women, were not screened as recommended for chlamydia.[4] (Contraceptive Technology Update *reported on the research. See "Too few young women get tested for chlamydia," June 2012.)*

Putting reminder prompts in electronic medical records is just the first step, 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 new technologies for self-administered vaginal swab tests for chlamydia and high risk HPV [human papillomavirus] are going to make us all have to revise the way we track our patients and their needed testing," states Nelson.

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Urinary tract infections, STIs misdiagnosed in EDs

Urinary tract and sexually transmitted infections (STIs) in women are misdiagnosed by emergency departments (EDs) nearly half the time, data indicate in new research.[1] These misdiagnoses result in overuse of antibiotics and increased antibiotic resistance, which is a problem for reproductive health clinicians who treat STIs on a regular basis.

Distinguishing between these syndromes can be challenging because of overlapping symptomatology (painful or difficult urination, frequency, urgency) and the fact that both are associated with abnormalities on urinalysis, researchers note. To perform the current study, researchers conducted a two-month observational cohort study to determine the accuracy of clinical diagnoses of urinary tract infections and STIs in adult women presenting with genitourinary symptoms or diagnosed with genitourinary infections at MetroHealth Medical Center in Cleveland, an urban academic emergency department. For all urine specimens, urinalysis, culture, and nucleic acid amplification testing for *Neisseria gonorrhoeae, Chlamydia trachomatis,* and *Trichomonas vaginalis* were performed.

Of the 264 women studied, providers diagnosed 175 (66%) with urinary tract infections, 100 (57%) of whom were treated without performing a urine culture during routine care. Combining routine care and study-performed urine cultures, only 84 (48%) of these women had a positive urine culture, the researchers report. Sixty (23%) of the 264 women studied had one or more positive STI tests, 22 (37%) of whom did not receive treatment for an STI within seven days of the ED visit, data indicate. Fourteen (64%) of these 22 women were diagnosed with a urinary tract infection instead of an STI. Ninety-two percent of the women studied had an abnormal urinalysis finding (greater-than-trace

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- HIV vaccine research: A progress report
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leukocyte esterase level, positive nitrite test result, or pyuria). The positive and negative predictive values of an abnormal urinalysis finding were 41% and 76%, respectively.

"Less than half the women diagnosed with a urinary tract infection actually had one," says **Michelle Hecker**, MD, a study coauthor and an assistant professor in the Department of Medicine, Division of Infectious Diseases at Case Western Reserve University, Cleveland. "Sexually transmitted infections were missed in 37% of the women, many of whom were wrongly diagnosed with urinary tract infections."

Resistance is growing

Reproductive health clinicians are mindful of the growing threat of antibiotic resistance.

The development of antibiotic resistance in *Neisseria gonorrhoeae* has been labeled as an urgent public health threat by the Centers for Disease Control and Prevention (CDC). Since antibiotics were first used for treatment of gonorrhea, *Neisseria gonorrhoeae* has progressively developed resistance to the antibiotic drugs prescribed to treat it: sulfonilamides, penicillin, tetracycline, and fluoroquinolones, such as ciprofloxacin. *Neisseria gonorrhoeae* developed resistance to sulfanilamide in the 1940s, penicillins and tetracyclines in the 1980s, and fluoroquinolones by 2007.

Just-released CDC STI treatment guidelines recommend dual therapy with the injectable cephalosporin ceftriaxone and azithromycin to treat all uncomplicated gonococcal infections among U.S. adults and adolescents.[2] Dual therapy is recommended to address the potential emergence of gonococcal cephalosporin resistance.[3]

"Given the ability of *N. gonorrhoeae* to readily develop antibiotic resistance, it is critical to continuously monitor gonococcal antibiotic resistance and encourage research and development of new treatment regimens for gonorrhea," the CDC states.

The effectiveness of cephalosporins for treating gonorrhea is decreasing rapidly, warned the CDC in 2012.[4] (Contraceptive Technology Update r*eported on the problem. See "Threat is up for gonorrhea that is multi-drug resistant," May 2012, and "Options running out for gonorrhea treatment," September 2011* STI Quarterly *supplement.)*

The CDC conducts surveillance for U.S. antimicrobial resistance to *Neisseria gonorrhoeae* through its Gonococcal Isolate Surveillance Project (GISP), which was established in 1986. Each year, 25-30 sites and four to five regional laboratories across the country participate in the project. Data from this project have been reported and have directly contributed to the CDC's *STD Treatment Guidelines* in recent years.

Clinicians who come in contact with a *Neisseria gonorrhoeae* specimen with decreased cephalosporin susceptibility and any gonorrhea cephalosporin treatment failure are asked to report such instances to the CDC through their state/local public health authorities. *(See resource listing at end of this story for CDC contact information.)*

Remind patients that if symptoms continue for more than a few days after receiving treatment for gonorrhea, they should return to a healthcare provider to be re-evaluated.

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RESOURCE

- Reports of apparent failures of infections to respond to treatment with CDC-recommended therapies should be reported to Robert Kirkcaldy, MD, MPH, Surveillance & Data Management Branch, Division of STD Prevention, Centers for Disease Control and Prevention, Atlanta. E-mail: rkirkcaldy@cdc.gov. ■

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.

CONTRACEPTIVE TECHNOLOGY UPDATE®

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 "My Account" to view your available CE activities. Tests are taken after each issue. First-time users will have to 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 e-mailed to you instantly.

CNE/CME QUESTIONS

1. According to the NIS-Teen 2014 Survey, how many U.S. adolescent females and males have not yet started the HPV vaccine series?

A. Four out of 10 adolescent girls and six out of 10 adolescent boys
B. Five out of 10 adolescent girls and seven out of 10 adolescent boys
C. Six out of 10 adolescent girls and eight out of 10 adolescent boys
D. Seven out of 10 adolescent girls and nine out of 10 adolescent boys

2. In an analysis that calculated what women paid out of pocket for contraceptive methods before and after the Affordable Care Act ruling came into effect in mid-2012, which two methods saw the least change in out-of-pocket costs?

A. The diaphragm and the intrauterine device
B. The contraceptive vaginal ring and the contraceptive patch
C. The birth control pill and the contraceptive injection
D. Emergency contraception and the contraceptive implant

3. According to a 2015 analysis from the National Center for Health Statistics, which contraceptive methods were most often used by teens?

A. Withdrawal, contraceptive injection, oral contraceptive pill
B. Condom, oral contraceptive pill, contraceptive injection
C. Condom, withdrawal, oral contraceptive pill
D. Withdrawal, condom, contraceptive injection

4. What is the 2015 recommendation for treating all uncomplicated gonococcal infections?

A. Injectable ceftriaxone
B. Erythromycin
C. Moxifloxacin
D. Injectable ceftriaxone and azithromycin