Few Teenagers in Managed Care Plans Get Chlamydia Tests; Nearly One in Five of Those Tested Are Infected

Only 16% of female teenagers and 2% of male teenagers participating in a managed care program in the Baltimore-Washington area were tested for chlamydia during 1998 and 1999. More than 60% of young women classified as sexually active were tested for chlamydia. Among the young people tested, 15% were infected with chlamydia—14% of females tested and 19% of males. Young people who tested positive were given a prescription for antibiotics, and two-thirds were retested at least a month after their initial positive test; of these, 16% had a repeat chlamydia infection.[1]

In the United States, chlamydia infection rates are highest among 15–19-year-old females. Since most chlamydia infections produce no symptoms, screening asymptomatic young women is one of the only ways for such infections to be detected and treated. Similarly, a substantial number of young males with chlamydia have no symptoms, and their infection will likely go undetected in the absence of screening. The Centers for Disease Control and Prevention recommends that all sexually active women younger than 20 be tested for chlamydia when they receive a pelvic exam, and national guidelines recommend that managed care organizations screen all sexually active women between the ages of 15 and 25 for chlamydia.

To examine the extent to which chlamydia screening has become part of standard care for young people covered by a large nonprofit managed care organization (Kaiser Permanente Mid-Atlantic States), a group of investigators studied patient care records from the plan's 21 clinic sites in Baltimore; Washington, D.C.; and surrounding suburban areas of Maryland and Virginia.

Among the more than 500,000 members receiving services annually at these sites, about 15% are teenagers. The researchers gathered data on all patient visits by 12–19-year-olds who were enrolled in the plan for at least 11 months of a calendar year during the period January 1998–December 1999. Over the two-year study period, approximately 43,000 females and 44,000 males aged 12–19 were enrolled in the plan for at least 11 months. Fifty-seven percent were aged 15–19, and 80% attended one of the clinic sites in suburban Maryland or northern Virginia.

Overall, 16% of females and 2% of males were tested for chlamydia; males were significantly more likely than females to test positive (19% vs. 14%). Young people aged 12–14 were less likely than 15–19-year-olds to have been tested (1% vs. 15%) and to have tested positive (9% vs. 15%). Members visiting sites in Washington were more likely to have been tested (16%) than were youth at other locations (6–9%). Moreover, those tested at a Washington clinic site were somewhat more likely to have received a chlamydia diagnosis (21%) than were those tested in Baltimore and suburban Maryland (15%) or in northern Virginia (10%).

Results regarding chlamydia testing were similar when the investigators restricted their analyses to young people who were actively receiving health care services during that year. Among plan members who made at least one clinic visit during that year, 17% of females and 1% of males were tested for chlamydia, as were 1% of 12–14-year-olds and 15% of participants aged 15–19.

Using records of services provided, the investigators identified 36% of the more than 24,000 adolescent females served in 1999 as being sexually active (because they had had a Pap smear or a pelvic exam, had been prescribed contraceptives, had received pregnancy-related services, or had been screened or treated for other sexually transmitted diseases). Women aged 15–19 were much more likely to be identified as sexually active (51%) than were 12–14-year-olds (10%), and those attending sites in Baltimore and Washington were more likely to be so identified (47%) than were those visiting a site in suburban Maryland or northern Virginia (34%).

Sixty-three percent of the young women identified as sexually active were tested for chlamydia in 1999. Young women visiting an obstetrics and gynecology clinic had significantly higher odds of having been tested than those visiting only a primary care clinic (odds ratios, 3.9 for 15–19-year-olds and 5.6 for younger teenagers).

Moreover, 72% of female adolescents who had a Pap smear in 1999 were tested for chlamydia. While there were no significant differences by age-group, young women who had Pap smears at a facility in Washington were much more likely to have been tested for chlamydia (92%) than were those in Baltimore (70%), suburban Maryland (77%) or northern Virginia (60%).

Among the adolescent managed care patients who tested positive for chlamydia during 1998 and 1999, two-thirds were tested again more than 30 days after the initial test; young women were much more likely than young men to have been retested (74% vs. 31%). Sixteen percent tested positive again. The median length of time between the first and second positive tests was about six months; 25% of repeat infections were diagnosed within three months.

The researchers comment that the "limited chlamydia testing" found among adolescent clients of the managed care plan studied presumably "reflects provider practices more than member access to care." In general, they contend that managed care organizations should be able to increase the accessibility of reproductive health services for teenagers, because they offer greater confidentiality than traditional insurance plans. (They add that new urine-based diagnostic tests—which avoid the need for an invasive exam, are easy to perform and may be more acceptable to young people—should further enhance managed care organizations' ability to provide sexually transmitted disease services to teenagers.) The researchers recommend that managed care plans use their own operational data "to develop protocols that identify and test all at-risk adolescent members."—*M. Klitsch*

REFERENCE

1. Burstein GR et al., Adolescent chlamydia testing practices and diagnosed infections in a large managed care organization, *Sexually Transmitted Diseases,* 2001, 28(8): 477–483.

Poor Hispanic Women Who Have Been Sterilized Are Unlikely to Use Condoms

Sterilized Hispanic women surveyed at a publicly funded primary care facility in Houston were only half as likely as women relying on hormonal contraceptives to say that they used condoms consistently or that they planned to use them.[1] Women had elevated odds of using condoms consistently if their partner had positive attitudes toward condoms or if they considered themselves to be at high risk of acquiring HIV or other sexually transmitted diseases (STDs). Sterilization is an increasingly popular contraceptive choice among U.S. women, but little is known about sterilized women's use of condoms for disease protection. It is particularly important to understand patterns of condom use among Hispanic women who have been sterilized, because Hispanic women's risk of HIV and other STDs often is elevated by their partners' behavior.

The survey was conducted at a primary care facility that serves a low-income population; all sexually active Hispanic clients who were sterilized or used the pill or injectable were invited to participate. In all, 224 sterilized women and 104 users of hormonal methods completed self-administered questionnaires, which asked about their background characteristics; their condom use with their main partner in the past three months; their likelihood of using condoms in the next three months; their perceptions of their ability to use condoms, of their susceptibility to disease and of the benefits of condom use; and their partner's role in the decision to use condoms.

Sterilized women were significantly older than hormonal method users (36 vs. 30 years), had had more pregnancies (3.2 vs. 2.2) and births (2.8 vs. 1.8), and were more likely to say that they were satisfied with their current contraceptive method (91% vs. 75%). They rated their chances of contracting HIV and other STDs significantly lower (1.8 and 1.6, respectively, on a four-point scale) than did hormonal method users (2.5 and 2.2). The two groups were statistically indistinguishable with respect to other characteristics that may be related to STD risk (including their current number of partners, their number of partners in the last year and their STD history).

When asked how frequently they had used condoms in the last three months, sterilized women were half as likely as users of the pill or injectable to say at least 90% of the time (18% vs. 32%); the difference was statistically significant. They were no more likely than users of hormonal methods to report having used condoms some of the time, but were significantly more likely to say that they had seldom or never used them (72% vs. 52%).

Responses regarding women's plans to use condoms in the next three months followed a similar pattern. Twenty-four percent of sterilized women were sure that they would use condoms, compared with 47% of users of hormonal methods; 62% and 37%, respectively, were sure that they would not. Women in the two groups were equally likely to be undecided about their future use.

Roughly two-fifths of consistent condom users and three-quarters of inconsistent users in each contraceptive method group agreed that condom use makes sex less pleasurable. Substantial proportions (approximately 20–30% of consistent users and 50–60% of inconsistent users) agreed that getting condoms is embarrassing and that condoms have undesirable side effects. Few consistent users reported that condom use is unacceptable to their partner, but one in three inconsistent users gave this response.

In logistic regression analyses that controlled for women's marital status and level of education, two factors were significantly associated with the likelihood of consistent condom use ($p<.05$). Among both sterilized women and those using other methods, those whose partner had favorable attitudes toward the condom and those who considered themselves highly susceptible to disease had elevated odds of using condoms consistently. Additionally, women in a long-term relationship (whose likelihood of consistent condom use was significantly reduced at the bivariate level) appeared somewhat less likely than those who had known their partners for a short time to use condoms consistently, but the association reached only a marginal level of significance.

While the researchers acknowledge that their findings may have limited generalizability outside the population of low-income Hispanic women, they point to several important implications for STD prevention programs. First, in view of partners' influence on condom decision-making, programs geared toward increasing use in the Hispanic community may need to include men more than they have in the past. Second, "improvement of women's assertiveness and negotiation skills may be pertinent" for effective STD prevention. Finally, programs should "broaden women's awareness of how their disease-risk status can be accurately estimated and should increase their knowledge of the effectiveness of condoms as protection against disease transmission."–*D. Hollander*

REFERENCE

1. Sangi-Haghpeykar H, Horth F and Poindexter AN III, Condom use among sterilized and nonsterilized Hispanic women, *Sexually Transmitted Diseases*, 2001, 28(9): 546–551.

High School–Based Program Tied to Reduction in Risk Of Having Unprotected Sex

A two-year risk-reduction program consisting of an intensive curriculum and a broad range of schoolwide activities significantly–and favorably–affected condom use among ninth and 10th graders in California and Texas. According to an analysis of 31-month follow-up data on 3,058 students from a randomized, controlled trial,[1] enrollment in the intervention significantly reduced both the number of times that students had unprotected sex and the number of partners they had unprotected intercourse with. Moreover, students exposed to the program were significantly more likely than those enrolled in a traditional program to have been protected from pregnancy the last time they had sex. Even though exposure to the intervention did not influence sexually inexperienced students to delay the initiation of intercourse, it resulted in several favorable psychosocial outcomes, including significantly improving students' knowledge scores about HIV and other sexually transmitted diseases (STDs), strengthening their belief in their ability to use a condom, enhancing their perception of their risk for HIV and lowering their perceived barriers to condom use.

The data come from a population-based study involving students in 20 public high schools in urban areas–10 schools in California and 10 in Texas. Five schools in each state were randomly assigned to the intervention and five to a comparison, knowledge-based program. Self-reported baseline data were collected in the fall of 1993, immediately before students started the theory-based risk-reduction program known as Safer Choices. The program consists of the following five components: a health promotion council (made up of teachers, students, parents, administrators and community representatives) to plan

and conduct activities; a 20-lesson curriculum (i.e., 10 lessons at each grade level) with staff training for grades nine and 10; a peer team or club at every school to host activities designed to change normative behaviors; activities and resources for parents, including a project newsletter, health information and tips about communicating with their children; and activities to help students become familiar with support services and resources outside of their school.

Follow-up surveys were fielded at three points—seven months after the program began (i.e., immediately after the first year), 19 months after baseline (just after the second year) and 31 months after the start date (12 months following completion of the program). The outcomes assessed include a range of sexual risk behaviors, as well as students' scores on 13 psychosocial scales. The investigators created linear and logistic multilevel models—which took into account variables measured at baseline and at each follow-up survey—to test the intervention's overall effects over 31 months. The estimated effects are expressed as ratios of adjusted means, odds ratios or group coefficients.

Baseline data were collected from 3,869 students (1,983 intervention students and 1,886 control students). These data indicate that sizable proportions in each group were sexually experienced (31% of the intervention group and 26% of controls). Among these students, a majority had used a condom at last intercourse (61% and 56%, respectively). Seventy-nine percent of the original cohort completed the 31-month follow-up; thus, the final sample for analysis included 3,058 students.

The linear and multilevel logistic results show that the intervention had a favorable and significant impact on two of the three primary sexual behavior outcomes examined: Compared with sexually experienced students enrolled in a standard HIV prevention curriculum, those in Safer Choices had had unprotected sex fewer times in the three months preceding the final follow-up (ratio of adjusted means, 0.6), and they had had unprotected sex with fewer partners in that time period (ratio of adjusted means, 0.7). There was no significant difference by exposure to the program, however, in the proportion of students who had initiated intercourse.

Compared with students in a traditional HIV prevention curriculum, those enrolled in Safer Choices had significantly higher odds of having used a condom at last intercourse (odds ratio, 1.7) and of having been effectively protected against pregnancy by using the pill, the condom or both at last intercourse (1.8). Exposure to the intervention had no significant independent effect on the six remaining secondary outcomes: condom use at first intercourse (among those initiating activity after the intervention began); frequency of intercourse in the past three months; number of recent sexual partners; alcohol or drug use before recent sexual activity; and the likelihood of being tested for HIV or of being tested for other STDs.

The intervention significantly improved students' performance on seven of the 13 psychosocial measures. At the 31-month follow-up, students exposed to Safer Choices scored significantly higher than those in the comparison program on scales measuring their knowledge of HIV and other STDs, they also held more positive attitudes toward condoms, and believed more strongly in their ability to use a condom, reported higher levels of perceived personal risk for HIV and for other STDs, and faced fewer barriers to condom use. (Adjusted mean differences between groups ranged from seven to 11 percentage points.) Exposure to the curriculum had a marginally significant impact on perceptions of peer norms regarding condom use and on students' communication with their parents. Enrollment in Safer Choices had no independent effect, however, on attitudes and normative beliefs toward sexual intercourse, and on students' beliefs in their ability to refuse sex or to communicate with a partner about sexual limits.

The intervention's impact was relatively consistent over the 31-month follow-up period; the results of an analysis testing for an interaction between the assigned group and time suggest that the magnitude of the effects diminished only somewhat, and not significantly, over time. Furthermore, most of the behavioral effects that proved to be significant at the 31-month follow-up were also significant when measured at one or both of the two earlier follow-up surveys, while the curriculum's significant effects on students' psychosocial measures at the final follow-up were consistently significant throughout.

The authors observe that overall, Safer Choices had a greater impact on condom-use outcomes than on outcomes related to delaying sex, despite the program's extensive emphasis on students' choosing not to have sex as the "safest" choice for reducing the risk of pregnancy and of HIV and other STDs. They assert that more research is needed to successfully identify approaches that would delay sexual initiation and improve students' beliefs in their ability to refuse intercourse and to communicate about sexual limits. Nonetheless, because the study succeeded in improving four out of five condom-use outcomes, and seven out of 13 psychosocial variables, the investigators conclude that "theory-driven, school-based, multi-component programs with a clear message can enhance psychosocial variables and reduce sexual risk behaviors."—*L. Remez*

REFERENCE

1. Coyle K et al., Safer Choices: reducing teen pregnancy, HIV, and STDs, *Public Health Reports,* 2001, 116 (Suppl.):83–93.

Odds of Adverse Outcome Of Second Birth Are Elevated for Teenagers

Adolescent women having their second birth are at elevated risk of giving birth either moderately or very prematurely, as well as of experiencing a stillbirth, compared with women aged 20–29. According to results from an analysis of Scottish hospital discharge data for the period 1992–1998, adverse outcomes for second teenage births were generally found both among current smokers and among nonsmokers. However, there was no relationship between age and birth outcomes among nonsmokers having a first birth. Teenage mothers, regardless of their parity or smoking status, were significantly less likely than older women to require an emergency cesarean section.[1]

Past research has suggested that teenagers are more likely to experience complications when having their first birth than are older women, although it is unclear if this situation reflects a biological effect or is caused by differences between younger and older women in socioeconomic status or health behavior. Similarly, while studies have indicated that second births are also more likely to be problematic for younger than for older women, inability to control for important confounding variables has left the true extent of an association unclear.

Researchers in Scotland utilized a database of morbidity records to identify all singleton births (live births and stillbirths) that occurred between 1992 and 1998. For their main analysis, they selected women aged 15–29 who had never smoked, had a first or second birth at

24–43 weeks and bore an infant weighing more than 500 g. A second sample was then drawn, comparable to the first, from among women who were current smokers at the time they commenced prenatal care.

Six birth outcomes were studied. The researchers categorized babies whose birth weight was in the lowest 5% of newborns at their gestational age (according to values calculated for Scottish live-born infants during the study period) as small for gestational age. They classified live births occurring at 24–32 weeks of gestation as very premature, and those occurring at 33–36 weeks as moderately premature. Stillbirths were babies born dead at or after 24 weeks, while neonatal deaths comprised live-born babies who died within 28 days of delivery. Finally, all unplanned cesarean sections were classified as emergency cesareans.

The analyses were based on 9,699 first births and 1,225 second births to women aged 15–19, and on 59,315 first births and 39,994 second births to 20–29-year-olds. The investigators used multivariate analysis to control for the effects of maternal height, degree of socioeconomic deprivation, previous spontaneous or induced abortion, and year of delivery. (Analyses of second births also controlled for the effect of a previous perinatal death.)

Among nonsmokers having a first birth, there were no statistically significant differences in most outcomes between women aged 15–19 and those aged 20–29: The two groups had comparable odds of having an infant with a birth weight in the lowest 5%, a very premature or moderately premature delivery, a stillbirth and a neonatal death. The odds of an emergency cesarean section were significantly reduced for women aged 15–19, however (odds ratio, 0.5).

In contrast, among nonsmokers having a second birth, the odds of several complications were increased. Compared with women giving birth at ages 20–29, women aged 15–19 had significantly higher odds of a very premature delivery (odds ratio, 2.5), a moderately premature delivery (1.6) or a stillbirth (2.6). As with the women having a first birth, teenage mothers having a second birth had significantly lower odds than older mothers of needing an emergency cesarean section (0.7).

The results for roughly 70,000 smokers also showed different odds of adverse outcomes depending on women's age and parity: Relative to women aged 20–29, teenagers giving birth for the first time had slightly higher odds of a moderately premature delivery (odds ratio, 1.1) and lower odds of bearing a baby who was small for gestational age (0.8) or of needing an emergency cesarean delivery (0.5). In contrast, teenage smokers having a second birth had significantly elevated odds of having a very premature birth (2.1), a moderately premature delivery (1.5) or a neonatal death (2.5). Teenagers' odds of having an underweight baby or of needing a cesarean delivery were significantly reduced relative to the odds among older women (0.8 and 0.7, respectively).

The researchers suggest that given their findings of no elevated risks of poor birth outcomes among nonsmoking teenage mothers having their first birth, it is possible that previous investigators who found a relationship between age and birth outcomes did not adjust adequately for the effects of cigarette smoking. In contrast, they note, their findings among both nonsmokers and smokers having second births "suggest a causal relation between [a] second teenage birth and adverse pregnancy outcome."

The authors observe, though, that this association is not necessarily attributable to a short interval between births among the teenage mothers, since the size of the effect is greater than that seen in past studies of short birth intervals. Moreover, the outcome most strongly linked to short intervals in other studies—an infant born small for gestational age—was not significantly related to age at birth in their analysis. They conclude that only a prospective study will be able to determine whether biological or social factors are behind the associations they found.–*M. Klitsch*

REFERENCE

1. Smith GCS and Pell JP, Teenage pregnancy and risk of adverse perinatal outcomes associated with first and second births: population based retrospective cohort study, *BMJ,* 2001, 323(7311):476–479.

Citing a Preference for Bottle-Feeding, the Vast Majority of Black Women Do Not Breastfeed

Black women are less than half as likely as white women to breastfeed, and the association is significant even when socioeconomic characteristics are controlled for. They also are considerably less likely than white women to cite logistical reasons for not breastfeeding, and are more likely to say that they simply prefer to bottle-feed. Differences in breastfeeding help explain why black babies are more likely than white infants to die before reaching one year of age: When breastfeeding is taken into account, the racial gap in infant mortality disappears. These are among the key findings of an analysis of data from the last two rounds of the National Survey of Family Growth (NSFG).[1]

Using information from 1995 NSFG respondents who had a child aged 18 months or younger at the time of the interview, researchers explored the association between breastfeeding and a range of maternal and birth factors that other studies have concluded influence the decision to breastfeed. After calculating bivariate odds ratios to determine the effect of each factor, they conducted multivariate analyses to examine the effects of all factors combined.

The analyses included 1,088 women, of whom 833 were white and 255 were black. Overall, 57% of women had ever breastfed their youngest child, but the proportion was much higher among white women (65%) than among black respondents (30%). White women also were more likely than black women to have high levels of income and education, to be married, to live in the West and to have wanted their last birth—all factors consistent with a greater inclination to breastfeed.

Racial differences were evident in a number of other characteristics as well. For example, black women were less likely than white women to be foreign-born and to be Catholic; they were more likely to live in central cities, to be unemployed, to want no more children and to report that their infant had been low-birth-weight. Black and white women were about equally likely to be smokers, to have only one child and to have delivered by cesarean.

At the bivariate level, all characteristics except parity and type of delivery were significantly associated with the decision to breastfeed. Among the findings were reduced odds of having breastfed among black women, women who wanted no more children or had not wanted the previous birth, and those whose infant had been low-birth-weight. The odds were elevated among women of higher socioeconomic status, residents of the West and Northeast, and foreign-born respondents.

However, few associations remained sig-

nificant in the multivariate analysis. When all factors were controlled for, black women were still less than half as likely as white women to have breastfed (odds ratio, 0.4), and women who reported wanting no more children had reduced odds compared with those who wanted to continue childbearing (0.6). The odds of having breastfed rose as women's income increased (1.1) and were elevated for women who had gone to college (1.9), who were foreign-born (1.6) and who lived in the West (3.7). An additional set of analyses, including only the factors that were statistically significant, yielded essentially the same results.

The data also revealed significant racial differences in why women choose not to breastfeed. In response to a multiple-choice question on what drove this decision, 83% of black respondents, but only 62% of whites, reported that they preferred bottle-feeding. Four percent and 14%, respectively, attributed their decision to job-related or scheduling difficulties; similarly, 8% of blacks and 18% of whites said that physical or medical problems prevented them from breastfeeding.

Finally, because research on racial variations in infant mortality has focused mainly on racial differences in the incidence of low birth weight, the investigators conducted another set of analyses to determine whether black women's relatively low likelihood of breastfeeding helps explain why their infants are less likely than babies born to white women to survive to age one. These analyses, which were based on data from the 1988 and 1995 cycles of the NSFG combined, indicated that black infants were roughly 50% more likely than others to die before one year of age (odds ratio, 1.5). However, when either low birth weight or breastfeeding was controlled for, each of those factors was significantly associated with the odds of infant death, and race no longer played a role. When both controls were taken into account simultaneously, the risk of death was significantly elevated for low-birth-weight infants (odds ratio, 4.3) and significantly reduced for babies who had been breastfed (0.2); race showed no association with the odds of infant death.

Commenting on their findings, the researchers stress the need to "better understand the factors that inhibit breastfeeding among black women and the factors that promote a preference for bottle-feeding." Efforts to persuade black women of the benefits of breastfeeding, they conclude, are "as critical in reducing black infant mortality as is targeting low-birth-weight infants."–*D. Hollander*

REFERENCE

1. Forste R, Weiss J and Lipincott E, The decision to breastfeed in the United States: does race matter? *Pediatrics,* 2001, 108(1):291–296.

Postpartum Anemia Is More Common and Lasts Longer In Poor Women Than in Those Who Are Better-Off

Between four and 26 weeks after giving birth, roughly one in four low-income women suffer from anemia; the proportion reaches nearly half, however, among those who were anemic during pregnancy and among black women. These findings, based on data for women enrolled in a federally sponsored nutrition program in 12 states,[1] suggest a sharply higher prevalence of anemia among low-income women than has been found elsewhere among their better-off counterparts. They also indicate that although women's iron levels (which drop during pregnancy) typically recover 4–6 weeks after delivery, low-income women remain at risk of suffering from anemia for a substantially longer period. Consequently, standard screening protocols, based in part on the 4–6-week time frame, may be too limited to detect this condition in low-income women.

To determine the prevalence and predictors of postpartum anemia among low-income women, researchers gathered data on participants in the Special Supplemental Food Program for Women, Infants and Children (WIC) in 1996. The data, culled from a large-scale nutrition surveillance system, included nearly 60,000 women who entered WIC while they were pregnant, had a live birth and visited a WIC site once during the postpartum period. For this study, the researchers defined the postpartum period as 4–26 weeks after delivery, because maternal hemoglobin levels, which are reduced during pregnancy, should return to normal within this interval. Participants were predominantly non-Hispanic white (65%), unmarried (60%) and in their 20s (57%); the majority (64%) were high school graduates.

Twenty-seven percent of the women were anemic when they made their postpartum visit to WIC. At any given interval since delivery, the proportion who were anemic was at least 25%; it peaked at 29–33% among women visiting WIC 12–18 weeks after giving birth. The prevalence of postpartum anemia was highest among women who had been anemic during pregnancy (49%) and among black women (43% overall, including 48% of those who were 13–14 weeks postpartum). By comparison, 24% of women who had not suffered from prenatal anemia and 21% of white women had postpartum anemia.

In logistic regression analyses that controlled for the number of weeks since the birth and other factors that could contribute to the risk of anemia, prenatal anemia emerged as the strongest predictor of postpartum anemia: Women who had been anemic while pregnant had significantly elevated odds of postpartum anemia (odds ratio, 2.7). Compared with white women, blacks had more than twice the odds of postpartum anemia (2.3), and women belonging to other minority groups had about half again the odds (1.4–1.6).

A number of other variables had smaller but still significant associations with the risk of postpartum anemia. The odds grew with increasing prepregnancy body mass index and were significantly elevated for women aged 16–19, those who had had a multiple birth, women with no more than a high school education and those who were not married. Women who had been breastfeeding for more than three weeks had reduced odds of being anemic at their postpartum WIC visit (0.8 both for those who had been breastfeeding for 4–6 weeks and for those who had been doing so for longer).

The researchers note that the overall prevalence of postpartum anemia found in their study is dramatically higher than the prevalence reported among higher-income women in a national study in the late 1980s and early 1990s (one in 18). Furthermore, they point out that the condition remained common in the WIC sample for longer than the 4–6 weeks after delivery that it usually takes iron levels to return to normal. Although clinical guidelines call for screening at 4–6 weeks after delivery only for women considered to have a high risk of postpartum anemia (i.e., those who were anemic through the third trimester, who lost excessive amounts of blood during delivery or who had a multiple birth), the researchers conclude that this protocol is inadequate for low-income populations. Rather, they emphasize the importance of screening all low-income women. Furthermore, they rec-

ommend that "given the magnitude of the problem..., the continuation of iron supplementation after delivery until women are screened at their first postpartum medical visit may be warranted."–*D. Hollander*

REFERENCE

1. Bodnar LM et al., High prevalence of postpartum anemia among low-income women in the United States, *American Journal of Obstetrics and Gynecology,* 2001, 185(2):438–443.

Sexual Risks Are Increased For Women Who Were Ever In Foster or Kinship Care

Women who spent any time living in foster homes or with relatives other than their parents during childhood have an elevated risk of engaging in high-risk sexual behaviors, according to an analysis of data from the 1995 National Survey of Family Growth (NSFG).[1] They are nearly a year younger than other women when they first become pregnant, and they have elevated odds of having more than three sexual partners over their lifetime. Those who lived with relatives also begin having intercourse at a younger age than women who always lived with at least one biological parent. More than 500,000 children are placed in living arrangements outside their parents' home each year; the analysts note, however, that the extent to which this experience influences their sexual behavior has received little attention.

The nationally representative NSFG data permitted researchers to examine patterns of sexual behavior among three groups of women: 89 who had ever lived in foster care, 513 who had ever lived in kinship care (that is, with relatives other than their parents) and 9,018 who had always lived with at least one parent (the comparison group). Women were excluded if they had never lived with their biological parents, they were foreign-born or they had lived in a group home at any point in their childhood.

In all three groups, the women's average age was 30–32 years, and non-Hispanic white women were the predominant racial group; black women represented a greater proportion of the kinship group (30%) than of the foster care and comparison groups (12–13%). Women who had always lived with their parents had more schooling (12.9 years, on average) than those who had ever had other living arrangements (11.9–12.2).

Bivariate analyses revealed no significant differences between the foster care and the kinship care groups with respect to factors related to sexual behavior and risk, but both of these groups differed from the comparison group in a number of ways: They were significantly more likely to have had an unwanted sexual experience before they were 18 years old (13–18% vs. 8%), to have been born to a single woman (17–21% vs. 5%) and to have had more than three partners (74–75% vs. 63%). These women also had been younger when they first had voluntary intercourse (16.4–16.8 years, on average, compared with 17.4 years) and when they first conceived (19.1–19.2 vs. 21.0 years).

Using multiple linear and logistic regression analyses, the researchers assessed the independent effects of childhood living arrangements on sexual behavior, controlling for background and risk-related factors. The first set of calculations showed that women in the kinship care group were six months younger than those in the comparison group when they first had voluntary intercourse; women who had lived in a foster family, however, did not differ from the comparison group on this measure. In the second set of multivariate analyses, the investigators found that compared with women who had always lived with their parents, those who had spent time in foster homes first became pregnant 11.3 months earlier, and those who had lived in the care of relatives first conceived 8.6 months earlier. Finally, both groups who had lived outside their parents' home had significantly increased odds of having had more than three sexual partners (odds ratios, 1.4–1.7).

In commenting on their findings, the researchers emphasize that the results "cannot implicate placement into foster and kinship care as the direct cause of...high-risk behaviors." Nevertheless, they conclude that the results have important clinical ramifications. Most important, in their view, children's and adults' health care providers should be aware of the sexual risks faced by female patients who live or have lived outside their parents' home. Additionally, youngsters and young adults who have lived in foster or kinship care may benefit from services involving collaboration between health care, education and child welfare professionals. And since reliance on kinship care is on the rise, it is important to recognize that such care "may not be more protective than traditional foster care with regard to long-term sexual and reproductive behaviors." –*D. Hollander*

REFERENCE

1. Carpenter SC et al., The association of foster care or kinship care with adolescent sexual behavior and first pregnancy, *Pediatrics,* <http://www.pediatrics.org/cgi/content/full/108/3/e46>.

Mother's Attitudes Affect Ability to Discuss Condom Use with Her Adolescent

A mother's attitude toward teenage sexuality, her comfort in talking about sexual matters and her religiousness can all significantly affect whether she communicates with her adolescent about condoms, according to a study of nearly 1,000 women in the United States and Puerto Rico.[1] Seventy-three percent of women report discussing condoms with their teenager. Mothers who have greater skill or greater comfort in communicating about sex, those who feel that they have credible information about condoms and those who have the perception that their adolescent's friends are sexually active have elevated odds of speaking with their teenager about condoms. Mothers who believe that their teenager should wait until marriage to engage in sexual activity are less likely than those who do not share this belief to talk to them about condoms.

To determine what factors significantly affect mother-adolescent communication about condoms, researchers surveyed women and their 14–17-year-old children in three locations: Montgomery, Alabama; San Juan, Puerto Rico; and New York City. In separate interviews, which took place between October 1993 and June 1994, researchers asked mothers and their teenagers questions regarding their demographic characteristics and whether they had ever spoken together about condoms. The mothers were also asked questions about six areas thought to influence parent-child communication: their knowledge and information about topics related to sex, HIV and other sexually transmitted diseases; attitudes, beliefs and religiousness; perception of their teenager's risk; perception of their ability to discuss sex and condoms; beliefs about condom effectiveness; and endorsement of condom use by adolescents.

Researchers conducted bivariate and multivariate analyses on the survey data. An initial regression model examined the indepen-

dent relationship between each demographic variable and communication about condoms. Individual regression models examined predictors within each of the six question areas, controlling for location, mother's age, mother's education, father's presence in the household and the adolescent's age and gender. A final model simultaneously examined all predictors found to be significant in the previous analyses.

Of the 907 mothers surveyed, 73% reported that they had spoken with their adolescent about condoms. In the bivariate analyses, the researchers identified numerous significant factors within each of the six question areas to be examined further in multivariate regression models. In the initial multivariate analysis, including only demographic factors, they found that women who lived in New York were more likely than those who lived in San Juan to have talked with their teenager about condoms (odds ratio, 2.3). The likelihood that a mother had spoken with her teenager about condoms rose as a mother's education increased and declined as her age increased (1.2 and 0.9, respectively); it was reduced if the father was present in the home (0.6).

The multivariate analysis of the knowledge and information question area included 12 factors, and of these, believing that she had enough information to discuss condoms and receiving information from a pamphlet, a doctor or the health department were found to be significantly associated with a mother's increased likelihood of having talked to her teenager about condoms (odds ratios, 2.6 and 2.0, respectively). In the regression model examining the mothers' attitudes, beliefs and religiousness, those who believed that their teenager should wait until marriage to have sex were 40% less likely than those who did not to talk to their adolescent about condoms (odds ratio, 0.6).

In the regression model looking at mothers' perception of their teenager's risk, those who perceived that their adolescent's friends were sexually active were more likely than those who did not to discuss condoms with their adolescent (odds ratio, 4.2). Of the four factors in the question area exploring mothers' perceptions of their ability to discuss sex, believing that they had good sexual communication skills and being comfortable with talking about condoms were significantly associated with elevated odds of mother-adolescent communication about condoms (1.1 and 1.3, respectively). Analysis of the factors in the question area on mothers' beliefs about condom effectiveness found that women who considered condoms effective in preventing HIV infection were more likely than those who did not to have talked to their teenager about condoms (1.4). Both of the factors in the model assessing the effects of mothers' beliefs about condom access—believing that schools should make condoms available to teenagers and believing that their teenager should carry condoms—were significantly associated with mothers' increased likelihood of having talked to their adolescent about condoms (2.1 and 1.5, respectively).

Most of the factors found significant in the multivariate analyses of the six question areas remained significant in the final regression model, which controlled for all factors simultaneously. The exceptions were the father's presence at home, the mother's belief in the efficacy of condoms and her belief that she had enough information to discuss the subject.

In light of their findings, the investigators conclude that "parents must learn that talking with adolescents about sex and condoms is associated with safer sexual behavior and with a reduced association between adolescents' own behavior and the adolescents' perception of their peers' behavior." They suggest that physicians and other health service providers can facilitate parent-teenager discussions by providing parents with credible information on sexuality and condoms, by informing parents of the benefit of such discussion and by impressing on parents the reality and risks of adolescent sexuality.—*J. Rosenberg*

REFERENCE

1. Miller KS and Whitaker DJ, Predictors of mother-adolescent discussions about condoms: implications for providers who serve youth, *Pediatrics,* 2001, 108(2), <http://www.pediatrics.org/cgi/content/full/108/2/e28>.

CORRECTION

In "Differences in Teenage Pregnancy Rates Among Five Developed Countries: The Roles of Sexual Activity and Contraceptive Use," by Jacqueline E. Darroch et al. [2001, 33(6):244–250 & 281], Table 1 should indicate that Canada's General Social Survey used a national sample of 3,743 men and 4,166 women, and measured age at first birth and method at last sex.