Women in Their 30s Are the Most Likely to Experience Adverse Birth Outcomes If Jailed During Pregnancy

Whether women who spend time in jail while pregnant are at increased risk of poor birth outcomes may depend on their age. Infants born to women in Washington State who were incarcerated and in their 30s during pregnancy weighed significantly less at birth than did those born to a comparison group of women who were not incarcerated; for infants whose mothers were 40 or older, however, the relationship was reversed. Those born to women in their 30s who spent time in jail also had significantly elevated odds of being low-birth-weight or being preterm. No association between birth outcomes and incarceration was evident for younger women.[1]

To study relationships between incarceration during pregnancy and birth outcomes, researchers compared data on 496 singleton births to women who had been detained in a King County jail while pregnant in 1994–1998 with data on 4,960 births to Medicaid recipients who had not been incarcerated. The groups were matched according to the proportions of mothers who were white, were aged 25 or older, had had more than one birth, abused substances and smoked. After comparing characteristics of the groups in bivariate analyses, the researchers used linear and logistic regression to identify associations between incarceration and birth weight, low birth weight, preterm birth and small size for gestational age.

Most of the women who had spent time in jail had been incarcerated for minor offenses. Three-quarters had been detained only once while pregnant; the median stay in jail during pregnancy was 14 days, but the range was wide (1–254 days). Half had entered jail during their first trimester, and only one in 10 in their third.

In both the study and the comparison groups, four in 10 births were to 18–24-year-olds, nearly half to women aged 25–34, one in 10 to women in their late 30s and a negligible proportion to women 40 or older. Half of births in each group were to white women; however, a significantly larger proportion of babies born to detained women than of those in the comparison group had black mothers (34% vs. 19%). Incarcerated women had less schooling and lower socioeconomic status than comparison women. Receipt of prenatal care before the third trimester was less common, but case management to coordinate care was more common, if the mother had been jailed than if she was in the comparison group. The proportions of infants who were low-birth-weight and preterm were significantly higher in the study group (14% and 15%, respectively) than in the comparison group (10% and 11%); similar proportions in the two groups were small for gestational age (15–17%).

Results of multivariate analysis revealed that among infants born to women who had spent time in jail, birth weight differed significantly by mother's age: Compared with babies born to 18–24-year-olds, those whose mothers were aged 30–34 weighed 162 g less at birth, and those whose mothers were in their late 30s weighed 312 g less. In contrast, infants born to women 40 or older weighed 421 g more than those born to the youngest women. No difference in birth weight was found between infants born to 18–24-year-olds and those born to 25–29-year-olds.

The odds of low birth weight were significantly elevated if a woman had been in jail during a pregnancy at age 30–34 (odds ratio, 3.0) or 35–39 (5.6), but not at age 25–29. No low-birth-weight infants were born to women 40 or older.

The same pattern emerged in an analysis of factors associated with preterm birth: The risk of preterm birth was not increased if the woman had been in jail and aged 25–29, but was elevated if she had been in her 30s (odds ratios, 2.7 and 3.6). No preterm births occurred among older women.

An infant's odds of being small for gestational age did not differ either by whether the mother had spent time in jail or, among those born to women who had been incarcerated, by mother's age.

Well-established maternal risk factors for adverse outcomes—being black, having less than a high school education, using substances and having had a preterm birth or an infant who was small for gestational age in the past—showed expected associations with birth weight and the risk of low birth weight and preterm birth. Likewise, receipt of prenatal care before the third trimester, support services and case management were associated with improved outcomes.

Analyses restricted to births to women who had been detained demonstrated that for every day a woman spent in jail while pregnant, her infant's birth weight increased by 2 g, and the odds of the infant's being low-birth-weight decreased by 2%. Infants born to women who had been incarcerated four or more times during pregnancy weighed 224 g less than those born to women who had been jailed only once; they also had significantly elevated odds of being delivered preterm (odds ratio, 3.9). The trimester during which the woman was first detained was not associated with any outcomes studied, and none of these measures was a significant factor in the risk of an infant's being small for gestational age. In these analyses, several well-established risk factors were no longer significantly associated with adverse birth outcomes. Moreover, receipt of prenatal care was not related to birth weight or the risk of low birth weight, and case management was not related to the odds of preterm birth.

The researchers had expected to find associations between incarceration during pregnancy and poor birth outcomes, owing to levels of stress experienced by women who spend time in jail. That they found no such relationship for young women, they suggest, may reflect younger women's greater resilience to stress, better general health and less severe chemical dependency. They speculate that the unexpected positive association between incarceration and birth weight for the oldest women may be explained by selection bias or by the beneficial effects for older women of services available in jail.

In conclusion, the researchers remark that "correctional facilities are important sites for public health intervention to improve birth outcomes for high-risk women." They urge public health and criminal justice officials "to de-

velop effective, comprehensive programs," including enhanced prenatal care services and transitional resources, for incarcerated pregnant women.–*D. Hollander*

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Odds of Penile HPV Are Reduced for Circumcised Men and Condom Users

Men who are circumcised and use condoms consistently may have a reduced risk of carrying human papillomavirus (HPV) on their penises. In analyses of data from a public sexually transmitted disease (STD) clinic in Tucson,[1] HPV was significantly less likely to be detected on the penises of circumcised men than on those of uncircumcised men (odds ratio, 0.3). Men who reported having always used condoms in the past three months were significantly less likely than nonusers to have HPV detected (0.4).

Study participants were 393 clinic attendees aged 18 or older who were recruited in 2000–2001 and completed a questionnaire about their demographic background, sexual behaviors and risk factors for STDs. Examinations were performed to evaluate clinical characteristics and to swab the surface of the penis for HPV testing. Detection was established if a skin sample contained HPV DNA. The researchers used chi-square tests and multivariate logistic regressions to assess relationships between participants' characteristics and the detection of any HPV and of oncogenic and nononcogenic strains of the virus.

Twenty-eight percent of men tested positive for any type of HPV. In univariate analyses adjusted for age, a significantly lower proportion of 25–29-year-olds than of 18–24-year-olds tested positive for the virus (20% vs. 34%). HPV detection was significantly less common among whites than among Hispanics and participants of other races and ethnicities (21% vs. 33–34%); among men who had some college education than among those who had a high school education or less (21% vs. 35%); and among participants who were circumcised than among those who were not (20% vs. 41%). Men who reported a coital frequency of 30 or more times per month during the past three months tested positive for penile HPV in significantly higher proportions than those who had not had sex at all (52% vs. 24%). HPV detection was also significantly more common among men who had genital warts at the time of the study than among those who did not (46% vs. 27%).

Univariate analyses of condom use and HPV status revealed that the proportion of men who had HPV detected was significantly lower among those who had sometimes used condoms during the past three months than among those who had never used them (25% vs. 37%). Participants who had used condoms at last anal intercourse tested positive for HPV at a significantly lower frequency than did those who had not used protection (14% vs. 41%). HPV detection was also significantly less common among men who sometimes or always used condoms with their steady partner than among those who never used them (15–24% vs. 40%).

Multivariate analyses adjusted for behavioral and clinical factors indicated that circumcised men and consistent condom users were significantly less likely to have HPV detected than were uncircumcised men and nonusers, respectively (odds ratios, 0.3 and 0.4). Participants who had always used condoms in the past three months were significantly less likely than those who had never used them to test positive for HPV (0.4). Having genital warts was significantly associated with elevated odds of HPV detection (2.5), as was a coital frequency of more than 30 times per month in the past three months (3.7). The odds of detection increased significantly with coital frequency.

In multivariate analyses stratified by HPV type, only circumcision remained significantly linked to reduced odds of oncogenic and nononcogenic HPV detection (odds ratios, 0.4 for both). The odds of having nononcogenic HPV detected were significantly elevated among men with genital warts (4.4) and significantly decreased among those who had used a condom at last anal intercourse (0.3). The relationship between HPV detection and a coital frequency of more than 30 times per month persisted in analyses limited to oncogenic strains of the virus (5.0), as did the trend associated with coital frequency and men's odds of HPV detection. Having always used condoms in the past three months was significantly associated with decreased odds of oncogenic HPV detection (0.2).

The researchers acknowledge that their study is limited because it included self-reported condom use data, used skin swabs for HPV testing and was based on a clinic population, who may be at high risk. According to the authors, their findings "suggest that 'classic' risk factors for HPV [such as cumulative number of partners and age at first intercourse] do not apply in men." Moreover, they say, "for prophylactic HPV vaccine efforts, targeted education campaigns, and other future cancer prevention endeavors to be successful, comprehensive knowledge about the epidemiology of HPV in men must be acquired through further studies."–*R. MacLean*

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Injectable Use May Increase Women's Odds of Getting Chlamydia or Gonorrhea

The use of progestin-only injectable contraceptives may be linked to an increased risk of chlamydial or gonococcal infection (hazard ratio, 3.6), according to data from women attending two Baltimore-area clinics.[1] In contrast to several existing studies, this study did not find a statistically significant association between oral contraceptive use and the risk of acquiring a cervical infection.

Participants were recruited at one reproductive health clinic in the suburbs and one in the inner city from 1996 to 1999. The sample comprised 819 women aged 15–45 who had not used hormonal contraceptives during their last menstrual cycle or the injectable during the last four months, were not currently pregnant or planning to become pregnant in the next year, and tested negative for chlamydia and gonorrhea at enrollment or after treatment. At baseline and at three-, six- and 12-month follow-up visits, researchers conducted standardized interviews to collect information on participants' demographic characteristics, reproductive history, sexual behavior and contraceptive use. Standardized pelvic examinations were performed to evaluate signs of possible infection: abnormal discharge, a vaginal pH of 5.0 or greater, cervical friability (i.e., easily induced bleeding) and cervical ectopy (i.e., growth of tissue from the cervical lining out onto the uterus). In addition, specimens were collected for chlamydial and gonococcal testing.

At baseline, women were classified accord-

ing to whether they chose to initiate the injectable, oral contraceptives or no hormonal method. To examine relationships between the use of each method and women's risk of infection, the researchers conducted chi-square tests and Cox regression analyses using data collected from 1,988 intervals of contraceptive use accumulated over the course of the study.

Roughly one-half of participants came from the inner-city clinic; 52% were white, and 43% were black. At baseline, the majority were younger than 25, single and nulliparous, and had graduated from high school. Roughly half had had six or more partners, and about three-quarters had used condoms in the last three months. Two-thirds had ever used oral contraceptives, and roughly one in 10 women had used the injectable. Five percent tested positive for chlamydia or gonorrhea at enrollment.

At baseline, higher proportions of women who initiated the injectable than of those who initiated oral contraceptives attended the inner-city clinic (56% vs. 30%); were nonwhite (55% vs. 30%), living with a partner (25% vs. 13%) and aged 25 or older (47% vs. 34%); had a high school education or less (47% vs. 34%); had been pregnant in the past 12 months (25% vs. 10%); and had ever had a child (40% vs. 11%). Injectable users reported several risk behaviors in higher proportions than oral contraceptive users: sex with a partner of positive or unknown STD status in the past year (14% vs. 6%), vaginal douching in the last 12 months (44% vs. 25%) and a coital frequency of five or more times per month during the past three months (63% vs. 60%). Abnormal vaginal discharge, high vaginal pH, cervical friability and diagnosis of chlamydia at baseline were also more common among injectable users than among oral contraceptive users (9–47% vs. 3–34%). Among women who chose neither method (controls), 15% had been pregnant in the past 12 months and 35% had ever given birth; 14% had had sex with a partner of positive or unknown STD status, 46% had douched within the last year and 46% reported a coital frequency of five or more times per month. Proportions with abnormal discharge (28%) and cervical friability (34%) were higher than among hormonal contraceptive users, while chlamydial infection was 6% at enrollment.

At follow-up interviews, risk behaviors in the past three months and clinical signs of possible infection tended to be most common among controls, but so was condom use. Differences were also identified between contraceptive use groups: Higher proportions of injectable users than of oral contraceptive users reported having douched (35% vs. 12%) and having had sex with a partner of positive or unknown STD status (8% vs. 6%); lower proportions reported having had two or more partners (9% vs. 11%), a coital frequency of five or more times per month (61% vs. 71%), sex with a new partner (12% vs. 17%) and having used condoms inconsistently (32% vs. 40%). The proportion of women who had abnormal vaginal discharge at follow-up visits was higher among injectable users than among oral contraceptive users (13% vs. 10%), as were the proportions with high vaginal pH (33% vs. 26%) and cervical friability (21% vs. 11%). However, 83% of women who relied on oral contraceptives had at least .04 cm of ectopy, compared with 77% of injectable users.

Bivariate analyses revealed that injectable users had a significantly higher risk of chlamydial or gonococcal infection than did controls (hazard ratio, 2.8). The risk was also significantly elevated among 15–17-year-olds, women who had a high school education or less, nonwhites, inner-city clinic attendees and participants who had been pregnant in the last year (1.6–6.3). Vaginal douching, multiple sex partners in the past three months and inconsistent condom use were significantly associated with an increased risk of infection (2.1–3.5), as were abnormal discharge, high vaginal pH and cervical friability (2.3–2.9).

The relationship between injectable use and women's risk of infection persisted in multivariate analyses (hazard ratio, 3.6). Participants who were aged 15–17, nonwhite and from the inner-city clinic also had a significantly elevated risk of infection (2.7–4.0). The only behavior significantly associated with an increased risk of acquiring chlamydia or gonorrhea was having had multiple partners in the past three months (2.6). The extent of cervical ectopy did not mediate the relationship between injectable use and women's risk of infection. Neither bivariate nor multivariate analyses revealed a significant association between oral contraceptive use and cervical infection.

The researchers acknowledge that their study is limited because they could not randomly assign women to use specific methods and could not ensure follow-up. Although they can only speculate as to how the hormonal injectable may affect women's susceptibility to cervical infection, they say their findings highlight the "need to counsel all women who use hormonal contraception and are not in a mutually monogamous relationship to use condoms consistently and correctly." Moreover, they point out, if further research corroborates their results, counseling for hormonal contraceptive users in settings where STDs are common "might need to be adjusted to reflect these findings."–*R. MacLean*

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Young Women Victimized In Adolescence Are at Risk Of Further Sexual Violence

Thirty percent of 14–23-year-old females who sought services at an adolescent health center in New York City between October 2000 and February 2002 reported an unwanted sexual experience in the past 12 months.[1] Of the participants in this urban study, 13% reported rape or attempted rape, 10% verbal sexual coercion and 6% unwanted touching. Risk factors associated with such experiences included past sexual victimization as an adolescent, past physical or verbal aggression from partners, going to perpetrators' homes to be alone with them and a lower level of romantic involvement in the most recent relationship. Females who went on a higher number of dates with their partners, those who were pressured to drink alcohol and those who refused to drink on a date were at increased risk of verbal sexual coercion; this risk also increased with a greater age difference between partners.

This cross-sectional study surveyed a population of 689 ethnically diverse women: Forty-two percent were black, 31% Puerto Rican, 17% Dominican and 10% white. To be eligible for the study, females had to be 14–23 years old, not married or living with a partner, and not pregnant, and had to have been on at least one date in the past year. Forty-six percent had had two or fewer lifetime partners, 29% had had 3–5 and 25% had had six or more.

Participants completed questionnaires on demographic and reproductive attributes, dating history and involvement, and substance use by themselves and their partners. The Sexual Experiences Survey, a commonly used instrument, measured sexual violence and unwanted sexual experiences in the past 12 months and over participants' lifetimes; women were classified as having experienced

no victimization, unwanted sexual contact (touching or kissing without permission), rape or attempted rape (using force, alcohol, drugs or position of power), or verbal sexual coercion (being talked or pressured into unwanted sexual intercourse). A second standard instrument, the Dating Violence Questionnaire, measured the amount of verbal and physical abuse that participants had experienced. Logistic regression analysis was used to identify correlates of rape or attempted rape and verbal sexual coercion. Only 6% of females reported unwanted touching; because of the low number this proportion represents, the authors conducted no analysis of this subgroup.

Thirteen percent of all participants reported rape or attempted rape in the preceding 12 months, and this risk was associated with a number of characteristics of their sexual history and behavior. Compared with women who reported no unwanted sexual experiences, those who had experienced mild to moderate physical aggression or severe aggression by a dating partner had an elevated likelihood of reporting rape or attempted rape (odds ratios, 4.3 and 15.2, respectively). Past sexual victimization as an adolescent was also associated with rape or attempted rape (4.7), as was visiting the perpetrator's home to be alone with him (3.0). The higher the woman rated her romantic involvement with the partner (using a 10-point scale), the lower her odds of rape or attempted rape (0.6 per point). The lower the participant rated the importance of her ethnic identity, the higher her odds of reporting such an experience (1.1 per point).

Ten percent of study participants reported verbal sexual coercion in the previous year. Women who had experienced mild to moderate verbal aggression or severe verbal aggression had higher odds of reporting such coercion than those who had experienced no such aggression (odds ratios, 4.4 and 13.8, respectively). Women were also at increased risk if they had previously been sexually victimized as adolescents (9.8) or had visited their partner's home to be alone with him (3.5); their risk declined as their reported level of romantic involvement increased (0.7 per point). Furthermore, participants who had gone on six or more dates with their partner had an elevated likelihood of reporting verbal coercion (7.5), and the greater the age difference between partners, the higher the woman's risk (1.2 per year difference).

In addition, compared with women who did not report unwanted experiences, women reporting verbal sexual coercion had increased odds of having been pressured by their partners to use alcohol (odds ratio, 9.5), of having refused to drink alcohol during the date when the coercion occurred (14.4) and of having used marijuana in the past year (3.6).

The authors state that the main strength of their study was that it surveyed a racially and ethnically diverse sample of 14–23-year-old females. Yet the application of these findings to a broader population may be limited by its focus on urban females who actively sought care at a health clinic. Nonetheless, the study identifies several risk factors that are associated with an increased likelihood of rape, attempted rape and verbal sexual coercion, and highlights "the need to educate young women on how to effectively manage verbal and psychological abuse and other types of coercive behaviors that may be exerted by male partners."–*J. Thomas*

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Unprotected Anal Sex Is Not Uncommon Among Men with HIV Infection

Three in 10 HIV-positive men interviewed in 1995–2000 reported that in the previous year, they had had unprotected anal intercourse with a steady male partner who was HIV-negative or whose infection status was unknown; the proportion was almost as high—two in 10—among men who had already been aware that they were infected.[1] In the latter group, those who had no more than a high school education, who identified themselves as heterosexual, who did not know their partner's HIV status or who had used crack were at increased risk of engaging in anal intercourse without using a condom.

The interviews were conducted as part of an ongoing surveillance project involving individuals in 12 states with newly reported HIV infection or AIDS. The project, designed by the Centers for Disease Control and Prevention, collects information that is not routinely gathered through HIV and AIDS case reporting. Participants must be at least 18 years old, speak English or Spanish, and be medically able to complete a 45-minute interview. During the study period, 970 men reported having had a steady male sex partner who was not infected or whose serostatus they did not know in the year before the interview. Analysts examined data from these men to assess the prevalence and predictors of unprotected anal intercourse.

Roughly half of the men in the sample were members of racial or ethnic minority groups, half were in their 30s and half had more than a high school education. Eighty-four percent identified themselves as gay, and 12% as bisexual; 1% said that they were heterosexual. The vast majority (83%) had AIDS. Only 1% of men reported using injection drugs during the past year, and 6% reported using crack. At the time of interview, 20% had known of their HIV infection for six months or less, 10% for 7–12 months and 69% for more than a year.

Overall, 79% of men had had anal intercourse in the year before the interview, and 29% had done so at least once without using a condom. The proportion who had had unprotected anal intercourse declined significantly as the length of time since HIV diagnosis increased: from 52% among men who had known of their infection for no more than six months to 30% among those who had been aware of it for 7–12 months and 21% among those who had known for more than a year.

HIV diagnoses made within the previous year may or may not have preceded reported occurrences of unprotected anal intercourse. Therefore, to assess behavior of men who knowingly put their partners during the previous year at risk of infection by not using condoms, the analysts focused on those whose infection had been detected more than a year earlier. In this subgroup, 36% of men who had had unprotected intercourse reported never using condoms, and 64% reported using them some of the time. Thirteen percent said that they had engaged only in insertive unprotected anal intercourse, 44% in receptive unprotected anal intercourse and 44% in both.

In analyses adjusting for men's background characteristics and risk-related behaviors, men who had been aware of their infection status had elevated odds of having engaged in unprotected anal intercourse if they had a high school education or less (odds ratio, 1.8), their partner's HIV status was unknown (1.8) or they had used crack in the previous year (3.1). The odds also were elevated among men who identified themselves as heterosexual (8.3), but very few men were in this group and the confidence interval around the odds ratio was very wide. Compared with men whose infection had been diagnosed 1–4 years before interview,

those who had known for five or more years that they were HIV-positive were significantly less likely to have engaged in anal intercourse without a condom (0.6). Race and ethnicity were not associated with having had unprotected anal intercourse, but the proportions of black and Hispanic men who had one or more of the identified risk factors (70% and 74%, respectively) were significantly higher than the proportion among white men (47%).

While the analysts acknowledge that their sample may not be representative of all HIV-infected U.S. men who have sex with men, they suggest that their findings have several implications for prevention programs. For example, they comment that programs should take a "holistic approach to the health care and prevention needs of HIV-positive men," help infected men develop the communication skills needed to discuss their infection status and safer-sex behaviors with partners, and emphasize the importance of HIV counseling and voluntary testing for the partners of infected men.–*D. Hollander*

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History of Endometriosis Places Women at High Risk Of Ovarian Cancer, but Pill Use Remains Protective

Women who have had endometriosis have an increased likelihood of developing ovarian cancer, but some of the same reproductive factors that lower the odds of cancer for women in general also appear to be protective for this high-risk group.[1] In an analysis based on pooled data from four population-based U.S. studies, the odds of ovarian cancer were 30% higher for women with a history of endometriosis (a condition marked by the presence of endometrial tissue outside the uterine lining) than for others. Regardless of whether women had had endometriosis, the risk of ovarian cancer was reduced among those who had ever used oral contraceptives, and it declined as a woman's number of live births increased.

The analysts pooled data from case-control studies conducted in different regions of the United States between 1993 and 2001. They used chi-square analyses and t-tests to compare characteristics of 2,098 women with ovarian cancer and 2,953 controls, and unconditional logistic regression to examine the factors associated with ovarian cancer. The multivariate analyses were conducted for all women and separately for women with and without endometriosis.

About half of both women with ovarian cancer and controls were in their 40s or 50s, and three-quarters were white; nine in 10 in each group had at least a high school education. Lower proportions of women with cancer than of controls had had a live birth (71% vs. 86%), had been sterilized (16% vs. 28%) and had used oral contraceptives (52% vs. 63%). Most pill users in both groups had taken oral contraceptives for less than 10 years. Four percent of women with ovarian cancer reported a family history of the disease, compared with 2% of controls; 9% and 6%, respectively, had a history of endometriosis.

Regardless of women's cancer status, the proportion who had ever used the pill was higher among those who had had endometriosis than among those with no history of the condition. However, the proportions who had used the pill for 10 or more years did not differ by whether women had had endometriosis.

Analyses controlling for study site, duration of pill use, parity, age, sterilization and family history of ovarian cancer confirmed that women with a history of endometriosis had a higher risk of ovarian cancer than women with no such history (odds ratio, 1.3). The differential was even greater for women who had never given birth (1.8). According to the analysts, the elevated risk among nulliparous women suggests an effect of endometriosis itself, rather than fertility problems caused by the condition.

When all relevant factors were controlled for, women who had ever used oral contraceptives had a reduced risk of ovarian cancer, and the benefit increased with duration of use: Compared with women who had never taken the pill, those who had used it for less than 10 years had 31% lower odds of developing cancer, and longer-term users had 55% lower odds. Similarly, reductions in the odds of ovarian cancer grew with parity (54% for women who had had 1–2 births and 64% for those who had had three or more). Women who had been sterilized had a lower risk than those who had not (odds ratio, 0.6).

Findings generally were similar for women with a history of endometriosis and those who had never had it; the exception was that women who had been sterilized had a reduced risk of ovarian cancer only if they had never had endometriosis. Notably, among women who had had endometriosis, long-term users of oral contraceptives had a markedly lower risk of ovarian cancer than never-users (odds ratio, 0.2); high parity (three or more live births) was associated with a similarly sharp reduction (0.2).

The analysts stress that strategies to reduce the likelihood of ovarian cancer are "critical in all women, but especially in women at an identifiably increased risk," such as those who have had endometriosis. Oral contraceptives are often prescribed as treatment for endometriosis; results of these analyses suggest that women with endometriosis are given the pill at first, but are then switched to other regimens. The analysts observe that such a change could reduce the pill's potential protection against ovarian cancer for these women. They conclude that "when women with endometriosis are being treated, the use of [oral contraceptives,] especially long-term use, should be encouraged."–*D. Hollander*

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Rapid HIV Test Offered To Women in Labor Proves Acceptable and Reliable

Eighty-four percent of women in a multicenter study who were offered a rapid HIV test during labor agreed to be tested; the test proved to be highly reliable and thus gave women who had not known that they were infected an opportunity to receive treatment aimed at preventing transmission of the virus to their infant during delivery.[1] The younger women were, the more likely they were to accept testing; black women and Hispanics had elevated odds of agreeing to take the test.

The study was conducted in 16 hospitals in six U.S. cities between November 2001 and November 2003. Women in labor with no documented HIV test results were offered a test that produces results in 20 minutes, along with standard testing to confirm the result; when it was

feasible, those who tested positive were given antiretroviral prophylaxis. Infants born to HIV-infected women were tested for the virus at birth and were followed up for as long as six months. To be eligible for the study, women had to be in active labor or to be at least 34 weeks pregnant. Labor and delivery personnel provided HIV services 24 hours a day; researchers conducted study interviews and collected additional data from participants' medical records.

Of the 5,744 women who were offered rapid HIV testing, 84% were tested and enrolled in the study. Results of logistic regression analyses that adjusted for study site and other relevant factors indicated that women younger than 30 were significantly more likely than their older counterparts to agree to testing; the younger the women were, the wider the differential (odds ratios, 1.4 for women in their late 20s, 1.5 for those in their early 20s and 1.9 for teenagers). Black women had higher odds of agreeing to the test than did white women (1.8), and Hispanics had elevated odds when compared with non-Hispanics (2.4). Women who were less than 32 weeks pregnant were more likely to have the test than were those at more than 36 weeks' gestation (2.0), and women who had not had prenatal care had higher odds of testing than women who had made more than five prenatal visits (1.7). Compared with women admitted for delivery care between eight A.M. and four P.M., those admitted between late afternoon and midnight had reduced odds of opting to be tested (0.7).

For half of women tested, results were available within 66 minutes. (By contrast, the median interval for receipt of enzyme immunoassay results was 28 hours.) Nevertheless, some women who entered the hospital in active labor did not receive test results until after they had delivered. In multivariate analyses, the odds of such delay were markedly increased if the woman delivered within two hours after arriving at the hospital (odds ratio, 34.5); they were significantly, although less dramatically, elevated if she gave birth within 3–12 hours of admission (2.0–5.2). A woman's likelihood of receiving test results after delivery also was elevated if she had waited more than 90 minutes to learn her test result (2.2), if she was admitted between four P.M. and eight A.M. or on a weekend (1.6–2.3), if she was more than 36 weeks pregnant (1.7) or if she had made more than five visits for prenatal care (1.4).

Both the rapid test and enzyme immunoassay identified 34 women who were infected with HIV (for a prevalence of seven per 1,000); neither test yielded any false-negative results. The sensitivity of the rapid test (i.e., the proportion of infected women it correctly identified) was 100%, and its specificity (i.e., the proportion of uninfected women for whom it showed negative results) was 99.9%.

Eighteen of the HIV-infected women received prophylactic zidovudine therapy; the median interval from receipt of the rapid test result to the first dose of the drug was 33 minutes. All 34 infants born to women with HIV received antiretroviral prophylaxis, and 32 were followed up; two were HIV-infected at birth, and one was not infected at birth but tested positive by six weeks of age.

On the basis of these findings, the researchers note, the Centers for Disease Control and Prevention has recommended routine HIV testing for women in labor whose infection status is unknown. They point out, however, that the results are important for other countries as well, particularly in the developing world, where pregnant women whose HIV status is unknown may not see a clinician until they are in labor. "Rapid testing during labor can enable [such] women...to learn their HIV infection status so they can receive antiretroviral prophylaxis and be referred for comprehensive medical care and follow-up."*–D. Hollander*

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